
Litt's
DRUG ERUPTION & REACTION MANUAL
30th EDITION
2024
NEIL H. SHEAR
CRC Press
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Litt's

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30th EDITION

2024

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A Note from the Editor

All of us involved with Litt's are very excited about reaching the milestone 30th edition of the Manual! It is hard to comprehend the number of new drugs and therapies that have emerged over those last three decades. Yet the great expansion in treatments to help patients is also associated with an exponential increase in adverse reactions. So therapeutic safety remains the heart and soul of Litt's DNA.

At a recent summer gathering of our Clinical Pharmacology group I was very pleased to hear how the Drug Safety Clinic was using Litt's on a regular basis. They very much depend on more than just the literature or experience and need up-to-date data on new and emerging adverse events. I heard how data like this help the team make clinical decisions, and they were especially using the online database updates. As the founder of this clinic I can tell you how truly happy I was to hear all of this.

With purchase of a new print copy of this year's manual in 2024 we are delighted to offer a 12-month free access to the full database so that you also can try using it for your own practice!*

Neil H. Shear, MD, FRCPC, FACP

**Please contact Robert Peden at the publishers* (Robert.peden@tandf.co.uk) *with documented purchase of a new print copy of the 30th edition in 2024*

Litt's Drug Eruption & Reaction Manual – at a glance

This 30th edition has been revised and updated throughout to present a quick clinical reference guide to adverse drug reactions (ADRs), side effects, drug interactions and other safety information for prescription and over-the-counter medications.

There is material on reactions caused by classes of drugs, enabling you to see at a glance whether a reaction is common to all the drugs in that particular class, or to a majority of them, or only to a significant few.

The aims of this edition remain:

1. To help medical practitioners make informed and safe decisions when diagnosing and prescribing, and also when generally seeking information.
2. To help healthcare professionals remain pharmacovigilant.
3. To provide all physicians, lecturers, educators, and pharmacists with an easy-to-use and reliable quick reference tool.

Space in the manual is, unfortunately, constrained. The full and comprehensive picture for all drugs – from which our information derives – can be found in the **Litt database** (www.drugeruptiondata.com), which is updated continually; it currently holds over 1800 drug profiles with over 73,000 documented drug reactions, as evidenced by well over 156,000 references on PubMed. The Litt database was originated by Jerome Z. Litt; and now edited by Neil H. Shear, with advice and input by Rupert Purchase, DPhil, CChem, FRSC.

A note on ADRs

The incidence and severity of ADRs are influenced by a number of factors:

1. Patient-related factors:

- Age – geriatric, pediatric, adolescent . . . older patients are taking more medications-hence more of a possibility of developing reactions; pediatric patients have more delicate skins; hormonal changes occur in adolescents . . . All these factors play roles in the development of possible adverse reactions.
- Gender – male or female – and if the latter, then pregnant/breast-feeding/menopausal . . .
- Disease – not only the disease being treated, but also other pre-existing health conditions and comorbid diseases. For example, atopic patients are at increased risk for serious allergic reactions; also, there would be an increased risk for hypersensitivity drug reactions if the patient has asthma or lupus erythematosus.
- Genetics – a patient could have abnormal drug metabolism due to inheriting abnormal alleles (see further the section of Genetic Tables).
- Geography – patients living in sunny climes could develop phototoxicities from photosensitizing drugs more readily than those who inhabit cooler, less sunny climates.

2. Drug-related factors:

- Type/class of drug – for example, there is a heightened risk of angioedema with the use of ACE inhibitors (see further the section of tables of class reactions).
- Duration of therapy – the longer a patient maintains the therapy, the more possible it becomes that he/she could develop a reaction due to their changes in drug metabolism (e.g. renal insufficiency) or drug interactions.
- Dosage – the greater the dosage, the more likely an adverse side effect.
- Bioavailability – the extent to and rate at which the drug enters systemic circulation, thereby accessing the site of action.
- Interactions with other drugs – for example, synergistic QT prolongation can occur when two QT prolonging agents, such as erythromycin + ritonavir, are used together.
- Route of administration – intramuscular, intravenous, subcutaneous, and topical administrations are more likely to cause hypersensitivity reactions; oral medications are less likely to result in drug hypersensitivity.

The terms “drug allergy,” “drug hypersensitivity,” and “drug reaction” are often used interchangeably. “Drug allergy” specifically refers to a reaction mediated by IgE; “drug hypersensitivity” is an immune-mediated response to a drug agent in a sensitized patient; and “drug reactions” comprise all adverse events related to drug administration, regardless of etiology.

Vigilance at point of care:

While the possibilities for adverse drug reactions seem endless, we must be on the lookout for any new medication(s) the patient might be taking. A thorough, detailed history of all medications must be made in order to elicit any remote possibility that the drug in question might be the culprit for the side effect. People do not often realize that the common over-the-counter analgesics – aspirin, Tylenol, Advil, Motrin, Naprosyn, and others – are actually medications. Herbals and supplements such as St. John’s wort, ginkgo biloba, and echinacea can be responsible for various hypersensitivity reactions. For example, St. John’s wort, in particular, interacts adversely with SSRIs and tricyclic antidepressants.

Contents of the book, and how to use them

1. **The A–Z**

The major portion of the manual lists in alphabetical order the 1500 most consulted and most important generic drugs, biologics, and supplements, and the adverse reactions that can arise from their use. If you do not find a drug in the main A–Z listing under the name you know it by, you can turn to the concordance of synonyms and trade names to find the generic name it will be listed under.

Trade (brand) name(s) are listed alphabetically. When there are many trade names, the ten (or so) most commonly recognized ones are listed.

Following the trade names is – in parentheses – the latest name of the pharmaceutical company that markets the drug. Many of the names of companies have changed from earlier editions of this manual because of acquisitions, mergers, and other factors in the pharmaceutical industry.

Next appear the Indication(s), the Class in which the drug belongs, and the Half-life of each drug, where known.

Drug interactions: many severe, hazardous drug-drug interactions are recorded. Only clinically significant drug interactions that have been reported to trigger potential harm and that could be life threatening have been included here in the profile. These interactions are predictable and well documented in controlled studies; they should be avoided.

Pregnancy category: for new drugs approved on or after 30 June 2015 this field gives (where available) a brief summary of the full statement reflecting the risk for pregnant women as given in the prescribing guidelines; health care providers are advised to check the individual label where necessary. An explanation of the categories for older drugs (A, B, C, D and X) can be found on our website – www.drugeruptiondata.com.

Any "Black box" Warning required by the FDA or Notes on use then follow.

Adverse Drug Reactions: under each drug profile is a list of related ADRs. These adverse events have been classified under the following categories: Skin, Hair, Nails, Mucosal; Cardiovascular, Central Nervous System, Endocrine/Metabolic, Gastrointestinal/Hepatic, Genitourinary, Hematologic, Local, Neuromuscular/Skeletal, Ocular, Otic, Renal, Respiratory, Other.

Within each category, the reactions are listed alphabetically. Thus, the order of listing does not reflect severity or frequency in any way.

The terminology used to list reaction patterns has been simplified as far as possible by eliminating, for the most part, tags such as "like" (as in "-Psoriasis-like"), "-reactivation," "-syndrome," "-dissemination," etc.

The number of reports is given for each reaction in square brackets. The incidence of the most important reactions is given in parentheses where indicated (usually from the full prescribing information for the relevant drug). For example, the profile for Amoxicillin begins:

Skin

AGEP [28]
Anaphylactoid reactions/Anaphylaxis [17]
Angioedema (<10%) [5]

This means that we have 28 journal articles referring to occurrence of AGEP (acute generalized exanthematous pustulosis); 17 articles mentioning the occurrence of anaphylaxis; and 5 articles discussing angioedema, as reactions to Amoxicillin within the Skin category. All these articles appear on our website – www.drugeruptiondata.com – together with links to the article abstracts on PubMed®. Additionally, the incidence of angioedema as a reaction has been reported as up to 10%.

On some occasions, there are very few adverse reactions to a specific drug. These drugs are still included in the manual as there is a positive significance in knowing there are no adverse reports.

2. **Important eruptions / reactions**

i) This section of the manual includes a listing of descriptions of important eruption and reaction patterns. Over 40 eruptions/reactions are described here in alphabetical order, from Acanthosis nigricans to Xerostomia. (Descriptions of several other reactions, and lists of drugs associated with these reactions, can be found on our website – www.drugeruptiondata.com.)

ii) We follow this with a list of the most common drugs that cause these important eruptions and reaction patterns, as a quick reference guide.

iii) We then have a list of the main classes of drugs, from 5-HT1 agonists to Xanthine alkaloids, as a quick reference guide.

iv) There follows a section of tables of class reactions, enabling you to see at a glance whether a reaction is common to all the drugs in that particular class, or to a majority of them, or only to a significant few.

v) Next is a table of reported genetic associations with cutaneous adverse drug reactions.

3. **The Concordance**

The final part of the manual is a concordance to match synonyms (noted in italic) and trade names with the generic drug name. If you know only the synonym or trade name, you can use this list to find the corresponding generic name to look up in the main A–Z listing section of the book.

Being a drug reaction sleuth!

Neil H Shear

I'll start off with a real referral sent to me a few years ago (I expect it will sound familiar to all dermatologists):

"*Dear Neil*,
I am just seeing a patient at the hospital.
The patient took ***amoxicillin*** *and* ***clarithromycin*** *1 week before &* ***ceftriaxone*** *45 min before getting a* ***rash****.*
I think it very unlikely that ceftriaxone is the cause. As far as I know he never had it before.
The reason for this note is that our Respiratory Physician feels strongly that ceftriaxone is the cause.
What do you think?"

What I do like about this is the fact that this is a written (email) request, so any reply I give has some demonstrable existence, as against a phone call or hall chat relying on memory only.

However, a common mistake would be to answer the question "What do you think?" There is very limited information about this patient whom I did not see and will never see. The first step in a proper consultation is **DIAGNOSIS** of the possible drug reaction. There are 3 key components for making a diagnosis:
– Appearance of the rash
– Systemic issues
– Histology
My mnemonic is Remember: Appearance, Systemic, Histology (RASH).

Thinking back on the referral sent to me I have very little information to help make a diagnosis.
What was the "rash" and were there systemic symptoms and signs? I don't know. So I will need to ask for more detailed information if this consultation continues.

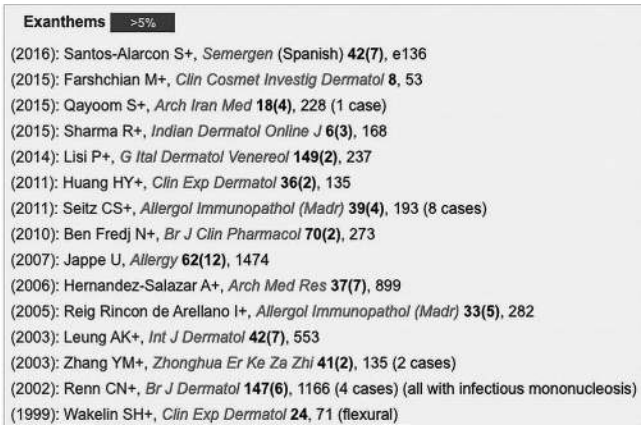
The second step is to determine **CAUSALITY**. Note the referral is focused on an assumption that I will pick a single drug that caused the "rash". Unfortunately, that is not how life works. There are at a minimum 3 possible causes that we know of from the history of drugs given. We don't know if the patient was on other drugs or has a drug allergy history. In this case I will have to assume there are NO systemic features and that the "rash" is a "simple exanthem".

Causality assessments demand:
– A **quantitative approach** (numbers matter)
– Using a Bayesian type of approach we can **generate probabilities** that each drug we know of might have caused a reaction.

So now I need to see what the baseline rate of "rash" is for each drug. This is where Litt comes in . . .

Amoxicillin

Looking at the Amoxicillin listing in the database (Fig 1) or the Amoxicillin summary in the manual I can see that there are 33 reports of the reaction and that the background rate is estimated at >5%. This is not the final step, but it gives me some evidence to demonstrate that, although each of these drugs could cause rash, one is much more likely than the others.


Exanthems >5%

(2016): Santos-Alarcon S+, *Semergen* (Spanish) **42(7)**, e136
(2015): Farshchian M+, *Clin Cosmet Investig Dermatol* **8**, 53
(2015): Qayoom S+, *Arch Iran Med* **18(4)**, 228 (1 case)
(2015): Sharma R+, *Indian Dermatol Online J* **6(3)**, 168
(2014): Lisi P+, *G Ital Dermatol Venereol* **149(2)**, 237
(2011): Huang HY+, *Clin Exp Dermatol* **36(2)**, 135
(2011): Seitz CS+, *Allergol Immunopathol (Madr)* **39(4)**, 193 (8 cases)
(2010): Ben Fredj N+, *Br J Clin Pharmacol* **70(2)**, 273
(2007): Jappe U, *Allergy* **62(12)**, 1474
(2006): Hernandez-Salazar A+, *Arch Med Res* **37(7)**, 899
(2005): Reig Rincon de Arellano I+, *Allergol Immunopathol (Madr)* **33(5)**, 282
(2003): Leung AK+, *Int J Dermatol* **42(7)**, 553
(2003): Zhang YM+, *Zhonghua Er Ke Za Zhi* **41(2)**, 135 (2 cases)
(2002): Renn CN+, *Br J Dermatol* **147(6)**, 1166 (4 cases) (all with infectious mononucleosis)
(1999): Wakelin SH+, *Clin Exp Dermatol* **24**, 71 (flexural)


(1997): Barbaud AM+, *Arch Dermatol* **133**, 481
(1995): Romano A+, *Allergy* **50**, 113
(1995): Wolkenstein P+, *Arch Dermatol* **131**, 544
(1993): Fellner MJ, *Int J Dermatol* **32**, 308
(1993): Romano A+, *J Invest Allergol Clin Immunol* **3**, 53
(1990): Pauszek ME, *Indiana Med* **83**, 330
(1989): Battegay M+, *Lancet* **2**, 1100
(1989): Chopra R+, *CMAJ* **140(8)**, 921
(1989): Kennedy C+, *Contact Dermatitis* **20**, 313
(1986): Bigby M+, *JAMA* **256**, 3358 5%
(1986): de Haan P+, *Allergy* **41**, 75
(1986): Sonntag MR+, *Schweiz Med Wochenschr* (German) **116(5)**, 142 7%
(1985): Levine LR, *Pediatr Infect Dis* **4**, 358
(1981): Odegaard OR, *Tidsskr Nor Laegeforen* (Norwegian) **101**, 1973
(1977): Taylor B+, *BMJ* **2**, 552 4%
(1975): Brogden RN+, *Drugs* **9**, 88
(1974): Wise PJ+, *J Infect Dis* **129(0)**, S266
(1973): Dubb S, *S Afr Med J* **47(28)**, 1218

Figure 1

After we have the background rate from Litt we can think of data that might modify the background rate. Nothing is as helpful as knowing the timing of drug exposure to onset of a rash. In this instance we know that aminopenicillin rashes come on around day 8 to 10 after exposure. That is very powerful additional information.

Ceftriaxone
There are comparatively few (7) reports and lower reported background rates (none in the package insert information) for this reaction in the database (Fig 2) and manual for a drug that is widely used. Clearly exanthems are not a major clinical issue, and the figures here are reassuringly low – not nearly as high as Amoxicillin, although not impossible.

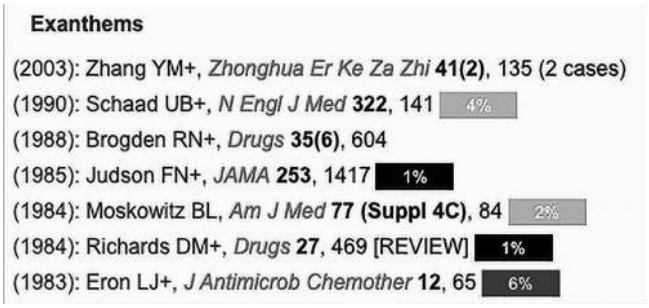


Figure 2

Clarithromycin
Figure 3 shows the very few (3) reports from the database and manual of this drug causing a rash; the lack of any reported background rate supports the conclusion it is not a major clinical issue.

Figure 3

We have to come to some conclusion and all possibilities need to be represented. Based on Amoxicillin being a common cause of an exanthem (AND on the timing), we have to give it a big lead. Then we think of "I don't know" and "I will never know", which I always mark down as 15% each. We now know the other antibiotics have a much small risk. So 30% for the unknowns, 5% or so for the drugs that were unlikely, leaves the remainder for Amoxicillin.

The numbers are approximations based on the data to hand. Having other unknowns reflects real life: maybe it was due to some contrast media? Or a comorbid risk? Or dozens of other possibilities. And truly sometimes we never know.

Now I am ready (and armed with data I can defend rationally) to send my report back to the referring doctor:

"Dear colleague
Thank you for sending information about your patient. I have not seen the patient and some key information is missing. My report is based on what information I have but clearly that could change with more data.
Assuming the patient had a simple exanthem and no fever etc., the estimated likelihood of what caused the rash is as follows:
Amoxicillin: 65%
Ceftriaxone: 4%
Clarithromycin: 1%
Other unknown exposures or risks: 15%
We will never know: 15%"

CONCLUSIONS
LESSON 1: Look for good quality clinical data.
LESSON 2: Give opinions in text, not conversation.
LESSON 3: Use a structured summary that is uniform, every time, to increase the impact and be on target.
LESSON 4: Be quantitative; it is clear and respected.

I hope this enhances your search for quality information and enhanced patient safety.

ABACAVIR

Trade names: Epzicom (ViiV), Triumeq (ViiV), Trizivir (ViiV), Ziagen (ViiV)
Indications: HIV infections in combination with other antiretrovirals
Class: Nucleoside analog reverse transcriptase inhibitor
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: alcohol, arbutamine, argatroban, arsenic, darunavir, ganciclovir, lopinavir, methadone, phenobarbital, phenytoin, protease inhibitors, ribavirin, rifampin, tipranavir, valganciclovir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Check for presence of HLA B*57:01
Epzicom is abacavir and lamivudine; Triumeq is abacavir, dolutegravir and lamivudine; Trizivir is abacavir, lamivudine and zidovudine.
Warning: HYPERSENSITIVITY REACTIONS, LACTIC ACIDOSIS and SEVERE HEPATOMEGALY, and EXACERBATIONS OF HEPATITIS B

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (3%) [3]
- Exanthems [2]
- Hypersensitivity (8–9%) [69]
- Lipoatrophy [2]
- Rash (5–7%) [18]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]

Cardiovascular
- Myocardial infarction [10]

Central Nervous System
- Abnormal dreams (10%) [2]
- Anxiety (5%)
- Chills (6%)
- Depression (6%)
- Fever (pyrexia) (includes hyperpyrexia) (6%) [2]
- Headache (7–13%) [4]
- Insomnia [2]
- Migraine (7%)
- Neuropsychiatric / neuropsychological adverse effect [4]
- Sleep-related disorder (10%)
- Vertigo / dizziness (6%) [3]

Endocrine/Metabolic
- ALT increased (6%)
- AST increased (6%)
- Hyperamylasemia (2–4%)
- Hypertriglyceridemia (includes triglycerides increased) (2–6%)

Gastrointestinal/Hepatic
- Abdominal pain (6%)
- Diarrhea (7%) [4]
- Gastritis / pangastritis / gastric irritation (6%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
- Nausea (7–19%) [6]
- Vomiting (2–10%)

Hematologic
- Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [3]
- Neutropenia (neutrophils decreased) (2–5%)

Neuromuscular/Skeletal
- Asthenia / fatigue (7–12%) [2]
- Bone or joint pain (5–6%)
- Myalgia/Myopathy (5–6%) [2]

Renal
- Fanconi syndrome [2]

Respiratory
- Bronchitis (4%)
- Cough [2]
- Pneumonia (4%)
- Upper respiratory tract infection [2]

Other
- Adverse effects / adverse reactions [4]
- Infection (5%)

ABALOPARATIDE

Trade name: Tymlos (Radius Health)
Indications: Osteoporosis in postmenopausal women
Class: Parathyroid hormone analog
Half-life: <2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Not indicated for use in females of reproductive potential)
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Warning: RISK OF OSTEOSARCOMA

Cardiovascular
- Orthostatic hypotension (<4%)
- Palpitation (5%)
- Tachycardia (2%) [2]

Central Nervous System
- Headache (8%)
- Vertigo / dizziness (2–10%)

Endocrine/Metabolic
- Hypercalcemia (3%) [3]
- Hyperuricemia (25%)

Gastrointestinal/Hepatic
- Abdominal pain (3%)
- Nausea (8%)

Genitourinary
- Hypercalciuria (11%)
- Urolithiasis (2%)

Local
- Injection-site edema (10%)
- Injection-site erythema (58%)
- Injection-site pain (9%)

Neuromuscular/Skeletal
- Asthenia / fatigue (3%)

Other
- Adverse effects / adverse reactions [2]

ABARELIX

Trade name: Plenaxis (Praecis)
Indications: Prostate cancer (advanced)
Class: Gonadotropin-releasing hormone (GnRH) antagonist
Half-life: 13.2 days
Clinically important, potentially hazardous interactions with: amiodarone, procainamide, quinidine, sotalol
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: pediatric patients

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Skin
- Hot flashes / hot flushes (79%)
- Peripheral edema (see also edema) (15%)

Central Nervous System
- Headache (12%)
- Pain (31%)
- Vertigo / dizziness (12%)

Endocrine/Metabolic
- Gynecomastia (30%)
- Mastodynia (20%)

Neuromuscular/Skeletal
- Asthenia / fatigue (10%)
- Back pain (31%)

Respiratory
- Upper respiratory tract infection (12%)

Other
- Allergic reactions [2]

ABATACEPT

Trade name: Orencia (Bristol-Myers Squibb)
Indications: Rheumatoid arthritis, juvenile idiopathic arthritis in pediatric patients 6 years of age and older
Class: Biologic, Biologic disease-modifying antirheumatic drug (bDMARD), Disease-modifying antirheumatic drug (DMARD), T-cell co-stimulation modulator
Half-life: 12–23 days
Clinically important, potentially hazardous interactions with: adalimumab, anakinra, certolizumab, denosumab, echinacea, etanercept, golimumab, infliximab, lenalidomide, live vaccines, natalizumab, pimecrolimus, sipuleucel-T, tacrolimus, TNF antagonists, trastuzumab
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
- Basal cell carcinoma [3]
- Eczema / eczematous reaction / eczematous eruption [2]
- Herpes simplex (<5%) [3]
- Herpes zoster [3]
- Hypersensitivity [2]
- Psoriasis [14]
- Rash (4%) [6]
- Sjögren's syndrome [4]
- Squamous cell carcinoma [5]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Mucosal
- Stomatitis (oral mucositis) [3]

Cardiovascular
- Hypertension (7%) [4]
- Hypotension [2]

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) (5%) [2]
- Headache (5–18%) [6]
- Vertigo / dizziness (9%) [3]

Gastrointestinal/Hepatic
- Abdominal pain (5%)
- Diarrhea (5%) [3]
- Dyspepsia / functional dyspepsia / gastroparesis (6%)
- Gastroenteritis [5]
- Nausea (5%) [2]
- Vomiting [2]

Genitourinary
- Urinary tract infection (5–13%) [10]

Local
Infusion-related reactions [4]
Infusion-site reactions (9%) [5]
Injection-site erythema [3]
Injection-site hematoma [2]
Injection-site pain [3]
Injection-site pruritus [2]
Injection-site reaction (3%) [8]

Neuromuscular/Skeletal
Asthenia / fatigue [2]
Back pain (7%) [2]
Pain in extremities (3%)

Respiratory
Bronchitis (<13%) [4]
Cough (5–8%)
Influenza (5–13%) [2]
Nasopharyngitis (12%) [6]
Pharyngitis (sore throat) [3]
Pneumonia (<5%) [7]
Pulmonary toxicity [2]
Rhinitis (<5%) [2]
Sinusitis (5–13%) [3]
Tuberculosis [2]
Upper respiratory tract infection (>10%) [9]

Other
Adverse effects / adverse reactions [26]
Death [2]
Infection (36–54%) [25]
Malignancies [10]

ABCIXIMAB

Synonym: C7E3
Trade name: ReoPro (Janssen Biotech)
Indications: Thrombotic arterial disease
Class: Antiplatelet, Glycoprotein IIb/IIIa inhibitor, Monoclonal antibody
Half-life: 10–30 minutes – given intravenously
Clinically important, potentially hazardous interactions with: anticoagulants, antiplatelets, collagenase, dasatinib, dextran, drotrecogin alfa, fondaparinux, glucosamine, herbals with anticoagulant properties, lepirudin, monoclonal antibodies, NSAIDs, omega-3 fatty acids, pentosan, pentoxifylline, prostacyclin analogues, reteplase, salicylates, thrombolytic agents, tositumomab & iodine^{131}, trastuzumab
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Peripheral edema (see also edema) (2%)

Cardiovascular
Bradycardia / sinus bradycardia (5%)
Chest pain (9%)
Hypotension (15%)
Myocardial infarction [4]

Central Nervous System
Headache (6%)
Pain (5%)

Gastrointestinal/Hepatic
Nausea (12%)
Vomiting (7%)

Hematologic
Bleeding [2]
Thrombocytopenia [15]

Local
Injection-site reaction (4%)

Neuromuscular/Skeletal
Back pain (17%)

Other
Death [3]

ABEMACICLIB

Trade name: Verzenio (Lilly)
Indications: Hormone receptor-positive, human epidermal growth factor 2-negative advanced or metastatic breast cancer, either as monotherapy or in combination with fulvestrant, or as inital endocrine-based therapy with an aromatase inhibitor
Class: Cyclin-dependent kinase (CDK) 4/6 inhibitor
Half-life: 18 hours
Clinically important, potentially hazardous interactions with: grapefruit juice, ketoconazole, strong CYP3A4 inducers or inhibitors
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Hair
Alopecia / hair loss (12%)

Mucosal
Stomatitis (oral mucositis) (14%)
Xerostomia (dry mouth) (17%)

Central Nervous System
Anorexia [3]
Dysgeusia (taste perversion) (12%)
Fever (pyrexia) (includes hyperpyrexia) (11%)
Headache (20%)
Vertigo / dizziness (11%)

Endocrine/Metabolic
ALT increased (31%)
Appetite decreased (45%) [3]
AST increased (30%)
Dehydration (10%)
Serum creatinine increased (13%) [3]
Weight loss (14%) [2]

Gastrointestinal/Hepatic
Abdominal pain (39%) [2]
Constipation (17%)
Diarrhea (90%) [12]
Nausea (64%) [9]
Vomiting (35%) [4]

Hematologic
Anemia (25%) [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (17%) [5]
Neutropenia (neutrophils decreased) (37%) [10]
Thrombocytopenia (20%) [3]

Neuromuscular/Skeletal
Arthralgia (15%)
Asthenia / fatigue (65%) [9]

Respiratory
Cough (19%)

Other
Infection (31%)

ABIRATERONE

Trade name: Zytiga (Janssen Biotech)
Indications: Metastatic castration-resistant prostate cancer (in combination with prednisone)
Class: CYP17 inhibitor, Enzyme inhibitor
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: atazanavir, carbamazepine, clarithromycin, CYP3A4 inducers or inhibitors, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, telithromycin, thioridazine, voriconazole
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in women who are or may become pregnant.

Skin
Edema / fluid retention (see also peripheral edema) (27%) [21]
Hot flashes / hot flushes (19%) [4]

Cardiovascular
Arrhythmias (7%)
Atrial fibrillation [3]
Cardiac failure (2%)
Cardiotoxicity [6]
Chest pain (4%)
Hypertension (9%) [27]
Tachycardia [3]

Central Nervous System
Headache [2]

Endocrine/Metabolic
ALT increased (11%) [8]
AST increased (31%) [4]
Hypercholesterolemia [2]
Hyperglycemia (includes glucose increased) [2]
Hypertriglyceridemia (includes triglycerides increased) (63%)
Hypokalemia [27]

Gastrointestinal/Hepatic
Constipation [8]
Diarrhea (18%) [6]
Dyspepsia / functional dyspepsia / gastroparesis (6%)
Hepatic (liver) disorder / hepatobiliary disorder / hepatic (liver) dysfunction [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (2%) [13]
Nausea [9]
Vomiting [2]

Genitourinary
Nocturia (6%)
Urinary frequency (7%)
Urinary tract infection (12%) [3]

Hematologic
Anemia [6]
Febrile neutropenia [2]
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [3]

Neuromuscular/Skeletal
Arthralgia [6]
Asthenia / fatigue [14]
Back pain [6]
Bone or joint pain (30%) [9]
Myalgia/Myopathy (26%)
Pain in extremities [3]

Rhabdomyolysis [3]

Respiratory
Cough (11%)
Dyspnea / shortness of breath [3]
Nasopharyngitis [2]
Upper respiratory tract infection (5%) [2]

Other
Adverse effects / adverse reactions [8]

ACALABRUTINIB

Trade name: Calquence (AstraZeneca)
Indications: Treatment of adult patients with mantle cell lymphoma (MCL) who have received at least one prior therapy
Class: Bruton's tyrosine kinase (BTK) inhibitor
Half-life: <3 hours
Clinically important, potentially hazardous interactions with: antacids, famotidine, H2-receptor antagonists, itraconazole, proton pump inhibitors, ranitidine, rifampin, strong CYP3A inducers, strong or moderate CYP3A inhibitors
Pregnancy category: N/A (May cause fetal toxicity based on findings in animal studies)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (21%) [2]
Hematoma (8%)
Petechiae (21%)
Rash (18%)

Mucosal
Epistaxis (nosebleed) (6%)

Cardiovascular
Atrial fibrillation (3%)
Atrial flutter (3%)
Hypertension [2]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (39%) [7]

Endocrine/Metabolic
Weight gain [4]

Gastrointestinal/Hepatic
Abdominal pain (15%)
Constipation (15%)
Diarrhea (31%) [6]
Nausea (19%) [2]
Vomiting (13%)

Hematologic
Anemia (46%)
Hemorrhage (8%)
Neutropenia (neutrophils decreased) (36%)
Thrombocytopenia (44%)

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue (28%) [3]
Myalgia/Myopathy (21%) [2]

Respiratory
Pneumonia [3]
Upper respiratory tract infection [2]

Other
Malignancies (11%)

ACAMPROSATE

Trade name: Campral (Forest) (Lipha)
Indications: Alcohol dependence
Class: Amino acid (synthetic)
Half-life: 20–33 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with severe renal impairment.

Skin
Diaphoresis (see also hyperhidrosis) (2%)
Peripheral edema (see also edema) (<10%)
Pruritus (itching) (4%) [2]

Mucosal
Xerostomia (dry mouth) (2%)

Cardiovascular
Chest pain (<10%)
Hypertension (<10%)
Palpitation (<10%)
Vasodilation (1–10%)

Central Nervous System
Amnesia (<10%)
Anorexia (2–5%)
Anxiety (5–8%) [2]
Chills (<10%)
Depression (4–8%)
Headache (<10%) [2]
Insomnia (6–9%)
Pain (2–4%)
Paresthesias (2–3%)
Somnolence (drowsiness) (<10%)
Suicidal ideation (1–10%)
Syncope / fainting (<10%)
Tremor (<10%)
Vertigo / dizziness (3–4%)

Endocrine/Metabolic
Appetite increased (<10%)
Libido decreased (<10%)
Weight gain (<10%)

Gastrointestinal/Hepatic
Abdominal pain (<10%)
Constipation (<10%)
Diarrhea (16%) [6]
Dyspepsia / functional dyspepsia / gastroparesis (<10%)
Flatulence (<4%) [2]
Nausea (3–4%) [2]
Vomiting (<10%) [2]

Genitourinary
Impotence (<10%)

Neuromuscular/Skeletal
Arthralgia (<10%)
Asthenia / fatigue (5–7%)
Back pain (<10%)
Myalgia/Myopathy (<10%)

Ocular
Abnormal vision (<10%)

Respiratory
Bronchitis (<10%)
Cough (<10%)
Dyspnea / shortness of breath (<10%)
Influenza- ('flu)-like syndrome (<10%)
Pharyngitis (sore throat) (<10%)
Rhinitis (<10%)

Other
Adverse effects / adverse reactions [3]
Infection (<10%)

ACARBOSE

Trade names: Glucobay (Bayer), Precose (Bayer)
Indications: Non-insulin dependent diabetes Type II
Class: Alpha-glucosidase inhibitor, Antidiabetic, Hypoglycemic (antihyperglycemic) agent
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: alcohol, anabolic steroids, beta blockers, cholestyramine, corticosteroids, diazoxide, digoxin, diuretics, estrogens, hypoglycemic agents, MAO inhibitors, neomycin, orlistat, pancreatin, pegvisomant, pramlintide, progestogens, somatropin, testosterone
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with diabetic ketoacidosis or cirrhosis; also in patients with inflammatory bowel disease, colonic ulceration, partial intestinal obstruction or in patients predisposed to intestinal obstruction.

Skin
AGEP [2]

Gastrointestinal/Hepatic
Abdominal distension [2]
Abdominal pain (19%)
Diarrhea (31%)
Flatulence (74%) [3]
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Pneumatosis intestinalis / pneumatosis cystoides intestinalis [8]

Other
Adverse effects / adverse reactions [5]

ACEBUTOLOL

Trade name: Sectral (Sanofi-Aventis)
Indications: Hypertension, angina, ventricular arrhythmias
Class: Antiarrhythmic class II, Beta adrenergic blocker, Beta blocker
Half-life: 3–7 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, adrenergic neurone blockers, alcohol, aldesleukin, alpha blockers, alprostadil, amiodarone, angiotensin II receptor antagonists, antiarrhythmics, antidiabetics, anxiolytics and hypnotics, baclofen, calcium channel blockers, cardiac glycosides, clonidine, corticosteroids, diazoxide, diltiazem, disopyramide, diuretics, ergotamine, estrogens, flecainide, general anesthetics, hydralazine, insulin, levodopa, MAO inhibitors, mefloquine, methyldopa, methysergide, minoxidil, moxisylyte, moxonidine, nifedipine, nitrates, nitroprusside, NSAIDs, phenothiazines, pilocarpine, prazosin, tizanidine, verapamil
Pregnancy category: B

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contraindicated in persistently severe bradycardia, second- and third-degree heart block, overt cardiac failure, and cardiogenic shock. Cutaneous side effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy.

Skin
Edema / fluid retention (see also peripheral edema) (2%)
Exanthems (4%)
Lichenoid eruption / lichenoid reaction [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [14]
Pruritus (itching) (<2%)
Psoriasis [2]
Rash (2%)
Raynaud's phenomenon [2]
Urticaria / hives [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Cardiovascular
Bradycardia / sinus bradycardia (<2%)
Cardiac failure (<2%)
Chest pain (2%)
Hypotension (<2%)

Central Nervous System
Abnormal dreams (3%)
Anxiety (<2%)
Depression (2%)
Headache (6%)
Hyperesthesia (<2%)
Hypoesthesia (numbness) (<2%)
Insomnia (3%)
Vertigo / dizziness (6%)

Gastrointestinal/Hepatic
Abdominal pain (<2%)
Constipation (4%)
Diarrhea (4%)
Dyspepsia / functional dyspepsia / gastroparesis (4%)
Flatulence (3%)
Nausea (4%)
Vomiting (<2%)

Genitourinary
Dysuria (<2%)
Impotence (<2%)
Nocturia (<2%)
Urinary frequency (3%)

Neuromuscular/Skeletal
Arthralgia (2%)
Asthenia / fatigue (11%)
Back pain (<2%)
Bone or joint pain (<2%)
Myalgia/Myopathy (2%)

Ocular
Abnormal vision (2%)
Conjunctivitis (conjunctival inflammation) (<2%)
Ocular pain (<2%)
Xerophthalmia (dry eyes) (<2%)

Respiratory
Dyspnea / shortness of breath (4%)
Pharyngitis (sore throat) (<2%)
Rhinitis (2%)
Wheezing (<2%)

ACECLOFENAC

Trade name: Preservex (UCB Pharma)
Indications: Ankylosing spondylitis, osteoarthritis, inflammatory disease of the joints
Class: Analgesic, Non-steroidal anti-inflammatory (NSAID)
Half-life: 4 hours
Clinically important, potentially hazardous interactions with: lithium
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Contact dermatitis [2]
Fixed eruption [2]
Photosensitivity [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

ACEMETACIN

Synonyms: acemetacine; acemetacinum
Trade name: Emflex (Merck)
Indications: Osteoarthritis, rheumatoid arthritis, lower back pain, post-operative pain, inflammation, musculoskeletal disorders, psychoses
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: <1.1 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, anti-coagulants, aspirin, beta blockers, beta-carotene, diflunisal, furosemide, haloperidol, lithium, methotrexate, potassium sparing diuretics, probenecid, salicylates, thiazide diuretics, triamterene, warfarin
Pregnancy category: N/A (Contra-indicated in the third trimester of pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Inhibition of platelet aggregation may occur. Aggravation of psychiatric disorders, epilepsy or Parkinsonism may occur. Patients receiving long-term treatment should be periodically screened for renal and hepatic function and blood counts.

Other
Adverse effects / adverse reactions [4]
Side effects [2]

ACENOCOUMAROL

Trade names: Sinthrome (Alliance), Sintrom (Alliance)
Indications: Thromboembolic diseases
Class: Anticoagulant
Half-life: 8–11 hours
Clinically important, potentially hazardous interactions with: allopurinol, amiodarone, aspirin, cimetidine, danazol, disulfiram, econazole, heparin, lepirudin, nandrolone
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Necrosis (skin necrosis) [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]

Hematologic
Prothrombin time (INR) increased [3]

Respiratory
Dyspnea / shortness of breath [2]

ACETAMINOPHEN

Synonyms: APAP; paracetamol
Trade names: Anacin-3 (Wyeth), Darvocet-N (aaiPharma), Excedrin (Bristol-Myers Squibb), Lorcet (Forest), Panadol (GSK), Percocet (Endo), Tylenol (Ortho-McNeil), Vicodin (AbbVie)
Indications: Pain, fever
Class: Analgesic; non-narcotic
Half-life: <3 hours
Clinically important, potentially hazardous interactions with: alcohol, anticonvulsants, barbiturates, busulfan, carbamazepine, cholestyramine, conivaptan, coumarins, didanosine, dong quai, exenatide, imatinib, isoniazid, liraglutide, melatonin, metoclopramide, metyrapone, PEG-interferon, pramlintide, probenecid, St John's wort
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Acetaminophen is the active metabolite of phenacetin. [IV] = intravenous. As a general point most reactions listed are those that have developed following the normal prescribing doses for acetaminophen and the overdosing, poisoning, and other toxicities that have been reported have been excluded.

Skin
AGEP [10]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [19]
Angioedema [8]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [4]
Dermatitis [3]
Erythema [3]
Erythema multiforme [3]
Exanthems [7]
Exfoliative dermatitis [2]
Fixed eruption [42]
Hyperhidrosis (see also diaphoresis) [2]
Hypersensitivity [12]
Neutrophilic eccrine hidradenitis [2]

Pemphigus [2]
Pruritus (itching) [5]
Purpura [6]
Rash [IV] [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [19]
Urticaria / hives [17]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Mucosal
Xerostomia (dry mouth) [3]

Cardiovascular
Hypertension [IV] [3]
Hypotension [2]

Central Nervous System
Agitation [IV] (>5%)
Fever (pyrexia) (includes hyperpyrexia) [IV] (5%)
Headache [IV] (10%) [5]
Insomnia [IV] (7%)
Somnolence (drowsiness) [8]
Vertigo / dizziness [15]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [3]

Gastrointestinal/Hepatic
Abdominal distension [2]
Abdominal pain [IV] [3]
Constipation [IV] (>5%) [7]
Diarrhea [IV] [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [72]
Nausea [IV] (34%) [18]
Pancreatitis / acute pancreatitis [6]
Vomiting (15%) [16]

Hematologic
Thrombocytopenia [2]

Neuromuscular/Skeletal
Rhabdomyolysis [4]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [9]
Renal failure [3]

Respiratory
Asthma [3]
Pulmonary toxicity [IV] (>5%)

Other
Adverse effects / adverse reactions [17]
Death [6]

ACETAZOLAMIDE

Trade name: Diamox (Duramed)
Indications: Epilepsy, glaucoma
Class: Carbonic anhydrase inhibitor, Diuretic
Half-life: 2–6 hours
Clinically important, potentially hazardous interactions with: arsenic, aspirin, ephedra, indacaterol, lisdexamfetamine, lithium, metformin, mivacurium, triamcinolone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Acetazolamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
AGEP [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Exanthems [2]
Pemphigus [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [8]

Central Nervous System
Depression [2]
Dysgeusia (taste perversion) (>10%) [8]
Paresthesias [6]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [3]
Libido decreased [2]
Weight loss [2]

Gastrointestinal/Hepatic
Diarrhea [2]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Nausea [2]
Vomiting [2]

Neuromuscular/Skeletal
Asthenia / fatigue [4]

Ocular
Choroidal detachment [2]
Corneal edema [2]
Glaucoma (includes acute angle-closure glaucoma) [5]
Myopia [2]

Renal
Nephrolithiasis (formation of a kidney stone) [3]

Respiratory
Non-cardiogenic pulmonary edema [7]

ACETOHEXAMIDE

Trade name: Dymelor (Barr)
Indications: Non-insulin dependent diabetes Type II
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Sulfonylurea
Half-life: 1–6 hours
Clinically important, potentially hazardous interactions with: phenylbutazones
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Acetohexamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Photosensitivity (<10%)
Rash (<10%)
Urticaria / hives (<10%)

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [2]

ACETYLCHOLINE

Trade name: Miochol (Novartis)
Indications: Cataract surgery, in penetrating keratoplasty, iridectomy and other anterior segment surgery where rapid miosis may be required
Class: Ophthalmic agent, miotic, Parasympathomimetic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Cardiovascular
Bradycardia / sinus bradycardia [7]
Hypotension [8]

Ocular
Intraocular pressure increased [5]

Respiratory
Bronchospasm [2]

ACETYLCYSTEINE

Synonyms: N-acetylcysteine; L-Cysteine; NAC
Indications: Emphysema, bronchitis, tuberculosis, bronchiectasis, tracheostomy care, antidote for acetaminophen toxicity
Class: Antidote, Antioxidant
Half-life: N/A
Clinically important, potentially hazardous interactions with: carbamazepine, nitroglycerin
Pregnancy category: B
Note: As an antidote, it is difficult to differentiate side effects due to the drug from those due to the effects of the poison.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (8–18%) [14]
Angioedema [6]
Flushing / rubefaction (<8%) [2]
Pruritus (itching) (<4%) [3]
Rash (2–4%) [4]
Urticaria / hives (6–8%)

Cardiovascular
Tachycardia (<4%)

Central Nervous System
Seizures [2]

Gastrointestinal/Hepatic
Diarrhea [2]
Nausea (<6%) [3]
Vomiting (2–10%) [2]

Other
Adverse effects / adverse reactions [2]
Death [2]

ACIPIMOX

Trade name: Olbetam (Pharmacia)
Indications: Hyperlipoproteinemia
Class: Cholesterol antagonist
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: fibrates, statins
Pregnancy category: N/A (Not recommended in pregnancy)

Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Flushing / rubefaction [9]

ACITRETIN

Trade names: Neotigason (Actavis), Soriatane (Stiefel)
Indications: Psoriasis
Class: Antipsoriatic agent, Retinoid
Half-life: 49 hours
Clinically important, potentially hazardous interactions with: alcohol, bexarotene, chloroquine, cholestyramine, corticosteroids, coumarins, danazol, demeclocycline, doxycycline, ethanolamine, isotretinoin, lithium, lymecycline, medroxyprogesterone, methotrexate, minocycline, oxytetracycline, phenytoin, progestins, sarecycline, St John's wort, tetracycline, tigecycline, vitamin A
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Oral retinoids can cause birth defects, and women should avoid acitretin when pregnant or trying to conceive.
Warning: CONTRA-INDICATED IN PREGNANCY

Skin
Angioedema [2]
Atrophy / Skin atrophy (10–25%)
Bromhidrosis (<10%)
Bullous dermatosis (<10%)
Clammy skin (<10%)
Cutaneous toxicity / skin toxicity [3]
Dermatitis (<10%)
Diaphoresis (see also hyperhidrosis) (<10%) [2]
Edema / fluid retention (see also peripheral edema) (<10%)
Erythema (18%)
Erythroderma [3]
Exanthems (10–25%) [2]
Exfoliative dermatitis (25–50%) [3]
Fissures (<10%)
Hot flashes / hot flushes (<10%)
Hyperhidrosis (see also diaphoresis) (<10%) [2]
Palmar–plantar desquamation (20–80%) [7]
Photosensitivity [3]
Pigmentation [3]
Pruritus (itching) (10–50%) [10]
Psoriasis (aggravated) (<10%)
Purpura (<10%)
Rash (>10%)
Seborrhea (<10%)
Stickiness (3–50%) [7]
Sunburn (<10%)
Ulcerations (<10%)
Xerosis / xeroderma (see also dry skin) (25–50%) [14]

Hair
Alopecia / hair loss (10–75%) [21]
Curly hair [3]
Hair changes (<10%)
Hair pigmentation [2]

Nails
Brittle nails [3]
Nail changes (25–50%)
Paronychia (10–25%) [6]
Pyogenic granuloma (<10%) [4]

Mucosal
Cheilitis (inflammation of the lips) (>75%) [14]
Dry mucous membranes [4]
Epistaxis (nosebleed) (10–25%) [2]
Gingival bleeding (<10%)
Gingivitis (<10%)
Mucocutaneous reactions [3]
Sialorrhea (ptyalism; hypersalivation) (<10%)
Stomatitis (oral mucositis) (<10%) [2]
Tongue disorder (<10%)
Ulcerative stomatitis (<10%)
Xerostomia (dry mouth) (10–60%) [7]

Cardiovascular
Capillary leak syndrome [3]

Central Nervous System
Anorexia (<10%)
Depression (<10%) [4]
Dysgeusia (taste perversion) (<10%)
Headache (<10%) [2]
Hyperesthesia (10–25%)
Insomnia (<10%)
Neurotoxicity [3]
Pain (<10%)
Paralysis / paraplegia (facial) (<10%)
Paresthesias (10–25%) [2]
Pseudotumor cerebri (see also intracranial hypertension) [5]
Rigors (10–25%) [2]
Somnolence (drowsiness) (<10%)
Stroke / cerebral infarction [2]
Suicidal ideation [2]

Endocrine/Metabolic
GGT increased [2]
Hyperbilirubinemia [2]
Hypercholesterolemia (25–50%) [3]
Hyperlipidemia [5]
Hypertriglyceridemia (includes triglycerides increased) (50–75%) [4]

Gastrointestinal/Hepatic
Abdominal pain (<10%)
Diarrhea (<10%) [2]
Hepatitis [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Nausea (<10%) [2]
Pancreatitis / acute pancreatitis [3]
Vomiting [2]

Genitourinary
Vulvovaginal candidiasis [2]

Neuromuscular/Skeletal
Arthralgia (10–25%) [2]
Asthenia / fatigue (<10%) [3]
Back pain (<10%)
Bone or joint pain [2]
Hyperostosis [11]
Myalgia/Myopathy [4]
Osteoporosis [2]

Ocular
Blepharitis (<10%)
Cataract (<10%)
Conjunctivitis (conjunctival inflammation) (<10%) [2]
Diplopia (double vision) (<10%)
Night blindness (<10%) [2]
Ocular adverse effect [2]
Ocular itching / ocular pruritus [2]
Ocular pain (<10%)
Photophobia (<10%) [2]
Vision blurred (<10%)
Xerophthalmia (dry eyes) (10–25%) [3]

Otic
Ear pain (<10%)
Tinnitus (<10%)

Respiratory
Laryngitis [2]
Rhinitis (25–50%) [2]
Sinusitis (<10%)

Other
Adverse effects / adverse reactions [9]
Dipsia (thirst) / polydipsia (<10%)
Infection [2]
Side effects [4]
Teratogenicity [7]

ACLIDINIUM

Trade name: Tudorza Pressair (Forest)
Indications: Long-term maintenance treatment of bronchospasm associated with chronic obstructive pulmonary disease, including chronic bronchitis and emphysema
Class: Anticholinergic, Muscarinic antagonist
Half-life: 5–8 hours
Clinically important, potentially hazardous interactions with: anticholinergics
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Mucosal
Xerostomia (dry mouth) [2]

Central Nervous System
Headache (7%)

Gastrointestinal/Hepatic
Diarrhea (3%)

Respiratory
Cough (3%)
Nasopharyngitis (6%)
Rhinitis (2%)
Sinusitis (2%)

Other
Adverse effects / adverse reactions [5]

ACYCLOVIR

Synonyms: aciclovir; ACV; acycloguanosine
Trade names: Sitavig (Cipher), Zovirax (GSK)
Indications: Herpes simplex, herpes zoster
Class: Antiviral, Antiviral; topical, Guanine nucleoside analog
Half-life: 3 hours (adults)
Clinically important, potentially hazardous interactions with: cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, meperidine, tenofovir disoproxil
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<3%)
Dermatitis [12]
Exanthems (<5%) [5]
Facial edema (3–5%)
Peripheral edema (see also edema) [2]
Pruritus (itching) (<10%)
Radiation recall dermatitis [2]

Rash (<3%) [3]
Urticaria / hives (<5%) [4]

Hair
Alopecia / hair loss (<3%)

Central Nervous System
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache (2%) [4]
Neurotoxicity [8]

Gastrointestinal/Hepatic
Diarrhea (2–3%)
Nausea (2–5%) [3]
Vomiting (3%)

Hematologic
Thrombocytopenia [5]

Local
Injection-site inflammation (>10%)
Injection-site thrombophlebitis (9%)

Neuromuscular/Skeletal
Asthenia / fatigue (12%)

Ocular
Periorbital edema (see also eyelid edema) (3–5%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [13]
Renal failure [4]

Other
Adverse effects / adverse reactions [2]

ADALIMUMAB

Trade names: Amgevita (Amgen), Amjevita (Amgen), Humira (AbbVie)
Indications: Rheumatoid arthritis, polyarticular juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, Crohn's disease, ulcerative colitis, psoriasis
Class: Anti-Tumor Necrosis Factor-alpha (TNF-α antagonist), Antipsoriatic agent, Biologic, Biologic disease-modifying antirheumatic drug (bDMARD), Cytokine inhibitor, Disease-modifying antirheumatic drug (DMARD), Monoclonal antibody
Half-life: 10–20 days
Clinically important, potentially hazardous interactions with: abatacept, anakinra, live vaccines
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: TNF inhibitors should be used in patients with heart failure only after consideration of other treatment options. TNF inhibitors are contra-indicated in patients with a personal or family history of multiple sclerosis or demyelinating disease. TNF inhibitors should not be administered to patients with moderate to severe heart failure (New York Heart Association Functional Class III/IV).
Warning: SERIOUS INFECTIONS AND MALIGNANCY

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema [4]
Carcinoma [2]
Cellulitis (<5%) [2]
Dermatomyositis [5]
Eczema / eczematous reaction / eczematous eruption [2]
Erysipelas (<5%)
Erythema multiforme [4]
Granulomatous reaction [6]
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis [2]
Herpes zoster [10]
Hidradenitis suppurativa (acne inversa) [2]
Hypersensitivity [3]
Lesions [2]
Lichenoid eruption / lichenoid reaction [5]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [18]
Lupus syndrome / drug-induced lupus (DIL) [5]
Lymphoma [8]
Melanoma [6]
Palmoplantar pustulosis [4]
Peripheral edema (see also edema) (<5%)
Pityriasis lichenoides / pityriasis lichenoides chronica / pityriasis lichenoides et varioliformis acuta (see also Mucha-Habermann disease) [2]
Pruritus (itching) [6]
Psoriasis [41]
Pyoderma gangrenosum [4]
Rash (12%) [6]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [9]
Squamous cell carcinoma [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Sweet's syndrome [4]
Urticaria / hives [5]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [9]
Vitiligo [2]

Hair
Alopecia / hair loss [5]
Alopecia areata [7]
Alopecia universalis [3]
Pityriasis amiantacea [2]

Cardiovascular
Arrhythmias (<5%)
Cardiac arrest (<5%)
Chest pain (<5%)
Congestive heart failure (<5%) [2]
Hypertension (<5%)
Myocardial infarction (<5%)
Palpitation [2]
Pericarditis (<5%)
Tachycardia (<5%)
Thromboembolism [2]

Central Nervous System
Aseptic meningitis [2]
Confusion (<5%)
Depression [2]
Encephalitis [2]
Fever (pyrexia) (includes hyperpyrexia) (<5%) [3]
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [5]
Headache (12%) [9]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [3]
Multiple sclerosis (<5%) [3]
Neurotoxicity [3]
Paresthesias (<5%) [2]
Syncope / fainting (<5%)
Tremor (<5%)
Vertigo / dizziness [2]

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<5%)
Hypercholesterolemia (6%)
Weight gain [2]

Gastrointestinal/Hepatic
Abdominal pain (7%) [2]
Cholecystitis (<5%)
Colitis [2]
Esophagitis (<5%)
Gastroenteritis (<5%)
Hepatitis [7]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [12]
Nausea (9%) [2]
Vomiting (<5%)

Genitourinary
Cystitis (<5%)
Hematuria (5%)
Pelvic pain (<5%)
Urinary tract infection (8%) [2]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') (<5%)
Eosinophilia [3]
Hemolytic anemia [4]
Hemophilia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<5%)
Pancytopenia (includes bicytopenia) [2]
Sepsis [2]
Thrombocytopenia [2]

Local
Infusion-related reactions [2]
Injection-site edema (15%) [2]
Injection-site erythema (15%) [3]
Injection-site pain (12%) [3]
Injection-site reaction [30]

Neuromuscular/Skeletal
Arthralgia (<5%) [6]
Asthenia / fatigue [2]
Back pain (6%) [3]
Tuberculous arthritis [2]

Ocular
Cataract (<5%)
Optic neuritis [5]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [4]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

Respiratory
Asthma (<5%)
Bronchitis [3]
Bronchospasm (<5%)
Dyspnea / shortness of breath (<5%)
Influenza- ('flu)-like syndrome (7%)
Nasopharyngitis [8]
Pleural effusion (<5%)
Pneumonia (<5%) [6]
Pneumonitis [3]
Pulmonary fibrosis [3]
Pulmonary toxicity [7]
Sinusitis (11%) [4]
Tonsillitis [2]
Tuberculosis [11]
Upper respiratory tract infection (17%) [14]

Other
Adverse effects / adverse reactions [50]
Allergic reactions [2]

Death [9]
Infection (5%) [81]
Malignancies [7]
Neoplasms [2]
Side effects [2]

ADAPALENE

Trade names: Differin (Galderma), Epiduo (Galderma)
Indications: Acne vulgaris
Class: Retinoid
Half-life: N/A
Clinically important, potentially hazardous interactions with: resorcinol, salicylates
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Epiduo is adapalene and benzoyl peroxide.

Skin
Burning / skin burning sensation (38%) [7]
Erythema (38%) [9]
Pruritus (itching) (>10%) [11]
Scaling (44%) [6]
Stinging (38%) [3]
Xerosis / xeroderma (see also dry skin) (45%) [10]

Other
Adverse effects / adverse reactions [3]

ADEFOVIR

Trade name: Hepsera (Gilead)
Indications: HIV infection, hepatitis B infection
Class: Antiretroviral, Nucleotide analog reverse transcriptase inhibitor
Half-life: 16–18 hours
Clinically important, potentially hazardous interactions with: amikacin, amphotericin B, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, delavirdine, drugs causing kidney toxicity, foscarnet, gentamicin, hydroxyurea, pentamidine, tenofovir disoproxil, tobramycin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SEVERE ACUTE EXACERBATIONS OF HEPATITIS, NEPHROTOXICITY, HIV RESISTANCE, LACTIC ACIDOSIS AND SEVERE HEPATOMEGALY WITH STEATOSIS

Skin
Pruritus (itching) (<10%)
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Central Nervous System
Headache (9%) [2]
Pain [2]

Endocrine/Metabolic
Hypophosphatemia [6]

Gastrointestinal/Hepatic
Abdominal pain (9%)
Diarrhea (3%)
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Flatulence (4%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<25%)
Nausea (5%)
Vomiting (<10%)

Genitourinary
Hematuria (11%)

Neuromuscular/Skeletal
Asthenia / fatigue (13%) [3]
Back pain (<10%)
Fractures [2]
Osteomalacia [8]

Renal
Fanconi syndrome [13]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [14]

Respiratory
Cough (6–8%)
Rhinitis (<5%)

ADENOSINE

Synonym: ATP
Trade names: Adenocard (Astellas), Adenocur (Sanofi-Aventis)
Indications: Paroxysmal supraventricular tachycardia, varicose vein complications with stasis dermatitis
Class: Antiarrhythmic class IV, Neurotransmitter
Half-life: <10 seconds
Clinically important, potentially hazardous interactions with: aminophylline, antiarrhythmics, beta blockers, bupivacaine, carbamazepine, dipyridamole, inotersen, levobupivacaine, nicotine, prilocaine, QT prolonging agents, ropivacaine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Flushing / rubefaction (18–44%)

Cardiovascular
Arrhythmias [2]
Atrial fibrillation [7]
Chest pain [5]
Coronary vasospasm [2]
Torsades de pointes [2]

Central Nervous System
Headache (2–18%) [2]
Vertigo / dizziness (2–12%)

Gastrointestinal/Hepatic
Abdominal pain (13%)

Neuromuscular/Skeletal
Jaw pain (<15%)

Respiratory
Cough (6–8%)
Dyspnea / shortness of breath [3]
Respiratory distress (11%)

Other
Adverse effects / adverse reactions [2]

AFAMELANOTIDE

Trade names: Melanotan (Clinuvel), Scenesse (Clinuvel)
Indications: Erythropoetic protoporphyria, polymorphous light eruption, photodamage
Class: Melanocortin receptor agonist, Melanocyte stimulating hormone A agonist, Photoprotective
Half-life: ~15 hr when administered subcutaneously in a controlled release implant.
Clinically important, potentially hazardous interactions with: none known

Skin
Hyperpigmentation (see also pigmentation) (4%)
Irritation (skin) (2%)
Pigmentation [6]

Mucosal
Oropharyngeal pain (7%)

Central Nervous System
Headache [2]
Vertigo / dizziness (4%)

Genitourinary
Priapism [7]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Respiratory
Cough (6%)
Respiratory tract infection (4%)

AFATINIB

Trade name: Gilotrif (Boehringer Ingelheim)
Indications: Metastatic non-small cell lung cancer in patients whose tumors have epidermal growth factor receptor exon 19 deletions or exon 21 (L858R) substitution mutations, metastatic squamous non-small cell lung cancer progressing following platinium-based chemotherapy
Class: Epidermal growth factor receptor (EGFR) inhibitor / antagonist, Tyrosine kinase inhibitor
Half-life: 37 hours
Clinically important, potentially hazardous interactions with: amiodarone, carbamazepine, cyclosporine, erythromycin, itraconazole, ketoconazole, nelfinavir, P-glycoprotein inhibitors, phenobarbital, phenytoin, quinidine, rifampin, ritonavir, saquinavir, St John's wort, tacrolimus, verapamil
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [29]
Cutaneous toxicity / skin toxicity [3]
Fissures [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [2]
Pruritus (itching) [3]
Rash [54]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Xerosis / xeroderma (see also dry skin) [8]

Nails
Nail changes [2]
Paronychia (58%) [18]

Mucosal
Epistaxis (nosebleed) [3]
Mucosal inflammation [7]
Mucositis [10]
Rhinorrhea (11%)
Stomatitis (oral mucositis) (71%) [22]
Central Nervous System
Anorexia [3]
Fever (pyrexia) (includes hyperpyrexia) (12%)
Endocrine/Metabolic
ALT increased [2]
Appetite decreased (29%) [5]
Dehydration [3]
Hypokalemia [2]
Gastrointestinal/Hepatic
Diarrhea (96%) [72]
Dysphagia [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (10%) [5]
Nausea [16]
Vomiting [10]
Hematologic
Anemia [3]
Febrile neutropenia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [6]
Thrombocytopenia [2]
Neuromuscular/Skeletal
Asthenia / fatigue [18]
Respiratory
Dyspnea / shortness of breath [3]
Pneumonitis [2]
Pulmonary toxicity [5]
Other
Adverse effects / adverse reactions [7]
Death [4]

AFLIBERCEPT

Synonym: ziv-aflibercept
Trade names: Eylea (Regeneron), Zaltrap (Sanofi-Aventis)
Indications: Neovascular (wet) age-related macular degeneration (Eylea), metastatic colorectal cancer (Zaltrap) in combination with FOLFIRI (fluorouracil, leucovorin and irinotecan)
Class: Angiogenesis inhibitor / antiangiogenic agent, Fusion protein
Half-life: terminal 5–6 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Eylea: Contra-indicated in patients with ocular or periocular infection or active intraocular inflammation.
Warning: Zaltrap: HEMORRHAGE, GASTROINTESTINAL PERFORATION, COMPROMISED WOUND HEALING

Mucosal
Epistaxis (nosebleed) [3]
Stomatitis (oral mucositis) [6]
Cardiovascular
Hypertension [16]
Myocardial infarction (<2%)
Venous thromboembolism [2]
Central Nervous System
Anorexia [2]
Headache [2]
Stroke / cerebral infarction (<2%)
Endocrine/Metabolic
Weight loss [2]
Gastrointestinal/Hepatic
Diarrhea [8]
Gastrointestinal perforation / perforated colon / gastric perforation [5]
Nausea [2]
Hematologic
Hemorrhage [3]
Neutropenia (neutrophils decreased) [13]
Local
Injection-site pain (3%)
Neuromuscular/Skeletal
Asthenia / fatigue [7]
Ocular
Cataract (7%) [3]
Conjunctival hemorrhage (25%) [3]
Conjunctival hyperemia / conjunctival injection (4%)
Conjunctivitis (conjunctival inflammation) [3]
Corneal erosion (4%)
Endophthalmitis [4]
Intraocular pressure increased (5%) [2]
Lacrimation (3%)
Ocular adverse effect [7]
Ocular pain (3–9%)
Vision blurred (2%)
Vitreous detachment (6%)
Vitreous floaters (6%)
Renal
Proteinuria [11]
Respiratory
Dysphonia (includes voice disorders / voice changes) [5]
Dyspnea / shortness of breath [2]
Pulmonary embolism [2]
Other
Adverse effects / adverse reactions [5]
Death [3]
Infection [3]

ALBENDAZOLE

Trade name: Albenza (GSK)
Indications: Nematode infections, hydatid cyst disease
Class: Anthelmintic
Half-life: 8–12 hours
Clinically important, potentially hazardous interactions with: antimalarials, conivaptan, dexamethasone, high fat foods
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Fixed eruption [2]
Pruritus (itching) [4]
Urticaria / hives [2]
Hair
Alopecia / hair loss (reversible) (<2%) [6]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<2%) [3]
Headache (<11%) [9]
Intracranial pressure increased (intracranial hypertension) (see also pseudotumor cerebri) (<2%)
Psychosis [2]
Somnolence (drowsiness) [2]
Vertigo / dizziness (<2%) [6]
Gastrointestinal/Hepatic
Abdominal pain (<7%) [9]
Hepatitis [6]
Nausea (4–6%) [5]
Vomiting (4–6%) [2]
Hematologic
Pancytopenia (includes bicytopenia) [3]
Neuromuscular/Skeletal
Asthenia / fatigue [3]
Dystonia [3]
Other
Adverse effects / adverse reactions [6]

ALBIGLUTIDE

Trade name: Tanzeum (GSK)
Indications: To improve glycemic control in adults with Type II diabetes mellitus
Class: Antidiabetic, Glucagon-like peptide-1 (GLP-1) receptor agonist
Half-life: 5 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a personal or family history of medullary thyroid carcinoma or in patients with multiple endocrine neoplasia syndrome Type 2.
Warning: RISK OF THYROID C-CELL TUMORS

Central Nervous System
Headache [4]
Vertigo / dizziness [2]
Endocrine/Metabolic
GGT increased (2%)
Hypoglycemia (see also insulin autoimmune syndrome) (2%) [5]
Gastrointestinal/Hepatic
Constipation [2]
Diarrhea (13%) [15]
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Gastroesophageal reflux (4%)
Nausea (11%) [20]
Pancreatitis / acute pancreatitis [4]
Vomiting (4%) [15]
Local
Injection-site hematoma (2%)
Injection-site reaction (11%) [16]
Neuromuscular/Skeletal
Arthralgia (7%)
Back pain (7%) [2]
Respiratory
Cough (7%)
Influenza (5%)
Nasopharyngitis [3]
Pneumonia (2%)
Sinusitis (6%)
Upper respiratory tract infection (14%) [4]
Other
Adverse effects / adverse reactions [4]

ALBUTEROL

Synonym: salbutamol
Trade names: AccuNeb (Mylan Specialty), Combivent (Boehringer Ingelheim), Duoneb (Mylan Specialty), Proventil (Schering), Ventolin (GSK), Volmax (Muro)
Indications: Bronchospasm associated with asthma
Class: Beta-2 adrenergic agonist, Bronchodilator, Tocolytic
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: atomoxetine, epinephrine, insulin degludec, insulin detemir, insulin glargine, insulin glulisine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Combivent is albuterol and ipratropium.

Skin
Dermatitis [2]
Diaphoresis (see also hyperhidrosis) (<10%)
Erythema (palmar) (with infusion) [2]
Flushing / rubefaction (<10%)

Mucosal
Xerostomia (dry mouth) (<10%)

Cardiovascular
Atrial fibrillation [2]
Hypertension [2]
Myocardial infarction [2]
Palpitation [2]
QT interval prolonged / QT prolongation [3]
Tachyarrhythmia [2]
Tachycardia [2]

Central Nervous System
Dysgeusia (taste perversion) (<10%)
Tremor [2]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [8]

Respiratory
Dyspnea / shortness of breath [2]

Other
Adverse effects / adverse reactions [2]

ALCAFTADINE

Trade name: Lastacaft (Allergan)
Indications: Prevention of itching associated with allergic conjunctivitis
Class: Histamine H1 receptor antagonist
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Central Nervous System
Headache (3%)

Ocular
Ocular burning (4%)
Ocular erythema (4%)
Ocular stinging (4%)

Respiratory
Influenza (3%)
Nasopharyngitis (3%)

ALCLOMETASONE

Trade names: Aclovate (GSK), Modrasone (Pliva)
Indications: Dermatoses
Class: Corticosteroid / Glucocorticoid, Corticosteroid, topical
Half-life: N/A
Clinically important, potentially hazardous interactions with: licorice, live vaccines
Pregnancy category: C

Skin
Dermatitis [3]

ALDESLEUKIN

Synonyms: IL-2; interleukin-2
Trade name: Proleukin (Chiron)
Indications: Metastatic renal cell carcinoma and metastatic melanoma
Class: Biologic, Immunomodulator, Interleukin-2
Half-life: 6–85 minutes
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, altretamine, amikacin, aminoglycosides, antineoplastics, betamethasone, bleomycin, busulfan, captopril, carboplatin, carmustine, chlorambucil, ciclesonide, cilazapril, cisplatin, corticosteroids, cyclophosphamide, cytarabine, dacarbazine, dactinomycin, daunorubicin, docetaxel, doxorubicin, enalapril, estramustine, etoposide, fludarabine, fluorouracil, fosinopril, gemcitabine, gentamicin, hydroxyurea, idarubicin, ifosfamide, indomethacin, interferon alfa, irbesartan, kanamycin, levamisole, lisinopril, lomustine, mechlorethamine, melphalan, mercaptopurine, methotrexate, mitomycin, mitotane, mitoxantrone, neomycin, olmesartan, PEG-interferon, pentostatin, plicamycin, procarbazine, quinapril, ramipril, streptomycin, streptozocin, thioguanine, thiotepa, tobramycin, trandolapril, tretinoin, triamcinolone, uracil, vinblastine, vincristine, vinorelbine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with significant cardiac, pulmonary, renal, hepatic, or CNS impairment.
Warning: CAPILLARY LEAK SYNDROME

Skin
Angioedema [2]
Cutaneous toxicity / skin toxicity [6]
Dermatitis [2]
Edema / fluid retention (see also peripheral edema) (47%) [3]
Erythema (41%) [5]
Erythema nodosum [3]
Erythroderma [4]
Exanthems [5]
Exfoliative dermatitis (18%)
Linear IgA bullous dermatosis [4]
Necrosis (skin necrosis) [2]
Pemphigus [2]
Peripheral edema (see also edema) (28%)
Petechiae (4%)
Pruritus (itching) (24%) [7]
Psoriasis [4]
Purpura (4%)
Rash (42%) [2]
Scleroderma (see also morphea / localized scleroderma) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives (2%) [3]
Vitiligo [3]
Xerosis / xeroderma (see also dry skin) (15%)

Hair
Alopecia / hair loss [2]

Mucosal
Oral mucosal eruption [2]
Stomatitis (oral mucositis) (22%)

Cardiovascular
Arrhythmias (10%)
Capillary leak syndrome [12]
Cardiotoxicity (11%) [2]
Hypotension (71%) [6]
Supraventricular tachycardia (12%)
Tachycardia (23%)
Vascular leak syndrome [6]
Vasodilation (13%)

Central Nervous System
Anorexia (20%)
Anxiety (12%)
Chills (52%)
Confusion (34%)
Depression [3]
Dysgeusia (taste perversion) (7%)
Fever (pyrexia) (includes hyperpyrexia) (29%) [8]
Neurotoxicity [3]
Pain (12%)
Rigors [3]
Somnolence (drowsiness) (22%)
Vertigo / dizziness (11%)

Endocrine/Metabolic
Acidosis (includes lactic acidosis) (12%)
ALP increased (10%)
AST increased (23%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (33%) [2]
Hypocalcemia (11%)
Hypomagnesemia [2]
Hypophosphatemia [2]
Weight gain (16%)
Weight loss [2]

Gastrointestinal/Hepatic
Abdominal pain (11%)
Diarrhea (67%) [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (35%) [9]
Vomiting (50%) [6]

Genitourinary
Oliguria (63%)

Hematologic
Anemia (29%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (16%) [2]
Sepsis [3]
Thrombocytopenia (37%) [2]

Local
Injection-site inflammation [2]
Injection-site nodules [2]
Injection-site reaction (3%) [2]

Neuromuscular/Skeletal
Asthenia / fatigue (23–27%)
Myalgia/Myopathy (6%)
Myasthenia gravis [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]
Respiratory
Cough (11%)
Dyspnea / shortness of breath (43%)
Pulmonary toxicity (11–24%) [2]
Rhinitis (10%)
Other
Adverse effects / adverse reactions [3]
Death [5]
Infection (13%) [2]

ALECTINIB

Trade name: Alecensa (Genentech)
Indications: Anaplastic lymphoma kinase-positive, metastatic non-small cell lung cancer in patients who have progressed on, or are intolerant to, crizotinib
Class: Anaplastic lymphoma kinase (ALK) inhibitor, Kinase inhibitor
Half-life: 33 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Edema / fluid retention (see also peripheral edema) (30%)
Peripheral edema (see also edema) [7]
Photosensitivity (10%) [3]
Rash (18%) [5]
Hair
Alopecia / hair loss [2]
Central Nervous System
Dysgeusia (taste perversion) [3]
Headache (17%) [3]
Endocrine/Metabolic
ALP increased (47%) [3]
ALT increased (34%) [6]
AST increased (51%) [7]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (43%) [8]
GGT increased [2]
Hyperbilirubinemia (39%) [6]
Hyperglycemia (includes glucose increased) (36%)
Hypocalcemia (32%)
Hypokalemia (29%)
Hyponatremia (20%)
Hypophosphatemia (21%)
Serum creatinine increased (28%)
Weight gain (11%)
Gastrointestinal/Hepatic
Constipation (34%) [10]
Diarrhea (16%) [3]
Hepatic (liver) disorder / hepatobiliary disorder / hepatic (liver) dysfunction [3]
Nausea (18%) [5]
Vomiting (12%) [3]
Hematologic
Anemia (56%) [4]
Hemolytic anemia [5]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (22%)
Neutropenia (neutrophils decreased) [7]
Neuromuscular/Skeletal
Asthenia / fatigue (41%) [6]
Back pain (12%)
Myalgia/Myopathy (29%) [8]
Ocular
Visual disturbances (10%)
Renal
Renal failure [2]
Respiratory
Cough (19%)
Dyspnea / shortness of breath (16%)
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [4]
Pulmonary toxicity [5]
Other
Adverse effects / adverse reactions [2]

ALEFACEPT

Trade name: Amevive (Astellas)
Indications: Chronic plaque psoriasis (in adults)
Class: Immunosuppressant
Half-life: 270 hours
Clinically important, potentially hazardous interactions with: alcohol, BCG vaccine, echinacea, leflunomide, live vaccines, natalizumab, pimecrolimus, sipuleucel-T, tacrolimus, trastuzumab
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with HIV.

Skin
Lymphoma (3 cases)
Pruritus (itching) (2–5%) [2]
Central Nervous System
Chills (transient) (6%) [2]
Headache [6]
Vertigo / dizziness (<2%)
Gastrointestinal/Hepatic
Nausea (2–5%)
Hematologic
Lymphopenia (lymphocytopenia) / lymphocytes decreased (1–10%)
Local
Injection-site bleeding (4%)
Injection-site edema (2%)
Injection-site inflammation (4%)
Injection-site pain (7%)
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Myalgia/Myopathy (2–5%)
Respiratory
Cough (2–5%) [2]
Influenza- ('flu)-like syndrome [2]
Pharyngitis (sore throat) (2–5%)
Upper respiratory tract infection [4]
Other
Adverse effects / adverse reactions (2%) [4]
Infection (2%) [3]

ALEMTUZUMAB

Trade names: Campath (Bayer), MabCampath (Schering)
Indications: B-cell chronic lymphcyotic leukemia, non-Hodgkin's lymphoma
Class: Biologic, Immunosuppressant, Monoclonal antibody
Half-life: 12 days
Clinically important, potentially hazardous interactions with: ponesimod
Pregnancy category: C
Note: Prophylactic therapy against PCP pneumonia and herpes viral infections is recommended upon initiation of therapy and for at least 2 months following last dose.
Warning: CYTOPENIAS, INFUSION REACTIONS, and INFECTIONS

Skin
Carcinoma [2]
Erythema (4%)
Flushing / rubefaction [2]
Herpes [2]
Herpes simplex [2]
Herpes zoster [3]
Lymphoma [2]
Lymphoproliferative disease / lymphoproliferative disorder (64–70%)
Peripheral edema (see also edema) (13%)
Pruritus (itching) (14–24%)
Purpura (8%)
Rash (13–40%) [5]
Thrombocytopenic purpura [11]
Urticaria / hives (16–30%) [2]
Vitiligo [2]
Hair
Alopecia areata [3]
Alopecia universalis [2]
Mucosal
Stomatitis (oral mucositis) (14%)
Cardiovascular
Hypertension (11–15%)
Hypotension (15–32%) [2]
Tachycardia (10%)
Central Nervous System
Anorexia (20%)
Anxiety (8%)
Chills (53%)
Depression (7%)
Dysesthesia (15%)
Fever (pyrexia) (includes hyperpyrexia) (69–85%) [6]
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [2]
Headache (13–24%) [3]
Insomnia (10%)
Intracranial hemorrhage [2]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [5]
Rigors (87%)
Tremor (3%)
Vertigo / dizziness (12%)
Endocrine/Metabolic
Graves' disease [5]
Hyperthyroidism [2]
Hypothyroidism [2]
Thyroid dysfunction [19]
Gastrointestinal/Hepatic
Abdominal pain (11%)
Diarrhea (10–22%) [2]

Nausea (47–54%) [4]
Vomiting (33–41%) [2]

Genitourinary
Cystitis [2]

Hematologic
Anemia (76%) [4]
Cytopenia [2]
Hemolytic anemia [5]
Hemophagocytic lymphohistiocytosis / hemophagocytic syndrome [2]
Hemotoxicity [4]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (97%) [2]
Neutropenia (neutrophils decreased) (77%) [10]
Sepsis [2]
Thrombocytopenia (71%) [13]

Local
Application-site reactions [2]
Infusion-related reactions [14]
Infusion-site reactions [5]
Injection-site pruritus (30–40%)
Injection-site reaction (90%) [5]

Neuromuscular/Skeletal
Asthenia / fatigue (22–34%)
Bone or joint pain (24%)
Myalgia/Myopathy (11%)

Ocular
Ocular adverse effect [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

Respiratory
Acute respiratory distress syndrome [2]
Alveolar hemorrhage (pulmonary) [3]
Dyspnea / shortness of breath (14–26%)
Influenza- ('flu)-like syndrome [2]
Pharyngitis (sore throat) (12%)
Pneumonia (16%) [3]
Pneumonitis [5]
Respiratory tract infection [2]
Tuberculosis [2]

Other
Adverse effects / adverse reactions [8]
Death [13]
Infection (43–74%) [52]

ALENDRONATE

Trade names: Binosto (Mission), Fosamax (Merck)
Indications: Osteoporosis in postmenopausal women, Paget's disease
Class: Bisphosphonate
Half-life: >10 years
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Angioedema [2]
Erythema multiforme [2]
Hypersensitivity [3]
Rash [5]

Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [9]

Central Nervous System
Headache [2]

Endocrine/Metabolic
Hypocalcemia (18%) [5]

Gastrointestinal/Hepatic
Abdominal pain (<7%) [8]
Dyspepsia / functional dyspepsia / gastroparesis [8]
Dysphagia [4]
Esophageal perforation [2]
Esophagitis [13]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]
Nausea [7]
Vomiting [4]

Neuromuscular/Skeletal
Arthralgia [6]
Bone or joint pain (<6%) [5]
Fractures [21]
Osteonecrosis / avascular necrosis [13]

Ocular
Conjunctivitis (conjunctival inflammation) [2]
Ocular adverse effect [2]
Ocular inflammation [2]
Scleritis [3]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [6]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure [2]

Other
Adverse effects / adverse reactions [5]

ALFENTANIL

Trade name: Alfenta (Akorn)
Indications: General anesthesia, post-operative pain
Class: Analgesic; opioid, Anesthetic
Half-life: 83–97 minutes (adults)
Clinically important, potentially hazardous interactions with: ceritinib, crizotinib, dasatinib, eluxadoline, enzalutamide, erythromycin, itraconazole, letermovir, ranitidine, ribociclib, rifapentine, ritonavir, telithromycin, viloxazine, voriconazole
Pregnancy category: C

Cardiovascular
Arrhythmias (>10%)
Bradycardia / sinus bradycardia (>10%) [2]
Hypotension (>10%)
Vasodilation (peripheral) (>10%)

Central Nervous System
Confusion (1–10%)
Depression (1–10%)
Intracranial pressure increased (intracranial hypertension) (see also pseudotumor cerebri) (>10%)
Shivering (3–9%)
Somnolence (drowsiness) (>10%)

ALFUZOSIN

Trade names: Uroxatral (Concordia), Xatral (Sanofi-Aventis)
Indications: Benign prostatic hyperplasia
Class: Adrenergic alpha-receptor antagonist
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, adrenergic neurone blockers, alcohol, aldesleukin, alprostadil, amitriptyline, angiotensin II receptor antagonists, antipsychotics, anxiolytics and hypnotics, arsenic, atazanavir, atenolol, baclofen, beta blockers, boceprevir, calcium channel blockers, cimetidine, citalopram, clonidine, conivaptan, corticosteroids, CYP3A4 inducers or inhibitors, darunavir, dasatinib, deferasirox, degarelix, delavirdine, diazoxide, diltiazem, diuretics, dolasetron, estrogens, food, general anesthetics, hydralazine, indinavir, itraconazole, ketoconazole, lapatinib, levodopa, levofloxacin, lopinavir, MAO inhibitors, methyldopa, minoxidil, moxifloxacin, moxisylyte, moxonidine, nelfinavir, nitrates, nitroprusside, NSAIDs, ombitasvir/paritaprevir/ritonavir and dasabuvir, pazopanib, phosphodiesterase 5 inhibitors, protease inhibitors, QT prolonging agents, ritonavir, sildenafil, St John's wort, tadalafil, telaprevir, telavancin, telithromycin, tipranavir, tizanidine, vardenafil, voriconazole, vorinostat, ziprasidone
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Cardiovascular
Hypotension [2]
Orthostatic hypotension [3]
QT interval prolonged / QT prolongation [2]

Central Nervous System
Headache (3%)
Pain (<2%)
Vertigo / dizziness (6%) [19]

Gastrointestinal/Hepatic
Abdominal pain (<2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Genitourinary
Ejaculatory dysfunction [3]
Erectile dysfunction [2]

Neuromuscular/Skeletal
Asthenia / fatigue (3%)

Ocular
Floppy iris syndrome [4]

Respiratory
Bronchitis (<2%)
Pharyngitis (sore throat) (<2%)
Sinusitis (<2%)
Upper respiratory tract infection (3%)

Other
Adverse effects / adverse reactions [2]

ALGLUCERASE

Trade name: Ceredase (Genzyme)
Indications: Gaucher disease
Class: Enzyme, glucocerebrosidase
Half-life: 3.6–10.4 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Safety and effectiveness in pediatric patients <2 years of age have not been established.

Cardiovascular
Hypertension [2]

ALGLUCOSIDASE ALFA

Trade name: Myozyme (Genzyme)
Indications: Pompe disease (glycogen storage disease type II), GAA deficiency
Class: Alfa-glucosidase, Enzyme
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (5–8%) [2]
Flushing / rubefaction (21%)
Rash (54%)
Urticaria / hives (21%)
Mucosal
Oral candidiasis (31%)
Cardiovascular
Bradycardia / sinus bradycardia (21%)
Hypertension (5–8%)
Tachycardia (23%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (97%)
Pain (15–26%)
Gastrointestinal/Hepatic
Constipation (10–23%)
Diarrhea (62%)
Vomiting (22–49%)
Hematologic
Anemia (31%)
Local
Catheter-related infection (28%)
Neuromuscular/Skeletal
Myalgia/Myopathy (37%)
Otic
Otitis media (44%)
Respiratory
Cough (46%)
Nasopharyngitis (23%)
Pneumonia (46%)
Upper respiratory tract infection (44%)

ALIROCUMAB

Trade name: Praluent (Regeneron)
Indications: Adjunct to diet and statin therapy in hypercholesterolemia or clinical atherosclerotic cardiovascular disease where additional lowering of low density lipoprotein cholesterol is required
Class: Monoclonal antibody, Proprotein convertase subtilisin kexin type 9 (PCSK9) inhibitor
Half-life: 17–20 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No data available but likely to cross the placenta in second and third trimester)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Hematoma (2%)
Cardiovascular
Cardiotoxicity [3]
Myocardial infarction [3]
Central Nervous System
Cognitive impairment [2]
Headache [5]
Neurotoxicity [4]
Stroke / cerebral infarction [2]
Vertigo / dizziness [6]
Endocrine/Metabolic
ALT increased [3]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [3]
Gastrointestinal/Hepatic
Diarrhea (5%) [3]
Gastrointestinal disorder / discomfort [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (3%)
Nausea [2]
Genitourinary
Urinary tract infection (5%)
Local
Injection-site pain [2]
Injection-site reaction (7%) [23]
Neuromuscular/Skeletal
Arthralgia [6]
Asthenia / fatigue [3]
Back pain [6]
Bone or joint pain (2%) [2]
Muscle spasm (3%)
Myalgia/Myopathy (4%) [11]
Ocular
Ocular adverse effect [2]
Respiratory
Bronchitis (4%)
Cough (3%)
Influenza (6%) [5]
Nasopharyngitis (11%) [11]
Sinusitis (3%) [2]
Upper respiratory tract infection [8]
Other
Adverse effects / adverse reactions [12]
Allergic reactions (9%)
Death [2]

ALISKIREN

Trade names: Rasilez (Novartis), Tekamlo (Novartis), Tekturna (Novartis), Tekturna HCT (Novartis), Valturna (Novartis)
Indications: Hypertension
Class: Antihypertensive, Renin inhibitor
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, aldosterone antagonists, atorvastatin, candesartan, celecoxib, cyclosporine, diclofenac, furosemide, heparin, irbesartan, itraconazole, ketoconazole, losartan, meloxicam, moexipril, NSAIDs, olmesartan, potassium salts, potassium-sparing diuretics, sacubitril/valsartan, tinzaparin, trandolapril, verapamil
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Tekamlo is aliskiren and amlodipine; Tekturna HCT is aliskiren and hydrochlorothiazide; Valturna is aliskiren and valsartan. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Contra-indicated for concomitant use with angiotensin receptor blockers or angiotensin-converting enzyme (ACE) inhibitors in patients with diabetes.
Warning: FETAL TOXICITY

Skin
Angioedema [4]
Peripheral edema (see also edema) [4]
Central Nervous System
Headache [12]
Vertigo / dizziness [8]
Endocrine/Metabolic
Hyperkalemia [3]
Gastrointestinal/Hepatic
Diarrhea (2%) [5]
Neuromuscular/Skeletal
Asthenia / fatigue [7]
Respiratory
Cough [4]
Nasopharyngitis [7]
Other
Adverse effects / adverse reactions [11]

ALITRETINOIN

Trade name: Panretin (Ligand)
Indications: Kaposi's sarcoma cutaneous lesions
Class: Retinoid
Half-life: N/A
Clinically important, potentially hazardous interactions with: ketoconazole, simvastatin, St John's wort, St John's wort, vitamin A
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients
Note: Oral alitretinoin (Toctino) is not available in the USA.

Skin
Edema / fluid retention (see also peripheral edema) (3–8%)
Erythema [2]
Exfoliative dermatitis (3–9%)
Flushing / rubefaction [2]
Pigmentation (3%)
Pruritus (itching) (8–11%)
Rash (25–77%)
Ulcerations (2%)
Xerosis / xeroderma (see also dry skin) (10%)
Hair
Curly hair [2]
Mucosal
Mucocutaneous reactions [2]

Central Nervous System
Depression [2]
Headache [8]
Paresthesias (3–22%)
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Dyslipidemia [2]
Hypertriglyceridemia (includes triglycerides increased) [2]
Gastrointestinal/Hepatic
Nausea [2]

ALLOPURINOL

Trade names: Duzallo (AstraZeneca), Zyloprim (Prometheus)
Indications: Gouty arthritis
Class: Purine analog, Uricosuric, Xanthine oxidase inhibitor
Half-life: <3 hours
Clinically important, potentially hazardous interactions with: acenocoumarol, amoxicillin, ampicillin, ampicillin/sulbactam, azathioprine, benazepril, capecitabine, captopril, cilazapril, cyclopenthiazide, dicumarol, enalapril, fosinopril, imidapril, lisinopril, mercaptopurine, pantoprazole, quinapril, ramipril, trandolapril, uracil/tegafur, vidarabine, zofenopril
Pregnancy category: C
Note: HLA-B*5801 confers a risk of allopurinol-induced serious skin reactions like SJS/TEN and DRESS. Should be seriously considered in patients of south Asian ancestry.
Duzallo is allopurinol and lesinurad (see separate entry).

Skin
AGEP [6]
Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR)) [10]
Cutaneous toxicity / skin toxicity [2]
DRESS syndrome [51]
Eosinophilic pustular folliculitis [2]
Erythema multiforme [7]
Exanthems (<5%) [20]
Exfoliative dermatitis (>10%) [15]
Fixed eruption [11]
Granuloma annulare (disseminated) [2]
Hypersensitivity [49]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Pityriasis rosea [2]
Pruritus (itching) [7]
Purpura (>10%) [2]
Rash (>10%) [11]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (>10%) [94]
Toxic pustuloderma [3]
Urticaria / hives (>10%) [6]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [7]
Hair
Alopecia / hair loss (<10%) [2]
Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [3]
Stomatitis (oral mucositis) [2]
Cardiovascular
Polyarteritis nodosa [3]
Central Nervous System
Chills (<10%)
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [3]
Vertigo / dizziness [3]
Endocrine/Metabolic
ALT increased [2]
AST increased [3]
Gastrointestinal/Hepatic
Diarrhea [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [10]
Nausea [3]
Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue [2]
Back pain [2]
Bone or joint pain [2]
Joint disorder [2]
Myalgia/Myopathy [3]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Respiratory
Nasopharyngitis [2]
Upper respiratory tract infection [4]
Other
Adverse effects / adverse reactions [13]
Allergic reactions (severe) [2]
Death [9]

ALMOTRIPTAN

Trade names: Almogran (Almirall), Axert (Ortho-McNeil)
Indications: Migraine headaches
Class: 5-HT1 agonist, Serotonin receptor agonist, Triptan
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: conivaptan, darunavir, delavirdine, dihydroergotamine, ergotamine, indinavir, ketoconazole, methysergide, SNRIs, SSRIs, telithromycin, triptans, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Contra-indicated in patients with history, symptoms, or signs of ischemic cardiac, cerebrovascular, or peripheral vascular syndromes, or with uncontrolled hypertension.

Cardiovascular
Chest pain [3]
Central Nervous System
Headache [2]
Neurotoxicity [2]
Paresthesias [4]
Somnolence (drowsiness) [5]
Vertigo / dizziness [6]
Gastrointestinal/Hepatic
Nausea [6]
Vomiting [3]
Neuromuscular/Skeletal
Asthenia / fatigue [4]
Respiratory
Influenza- ('flu)-like syndrome (12%)
Upper respiratory tract infection (20%)
Other
Adverse effects / adverse reactions [10]

ALOE VERA (GEL, JUICE, LEAF)

Family: Liliaceae
Scientific names: *Aloë africana, Aloë barbadensis, Aloë ferox, Aloë spicata*
Indications: Oral: anesthetic, antiseptic, antipyretic, antipruritic, vasodilator, anti-inflammatory, vermifuge, antifungal. antiulcer, diabetes, asthma
Topical: promote healing, cold sores, ulceration, radiations injuries, psoriasis, frostbite. Also used in cosmetics and for its moisturizing and emollient properties
Class: Anthroquinone glycoside, Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: arsenic
Pregnancy category: N/A
Note: One blade of aloe can be used for weeks. The severed end of the blade is self healing.
I have perfumed my bed with myrrh, aloes and cinnamon (Proverbs 7:17).
Cleopatra regarded the gel as a fountain of youth and used it to preserve her skin against the ravages of the Egyptian sun.

Skin
Contact dermatitis [2]
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis [2]
Hypersensitivity [2]
Endocrine/Metabolic
Hypokalemia [2]
Gastrointestinal/Hepatic
Diarrhea [2]
Hepatitis [6]
Other
Allergic reactions [2]

ALOGLIPTIN

Trade name: Nesina (Takeda)
Indications: Type II diabetes mellitus
Class: Antidiabetic, Dipeptidyl peptidase-4 (DPP-4) (gliptin) inhibitor
Half-life: 21 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Bullous pemphigoid / pemphigoid [2]
Hypersensitivity [2]
Pruritus (itching) [2]
Central Nervous System
Headache (4%) [8]
Vertigo / dizziness [3]
Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [14]
Gastrointestinal/Hepatic
Constipation [2]
Diarrhea [2]
Pancreatitis / acute pancreatitis [3]

Neuromuscular/Skeletal
Arthralgia [2]
Respiratory
Nasopharyngitis (4%) [8]
Upper respiratory tract infection (4%) [6]
Other
Adverse effects / adverse reactions [6]
Infection [3]

ALOSETRON

Trade name: Lotronex (GSK)
Indications: Irritable bowel syndrome
Class: 5-HT3 antagonist, Serotonin type 3 receptor antagonist
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: apomorphine, conivaptan, CYP1A2 inhibitors, CYP3A4 inhibitors, darunavir, delavirdine, eluxadoline, fluvoxamine, indinavir, telithromycin, teriflunomide, viloxazine, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Alosetron was approved in 2000 for use in women with diarrhea-predominant irritable bowel syndrome (IBS-D), however infrequent serious adverse events (including ischemic colitis and serious complications of constipation, resulting in hospitalization, blood transfusion, surgery and death) prompted alosetron's voluntary withdrawal from the US market in November 2000. Public request prompted its reintroduction in 2002 under a Risk Management Plan, including a more restricted indication and a Prescribing Program for Lotronex. Only licensed for use in female patients. Contra-indicated in patients with constipation or a history of chronic or severe constipation or sequelae from constipation; intestinal obstruction, stricture, toxic megacolon, gastrointestinal perforation, and/or adhesions; ischemic colitis; impaired intestinal circulation, thrombophlebitis, or hypercoagulable state; Crohn's disease or ulcerative colitis; diverticulitis; severe hepatic impairment.
Warning: SERIOUS GASTROINTESTINAL ADVERSE REACTIONS

Gastrointestinal/Hepatic
Abdominal distension (2%)
Abdominal pain (<7%) [3]
Colitis [12]
Constipation (9–29%) [14]
Diarrhea (2–3%)
Flatulence (<3%)
Gastroenteritis (>3%)
Gastroesophageal reflux (2%)
Hemorrhoids (<3%)
Nausea (6%)
Vomiting (<3%)
Genitourinary
Urinary tract infection (>3%)
Neuromuscular/Skeletal
Asthenia / fatigue (3%)
Muscle spasm (3%)
Respiratory
Cough (>3%)
Nasopharyngitis (>3%)
Sinusitis (>3%)
Upper respiratory tract infection (>3%)
Other
Adverse effects / adverse reactions [5]

ALPHA-LIPOIC ACID

Synonym: ALA
Indications: Diabetic neuropathy, vasodilation, photoaging
Class: Dietary supplement
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known

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Skin
Rash [2]
Central Nervous System
Vertigo / dizziness [2]
Endocrine/Metabolic
Insulin autoimmune syndrome / insulin autoimmune hypoglycemia / Hirata's disease [4]

ALPRAZOLAM

Trade name: Xanax (Pfizer)
Indications: Anxiety, depression, panic attacks
Class: Benzodiazepine
Half-life: 11–16 hours
Clinically important, potentially hazardous interactions with: alcohol, amprenavir, aprepitant, boceprevir, clarithromycin, CNS depressants, darunavir, delavirdine, digoxin, efavirenz, fluconazole, fluoxetine, fluvoxamine, grapefruit juice, indinavir, itraconazole, ivermectin, kava, ketoconazole, posaconazole, propoxyphene, ritonavir, saquinavir, St John's wort, telaprevir, tipranavir
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Skin
Dermatitis (4%) [5]
Diaphoresis (see also hyperhidrosis) (16%)
Edema / fluid retention (see also peripheral edema) (5%)
Photosensitivity [4]
Pruritus (itching) (<10%) [2]
Rash (11%) [4]
Mucosal
Sialopenia (33%)
Sialorrhea (ptyalism; hypersalivation) (4%)
Xerostomia (dry mouth) (15%) [6]
Cardiovascular
Hypotension (<10%)
Central Nervous System
Cognitive impairment (>10%)
Coma [2]
Depression (>10%)
Dysarthria (>10%)
Incoordination (<10%)
Memory loss/memory impaired [2]
Neurotoxicity [2]
Paresthesias (2%)
Restlessness [2]
Sedation [2]
Seizures (<10%) [2]
Somnolence (drowsiness) (>10%)
Endocrine/Metabolic
Galactorrhea [2]
Genitourinary
Micturition difficulty (>10%)
Neuromuscular/Skeletal
Asthenia / fatigue (>10%) [2]

ALPROSTADIL

Synonyms: PGE; prostaglandin E_1
Trade names: Caverject (Pfizer), Edex (Schwarz), Muse (Vivus), Prostin VR (Pfizer)
Indications: Impotence, to maintain patent ductus arteriosus
Class: Prostaglandin
Half-life: 5–10 minutes
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, captopril, cilazapril, enalapril, fosinopril, irbesartan, lisinopril, olmesartan, quinapril, ramipril
Pregnancy category: D (not indicated for use in women)
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Warning: APNEA (in neonates with congenital heart defects)

Skin
Edema / fluid retention (see also peripheral edema) (<10%)
Flushing / rubefaction (>10%)
Penile rash (<10%)
Mucosal
Nasal congestion (<10%)
Cardiovascular
Bradycardia / sinus bradycardia (<10%)
Hypertension (<10%)
Hypotension (<10%)
Tachycardia (<10%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (>10%)
Headache (>10%)
Pain (>10%)
Vertigo / dizziness (>10%)
Gastrointestinal/Hepatic
Diarrhea (<10%)
Genitourinary
Erectile dysfunction (prolonged erection / >4 hours) (4%)
Penile pain (>10%)
Priapism (4%) [8]
Urethral burning (>10%) [2]
Local
Application-site burning [3]
Application-site erythema [3]
Application-site pain [2]
Application-site pruritus [2]
Injection-site ecchymoses (<10%)
Injection-site hematoma (3%)
Injection-site pain (2%)
Neuromuscular/Skeletal
Back pain (<10%)
Respiratory
Apnea (>10%)
Cough (<10%)
Influenza- ('flu)-like syndrome (<10%)
Sinusitis (<10%)

ALTEPLASE

Synonym: tPA
Trade name: Activase (Genentech)
Indications: Acute myocardial infarction, acute pulmonary embolism
Class: Fibrinolytic, Plasminogen activator
Half-life: 30–45 minutes
Clinically important, potentially hazardous interactions with: defibrotide, nitroglycerin, ticlopidine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

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Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
- Angioedema [12]
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (<10%)
- Purpura (<10%)

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) (<10%)
- Intracranial hemorrhage [8]

Gastrointestinal/Hepatic
- Hemorrhagic colitis (5%)

Hematologic
- Bleeding [3]
- Hemorrhage (4%)

Other
- Death [4]

ALTRETAMINE

Synonym: hexamethylmelamine
Trade name: Hexalen (Eisai)
Indications: Palliative treatment of recurrent ovarian cancer
Class: Alkylating agent
Half-life: 13 hours
Clinically important, potentially hazardous interactions with: aldesleukin, amitriptyline, linezolid
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Central Nervous System
- Neurotoxicity [5]
- Paresthesias [2]
- Peripheral neuropathy (31%)

Gastrointestinal/Hepatic
- Abdominal pain [2]
- Nausea (33%)
- Vomiting (33%) [2]

Hematologic
- Anemia (33%)
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (5%)
- Neutropenia (neutrophils decreased) [2]
- Thrombocytopenia (9%)

Neuromuscular/Skeletal
- Asthenia / fatigue [3]

ALVIMOPAN

Trade name: Entereg (Adolor)
Indications: Postoperative ileus
Class: Opioid antagonist, Opioid receptor antagonist
Half-life: 10–18 hours
Clinically important, potentially hazardous interactions with: hydromorphone, opioid receptor antagonist (for longer than 7 days), tapentadol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: FOR SHORT-TERM HOSPITAL USE ONLY

Cardiovascular
- Hypotension [2]
- Myocardial infarction [3]

Endocrine/Metabolic
- Hypokalemia (7–10%)

Gastrointestinal/Hepatic
- Abdominal pain [4]
- Constipation (4–10%)
- Diarrhea [4]
- Dyspepsia / functional dyspepsia / gastroparesis (6–7%)
- Flatulence (3–9%) [2]
- Nausea [6]
- Vomiting [3]

Genitourinary
- Urinary retention (3–4%)

Hematologic
- Anemia (5%)

Neuromuscular/Skeletal
- Back pain (3%)

AMANTADINE

Trade names: Gocovri (Adamas Pharma), Symmetrel (Endo)
Indications: Parkinsonism, influenza A viral infection
Class: Adamantane, Antiviral
Half-life: 10–28 hours
Clinically important, potentially hazardous interactions with: cyclopenthiazide, fesoterodine, levomepromazine, memantine, quinine, risperidone, tetrabenazine, trimethoprim, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Amantadine should be prescribed with caution to patients with a history of myocardial disease.

Skin
- Dermatitis [20]
- Edema / fluid retention (see also peripheral edema) [3]
- Livedo reticularis (50–90%) [23]
- Peripheral edema (see also edema) (<10%) [9]
- Photosensitivity [2]

Mucosal
- Xerostomia (dry mouth) (<10%) [11]

Cardiovascular
- Cardiac arrest [3]
- Cardiac failure [2]
- Hypotension (<10%)
- Orthostatic hypotension [3]
- QT interval prolonged / QT prolongation [4]

Central Nervous System
- Abnormal dreams (<10%)
- Agitation (<10%)
- Anorexia (<10%)
- Anxiety (<10%)
- Confusion (<10%) [2]
- Delirium (<10%) [4]
- Depression (<10%)
- Gait instability / postural instability [3]
- Hallucinations [9]
- Hallucinations, visual (see also Charles Bonnet syndrome) [6]
- Headache (<10%)
- Insomnia (<10%) [4]
- Psychosis [2]
- Somnolence (drowsiness) (<10%)
- Vertigo / dizziness (<10%) [3]

Endocrine/Metabolic
- Hyponatremia [2]

Gastrointestinal/Hepatic
- Constipation (<10%) [8]
- Diarrhea (<10%)
- Nausea [3]

Neuromuscular/Skeletal
- Asthenia / fatigue (<10%)
- Ataxia (<10%)
- Myoclonus [4]

Ocular
- Corneal edema [8]
- Vision blurred [2]

AMBRISENTAN

Trade names: Letairis (Gilead), Volibris (GSK)
Indications: Pulmonary arterial hypertension
Class: Antihypertensive, Endothelin receptor (ETR) antagonist, Vasodilator
Half-life: 9 hours
Clinically important, potentially hazardous interactions with: conivaptan, cyclosporine, CYP2C19 inducers or inhibitors, CYP3A4 inducers or inhibitors, dasatinib, deferasirox, grapefruit juice, St John's wort
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Also contra-indicated in patients with idiopathic pulmonary fibrosis.
Warning: CONTRA-INDICATED IN PREGNANCY

Skin
- Edema / fluid retention (see also peripheral edema) [5]
- Flushing / rubefaction (4%)
- Peripheral edema (see also edema) (17%) [9]

Mucosal
- Nasal congestion (6%) [2]

Cardiovascular
- Palpitation (5%)

Central Nervous System
- Headache (15%) [5]

Gastrointestinal/Hepatic
Abdominal pain (3%)
Constipation (4%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Hematologic
Anemia [5]
Respiratory
Dyspnea / shortness of breath (4%)
Nasopharyngitis (3%)
Sinusitis (3%)

AMCINONIDE

Trade name: Cyclocort (Astellas)
Indications: Dermatoses
Class: Corticosteroid / Glucocorticoid, Corticosteroid, topical
Half-life: N/A
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis [13]

AMIFOSTINE

Synonyms: ethiofos; gammaphos
Trade name: Ethyol (Medimmune)
Indications: Nephrotoxicity prophylaxis
Class: Thiophosphate cytoprotective
Half-life: 9 minutes
Clinically important, potentially hazardous interactions with: benazepril, captopril, clevidipine, enalapril, fosinopril, irbesartan, lisinopril, olmesartan, quinapril, ramipril
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Dermatitis [3]
Flushing / rubefaction (>10%) [4]
Rash [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Mucosal
Mucositis [4]
Xerostomia (dry mouth) [7]
Cardiovascular
Hypotension (15–61%) [5]
Central Nervous System
Chills (>10%)
Dysgeusia (taste perversion) [2]
Fever (pyrexia) (includes hyperpyrexia) [3]
Endocrine/Metabolic
Hypocalcemia [2]
Gastrointestinal/Hepatic
Nausea (53–96%) [2]
Vomiting (53–96%) [2]
Respiratory
Dyspnea / shortness of breath (4%)
Other
Allergic reactions [2]

AMIKACIN

Trade name: Amikacin sulfate (Bedford)
Indications: Short-term treatment of serious infections due to gram-negative bacteria
Class: Antibiotic, Antibiotic; aminoglycoside, Antimicrobial, Drug-resistant antituberculosis agent
Half-life: 1.5–2.5 hours (adults)
Clinically important, potentially hazardous interactions with: adefovir, aldesleukin, aminoglycosides, atracurium, bumetanide, cephalexin, doxacurium, ethacrynic acid, furosemide, succinylcholine, teicoplanin, torsemide
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Aminoglycosides may cause neurotoxicity and/or nephrotoxicity.

Skin
Dermatitis [3]
DRESS syndrome [2]
Exanthems [2]
Central Nervous System
Neurotoxicity (<10%)
Ocular
Macular infarction [3]
Otic
Hearing loss (hypoacusis) [6]
Ototoxicity (<10%) [9]
Tinnitus [3]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (<10%) [11]

AMILORIDE

Trade names: Midamor (Merck), Moduretic (Merck)
Indications: Prevention of hypokalemia associated with kaliuretic diuretics, management of edema in hypertension
Class: Diuretic, potassium-sparing
Half-life: 6–9 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, benazepril, captopril, cyclosporine, enalapril, fosinopril, lisinopril, magnesium, metformin, moexipril, potassium salts, quinapril, quinidine, ramipril, spironolactone, trandolapril, zofenopril
Pregnancy category: B
Note: Moduretic is amiloride and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Photosensitivity [4]
Central Nervous System
Headache (<10%)
Vertigo / dizziness (<10%)
Endocrine/Metabolic
Gynecomastia (<10%)
Hyperkalemia [2]
Genitourinary
Impotence (<10%)
Neuromuscular/Skeletal
Asthenia / fatigue (<10%)
Myalgia/Myopathy (<10%)
Respiratory
Cough (<10%)
Dyspnea / shortness of breath (<10%)

AMINOCAPROIC ACID

Trade name: Amicar (Xanodyne)
Indications: To provide hemostasis in the treatment of fibrinolysis
Class: Antifibrinolytic
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis [4]
Purpura [2]
Rash (<10%)
Neuromuscular/Skeletal
Myalgia/Myopathy (<10%)
Rhabdomyolysis [11]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

AMINO-GLUTETHIMIDE

Trade name: Cytadren (Novartis)
Indications: Suppression of adrenal function, metastatic carcinoma
Class: Aromatase inhibitor
Half-life: 7–15 hours
Clinically important, potentially hazardous interactions with: betamethasone, dexamethasone, doxercalciferol, oxtriphylline, triamcinolone
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Exanthems [8]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (>10%)
Pruritus (itching) (5%)
Rash (>10%)
Hair
Hirsutism (<10%)
Mucosal
Oral mucosal eruption [2]
Neuromuscular/Skeletal
Myalgia/Myopathy (3%)

AMINOLEVULINIC ACID

Synonym: 5-Aminolevulinic acid
Trade names: Ameluz (Biofrontera), Levulan Kerastick (Dusa)
Indications: Non-hyperkeratotic actinic keratoses of face and scalp
Class: Photosensitizer, Protoporphyrin IX (PpIX) (wakefulness promoting agent)
Half-life: 20–40 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: In photodynamic therapy: to be used in conjunction with the relevant illuminator as approved by the manufacturer.

Skin
- Burning / skin burning sensation (>50%) [6]
- Crusting (64–71%) [2]
- Dermatitis [2]
- Desquamation [2]
- Edema / fluid retention (see also peripheral edema) (35%) [9]
- Erosions (14%) [2]
- Erythema (99%) [14]
- Exfoliative dermatitis (from topical treatment) [3]
- Hypomelanosis (22%)
- Photosensitivity [3]
- Pigmentation (from topical treatment) (22%) [7]
- Pruritus (itching) (25%) [2]
- Pustules / pustular eruption (<4%)
- Scaling (64–71%)
- Stinging (>50%) [2]
- Ulcerations (4%)
- Vesiculation (4%) [2]

Cardiovascular
- Hypotension [3]

Central Nervous System
- Dysesthesia (2%)
- Pain [12]

AMINOPHYLLINE

Synonym: theophylline ethylenediamine
Trade names: Elixophyllin (Forest), Phyllocontin (Napp), Quibron (Monarch)
Indications: Prevention or treatment of reversible bronchospasm
Class: Xanthine alkaloid
Half-life: 3–15 hours (in adult nonsmokers)
Clinically important, potentially hazardous interactions with: adenosine, anagrelide, arformoterol, azithromycin, BCG vaccine, caffeine, capsicum, carbimazole, cimetidine, ciprofloxacin, clorazepate, cocoa, erythromycin, eucalyptus, febuxostat, fluvoxamine, halothane, indacaterol, influenza vaccine, levofloxacin, mebendazole, methylprednisolone, moxifloxacin, nilutamide, norfloxacin, obeticholic acid, ofloxacin, oral contraceptives, prednisolone, prednisone, propranolol, rasagiline, raspberry leaf, roflumilast, ropivacaine, roxithromycin, St John's wort, torasemide, torsemide, triamcinolone, zafirlukast
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

Skin
- Dermatitis [7]
- Exanthems [5]
- Exfoliative dermatitis [6]
- Hypersensitivity [6]
- Pruritus (itching) [3]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
- Urticaria / hives [6]

Cardiovascular
- Arrhythmias [2]
- Palpitation [3]
- Tachycardia [2]

Central Nervous System
- Insomnia [2]
- Seizures [11]
- Tremor [2]

Endocrine/Metabolic
- SIADH [2]

Gastrointestinal/Hepatic
- Abdominal pain [2]
- Nausea [5]
- Vomiting [2]

Neuromuscular/Skeletal
- Rhabdomyolysis [5]

Other
- Adverse effects / adverse reactions [3]
- Allergic reactions [5]
- Death [2]

AMINOSALICYLATE SODIUM

Synonyms: PAS; para-aminosalicylate sodium
Trade name: Paser Granules (Jacobus)
Indications: Tuberculosis
Class: Antibiotic, Antimicrobial, Antimycobacterial (including antitubercular), Salicylate
Half-life: 45–60 minutes
Clinically important, potentially hazardous interactions with: none known
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
- Angioedema [2]
- Bullous dermatosis [2]
- DRESS syndrome [2]
- Exanthems [10]
- Exfoliative dermatitis [6]
- Fixed eruption [6]
- Hypersensitivity [2]
- Lichenoid eruption / lichenoid reaction [3]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
- Photosensitivity [3]
- Pruritus (itching) [3]
- Purpura [4]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Urticaria / hives [5]

Hair
- Alopecia / hair loss [4]

Mucosal
- Oral mucosal eruption [2]

Endocrine/Metabolic
- Hypothyroidism [2]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
- Adverse effects / adverse reactions [4]

AMIODARONE

Trade names: Cordarone (Wyeth), Pacerone (Upsher-Smith)
Indications: Ventricular fibrillation, ventricular tachycardia
Class: Antiarrhythmic, Antiarrhythmic class III, CYP1A2 inhibitor, CYP3A4 inhibitor
Half-life: 26–107 days
Clinically important, potentially hazardous interactions with: abarelix, acebutolol, acenocoumarol, afatinib, amisulpride, amitriptyline, amprenavir, anisindione, anticoagulants, arsenic, artemether/lumefantrine, asenapine, astemizole, atazanavir, atorvastatin, azoles, betrixaban, boceprevir, bosentan, carbimazole, celiprolol, cholestyramine, cimetidine, ciprofloxacin, clopidogrel, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, cyclosporine, dabigatran, daclatasvir, darunavir, degarelix, delavirdine, dextromethorphan, dicumarol, digoxin, diltiazem, disopyramide, dronedarone, droperidol, echinacea, enoxacin, fentanyl, finerenone, flecainide, fosamprenavir, gatifloxacin, grapefruit juice, indinavir, ledipasvir & sofosbuvir, lesinurad, letermovir, levofloxacin, levomepromazine, lidocaine, lomefloxacin, lopinavir, loratadine, macrolide antibiotics, methotrexate, moxifloxacin, naldemedine, nelfinavir, nevirapine, nilotinib, norfloxacin, ofloxacin, orlistat, oxprenolol, pentamidine, phenytoin, pimavanserin, ponesimod, procainamide, propranolol, quinidine, quinine, quinolones, ribociclib, rifabutin, rifampin, rifapentine, ritonavir, ropivacaine, rosuvastatin, simvastatin, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, sotalol, sparfloxacin, St John's wort, sulpiride, tacrolimus, talazoparib, telaprevir, tetrabenazine, thalidomide, tipranavir, trazodone, vandetanib, venetoclax, verapamil, warfarin, zuclopenthixol
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Amiodarone induced pulmonary toxicity has an incidence of about 5%-10%, and it is considered the most serious adverse effect with mortalities reaching up to 10% of the patients.
Warning: PULMONARY TOXICITY

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
- Angioedema [2]
- Cutaneous toxicity / skin toxicity [5]
- Diaphoresis (see also hyperhidrosis) [2]
- Edema / fluid retention (see also peripheral edema) (<10%)
- Erythema nodosum [2]
- Exanthems [5]
- Facial erythema (3%) [2]

Flushing / rubefaction (<10%)
Iododerma [2]
Linear IgA bullous dermatosis [6]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Myxedema (see also myxedema coma under 'Endocrine/Metabolic') [2]
Photosensitivity (10–75%) [42]
Phototoxicity [4]
Pigmentation (blue) (<10%) [70]
Pruritus (itching) (<5%) [2]
Psoriasis [2]
Purpura (2%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [6]

Hair
Alopecia / hair loss [5]

Mucosal
Sialorrhea (ptyalism; hypersalivation) (<10%)

Cardiovascular
Arrhythmias (<3%) [3]
Atrial fibrillation (paroxysmal) [3]
Atrioventricular block [3]
Bradycardia / sinus bradycardia [18]
Cardiotoxicity [4]
Hypotension (16%) [4]
QT interval prolonged / QT prolongation [25]
Tachycardia [2]
Thrombophlebitis [2]
Torsades de pointes [38]
Ventricular arrhythmia [2]

Central Nervous System
Anorexia (10–33%)
Dysgeusia (taste perversion) (<10%)
Headache (3–40%)
Insomnia (3–40%)
Neuromyopathy [5]
Neurotoxicity [6]
Paresthesias (4–9%)
Parkinsonism [4]
Parosmia (<10%)
Peripheral neuropathy [4]
Syncope / fainting [2]
Tremor (3–40%) [5]
Vertigo / dizziness (3–40%)

Endocrine/Metabolic
Hyperthyroidism (<3%) [10]
Hyponatremia [6]
Hypothyroidism (<3%) [19]
Myxedema coma [9]
SIADH [12]
Thyroid dysfunction [27]
Thyrotoxicosis [24]

Gastrointestinal/Hepatic
Abdominal pain (<10%)
Constipation (10–33%)
Hepatic failure [6]
Hepatic steatosis [2]
Hepatitis (<3%) [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [32]
Nausea (10–33%)
Pancreatitis / acute pancreatitis [5]
Vomiting (10–33%)

Genitourinary
Epididymitis [3]

Hematologic
Neutropenia (neutrophils decreased) [2]

Local
Injection-site phlebitis [4]

Neuromuscular/Skeletal
Ataxia [6]
Myoclonus [3]
Rhabdomyolysis [7]

Ocular
Corneal deposits (>90%) [2]
Keratopathy (see also cornea verticillata) [6]
Ocular adverse effect [4]
Ocular toxicity [2]
Optic neuropathy [7]
Visual disturbances (2–9%)

Otic
Vestibular disorder / vestibulopathy [3]

Renal
Renal failure [3]

Respiratory
Alveolar hemorrhage (pulmonary) [2]
Cough [2]
Eosinophilic pneumonia [2]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [2]
Pneumonia [4]
Pneumonitis [5]
Pulmonary fibrosis [2]
Pulmonary toxicity [30]

Other
Adverse effects / adverse reactions [5]
Death [10]
Side effects (12%) [4]

AMISULPRIDE

Trade names: Barhemsys (Acacia Pharma), Deniban (Sanofi-Aventis), Solian (Sanofi-Aventis)
Indications: Prevention of postoperative nausea and vomiting (lower doses). Psychoses, schizophrenia (higher doses)
Class: Antiemetic, Antipsychotic, Dopamine receptor antagonist
Half-life: 4–5 hours (following intravenous infusion)
Clinically important, potentially hazardous interactions with: amiodarone, bepridil, cisapride, disopyramide, droperidol, erythromycin, flecainide, levodopa, ondansetron, pentamidine, procainamide, quinidine, sotalol, sparfloxacin, terfenadine, thioridazine
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Approved by FDA for prevention of postoperative nausea and vomiting, February 2020. Avoid use in patients with congenital long QT syndrome and in patients taking droperidol.

Cardiovascular
Bradycardia / sinus bradycardia [5]
Hypertension [2]
Hypotension (3%) [2]
QT interval prolonged / QT prolongation [10]
Torsades de pointes [5]

Central Nervous System
Agitation [2]
Akathisia [2]
Chills (4%)
Extrapyramidal symptoms [3]
Insomnia [4]
Mania [4]
Neuroleptic malignant syndrome [5]
Sedation [3]
Seizures [2]
Somnolence (drowsiness) [2]
Tardive syndrome / tardive dyskinesia [3]
Tic disorder [2]
Tremor [2]

Endocrine/Metabolic
ALT increased [2]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Galactorrhea [4]
Hyperprolactinemia (5%) [8]
Hypokalemia (4%)
Lactate dehydrogenase levels increased [2]
Weight gain [10]

Gastrointestinal/Hepatic
Abdominal distension (2%)

Local
Infusion-site pain (6%)

Neuromuscular/Skeletal
Asthenia / fatigue [2]
Dystonia [5]

Ocular
Oculogyric crisis [2]

AMITRIPTYLINE

Trade names: Elavil (AstraZeneca), Limbitrol (Valeant)
Indications: Depression
Class: Antidepressant; tricyclic, Muscarinic antagonist
Half-life: 10–25 hours
Clinically important, potentially hazardous interactions with: adrenergic neurone blockers, alcohol, alfuzosin, altretamine, amiodarone, amphetamines, amprenavir, anticholinergics, antiepileptics, antihistamines, antimuscarinics, antipsychotics, apraclonidine, arsenic, artemether/lumefantrine, aspirin, atomoxetine, baclofen, barbiturates, brimonidine, bupropion, cannabis extract, carbamazepine, cimetidine, cinacalcet, ciprofloxacin, cisapride, clonidine, clozapine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, conivaptan, coumarins, CYP2D6 inhibitors, desmopressin, dexmethylphenidate, diltiazem, disopyramide, disulfiram, diuretics, dronedarone, droperidol, duloxetine, entacapone, ephedra, epinephrine, estrogens, eucalyptus, flecainide, gadobutrol, general anesthetics, gotu kola, grapefruit juice, guanethidine, histamine, interferon alfa, iobenguane, isocarboxazid, isoproterenol, kava, linezolid, lithium, MAO inhibitors, methylphenidate, metoclopramide, moclobemide, moxifloxacin, moxonidine, nefopam, nicorandil, nilotinib, nitrates, NSAIDs, opioid analgesics, paroxetine hydrochloride, pentamidine, phenelzine, phenothiazines, phenytoin, pimozide, pramlintide, primidone, propafenone, propoxyphene, protease inhibitors, QT interval prolonging agents, quinidine, quinine, quinolones, rasagiline, ritonavir, saquinavir, selegiline, sibutramine, sodium oxybate, sotalol, sparfloxacin, SSRIs, St John's wort, sulfonylureas, terbinafine, tetrabenazine, thioridazine, thyroid hormones, tramadol, tranylcypromine, valerian, valproic acid, verapamil, vitamin K antagonists, yohimbine, ziprasidone
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Limbitrol is amitriptyline and chlordiazepoxide.
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
DRESS syndrome [2]
Erythema annulare centrifugum (see also gyrate erythema) [2]
Photosensitivity [3]
Pigmentation [4]
Pruritus (itching) [3]
Pseudolymphoma [2]
Purpura [2]
Mucosal
Xerostomia (dry mouth) (>10%) [17]
Cardiovascular
Brugada syndrome [4]
Myocardial infarction [2]
Postural hypotension [2]
QT interval prolonged / QT prolongation [2]
Central Nervous System
Delirium [2]
Depression [2]
Dysgeusia (taste perversion) (>10%) [2]
Hallucinations [3]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache [2]
Restless legs syndrome [2]
Sedation [3]
Seizures [7]
Serotonin syndrome [4]
Somnolence (drowsiness) [8]
Vertigo / dizziness [6]
Endocrine/Metabolic
SIADH [5]
Weight gain [7]
Gastrointestinal/Hepatic
Cholestasis [2]
Constipation [5]
Nausea [2]
Neuromuscular/Skeletal
Asthenia / fatigue [4]
Rhabdomyolysis [2]
Ocular
Vision blurred [2]
Otic
Tinnitus [3]
Other
Adverse effects / adverse reactions [5]
Death [3]

AMLEXANOX

Trade names: Aphthasol (Discus), Aphtheal (Straken), OraDisc (Access), Solfa (Takeda)
Indications: Aphthous ulcers, canker sores
Class: Anti-inflammatory
Half-life: ~3.5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Dermatitis [3]

AMLODIPINE

Trade names: Caduet (Pfizer), Exforge (Novartis), Istin (Pfizer), Lotrel (Novartis), Norvasc (Pfizer), Prestalia (Symplmed), Tekamlo (Novartis)
Indications: Hypertension, angina
Class: Antiarrhythmic class IV, Calcium channel blocker
Half-life: 30–50 hours
Clinically important, potentially hazardous interactions with: amprenavir, carbamazepine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, conivaptan, delavirdine, epirubicin, imatinib, phenytoin, primidone, sildenafil, simvastatin, St John's wort, tadalafil, telaprevir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Caduet is amlodipine and atorvastatin; Exforge is amlodipine and valsartan; Lotrel is amlodipine and benazepril; Prestalia is amlodipine and perindopril; Tekamlo is amlodipine and aliskiren.

Skin
Angioedema [6]
Cutaneous toxicity / skin toxicity [2]
Dermatitis (<10%)
Eczema / eczematous reaction / eczematous eruption [2]
Edema / fluid retention (see also peripheral edema) (5–14%) [22]
Erythema multiforme [2]
Exanthems (2–4%) [2]
Flushing / rubefaction (<10%) [5]
Peripheral edema (see also edema) (>10%) [47]
Pigmentation [2]
Pruritus (itching) (2–4%) [3]
Purpura [2]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Telangiectasia [6]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [40]
Oral pigmentation [2]
Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypotension [9]
Orthostatic hypotension [2]
Central Nervous System
Headache [14]
Parkinsonism [2]
Syncope / fainting [2]
Vertigo / dizziness [18]
Endocrine/Metabolic
Hyponatremia [2]
Gastrointestinal/Hepatic
Diarrhea [3]
Gastritis / pangastritis / gastric irritation [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [5]
Vomiting [2]
Neuromuscular/Skeletal
Asthenia / fatigue [5]
Rhabdomyolysis [2]
Respiratory
Bronchitis [2]
Cough [3]
Upper respiratory tract infection [5]
Other
Adverse effects / adverse reactions [8]

AMOBARBITAL

Indications: Insomnia, sedation
Class: Barbiturate
Half-life: initial: 40 minutes; terminal: 20 hours
Clinically important, potentially hazardous interactions with: alcohol, dicumarol, ethanolamine, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Local
Injection-site pain (>10%)

AMODIAQUINE

Trade names: Camoquin (Pfizer), Flavoquin (Sanofi-Aventis)
Indications: Malaria
Class: Anti-inflammatory, Antimalarial
Half-life: 15.7–19.5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Pruritus (itching) [4]
Central Nervous System
Extrapyramidal symptoms [4]
Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Vomiting [9]
Hematologic
Neutropenia (neutrophils decreased) [2]
Neuromuscular/Skeletal
Asthenia / fatigue [5]
Other
Adverse effects / adverse reactions [3]
Death [2]

AMOXAPINE

Trade name: Amoxapine (Watson)
Indications: Depression
Class: Antidepressant; tricyclic, Muscarinic antagonist
Half-life: 11–30 hours
Clinically important, potentially hazardous interactions with: amprenavir, artemether/lumefantrine, clonidine, dronedarone, epinephrine, fluoxetine, guanethidine, iobenguane, isocarboxazid, linezolid, MAO inhibitors, nilotinib, phenelzine, pimozide, quetiapine, quinine, quinolones, sparfloxacin, tetrabenazine, thioridazine, toremifene, tranylcypromine, vandetanib, vemurafenib, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
- AGEP [3]
- Diaphoresis (see also hyperhidrosis) (<10%)
- Edema / fluid retention (see also peripheral edema) (<10%)
- Exanthems [2]
- Rash (<10%)
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Mucosal
- Xerostomia (dry mouth) (14%)

Central Nervous System
- Dysgeusia (taste perversion) (>10%)
- Headache (<10%)
- Insomnia (<10%)
- Neuroleptic malignant syndrome [2]
- Seizures [2]
- Somnolence (drowsiness) (14%)
- Vertigo / dizziness (<10%)

Endocrine/Metabolic
- Galactorrhea [2]

Gastrointestinal/Hepatic
- Constipation (12%)
- Nausea (<10%)

Neuromuscular/Skeletal
- Asthenia / fatigue (<10%)

Ocular
- Vision blurred (7%)

Other
- Side effects (5%)

AMOXICILLIN

Synonym: amoxycillin
Trade names: Amoxil (GSK), Augmentin (GSK), Clavulin (GSK), Prevpac (TAP), Trimox (Bristol-Myers Squibb)
Indications: Infections of the respiratory tract, skin and urinary tract
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 0.7–1.4 hours
Clinically important, potentially hazardous interactions with: allopurinol, bromelain, chloramphenicol, demeclocycline, doxycycline, erythromycin, imipenem/cilastatin, methotrexate, minocycline, omeprazole, oxytetracycline, sulfonamides, tetracycline
Pregnancy category: B
Note: Augmentin and Clavulin are trade names for a combination of amoxicillin and clavulanic acid. The International Nonproprietary Name for this combination is amoxicillin/clavulanic acid, and co-amoxiclav the British Approved Name.

Skin
- AGEP [28]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [17]
- Angioedema (<10%) [5]
- Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [16]
- Bullous pemphigoid / pemphigoid [2]
- Dermatitis [4]
- DRESS syndrome [9]
- Edema / fluid retention (see also peripheral edema) [2]
- Erythema multiforme [18]
- Exanthems (>5%) [33]
- Exfoliative dermatitis [2]
- Fixed eruption [10]
- Hypersensitivity [5]
- Jarisch–Herxheimer reaction [2]
- Linear IgA bullous dermatosis [5]
- Pemphigus [4]
- Pruritus (itching) [7]
- Pustules / pustular eruption [8]
- Rash (<10%) [14]
- Serum sickness-like reaction (<10%) [6]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [23]
- Sweet's syndrome [2]
- Toxic pustuloderma [2]
- Urticaria / hives (<5%) [16]

Mucosal
- Black tongue / black hairy tongue (lingua villosa nigra) [2]
- Stomatitis (oral mucositis) [2]

Cardiovascular
- Kounis syndrome / allergic angina syndrome / allergic myocardial infarction [8]

Central Nervous System
- Anorexia [2]
- Aseptic meningitis [14]
- Dysgeusia (taste perversion) [6]
- Hallucinations [3]
- Headache [5]
- Psychosis [3]
- Somnolence (drowsiness) [3]
- Vertigo / dizziness [5]

Gastrointestinal/Hepatic
- Abdominal distension [2]
- Abdominal pain [7]
- Diarrhea [20]
- Dyspepsia / functional dyspepsia / gastroparesis [2]
- Enterocolitis [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [38]
- Nausea [13]
- Pancreatitis / acute pancreatitis [2]
- Vomiting [9]

Genitourinary
- Vaginitis (includes vulvitis) [3]

Hematologic
- Neutropenia (neutrophils decreased) [2]

Neuromuscular/Skeletal
- Asthenia / fatigue [3]
- Rhabdomyolysis [2]

Renal
- Nephropathy [2]
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
- Adverse effects / adverse reactions [20]
- Side effects [4]
- Tooth fluorosis [2]
- Tooth pigmentation / discoloration [2]

AMPHOTERICIN B

Trade names: Abelcet (Sigma-Tau), AmBisome (Astellas), Amphocin (Pfizer), Amphotec (Alkopharma)
Indications: Potentially life-threatening fungal infections
Class: Antifungal / antimycotic, Antimicrobial
Half-life: initial: 15–48 hours; terminal: 15 days
Clinically important, potentially hazardous interactions with: adefovir, aminoglycosides, arsenic, astemizole, betamethasone, cephalothin, cidofovir, cyclosporine, digoxin, ethoxzolamide, fluconazole, flucytosine, ganciclovir, griseofulvin, hydrocortisone, itraconazole, ketoconazole, micafungin, pentamidine, probenecid, sulpiride, terbinafine, triamcinolone, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
- Cutaneous toxicity / skin toxicity [2]
- Diaphoresis (see also hyperhidrosis) (7%)
- Exanthems [4]
- Flushing / rubefaction (<10%) [2]
- Peripheral edema (see also edema) (15%)
- Pruritus (itching) (11%) [2]
- Purpura [3]
- Rash (25%) [2]
- Urticaria / hives [2]

Mucosal
- Epistaxis (nosebleed) (15%)

Cardiovascular
- Chest pain (12%)
- Hypertension (8%) [4]
- Hypotension (14%)
- Tachycardia (13%)
- Thrombophlebitis (<10%)

Central Nervous System
- Anorexia (>10%)
- Anxiety (14%)
- Chills (48%) [6]
- Confusion (11%)
- Delirium (>10%)
- Fever (pyrexia) (includes hyperpyrexia) (>10%) [6]
- Headache (20%)
- Insomnia (17%)
- Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [4]
- Pain (14%)
- Paresthesias (<10%)
- Parkinsonism [2]
- Rigors [2]

Endocrine/Metabolic
- ALP increased (22%)

ALT increased (15%)
AST increased (13%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (22%)
Hyperglycemia (includes glucose increased) (23%)
Hypernatremia (4%)
Hypervolemia (fluid overload) (12%)
Hypocalcemia (18%)
Hypokalemia [4]
Hypomagnesemia (20%)

Gastrointestinal/Hepatic
Abdominal pain (20%)
Diarrhea (30%)
Gastrointestinal bleeding (10%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea (40%)
Vomiting (32%)

Genitourinary
Hematuria (14%)
Urinary retention (<10%)

Hematologic
Anemia (>10%) [4]
Leukocytosis (elevated white blood cell (WBC) count) (<10%)
Pancytopenia (includes bicytopenia) [3]
Sepsis (14%)
Thrombocytopenia [3]

Local
Infusion-related reactions [5]
Injection-site pain (>10%)
Injection-site reaction [5]

Neuromuscular/Skeletal
Asthenia / fatigue (13%)
Back pain (12%)

Otic
Ototoxicity [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [54]

Respiratory
Bronchospasm [2]
Cough (18%)
Dyspnea / shortness of breath (23%)
Hypoxia (see also hypoxemia) (8%)
Pleural effusion (13%)
Pulmonary toxicity (18%)
Rhinitis (11%)
Tachypnea / respiratory rate increased (>10%)

Other
Adverse effects / adverse reactions [6]
Death [5]
Infection (11%)

AMPICILLIN

Trade name: Totacillin (GSK)
Indications: Susceptible strains of gram-negative and gram-positive bacterial infections
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 1–1.5 hours
Clinically important, potentially hazardous interactions with: allopurinol, anticoagulants, chloramphenicol, cyclosporine, demeclocycline, doxycycline, erythromycin, imipenem/cilastatin, levodopa, methotrexate, minocycline, oxytetracycline, sulfonamides, tetracycline
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Five to 10% of people taking ampicillin develop eruptions between the 5th and 14th day following initiation of therapy. Also, there is a 95% incidence of exanthematous eruptions in patients who are treated for infectious mononucleosis with ampicillin. The allergenicity of ampicillin appears to be enhanced by allopurinol or by hyperuricemia. Ampicillin is clearly the more allergenic of the two drugs when given alone.

Skin
AGEP [9]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [10]
Angioedema [2]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [3]
Dermatitis [8]
Erythema multiforme [11]
Exanthems (>10%) [84]
Exfoliative dermatitis [3]
Fixed eruption [10]
Hypersensitivity [5]
Linear IgA bullous dermatosis [4]
Pemphigus [6]
Pruritus (itching) (<5%) [5]
Psoriasis [5]
Purpura [6]
Pustules / pustular eruption [4]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [23]
Urticaria / hives [16]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Hematologic
Thrombocytopenia [2]

Local
Injection-site pain (>10%)

Other
Allergic reactions (<10%) [3]

AMPICILLIN/ SULBACTAM

Trade name: Unasyn (Pfizer)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: allopurinol, probenecid
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Serious and occasionally fatal hypersensitivity (anaphylactic) reactions have been reported in patients on penicillin therapy. Contra-indicated in patients with a history of hypersensitivity reactions to any of the penicillins.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Linear IgA bullous dermatosis [3]
Rash (<10%) [2]

Gastrointestinal/Hepatic
Diarrhea (<10%)

Local
Injection-site pain (16%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

AMPRENAVIR

Trade name: Agenerase (GSK)
Indications: HIV infection
Class: Antiretroviral, HIV-1 protease inhibitor
Half-life: 7–11 hours
Clinically important, potentially hazardous interactions with: alprazolam, amiodarone, amitriptyline, amlodipine, amoxapine, antacids, atorvastatin, avanafil, benzodiazepines, bepridil, bosentan, carbamazepine, cisapride, clomipramine, clonazepam, clorazepate, cyclosporine, delavirdine, desipramine, dexamethasone, diazepam, didanosine, dihydroergotamine, diltiazem, doxepin, efavirenz, ergotamine, estradiol, felodipine, fentanyl, flibanserin, flurazepam, fluticasone propionate, imipramine, indinavir, isradipine, itraconazole, ixabepilone, ketoconazole, lidocaine, lopinavir, lorazepam, lovastatin, lumateperone, methadone, methylergonovine, methysergide, midazolam, mifepristone, nelfinavir, nevirapine, nicardipine, nifedipine, nimodipine, nisoldipine, nortriptyline, olaparib, oral contraceptives, oxazepam, phenobarbital, phenytoin, pimozide, protriptyline, quazepam, quinidine, rapamycin, rifabutin, rifampin, ritonavir, saquinavir, sildenafil, simvastatin, St John's wort, tacrolimus, temazepam, trazodone, triazolam, tricyclic antidepressants, trimipramine, verapamil, vitamin E, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Rash (20–27%) [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (4%)

Central Nervous System
Depression (9–16%)
Dysgeusia (taste perversion) (10%)
Mood changes (9–16%)
Paresthesias (perioral) (26–31%) [4]

Gastrointestinal/Hepatic
Diarrhea (39–60%)
Loose stools / soft feces (39–60%)
Nausea (43–74%)
Vomiting (24–34%)

AMYL NITRITE

Indications: Angina pectoris
Class: Nitrate, Vasodilator
Half-life: N/A
Clinically important, potentially hazardous interactions with: furosemide, sildenafil, tadalafil, vardenafil
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis [3]
Flushing / rubefaction (<10%)

ANAGRELIDE

Trade names: Agrylin (Shire), Xagrid (Shire)
Indications: Essential thrombocytopenia, to reduce elevated platelet count and the risk of thrombosis
Class: Phospholipase A2 inhibitor
Half-life: 1.3 hours
Clinically important, potentially hazardous interactions with: aminophylline, aspirin, cilostazol, enoximone, fluvoxamine, fondaparinux, inamrinone, milrinone, olprinone, sucralfate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contraindicated in patients with severe hepatic impairment.

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (<5%)
Edema / fluid retention (see also peripheral edema) (21%) [10]
Peripheral edema (see also edema) (7%)
Photosensitivity (<5%)
Pruritus (itching) (<5%)
Rash (8%)
Urticaria / hives (8%)

Hair
Alopecia / hair loss (<5%)

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (<5%)

Cardiovascular
Arrhythmias [5]
Cardiomyopathy [2]
Myocardial toxicity [2]
Palpitation (26%) [4]
Pericardial effusion [2]
Tachycardia [5]

Central Nervous System
Chills (<5%)
Depression (<5%)
Headache (44%) [12]
Pain (15%)
Paresthesias (7%)
Vertigo / dizziness (15%)

Gastrointestinal/Hepatic
Abdominal pain [3]

Genitourinary
Erectile dysfunction [2]

Hematologic
Anemia [2]

Neuromuscular/Skeletal
Arthralgia (<5%)
Asthenia / fatigue (23%)
Back pain (6%)
Leg cramps (<5%)
Myalgia/Myopathy (<5%)

Otic
Tinnitus (<5%)

Respiratory
Dyspnea / shortness of breath (12%)
Influenza- ('flu)-like syndrome (<5%)

Other
Adverse effects / adverse reactions (<5%)

ANAKINRA

Trade name: Kineret (Amgen)
Indications: Rheumatoid arthritis, neonatal-onset multisystem inflammatory disease
Class: Biologic, Biologic disease-modifying antirheumatic drug (bDMARD), Covid-19 putative drug, Disease-modifying antirheumatic drug (DMARD), Interleukin-1 receptor antagonist (IL-1Ra)
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: abatacept, adalimumab, certolizumab, etanercept, golimumab, infliximab, lenalidomide, live vaccines
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (12%)
Headache (12–14%) [2]

Gastrointestinal/Hepatic
Abdominal pain (5%)
Diarrhea (8%)
Nausea (8%)
Vomiting (14%)

Local
Injection-site edema [2]
Injection-site erythema [3]
Injection-site inflammation [2]
Injection-site pain [4]
Injection-site reaction (71%) [32]

Neuromuscular/Skeletal
Arthralgia (6–12%)

Respiratory
Influenza- ('flu)-like syndrome (6%)
Nasopharyngitis (12%)
Sinusitis (7%)
Upper respiratory tract infection (4%) [2]

Other
Adverse effects / adverse reactions [6]
Death [2]
Infection (40%) [11]

ANASTROZOLE

Trade name: Arimidex (AstraZeneca)
Indications: Breast carcinoma (localized – advanced or metastatic)
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Aromatase inhibitor
Half-life: 50 hours
Clinically important, potentially hazardous interactions with: estradiol, estrogens, tamoxifen
Pregnancy category: N/A (Contra-indicated in women of premenopausal endocrine status, including pregnant women)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: The efficacy of anastrozole in the treatment of pubertal gynecomastia in adolescent boys and in the treatment of precocious puberty in girls with McCune-Albright syndrome has not been demonstrated.

Skin
Flushing / rubefaction (>5%)
Hot flashes / hot flushes (12–36%) [13]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Peripheral edema (see also edema) (10%)
Pruritus (itching) (2–5%)
Rash (6–11%) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Hair
Alopecia / hair loss (2–5%)

Cardiovascular
Angina (2%)
Hypertension (2–13%)
Thrombophlebitis (2–5%)

Central Nervous System
Carpal tunnel syndrome [2]
Depression (5–13%)
Headache (9–13%) [2]
Pain (14%)
Tumor pain (>5%)

Endocrine/Metabolic
Mastodynia (2–5%)

Gastrointestinal/Hepatic
Diarrhea [2]
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea (11–19%)
Vomiting (8–13%)

Genitourinary
Vaginal dryness (2%) [3]

Neuromuscular/Skeletal
Arthralgia (2–5%) [8]
Asthenia / fatigue (19%) [7]
Back pain (12%) [2]
Bone or joint pain (6–11%) [2]
Joint disorder [3]
Myalgia/Myopathy (2–5%) [2]
Osteoporosis (11%)

Respiratory
Cough (11%)
Influenza- ('flu)-like syndrome (7%)
Pharyngitis (sore throat) (6–14%)

Other
Infection (2–5%)

ANDROSTENEDIONE

Synonym: N/A
Other common trade names: Andro, Androstene
Indications: Enhanced athletic performance, increased energy, to keep red blood cells healthy
Class: Aromatase inhibitor
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Note: Protease inhibitors cause dyslipidemia which includes elevated triglycerides and cholesterol and redistribution of body fat centrally to produce the so-called 'protease paunch', breast enlargement, facial atrophy, and 'buffalo hump'
In 2004 the FDA requested companies to stop distributing products containing androstenedione. Studies have shown that it does not increase muscle mass and that it poses the same kind of health risks as anabolic steroids, including abnormal elevations in serum estrogen, increased risk of prostate, pancreatic and endometrial cancers, and increased cardiovascular disease risk.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Other
Adverse effects / adverse reactions [6]

ANIDULAFUNGIN

Trade names: Ecalta (Pfizer), Eraxis (Pfizer)
Indications: Candidemia, candidal esophagitis
Class: Antimycobacterial; echinocandin
Half-life: 40–50 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Angioedema (<2%)
Erythema (<2%)
Flushing / rubefaction (<2%) [2]
Hot flashes / hot flushes (<2%)
Hyperhidrosis (see also diaphoresis) (<2%)
Peripheral edema (see also edema) (11%)
Pruritus (itching) (<2%)
Ulcerations (5%)
Urticaria / hives (<2%)
Mucosal
Oral candidiasis (5%)
Cardiovascular
Atrial fibrillation (<2%)
Bundle branch block (<2%)
Chest pain (5%)
Hypertension (12%)
Hypotension (15%)
Phlebitis [2]
Thrombophlebitis (<2%)
Venous thromboembolism (10%)
Central Nervous System
Confusion (8%)
Depression (6%)
Fever (pyrexia) (includes hyperpyrexia) (9–18%) [4]
Headache (8%) [5]
Insomnia (15%)
Rigors (<2%)
Seizures (<2%)
Vertigo / dizziness (<2%)
Endocrine/Metabolic
ALP increased (12%)
ALT increased (2%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (5%)
Dehydration (6%)
Hyperglycemia (includes glucose increased) (6%)
Hyperkalemia (6%)
Hypoglycemia (see also insulin autoimmune syndrome) (7%)
Hypokalemia (5–15%)
Hypomagnesemia (12%)
Gastrointestinal/Hepatic
Abdominal pain (6%)
Cholestasis (<2%)
Constipation (8%)
Diarrhea (9–18%) [3]
Dyspepsia / functional dyspepsia / gastroparesis (aggravated) (7%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (7–24%) [5]
Vomiting (7–18%) [6]
Genitourinary
Urinary tract infection (15%)
Hematologic
Anemia (8–9%)
Coagulopathy (includes disseminated intravascular coagulation / DIC) (<2%)
Leukocytosis (elevated white blood cell (WBC) count) (5%)
Sepsis (7%)
Thrombocythemia (thrombocytosis) (6%)
Thrombocytopenia (<2%)
Local
Infusion-related reactions [2]
Neuromuscular/Skeletal
Back pain (5%)
Ocular
Ocular pain (<2%)
Vision blurred (<2%)
Visual disturbances (<2%)
Respiratory
Cough (7%)
Dyspnea / shortness of breath (12%)
Pleural effusion (10%)
Pneumonia (6%)
Respiratory distress (6%)
Other
Adverse effects / adverse reactions [4]
Infection (63%)

ANISINDIONE

Trade name: Miradon (Schering)
Indications: Adjunct in treatment of coronary occlusion, atrial fibrillation
Class: Anticoagulant, Indanedione
Half-life: 3–5 days
Clinically important, potentially hazardous interactions with: amiodarone, anabolic steroids, antithyroid agents, barbiturates, bivalirudin, cimetidine, clofibrate, clopidogrel, cyclosporine, delavirdine, dextrothyroxine, disulfiram, fluconazole, glutethimide, imatinib, itraconazole, ketoconazole, metronidazole, miconazole, nandrolone, penicillins, phenylbutazones, piperacillin, quinidine, quinine, rifabutin, rifampin, rifapentine, rofecoxib, salicylates, sulfinpyrazone, sulfonamides, testosterone, thyroid, zileuton
Important contra-indications noted in the prescribing guidelines for: nursing mothers

ANISTREPLASE

Indications: Acute myocardial infarction
Class: Fibrinolytic
Half-life: 70–120 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [5]

ANTHRAX VACCINE

Trade name: BioThrax (Emergent BioSolutions)
Indications: Anthrax prophylaxis
Class: Vaccine
Half-life: Requires 1 month to achieve immunity (92.5% efficient)
Clinically important, potentially hazardous interactions with: corticosteroids, immunosuppressive therapies, other vaccines
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Dr. Sue Bailey, Assistant Secretary for Health Affairs, released a statement on June 29, 1999 that 'almost one million shots given, the anthrax immunization is proving to be one of the safest vaccination programs on record.' The ADRs reported occurred for '50 service members at one installation alone.' Note that no number of military personnel was mentioned at this installation, nor did it give any percentages for the reactions reported.

Skin
Diaphoresis (see also hyperhidrosis) [2]
Edema / fluid retention (see also peripheral edema) (3%) [2]
Hypersensitivity [5]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Pruritus (itching) (<10%) [2]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives [2]
Central Nervous System
Chills [2]
Fever (pyrexia) (includes hyperpyrexia) [3]
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [2]
Headache (4–64%) [2]
Gastrointestinal/Hepatic
Diarrhea (6–8%)
Nausea (6%)
Genitourinary
Dysmenorrhea (7%)
Local
Injection-site edema [4]
Injection-site nodules [2]
Injection-site pain [4]
Injection-site pruritus [2]
Injection-site reaction [6]
Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue (5–62%)
Myalgia/Myopathy (2–72%) [3]
Respiratory
Influenza- ('flu)-like syndrome [3]
Nasopharyngitis (12–15%)
Other
Allergic reactions [2]

ANTI-THYMOCYTE GLOBULIN (EQUINE)

Trade name: Atgam (Pfizer)
Indications: Management of allograft rejection in renal transplant patients, prophylaxis of moderate to severe aplastic anemia in patients who are unsuitable for bone marrow transplantation
Class: Immunosuppressant
Half-life: 3–9 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contraindicated in patients who have had a severe systemic reaction during prior administration of any equine gamma globulin preparation.

Skin
Lymphadenopathy [2]
Serum sickness [6]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]

ANTI-THYMOCYTE IMMUNOGLOBULIN (RABBIT)

Trade name: Thymoglobulin (Genzyme)
Indications: Immunosuppression in solid organ transplantation
Class: Immunosuppressant
Half-life: 2–3 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contraindicated in patients with history of allergy or anaphylaxis to rabbit proteins, or who have an acute viral illness.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Herpes simplex (5%)
Peripheral edema (see also edema) (34%)
Pruritus (itching) (<10%)
Rash (<10%)
Serum sickness [7]
Mucosal
Oral candidiasis (4%)
Cardiovascular
Hypertension (37%)
Tachycardia (27%)
Central Nervous System
Chills (57%)
Fever (pyrexia) (includes hyperpyrexia) (63%) [3]
Headache (40%)
Pain (46%)
Vertigo / dizziness (9%)
Endocrine/Metabolic
Hyperkalemia (27%)
Gastrointestinal/Hepatic
Abdominal pain (38%)
Diarrhea (37%)
Dysphagia (<10%)
Nausea (37%)
Vomiting (<10%)
Genitourinary
Urinary tract infection (18%)
Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (57%)
Lymphopenia (lymphocytopenia) / lymphocytes decreased (10%)
Neutropenia (neutrophils decreased) (10%)
Thrombocytopenia (37%) [3]
Neuromuscular/Skeletal
Asthenia / fatigue (27%)
Myalgia/Myopathy (<10%)
Renal
Renal failure [2]
Respiratory
Dyspnea / shortness of breath (28%)
Other
Infection (37%) [4]
Malignancies (<10%)

ANTIHEMOPHILIC FACTOR

Synonym: rFV111Fc
Trade names: Afstyla (CSL Behring), Eloctate (Biogen Idec), Kovaltry (Bayer)
Indications: Control and prevention of bleeding episodes in Hemophilia A
Class: Antihemorrhagic, Recombinant fusion protein
Half-life: 20 hours (adults)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Other
Adverse effects / adverse reactions [2]

APIXABAN

Trade name: Eliquis (Bristol-Myers Squibb)
Indications: Reduce the risk of stroke and systemic embolism in patients with nonvalvular atrial fibrillation
Class: Anticoagulant, Direct factor Xa inhibitor
Half-life: 5–12 hours
Clinically important, potentially hazardous interactions with: carbamazepine, darunavir, phenytoin, rifampin, St John's wort, tipranavir, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with active pathological bleeding.
Warning: DISCONTINUING ELIQUIS IN PATIENTS WITHOUT ADEQUATE CONTINUOUS ANTICOAGULATION INCREASES RISK OF STROKE

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Hematologic
Hemorrhage [15]
Other
Adverse effects / adverse reactions [5]

APOMORPHINE

Trade names: Apokyn (Ipsen), Uprima (AbbVie)
Indications: Parkinsonism, erectile dysfunction
Class: Dopamine receptor agonist
Half-life: 40 minutes
Clinically important, potentially hazardous interactions with: 5HT3 antagonists, alcohol, alosetron, antihypertensives, dolasetron, granisetron, levomepromazine, ondansetron, palonosetron, risperidone, vasodilators, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Apomorphine contains sodium metabisulfite which is capable of causing anaphylactoid reactions in patients with sulfite allergy.

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (>5%)
Diaphoresis (see also hyperhidrosis) (1–10%)
Edema / fluid retention (see also peripheral edema) (10%)
Nodular eruption [5]
Panniculitis [2]
Peripheral edema (see also edema) (10%)
Mucosal
Rhinorrhea (20%)
Cardiovascular
Angina (15%)
Chest pain (15%)
Congestive heart failure (>5%)
Central Nervous System
Confusion (10%)
Depression (>5%)
Dysgeusia (taste perversion) [2]
Dyskinesia (24–35%) [2]
Hallucinations (10%) [2]
Headache (>5%) [4]
Impulse control disorder [2]
Psychosis [2]
Somnolence (drowsiness) (35%) [2]
Syncope / fainting (2%)
Vertigo / dizziness (20%) [5]
Yawning (40%) [2]
Gastrointestinal/Hepatic
Nausea (30%) [6]
Vomiting (30%) [2]
Local
Infusion-site granuloma (4%)
Injection-site pruritus (2%)
Injection-site reaction (26%) [3]
Neuromuscular/Skeletal
Arthralgia (>5%)
Asthenia / fatigue (>5%)
Back pain (>5%)

APRACLONIDINE

Trade name: Iopidine (Alcon)
Indications: Post-surgical intraocular pressure elevation
Class: Adrenergic alpha2-receptor agonist
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: amitriptyline
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis [3]
Pruritus (itching) (10%)
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Dysgeusia (taste perversion) (3%)
Ocular
Conjunctivitis (conjunctival inflammation) (<5%)
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) (<3%)
Ocular itching / ocular pruritus (5–15%)
Xerophthalmia (dry eyes) (<5%)
Other
Allergic reactions [5]

APREMILAST

Trade name: Otezla (Celgene)
Indications: Psoriatic arthritis, plaque psoriasis
Class: Antipsoriatic agent, Phosphodiesterase inhibitor, Phosphodiesterase type 4 (PDE4) inhibitor
Half-life: 6–9 hours
Clinically important, potentially hazardous interactions with: carbamazepine, phenobarbital, phenytoin, rifampin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Central Nervous System
Depression [4]
Headache (5–6%) [34]
Endocrine/Metabolic
ALT increased [2]
Appetite decreased [2]
Weight loss (10–12%) [8]
Gastrointestinal/Hepatic
Abdominal pain (<2%) [5]
Diarrhea (8–9%) [42]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Gastrointestinal disorder / discomfort [2]
Loose stools / soft feces [2]
Nausea (7–9%) [41]
Vomiting (<3%) [11]
Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [5]
Respiratory
Nasopharyngitis (<3%) [22]
Upper respiratory tract infection (<4%) [17]
Other
Adverse effects / adverse reactions [6]
Infection [2]

APREPITANT

Trade name: Emend (Merck)
Indications: Prevention of postoperative and chemotherapy induced nausea and vomiting
Class: Antiemetic, CYP3A4 inhibitor, Neurokinin 1 receptor antagonist
Half-life: 9–13 hours
Clinically important, potentially hazardous interactions with: alprazolam, antifungal agents, astemizole, avanafil, betamethasone, carbamazepine, cisapride, clarithromycin, colchicine, conivaptan, corticosteroids, CYP2C9 substrates, CYP3A4 inducers or inhibitors, dasatinib, deferasirox, dexamethasone, diltiazem, docetaxel, eplerenone, estrogens, everolimus, fentanyl, grapefruit juice, halofantrine, ifosfamide, imatinib, irinotecan, itraconazole, ketoconazole, lumateperone, methylprednisolone, midazolam, mifepristone, naldemedine, nefazodone, neratinib, olaparib, oral contraceptives, paroxetine hydrochloride, phenobarbital, phenytoin, pimecrolimus, pimozide, progestins, ranolazine, rifampin, rifamycin derivatives, rifapentine, ritonavir, salmeterol, saxagliptin, St John's wort, telithromycin, terfenadine, tolbutamide, tolvaptan, trabectedin, triamcinolone, troleandomycin, vinblastine, vincristine, voriconazole, warfarin
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Fosaprepitant is a prodrug of aprepitant for injection. Aprepitant treatment is given along with a 5-HT3-receptor antagonist and dexamethasone.

Skin
Pruritus (itching) (8%)
Hair
Alopecia / hair loss (12%)
Mucosal
Mucocutaneous reactions (3%)
Stomatitis (oral mucositis) (3%)
Cardiovascular
Hypertension (2%)
Hypotension (6%)
Central Nervous System
Anorexia (6–10%) [4]
Encephalopathy (includes hepatic encephalopathy) [2]
Fever (pyrexia) (includes hyperpyrexia) (3–6%)
Headache (5–9%) [6]
Insomnia (2–3%)
Somnolence (drowsiness) [2]
Vertigo / dizziness (3–7%) [3]
Endocrine/Metabolic
ALT increased (6%)
AST increased (3%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (4%)
Dehydration (6%)
Gastrointestinal/Hepatic
Abdominal pain (5%) [3]
Constipation (9–10%) [10]
Diarrhea (<10%) [3]
Dyspepsia / functional dyspepsia / gastroparesis (5–6%)
Flatulence (4%)
Gastritis / pangastritis / gastric irritation (4%)
Nausea (6–13%) [2]
Vomiting (3–8%)
Genitourinary
Urinary tract infection (2%)
Hematologic
Anemia (3%)
Febrile neutropenia [3]
Neutropenia (neutrophils decreased) (3–6%) [4]
Local
Infusion-related reactions [2]
Infusion-site pain [2]
Neuromuscular/Skeletal
Asthenia / fatigue (5–18%) [11]
Otic
Tinnitus (4%)
Renal
Proteinuria (7%)
Other
Hiccups / singultus (11%) [9]
Infection [3]

APROBARBITAL

Trade name: Alurate (Roche)
Indications: Short-term sedation, sleep induction
Class: Barbiturate
Half-life: 14–34 hours
Clinically important, potentially hazardous interactions with: alcohol, brompheniramine, buclizine, dicumarol, ethanolamine, warfarin
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

APROTININ

Trade name: Trasylol (Bayer)
Indications: For prophylactic use to reduce blood loss in patients undergoing coronary artery bypass surgery
Class: Antifibrinolytic, Serine protease inhibitor
Half-life: 150 minutes
Clinically important, potentially hazardous interactions with: captopril, enalapril, lisinopril, quinapril
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: ANAPHYLACTIC OR ANAPHYLACTOID REACTIONS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [26]
Hypersensitivity [4]
Lipohypertrophy [2]
Peripheral edema (see also edema) (5%)
Rash (2%)
Cardiovascular
Arrhythmias (3–4%)
Atrial fibrillation (21%)
Atrial flutter (6%)
Cardiac failure (5%)
Chest pain (2%)

Extrasystoles (6%)
Hypertension (4%)
Hypotension (8%)
Myocardial infarction (6%)
Pericarditis (5%)
Phlebitis (1–10%)
Pulmonary edema / cardiogenic pulmonary edema (<2%)
Supraventricular tachycardia (4%)
Tachycardia (6%)
Ventricular tachycardia (5%)

Central Nervous System
Confusion (4%)
Fever (pyrexia) (includes hyperpyrexia) (15%)
Insomnia (3%)

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (2%)

Gastrointestinal/Hepatic
Constipation (4%)
Diarrhea (3%)
Nausea (11%)
Vomiting (3%)

Genitourinary
Urinary retention (3%)
Urinary tract infection (2%)

Hematologic
Anemia (2%)
Thrombosis (<2%)

Neuromuscular/Skeletal
Asthenia / fatigue (2%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure (<2%)
Renal function abnormal / renal dysfunction (3%)

Respiratory
Asthma (2%)
Dyspnea / shortness of breath (4%)
Hypoxia (see also hypoxemia) (2%)
Pleural effusion (7%)
Pneumothorax (4–5%)
Pulmonary toxicity (8%)

Other
Allergic reactions [2]
Death [2]
Infection (6%)

ARBUTAMINE

Trade name: GenESA (Sicor)
Indications: Diagnostic aid for coronary artery disease
Class: Adrenergic beta-receptor agonist
Half-life: 1.8 hours
Clinically important, potentially hazardous interactions with: abacavir, clidinium, clomipramine, desipramine, dicyclomine, digoxin, doxepin, flavoxate, glycopyrrolate, hyoscyamine, imipramine, mepenzolate, methantheline, nortriptyline, oxybutynin, procyclidine, propantheline, protriptyline, scopolamine, trihexyphenidyl, trimipramine
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (2%)
Flushing / rubefaction (3%)
Hot flashes / hot flushes (3%)

Central Nervous System
Pain (2%)
Paresthesias (2%)
Tremor (15%)

ARFORMOTEROL

Trade name: Brovana (Sunovion)
Indications: Chronic obstructive pulmonary disease including chronic bronchitis and emphysema
Class: Beta-2 adrenergic agonist, Bronchodilator
Half-life: 26 hours
Clinically important, potentially hazardous interactions with: aminophylline, beta blockers, MAO inhibitors, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Studies in asthma patients showed that long-acting beta$_2$-adrenergic agonists may increase the risk of asthma-related death. Contra-indicated in patients with asthma without use of a long-term asthma control medication.
Warning: ASTHMA-RELATED DEATH

Skin
Abscess (<2%)
Edema / fluid retention (see also peripheral edema) (<2%)
Herpes simplex (<2%)
Herpes zoster (<2%)
Peripheral edema (see also edema) (3%)
Pigmentation (<2%)
Rash (4%)
Xerosis / xeroderma (see also dry skin) (<2%)

Mucosal
Oral candidiasis (<2%)

Cardiovascular
Arteriosclerosis (<2%)
Atrioventricular block (<2%)
Chest pain (7%) [2]
Digitalis intoxication (<2%)
QT interval prolonged / QT prolongation (<2%)
Supraventricular tachycardia (<2%)

Central Nervous System
Agitation (<2%)
Fever (pyrexia) (includes hyperpyrexia) (<2%)
Headache [2]
Hypokinesia (<2%)
Insomnia [2]
Nervousness [3]
Pain (8%)
Paresthesias (<2%)
Somnolence (drowsiness) (<2%)
Tremor (<2%) [3]

Gastrointestinal/Hepatic
Nausea [2]

Genitourinary
Cystitis (<2%)
Nocturia (<2%)

Local
Injection-site pain (<2%)

Neuromuscular/Skeletal
Arthralgia (<2%)
Back pain (6%)
Leg cramps (4%)
Neck rigidity (<2%)

Ocular
Glaucoma (includes acute angle-closure glaucoma) (<2%)
Visual disturbances (<2%)

Respiratory
Bronchitis [3]
COPD (exacerbation) [3]
Dysphonia (includes voice disorders / voice changes) (<2%)
Dyspnea / shortness of breath (4%)
Influenza- ('flu)-like syndrome (3%)
Nasopharyngitis [3]
Sinusitis (4%) [2]

Other
Adverse effects / adverse reactions [2]
Allergic reactions (<2%)
Neoplasms (<2%)

ARGATROBAN

Trade name: Acova (GSK)
Indications: Heparin-induced thrombocytopenia
Class: Anticoagulant, Thrombin inhibitor
Half-life: 40–50 minutes
Clinically important, potentially hazardous interactions with: abacavir, anticoagulants, antiplatetlet agents, butabarbital, collagen (bovine)collagenase, dasatinib, ibritumomab, NSAIDs, pentosan, prostacyclin analogs, salicylates, thrombolytic agents, tositumomab & iodine^{131}
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contraindicated in patients with overt major bleeding.

Cardiovascular
Atrial fibrillation (3%)
Bradycardia / sinus bradycardia (5%)
Cardiac arrest (6%)
Chest pain (15%)
Hypotension (7–11%)
Myocardial infarction (4%)
Ventricular tachycardia (5%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (4–7%)
Headache (5%)
Neurotoxicity (2%)
Pain (5%)

Gastrointestinal/Hepatic
Abdominal pain (3–4%)
Diarrhea (6%)
Gastrointestinal bleeding (2%)
Hematemesis (3%)
Nausea (5–7%)
Vomiting (4–6%)

Genitourinary
Hematuria (2–12%)
Urinary tract infection (5%)

Hematologic
Bleeding (5%) [3]
Sepsis (6%)
Thrombosis [2]

Local
Injection-site bleeding (2–5%)

Neuromuscular/Skeletal
Back pain (8%)

Renal
Renal function abnormal / renal dysfunction (3%)
Respiratory
Cough (3%)
Dyspnea / shortness of breath (8%)
Hemoptysis (<3%)
Pneumonia (3%)
Other
Infection (4%)

ARIPIPRAZOLE

Trade names: Abilify (Bristol-Myers Squibb), Aristada (Alkermes)
Indications: Schizophrenia, bipolar I disorder, major depressive disorder, irritability associated with autistic disorder
Class: Antipsychotic, Mood stabilizer
Half-life: 75–94 hours
Clinically important, potentially hazardous interactions with: alcohol, atazanavir, carbamazepine, CYP3A4 inhibitors, efavirenz, itraconazole, ketoconazole, lopinavir, nelfinavir, paroxetine hydrochloride, quinidine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS
SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Rash (6%) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Mucosal
Sialorrhea (ptyalism; hypersalivation) (4–9%) [5]
Xerostomia (dry mouth) (5%) [7]
Cardiovascular
Arrhythmias [2]
Hypertension [3]
QT interval prolonged / QT prolongation [2]
Central Nervous System
Agitation (19%) [5]
Akathisia (8–13%) [38]
Anxiety (17%) [11]
Compulsions / obsessive-compulsive symptoms [4]
Dyskinesia [3]
Extrapyramidal symptoms [11]
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache (27%) [14]
Hypersexuality [2]
Hypothermia [3]
Impulse control disorder [5]
Insomnia (18%) [22]
Irritability [5]
Mania [2]
Neuroleptic malignant syndrome [14]
Neurotoxicity [2]
Parkinsonism [13]
Psychosis [2]
Restlessness [10]
Schizophrenia (exacerbation) [2]
Sedation [12]
Somnolence (drowsiness) (5–11%) [14]
Stroke / cerebral infarction [2]
Suicidal ideation [6]
Tardive syndrome / tardive dyskinesia [8]
Tic disorder [3]
Tremor (3%) [9]
Vertigo / dizziness [8]
Endocrine/Metabolic
Appetite increased [5]
Diabetes mellitus [2]
Galactorrhea [2]
Hyperprolactinemia [2]
SIADH [2]
Weight gain (2–30%) [37]
Gastrointestinal/Hepatic
Constipation (11%) [5]
Dyspepsia / functional dyspepsia / gastroparesis (9%)
Nausea (15%) [14]
Vomiting (11%) [6]
Genitourinary
Enuresis (urinary incontinence) [3]
Priapism [3]
Urinary retention [2]
Vaginitis (includes vulvitis) [2]
Hematologic
Neutropenia (neutrophils decreased) [5]
Local
Injection-site pain [10]
Neuromuscular/Skeletal
Asthenia / fatigue [5]
Ataxia [4]
Dystonia [14]
Pisa syndrome (pleurothotonus) [2]
Ocular
Oculogyric crisis [6]
Vision blurred (3–8%)
Respiratory
Cough (3%)
Nasopharyngitis [2]
Upper respiratory tract infection [3]
Other
Adverse effects / adverse reactions [6]
Death [3]
Hiccups / singultus [6]
Toothache (odontalgia) [2]

ARISTOLOCHIA

Family: Aristolochiaceae
Scientific names: *Aristolochia clematitis, Aristolochia serpentaria*
Indications: Aphrodisiac, anti-allergy, anticonvulsant, promotes menstruation
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Aristolochia has been reported to cause severe kidney damage or 'Chinese herb nephropathy'. Eighteen patients developed carcinomas of the bladder, ureter and/or renal pelvis.
Aristolochia is banned in the European Union and Japan.

Skin
Carcinoma [2]
Cutaneous toxicity / skin toxicity [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [9]

ARMODAFINIL

Trade name: Nuvigil (Cephalon)
Indications: Narcolepsy, obstructive sleep apnea, shift work sleep disorder
Class: Eugeroic
Half-life: 12–15 hours
Clinically important, potentially hazardous interactions with: cyclosporine, lumateperone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Central Nervous System
Anxiety [2]
Headache (14–23%) [10]
Insomnia (4–6%) [3]
Vertigo / dizziness (5%) [2]
Gastrointestinal/Hepatic
Diarrhea [3]
Nausea [2]
Other
Adverse effects / adverse reactions [2]

ARNICA

Family: Asteraceae; Compositae
Scientific names: *Arnica fulgens, Arnica montana, Arnica sororia*
Indications: Bruising, aches and sprains, insect bites, superficial phlebitis, diuretic, flavoring agent, found in hair tonic and shampoo
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Dermatitis [5]

ARSENIC

Synonyms: Arsenic trioxide (Trisenox); Potassium arsenite solution (Fowler's solution)
Trade name: Trisenox (Cephalon)
Indications: Acute promyelocytic leukemia, psoriasis (in the early 1900s), devitalization of pulp in dental procedures
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Trace element
Half-life: 10–14 hours
Clinically important, potentially hazardous interactions with: abacavir, acetazolamide, alfuzosin, aloe vera (gel, juice, leaf), amiodarone, amitriptyline, amphotericin B, artemether/lumefantrine, bretylium, chloroquine, chlorpromazine, ciprofloxacin, clomipramine, clozapine, disopyramide, diuretics, dronedarone, droperidol, enoxacin, erythromycin, fluphenazine, gadobutrol, garlic, gatifloxacin, ginger, ginseng, haloperidol, indacaterol, levofloxacin, levomepromazine, lithium, lomefloxacin, mesoridazine, moxifloxacin, nilotinib, norfloxacin, ofloxacin, phenothiazines, pimozide, procainamide, prochlorperazine, promethazine, QT prolonging antipsychotics, quetiapine, quinidine, quinine, quinolones, sotalol, sparfloxacin, tetrabenazine, thioridazine, toremifene, trifluoperazine, vandetanib,

vemurafenib, ziprasidone, zuclopenthixol
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: APL DIFFERENTIATION SYNDROME and ECG ABNORMALITIES

Skin
- Basal cell carcinoma [5]
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (20%)
- Bullous dermatosis [4]
- Carcinoma [20]
- Dermatitis (43%) [6]
- Edema / fluid retention (see also peripheral edema) (40%) [2]
- Erythema (13%)
- Erythema multiforme [4]
- Exanthems [5]
- Exfoliative dermatitis (5%) [7]
- Facial edema (8%)
- Fixed eruption [2]
- Flushing / rubefaction (10%)
- Gangrene [2]
- Herpes simplex (13%)
- Herpes zoster (8%) [4]
- Hyperhidrosis (see also diaphoresis) (13%)
- Hyperkeratosis (palms and soles) (40%) [5]
- Hypersensitivity (5%)
- Keratoses [20]
- Leukomelanosis [7]
- Lymphadenopathy (8%)
- Melanoma [5]
- Melanosis / melanocytosis [6]
- Merkel cell carcinoma [4]
- Pallor (10%)
- Palmar–plantar desquamation [16]
- Palmar–plantar hyperhidrosis [2]
- Palmar–plantar hyperkeratosis [20]
- Palmar–plantar punctate keratoses [2]
- Petechiae (8%)
- Pigmentation (8%) [15]
- Pityriasis rosea (from organic arsenic) [2]
- Pruritus (itching) (33%)
- Purpura (20%)
- Squamous cell carcinoma [15]
- Squamous cell carcinoma in situ (Bowen disease) [6]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
- Urticaria / hives (8%)
- Xerosis / xeroderma (see also dry skin) (15%)

Hair
- Alopecia / hair loss [4]

Nails
- Leukonychia striata (Mees' lines) [3]
- Nail pigmentation [2]

Mucosal
- Epistaxis (nosebleed) (25%)
- Oral candidiasis (5%)
- Oral mucosal eruption (8%) [3]
- Xerostomia (dry mouth) (8%)

Cardiovascular
- Arrhythmias [2]
- Chest pain (25%)
- Hypertension (10%)
- Hypotension (25%)
- Palpitation (10%)
- QT interval prolonged / QT prolongation (40%) [10]
- Tachycardia (55%)
- Torsades de pointes [3]

Central Nervous System
- Agitation (5%)
- Anorexia (23%)
- Anxiety (30%)
- Coma (5%)
- Confusion (5%)
- Depression (20%)
- Fever (pyrexia) (includes hyperpyrexia) (63%)
- Headache (60%)
- Insomnia (43%)
- Neurotoxicity [2]
- Pain (15%)
- Paresthesias (33%)
- Pseudotumor cerebri (see also intracranial hypertension) [2]
- Rigors (38%)
- Seizures (8%)
- Somnolence (drowsiness) (8%)
- Tremor (13%)
- Vertigo / dizziness (23%)

Endocrine/Metabolic
- Acidosis (includes lactic acidosis) (5%)
- ALT increased (20%)
- Appetite decreased (15%)
- AST increased (13%)
- Hyperglycemia (includes glucose increased) (45%)
- Hyperkalemia (18%)
- Hypocalcemia (10%)
- Hypoglycemia (see also insulin autoimmune syndrome) (8%)
- Hypokalemia (50%)
- Hypomagnesemia (45%)
- Weight gain (13%)
- Weight loss (8%)

Gastrointestinal/Hepatic
- Abdominal distension (8%)
- Abdominal pain (58%)
- Black stools / melena (8%)
- Constipation (28%) [2]
- Diarrhea (53%)
- Dyspepsia / functional dyspepsia / gastroparesis (10%)
- Fecal incontinence (8%)
- Gastrointestinal bleeding (8%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Loose stools / soft feces (10%)
- Nausea (75%) [2]
- Pancreatitis / acute pancreatitis [2]
- Vomiting (58%) [2]

Genitourinary
- Enuresis (urinary incontinence) (5%)
- Oliguria (5%)
- Vaginal bleeding (13%)

Hematologic
- Anemia (20%)
- Bleeding (8%)
- Febrile neutropenia (13%)
- Leukocytosis (elevated white blood cell (WBC) count) (50%)
- Neutropenia (neutrophils decreased) (10%) [2]
- Sepsis (5%)
- Thrombocytopenia (18%)

Local
- Injection-site edema (10%)
- Injection-site erythema (13%)
- Injection-site pain (20%)

Neuromuscular/Skeletal
- Arthralgia (33%)
- Asthenia / fatigue (63%)
- Back pain (18%)
- Bone or joint pain (23%)
- Myalgia/Myopathy (25%)
- Neck pain (13%)
- Osteonecrosis / avascular necrosis [8]
- Pain in extremities (13%)

Ocular
- Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) (5%)
- Ocular itching / ocular pruritus (10%)
- Vision blurred (10%)
- Xerophthalmia (dry eyes) (8%)

Otic
- Ear pain (8%)
- Tinnitus (5%)

Renal
- Renal failure (8%)

Respiratory
- Cough (65%)
- Dyspnea / shortness of breath (53%)
- Hemoptysis (8%)
- Hypoxia (see also hypoxemia) (23%)
- Nasopharyngitis (5%)
- Pharyngolaryngeal pain (35%)
- Pleural effusion (20%)
- Rhonchi (8%)
- Sinusitis (20%)
- Tachypnea / respiratory rate increased (8%)
- Upper respiratory tract infection (13%)
- Wheezing (13%)

Other
- Death [3]

ARTEMETHER/ LUMEFANTRINE

Trade name: Coartem (Novartis)
Indications: Acute, uncomplicated malaria infections due to *Plasmodium falciparum* in patients of 5kg bodyweight and above
Class: Antimalarial
Half-life: ~2 hours (artemether); 3–6 days (lumefantrine)
Clinically important, potentially hazardous interactions with: amiodarone, amitriptyline, amoxapine, antimalarials, antiretrovirals, arsenic, astemizole, atazanavir, atovaquone/proguanil, azithromycin, carbamazepine, ciprofloxacin, citalopram, clomipramine, conivaptan, CYP2D6 substrates, CYP3A4 inducers, inhibitors or substrates, darunavir, dasatinib, degarelix, delavirdine, disopyramide, dolasetron, duloxetine, flecainide, halofantrine, hormonal contraceptives, imipramine, indinavir, itraconazole, lapatinib, levofloxacin, levomepromazine, lopinavir, mefloquine, moxifloxacin, nelfinavir, norfloxacin, ofloxacin, paroxetine hydrochloride, pazopanib, phenytoin, pimozide, procainamide, quinidine, quinine, rifampin, risperidone, sotalol, St John's wort, telavancin, telithromycin, terfenadine, tipranavir, venlafaxine, voriconazole, vorinostat, ziprasidone, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Artemether/Lumefantrine tablets should not be used to treat severe malaria or to prevent malaria.

Skin
Abscess (<3%)
Impetigo (<3%)
Inflammation [3]
Pruritus (itching) (4%) [2]
Rash (3%) [6]
Urticaria / hives (<3%) [2]

Cardiovascular
Palpitation (18%) [2]

Central Nervous System
Agitation (<3%)
Anorexia (40%) [6]
Chills (23%)
Fever (pyrexia) (includes hyperpyrexia) (25–29%) [6]
Gait instability / postural instability (<3%)
Headache (56%) [9]
Hypoesthesia (numbness) (<3%)
Insomnia (5%) [2]
Mood changes (<3%)
Seizures [2]
Sleep disturbances (22%)
Sleep-related disorder [2]
Tremor (<3%)
Vertigo / dizziness (39%) [9]

Endocrine/Metabolic
ALT increased (<3%)
AST increased (<3%)
Hypokalemia (<3%)

Gastrointestinal/Hepatic
Abdominal pain (17%) [12]
Constipation (<3%)
Diarrhea (8%) [12]
Dyspepsia / functional dyspepsia / gastroparesis (<3%)
Dysphagia (<3%)
Gastroenteritis (<3%)
Hepatomegaly (6–9%)
Nausea [8]
Peptic ulceration (includes duodenal ulcer, esophageal ulcer) (<3%)
Vomiting [17]

Genitourinary
Hematuria (<3%)
Urinary tract infection (<3%)

Hematologic
Anemia (4–9%) [4]
Eosinophilia (<3%)
Hemolytic anemia [2]
Neutropenia (neutrophils decreased) [2]
Platelets decreased (<3%)

Neuromuscular/Skeletal
Arthralgia (34%)
Asthenia / fatigue (38%) [10]
Ataxia (<3%)
Back pain (<3%)
Myalgia/Myopathy (32%)

Ocular
Conjunctivitis (conjunctival inflammation) (<3%)
Nystagmus (<3%)

Otic
Ear infection (<3%)
Hearing impairment [2]
Tinnitus (<3%)

Renal
Proteinuria (<3%)

Respiratory
Asthma (<3%)
Bronchitis (<3%)
Cough (6–23%) [3]
Influenza (<3%)
Nasopharyngitis (4%)
Pharyngolaryngeal pain (<3%)
Pneumonia (<3%)
Rhinitis (4%)
Upper respiratory tract infection (<3%)

Other
Adverse effects / adverse reactions [5]
Death [2]
Infection (<3%)

ARTEMISIA

Family: Asteraceae
Scientific names: *Artemisia annua, Benflumetol, Co-artemether, Coartem, Riamet (Novartis)*
Indications: Fever, multidrug-resistant malaria, parasitemia, leukemia, colon cancer, diarrhea, schistosomiasis, worms, insect bites (topical)
Class: Antimalarial
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: This drug profile only refers to *Artemisia annua*, NOT *Artemisia absinthium*. The latter, the main constituent of absinthe, has serious side effects, including seizures, hallucinations, and death.
Derivatives of *Artemisia annua* are often used in combination with piperaquine, or mefloquine in treatment of malaria. Benflumetol, Coartem and Co-artemether are a combination of artemether-lumefantrine (see separate profile).

Skin
Pruritus (itching) [2]
Rash [2]

Central Nervous System
Headache [2]

Local
Injection-site pain [2]

ARTESUNATE

Trade name: Rtsun (Wiscon)
Indications: *Plasmodium falciparum* malaria
Class: Antimalarial
Half-life: 0.5 hours
Clinically important, potentially hazardous interactions with: efavirenz
Pregnancy category: N/A (Use carefully in first three trimesters of pregnancy)
Note: Artesunate therapy should be combined with other antimalarials (e.g. mefloquine) if given for less than 5 days.

Skin
Pruritus (itching) [4]

Cardiovascular
QT interval prolonged / QT prolongation [2]

Central Nervous System
Anorexia [3]
Extrapyramidal symptoms [3]
Fever (pyrexia) (includes hyperpyrexia) [4]
Headache [8]
Insomnia [2]
Vertigo / dizziness [12]

Gastrointestinal/Hepatic
Abdominal pain [5]
Diarrhea [6]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [6]
Vomiting [16]

Hematologic
Anemia [5]
Hemolysis [4]
Hemolytic anemia [2]
Neutropenia (neutrophils decreased) [2]

Neuromuscular/Skeletal
Asthenia / fatigue [7]
Myalgia/Myopathy [2]

Respiratory
Cough [4]

Other
Adverse effects / adverse reactions [4]

ARTICAINE

Trade names: Orabloc (Pierrel), Septanest (Septodont), Septocaine (Septodont)
Indications: Local, infiltrative, or conductive anesthesia in both simple and complex dental procedures
Class: Anesthetic; local
Half-life: 44 minutes
Clinically important, potentially hazardous interactions with: beta adrenergic blockers, MAO inhibitors, tricyclic antidepressants
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Contra-indicated in patients with a known hypersensitivity to sulfite. All named products above are articaine and epinephrine.

Skin
Facial edema [2]

Cardiovascular
Hypotension [2]

Central Nervous System
Headache [2]
Paresthesias [6]
Somnolence (drowsiness) [2]
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Nausea [3]

Local
Injection-site pain [3]

Other
Adverse effects / adverse reactions [2]

ARTICHOKE

Family: Asteraceae; Compositae
Scientific names: *Cynara cardunculus, Cynara scolymus*
Indications: Dyspepsia, hyperlipidemia, nausea, hangover, irritable bowel syndrome (IBS), liver dysfunction, hypoglycemia. Flavoring, sweetener, prebiotic
Class: Antiemetic, Carminative
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Jerusalem artichoke (*Helianthus tuberosus*) is a completely different plant.

Skin
Dermatitis [3]

ASCORBIC ACID

Synonym: Vitamin C
Indications: Prevention of scurvy
Class: Covid-19 putative drug, Vitamin
Half-life: N/A
Clinically important, potentially hazardous interactions with: deferoxamine, estradiol, penicillamine
Pregnancy category: A (the pregnancy category will be C if used in doses above the RDA)

Genitourinary
Hyperoxaluria [2]
Renal
Oxalate nephropathy [8]
Other
Side effects [2]

ASENAPINE

Trade name: Saphris (Merck)
Indications: Schizophrenia, bipolar disorder
Class: Antipsychotic
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: alcohol, amiodarone, chlorpromazine, CYP2D6 substrates and inhibitors, fluvoxamine, gatifloxacin, moxifloxacin, paroxetine hydrochloride, procainamide, QT prolonging drugs, quinidine, sotalol, thioridazine, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Peripheral edema (see also edema) (3%)
Mucosal
Oral numbness [4]
Salivary hypersecretion (2%)
Xerostomia (dry mouth) (2–3%)
Cardiovascular
Hypertension (2–3%) [2]
Central Nervous System
Akathisia (4–6%) [10]
Anxiety (4%)
Depression (2%) [3]
Dysgeusia (taste perversion) (3%) [4]
Extrapyramidal symptoms (6–10%) [11]
Headache (12%) [3]
Hypersomnia [2]
Hypoesthesia (numbness) (4–5%) [7]
Insomnia (6–15%) [3]
Irritability (2%)
Sedation [9]
Somnolence (drowsiness) (13–24%) [15]
Tardive syndrome / tardive dyskinesia [2]
Vertigo / dizziness (4–11%) [5]
Endocrine/Metabolic
Appetite increased (2–4%)
Weight gain (3–5%) [12]
Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation (5%)
Dyspepsia / functional dyspepsia / gastroparesis (3–4%)
Vomiting (5%)
Neuromuscular/Skeletal
Arthralgia (3%)
Asthenia / fatigue (3–4%)
Pain in extremities (2%)
Other
Adverse effects / adverse reactions [4]

ASFOTASE ALFA

Trade name: Strensiq (Alexion)
Indications: Perinatal/infantile-and juvenile-onset hypophosphatasia
Class: Enzyme replacement
Half-life: 5 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No available data)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%)
Calcification (4%)
Erythema (<10%)
Flushing / rubefaction (<10%)
Central Nervous System
Chills (<10%)
Fever (pyrexia) (includes hyperpyrexia) (<10%)
Headache (<10%)
Hypoesthesia (numbness) (oral) (<10%)
Irritability (<10%)
Pain (<10%)
Rigors (<10%)
Gastrointestinal/Hepatic
Nausea (<10%)
Vomiting (5%)
Local
Injection-site bruising (8%)
Injection-site edema (13%)
Injection-site erythema (41%)
Injection-site hemorrhage (<17%)
Injection-site induration (13%)
Injection-site lipoatrophy/lipohypertrophy (5–8%)
Injection-site pain (14%)
Injection-site papules and nodules (3%)
Injection-site pigmentation / injection-site discoloration (15%)
Injection-site pruritus (13%)
Injection-site reaction (9%) [2]
Other
Adverse effects / adverse reactions [2]

ASPARAGINASE

Synonym: L-asparaginase
Trade names: Elspar (Merck), Kidrolase (EUSA Pharma)
Indications: Acute lymphoblastic leukemia, lymphoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Enzyme
Half-life: 8–30 hours (intravenous); 34–49 hours (intramuscular)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (3–40%) [4]
Angioedema [3]
Cutaneous toxicity / skin toxicity [2]
Hypersensitivity (6–40%) [16]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives (<15%) [5]
Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (<10%)
Oral lesions (26%)
Parotitis [5]
Stomatitis (oral mucositis) (<10%)
Central Nervous System
Chills (>10%)
Coma (25%)
Depression (>10%)
Encephalopathy (includes hepatic encephalopathy) [2]
Fever (pyrexia) (includes hyperpyrexia) (>10%)
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [3]
Neurotoxicity [4]
Seizures (10–60%) [2]
Somnolence (drowsiness) (>10%)
Stroke / cerebral infarction [2]
Endocrine/Metabolic
Hyperglycemia (includes glucose increased) [4]
Hyperlipidemia [2]
Hypertriglyceridemia (includes triglycerides increased) [4]
Gastrointestinal/Hepatic
Abdominal pain (70%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Pancreatitis / acute pancreatitis (15%) [25]
Vomiting (50–60%)
Genitourinary
Azotemia (66%)
Hematologic
Sepsis [2]
Thrombosis [9]
Other
Adverse effects / adverse reactions [2]
Allergic reactions (15–35%) [2]

ASPARAGINASE *ERWINIA CHRYSANTHEMI*

Synonym: crisantaspase
Trade names: Erwinase (EUSA Pharma), Erwinaze (EUSA Pharma)
Indications: Acute lymphoblastic leukemia in patients who have developed hypersensitivity to *E. coli* derived aparaginase
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (17%)
Hypersensitivity (17%) [2]
Urticaria / hives (17%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (3%)

Endocrine/Metabolic
Hyperglycemia (includes glucose increased) (2%) [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<3%)
Nausea (2%)
Pancreatitis / acute pancreatitis (4%) [3]
Vomiting (2%)

Hematologic
Coagulopathy (includes disseminated intravascular coagulation / DIC) (3%)

Other
Allergic reactions [3]

ASPARTAME

Class: Sweetening agent
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: A (the pregnancy category will be C for women with phenylketonuria)
Note: Upon ingestion, aspartame is metabolized to formaldehyde in the body and has been reportedly associated with systemic contact dermatitis in patients exquisitely sensitive to formaldehyde.
Aspartame can be found in instant breakfasts, breath mints, cereals, sugar-free chewing gum, cocoa mixes, coffee beverages, frozen desserts, gelatin desserts, juice beverages, laxatives, multivitamins, milk drinks, pharmaceuticals and supplements, shake mixes, soft drinks, tabletop sweeteners, tea beverages, instant teas and coffees, topping mixes, wine coolers, yogurt.

Skin
Angioedema [2]
Panniculitis [3]
Urticaria / hives [4]

Other
Allergic reactions [2]

ASPIRIN

Synonyms: acetylsalicylic acid; ASA
Trade names: Aggrenox (Boehringer Ingelheim), Anacin (Wyeth), Ascriptin (Novartis) (Wallace), Darvon Compound (aaiPharma), Durlaza (New Haven), Ecotrin (GSK), Equagesic (Women First), Excedrin (Bristol-Myers Squibb), Fiorinal (Watson), Norgesic (3M), Soma Compound (MedPointe), Talwin Compound (Sanofi-Aventis), Yosprala (Aralez)
Indications: Pain, fever, inflammation
Class: Antiplatelet, Non-steroidal anti-inflammatory (NSAID), Salicylate
Half-life: 15–20 minutes
Clinically important, potentially hazardous interactions with: acemetacin, acenocoumarol, acetazolamide, amitriptyline, anagrelide, anticoagulants, azficel-t, bismuth, calcium hydroxylapatite, capsicum, celecoxib, cholestyramine, cilazapril, citalopram, desvenlafaxine, devil's claw, dexamethasone, dexibuprofen, dichlorphenamide, diclofenac, dicumarol, duloxetine, enoxaparin, etodolac, evening primrose, flunisolide, flurbiprofen, ginkgo biloba, ginseng, heparin, ibuprofen, iloprost, indomethacin, inotersen, ketoprofen, ketorolac, lumiracoxib, meloxicam, methotrexate, methyl salicylate, methylprednisolone, milnacipran, nilutamide, NSAIDs, paroxetine hydrochloride, phellodendron, piroxicam, prednisone, resveratrol, reteplase, rivaroxaban, sermorelin, sulfites, tinzaparin, tirofiban, tolmetin, triamcinolone, urokinase, valdecoxib, valproic acid, venlafaxine, verapamil, vilazodone, warfarin, zafirlukast
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
Aggrenox is aspirin and dipyridamole; Yosprala is aspirin and omeprazole.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%) [8]
Angioedema (<5%) [32]
Bullous dermatosis [4]
DRESS syndrome [2]
Erythema multiforme [9]
Erythema nodosum [9]
Erythroderma [2]
Exanthems [11]
Fixed eruption [22]
Hypersensitivity [5]
Lichenoid eruption / lichenoid reaction [2]
Linear IgA bullous dermatosis [2]
Pityriasis rosea [3]
Pruritus (itching) [6]
Psoriasis [3]
Purpura [8]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [14]
Urticaria / hives (<10%) [72]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [3]
Epistaxis (nosebleed) [2]
Nasal polyp [4]
Oral mucosal eruption [3]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [4]

Cardiovascular
Kounis syndrome / allergic angina syndrome / allergic myocardial infarction [2]

Central Nervous System
Stroke / cerebral infarction [2]

Gastrointestinal/Hepatic
Black stools / melena [3]
Gastritis / pangastritis / gastric irritation [2]
Gastrointestinal bleeding [8]
Gastrointestinal ulceration [7]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Pancreatitis / acute pancreatitis [2]

Hematologic
Bleeding [17]

Ocular
Periorbital edema (see also eyelid edema) [3]

Otic
Tinnitus [17]

Renal
Fanconi syndrome [2]

Respiratory
Asthma [10]
Pulmonary toxicity [2]
Rhinitis [3]
Sinusitis [2]

Other
Adverse effects / adverse reactions [9]
Allergic reactions [2]

ASTEMIZOLE

Trade name: Histeamen (Janssen)
Indications: Urticaria, pruritus, allergic rhinitis
Class: Histamine H1 receptor antagonist
Half-life: 20 hours
Clinically important, potentially hazardous interactions with: amiodarone, amphotericin B, aprepitant, artemether/lumefantrine, azithromycin, bepredil, bosentan, bretylium, cisapride, clarithromycin, darunavir, dasatinib, delavirdine, disopyramide, erythromycin, erythromycin fluconazole, fluoxetine, fluvoxamine, grapefruit juice, indinavir, itraconazole, ketoconazole, metronidazole, miconazole, nefazodone, nilotinib, paroxetine hydrochloride, pimozide, probucol, procainamide, quinidine, quinine, ritonavir, saquinavir, sertindole, sertraline, sotalol, SSRIs, terfenadine, troleandomycin, voriconazole, zileuton, ziprasidone
Pregnancy category: C
Note: Hismanal has been withdrawn in the USA as of 1999.

Skin
Urticaria / hives [2]

Mucosal
Xerostomia (dry mouth) [4]

Cardiovascular
Arrhythmias [2]
QT interval prolonged / QT prolongation [10]

Torsades de pointes [10]

Central Nervous System
Paresthesias [3]
Somnolence (drowsiness) [3]

ASTRAGALUS ROOT

Family: Fabaceae; Leguminosae
Scientific names: *Astragalus membranaceus, Astragalus mongholicus*
Indications: Arrhythmia, colds, upper respiratory infections, chronic fatigue syndrome, colitis, diabetes, hepatitis, hypotension, herpes simplex keratitis
Class: Antioxidant, Immune stimulant, Vasodilator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

ATAZANAVIR

Trade names: Evotaz (Bristol-Myers Squibb), Reyataz (Bristol-Myers Squibb)
Indications: HIV infection
Class: Antiretroviral, HIV-1 protease inhibitor
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: abiraterone, alfuzosin, amiodarone, antacids, aripiprazole, artemether/lumefantrine, atorvastatin, avanafil, bepridil, bosentan, buprenorphine, cabazitaxel, cabozantinib, calcifediol, cisapride, clarithromycin, colchicine, crizotinib, cyclosporine, darifenacin, dasatinib, dexlansoprazole, diltiazem, dofetilide, efavirenz, elbasvir & grazoprevir, eluxadoline, ergot derivatives, erlotinib, estrogens, etravirine, everolimus, famotidine, felodipine, fentanyl, fesoterodine, flibanserin, fluticasone propionate, garlic, glecaprevir & pibrentasvir, indinavir, irinotecan, itraconazole, ixabepilone, ketoconazole, lapatinib, lidocaine, lopinavir, lovastatin, maraviroc, marihuana, midazolam, mifepristone, naldemedine, nevirapine, nicardipine, nifedipine, olaparib, ombitasvir/paritaprevir/ritonavir, omeprazole, oral contraceptives, paclitaxel, pantoprazole, pazopanib, pimozide, posaconazole, proton-pump inhibitors, quetiapine, quinidine, quinine, rabeprazole, raltegravir, ranolazine, rifabutin, rifampin, rilpivirine, ritonavir, rivaroxaban, romidepsin, rosuvastatin, salmeterol, saquinavir, sildenafil, simeprevir, simvastatin, sirolimus, sofosbuvir/velpatasvir/voxilaprevir, solifenacin, sonidegib, St John's wort, sunitinib, tacrolimus, tadalafil, telaprevir, telithromycin, temsirolimus, tenofovir disoproxil, ticagrelor, tipranavir, trazodone, triazolam, tricyclic antidepressants, vardenafil, vemurafenib, verapamil, voriconazole, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Evotaz is atazanavir and cobicistat.

Skin
Jaundice (5–7%) [11]
Rash (3–20%) [7]

Cardiovascular
QT interval prolonged / QT prolongation [2]
Torsades de pointes [2]

Central Nervous System
Depression (2%)
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache (<6%) [3]
Insomnia (3%)
Neurotoxicity [2]
Pain (3%)
Vertigo / dizziness (3%)

Endocrine/Metabolic
ALT increased (3%)
AST increased (3%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (8%)
Hyperbilirubinemia [8]

Gastrointestinal/Hepatic
Abdominal pain (4%)
Cholelithiasis (gallstones in the gallbladder) [4]
Diarrhea (2%) [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea (6–14%) [4]
Vomiting (3–4%)

Genitourinary
Urolithiasis [4]

Hematologic
Neutropenia (neutrophils decreased) (5%)

Neuromuscular/Skeletal
Asthenia / fatigue (2%)
Back pain (2%)
Myalgia/Myopathy (4%)

Renal
Nephrolithiasis (formation of a kidney stone) [5]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [7]

Respiratory
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [5]
Infection (~50%)

ATENOLOL

Trade names: Beta-Adalat (Bayer), Kalten (BPC), Tenif (AstraZeneca), Tenoret 50 (AstraZeneca), Tenoretic (AstraZeneca), Tenormin (AstraZeneca)
Indications: Angina, hypertension, acute myocardial infarction
Class: Antiarrhythmic class II, Beta adrenergic blocker, Beta blocker
Half-life: 6–7 hours (adults)
Clinically important, potentially hazardous interactions with: alfuzosin, calcium channel blockers, cisplatin, clonidine, digitalis glycosides, diltiazem, disopyramide, epinephrine, indomethacin, reserpine, verapamil
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with sinus bradycardia, heart block greater than first degree, cardiogenic shock, or overt cardiac failure. Beta-Adalat and Tenif are atenolol and nifedipine. Kalten, Tenoret 50 and Tenoretic are atenolol and chlorthalidone. Chlorthalidone is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Warning: CESSATION OF THERAPY

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Necrosis (skin necrosis) [3]
Pruritus (itching) (<5%)
Psoriasis [7]
Raynaud's phenomenon [2]
Urticaria / hives [2]

Cardiovascular
Atrial fibrillation (5%) [2]
Atrial flutter (2%)
Bradycardia / sinus bradycardia (3–18%) [8]
Cardiac arrest (2%)
Cardiac failure (19%)
Heart block (5%)
Hypotension (25%) [2]
Postural hypotension (12%)
Supraventricular tachycardia (12%)
Ventricular tachycardia (16%)

Central Nervous System
Depression (12%)
Somnolence (drowsiness) (2%)
Stroke / cerebral infarction [2]
Syncope / fainting [2]
Vertigo / dizziness (15%)

Gastrointestinal/Hepatic
Diarrhea (3%)
Nausea (3%)

Neuromuscular/Skeletal
Asthenia / fatigue (26%)
Leg pain (3%)

Respiratory
Dyspnea / shortness of breath (6%)
Wheezing (3%)

Other
Adverse effects / adverse reactions [5]

ATEZOLIZUMAB

Trade name: Tecentriq (Genentech)
Indications: Locally advanced or metastatic urothelial carcinoma in patients having disease progression following platinum-containing chemotherapy, bladder cancer, non-small cell lung cancer
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Immune checkpoint inhibitor, Monoclonal antibody, Programmed death-ligand (PD-L1) inhibitor
Half-life: 27 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Lichenoid dermatitis [2]
Peripheral edema (see also edema) (18%) [2]
Pruritus (itching) (13%) [6]
Psoriasis [4]

Rash (15%) [7]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [2]

Cardiovascular
Hypertension [4]
Myocarditis [2]
Venous thromboembolism (>2%)

Central Nervous System
Encephalitis [10]
Fever (pyrexia) (includes hyperpyrexia) (21%) [4]

Endocrine/Metabolic
ALP increased (4%)
ALT increased (2%) [3]
Appetite decreased (26%) [8]
AST increased (2%) [7]
Dehydration (>2%)
Diabetes mellitus [4]
Diabetic ketoacidosis [3]
Hyperglycemia (includes glucose increased) (5%)
Hyperthyroidism (2%)
Hyponatremia (10%) [2]
Hypothyroidism (6%) [4]
Serum creatinine increased (3%)

Gastrointestinal/Hepatic
Abdominal pain (17%)
Cholangitis / sclerosing cholangitis [2]
Colitis [6]
Constipation (21%) [2]
Diarrhea (18%) [4]
Gastric obstruction (>2%)
Hepatitis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (25%) [6]
Vomiting (17%)

Genitourinary
Hematuria (14%)
Urinary tract infection (22%)

Hematologic
Anemia (8%) [4]
Hemolytic anemia [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (10%)
Sepsis (>2%)
Thrombocytopenia [2]

Local
Infusion-related reactions (3%)

Neuromuscular/Skeletal
Arthralgia (14%) [2]
Asthenia / fatigue (52%) [13]
Ataxia [3]
Back pain (15%)
Lambert-Eaton myasthenic syndrome [2]
Myalgia/Myopathy [2]
Myasthenia gravis [2]
Neck pain (15%)

Ocular
Uveitis / anterior uveitis / posterior uveitis / panuveitis [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (>2%)

Respiratory
Cough (14%) [3]
Dyspnea / shortness of breath (16%) [5]
Hypoxia (see also hypoxemia) [2]
Pneumonia (>2%) [2]
Pneumonitis (3%) [4]

Other
Adverse effects / adverse reactions [8]
Infection (38%)

ATOMOXETINE

Trade name: Strattera (Lilly)
Indications: Attention deficit hyperactivity disorder
Class: Anti-attention deficit hyperactivity disorder (anti-ADHD), Norepinephrine reuptake inhibitor
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: albuterol, amitriptyline, cinacalcet, citalopram, delavirdine, droperidol, duloxetine, levalbuterol, levomepromazine, linezolid, lisdexamfetamine, MAO inhibitors, moxifloxacin, paroxetine hydrochloride, sotalol, terbinafine, terbutaline, tipranavir, venlafaxine, viloxazine, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SUICIDAL IDEATION IN CHILDREN AND ADOLESCENTS

Skin
Pruritus (itching) (>2%)

Mucosal
Xerostomia (dry mouth) (>5%) [9]

Cardiovascular
Cardiotoxicity [3]
Tachycardia [2]

Central Nervous System
Aggression (includes anger) [3]
Anorexia [5]
Depression (>2%) [3]
Headache [9]
Hypomania [2]
Insomnia [7]
Irritability [8]
Mania [2]
Mood changes [5]
Nervousness [3]
Seizures [2]
Somnolence (drowsiness) [11]
Suicidal ideation [6]
Tic disorder [7]
Tremor (>2%) [2]
Vertigo / dizziness (>5%) [10]

Endocrine/Metabolic
Appetite decreased [27]
Weight loss [5]

Gastrointestinal/Hepatic
Abdominal pain [12]
Constipation [2]
Dyspepsia / functional dyspepsia / gastroparesis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [12]
Nausea [18]
Vomiting [10]

Genitourinary
Erectile dysfunction [4]
Urinary hesitancy [2]

Neuromuscular/Skeletal
Asthenia / fatigue [11]

Other
Adverse effects / adverse reactions [10]
Bruxism (teeth grinding) [2]

ATORVASTATIN

Trade names: Caduet (Pfizer), Lipitor (Pfizer), Liptruzet (Merck Sharpe & Dohme)
Indications: Hypercholesterolemia
Class: HMG-CoA reductase inhibitor / statin
Half-life: 14 hours
Clinically important, potentially hazardous interactions with: alcohol, aliskiren, amiodarone, amprenavir, antifungals, atazanavir, azithromycin, bexarotene, boceprevir, bosentan, ciprofibrate, clarithromycin, clopidogrel, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, conivaptan, cyclosporine, CYP3A4 inhibitors, dabigatran, danazol, daptomycin, darunavir, dasatinib, delavirdine, digoxin, diltiazem, dronedarone, efavirenz, elbasvir & grazoprevir, eltrombopag, erythromycin, estradiol, etravirine, everolimus, fenofibrate, fenofibric acid, fibrates, fluconazole, fosamprenavir, fusidic acid, gemfibrozil, glecaprevir & pibrentasvir, grapefruit juice, imatinib, imidazoles, indinavir, itraconazole, letermovir, liraglutide, lonafarnib, lopinavir, macrolide antibiotics, midazolam, nefazodone, nelfinavir, niacin, niacinamide, norethisterone, oral contraceptives, P-glycoprotein inhibitors, posaconazole, protease inhibitors, quinine, red rice yeast, rifampin, ritonavir, rivaroxaban, saquinavir, silodosin, St John's wort, telaprevir, telithromycin, tipranavir, topotecan, trabectedin, verapamil, voriconazole, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Caduet is atorvastatin and amlodipine; Liptruzet is atorvastatin and ezetimibe.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<2%)
Angioedema [4]
Bruise / bruising / contusion / ecchymosis (ecchymoses) (<2%)
Cutaneous toxicity / skin toxicity [2]
Dermatitis (<2%)
Dermatomyositis [4]
Diaphoresis (see also hyperhidrosis) (<2%)
Eczema / eczematous reaction / eczematous eruption (<2%)
Edema / fluid retention (see also peripheral edema) (<2%)
Facial edema (<2%)
Jaundice [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Lymphocytic infiltration / Jessner lymphocytic infiltration [2]
Petechiae (<2%)
Photosensitivity (<2%)
Pruritus (itching) (<2%)
Rash (>3%) [2]
Seborrhea (<2%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Ulcerations (<2%)
Urticaria / hives (<2%)

Xerosis / xeroderma (see also dry skin) (<2%)

Hair
Alopecia / hair loss (<2%)

Mucosal
Cheilitis (inflammation of the lips) (<2%)
Glossitis (inflammation of the tongue) (<2%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (<2%)
Stomatitis (oral mucositis) (<2%)

Cardiovascular
Hypotension [2]
Myocarditis [2]

Central Nervous System
Ageusia (taste loss) / taste disorder (<2%)
Cognitive impairment [2]
Depression [3]
Dysgeusia (taste perversion) (<2%)
Headache [5]
Neurotoxicity [2]
Paresthesias (<2%)
Parosmia (<2%)
Vertigo / dizziness [2]

Endocrine/Metabolic
ALT increased [3]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [5]
Diabetes mellitus [2]
Gynecomastia (<2%)

Gastrointestinal/Hepatic
Cholelithiasis (gallstones in the gallbladder) [2]
Diarrhea (5–14%)
Hepatitis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [11]
Nausea (4–7%)
Pancreatitis / acute pancreatitis [8]

Genitourinary
Urinary tract infection (4–8%)

Neuromuscular/Skeletal
Arthralgia (4–12%)
Asthenia / fatigue [5]
Back pain [3]
Muscle spasm [2]
Myalgia/Myopathy (3–8%) [37]
Necrotizing myopathy / immune-mediated necrotizing myopathy [15]
Pain in extremities (6%)
Rhabdomyolysis [44]
Tendinopathy/Tendon rupture [2]

Otic
Hearing loss (hypoacusis) [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]

Respiratory
Cough [2]
Nasopharyngitis (4–13%)

Other
Adverse effects / adverse reactions [11]
Allergic reactions (<2%)
Death [7]
Multiorgan failure [2]

ATOVAQUONE

Trade names: Mepron (GSK), Wellvone (GSK)
Indications: *Pneumocystis carinii* infection
Class: Antimalarial, Antimicrobial, Antiprotozoal
Half-life: 1.5–4 days
Clinically important, potentially hazardous interactions with: efavirenz, etoposide, histamine, hypoglycemic agents, indinavir, lopinavir, metoclopramide, rifabutin, rifampin, rifapentine, ritonavir, tetracycline, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (10%)
Pruritus (itching) (11%) [2]
Rash (23%) [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Mucosal
Oral candidiasis (<10%)

Central Nervous System
Depression (>10%)
Dysgeusia (taste perversion) (3%)
Fever (pyrexia) (includes hyperpyrexia) (14–40%)
Headache (16–31%)
Insomnia (10–19%)
Pain (>10%)

Gastrointestinal/Hepatic
Abdominal pain (4–21%)
Diarrhea (9–42%) [3]
Nausea (21–32%) [4]
Vomiting (14–22%) [2]

Neuromuscular/Skeletal
Asthenia / fatigue (8–31%)
Myalgia/Myopathy (>10%)

Respiratory
Cough (increased) (14–25%)
Dyspnea / shortness of breath (21–25%)
Influenza- ('flu)-like syndrome (>10%)
Rhinitis (5–24%)
Sinusitis (7–10%)

Other
Adverse effects / adverse reactions [3]
Infection (18–22%)

ATOVAQUONE/ PROGUANIL

Trade name: Malarone (GSK)
Indications: Malaria prophylaxis and treatment
Class: Antimalarial
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: artemether/lumefantrine, dapsone, etoposide, hypoglycemic agents, indinavir, metoclopramide, phenothiazines, rifabutin, rifampin, ritonavir, tetracycline, typhoid vaccine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

Skin
Erythema multiforme [2]
Pruritus (itching) (<10%)

Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (6%) [3]

Central Nervous System
Abnormal dreams (7%)
Anorexia (5%)
Headache (10%) [4]
Insomnia (3%)
Vertigo / dizziness (5%) [3]

Gastrointestinal/Hepatic
Abdominal pain (17%) [5]
Diarrhea (8%)
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Gastritis / pangastritis / gastric irritation (3%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (12%)
Vomiting (12%) [2]

Neuromuscular/Skeletal
Asthenia / fatigue (8%)

Ocular
Vision impaired (2%)

Respiratory
Cough [3]

Other
Adverse effects / adverse reactions [3]

ATRACURIUM

Trade name: Tracrium (AbbVie)
Indications: Neuromuscular blockade, endotracheal intubation
Class: Non-depolarizing neuromuscular blocker
Half-life: 20 minutes
Clinically important, potentially hazardous interactions with: amikacin, aminoglycosides, anesthetics, antibiotics, gentamicin, halothane, kanamycin, neomycin, piperacillin, streptomycin, tobramycin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [12]
Flushing / rubefaction (<10%) [2]
Rash [2]

Cardiovascular
Hypotension [4]

Ocular
Periorbital edema (see also eyelid edema) [2]

Other
Adverse effects / adverse reactions [2]
Allergic reactions [2]

ATROPINE SULFATE

Trade name: Lomotil (Pfizer)
Indications: Salivation, sinus bradycardia, uveitis, peptic ulcer
Class: Muscarinic antagonist
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: anticholinergics, zuclopenthixol
Pregnancy category: C
Note: Many of the trade name drugs for atropine sulfate contain phenobarbital, scopolamine,

hyoscyamine, hydrocodone, methenamine, etc.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Dermatitis [3]
Erythema multiforme [2]
Photosensitivity (<10%)
Mucosal
Xerostomia (dry mouth) (>10%) [4]
Cardiovascular
Arrhythmias [2]
Atrial fibrillation [2]
Bradycardia / sinus bradycardia [3]
Tachycardia [5]
Central Nervous System
Confusion [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [3]
Local
Injection-site irritation (>10%)
Ocular
Amblyopia [5]
Dilated pupils [2]
Periocular dermatitis [3]
Photophobia [2]
Vision blurred [3]
Other
Allergic reactions [2]
Central anticholinergic syndrome [2]

AVANAFIL

Trade name: Stendra (Vivus)
Indications: Erectile dysfunction
Class: Phosphodiesterase type 5 (PDE5) inhibitor
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: alcohol, alpha blockers, amprenavir, antihypertensives, aprepitant, atazanavir, clarithromycin, diltiazem, erythromycin, fluconazole, fosamprenavir, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, nitrates, ritonavir, saquinavir, strong CYP3A4 inhibitors, telithromycin, verapamil, viloxazine
Pregnancy category: C (Not indicated for use in women)
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Contra-indicated in patients using any form of nitrates.

Skin
Facial flushing [2]
Flushing / rubefaction (3–10%) [11]
Rash (<2%)
Mucosal
Nasal congestion (<3%) [7]
Cardiovascular
Hypertension (<2%)
Central Nervous System
Headache (5–12%) [10]
Vertigo / dizziness (<2%) [3]
Gastrointestinal/Hepatic
Constipation (<2%)
Diarrhea (<2%)
Dyspepsia / functional dyspepsia / gastroparesis (<2%) [5]
Nausea (<2%)
Neuromuscular/Skeletal
Arthralgia (<2%)
Asthenia / fatigue [2]
Back pain (<3%) [3]
Respiratory
Bronchitis (<2%)
Influenza (<2%)
Nasopharyngitis (<5%) [5]
Sinusitis (<2%) [2]
Upper respiratory tract infection (<3%)
Other
Adverse effects / adverse reactions [5]

AVELUMAB

Trade name: Bavencio (Merck Serono)
Indications: Metastatic Merkel cell carcinoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Immune checkpoint inhibitor, Monoclonal antibody, Programmed death-ligand (PD-L1) inhibitor
Half-life: 6 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Peripheral edema (see also edema) (20%)
Pruritus (itching) (10%)
Rash (22%)
Cardiovascular
Hypertension (13%)
Central Nervous System
Headache (10%)
Vertigo / dizziness (14%)
Endocrine/Metabolic
ALT increased (20%)
Appetite decreased (20%)
AST increased (34%) [2]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [3]
Hyperamylasemia (8%)
Hyperbilirubinemia (6%)
Hyperglycemia (includes glucose increased) (>10%)
Hyperlipasemia (14%)
Thyroid dysfunction (6%)
Weight loss (15%)
Gastrointestinal/Hepatic
Abdominal pain (16%)
Colitis (2%)
Constipation (17%)
Diarrhea (23%) [2]
Nausea (22%) [3]
Vomiting (13%)
Hematologic
Anemia (35%)
Lymphopenia (lymphocytopenia) / lymphocytes decreased (49%)
Neutropenia (neutrophils decreased) (6%)
Thrombocytopenia (27%)
Local
Infusion-related reactions (22%) [6]
Neuromuscular/Skeletal
Arthralgia (16%)
Asthenia / fatigue (50%) [5]
Bone or joint pain (32%)
Respiratory
Cough (18%)
Dyspnea / shortness of breath (11%)
Other
Adverse effects / adverse reactions [5]
Death [2]
Immune-related adverse effect [2]

AXITINIB

Trade name: Inlyta (Pfizer)
Indications: Advanced renal cell carcinoma (after failure of one prior systemic therapy)
Class: Angiogenesis inhibitor / antiangiogenic agent, Tyrosine kinase inhibitor, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 2–6 hours
Clinically important, potentially hazardous interactions with: ketoconazole, rifampin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Cutaneous collagenous vasculopathy [2]
Erythema (2%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (27%) [20]
Pruritus (itching) (7%)
Rash (13%) [3]
Xerosis / xeroderma (see also dry skin) (10%)
Hair
Alopecia / hair loss (4%) [2]
Mucosal
Mucosal inflammation (15%) [2]
Stomatitis (oral mucositis) (15%) [3]
Cardiovascular
Hypertension (40%) [40]
Central Nervous System
Anorexia [5]
Dysgeusia (taste perversion) (11%)
Headache (14%) [4]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Endocrine/Metabolic
ALT increased (22%) [3]
Appetite decreased (34%) [9]
AST increased [2]
Dehydration [2]
Hyperthyroidism [2]
Hyponatremia [2]
Hypothyroidism (19%) [8]
Serum creatinine increased [2]
Thyroid dysfunction [2]
Weight loss (25%) [3]
Gastrointestinal/Hepatic
Abdominal pain (14%)
Constipation (20%) [2]
Diarrhea (55%) [27]
Dyspepsia / functional dyspepsia / gastroparesis (10%)
Gastrointestinal disorder / discomfort [3]
Nausea (32%) [10]
Vomiting (24%) [6]
Hematologic
Anemia [2]
Hemorrhage (16%)
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [2]

Thrombotic complications (3%)

Neuromuscular/Skeletal
Arthralgia (15%) [2]
Asthenia / fatigue (39%) [31]
Pain in extremities (13%)

Renal
Proteinuria (11%) [5]

Respiratory
Cough (15%) [3]
Dysphonia (includes voice disorders / voice changes) (>20%) [13]
Dyspnea / shortness of breath (15%) [4]

Other
Adverse effects / adverse reactions [5]
Death [2]

AZACITIDINE

Synonym: Azacytidine
Trade name: Vidaza (Celgene)
Indications: Myelodysplastic syndromes, refractory anemia
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Cytosine analog
Half-life: 40–56 minutes
Clinically important, potentially hazardous interactions with: BCG vaccine, denosumab, echinacea, leflunomide, natalizumab, pimecrolimus, sipuleucel-T, tacrolimus, trastuzumab, vaccines
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with advanced malignant hepatic tumors.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<5%)
Bruise / bruising / contusion / ecchymosis (ecchymoses) (31%)
Cellulitis (8%)
Cutaneous toxicity / skin toxicity [2]
Diaphoresis (see also hyperhidrosis) (11%)
Edema / fluid retention (see also peripheral edema) (14%)
Erythema (7–17%)
Hematoma (9%)
Herpes simplex (9%)
Hypersensitivity (<5%)
Induration (<5%)
Lymphoproliferative disease / lymphoproliferative disorder [2]
Nodular eruption (5%)
Pallor (16%)
Peripheral edema (see also edema) (19%)
Petechiae (11–24%)
Pruritus (itching) (12%)
Pyoderma gangrenosum (<5%) [2]
Rash (10–14%) [4]
Sweet's syndrome [9]
Urticaria / hives (6%)
Xerosis / xeroderma (see also dry skin) (5%)

Mucosal
Gingival bleeding (10%)
Oral bleeding (5%)
Stomatitis (oral mucositis) (8%)
Tongue ulceration (5%)

Cardiovascular
Arrhythmias [2]
Atrial fibrillation (<5%)
Cardiac failure (<5%)
Cardiomyopathy (<5%)
Cardiotoxicity [3]
Chest pain (5–16%) [4]
Congestive heart failure (<5%)
Hypertension (9%)
Hypotension (7%) [2]
Orthostatic hypotension (<5%)
Pericardial effusion [3]
Pericarditis [2]
QT interval prolonged / QT prolongation [2]
Tachycardia [3]

Central Nervous System
Anorexia (21%)
Anxiety (5–13%)
Cerebral hemorrhage (<5%)
Depression (12%)
Fever (pyrexia) (includes hyperpyrexia) (30–52%) [4]
Headache (22%)
Insomnia (9–11%)
Intracranial hemorrhage (<5%)
Pain (11%)
Seizures (<5%)
Syncope / fainting [2]
Vertigo / dizziness (19%)

Endocrine/Metabolic
Dehydration (<5%)
Hyperglycemia (includes glucose increased) [2]
Hypokalemia (6%)
Weight loss (8%)

Gastrointestinal/Hepatic
Abdominal pain (12–13%)
Black stools / melena (<5%)
Cholecystitis (<5%)
Constipation (34–50%) [4]
Diarrhea (36%) [4]
Dyspepsia / functional dyspepsia / gastroparesis (6%)
Dysphagia (5%)
Gastrointestinal bleeding (<5%)
Loose stools / soft feces (6%)
Nausea (48–71%) [7]
Vomiting (27–54%) [4]

Genitourinary
Hematuria (6%)
Urinary tract infection (9%)

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') (<5%)
Anemia (51–70%) [5]
Bleeding [3]
Cytopenia [4]
Febrile neutropenia (14–16%) [8]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (18–48%) [2]
Myelosuppression / bone marrow suppression / myelotoxicity [3]
Neutropenia (neutrophils decreased) (32–66%) [12]
Pancytopenia (includes bicytopenia) (<5%)
Splenomegaly (<5%)
Thrombocytopenia (66–70%) [8]

Local
Injection-site bruising (5–14%)
Injection-site edema (5%)
Injection-site erythema (35–43%)
Injection-site hematoma (6%)
Injection-site pain (19–23%)
Injection-site pigmentation / injection-site discoloration (5%)
Injection-site pruritus (7%)
Injection-site purpura (14%)
Injection-site reaction (14–29%) [7]

Neuromuscular/Skeletal
Arthralgia (22%) [2]
Asthenia / fatigue (7–36%) [5]
Back pain (19%)
Bone or joint pain (<5%)
Myalgia/Myopathy (16%)
Neck pain (<5%)

Ocular
Ocular hemorrhage (<5%)

Renal
Renal failure (<5%)

Respiratory
Cough (30%)
Dyspnea / shortness of breath (14–29%) [2]
Hemoptysis (<5%)
Nasopharyngitis (15%)
Pharyngolaryngeal pain (6%)
Pneumonia (11%) [2]
Pneumonitis (<5%) [7]
Pulmonary toxicity [2]
Respiratory distress (<5%)
Rhinitis (6%)
Upper respiratory tract infection (9–13%)

Other
Adverse effects / adverse reactions [6]
Death [5]
Infection (<5%) [9]
Neoplasms (<5%)

AZATADINE

Trade names: Optimine (Schering), Trinalin (Schering)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 9 hours
Clinically important, potentially hazardous interactions with: barbiturates, chloral hydrate, paraldehyde, phenylthiazines, zolpidem
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Mucosal
Xerostomia (dry mouth) (<10%)

AZATHIOPRINE

Trade names: Azasan (aaiPharma), Imuran (Prometheus)
Indications: Lupus nephritis, psoriatic arthritis, rheumatoid arthritis, autoimmune diseases, as an adjunct for the prevention of rejection in kidney transplant patients
Class: Antimetabolite, Disease-modifying antirheumatic drug (DMARD), Immunosuppressant, Purine analog
Half-life: 12 minutes
Clinically important, potentially hazardous interactions with: allopurinol, aminosalicylates, balsalazide, benazepril, captopril, chlorambucil, co-trimoxazole, cyclophosphamide, cyclosporine, enalapril, febuxostat, fosinopril, Hemophilus B vaccine, imidapril, lisinopril, mesalamine, mycophenolate, natalizumab, olsalazine, quinapril,

ramipril, ribavirin, sulfamethoxazole, tofacitinib, trimethoprim, typhoid vaccine, vaccines, warfarin, yellow fever vaccine
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Patients receiving immunosuppressants, including azathioprine, are at increased risk of developing lymphoma and other malignancies, particularly of the skin.
Warning: MALIGNANCY

Skin
Acanthosis nigricans [2]
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
AGEP [2]
Angioedema [2]
Basal cell carcinoma [2]
Carcinoma [3]
Cutaneous toxicity / skin toxicity [3]
Dermatitis [4]
Erythema gyratum repens [2]
Erythema multiforme [2]
Erythema nodosum [5]
Exanthems [10]
Herpes simplex [3]
Herpes zoster [8]
Hypersensitivity [29]
Kaposi's sarcoma [14]
Lymphoproliferative disease / lymphoproliferative disorder [4]
Neutrophilic dermatosis [4]
Nevi [3]
Pellagra [2]
Porokeratosis [4]
Rash (<10%) [11]
Scabies [5]
Squamous cell carcinoma [11]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Sweet's syndrome [17]
Tinea [3]
Tumors [8]
Urticaria / hives [5]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [5]
Verrucae vulgaris / warts / verrucae [3]
Hair
Alopecia / hair loss [14]
Anagen effluvium (see also alopecia / hair loss) [2]
Nails
Onychomycosis [2]
Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Sialadenitis [3]
Stomatitis (oral mucositis) [3]
Cardiovascular
Atrial fibrillation [3]
Central Nervous System
Chills (>10%)
Encephalopathy (includes hepatic encephalopathy) [2]
Fever (pyrexia) (includes hyperpyrexia) [8]
Headache [3]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Hepatitis [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [29]
Nausea [8]
Pancreatitis / acute pancreatitis [49]
Vomiting [4]
Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [2]
Anemia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [18]
Myelosuppression / bone marrow suppression / myelotoxicity [17]
Neutropenia (neutrophils decreased) [2]
Pancytopenia (includes bicytopenia) [7]
Pure red cell aplasia [3]
Thrombocytopenia [6]
Neuromuscular/Skeletal
Arthralgia [5]
Asthenia / fatigue [7]
Myalgia/Myopathy [2]
Respiratory
Influenza- ('flu)-like syndrome [2]
Pneumonitis [2]
Pulmonary toxicity [3]
Other
Adverse effects / adverse reactions [11]
Allergic reactions [5]
Death [2]
Infection [9]
Malignancies [2]
Neoplasms [2]

AZELASTINE

Trade names: Astelin (MedPointe), Optivar (MedPointe)
Indications: Allergic rhinitis
Class: Histamine H1 receptor antagonist
Half-life: 22 hours
Clinically important, potentially hazardous interactions with: barbiturates, chloral hydrate, paraldehyde, phenothiazines, zolpidem
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Dermatitis (<2%)
Eczema / eczematous reaction / eczematous eruption (<2%)
Flushing / rubefaction (<2%)
Folliculitis (<2%)
Furunculosis (<2%)
Herpes simplex (<2%)
Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (<2%)
Glossitis (inflammation of the tongue) (<2%)
Stomatitis (oral mucositis) (ulcerative) (<2%)
Xerostomia (dry mouth) [2]
Central Nervous System
Ageusia (taste loss) / taste disorder (<2%)
Dysgeusia (taste perversion) [10]
Hyperesthesia (<2%)
Endocrine/Metabolic
Mastodynia (<2%)
Neuromuscular/Skeletal
Myalgia/Myopathy (2%)
Other
Allergic reactions (<2%)

AZFICEL-T

Trade name: IaViv (Fibrocell)
Indications: Correction of moderate to severe nasolabial folds
Class: Dermal filler
Half-life: N/A
Clinically important, potentially hazardous interactions with: aniticoagulants, aspirin, NSAIDs
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Local
Injection-site ecchymoses (11%)
Injection-site edema (4–14%)
Injection-site erythema (16%)
Injection-site pain (6%)

AZILSARTAN

Trade name: Edarbi (Takeda)
Indications: Hypertension
Class: Angiotensin receptor antagonist (blocker), Antihypertensive
Half-life: 11 hours
Clinically important, potentially hazardous interactions with: NSAIDs
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: FETAL TOXICITY

Cardiovascular
Hypotension [3]
Central Nervous System
Headache [10]
Vertigo / dizziness [11]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Dyslipidemia [3]
Serum creatinine increased [3]
Gastrointestinal/Hepatic
Diarrhea [3]
Neuromuscular/Skeletal
Asthenia / fatigue [3]
Back pain [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Nasopharyngitis [3]
Upper respiratory tract infection [2]

AZITHROMYCIN

Trade names: AzaSite (Merck), Zithromax (Pfizer)
Indications: Infections of the upper and lower respiratory tract, skin infections, sexually transmitted diseases, conjunctivitis (ophthalmic preparations only)
Class: Antibiotic, Antibiotic; macrolide, Antimicrobial, Covid-19 putative drug
Half-life: 68 hours
Clinically important, potentially hazardous interactions with: aminophylline, antacids, artemether/lumefantrine, astemizole, atorvastatin, betrixaban, bromocriptine, cabergoline, colchicine, coumarins, cyclosporine, digoxin, droperidol, ergotamine, fluvastatin, lovastatin, methysergide, mizolastine, oral typhoid vaccine, pimozide, pravastatin, quetiapine, reboxetine, rifabutin, ritonavir, simvastatin, venetoclax, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: AzaSite is for topical ophthalmic use only (see reactions noted [Ophth] below).

Skin
- AGEP [3]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
- Churg-Strauss syndrome [2]
- DRESS syndrome [4]
- Erythema [2]
- Exanthems [3]
- Hypersensitivity [3]
- Jarisch–Herxheimer reaction [2]
- Pruritus (itching) [3]
- Rash [Ophth] (2–10%) [7]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [9]
- Urticaria / hives [Ophth] [2]

Cardiovascular
- Bradycardia / sinus bradycardia [2]
- Cardiotoxicity [8]
- QT interval prolonged / QT prolongation [12]
- Torsades de pointes [5]

Central Nervous System
- Anorexia (2–10%)
- Headache [3]
- Vertigo / dizziness [2]

Gastrointestinal/Hepatic
- Abdominal pain (2–10%) [4]
- Diarrhea (4–9%) [19]
- Gastrointestinal disorder / discomfort [3]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]
- Nausea (7%) [9]
- Vanishing bile duct syndrome / ductopenia [2]
- Vomiting (2–10%) [6]

Genitourinary
- Vaginitis (includes vulvitis) (2–10%)

Local
- Injection-site erythema (2–10%)
- Injection-site pain (2–10%) [3]

Ocular
- Keratitis [2]

Otic
- Hearing loss (hypoacusis) [4]
- Tinnitus [2]

Other
- Adverse effects / adverse reactions [15]
- Death [2]
- Hiccups / singultus [2]
- Side effects [2]

AZTREONAM

Trade names: Azactam (Bristol-Myers Squibb), Cayston (Gilead)
Indications: Aerobic gram-negative bacillary infections, improve respiratory symptoms in cystic fibrosis patients
Class: Antibiotic, Antibiotic; beta-lactam, Antimicrobial
Half-life: 1.4–2.2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Safety and effectiveness have not been established in pediatric patients <7 years of age, patients with FEV1 <25% or >75% predicted, or patients colonized with *Burkholderia cepacia*.

Skin
- Exanthems [4]
- Hypersensitivity [2]
- Pruritus (itching) [5]
- Purpura [2]
- Rash (<10%)
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Urticaria / hives [5]

Mucosal
- Nasal congestion [2]

Cardiovascular
- Thrombophlebitis (<10%)

Central Nervous System
- Headache [3]

Gastrointestinal/Hepatic
- Diarrhea [3]
- Nausea [2]

Local
- Injection-site pain (<10%)
- Injection-site phlebitis (<10%)

Respiratory
- Cough [3]
- Dyspnea / shortness of breath [2]
- Wheezing [2]

BACAMPICILLIN

Synonym: carampicillin
Indications: Respiratory tract infections, urinary tract infections, gonorrhea
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 65 minutes
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, demeclocycline, doxycycline, imipenem/cilastatin, methotrexate, minocycline, oxytetracycline, tetracycline
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
- Exanthems [3]

BACITRACIN

Trade names: Baciguent (Pharmacia & Upjohn), Baciim (X-Gen), Cortisporin (Monarch), Neosporin (Johnson & Johnson)
Indications: Bacterial infections
Class: Antibiotic, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: clioquinol, colistin, kanamycin, neomycin, pyridostigmine, rocuronium, streptomycin
Pregnancy category: C
Note: Bacitracin is supplied in many forms and vehicles: intramuscular; topical, ophthalmic, otic, aerosols, for irrigations. Many bacitracin ointments are combinations with neomycin and polymyxin B.

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [21]
- Contact dermatitis [11]
- Facial edema (<10%)
- Pruritus (itching) (<10%)
- Rash (<10%)

Mucosal
- Rectal itch (<10%)

Cardiovascular
- Chest pain (<10%)
- Hypotension (<10%)

Central Nervous System
- Anorexia (<10%)
- Pain (<10%)

Gastrointestinal/Hepatic
- Nausea (<10%)
- Vomiting (<10%)

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (from intramuscular injections) (<10%)

BACLOFEN

Trade names: Baclofen (Watson), Gablofen (Mallinckrodt), Lioresal (Medtronic)
Indications: Spasticity resulting from multiple sclerosis
Class: GABA receptor agonist, Skeletal muscle relaxant
Half-life: 2.5–4 hours
Clinically important, potentially hazardous interactions with: acebutolol, alcohol, alfuzosin, amitriptyline, captopril, cilazapril, diclofenac, enalapril, fosinopril, irbesartan, levodopa, lisinopril, meloxicam, olmesartan, quinapril, ramipril, trandolapril
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Children appear to be at higher risk for complications than adults when using intrathecal baclofen (ITB). ITB therapy is a safe and effective treatment for severe spasticity in the pediatric population, but does have a 31% rate of complications requiring surgical management over a 3-year treatment period.

Warning: DO NOT DISCONTINUE ABRUPTLY

Skin
Cutaneous toxicity / skin toxicity [2]
Exanthems [2]
Rash (<10%)

Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypertension [2]
Hypotension [3]

Central Nervous System
Coma [4]
Confusion (<10%)
Dyskinesia [2]
Encephalopathy (includes hepatic encephalopathy) [3]
Hallucinations [4]
Headache (<10%)
Insomnia (>10%) [2]
Psychosis [4]
Seizures [11]
Sleep apnea [3]
Slurred speech (>10%)
Somnolence (drowsiness) (>10%) [8]
Vertigo / dizziness (>10%) [7]

Gastrointestinal/Hepatic
Constipation (<10%)
Nausea (<10%)

Genitourinary
Polyuria (<10%)

Neuromuscular/Skeletal
Asthenia / fatigue (>10%) [8]

Other
Infection [2]
Side effects (<2%)

BALOXAVIR MARBOXIL

Trade name: Xofluza (Shionogi)
Indications: Indicated for the treatment of acute uncomplicated influenza in patients 12 years of age and older who have been symptomatic for no more than 48 hours
Class: Polymerase acidic (PA) endonuclease inhibitor
Half-life: 79.1 hours
Clinically important, potentially hazardous interactions with: calcium hydroxylapatite, selenium, zinc
Pregnancy category: N/A (no available data)

Gastrointestinal/Hepatic
Diarrhea (3%) [2]
Vomiting [3]

Respiratory
Bronchitis (2%)

Other
Adverse effects / adverse reactions [3]

BALSALAZIDE

Trade names: Colazal (Salix), Colazide (Almirall)
Indications: Mild to moderately active ulcerative colitis
Class: Aminosalicylate
Half-life: N/A
Clinically important, potentially hazardous interactions with: azathioprine, cardiac glycosides, folic acid, heparin, low molecular weight heparins, mercaptopurine, thiopurine analogs, varicella virus-containing vaccines
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Hypersensitivity [2]

Mucosal
Stomatitis (oral mucositis) (3%)

Central Nervous System
Anorexia (2%)
Fever (pyrexia) (includes hyperpyrexia) (2–6%)
Headache (15%)
Insomnia (2%)

Gastrointestinal/Hepatic
Abdominal pain (6–13%)
Colitis (ulcerative, exacerbation) (6%)
Diarrhea (5–9%)
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Flatulence (2%)
Nausea (4%)
Vomiting (10%)

Genitourinary
Dysmenorrhea (3%)

Neuromuscular/Skeletal
Arthralgia (4%)
Asthenia / fatigue (2%)

Respiratory
Cough (2–3%)
Influenza- ('flu)-like syndrome (<4%)
Nasopharyngitis (6%)
Pharyngitis (sore throat) (2%)
Pharyngolaryngeal pain (3%)
Rhinitis (2%)

BARICITINIB

Trade name: Olumiant (Eli Lilly and Co)
Indications: Treatment of adult patients with moderately to severely active rheumatoid arthritis who have had an inadequate response to one or more TNF antagonist therapies.
Treatment of atopic dermatitis
Class: Covid-19 putative drug, Janus kinase (JAK) inhibitor
Half-life: ~12 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Insufficient data to inform a drug-associated risk for major birth defects or miscarriage)
Warning: WARNING: SERIOUS INFECTIONS, MORTALITY, MALIGNANCY, MAJOR ADVERSE CARDIOVASCULAR EVENTS (MACE), AND THROMBOSIS (amended December 2021)

• INCREASED RISK OF SERIOUS BACTERIAL, FUNGAL, VIRAL AND OPPORTUNISTIC INFECTIONS LEADING TO HOSPITALIZATION OR DEATH, INCLUDING TUBERCULOSIS (TB). INTERRUPT TREATMENT WITH BARICITINIB IF SERIOUS INFECTION OCCURS UNTIL THE INFECTION IS CONTROLLED. TEST FOR LATENT TB BEFORE AND DURING THERAPY; TREAT LATENT TB PRIOR TO USE. MONITOR ALL PATIENTS FOR ACTIVE TB DURING TREATMENT, EVEN PATIENTS WITH INITIAL NEGATIVE, LATENT TB TEST.

• HIGHER RATE OF ALL-CAUSE MORTALITY, INCLUDING SUDDEN CARDIOVASCULAR DEATH WITH ANOTHER JANUS KINASE INHIBITOR (JAK) VS. TNF BLOCKERS IN RHEUMATOID ARTHRITIS (RA) PATIENTS.

• MALIGNANCIES HAVE OCCURRED IN PATIENTS TREATED WITH BARICITINIB. HIGHER RATE OF LYMPHOMAS AND LUNG CANCERS WITH ANOTHER JAK INHIBITOR VS. TNF BLOCKERS IN RA PATIENTS.

• HIGHER RATE OF MACE (DEFINED AS CARDIOVASCULAR DEATH, MYOCARDIAL INFARCTION, AND STROKE) WITH ANOTHER JAK INHIBITOR VS. TNF BLOCKERS IN RA PATIENTS.

• THROMBOSIS HAS OCCURRED IN PATIENTS TREATED WITH BARICITINIB. INCREASED INCIDENCE OF PULMONARY EMBOLISM, VENOUS AND ARTERIAL THROMBOSIS WITH ANOTHER JAK INHIBITOR VS. TNF

Skin
Herpes simplex (1–2%)

Endocrine/Metabolic
Hypercholesterolemia [2]
Serum creatinine increased [2]

Gastrointestinal/Hepatic
Nausea (3%)

Hematologic
Neutropenia (neutrophils decreased) [2]

Respiratory
Upper respiratory tract infection (15–16%) [3]

Other
Adverse effects / adverse reactions [5]
Cytomegalovirus infection [2]
Death [2]
Infection [6]

BASILIXIMAB

Trade name: Simulect (Novartis)
Indications: Prophylaxis of organ rejection in renal transplantation
Class: Interleukin-2 receptor antagonist, Monoclonal antibody
Half-life: 7.2 days
Clinically important, potentially hazardous interactions with: cyclosporine, Hemophilus B vaccine, mycophenolate
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>10%)
Candidiasis / candidosis (3–10%)
Cyst (3–10%)
Edema / fluid retention (see also peripheral edema) (generalized) (3–10%)
Facial edema (3–10%)
Genital edema (3–10%)
Hematoma (3–10%)

Herpes simplex (3–10%)
Herpes zoster (3–10%)
Peripheral edema (see also edema) (>10%)
Pruritus (itching) (3–10%)
Rash (3–10%)
Ulcerations (3–10%)
Wound complications (>10%)

Hair
Hypertrichosis (3–10%)

Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth (3–10%)
Stomatitis (oral mucositis) (3–10%)
Ulcerative stomatitis (3–10%)

Cardiovascular
Angina (3–10%)
Arrhythmias (3–10%)
Atrial fibrillation (3–10%)
Cardiac failure (3–10%)
Chest pain (3–10%)
Hypertension (>10%)
Hypotension (3–10%)
Pulmonary edema / cardiogenic pulmonary edema (3–10%)
Tachycardia (3–10%)

Central Nervous System
Agitation (3–10%)
Anxiety (3–10%)
Depression (3–10%)
Fever (pyrexia) (includes hyperpyrexia) (>10%)
Headache (>10%)
Hypoesthesia (numbness) (3–10%)
Insomnia (>10%)
Pain (>10%)
Paresthesias (3–10%)
Rigors (3–10%)
Tremor (>10%)
Vertigo / dizziness (3–10%)

Endocrine/Metabolic
Acidosis (includes lactic acidosis) (3–10%)
Dehydration (3–10%)
Diabetes mellitus (3–10%)
Hypercalcemia (3–10%)
Hypercholesterolemia (>10%)
Hyperglycemia (includes glucose increased) (>10%)
Hyperkalemia (>10%)
Hyperlipidemia (3–10%)
Hypertriglyceridemia (includes triglycerides increased) (3–10%)
Hyperuricemia (>10%)
Hypocalcemia (3–10%)
Hypoglycemia (see also insulin autoimmune syndrome) (3–10%)
Hypokalemia (>10%)
Hypophosphatemia (>10%)
Weight gain (3–10%)

Gastrointestinal/Hepatic
Abdominal distension (3–10%)
Abdominal pain (>10%)
Black stools / melena (3–10%)
Constipation (>10%)
Diarrhea (>10%)
Dyspepsia / functional dyspepsia / gastroparesis (>10%)
Esophagitis (3–10%)
Flatulence (3–10%)
Gastroenteritis (3–10%)
Gastrointestinal bleeding (3–10%)
Gastrointestinal disorder / discomfort (69%)
Hernia (3–10%)
Nausea (>10%)
Vomiting (>10%)

Genitourinary
Albuminuria (3–10%)
Dysuria (3–10%)
Hematuria (3–10%)
Impotence (3–10%)
Oliguria (3–10%)
Urinary frequency (3–10%)
Urinary retention (3–10%)
Urinary tract infection (>10%)

Hematologic
Anemia (>10%)
Hemorrhage (3–10%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (3–10%)
Polycythemia / erythrocytosis (3–10%)
Sepsis (3–10%)
Thrombocytopenia (3–10%)
Thrombosis (3–10%)

Neuromuscular/Skeletal
Arthralgia (3–10%)
Asthenia / fatigue (3–10%)
Back pain (3–10%)
Cramps (3–10%)
Fractures (3–10%)
Leg pain (3–10%)
Myalgia/Myopathy (3–10%)

Ocular
Abnormal vision (3–10%)
Cataract (3–10%)
Conjunctivitis (conjunctival inflammation) (3–10%)

Renal
Renal tubular necrosis (3–10%)

Respiratory
Bronchitis (3–10%)
Bronchospasm (3–10%)
Cough (3–10%)
Dyspnea / shortness of breath (>10%)
Pharyngitis (sore throat) (3–10%)
Pneumonia (3–10%)
Rhinitis (3–10%)
Sinusitis (3–10%)
Upper respiratory tract infection (>10%)

Other
Infection (viral) (>10%)

BCG VACCINE

Synonym: Bacille Calmette-Guerin
Trade names: Mycobax (Sanofi-Aventis), TICE BCG (Organon)
Indications: Immunization against tuberculosis
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: alefacept, aminophylline, azacitidine, betamethasone, cabazitaxel, cefazolin, cefixime, ceftaroline fosamil, ceftobiprole, ciprofloxacin, demeclocycline, denileukin, docetaxel, doripenem, doxycycline, fingolimod, gefitinib, gemifloxacin, leflunomide, levofloxacin, minocycline, monosodium glutamate, moxifloxacin, ofloxacin, oxaliplatin, pazopanib, pralatrexate, rifaximin, rifaximin, sulfadiazine, telavancin, telithromycin, temsirolimus
Pregnancy category: C

Skin
Abscess [16]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
Churg-Strauss syndrome [15]
Dermatitis [2]
Erythema [3]
Fixed eruption [2]
Hypersensitivity [2]
Keloid [4]
Lupus vulgaris [22]
Lymphadenitis [9]
Lymphadenopathy [92]
Papular lesions [6]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [4]
Scar [8]
Scrofuloderma [5]
Sweet's syndrome [2]
Ulcerations [6]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Mucosal
Mucocutaneous lymph node syndrome (Kawaski syndrom) [2]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [6]
Neurotoxicity [2]

Gastrointestinal/Hepatic
Hepatitis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Genitourinary
Balanitis (glans penile inflammation) [3]
Bladder disorder [2]
Hematuria [2]

Hematologic
Sepsis [3]

Local
Injection-site abscess [3]
Injection-site reaction [3]
Injection-site ulceration [4]

Neuromuscular/Skeletal
Arthralgia [7]
Asthenia / fatigue [4]
Osteomyelitis [35]
Reiter's syndrome (reactive arthritis) [3]

Ocular
Optic neuritis [2]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [4]

Other
Adverse effects / adverse reactions [4]
Cancer [3]
Death [14]
Infection [3]
Systemic reactions [2]

BECAPLERMIN

Trade names: PDGF (Novartis), Regranex (Janssen) (Cilag AG)
Indications: Diabetic ulcers $\leq$ 5 cm^2
Class: Platelet derived growth factor-BB
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: INCREASED RATE OF MORTALITY SECONDARY TO MALIGNANCY

Skin
Cellulitis (>10%)
Ulcerations (>10%)

BECLOMETHASONE

Trade names: Beconase AQ (GSK), Qnasl (Teva), Qvar (3M), Vanceril (Schering)
Indications: Allergic rhinitis, asthma
Class: Corticosteroid / Glucocorticoid, Corticosteroid, inhaled
Half-life: N/A
Clinically important, potentially hazardous interactions with: diuretics, estrogens, ketoconazole, live vaccines, oral contraceptives, phenytoin, rifampin, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) [3]
Candidiasis / candidosis [2]
Mucosal
Epistaxis (nosebleed) (with nasally-inhaled formulation) (2%)
Nasal discomfort (5%)
Oral candidiasis [4]
Central Nervous System
Headache (2%) [2]
Neuromuscular/Skeletal
Osteoporosis [5]
Ocular
Cataract [4]
Glaucoma (includes acute angle-closure glaucoma) [3]
Respiratory
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [10]

BEDAQUILINE

Trade name: Sirturo (Janssen)
Indications: Pulmonary multi-drug resistant tuberculosis
Class: Antimycobacterial (including antitubercular), Diarylquinoline
Half-life: 5.5 months
Clinically important, potentially hazardous interactions with: ketoconazole, rifabutin, rifampin, rifapentine, strong CYP3A4 inducers or inhibitors
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: INCREASED RISK OF DEATH / QT PROLONGATION

Skin
Rash (8%)
Cardiovascular
Chest pain (11%) [2]
QT interval prolonged / QT prolongation [9]
Central Nervous System
Anorexia (9%)
Headache (28%) [3]
Vertigo / dizziness [2]
Endocrine/Metabolic
ALT increased (<10%)
AST increased (<10%)
Hyperuricemia [2]
Gastrointestinal/Hepatic
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea (38%) [5]
Vomiting [2]
Neuromuscular/Skeletal
Arthralgia (33%) [2]
Pain in extremities [2]
Otic
Hearing loss (hypoacusis) [2]
Respiratory
Hemoptysis (18%)
Other
Adverse effects / adverse reactions [6]
Infection [3]

BELATACEPT

Trade name: Nulojix (Bristol-Myers Squibb)
Indications: Prophylaxis of organ rejection in kidney transplantation
Class: Immunosuppressant, T-cell co-stimulation blocker
Half-life: 7–10 days
Clinically important, potentially hazardous interactions with: live vaccines, mycophenolate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients without immunity to Epstein-Barr virus.
Warning: POST-TRANSPLANT LYMPHOPROLIFERATIVE DISORDER, OTHER MALIGNANCIES, AND SERIOUS INFECTIONS

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (8%)
Hematoma (<10%)
Hyperhidrosis (see also diaphoresis) (<10%)
Lymphoproliferative disease / lymphoproliferative disorder (post-transplant) [7]
Peripheral edema (see also edema) (34%)
Hair
Alopecia / hair loss (<10%)
Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (<10%)
Stomatitis (oral mucositis) (<10%)
Cardiovascular
Atrial fibrillation (<10%)
Hypertension (32%)
Hypotension (18%)
Central Nervous System
Anxiety (10%)
Fever (pyrexia) (includes hyperpyrexia) (28%)
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy (<10%)
Headache (21%)
Insomnia (15%)
Tremor (8%)
Vertigo / dizziness (9%)
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (15%)
Dyslipidemia (19%)
Hypercholesterolemia (11%)
Hyperglycemia (includes glucose increased) (19%)
Hyperkalemia (20%)
Hyperuricemia (5%)
Hypocalcemia (13%)
Hypokalemia (21%)
Hypomagnesemia (7%)
Hypophosphatemia (19%)
Gastrointestinal/Hepatic
Abdominal pain (9–19%)
Constipation (33%)
Diarrhea (39%)
Nausea (24%)
Vomiting (22%)
Genitourinary
Dysuria (11%)
Enuresis (urinary incontinence) (<10%)
Hematuria (16%)
Urinary tract infection (37%) [2]
Hematologic
Anemia (45%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (20%)
Neutropenia (neutrophils decreased) (<10%) [2]
Neuromuscular/Skeletal
Arthralgia (17%)
Back pain (13%)
Bone or joint pain (<10%)
Renal
Proteinuria (16%)
Renal failure (<10%)
Renal tubular necrosis (9%)
Respiratory
Bronchitis (10%)
Cough (24%)
Dyspnea / shortness of breath (12%)
Influenza (11%)
Nasopharyngitis (13%)
Upper respiratory tract infection (15%)
Other
Graft dysfunction (25%)
Infection (<10%) [7]
Malignancies [3]

BELIMUMAB

Trade name: Benlysta (GSK)
Indications: Systemic lupus erythematosus
Class: Immunosuppressant, Monoclonal antibody
Half-life: 19.4 days
Clinically important, potentially hazardous interactions with: biologic therapies, cyclophosphamide, denileukin, live vaccines, typhoid vaccine, yellow fever vaccine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Contra-indicated in patients who have had anaphylaxis with belimumab.

Skin
Hypersensitivity (13%) [2]
Central Nervous System
Anxiety (4%)
Depression (5%)

Fever (pyrexia) (includes hyperpyrexia) (10%)
Headache [3]
Insomnia (7%)
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Migraine (5%)

Gastrointestinal/Hepatic
Diarrhea (12%)
Gastroenteritis (3%)
Nausea (15%) [2]

Genitourinary
Cystitis (4%)

Local
Infusion-related reactions [3]

Neuromuscular/Skeletal
Asthenia / fatigue [2]
Pain in extremities (6%)

Respiratory
Bronchitis (9%)
Nasopharyngitis (9%)
Pharyngitis (sore throat) (5%)
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [2]
Death [2]
Infection [4]

BELINOSTAT

Trade name: Beleodaq (Spectrum)
Indications: Peripheral T-cell lymphoma
Class: Histone deacetylase (HDAC) inhibitor
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: strong UGT1A1 inhibitors
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Peripheral edema (see also edema) (20%) [2]
Pruritus (itching) (16%)
Rash (20%)

Hair
Alopecia / hair loss [2]

Cardiovascular
Hypotension (10%)
Phlebitis (10%)
QT interval prolonged / QT prolongation (11%) [2]

Central Nervous System
Anorexia [2]
Chills (16%)
Fever (pyrexia) (includes hyperpyrexia) (35%) [2]
Headache (15%) [3]
Peripheral neuropathy [2]
Vertigo / dizziness (10%) [2]

Endocrine/Metabolic
Appetite decreased (15%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (>2%)
Hypokalemia (12%)

Gastrointestinal/Hepatic
Abdominal pain (11%)
Constipation (23%) [5]
Diarrhea (23%) [6]
Nausea (42%) [11]
Vomiting (29%) [11]

Hematologic
Anemia (32%) [5]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Neutropenia (neutrophils decreased) [4]
Thrombocytopenia (16%) [3]
Thrombosis [2]

Local
Infusion-site pain (14%)
Injection-site reaction [2]

Neuromuscular/Skeletal
Asthenia / fatigue (37%) [12]
Myalgia/Myopathy [2]

Respiratory
Cough (19%)
Dyspnea / shortness of breath (22%) [4]
Pneumonia (>2%)
Pneumonitis [2]

Other
Allergic reactions [2]
Hiccups / singultus [2]
Multiorgan failure (>2%)

BENAZEPRIL

Trade names: Lotensin (Novartis), Lotensin HCT (Novartis), Lotrel (Novartis)
Indications: Hypertension
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive, Vasodilator
Half-life: 10–11 hours
Clinically important, potentially hazardous interactions with: allopurinol, amifostine, amiloride, angiotensin II receptor blockers, antacids, antidiabetics, antihypertensives, azathioprine, cyclosporine, diazoxide, diuretics, eplerenone, everolimus, gold & gold compounds, herbals, lithium, MAO inhibitors, methylphenidate, NSAIDs, pentoxifylline, phosphodiesterase 5 inhibitors, potassium salts, prostacyclin analogues, rituximab, sirolimus, spironolactone, temsirolimus, tizanidine, tolvaptan, triamterene, trimethoprim, yohimbine
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Lotrel is benazepril and amlodipine. Lotensin-HCT is benazepril and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Contra-indicated in patients with a history of angioedema with or without previous ACE inhibitor treatment.
Warning: FETAL TOXICITY

Skin
Angioedema [8]
Peripheral edema (see also edema) [3]

Central Nervous System
Headache (6%)
Vertigo / dizziness (4%)

Respiratory
Cough [10]

BENDAMUSTINE

Trade names: Ribomustin (Mundipharma), Treanda (Cephalon)
Indications: Chronic lymphatic leukemia, non-Hodgkin's lymphoma
Class: Alkylating agent
Half-life: 40 minutes
Clinically important, potentially hazardous interactions with: ciprofloxacin, fluvoxamine, nicotine, ofloxacin, omeprazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Herpes simplex (3%)
Herpes zoster (10%)
Hyperhidrosis (see also diaphoresis) (5%)
Hypersensitivity (5%)
Peripheral edema (see also edema) (13%)
Pruritus (itching) (5–6%)
Rash (8–16%) [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Xerosis / xeroderma (see also dry skin) (5%)

Mucosal
Nasal congestion (5%)
Oral candidiasis (6%)
Stomatitis (oral mucositis) (15%)
Xerostomia (dry mouth) (9%) [4]

Cardiovascular
Cardiotoxicity [3]
Chest pain (6%)
Hypotension (6%) [2]
Tachycardia (7%)

Central Nervous System
Anorexia (23%) [5]
Anxiety (8%)
Chills (6–14%) [2]
Depression (6%)
Dysgeusia (taste perversion) (7%)
Fever (pyrexia) (includes hyperpyrexia) (24–34%) [10]
Headache (21%)
Insomnia (13%)
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [3]
Neurotoxicity [3]
Pain (6%)
Vertigo / dizziness (14%)

Endocrine/Metabolic
Appetite decreased (13%)
Dehydration (14%)
Hyperuricemia (7%)
Hypokalemia (9%)
Weight loss (7–18%) [2]

Gastrointestinal/Hepatic
Abdominal distension (5%)
Abdominal pain (13%)
Constipation (29%) [3]
Diarrhea (9–37%) [3]
Dyspepsia / functional dyspepsia / gastroparesis (11%)
Gastroesophageal reflux (10%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (20–75%) [10]
Vomiting (16–40%) [5]

Genitourinary
Urinary tract infection (10%)

Hematologic
- Anemia [11]
- Febrile neutropenia (6%) [10]
- Hemotoxicity [2]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [5]
- Myelosuppression / bone marrow suppression / myelotoxicity [2]
- Neutropenia (neutrophils decreased) [22]
- Sepsis [2]
- Thrombocytopenia [24]

Local
- Infusion-related reactions [4]
- Infusion-site pain (6%)

Neuromuscular/Skeletal
- Arthralgia (6%)
- Asthenia / fatigue (8–11%) [14]
- Back pain (14%)
- Bone or joint pain (5%)
- Pain in extremities (5%)

Renal
- Nephrogenic diabetes insipidus [3]
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
- Tumor lysis syndrome (TLS) [3]

Respiratory
- Cough (4–22%) [2]
- Dyspnea / shortness of breath (16%) [2]
- Nasopharyngitis (6–7%)
- Pneumonia (8%)
- Sinusitis (9%)
- Upper respiratory tract infection (10%)
- Wheezing (5%)

Other
- Adverse effects / adverse reactions [2]
- Allergic reactions [3]
- Death [3]
- Infection (6%) [23]

BENDROFLUMETHIAZIDE

Trade names: Corzide (Monarch), Naturetin (Bristol-Myers Squibb)
Indications: Edema, diabetes insipidus, hypertension
Class: Diuretic, thiazide
Half-life: 8.5 hours
Clinically important, potentially hazardous interactions with: digoxin, lithium, tadalafil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Bendroflumethiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Corzide is bendroflumethiazide and nadolol.

Skin
- Phototoxicity [2]

BENRALIZUMAB

Trade name: Fasenra (AstraZeneca)
Indications: Add-on maintenance treatment of patients with severe asthma with an eosinophilic phenotype
Class: Interleukin-5 antagonist, Monoclonal antibody
Half-life: 15 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Insufficient evidence to inform on drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Hypersensitivity (3%)
- Rash (3%)
- Urticaria / hives (3%) [2]

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) (3%) [2]
- Headache (8%) [4]
- Vertigo / dizziness [2]

Local
- Infusion-site erythema (2%)
- Infusion-site pain (2%)
- Injection-site papules and nodules (2%)
- Injection-site pruritus (2%)
- Injection-site reaction [2]

Respiratory
- Asthma [8]
- Bronchitis [4]
- Nasopharyngitis [8]
- Pharyngitis (sore throat) (5%)
- Sinusitis [2]
- Upper respiratory tract infection [5]

BENZALKONIUM

Trade name: Zephrex (Sanofi-Aventis)
Indications: Antisepsis, preoperative skin preparation, wound treatment, vaginal douche
Class: Antiseptic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
- Dermatitis [13]

Ocular
- Ocular adverse effect [3]

Other
- Allergic reactions [2]

BENZNIDAZOLE

Indications: Chagas disease (trypanosomiasis) in pediatric patients aged 2–12 years
Class: Antibiotic, Antibiotic; nitroimidazole, Antimicrobial
Half-life: 13 hours
Clinically important, potentially hazardous interactions with: disulfiram
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Has the potential for genotoxicity and carcinogenicity.

Skin
- Edema / fluid retention (see also peripheral edema) [4]
- Hypersensitivity [3]
- Pigmentation [2]
- Pruritus (itching) [5]
- Rash [7]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Urticaria / hives [2]

Central Nervous System
- Anorexia (<5%)
- Fever (pyrexia) (includes hyperpyrexia) [6]
- Headache (<5%) [5]
- Neurotoxicity [3]
- Peripheral neuropathy (2%) [2]
- Tremor (2%)
- Vertigo / dizziness (4%)

Gastrointestinal/Hepatic
- Abdominal distension [2]
- Abdominal pain (25%) [4]
- Diarrhea [2]
- Dyspepsia / functional dyspepsia / gastroparesis [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (5%) [2]
- Nausea [4]
- Vomiting [2]

Hematologic
- Eosinophilia [2]
- Neutropenia (neutrophils decreased) [2]

Neuromuscular/Skeletal
- Arthralgia (<5%) [5]
- Asthenia / fatigue [5]
- Myalgia/Myopathy [3]

Other
- Adverse effects / adverse reactions [8]
- Allergic reactions [2]

BENZONATATE

Trade name: Tessalon (Forest)
Indications: Symptomatic relief of cough
Class: Antitussive
Half-life: duration: 3–8 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Benzonatate is related to tetracaine and other anesthetics of the para-aminobenzoic acid class.

Skin
- Rash (<10%)

Central Nervous System
- Seizures [2]

Ocular
- Ocular burning (<10%)

Other
- Death [3]

BENZPHETAMINE

Trade name: Didrex (Pfizer)
Indications: Adjunct to diet plan to reduce weight
Class: Amphetamine
Half-life: N/A
Clinically important, potentially hazardous interactions with: furazolidone, guanethidine, MAO inhibitors, SSRIs
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Mucosal
Xerostomia (dry mouth) [2]
Central Nervous System
Insomnia [3]
Nervousness [2]
Restlessness [2]
Vertigo / dizziness [2]

BENZTHIAZIDE

Indications: Hypertension
Class: Diuretic, thiazide
Half-life: N/A
Clinically important, potentially hazardous interactions with: digoxin, lithium
Note: Benzthiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

BENZTROPINE

Trade name: Cogentin (Merck)
Indications: Parkinsonism
Class: Anticholinergic, Muscarinic antagonist
Half-life: 6–48 hours
Clinically important, potentially hazardous interactions with: haloperidol, other anticholinergics
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Photosensitivity (<10%)
Xerosis / xeroderma (see also dry skin) (>10%)
Mucosal
Xerostomia (dry mouth) (>10%) [3]
Other
Death [2]

BENZYDAMINE

Trade name: Difflam (Meda)
Indications: Musculoskeletal pain
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
Benzdyamine has been used in Brazil as a rave, or club, drug.

Skin
Contact dermatitis [5]
Photocontact dermatitis [8]
Rash [2]

BEPRIDIL

Indications: Angina pectoris
Class: Antiarrhythmic, Antiarrhythmic class IV, Calcium channel blocker
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: amisulpride, amprenavir, atazanavir, boceprevir, celiprolol, ciprofloxacin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, delavirdine, efavirenz, enoxacin, epirubicin, fosamprenavir, gatifloxacin, indinavir, lomefloxacin, lopinavir, mistletoe, moxifloxacin, nilotinib, norfloxacin, ofloxacin, quinolones, ribociclib, ritonavir, sotalol, sparfloxacin, telaprevir, tipranavir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (<2%)
Edema / fluid retention (see also peripheral edema) (<10%)
Rash (<2%)
Mucosal
Xerostomia (dry mouth) (<10%) [2]
Cardiovascular
Bradycardia / sinus bradycardia [3]
QT interval prolonged / QT prolongation [5]
Torsades de pointes [11]
Central Nervous System
Paresthesias (2%)
Tremor (<9%)
Vertigo / dizziness [2]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Respiratory
Pneumonia [5]

BERACTANT

Trade name: Survanta (AbbVie)
Indications: Respiratory distress syndrome (RDS), hyaline membrane disease
Class: Pulmonary surfactant
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Respiratory
Apnea (65%)

BERGAMOT

Family: Rutaceae
Scientific name: *Citrus aurantium ssp bergamia*
Indications: Headache, bronchitis, vitiligo, mycosis fungoides, psoriasis (in conjunction with UVA), insecticide, essential oil in perfumery, cosmetics, flavoring
Class: Stimulant, mild
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Two distinct species are known by the common name of bergamot. This profile does not refer to *Monarda didyma*.
Oil of bergamot possesses photosensitive and melanogenic properties because of the presence of furocoumarins, primarily bergapten (5-methoxypsoralen [5-MOP]).
Its use is restricted or banned in many countries.

Skin
Dermatitis [2]
Photosensitivity [3]
Phototoxicity [8]
Phytophotodermatitis / berloque dermatitis [2]
Other
Adverse effects / adverse reactions [2]

BESIFLOXACIN

Trade name: Besivance (Bausch & Lomb)
Indications: Conjunctivitis
Class: Antibiotic, Antibiotic; fluoroquinolone, Antimicrobial
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants.
Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis.

Central Nervous System
Headache (<2%) [2]
Ocular
Conjunctival erythema (2%)
Conjunctivitis (conjunctival inflammation) [3]
Ocular itching / ocular pruritus (<2%) [2]
Ocular pain (<2%) [3]
Ocular stinging (<2%)
Vision blurred (<2%) [3]

BETA-CAROTENE

Trade name: Solatene (Merck)
Indications: Photosensitivity reactions
Class: Vitamin
Half-life: N/A
Clinically important, potentially hazardous interactions with: acemetacin, bexarotene

Pregnancy category: C

Skin
Carotenemia (>10%)

BETAMETHASONE

Trade names: Beta-Val (Teva), Betatrex (Savage), Celestone (Schering), Diprolene (Schering), Luxiq (Connetics), Sernivo (Promius), Soluspan (Schering)
Indications: Arthralgia, dermatoses, rhinitis
Class: Corticosteroid / Glucocorticoid
Half-life: N/A
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, aminoglutethimide, amphotericin B, antacids, antidiabetics, antifungals, aprepitant, barbiturates, BCG vaccine, bile acid sequestrants, calcitriol, calcium channel blockers, clotrimazole, corticorelin, denosumab, diuretics, echinacea, estrogens, fluconazole, isoniazid, leflunomide, mitotane, natalizumab, NSAIDs, phenobarbital, pimecrolimus, primidone, quinolones, rifampin, salicylates, sipuleucel-T, tacrolimus, tetracycline, trastuzumab, vaccines, vecuronium, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Topical [T].

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Atrophy / Skin atrophy [2]
Dermatitis [4]
Facial edema [2]
Pruritus (itching) [T] [3]
Psoriasis [T] [3]
Striae [T] [2]

Central Nervous System
Headache [2]

Endocrine/Metabolic
Cushing's syndrome [3]

Gastrointestinal/Hepatic
Diarrhea [2]
Pancreatitis / acute pancreatitis [2]

Local
Application-site pain [3]
Application-site pruritus [2]
Injection-site atrophy [2]
Injection-site ulceration [2]

Respiratory
Nasopharyngitis [4]

Other
Adverse effects / adverse reactions [5]
Allergic reactions [2]

BETAXOLOL

Trade names: Betoptic [Ophthalmic] (Alcon), Kerlone (Pfizer)
Indications: Open-angle glaucoma, hypertension
Class: Adrenergic beta-receptor antagonist
Half-life: 14–22 hours
Clinically important, potentially hazardous interactions with: clonidine, verapamil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Cutaneous side effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy.

Skin
Cold extremities (2%)
Dermatitis [3]
Diaphoresis (see also hyperhidrosis) (<2%)
Eczema / eczematous reaction / eczematous eruption (<2%)
Edema / fluid retention (see also peripheral edema) (<2%)
Erythema (<2%)
Flushing / rubefaction (<2%)
Lymphadenopathy (<2%)
Pruritus (itching) (<2%)
Purpura (<2%)
Rash (<2%) [3]

Hair
Alopecia / hair loss (<2%)
Hypertrichosis (<2%)

Mucosal
Epistaxis (nosebleed) (<2%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (<2%)
Sialorrhea (ptyalism; hypersalivation) (<2%)
Xerostomia (dry mouth) (<2%)

Cardiovascular
Angina (<2%)
Arrhythmias (<2%)
Atrioventricular block (<2%)
Bradycardia / sinus bradycardia (6–8%)
Cardiac failure (<2%)
Chest pain (2–7%)
Hypertension (<2%)
Hypotension (<2%)
Myocardial infarction (<2%)
Palpitation (2%)
Peripheral ischemia (<2%)

Central Nervous System
Ageusia (taste loss) / taste disorder (<2%)
Amnesia (<2%)
Anorexia (<2%)
Confusion (<2%)
Dysgeusia (taste perversion) (<2%)
Emotional lability (<2%)
Fever (pyrexia) (includes hyperpyrexia) (<2%)
Hallucinations (<2%)
Headache (7–15%)
Insomnia (<5%)
Myokymia / twitching (<2%)
Pain (<2%)
Paresthesias (2%)
Rigors (<2%)
Stupor (<2%)
Syncope / fainting (<2%)
Tremor (<2%)
Vertigo / dizziness (5–15%)

Endocrine/Metabolic
Acidosis (includes lactic acidosis) (<2%)
ALT increased (<2%)
Appetite increased (<2%)
AST increased (<2%)
Diabetes mellitus (<2%)
Gynecomastia (<2%)
Hypercholesterolemia (<2%)
Hyperglycemia (includes glucose increased) (<2%)
Hyperkalemia (<2%)
Hyperuricemia (<2%)
Hypokalemia (<2%)
Libido decreased (<2%)
Mastodynia (<2%)
Menstrual irregularities (<2%)
Weight gain (<2%)
Weight loss (<2%)

Gastrointestinal/Hepatic
Constipation (<2%)
Diarrhea (2%)
Dyspepsia / functional dyspepsia / gastroparesis (4–5%)
Dysphagia (<2%)
Nausea (2–6%)
Vomiting (<2%)

Genitourinary
Cystitis (<2%)
Dysuria (<2%)
Oliguria (<2%)
Peyronie's disease (<2%)
Prostatitis (<2%)

Hematologic
Anemia (<2%)
Lymphocytosis / lymphocytes increased (<2%)
Thrombocytopenia (<2%)
Thrombosis (<2%)

Neuromuscular/Skeletal
Arthralgia (3%)
Asthenia / fatigue (3–10%)
Ataxia (<2%)
Bone or joint pain (5%)
Leg cramps (<2%)
Myalgia/Myopathy (3%)
Neck pain (<2%)
Tendinitis (<2%)

Ocular
Abnormal vision (<2%)
Blepharitis (<2%)
Cataract (<2%)
Conjunctivitis (conjunctival inflammation) (<2%)
Iritis (<2%)
Lacrimation (<2%)
Ocular hemorrhage (<2%)
Scotoma (<2%)
Xerophthalmia (dry eyes) (<2%)

Otic
Ear pain (<2%)
Hearing loss (hypoacusis) (<2%)
Tinnitus (<2%)

Renal
Proteinuria (<2%)
Renal function abnormal / renal dysfunction (<2%)

Respiratory
Bronchitis (<2%)
Bronchospasm (<2%)
Cough (<2%)
Dysphonia (includes voice disorders / voice changes) (<2%)
Dyspnea / shortness of breath (2%)
Influenza (<2%)
Pharyngitis (sore throat) (2%)
Pneumonia (<2%)
Sinusitis (<2%)
Upper respiratory tract infection (3%)

Other
Allergic reactions (<2%)
Dipsia (thirst) / polydipsia (<2%)

BETHANECHOL

Trade name: Urecholine (Odyssey)
Indications: Nonobstructive urinary retention
Class: Muscarinic cholinergic agonist
Half-life: up to 6 hours
Clinically important, potentially hazardous interactions with: galantamine, physostigmine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Mucosal
Sialorrhea (ptyalism; hypersalivation) [2]
Gastrointestinal/Hepatic
Abdominal pain [2]

BETRIXABAN

Trade name: Bevyxxa (Portola)
Indications: Prophylaxis of venous thromboembolism in adult patients hospitalized for an acute medical illness who are at risk for thromboembolic complications
Class: Direct factor Xa inhibitor
Half-life: 19–27 hours
Clinically important, potentially hazardous interactions with: amiodarone, anticoagulants, antiplatelet drugs and thrombolytics, azithromycin, clarithromycin, ketoconazole, verapamil
Pregnancy category: N/A (Likely to increase the risk of hemorrhage during pregnancy and delivery)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with active pathological bleeding.
Warning: SPINAL/EPIDURAL HEMATOMA

Mucosal
Epistaxis (nosebleed) (2%)
Cardiovascular
Hypertension (2%)
Central Nervous System
Headache (2%)
Endocrine/Metabolic
Hypokalemia (3%)
Gastrointestinal/Hepatic
Constipation (3%)
Diarrhea (2%)
Nausea (2%)
Genitourinary
Hematuria (2%)
Urinary tract infection (3%)
Hematologic
Bleeding (<2%) [4]

BEVACIZUMAB

Trade name: Avastin (Genentech)
Indications: Colon cancer, lung cancer, glioblastoma, renal-cell carcinoma
Class: Angiogenesis inhibitor / antiangiogenic agent, Biologic, Covid-19 putative drug, Monoclonal antibody
Half-life: 20 days
Clinically important, potentially hazardous interactions with: antineoplastics, irinotecan, sorafenib, sunitinib
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: GASTROINTESTINAL PERFORATIONS, SURGERY AND WOUND HEALING COMPLICATIONS, and HEMORRHAGE

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [6]
Cutaneous toxicity / skin toxicity [9]
Edema / fluid retention (see also peripheral edema) [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [13]
Necrosis (skin necrosis) [2]
Rash [18]
Thrombocytopenic purpura [2]
Ulcerations [3]
Wound complications [8]
Hair
Alopecia / hair loss [5]
Nails
Paronychia [2]
Mucosal
Epistaxis (nosebleed) [6]
Mucosal inflammation [2]
Mucositis [14]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Stomatitis (oral mucositis) [8]
Cardiovascular
Cardiac failure [2]
Cardiotoxicity [6]
Hypertension (23–67%) [113]
Hypotension (7–15%)
Thromboembolism (<21%) [16]
Venous thromboembolism [7]
Central Nervous System
Anorexia [17]
Cerebral hemorrhage [7]
Encephalitis [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache [8]
Intracranial hemorrhage [2]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [19]
Neurotoxicity [13]
Pain [3]
Peripheral neuropathy [11]
Seizures [2]
Endocrine/Metabolic
ALT increased [3]
AST increased [3]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Hyperglycemia (includes glucose increased) [2]
Hypokalemia [3]
Hypomagnesemia [2]
Gastrointestinal/Hepatic
Abdominal pain [4]
Colitis [3]
Constipation [3]
Diarrhea [46]
Gastrointestinal bleeding [5]
Gastrointestinal fistula [6]
Gastrointestinal perforation / perforated colon / gastric perforation [28]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea [20]
Pneumatosis intestinalis / pneumatosis cystoides intestinalis [2]
Vomiting [12]
Hematologic
Anemia [21]
Bleeding [16]
Evans' syndrome [2]
Febrile neutropenia [16]
Hemolytic anemia [2]
Hemorrhage [13]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [21]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [6]
Neutropenia (neutrophils decreased) [56]
Thrombocytopenia [26]
Thrombosis [19]
Thrombotic complications [4]
Thrombotic microangiopathy [3]
Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [46]
Osteonecrosis / avascular necrosis [6]
Ocular
Intraocular pressure increased [3]
Iritis [2]
Ocular adverse effect [3]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Proteinuria [49]
Respiratory
Hemoptysis [5]
Pulmonary embolism [5]
Pulmonary toxicity [2]
Other
Adverse effects / adverse reactions [28]
Allergic reactions [3]
Death [19]
Hiccups / singultus [2]
Infection [11]

BEXAROTENE

Trade name: Targretin (Eisai)
Indications: Cutaneous T-cell lymphoma, mycosis fungoides
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Retinoid
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: acitretin, atorvastatin, beta-carotene, carboplatin, conivaptan,

dexamethasone, dong quai, gemfibrozil, grapefruit juice, isotretinoin, oral contraceptives, paclitaxel, saxagliptin, St John's wort, tamoxifen, tetracyclines, tretinoin, vitamin A
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Retinoids can cause birth defects, and women should avoid bexarotene when pregnant or trying to conceive.
Warning: AVOID IN PREGNANCY

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<10%)
Bacterial infection (<13%)
Dermatitis [2]
Erythema [2]
Exanthems (<10%)
Exfoliative dermatitis (10–28%)
Necrosis (skin necrosis) [2]
Nodular eruption (<10%)
Peripheral edema (see also edema) (13%)
Pruritus (itching) (20–30%) [5]
Rash (17%) [3]
Ulcerations (<10%)
Vesiculobullous eruption (<10%)
Xerosis / xeroderma (see also dry skin) (11%) [2]
Hair
Alopecia / hair loss (4–11%)
Mucosal
Cheilitis (inflammation of the lips) (<10%)
Gingivitis (<10%)
Mucositis [2]
Xerostomia (dry mouth) (<10%)
Central Nervous System
Chills (10%)
Hyperesthesia (<10%)
Endocrine/Metabolic
Hypercholesterolemia [5]
Hyperlipidemia [4]
Hypertriglyceridemia (includes triglycerides increased) [9]
Hypothyroidism [10]
Mastodynia (<10%)
Hematologic
Anemia [4]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [5]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Neutropenia (neutrophils decreased) [9]
Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [2]
Myalgia/Myopathy (<10%) [2]
Respiratory
Influenza- ('flu)-like syndrome (4–13%)
Other
Adverse effects / adverse reactions [3]

BEZAFIBRATE

Trade name: Bezalip (Roche)
Indications: Hypercholesterolemia, hyperlipidemia, Type II diabetes
Class: Antilipemic, Fibrate
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: cholestyramine, cyclosporine, HMG-CoA reductase inhibitors, MAO inhibitors, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: This drug is not available in the USA; Israel withdrew bezafibrate in 2006. The Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency (EMA) has concluded that the benefits of bezafibrate outweigh the risks in the treatment of patients with blood lipid disorders. However, bezafibrate should not be prescribed for newly-diagnosed patients as first-line treatment, except for those with severe hypertriglyceridemia or patients who cannot take statins.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Pruritus (itching) (3%)
Central Nervous System
Headache [2]
Vertigo / dizziness (2%)
Neuromuscular/Skeletal
Myalgia/Myopathy [9]
Rhabdomyolysis [11]
Renal
Renal failure [5]

BEZLOTOXUMAB

Trade name: Zinplava (Merck)
Indications: To reduce the recurrence of *Clostridium difficile* infection (CDI) in patients who are receiving antibacterial treatment of CDI and are at high risk for CDI recurrence
Class: C. difficile toxin inhibitor, Monoclonal antibody
Half-life: ~19 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Cardiovascular
Cardiac failure (2%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (5%) [2]
Headache (4%) [3]
Gastrointestinal/Hepatic
Diarrhea [4]
Nausea (7%) [4]
Local
Infusion-related reactions (10%) [2]

BICALUTAMIDE

Trade name: Casodex (AstraZeneca)
Indications: Metastatic prostatic carcinoma
Class: Androgen antagonist
Half-life: up to 10 days
Clinically important, potentially hazardous interactions with: CYP3A4 substrates
Pregnancy category: X (not indicated for use in women)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (6%)
Edema / fluid retention (see also peripheral edema) (2–5%)
Hot flashes / hot flushes (49%) [9]
Peripheral edema (see also edema) (8%)
Pruritus (itching) (2–5%)
Rash (6%)
Xerosis / xeroderma (see also dry skin) (2–5%)
Hair
Alopecia / hair loss (2–5%)
Mucosal
Xerostomia (dry mouth) (2–5%)
Central Nervous System
Paresthesias (6%)
Endocrine/Metabolic
Gynecomastia (38%) [34]
Mastodynia (39%) [16]
Gastrointestinal/Hepatic
Constipation [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Local
Injection-site reaction (2–5%)
Neuromuscular/Skeletal
Asthenia / fatigue [4]
Myalgia/Myopathy (2–5%)
Respiratory
Dyspnea / shortness of breath [2]
Other
Death [2]

BICTEGRAVIR/EMTRICITABINE/TENOFOVIR ALAFENAMIDE

Trade name: Biktarvy (Gilead)
Indications: HIV-1 infection
Class: Antiretroviral, Hepatitis B virus necleoside analog reverse transcriptase inhibitor (tenofovir alafenamide), Integrase strand transfer inhibitor (bictegravir), Nucleoside analog reverse transcriptase inhibitor (emtricitabine)
Half-life: 17 hours (bictegravir); 10 hours (emtricitabine); <1 hour (tenofovir alafenamide)
Clinically important, potentially hazardous interactions with: carbamazepine, dofetilide, metformin, other antiretroviral drugs, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, St John's wort
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: POST-TREATMENT ACUTE EXACERBATION OF HEPATITIS B

Skin
Rash (<2%)
Central Nervous System
Abnormal dreams (<3%)
Depression (<2%)
Headache (4–5%)
Insomnia (2%)
Vertigo / dizziness (2%)
Endocrine/Metabolic
ALT increased (<2%)
AST increased (<2%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (4%)
Hyperamylasemia (2%)
Hyperbilirubinemia (12%)
Hypercholesterolemia (2–3%)
Gastrointestinal/Hepatic
Abdominal pain (<2%)
Diarrhea (3–6%)
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Flatulence (<2%)
Nausea (3–5%) [2]
Vomiting (<2%)
Hematologic
Neutropenia (neutrophils decreased) (2%)
Neuromuscular/Skeletal
Asthenia / fatigue (2–3%)
Other
Adverse effects / adverse reactions [3]

BIFIDOBACTERIA

Family: Actinomycetaceae
Scientific names: *Bifidobacterium adolescentis, Bifidobacterium animalis, Bifidobacterium bifidum, Bifidobacterium breve, Bifidobacterium infantis, Bifidobacterium lactis, Bifidobacterium longum*
Indications: Diarrhea, atopic eczema, candidiasis, colds and flu, hepatitis, hypercholesterolemia, lactose intolerance, ulcerative colitis, pouchitis, irritable bowel syndrome
Class: Immunomodulator, Probiotic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Immune-deficient subjects or those with mucosal disease may experience serious adverse effects.
Bifidobacterium is often combined with *Lactobacillus, Saccharomyces* or *Streptococcus thermophilus*.

BIMATOPROST

Trade names: Latisse (Allergan), Lumigan (Allergan)
Indications: Reduction of elevated intraocular pressure in open-angle glaucoma or ocular hypertension, hypotrichosis of the eyelashes
Class: Prostaglandin analog
Half-life: 45 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Pigmentation [2]
Hair
Hirsutism (<5%)
Hypertrichosis [2]
Central Nervous System
Headache (<5%)
Neuromuscular/Skeletal
Asthenia / fatigue (<5%)
Ocular
Asthenopia (<10%)
Blepharitis (<10%)
Cataract (<10%)
Choroidal detachment [2]
Conjunctival edema (<10%)
Conjunctival hemorrhage (<10%)
Conjunctival hyperemia / conjunctival injection (25–45%) [43]
Conjunctivitis (conjunctival inflammation) (<10%)
Deepening of upper lid sulcus [9]
Eyelashes – hypertrichosis (>10%) [13]
Eyelashes – pigmentation (<10%) [3]
Eyelid erythema (3–10%) [2]
Eyelid irritation (3–10%)
Eyelid pain (3–10%)
Eyelid pigmentation (3–10%) [6]
Eyelid xerosis (3–10%)
Foreign body sensation (<10%)
Iris pigmentation (<10%) [4]
Keratitis [2]
Lacrimation (<10%)
Macular edema [2]
Ocular adverse effect [12]
Ocular burning (<10%)
Ocular discharge (<10%)
Ocular hyperemia [4]
Ocular itching / ocular pruritus (<10%) [5]
Ocular pain [2]
Ocular pigmentation (<3%) [5]
Periorbital pigmentation (<10%) [3]
Photophobia (<10%)
Punctate keratitis (<10%) [2]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [3]
Respiratory
Nasopharyngitis [2]
Upper respiratory tract infection (10%)

BIPERIDEN

Trade name: Akineton (Par)
Indications: Parkinsonism
Class: Anticholinergic, Muscarinic antagonist
Half-life: 18–24 hours
Clinically important, potentially hazardous interactions with: anticholinergics, cyclopenthiazide
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Central Nervous System
Delirium [2]

BISACODYL

Trade name: Dulcolax (Boehringer Ingelheim)
Indications: Constipation
Class: Stimulant laxative
Half-life: N/A
Clinically important, potentially hazardous interactions with: adreno-corticosteroids, antibiotics, cardiac glycosides, digoxin, diuretics
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Central Nervous System
Headache [3]
Somnolence (drowsiness) [2]
Gastrointestinal/Hepatic
Abdominal pain (<10%) [4]
Diarrhea (<10%)

BISMUTH

Trade names: Helidac (Prometheus), Pepto-Bismol (Procter & Gamble)
Indications: As part of 'triple therapy' (antibiotics + bismuth) for eradication of *H. pylori*. Bismuth subgallate initiates clotting via activation of factor XII, and is used for bleeding during tonsillectomy and adenoidectomy. BIPP impregnated ribbon gauze is used for packing following ear surgery. Bismuth subsalicylate is in OTC products for gastrointestinal complaints and peptic ulcer disease
Class: Disinfectant, Heavy metal
Half-life: 21–72 days
Clinically important, potentially hazardous interactions with: aspirin, ciprofloxacin, demeclocycline, doxycycline, hypoglycemics, lomefloxacin, lymecycline, methotrexate, minocycline, tetracycline, warfarin
Pregnancy category: D (category C in first and second trimesters; category D in third trimester)

Skin
Dermatitis [2]
Hypersensitivity [2]
Pigmentation [5]
Pruritus (itching) (triple therapy) [2]
Rash [4]
Mucosal
Oral pigmentation [3]
Stomatitis (oral mucositis) [4]
Tongue pigmentation (>10%) [3]

Xerostomia (dry mouth) (triple therapy) (41%)

Central Nervous System
Dysgeusia (taste perversion) (triple therapy) (46%) [9]
Encephalopathy (includes hepatic encephalopathy) [4]
Pain (triple therapy) (10%)
Tremor [2]
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Diarrhea [5]
Nausea [4]
Vomiting [2]

Neuromuscular/Skeletal
Arthralgia [10]
Asthenia / fatigue [2]

Other
Adverse effects / adverse reactions (triple therapy) [52]
Allergic reactions [2]
Death [10]

BISOPROLOL

Trade names: Cardicor (Merck Serono), Concor (Merck Serono), Emcor (Merck Serono), Zebeta (Barr), Ziac (Barr)
Indications: Hypertension
Class: Beta adrenergic blocker, Beta blocker
Half-life: 9–12 hours
Clinically important, potentially hazardous interactions with: diltiazem, disopyramide, guanethidine, reserpine, rifampin, verapamil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Ziac is bisoprolol and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Contra-indicated in patients with cardiogenic shock, overt cardiac failure, second or third degree AV block, and marked sinus bradycardia.

Skin
Edema / fluid retention (see also peripheral edema) (3%)
Peripheral edema (see also edema) (<10%)
Rash (<10%)
Raynaud's phenomenon (<10%)

Cardiovascular
Bradycardia / sinus bradycardia [6]
Hypotension [3]

Central Nervous System
Headache [2]
Hyperesthesia (2%)
Vertigo / dizziness [3]

Neuromuscular/Skeletal
Myalgia/Myopathy (<10%)

Other
Adverse effects / adverse reactions [4]

BIVALIRUDIN

Trade name: Angiomax (The Medicines Company)
Indications: Angioplasty adjunct
Class: Thrombin inhibitor
Half-life: 25 minutes
Clinically important, potentially hazardous interactions with: anisindione, dicumarol, heparin, reteplase, streptokinase, tenecteplase, urokinase, warfarin
Pregnancy category: B

Central Nervous System
Pain (15%)

Hematologic
Bleeding [6]
Thrombosis [3]

Local
Injection-site pain (8%)

Neuromuscular/Skeletal
Back pain (42%)

BLACK COHOSH

Family: Ranunculaceae
Scientific names: *Actaea macrotys, Actaea racemosa, Cimicifuga racemosa*
Indications: Anxiety, arthritis, asthma, cardiovascular and circulatory problems, climacteric, menstrual and premenstrual disorders, colds, cough, constipation, depression, kidney disorders, malaria, sore throat, tinnitus
Class: Phytoestrogen
Half-life: N/A
Clinically important, potentially hazardous interactions with: clevidipine, salicylates
Pregnancy category: N/A
Note: In 2001, the American College of Obstetricians and Gynecologists stated that black cohosh might be helpful in the short term (6 months or less) for women with vasomotor symptoms of menopause.

Skin
Diaphoresis (see also hyperhidrosis) [2]
Rash [2]

Central Nervous System
Seizures [3]
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Hepatic failure [2]
Hepatitis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]

Other
Adverse effects / adverse reactions [4]

BLEOMYCIN

Synonyms: bleo; BLM
Trade name: Blenoxane (Mead Johnson)
Indications: Melanomas, sarcomas, lymphomas, testicular carcinoma
Class: Antibiotic, Antibiotic; anthracycline, Antimicrobial
Half-life: 1.3–9 hours
Clinically important, potentially hazardous interactions with: aldesleukin, brentuximab vedotin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acral erythema [2]
Acral necrosis [2]
Bullous dermatosis (<5%)
Calcification [2]
Cutaneous toxicity / skin toxicity [2]
Erythema [6]
Exanthems [3]
Flagellate dermatitis [12]
Flagellate erythema/pigmentation [45]
Gangrene (digital) [3]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [2]
Hyperkeratosis (palms and soles) [3]
Hypersensitivity (<10%) [5]
Linear streaking [4]
Lipodystrophy [2]
Neutrophilic eccrine hidradenitis [2]
Pigmentation (~50%) [21]
Pruritus (itching) (>5%) [7]
Raynaud's phenomenon (>10%) [35]
Scleroderma (see also morphea / localized scleroderma) [16]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Hair
Alopecia / hair loss (~50%) [8]

Nails
Melanonychia [2]
Nail changes [2]
Nail growth reduced [2]
Nail loss [3]
Nail pigmentation (banding) [2]
Onychodystrophy [2]
Onycholysis [3]

Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Stomatitis (oral mucositis) (>10%) [8]

Central Nervous System
Chills (>10%)
Fever (pyrexia) (includes hyperpyrexia) [4]

Endocrine/Metabolic
SIADH [2]

Hematologic
Hemolytic uremic syndrome [8]

Local
Injection-site phlebitis (<10%)

Neuromuscular/Skeletal
Digital necrosis [3]

Respiratory
Pneumonitis [3]
Pulmonary fibrosis [3]
Pulmonary toxicity [7]

Other
Adverse effects / adverse reactions [2]
Allergic reactions [2]
Death [3]

BLINATUMOMAB

Trade name: Blincyto (Amgen)
Indications: Precursor B-cell acute lymphoblastic leukemia
Class: Bispecific CD19-directed CD3 T-cell engager, Monoclonal antibody
Half-life: 1.4 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: CYTOKINE RELEASE SYNDROME and NEUROLOGICAL TOXICITIES

Skin
- Edema / fluid retention (see also peripheral edema) (5%) [4]
- Peripheral edema (see also edema) (25%) [2]
- Rash (21%) [2]

Cardiovascular
- Chest pain (11%)
- Hypertension (8%)
- Hypotension (11%)
- Tachycardia (8%)

Central Nervous System
- Aphasia (4%) [5]
- Chills (15%)
- Confusion (7%) [4]
- Cytokine release syndrome / cytokine storm (11%) [14]
- Disorientation (3%) [3]
- Encephalopathy (includes hepatic encephalopathy) (5%) [6]
- Fever (pyrexia) (includes hyperpyrexia) (62%) [9]
- Headache (36%) [7]
- Insomnia (15%)
- Memory loss/memory impaired (2%)
- Neurotoxicity [8]
- Paresthesias (5%) [2]
- Seizures (2%) [7]
- Somnolence (drowsiness) [2]
- Speech disorder [3]
- Status epilepticus [2]
- Tremor (20%) [7]
- Vertigo / dizziness (14%) [2]

Endocrine/Metabolic
- ALT increased (12%) [2]
- Appetite decreased (10%)
- AST increased (11%)
- GGT increased (6%) [2]
- Hyperbilirubinemia (8%)
- Hyperglycemia (includes glucose increased) (11%) [2]
- Hypoalbuminemia / albumin decreased (4%)
- Hypokalemia (23%) [5]
- Hypomagnesemia (12%)
- Hypophosphatemia (6%)
- Weight gain (11%)

Gastrointestinal/Hepatic
- Abdominal pain (15%)
- Constipation (20%) [2]
- Diarrhea (20%) [3]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
- Nausea (25%) [4]
- Vomiting (13%)

Hematologic
- Anemia (18%) [5]
- Febrile neutropenia (25%) [8]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (9%) [5]
- Leukocytosis (elevated white blood cell (WBC) count) (2%)
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [3]
- Neutropenia (neutrophils decreased) (16%) [5]
- Sepsis (7%) [3]
- Thrombocytopenia (11%) [6]

Local
- Catheter-related infection [2]

Neuromuscular/Skeletal
- Arthralgia (10%)
- Asthenia / fatigue (17%) [4]
- Ataxia [2]
- Back pain (14%) [2]
- Bone or joint pain (11%)
- Pain in extremities (12%)

Respiratory
- Cough (19%) [2]
- Dyspnea / shortness of breath (15%)
- Pneumonia (9%) [4]

Other
- Adverse effects / adverse reactions [2]
- Infection [2]

BLOODROOT

Family: Papaveraceae
Scientific name: *Sanguinaria canadensis*
Indications: Oral: emetic, cathartic, expectorant. **Topical:** debriding agent, bronchitis, asthma, croup, laryngitis, pharyngitis, scabies, eczema, athlete's foot, nasal polyps, rheumatism, fever, anemia
Class: Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Mucosal
- Leukoplakia [2]

BLUE COHOSH

Family: Berberidaceae
Scientific name: *Caulophyllum thalictroides*
Indications: Rheumatism, dropsy, epilepsy, hysteria, uterine inflammation, thrush, menopause, headache, sexual debility, aphthous stomatitis, laxative, colic, sore throat, hiccups
Class: Diuretic, Oxytocic
Half-life: N/A
Clinically important, potentially hazardous interactions with: cardioactive drugs, clevidipine
Pregnancy category: N/A
Note: Cohosh is from the Algonquin word 'rough', referring to the appearance of the roots. It is a toxic herb and should not be confused with the safer, unrelated herb, black cohosh.

Other
- Adverse effects / adverse reactions [2]

BOCEPREVIR

Trade name: Victrelis (Merck)
Indications: Chronic hepatitis C
Class: CYP3A4 inhibitor, Direct-acting antiviral, Hepatitis C virus NS3/4A protease inhibitor
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: alfuzosin, alprazolam, amiodarone, atorvastatin, bepridil, bosentan, brigatinib, budesonide, buprenorphine, cabozantinib, carbamazepine, cisapride, clarithromycin, colchicine, copanlisib, cyclosporine, dasatinib, desipramine, dexamethasone, digoxin, dihydroergotamine, drospirenone, efavirenz, ergonovine, ergotamine, estradiol, felodipine, flecainide, flibanserin, fluticasone propionate, gefitinib, itraconazole, ketoconazole, lomitapide, lovastatin, methadone, methylergonovine, midazolam, midostaurin, mifepristone, neratinib, nicardipine, nifedipine, olaparib, pazopanib, phenobarbital, phenytoin, pimozide, ponatinib, posaconazole, propafenone, quinidine, ribociclib, rifabutin, rifampin, ritonavir, ruxolitinib, salmeterol, sildenafil, simvastatin, sirolimus, St John's wort, tacrolimus, tadalafil, trazodone, triazolam, vardenafil, vorapaxar, voriconazole, warfarin
Pregnancy category: X (boceprevir is pregnancy category B but must not be used in monotherapy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Must be used in combination with PEG-interferon and ribavirin (see separate entries) Combination treatment is contra-indicated in pregnant women and men whose female partners are pregnant because of the risks for birth defects and fetal death associated with ribavirin, or in coadministration with drugs that are highly dependent on CYP3A4/5 for clearance, or with potent CYP3A4/5 inducers.

Skin
- Pruritus (itching) [3]
- Rash [3]

Central Nervous System
- Dysgeusia (taste perversion) [6]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Hematologic
- Anemia [24]
- Neutropenia (neutrophils decreased) [8]
- Thrombocytopenia [8]

Other
- Adverse effects / adverse reactions [6]
- Infection [2]

BORTEZOMIB

Trade name: Velcade (Millennium)
Indications: Multiple myeloma, mantle cell lymphoma
Class: Biologic, Proteasome inhibitor
Half-life: 9–15 hours
Clinically important, potentially hazardous interactions with: conivaptan, darunavir, delavirdine, efavirenz, indinavir, strong CYP3A4 inducers or inhibitors, telithromycin, thalidomide, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with hypersensitivity to boron or mannitol.

Skin
- Cutaneous toxicity / skin toxicity [5]
- Edema / fluid retention (see also peripheral edema) (23%)
- Erythema [2]
- Folliculitis [2]
- Herpes zoster (12%) [13]
- Peripheral edema (see also edema) [6]
- Pruritus (itching) (11%)
- Purpura [2]
- Rash (18%) [11]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Sweet's syndrome [11]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Mucosal
- Mucositis [2]

Cardiovascular
- Arrhythmias [2]
- Cardiac failure [4]
- Cardiotoxicity [4]
- Congestive heart failure [4]
- Hypertension [3]
- Hypotension (13%) [4]
- QT interval prolonged / QT prolongation [2]

Central Nervous System
- Anorexia [2]
- Anxiety (10%)
- Dysesthesia (23%)
- Dysgeusia (taste perversion) (13%)
- Encephalopathy (includes hepatic encephalopathy) [3]
- Fever (pyrexia) (includes hyperpyrexia) (34%) [9]
- Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [2]
- Headache [3]
- Hypoesthesia (numbness) [2]
- Insomnia (20%) [2]
- Neurotoxicity [27]
- Pain [2]
- Paresthesias (22%) [3]
- Peripheral neuropathy (39%) [70]
- Vertigo / dizziness (17%)

Endocrine/Metabolic
- Appetite decreased (36%)
- Dehydration (10%) [2]
- Hypocalcemia [2]
- Hypokalemia [3]
- Serum creatinine increased [2]
- SIADH [2]
- Weight loss [2]

Gastrointestinal/Hepatic
- Abdominal distension [2]
- Abdominal pain [3]
- Colitis [2]
- Constipation (41%) [7]
- Diarrhea (52%) [25]
- Gastrointestinal disorder / discomfort [3]
- Hepatitis [3]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
- Nausea (55%) [11]
- Pancreatitis / acute pancreatitis [6]
- Vomiting (33%) [4]

Hematologic
- Anemia (29%) [19]
- Febrile neutropenia [6]
- Hemotoxicity [5]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [10]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [12]
- Myelosuppression / bone marrow suppression / myelotoxicity [2]
- Neutropenia (neutrophils decreased) (17%) [37]
- Sepsis [4]
- Thrombocytopenia (36%) [59]
- Thrombotic microangiopathy [2]

Local
- Infusion-related reactions [2]
- Injection-site irritation (5%)
- Injection-site reaction [4]

Neuromuscular/Skeletal
- Arthralgia (17%) [2]
- Asthenia / fatigue (64%) [43]
- Back pain (13%)
- Bone or joint pain (14%) [3]
- Cramps (11%)
- Myalgia/Myopathy (12%)

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
- Tumor lysis syndrome (TLS) [3]

Respiratory
- Cough (20%) [2]
- Dyspnea / shortness of breath (21%) [6]
- Nasopharyngitis (12%)
- Pneumonia (12%) [9]
- Pneumonitis [4]
- Pulmonary toxicity [7]
- Upper respiratory tract infection (12%) [3]

Other
- Adverse effects / adverse reactions [13]
- Death [9]
- Infection [12]

BOSENTAN

Trade name: Tracleer (Actelion)
Indications: Pulmonary arterial hypertension
Class: Antihypertensive, Endothelin receptor (ETR) antagonist, Vasodilator
Half-life: ~5 hours
Clinically important, potentially hazardous interactions with: amiodarone, amprenavir, astemizole, atazanavir, atorvastatin, boceprevir, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, cyclosporine, diltiazem, elbasvir & grazoprevir, enzalutamide, erythromycin, fluconazole, fluvastatin, glibenclamide, glyburide, ibrexafungerp, indinavir, itraconazole, ketoconazole, lemborexant, levonorgestrel, lopinavir, lovastatin, neratinib, olaparib, oral contraceptives, palbociclib, progestogens, reboxetine, rifampin, ritonavir, sildenafil, simvastatin, St John's wort, tacrolimus, tadalafil, telaprevir, tipranavir, ulipristal, vardenafil, venetoclax, voriconazole, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: RISKS OF HEPATOTOXICITY and TERATOGENICITY

Skin
- Edema / fluid retention (see also peripheral edema) (8%) [4]
- Flushing / rubefaction (9%) [2]
- Peripheral edema (see also edema) (8%) [5]
- Pruritus (itching) (4%)

Central Nervous System
- Headache [3]
- Syncope / fainting [2]

Endocrine/Metabolic
- AST increased [2]

Gastrointestinal/Hepatic
- Diarrhea [2]
- Hepatic (liver) disorder / hepatobiliary disorder / hepatic (liver) dysfunction [3]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [18]
- Nausea [2]

Hematologic
- Anemia [5]

Respiratory
- Bronchitis [2]

Other
- Adverse effects / adverse reactions [7]

BOSUTINIB

Trade name: Bosulif (Wyeth)
Indications: Chronic, accelerated, or blast phase Ph+ chronic myelogenous leukemia in adult patients with resistance or intolerance to prior therapy
Class: Tyrosine kinase inhibitor
Half-life: 23 hours
Clinically important, potentially hazardous interactions with: CYP3A inhibitors (strong or moderate), digoxin, ketoconazole, lansoprazole, P-glycoprotein inhibitors, proton pump inhibitors
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (<10%)
- Edema / fluid retention (see also peripheral edema) (14%)
- Hypersensitivity (<10%)
- Pruritus (itching) (10%) [2]
- Rash (35%) [9]
- Urticaria / hives (<10%)

Cardiovascular
- Atrial fibrillation [2]
- Chest pain (<10%)
- Pericardial effusion (<10%)
- QT interval prolonged / QT prolongation [2]

Central Nervous System
Dysgeusia (taste perversion) (<10%)
Fever (pyrexia) (includes hyperpyrexia) (26%) [2]
Headache (20%) [4]
Pain (<10%)
Vertigo / dizziness (10%)
Endocrine/Metabolic
ALT increased (17%) [8]
Appetite decreased (13%)
AST increased (14%) [6]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<10%) [2]
Dehydration (<10%)
Hyperkalemia (<10%)
Hypophosphatemia [2]
Gastrointestinal/Hepatic
Abdominal pain (37%) [2]
Constipation [2]
Diarrhea (82%) [17]
Gastritis / pangastritis / gastric irritation (<10%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<10%) [5]
Nausea (46%) [10]
Vomiting (39%) [9]
Hematologic
Anemia (27%) [2]
Febrile neutropenia (<10%)
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) (17%) [3]
Thrombocytopenia (41%) [5]
Neuromuscular/Skeletal
Arthralgia (14%)
Asthenia / fatigue (11–24%) [4]
Back pain (11%)
Myalgia/Myopathy (<10%)
Renal
Renal failure (<10%)
Respiratory
Bronchitis (<10%)
Cough (20%)
Dyspnea / shortness of breath (12%)
Influenza (<10%)
Nasopharyngitis (10%)
Pleural effusion (<10%) [3]
Pneumonia (<10%)
Respiratory tract infection (12%)
Other
Adverse effects / adverse reactions [4]

BOSWELLIA

Family: Burseraceae
Scientific names: *Boswellia carterii, Boswellia commiphora, Boswellia ovalifoliolata, Boswellia serrata*
Indications: Allergic rhinitis, arthritis, asthma, atherosclerosis, chronic colitis, ulcerative colitis, Crohn's disease, peritumoral brain edema, rheumatism, trypanosomiasis, ulcers
Class: Anti-inflammatory, Diuretic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Other
Adverse effects / adverse reactions [2]

BOTULINUM TOXIN (A & B)

Synonym: OnabotulinumtoxinA
Trade names: Azzalure (Galderma), Bocouture (Merz), Botox (Allergan), Dysport (Ipsen), Myobloc (Solstice), Neurobloc (Eisai), Vistabel (Allergan), Xeomin (Merz)
Indications: Blepharospasm, hemifacial spasm, spasmodic torticollis, sialorrhea, hyperhidrosis, strabismus, oromandibular dystonia, cervical dystonia, spasmodic dysphonia, chronic migraine, urinary incontinence in people with neurologic conditions such as spinal cord injury and multiple sclerosis who have overactivity of the bladder, cosmetic application for wrinkles
Class: Acetylcholine inhibitor, Neuromuscular blocker, Ophthalmic agent, toxin
Half-life: 3–6 months
Clinically important, potentially hazardous interactions with: aminoglycosides, anticholinergics, fesoterodine, tiotropium, trospium
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Distant spread of toxin effect - postmarketing reports indicate that all botulinum toxin products may spread from the area of injection to produce symptoms consistent with botulinum toxin effects. These may include asthenia, generalized muscle weakness, diplopia, ptosis, dysphagia, dysphonia, dysarthria, urinary incontinence and breathing diffculties. These symptoms have been reported hours to weeks after injection.
An antitoxin is available in the event of overdose or misinjection.
Warning: DISTANT SPREAD OF TOXIN EFFECT

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Bruise / bruising / contusion / ecchymosis (ecchymoses) [4]
Erythema [2]
Granulomas [2]
Hematoma [3]
Peripheral edema (see also edema) (<10%)
Pruritus (itching) (<10%)
Purpura (<10%)
Rash [2]
Mucosal
Epistaxis (nosebleed) [2]
Stomatitis (oral mucositis) (<10%)
Xerostomia (dry mouth) (3–34%) [13]
Central Nervous System
Dysgeusia (taste perversion) (<10%)
Gait instability / postural instability [2]
Headache [8]
Hyperesthesia (<10%)
Neurotoxicity [3]
Pain (6–13%) [4]
Seizures [2]
Tremor (<10%)
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Constipation [3]
Diarrhea [3]
Dysphagia [21]
Genitourinary
Dysuria [2]
Enuresis (urinary incontinence) [3]
Hematuria [5]
Urinary retention [15]
Urinary tract infection [17]
Vulvovaginal candidiasis (<10%)
Local
Injection-site bruising [4]
Injection-site ecchymoses [2]
Injection-site edema [8]
Injection-site erythema [4]
Injection-site pain (2–10%) [22]
Injection-site paralysis [2]
Injection-site reaction [6]
Neuromuscular/Skeletal
Arthralgia (<7%)
Asthenia / fatigue [16]
Myasthenia gravis [2]
Neck pain [4]
Ocular
Conjunctivitis (conjunctival inflammation) [2]
Diplopia (double vision) [11]
Epiphora [2]
Eyebrow ptosis / brow ptosis [2]
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) [4]
Eyelid ptosis / blepharoptosis [27]
Ocular adverse effect [2]
Xerophthalmia (dry eyes) (6%) [2]
Otic
Tinnitus (<10%)
Respiratory
Dysphonia (includes voice disorders / voice changes) [2]
Dyspnea / shortness of breath [2]
Influenza- ('flu)-like syndrome (2–10%) [8]
Nasopharyngitis [2]
Pulmonary toxicity [3]
Other
Adverse effects / adverse reactions [23]
Death [4]
Infection (13–19%)
Side effects [3]

BRENTUXIMAB VEDOTIN

Trade name: Adcetris (Seattle Genetics)
Indications: Hodgkin's lymphoma, systemic anaplastic large cell lymphoma
Class: Antibody drug conjugate (ADC), CD30-directed antibody-drug conjugate, Monoclonal antibody
Half-life: 4–6 days
Clinically important, potentially hazardous interactions with: bleomycin, efavirenz, ketoconazole, rifampin, strong CYP3A4 inhibitors
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY

Skin
Diaphoresis (see also hyperhidrosis) (12%)
Lymphadenopathy (11%)
Peripheral edema (see also edema) (4–16%)
Pruritus (itching) (19%)
Rash (31%)
Xerosis / xeroderma (see also dry skin) (10%)

Hair
Alopecia / hair loss (14%)

Central Nervous System
Anxiety (11%)
Chills (13%)
Fever (pyrexia) (includes hyperpyrexia) (29–38%) [4]
Headache (19%)
Insomnia (16%)
Neurotoxicity [2]
Pain (7–28%)
Peripheral neuropathy (68%) [19]
Vertigo / dizziness (11–16%)

Endocrine/Metabolic
Appetite decreased (16%)
Weight loss (6–12%)

Gastrointestinal/Hepatic
Abdominal pain (9–25%)
Constipation (19%)
Diarrhea (36%) [6]
Nausea (42%) [4]
Vomiting (22%)

Hematologic
Anemia (33–52%) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Neutropenia (neutrophils decreased) (55%) [12]
Thrombocytopenia (16–28%) [2]

Neuromuscular/Skeletal
Arthralgia (9–19%)
Asthenia / fatigue (41–49%) [4]
Back pain (14%)
Muscle spasm (10%)
Myalgia/Myopathy (17%)
Pain in extremities (10%)

Ocular
Uveitis / anterior uveitis / posterior uveitis / panuveitis [2]

Respiratory
Cough (17–25%)
Dyspnea / shortness of breath (13–19%)
Pneumonia [2]
Pulmonary toxicity [4]
Upper respiratory tract infection (12–47%)

Other
Adverse effects / adverse reactions [5]
Death [2]

BRETYLIUM

Indications: Ventricular tachycardia and fibrillation
Class: Antiarrhythmic class III
Half-life: 4–17 hours
Clinically important, potentially hazardous interactions with: arsenic, astemizole, ciprofloxacin, enoxacin, gatifloxacin, lomefloxacin, moxifloxacin, norfloxacin, ofloxacin, quinolones, sparfloxacin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients

Cardiovascular
Hypotension [7]

BREWER'S YEAST

Family: Saccharomycetaceae
Scientific names: *Saccharomyces boulardii, Saccharomyces cerevisiae*
Indications: Diarrhea, rotaviral diarrhea, irritable bowel syndrome, Crohn's disease, ulcerative colitis, urinary tract infections, vaginal infections, acne, premenstrual syndrome, furunculosis
Class: Immunomodulator, Probiotic
Half-life: N/A
Clinically important, potentially hazardous interactions with: MAO inhibitors
Pregnancy category: N/A
Note: Immune-deficient subjects or those with mucosal disease may experience serious adverse effects.

BREXPIPRAZOLE

Trade name: Rexulti (Otsuka)
Indications: Schizophrenia, major depressive disorder (with antidepressants)
Class: Antipsychotic
Half-life: 86–91 hours
Clinically important, potentially hazardous interactions with: strong or moderate CYP2D6 inhibitors, strong or moderate CYP3A4 inducers or inhibitors
Pregnancy category: N/A (Neonatal risk in third trimester exposure)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS and SUICIDAL THOUGHTS AND BEHAVIORS

Central Nervous System
Agitation [3]
Akathisia (6–9%) [16]
Anxiety (3%) [3]
Headache (7%) [11]
Insomnia [8]
Psychosis [2]
Restlessness (3%) [2]
Schizophrenia [4]
Sedation (2%) [2]
Somnolence (drowsiness) (5%) [7]
Tremor (3–4%)
Vertigo / dizziness (3%) [2]

Endocrine/Metabolic
Appetite increased (3%) [3]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (2%)
Hyperprolactinemia [2]
Weight gain (4–7%) [17]
Weight loss (10%)

Gastrointestinal/Hepatic
Constipation (2%)
Diarrhea (3%) [3]
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Nausea [5]

Hematologic
Hemotoxicity (2%)

Neuromuscular/Skeletal
Asthenia / fatigue (3%) [4]

Respiratory
Nasopharyngitis (4%) [2]

BRIGATINIB

Trade name: Alunbrig (Ariad)
Indications: Anaplastic lymphoma kinase-positive metastatic non-small cell lung cancer in patients who have progressed on, or are intolerant to, crizotinib
Class: Anaplastic lymphoma kinase (ALK) inhibitor, Tyrosine kinase inhibitor
Half-life: 25 hours
Clinically important, potentially hazardous interactions with: boceprevir, carbamazepine, clarithromycin, cobicistat, conivaptan, CYP3A substrates and strong CYP3A inducers or inhibitors, grapefruit juice, hormonal contraceptives, indinavir, itraconazole, ketoconazole, lopinavir, nelfinavir, phenytoin, posaconazole, rifampin, ritonavir, saquinavir, St John's wort, voriconazole
Pregnancy category: N/A (May cause fetal toxicity based on findings in animal studies)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Photosensitivity [2]
Rash (15–24%)

Cardiovascular
Bradycardia / sinus bradycardia (6–8%)
Hypertension (11–21%) [3]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (6–14%)
Headache (27–28%) [2]
Insomnia (7–11%)
Peripheral neuropathy (13%)

Endocrine/Metabolic
ALT increased (34–40%) [2]
Appetite decreased (15–22%)
AST increased (38–65%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (27–48%) [3]
Hyperglycemia (includes glucose increased) (38–49%)
Hyperlipasemia (21–45%) [3]
Hypophosphatemia (15–23%)

Gastrointestinal/Hepatic
Abdominal pain (10–17%)
Constipation (15–19%)
Diarrhea (19–38%) [6]
Nausea (33–40%) [5]
Vomiting (23–24%)

Hematologic
Anemia (23–40%)
Lymphopenia (lymphocytopenia) / lymphocytes decreased (19–27%)
Prothrombin time (INR) increased (20–22%)

Neuromuscular/Skeletal
Arthralgia (14%)
Asthenia / fatigue (29–36%) [2]
Back pain (10–15%)
Muscle spasm (12–17%)

Myalgia/Myopathy (9–15%)
Pain in extremities (4–11%)

Ocular
Visual disturbances (7–10%)

Respiratory
Cough (18–34%) [4]
Dyspnea / shortness of breath (21–27%) [5]
Hypoxia (see also hypoxemia) (<3%) [4]
Pneumonia (5–10%) [4]
Pneumonitis (4–9%)
Pulmonary hypertension [2]
Pulmonary toxicity [3]

Other
Death [3]

BRIMONIDINE

Trade names: Alphagan P (Allergan), Mirvaso (Galderma)
Indications: Open-angle glaucoma, ocular hypertension, topical application for rosacea
Class: Adrenergic alpha2-receptor agonist
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: amitriptyline, MAO inhibitors, tricyclic antidepressants
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: [T] = Topical.

Skin
Burning / skin burning sensation [T] (2%) [4]
Contact dermatitis [T] [2]
Dermatitis [2]
Erythema [T] (4%) [7]
Flushing / rubefaction [T] (3%) [3]
Hypersensitivity [3]
Irritation (skin) [3]
Pruritus (itching) [4]
Rosacea [2]
Xerosis / xeroderma (see also dry skin) [2]

Mucosal
Xerostomia (dry mouth) (5–20%) [12]

Cardiovascular
Hypertension (5–20%)

Central Nervous System
Dysgeusia (taste perversion) (<10%) [4]
Somnolence (drowsiness) [2]

Neuromuscular/Skeletal
Asthenia / fatigue [4]

Ocular
Blepharitis (<10%) [3]
Conjunctival hyperemia / conjunctival injection (5–20%) [7]
Conjunctivitis (conjunctival inflammation) (5–20%) [8]
Eyelid crusting (<10%)
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) (<10%)
Eyelid erythema (<10%)
Intraocular pressure increased [2]
Ocular adverse effect [4]
Ocular allergy (4%) [8]
Ocular burning (<10%) [7]
Ocular hyperemia [5]
Ocular itching / ocular pruritus [5]
Ocular pain [3]
Ocular stinging (<10%) [6]
Periocular dermatitis [2]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [11]
Vision blurred [T] [3]
Visual disturbances (5–20%)
Xerophthalmia (dry eyes) [3]

Respiratory
Upper respiratory tract infection (<10%)

Other
Adverse effects / adverse reactions [4]
Allergic reactions [2]

BRINZOLAMIDE

Trade name: Azopt (Alcon)
Indications: Open-angle glaucoma, ocular hypertension
Class: Carbonic anhydrase inhibitor, Diuretic
Half-life: 111 days
Clinically important, potentially hazardous interactions with: conivaptan, darunavir, delavirdine, indinavir, salicylates, telithromycin, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Brinzolamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Dermatitis (<5%)

Mucosal
Xerostomia (dry mouth) [4]

Central Nervous System
Dysgeusia (taste perversion) (5–10%) [15]
Headache (<5%)

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [2]

Neuromuscular/Skeletal
Asthenia / fatigue [3]

Ocular
Blepharitis (<5%) [2]
Conjunctival hyperemia / conjunctival injection [10]
Conjunctivitis (conjunctival inflammation) [5]
Corneal abnormalities [3]
Foreign body sensation (<5%)
Lacrimation [3]
Ocular adverse effect [3]
Ocular allergy [2]
Ocular burning [4]
Ocular discharge (<5%)
Ocular hyperemia [5]
Ocular itching / ocular pruritus [8]
Ocular keratitis (<5%)
Ocular pain (<5%) [6]
Ocular stinging [4]
Vision blurred (5–10%) [16]
Xerophthalmia (dry eyes) (<5%) [5]

Respiratory
Rhinitis (<5%)

Other
Adverse effects / adverse reactions [3]

BRIVARACETAM

Trade name: Briviact (UCB)
Indications: Epilepsy adjunct therapy
Class: Anticonvulsant, Antiepileptic
Half-life: 9 hours
Clinically important, potentially hazardous interactions with: carbamazepine, phenytoin, rifampin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Central Nervous System
Aggression (includes anger) [5]
Agitation [2]
Anxiety [2]
Balance disorder (3%)
Behavioral disturbances / personality changes [2]
Depression [6]
Dysgeusia (taste perversion) (<3%)
Euphoria / elation (<3%)
Headache [13]
Impaired concentration [2]
Insomnia [2]
Irritability (3%) [8]
Neurotoxicity (13%)
Psychosis [2]
Sedation (16%)
Seizures [3]
Somnolence (drowsiness) (16%) [30]
Vertigo / dizziness (12%) [26]

Gastrointestinal/Hepatic
Constipation (2%)
Nausea (5%) [6]
Vomiting (5%) [3]

Genitourinary
Urinary tract infection [2]

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (2%)

Local
Infusion-site pain (<3%)

Neuromuscular/Skeletal
Asthenia / fatigue (9%) [20]
Back pain [2]
Convulsions [2]

Respiratory
Nasopharyngitis [8]

Other
Adverse effects / adverse reactions [6]

BRODALUMAB

Trade name: Siliq (Valeant)
Indications: Moderate-to-severe plaque psoriasis
Class: Interleukin-17A (IL-17A) antagonist / interleukin-17 inhibitor, Monoclonal antibody
Half-life: N/A
Clinically important, potentially hazardous interactions with: cyP450 substrates, live vaccines
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with Crohn's disease.
Warning: SUICIDAL IDEATION AND BEHAVIOR

Skin
Candidiasis / candidosis [5]
Contact dermatitis [2]
Eczema / eczematous reaction / eczematous eruption [3]
Folliculitis [2]
Tinea (pedis, versicolor, cruris) [2]
Mucosal
Oropharyngeal pain (2%)
Central Nervous System
Headache (4%) [9]
Suicidal ideation [5]
Gastrointestinal/Hepatic
Diarrhea (2%) [5]
Nausea (2%) [3]
Hematologic
Neutropenia (neutrophils decreased) [5]
Local
Injection-site bleeding (<2%)
Injection-site bruising (<2%)
Injection-site erythema (<2%) [4]
Injection-site pain (<2%)
Injection-site pruritus (<2%)
Injection-site reaction (2%) [2]
Neuromuscular/Skeletal
Arthralgia (5%) [10]
Asthenia / fatigue (3%) [2]
Back pain [2]
Myalgia/Myopathy (2%)
Respiratory
Influenza [2]
Nasopharyngitis [15]
Upper respiratory tract infection [16]
Other
Adverse effects / adverse reactions [3]
Infection (25%) [2]

BROMELAIN

Family: Bromeliaceae
Scientific names: *Ananas comosus, Ananas duckei, Ananas sativus, Bromelia ananas, Bromelia comosa*
Indications: Oral: inflammation, mild ulcerative colitis, osteoarthritis, sinusitis, sprains. **Topical:** burn debridement
Class: Analgesic, Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: amoxicillin, fluorouracil, tetracycline, vincristine
Pregnancy category: N/A
Note: Phlogenzym is rutoside, bromelain and trypsin.

Skin
Contact dermatitis [2]
Central Nervous System
Headache [2]
Respiratory
Asthma (occupational / inhalation) [3]
Other
Adverse effects / adverse reactions [8]

BROMOCRIPTINE

Trade name: Parlodel (Novartis)
Indications: Amenorrhea, Parkinsonism, infertility, acromegaly
Class: Dopamine receptor agonist
Half-life: initial: 6–8 hours; terminal: 50 hours
Clinically important, potentially hazardous interactions with: alcohol, antipsychotics, azithromycin, domperidone, erythromycin, isometheptene, lanreotide, levomepromazine, macrolides, memantine, methyldopa, metoclopramide, octreotide, pasireotide, pseudoephedrine, risperidone, sympathomimetics, zuclopenthixol
Pregnancy category: N/A (Contra-indicated in women who become pregnant or in the postpartum period)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Erythromelalgia / erythermalgia [5]
Flushing / rubefaction [2]
Livedo reticularis [3]
Raynaud's phenomenon (<10%) [8]
Scleroderma (see also morphea / localized scleroderma) [2]
Hair
Alopecia / hair loss [2]
Mucosal
Nasal congestion (3–4%)
Xerostomia (dry mouth) (4–10%) [3]
Cardiovascular
Cardiotoxicity [2]
Coronary spasm [2]
Orthostatic hypotension (6%)
Postural hypotension (6%)
Central Nervous System
Anorexia (4%)
Hallucinations [4]
Headache (<19%) [3]
Seizures (in postpartum patients) [3]
Somnolence (drowsiness) (3%)
Syncope / fainting (<2%)
Vertigo / dizziness (17%)
Gastrointestinal/Hepatic
Abdominal pain (4%)
Constipation (3–14%) [2]
Diarrhea (3%)
Dyspepsia / functional dyspepsia / gastroparesis (4%)
Gastrointestinal bleeding (<2%)
Nausea (18–49%) [7]
Vomiting (2–5%) [4]
Neuromuscular/Skeletal
Asthenia / fatigue (3–7%)
Respiratory
Pleural effusion [2]
Pulmonary fibrosis [2]
Other
Adverse effects / adverse reactions [2]

BROMPHENIRAMINE

Trade names: Bromfed (Muro), Rondec (Biovail)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 12–48 hours
Clinically important, potentially hazardous interactions with: aprobarbital, butabarbital, chloral hydrate, ethchlorvynol, mephobarbital, pentobarbital, phenobarbital, phenothiazines, primidone, secobarbital, zolpidem
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Mucosal
Xerostomia (dry mouth) (<10%)

BUCILLAMINE

Trade name: Rimatil (Santen)
Indications: Rheumatoid arthritis
Class: Disease-modifying antirheumatic drug (DMARD)
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Pemphigus [3]
Rash [2]
Nails
Nail dystrophy [2]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [4]
Endocrine/Metabolic
Breast hypertropy / gigantomastia / macromastia [2]
Neuromuscular/Skeletal
Myasthenia gravis [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]
Proteinuria [2]
Respiratory
Cough [4]
Other
Adverse effects / adverse reactions [2]

BUCLIZINE

Indications: Motion sickness, nausea/vomiting
Class: Histamine H1 receptor antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: aprobarbital, butabarbital, chloral hydrate, ethchlorvynol, mephobarbital, pentobarbital, phenobarbital, phenothiazines, primidone, secobarbital, zolpidem
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: pediatric patients

BUDESONIDE

Trade names: Pulmicort Turbuhaler (AstraZeneca), Rhinocort (AstraZeneca), Symbicort (AstraZeneca)
Indications: Asthma, rhinitis
Class: Corticosteroid / Glucocorticoid, Corticosteroid, inhaled
Half-life: N/A
Clinically important, potentially hazardous interactions with: boceprevir, efavirenz, itraconazole, ketoconazole, live vaccines, oral contraceptives, telaprevir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Budesonide–MMX is an oral formulation of budesonide that uses Multi-Matrix System (MMX) technology to extend release to the colon. Symbicort is budesonide and formoterol.

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash [3]
- Dermatitis [8]
- Exanthems [2]
- Moon face [2]
- Pruritus (itching) [2]
- Rash [2]

Mucosal
- Oral candidiasis [2]

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Headache [2]
- Insomnia [2]
- Mood changes [2]

Endocrine/Metabolic
- Adrenal insufficiency (hypoadrenalism) [3]
- Cushing's syndrome [2]

Ocular
- Cataract [2]

Respiratory
- Asthma (exacerbation) [4]
- Cough [2]
- Nasopharyngitis [2]

Other
- Adverse effects / adverse reactions [14]
- Allergic reactions [3]
- Infection [2]
- Systemic reactions [2]

BUMETANIDE

Trade name: Bumex (Roche)
Indications: Edema associated with congestive heart failure
Class: Diuretic, loop, Sulfonamide
Half-life: 1–1.5 hours
Clinically important, potentially hazardous interactions with: amikacin, aminoglycosides, digoxin, gentamicin, kanamycin, neomycin, streptomycin, tobramycin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Bumetanide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
- Pruritus (itching) [2]

BUPIVACAINE

Trade names: Exparel (Pacira), Marcaine (AstraZeneca), Sensorcaine (AstraZeneca)
Indications: Local or regional anesthesia or analgesia
Class: Anesthetic; local
Half-life: N/A
Clinically important, potentially hazardous interactions with: adenosine, antiarrhythmics, beta blockers, conivaptan, dronedarone, MAO inhibitors, PEG-interferon, propranolol, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
- Pruritus (itching) [4]

Cardiovascular
- Bradycardia / sinus bradycardia [2]
- Cardiac arrest [5]
- Hypotension [4]

Central Nervous System
- Headache [2]
- Sedation [2]
- Seizures [3]
- Vertigo / dizziness [2]

Gastrointestinal/Hepatic
- Constipation [2]
- Nausea [5]
- Vomiting [5]

Other
- Adverse effects / adverse reactions [2]
- Death [3]

BUPRENORPHINE

Trade names: Probuphine (Braeburn), Suboxone (Reckitt Benckiser), Subutex (Reckitt Benckiser), Transtec (Napp)
Indications: Opioid dependence, moderate to severe pain
Class: Analgesic, Mixed opioid agonist/antagonist, Narcotic
Half-life: 37 hours
Clinically important, potentially hazardous interactions with: antihistamines, atazanavir, azole antifungals, benzodiazepines, boceprevir, carbamazepine, cimetidine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, delavirdine, diazepam, efavirenz, erythromycin, HIV protease inhibitors, hydrocodone, hydromorphone, ketoconazole, ketorolac, linezolid, macrolide antibiotics, morphine, neuroleptics, oliceridine, oxymorphone, phenobarbital, phenytoin, rifampin, ritonavir, tapentadol, tipranavir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Suboxone contains naloxone; Probuphine is an implant for subdermal administration.
Warning: ABUSE POTENTIAL, LIFE-THREATENING RESPIRATORY DEPRESSION, and ACCIDENTAL EXPOSURE
Probuphine: IMPLANT MIGRATION, PROTRUSION, EXPULSION, and NERVE DAMAGE ASSOCIATED WITH INSERTION and REMOVAL

Skin
- Abscess (2%)
- Dermatitis [2]
- Diaphoresis (see also hyperhidrosis) (12–14%)
- Erythema [4]
- Hyperhidrosis (see also diaphoresis) [4]
- Pruritus (itching) [11]

Mucosal
- Xerostomia (dry mouth) [3]

Cardiovascular
- Bradycardia / sinus bradycardia [3]
- Hypotension [4]
- Pulmonary edema / cardiogenic pulmonary edema [2]
- QT interval prolonged / QT prolongation [2]
- Vasodilation (9%)

Central Nervous System
- Anxiety (12%)
- Chills (6–8%)
- Depression (11%)
- Fever (pyrexia) (includes hyperpyrexia) (3%)
- Headache (30–36%) [6]
- Insomnia (14–25%)
- Nervousness (6%)
- Neurotoxicity [2]
- Pain (22–24%)
- Seizures [3]
- Somnolence (drowsiness) (5%) [4]
- Vertigo / dizziness (4%) [14]

Gastrointestinal/Hepatic
- Abdominal pain (11%) [2]
- Constipation (11–12%) [12]
- Diarrhea (4–5%) [2]
- Dyspepsia / functional dyspepsia / gastroparesis (3%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
- Nausea (10–15%) [15]
- Vomiting (5–8%) [12]

Local
- Application-site reactions [3]

Neuromuscular/Skeletal
- Asthenia / fatigue (7–14%) [4]
- Back pain (4–14%)
- Myalgia/Myopathy [2]

Ocular
- Lacrimation (5%)

Respiratory
- Cough (4%)
- Influenza- ('flu)-like syndrome (6%)
- Pharyngitis (sore throat) (4%)
- Respiratory depression [3]
- Rhinitis (5–11%)

Other
Adverse effects / adverse reactions [4]
Death [9]
Infection (6–20%)

BUPROPION

Trade names: Wellbutrin (GSK), Zyban (GSK)
Indications: Depression, aid to smoking cessation
Class: Antidepressant, Dopamine reuptake inhibitor
Half-life: 14 hours
Clinically important, potentially hazardous interactions with: amitriptyline, citalopram, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, cyclosporine, deutetrabenazine, efavirenz, eluxadoline, erythromycin, escitalopram, isocarboxazid, levodopa, linezolid, lopinavir, lorcaserin, methylphenidate, mifepristone, oliceridine, phenelzine, ritonavir, tranylcypromine, trimipramine, vortioxetine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: NEUROPSYCHIATRIC REACTIONS; AND SUICIDAL THOUGHTS AND BEHAVIORS

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<10%)
AGEP [3]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema [3]
Diaphoresis (see also hyperhidrosis) (5%) [4]
Erythema multiforme [4]
Exanthems [2]
Flushing / rubefaction (4%)
Hypersensitivity [6]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Peripheral edema (see also edema) [2]
Pruritus (itching) (4%) [3]
Psoriasis [3]
Rash (4%) [3]
Serum sickness [3]
Serum sickness-like reaction [10]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Thrombocytopenic purpura [2]
Urticaria / hives [9]
Xerosis / xeroderma (see also dry skin) (<10%)

Hair
Hirsutism (<10%)

Mucosal
Tongue edema [2]
Xerostomia (dry mouth) (<64%) [20]

Cardiovascular
Arrhythmias [2]
Hypertension [3]
Myocardial ischemia [2]
Palpitation [2]
Tachycardia [3]

Central Nervous System
Aggression (includes anger) [2]
Agitation [5]
Anxiety [5]
Delirium [2]
Depression [4]
Dysgeusia (taste perversion) (4%)
Dyskinesia [2]
Hallucinations [7]
Hallucinations, visual (see also Charles Bonnet syndrome) [3]
Headache [8]
Insomnia [9]
Irritability [2]
Mania [3]
Myokymia / twitching (2%)
Nightmares [2]
Paresthesias (2%)
Parkinsonism [4]
Psychosis [7]
Seizures [40]
Serotonin syndrome [2]
Sleep-related disorder [2]
Somnolence (drowsiness) [5]
Stuttering (dysphemia) / stammering [2]
Suicidal ideation [5]
Tremor (>10%) [7]
Vertigo / dizziness [7]

Gastrointestinal/Hepatic
Constipation [5]
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [17]
Vomiting [6]

Genitourinary
Priapism [2]

Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue [3]
Dystonia [10]
Myalgia/Myopathy (6%) [2]
Rhabdomyolysis [3]

Respiratory
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [2]
Congenital malformations [2]
Death [5]

BUSERELIN

Trade names: Suprecur (Sanofi-Aventis), Suprefact (Sanofi-Aventis)
Indications: Prostate cancer, endometriosis, uterine fibrosis
Class: Gonadotropin-releasing hormone (GnRH) agonist
Half-life: 80 minutes
Clinically important, potentially hazardous interactions with: antidiabetics, sexual hormones

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Skin
Flushing / rubefaction [8]

Endocrine/Metabolic
Amenorrhea [3]
Libido decreased [3]

Genitourinary
Impotence [2]

BUSPIRONE

Trade name: BuSpar (Bristol-Myers Squibb)
Indications: Anxiety
Class: Anxiolytic, Serotonin antagonist
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: citalopram, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, desipramine, grapefruit juice, itraconazole, linezolid, nefazodone, paclitaxel, rifapentine, ritonavir, St John's wort, telithromycin, vilazodone, voriconazole
Pregnancy category: B

Hair
Alopecia / hair loss [2]

Mucosal
Xerostomia (dry mouth) (3%)

Central Nervous System
Serotonin syndrome [4]

BUSULFAN

Trade name: Myleran (GSK)
Indications: Chronic myelogenous leukemia, bone marrow disorders
Class: Alkylating agent
Half-life: 3.4 hours (after first dose)
Clinically important, potentially hazardous interactions with: acetaminophen, aldesleukin, itraconazole, metronidazole, voriconazole
Pregnancy category: D
Warning: LEUKEMOGENESIS and PANCYTOPENIA

Skin
Erythema (macular) (>10%)
Erythema multiforme [5]
Erythema nodosum [3]
Exanthems [2]
Pigmentation ('busulfan tan') (<10%) [13]
Urticaria / hives (>10%) [5]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Hair
Alopecia / hair loss (>10%) [7]

Mucosal
Mucositis [4]
Stomatitis (oral mucositis) [4]

Central Nervous System
Neurotoxicity [3]
Seizures [4]

Endocrine/Metabolic
Gynecomastia [3]
Porphyria cutanea tarda [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]

Hematologic
Febrile neutropenia [3]

Respiratory
Pulmonary toxicity [3]

Other
Death [4]
Infection [3]

BUTABARBITAL

Trade name: Butisol (MedPointe)
Indications: Sedation
Class: Barbiturate
Half-life: 40–140 hours
Clinically important, potentially hazardous interactions with: alcohol, antihistamines, ardeparin, argatroban, brompheniramine, buclizine, chlorpheniramine, dalteparin, danaparoid, dicumarol, enoxaparin, ethanolamine, heparin, imatinib, tinzaparin, warfarin
Pregnancy category: D

Skin
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]

BUTALBITAL

Trade names: Esgic (Forest), Fioricet (Watson), Fiorinal (Watson)
Indications: Tension headaches
Class: Barbiturate
Half-life: 35 hours
Clinically important, potentially hazardous interactions with: alcohol, dicumarol, pizotifen
Pregnancy category: C (the pregnancy category will be D if used in high doses or for prolonged periods)

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%)
Erythema multiforme [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Rash (<10%)

BUTORPHANOL

Trade name: Stadol (Bristol-Myers Squibb)
Indications: Pain, migraine
Class: Opiate agonist-antagonist
Half-life: 2.5–4 hours
Clinically important, potentially hazardous interactions with: cimetidine, hydrocodone, hydromorphone, oliceridine, oxymorphone, tapentadol
Pregnancy category: C

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Flushing / rubefaction (<10%)
Pruritus (itching) (<10%) [2]
Mucosal
Xerostomia (dry mouth) (3–9%)
Central Nervous System
Dysgeusia (taste perversion) (3–9%)
Vertigo / dizziness [5]

BUTTERBUR

Family: Asteraceae; Compositae
Scientific names: *Petasites hybridus, Petasites officinalis*
Indications: Allergic rhinitis, asthma, bronchitis, chills, cough, dysmenorrhea, hay fever, headache, heart tonic, migraine, peptic ulcer, appetite stimulant, irritable bladder, poultice for wounds or skin ulcers
Class: Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Contraindicated in pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Petadolex formulation has had the potentially carcinogenic pyrrolizidine alkaloids removed.

Skin
Edema / fluid retention (see also peripheral edema) [2]
Erythema [2]
Hypersensitivity [2]
Rash [2]
Gastrointestinal/Hepatic
Eructation (belching) [3]
Other
Adverse effects / adverse reactions [2]

CABAZITAXEL

Trade name: Jevtana (Sanofi-Aventis)
Indications: Hormone-refractory metastatic prostate cancer (in combination with prednisone)
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Microtubule inhibitor
Half-life: α-, β-, and γ-half-lives of 4 minutes, 2 hours, and 95 hours, respectively
Clinically important, potentially hazardous interactions with: antineoplastics, atazanavir, BCG vaccine, carbamazepine, cardiac glycosides, clarithromycin, clozapine, conivaptan, CYP3A4 inhibitors and inducers, dasatinib, deferasirox, denosumab, doxorubicin, echinacea, grapefruit juice, indinavir, itraconazole, ketoconazole, leflunomide, natalizumab, nelfinavir, phenobarbital, phenytoin, pimecrolimus, rifabutin, rifampin, ritonavir, saquinavir, sipuleucel-T, St John's wort, tacrolimus, telithromycin, trastuzumab, vaccines, vitamin K antagonists, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: NEUTROPENIC DEATH and SEVERE HYPERSENSITIVITY

Skin
Cutaneous toxicity / skin toxicity [3]
Hypersensitivity [2]
Peripheral edema (see also edema) (9%)
Hair
Alopecia / hair loss (10%)
Mucosal
Mucosal inflammation (6%)
Cardiovascular
Arrhythmias (5%)
Hypotension (5%)
Central Nervous System
Anorexia (16%)
Dysgeusia (taste perversion) (11%)
Fever (pyrexia) (includes hyperpyrexia) (12%) [2]
Headache (8%)
Neurotoxicity [5]
Pain (5%) [2]
Peripheral neuropathy (13%) [2]
Vertigo / dizziness (8%)
Endocrine/Metabolic
Dehydration (5%)
Weight loss (9%)
Gastrointestinal/Hepatic
Abdominal pain (17%)
Constipation (20%)
Diarrhea (47%) [17]
Dyspepsia / functional dyspepsia / gastroparesis (10%)
Nausea (34%) [4]
Vomiting (22%) [4]
Genitourinary
Dysuria (7%)
Hematuria (17%) [4]
Urinary tract infection (8%)
Hematologic
Anemia (98%) [9]
Febrile neutropenia (7%) [19]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (96%) [3]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) (94%) [22]
Thrombocytopenia (48%) [7]
Neuromuscular/Skeletal
Arthralgia (11%) [2]
Asthenia / fatigue (20–37%) [9]
Back pain [2]
Muscle spasm (7%)
Respiratory
Cough (11%)
Dyspnea / shortness of breath (12%) [2]
Other
Death [2]

CABERGOLINE

Trade name: Dostinex (Pfizer)
Indications: Hyperprolactinemia, Parkinsonism
Class: Dopamine receptor agonist
Half-life: 63–69 hours
Clinically important, potentially hazardous interactions with: azithromycin, levomepromazine, risperidone, zuclopenthixol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Edema / fluid retention (see also peripheral edema) [2]
Hot flashes / hot flushes (3%)
Mucosal
Xerostomia (dry mouth) (2%)
Cardiovascular
Cardiac failure [2]

Hypotension [5]
Myocardial toxicity [3]
Pericarditis [4]
Valve regurgitation [2]
Valvulopathy [9]

Central Nervous System
Dyskinesia [2]
Headache (26%) [7]
Mania [3]
Neurotoxicity [3]
Paresthesias (5%) [2]
Psychosis [3]
Somnolence (drowsiness) (<5%)
Vertigo / dizziness (15–17%) [7]

Endocrine/Metabolic
Mastodynia (2%)

Gastrointestinal/Hepatic
Abdominal pain (5%)
Constipation (7–10%)
Nausea (28%) [4]

Neuromuscular/Skeletal
Asthenia / fatigue (6%) [5]

Ocular
Ocular adverse effect [2]

CABOZANTINIB

Trade names: Carbometyx (Exelixis), Cometriq (Exelixis)
Indications: Metastatic medullary thyroid cancer (Cometriq), advanced renal cell carcinoma (Cabometyx)
Class: Angiogenesis inhibitor / antiangiogenic agent, MET (mesenchymal-epithelial transition) inhibitor / MET tyrosine kinase inhibitor, Tyrosine kinase inhibitor, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 55 hours (Cometriq); 99 hours (Cabometyx)
Clinically important, potentially hazardous interactions with: atazanavir, boceprevir, carbamazepine, clarithromycin, conivaptan, grapefruit juice, indinavir, itraconazole, ketoconazole, lopinavir, nefazodone, nelfinavir, phenobarbital, phenytoin, posaconazole, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, telithromycin, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: PERFORATIONS AND FISTULAS, and HEMORRHAGE

Skin
Cutaneous toxicity / skin toxicity [3]
Erythema (11%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (50%) [24]
Hyperkeratosis (7%)
Jaundice (25%)
Rash (19%)
Wound complications [2]
Xerosis / xeroderma (see also dry skin) (19%)

Hair
Alopecia / hair loss (16%)
Hair changes (34%)
Hair pigmentation (34%) [2]

Mucosal
Mucosal inflammation [3]
Stomatitis (oral mucositis) (51%) [4]

Cardiovascular
Chest pain (9%)
Hypertension (33%) [20]
Hypotension (7%)
Systolic dysfunction / ejection fraction reduced [3]

Central Nervous System
Anorexia [3]
Anxiety (9%)
Dysgeusia (taste perversion) (34%) [3]
Headache (18%)
Paresthesias (7%)
Peripheral neuropathy (5%)
Vertigo / dizziness (14%)

Endocrine/Metabolic
ALP increased (52%)
ALT increased (86%) [3]
Appetite decreased (46%) [5]
AST increased (86%) [3]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Dehydration (7%)
GGT increased (27%)
Hypoalbuminemia / albumin decreased (36%)
Hypocalcemia (52%)
Hypokalemia (18%)
Hypomagnesemia (19%)
Hyponatremia (10%)
Hypophosphatemia (28%)
Hypothyroidism [5]
Serum creatinine increased (58%)
Weight loss (48%) [9]

Gastrointestinal/Hepatic
Abdominal pain (27%)
Constipation (27%) [2]
Diarrhea (63%) [25]
Dyspepsia / functional dyspepsia / gastroparesis (11%)
Dysphagia (13%)
Gastrointestinal perforation / perforated colon / gastric perforation (3%)
Hemorrhoids (9%)
Nausea (43%) [10]
Vomiting (24%) [5]

Hematologic
Anemia [3]
Hemorrhage [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (53%)
Neutropenia (neutrophils decreased) (35%) [2]
Thrombocytopenia (35%) [2]
Thrombosis [2]

Neuromuscular/Skeletal
Arthralgia (14%)
Asthenia / fatigue (21–41%) [28]
Muscle spasm (12%)
Osteonecrosis / avascular necrosis (jaw) [4]
Pain in extremities (14%)

Renal
Proteinuria (2%)

Respiratory
Cough (18%)
Dysphonia (includes voice disorders / voice changes) (20%)
Dyspnea / shortness of breath (19%)
Pulmonary embolism [2]

Other
Adverse effects / adverse reactions [6]
Death (6%) [6]

CAFFEINE

Family: Rubiales
Scientific names: *Cafcit (Bedford), Coffea arabica, Coffea canephora, Coffea robusta, Cola acuminata, Thea sinensis, Theobroma cacao*
Indications: With ergotamine for migraine, with NSAIDs in analgesics, headache, respiratory depression in neonates, postprandial hypotension, enhances seizure duration in electroconvulsive therapy, ingredient in cough and cold remedies
Class: Diuretic, Xanthine alkaloid
Half-life: 2–7 hours
Clinically important, potentially hazardous interactions with: aminophylline, carbamazepine, cimetidine, clozapine, cocoa, ephedra, ferrous sulfate, fluorides, ginseng, guarana, idrocilamide, ketoconazole, ketoprofen, levomepromazine, linezolid, methoxsalen, mexiletine, norfloxacin, phenobarbital, phenylpropanolamine, phenytoin, regadenoson, terbinafine, teriflunomide, zonisamide
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Caffeine is an addictive psychoactive substance. Spontaneous abortion and low birthweight babies have occurred in pregnant women consuming 150 mg caffeine per day. Abuse can lead to cardiac damage or death. See also separate profile for guarana.
Common symptoms of caffeine withdrawal are headache; drowsiness; yawning, impaired concentration; lassitude; irritability; decreased contentedness, well-being and self-confidence; decreased sociability; flu-like symptoms; muscle aches and stiffness; hot or cold spells; nausea or vomiting; and blurred vision. Cafcit is caffeine citrate.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Hypersensitivity [2]
Urticaria / hives [5]

Cardiovascular
Arrhythmias [4]
Atrial fibrillation [2]
Hypertension [2]
Palpitation [2]

Central Nervous System
Anxiety [2]
Depression [2]
Headache [2]
Insomnia [2]
Psychosis [3]
Restlessness [2]
Seizures [6]
Tremor [4]

Gastrointestinal/Hepatic
Gastrointestinal disorder / discomfort [2]

Neuromuscular/Skeletal
Rhabdomyolysis [6]

Other
Adverse effects / adverse reactions [3]
Death (from abuse / overdose) [21]

CALCIFEDIOL

Synonym: calcidiol
Trade name: Rayaldee (Opko)
Indications: Hyperparathyroidism in stage 3 or 4 chronic kidney disease
Class: Vitamin D analog
Half-life: 11 days
Clinically important, potentially hazardous interactions with: anticonvulsants, atazanavir, cholestyramine, clarithromycin, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, phenobarbital, ritonavir, saquinavir, telithromycin, thiazides, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Hematoma (2%)
Cardiovascular
Congestive heart failure (4%)
Endocrine/Metabolic
Hyperkalemia (3%)
Hyperuricemia (2%)
Serum creatinine increased (5%)
Gastrointestinal/Hepatic
Constipation (3%)
Hematologic
Anemia (5%)
Neuromuscular/Skeletal
Arthralgia (2%)
Respiratory
Bronchitis (3%)
Cough (4%)
Dyspnea / shortness of breath (4%)
Nasopharyngitis (5%)

CALCIPOTRIOL

Synonym: calcipotriene
Trade name: Dovonex (Leo Pharma)
Indications: Psoriasis
Class: Antipsoriatic agent, Vitamin D analog
Half-life: ~30 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with acute psoriatic eruptions, hypercalcemia or vitamin D toxicity.

Skin
Burning / skin burning sensation (23%)
Contact dermatitis [8]
Erythema (<10%)
Pigmentation [3]
Pruritus (itching) (>10%) [6]
Psoriasis (<10%) [3]
Rash (11%)
Xerosis / xeroderma (see also dry skin) (<5%)
Endocrine/Metabolic
Hypercalcemia [3]
Local
Application-site pain [3]
Application-site pruritus [2]
Application-site reactions [2]
Respiratory
Nasopharyngitis [4]
Other
Adverse effects / adverse reactions [3]

CALCITONIN

Trade names: Calcimar (Sanofi-Aventis), Miacalcin (Novartis)
Indications: Paget's disease of bone
Class: Parathyroid hormone antagonist
Half-life: 70–90 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Flushing / rubefaction (>10%) [5]
Gastrointestinal/Hepatic
Diarrhea [2]
Nausea [2]
Local
Injection-site edema (>10%)
Injection-site inflammation (>10%) [2]
Injection-site reaction (10%)
Respiratory
Rhinitis (12%)

CALCIUM HYDROXYLAPATITE

Trade name: Radiesse (Merz)
Indications: Correction of facial wrinkles and folds
Class: Dermal filler
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticoagulants, antiplatelet drugs, aspirin, baloxavir marboxil

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) [2]
Granulomas [6]
Necrosis (skin necrosis) [2]
Nodular eruption [3]
Mucosal
Oral lesions [3]

CANAGLIFLOZIN

Trade names: Invokamet (Janssen), Invokana (Janssen)
Indications: Type II diabetes mellitus
Class: Antidiabetic, Sodium-glucose co-transporter 2 (SGLT2) inhibitor ('gliflozin')
Half-life: 11–13 hours
Clinically important, potentially hazardous interactions with: digoxin, rifampin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with severe renal impairment, end stage renal disease, or on dialysis. Invokamet is canagliflozin and metformin.

Skin
Pruritus (itching) [2]
Cardiovascular
Postural hypotension [2]
Central Nervous System
Headache [3]
Vertigo / dizziness [3]
Endocrine/Metabolic
Dehydration [3]
Diabetic ketoacidosis [2]
Hypoglycemia (see also insulin autoimmune syndrome) [8]
Gastrointestinal/Hepatic
Abdominal pain (2%) [3]
Constipation (2%) [3]
Diarrhea [2]
Nausea (2%) [4]
Genitourinary
Genital mycotic infection (4–11%) [29]
Pollakiuria [8]
Polyuria [2]
Urinary frequency (5%) [6]
Urinary tract infection (4–6%) [24]
Vulvovaginal candidiasis [2]
Vulvovaginal pruritus (2–3%) [3]
Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue (2%)
Back pain [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Nasopharyngitis [2]
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [5]
Death [2]
Dipsia (thirst) / polydipsia (2–3%) [4]
Infection [2]

CANAKINUMAB

Trade name: Ilaris (Novartis)
Indications: Periodic fever syndromes, systemic juvenile idiopathic arthritis
Class: Interleukin-1 inhibitor, Monoclonal antibody
Half-life: 26 days
Clinically important, potentially hazardous interactions with: cytochrome P450, IL-1 blockers, lenalidomide, TNF-blockers
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Interleukin-1 blockade may interfere with immune response to infections. Treatment with medications that work through inhibition of IL-1 has been associated with an increased risk of serious infections.

Central Nervous System
Headache [2]
Vertigo / dizziness (11%) [2]
Endocrine/Metabolic
Weight gain (11%)
Gastrointestinal/Hepatic
Gastroenteritis (11%) [2]
Nausea (14%)
Genitourinary
Urinary tract infection [2]

Hematologic
Macrophage activation syndrome [3]
Neutropenia (neutrophils decreased) [2]
Local
Injection-site reaction [4]
Neuromuscular/Skeletal
Myalgia/Myopathy (11%)
Respiratory
Bronchitis (11%)
Influenza- ('flu)-like syndrome (20%)
Nasopharyngitis (34%) [3]
Pharyngitis (sore throat) (11%)
Pneumonia [2]
Rhinitis (17%)
Upper respiratory tract infection [4]
Other
Adverse effects / adverse reactions [8]
Infection [14]

CANDESARTAN

Trade name: Atacand (AstraZeneca)
Indications: Hypertension and heart failure
Class: Angiotensin receptor antagonist (blocker), Antihypertensive
Half-life: 9 hours
Clinically important, potentially hazardous interactions with: aliskiren
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: FETAL TOXICITY

Skin
Angioedema [3]
Cardiovascular
Hypotension [5]
Central Nervous System
Dysgeusia (taste perversion) [2]
Headache [5]
Vertigo / dizziness (4%) [6]
Endocrine/Metabolic
Hyperkalemia (2%)
Gastrointestinal/Hepatic
Gastroenteritis [2]
Hematologic
Neutropenia (neutrophils decreased) [2]
Neuromuscular/Skeletal
Back pain (3%) [3]
Renal
Renal failure [3]
Respiratory
Pharyngitis (sore throat) (2%)
Rhinitis (2%)
Upper respiratory tract infection (6%) [3]
Other
Adverse effects / adverse reactions [4]
Fetotoxicity [2]

CANGRELOR

Trade name: Kengreal (Medicines Co)
Indications: Adjunct to percutaneous coronary intervention for reducing the risk of periprocedural myocardial infarction, repeat coronary revascularization and stent thrombosis
Class: Antiplatelet, Antiplatelet; cyclopentyl triazolo-pyrimidine (CPTP)
Half-life: 3–6 minutes
Clinically important, potentially hazardous interactions with: clopidogrel, prasugrel
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with significant active bleeding.

Hematologic
Bleeding (<15%) [7]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (3%)
Respiratory
Dyspnea / shortness of breath [5]

CAPECITABINE

Trade name: Xeloda (Roche)
Indications: Metastatic breast or colorectal cancer, adjuvant colon cancer
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Fluoropyrimidine
Half-life: 0.5–1 hour
Clinically important, potentially hazardous interactions with: allopurinol, anticoagulants, CYP2C9 substrates, erlotinib, leucovorin, phenprocoumon, phenytoin, tegafur/gimeracil/oteracil, tegafur/gimeracil/oteracil, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Patients receiving concomitant capecitabine and oral coumarin-derivative anticoagulants such as warfarin and phenprocoumon should have their anticoagulant response (INR or prothrombin time) monitored frequently in order to adjust the anticoagulant dose accordingly. Altered coagulation parameters and/or bleeding, including death, have been reported during concomitant use.
Contra-indicated in patients with severe renal impairment or with known hypersensitivity to fluorouracil.
Warning: XELODA - WARFARIN INTERACTION

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
Actinic keratoses [3]
Adermatoglyphia (fingerprint loss) [3]
Cutaneous toxicity / skin toxicity [4]
Dermatitis (37%) [10]
Edema / fluid retention (see also peripheral edema) (9%) [3]
Exfoliative dermatitis (31–37%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (7–58%) [183]
Hyperpigmentation (see also pigmentation) [3]
Jaundice [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
Photosensitivity [2]
Pigmentation [10]
Pruritus (itching) [2]
Radiation recall dermatitis [6]
Rash [14]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Vitiligo [2]
Xerosis / xeroderma (see also dry skin) [2]
Hair
Alopecia / hair loss [10]
Nails
Nail changes (7%)
Onycholysis [3]
Onychomadesis [3]
Paronychia [2]
Pyogenic granuloma [2]
Mucosal
Mucosal inflammation [2]
Mucositis [17]
Oral pigmentation [2]
Stomatitis (oral mucositis) (24%) [19]
Cardiovascular
Angina [6]
Cardiotoxicity [6]
Chest pain [3]
Coronary vasospasm [5]
Hypertension [6]
Myocardial infarction [4]
QT interval prolonged / QT prolongation [2]
Thromboembolism [2]
Ventricular fibrillation [2]
Central Nervous System
Anorexia [13]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [2]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [6]
Neurotoxicity [14]
Pain [4]
Paresthesias (21%)
Peripheral neuropathy [12]
Vertigo / dizziness [3]
Endocrine/Metabolic
ALT increased [5]
Appetite decreased [2]
AST increased [5]
Hyperammonemia [2]
Hyperbilirubinemia [4]
Hyperglycemia (includes glucose increased) [6]
Hypertriglyceridemia (includes triglycerides increased) [5]
Hypokalemia [2]
Hypophosphatemia [2]
Gastrointestinal/Hepatic
Abdominal pain [9]
Colitis [2]
Constipation [3]
Diarrhea [77]
Enterocolitis [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Ileitis [7]
Ileus [2]
Nausea [41]
Pancreatitis / acute pancreatitis [2]
Vomiting [30]

Hematologic
Anemia [28]
Febrile neutropenia [4]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [19]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Neutropenia (neutrophils decreased) [52]
Thrombocytopenia [23]

Neuromuscular/Skeletal
Asthenia / fatigue [54]
Ataxia [2]
Myalgia/Myopathy (9%) [3]
Pain in extremities [2]

Respiratory
Nasopharyngitis [2]

Other
Adverse effects / adverse reactions [7]
Allergic reactions [2]
Death [7]
Infection [2]

CAPREOMYCIN

Trade name: Capastat (King)
Indications: Tuberculosis
Class: Antibiotic, Antimicrobial, Drug-resistant antituberculosis agent
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: aminoglycosides, non-depolarizing neuromuscular blocking agents, oxaliplatin
Pregnancy category: C

Endocrine/Metabolic
Hypocalcemia [2]
Hypokalemia [3]
Hypomagnesemia [2]

CAPSICUM

Family: Solanaceae
Scientific names: *Capsicum annuum, Capsicum baccatum, Capsicum chinense, Capsicum frutescens, Capsicum pubscens*
Indications: Nausea, neuropathic pain, osteoarthritis, fibromyalgia, anticarcinogen, rheumatoid arthritis, diabetic neuropathy, postherpetic neuralgia (shingles), psoriasis, pruritus, vitiligo, dyspepsia, flatulence, ulcers, stomach cramps, hypertension, improved circulation, weight-loss
Class: Rubefacient
Half-life: N/A
Clinically important, potentially hazardous interactions with: ACE inhibitors, aminophylline, antiplatelet drugs, aspirin, latex, salicylic acid
Pregnancy category: N/A
Note: Pepper spray or gas contains 5% oleoresin capsicum (OC). It is used by police and in personal defense sprays.

Skin
Burning / skin burning sensation [5]
Dermatitis [3]
Erythema [3]
Hypersensitivity [2]
Pruritus (itching) [2]
Urticaria / hives [2]

Cardiovascular
Hypertension [2]

Central Nervous System
Pain [5]

Ocular
Conjunctivitis (conjunctival inflammation) [3]

Other
Adverse effects / adverse reactions [6]
Allergic reactions [3]
Death [5]

CAPTOPRIL

Trade names: Capoten (Par), Capozide (Par)
Indications: Hypertension, congestive heart failure, to improve survival following myocardial infarction in clinically stable patients with left ventricular dysfunction, diabetic nephropathy in patients with Type I insulin-dependent diabetes mellitus and retinopathy
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive, Vasodilator
Half-life: <3 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, allopurinol, alpha blockers, alprostadil, amifostine, amiloride, angiotensin II receptor antagonists, antacids, antidiabetics, antihypertensives, antipsychotics, anxiolytics and hypnotics, aprotinin, azathioprine, baclofen, beta blockers, calcium channel blockers, clonidine, cyclosporine, CYP2D6 inhibitors, darunavir, diazoxide, digoxin, diuretics, eplerenone, estrogens, everolimus, general anesthetics, gold & gold compounds, heparins, herbals, hydralazine, hypotensives, insulin, interferon alfa, levodopa, lithium, MAO inhibitors, metformin, methyldopa, methylphenidate, minoxidil, moxisylyte, moxonidine, naldemedine, nitrates, nitroprusside, NSAIDs, pentoxifylline, phosphodiesterase 5 inhibitors, potassium salts, probenecid, prostacyclin analogues, rituximab, salicylates, sirolimus, spironolactone, sulfonylureas, temsirolimus, tizanidine, tolvaptan, triamterene, trimethoprim, venetoclax, yohimbine
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Capozide is captopril and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Warning: FETAL TOXICITY

Skin
Angioedema (<15%) [45]
Bullous pemphigoid / pemphigoid [2]
Dermatitis [3]
DRESS syndrome [2]
Erythroderma [2]
Exanthems (4–7%) [19]
Exfoliative dermatitis (<2%) [4]
Flushing / rubefaction [2]
Kaposi's sarcoma [2]
Lichen planus pemphigoides [2]
Lichenoid eruption / lichenoid reaction [12]
Linear IgA bullous dermatosis [5]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [8]
Mycosis fungoides [2]
Pemphigus (<2%) [24]
Pemphigus foliaceus [2]
Penile ulceration [2]
Photosensitivity [3]
Phototoxicity (<2%)
Pigmentation [2]
Pityriasis rosea (<2%) [6]
Pruritus (itching) (<7%) [8]
Pseudolymphoma [2]
Psoriasis [8]
Rash (4–7%) [12]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Urticaria / hives [9]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [7]

Hair
Alopecia / hair loss (<2%) [4]

Nails
Nail dystrophy [2]
Onycholysis [2]

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (<2%) [5]
Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis) [2]
Glossitis (inflammation of the tongue) [3]
Oral mucosal eruption [3]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [4]
Sialadenitis [2]
Tongue ulceration [3]
Xerostomia (dry mouth) (<2%)

Central Nervous System
Ageusia (taste loss) / taste disorder (2–4%) [11]
Dysgeusia (taste perversion) (metallic or salty taste) (2–4%) [14]
Hallucinations [2]
Paresthesias (<2%)

Endocrine/Metabolic
Gynecomastia [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Cough [19]

Other
Adverse effects / adverse reactions [4]
Allergic reactions [2]

CARAWAY

Family: Apiaceae Umbelliferae
Scientific names: *Apium carvi, Carum carvi*
Indications: Hypotensive, dyspepsia, hysteria, tonic, stomachic, flatulent indigestion, flatulent colic of infants, fragrance, flavoring in foods, toothpaste, and cosmetics
Class: Anti-inflammatory, Carminative
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known

Pregnancy category: N/A

Other
Adverse effects / adverse reactions [4]

CARBACHOL

Trade name: Carbastat Ophthalmic (Novartis)
Indications: Glaucoma
Class: Miotic, Muscarinic cholinergic agonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

CARBAMAZEPINE

Trade names: Epitol (Teva), Tegretol (Novartis)
Indications: Epilepsy, pain or trigeminal neuralgia
Class: Anticonvulsant, Antipsychotic, CYP1A2 inducer, CYP3A4 inducer, Mood stabilizer
Half-life: 18–55 hours
Clinically important, potentially hazardous interactions with: abiraterone, acetaminophen, acetylcysteine, adenosine, afatinib, amitriptyline, amlodipine, amprenavir, apixaban, apremilast, aprepitant, aripiprazole, artemether/lumefantrine, bictegravir/emtricitabine/tenofovir alafenamide, boceprevir, brigatinib, brivaracetam, buprenorphine, cabazitaxel, cabozantinib, caffeine, caspofungin, cefixime, cenobamate, ceritinib, charcoal, citalopram, clarithromycin, clobazam, clopidogrel, clorazepate, clozapine, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, cobimetinib, copanlisib, crizotinib, dabigatran, daclatasvir, darunavir, dasatinib, deflazacort, delavirdine, dexamethasone, diltiazem, doravirine, doravirine/lamiduvine/tenofovir disoproxil, doxacurium, doxycycline, dronedarone, efavirenz, elbasvir & grazoprevir, eliglustat, emtricitabine/rilpivirine/tenofovir alafenamide, enzalutamide, erlotinib, erlotinib, erythromycin, eslicarbazepine, estradiol, ethosuximide, etravirine, ezogabine, felodipine, fesoterodine, flibanserin, fosamprenavir, fostemsavir, gefitinib, glecaprevir & pibrentasvir, ibrexafungerp, ibrutinib, idelalisib, imatinib, indinavir, influenza vaccine, isavuconazonium sulfate, isotretinoin, itraconazole, ixabepilone, ixazomib, lacosamide, lapatinib, ledipasvir & sofosbuvir, lemborexant, lesinurad, levetiracetam, levomepromazine, levonorgestrel, linezolid, lopinavir, lumateperone, methylprednisolone, midazolam, midostaurin, mifepristone, naldemedine, nelfinavir, neratinib, nevirapine, nifedipine, nilotinib, nintedanib, olanzapine, olaparib, oliceridine, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, ondansetron, osilodrostat, osimertinib, oxcarbazepine, oxtriphylline, paclitaxel, palbociclib, paliperidone, perampanel, pimavanserin, piracetam, ponatinib, ponesimod, prednisolone, propoxyphene, regorafenib, rilpivirine, riociguat, risperidone, ritonavir, rivaroxaban, roflumilast, romidepsin, rufinamide, simeprevir, simvastatin, sodium picosulfate, sofosbuvir, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, solifenacin, sonidegib, sorafenib, St John's wort, sunitinib, telaprevir, telithromycin, temsirolimus, tenofovir alafenamide, terbinafine, tezacaftor/ivacaftor, thalidomide, tiagabine, ticagrelor, tipranavir, tolvaptan, tramadol, triamcinolone, troleandomycin, ulipristal, valbenazine, vandetanib, vemurafenib, venetoclax, verapamil, vorapaxar, voriconazole, vortioxetine, ziprasidone, zuclopenthixol
Pregnancy category: D
Note: Carbamazepine is the main cause of Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN), and the hypersensitivity syndrome in Han Chinese, and in peoples of other Southeast Asian countries, as a result of a strong pharmacogenetic association that has been reported in these patients between the human leukocyte antigen (HLA)-B*1502 and carbamazepine.
Warning: SERIOUS DERMATOLOGIC REACTIONS AND HLA-B*1502 ALLELE; APLASTIC ANEMIA AND AGRANULOCYTOSIS

Skin
- AGEP [5]
- Angioedema [5]
- Bullous dermatosis [4]
- Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR)) [6]
- Cutaneous toxicity / skin toxicity [2]
- Dermatitis [7]
- Diaphoresis (see also hyperhidrosis) (<10%)
- DRESS syndrome [75]
- Eczema / eczematous reaction / eczematous eruption [2]
- Erythema multiforme [17]
- Erythroderma [12]
- Exanthems (>5%) [36]
- Exfoliative dermatitis [24]
- Facial edema [2]
- Fixed eruption [10]
- Hypersensitivity [72]
- Lichen planus (includes hypertrophic lichen planus) [2]
- Lichenoid eruption / lichenoid reaction [8]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [35]
- Lymphadenopathy [2]
- Lymphoma [2]
- Lymphoproliferative disease / lymphoproliferative disorder [5]
- Mycosis fungoides [3]
- Pemphigus [3]
- Photosensitivity [9]
- Pruritus (itching) [7]
- Pseudolymphoma [17]
- Purpura [8]
- Pustules / pustular eruption [5]
- Rash (>10%) [31]
- Serum sickness [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<10%) [150]
- Toxic pustuloderma [3]
- Urticaria / hives [14]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [7]

Hair
- Alopecia / hair loss [7]

Mucosal
- Mucocutaneous eruption (includes fixed eruption) [4]
- Mucocutaneous lymph node syndrome (Kawasaki syndrome) [2]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
- Tongue ulceration [2]

Cardiovascular
- Bradycardia / sinus bradycardia [3]
- Myocarditis [2]

Central Nervous System
- Ageusia (taste loss) / taste disorder [3]
- Coma [3]
- Dysgeusia (taste perversion) [2]
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Hallucinations, auditory [2]
- Headache [5]
- Memory loss/memory impaired [2]
- Seizures [13]
- Somnolence (drowsiness) [8]
- Tic disorder [4]
- Vertigo / dizziness [8]

Endocrine/Metabolic
- Acute intermittent porphyria [5]
- Hyponatremia [6]
- SIADH [17]
- Weight gain [5]

Gastrointestinal/Hepatic
- Diarrhea [3]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [12]
- Nausea [5]
- Pancreatitis / acute pancreatitis [3]
- Vanishing bile duct syndrome / ductopenia [4]
- Vomiting [3]

Hematologic
- Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [4]
- Aplastic anemia [3]
- Eosinophilia [2]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
- Thrombocytopenia [3]

Neuromuscular/Skeletal
- Asthenia / fatigue [3]
- Ataxia [5]
- Myasthenia gravis [2]
- Osteoporosis [2]

Ocular
- Diplopia (double vision) [2]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
- Respiratory depression [2]

Other
- Adverse effects / adverse reactions [10]
- Allergic reactions [9]
- Death [8]
- Side effects [3]
- Teratogenicity [12]

CARBENICILLIN

Trade name: Geocillin (Pfizer)
Indications: Urinary tract infections
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 1.0–1.5 hours
Clinically important, potentially hazardous interactions with: anticoagulants, ceftobiprole, cyclosporine, demeclocycline, doxycycline, gentamicin, imipenem/cilastatin, methotrexate, minocycline, oxytetracycline, tetracycline
Pregnancy category: B

Skin
Purpura [2]
Mucosal
Glossitis (inflammation of the tongue) (<10%)
Central Nervous System
Dysgeusia (taste perversion) (<10%)
Seizures [2]

CARBIMAZOLE

Trade name: NeoMercazole (Amdipharm)
Indications: Hyperthyroidism
Class: Antithyroid, Imidazole antithyroid agent
Half-life: 6–8 hours
Clinically important, potentially hazardous interactions with: aminophylline, amiodarone, digoxin, prednisolone
Pregnancy category: D
Note: Carbimazole is a prodrug of methimazole (see separate entry).

Skin
Hypersensitivity [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [10]
Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [8]
Neutropenia (neutrophils decreased) [2]
Neuromuscular/Skeletal
Myalgia/Myopathy [4]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Pleural effusion [2]
Other
Teratogenicity [2]

CARBINOXAMINE

Trade name: Histex (TEAMM)
Indications: Allergic rhinitis
Class: Histamine H1 receptor antagonist
Half-life: 10–20 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

CARBOPLATIN

Trade name: Paraplatin (Bristol-Myers Squibb)
Indications: Various carcinomas and sarcomas
Class: Alkylating agent, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Platinum-based antineoplastic
Half-life: terminal: 22–40 hours
Clinically important, potentially hazardous interactions with: aldesleukin, bexarotene
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
Cutaneous toxicity / skin toxicity [6]
Erythema (2%) [2]
Exanthems [3]
Flushing / rubefaction [3]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [5]
Hypersensitivity (2%) [27]
Pigmentation [2]
Pruritus (itching) (2%) [2]
Radiation recall dermatitis [2]
Rash (2%) [10]
Scleroderma (see also morphea / localized scleroderma) [2]
Urticaria / hives (2%) [4]
Hair
Alopecia / hair loss (3%) [19]
Alopecia areata [2]
Mucosal
Epistaxis (nosebleed) [2]
Mucositis [5]
Stomatitis (oral mucositis) (>10%) [2]
Cardiovascular
Hypertension [10]
Central Nervous System
Anorexia [8]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [2]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Neurotoxicity [16]
Pain [2]
Paresthesias [2]
Peripheral neuropathy [9]
Vertigo / dizziness [2]
Endocrine/Metabolic
ALT increased [4]
AST increased [3]
Hyperbilirubinemia [2]
Hyperglycemia (includes glucose increased) [5]
Hyponatremia [3]
SIADH [3]
Gastrointestinal/Hepatic
Constipation [3]
Diarrhea [16]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Gastrointestinal perforation / perforated colon / gastric perforation [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea [18]
Pancreatitis / acute pancreatitis [2]
Vomiting [18]
Hematologic
Anemia [31]
Febrile neutropenia [23]
Hemolytic anemia [2]
Hemorrhage [2]
Hemotoxicity [8]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [15]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [3]
Myelosuppression / bone marrow suppression / myelotoxicity [5]
Neutropenia (neutrophils decreased) [59]
Pancytopenia (includes bicytopenia) [2]
Thrombocytopenia [41]
Local
Injection-site pain (>10%)
Neuromuscular/Skeletal
Asthenia / fatigue [27]
Myalgia/Myopathy [3]
Otic
Ototoxicity [7]
Tinnitus [3]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [9]
Proteinuria [3]
Respiratory
Cough [2]
Hemoptysis [3]
Pneumonia [3]
Pulmonary toxicity [3]
Other
Adverse effects / adverse reactions [3]
Allergic reactions [4]
Death [7]
Infection [5]

CARFILZOMIB

Trade name: Kyprolis (Onyx)
Indications: Multiple myeloma
Class: Proteasome inhibitor
Half-life: ~1 hour
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Herpes zoster (reactivation) (2%) [2]
Peripheral edema (see also edema) (24%) [3]
Cardiovascular
Arrhythmias [2]
Cardiac failure (7%) [5]
Cardiotoxicity [9]
Cardiovascular adverse effect [2]
Chest pain (11%)
Hypertension (14%) [11]
Central Nervous System
Anorexia (12%)
Chills (16%)
Fever (pyrexia) (includes hyperpyrexia) (30%) [7]
Headache (28%) [3]
Hypoesthesia (numbness) (12%)
Insomnia (18%) [2]
Pain (12%)
Peripheral neuropathy (14%) [15]
Vertigo / dizziness (13%)
Endocrine/Metabolic
AST increased (13%)
Hypercalcemia (11%)
Hyperglycemia (includes glucose increased) (12%) [3]
Hypokalemia (14%) [3]
Hypomagnesemia (14%)
Hyponatremia (10%) [2]
Hypophosphatemia (11%) [3]
Serum creatinine increased [5]
Gastrointestinal/Hepatic
Constipation (21%) [3]
Diarrhea (33%) [7]
Nausea (45%) [15]

Vomiting (22%) [5]

Genitourinary
Albuminuria [2]

Hematologic
Anemia (47%) [22]
Hemolytic uremic syndrome [2]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (14%) [4]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (24%) [7]
Neutropenia (neutrophils decreased) (21%) [11]
Thrombocytopenia (36%) [22]
Thrombotic microangiopathy [5]

Neuromuscular/Skeletal
Arthralgia (16%)
Asthenia / fatigue (13–56%) [18]
Back pain (20%)
Muscle spasm (14%) [2]
Pain in extremities (13%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [7]
Renal failure [2]
Tumor lysis syndrome (TLS) [4]

Respiratory
Cough (26%) [5]
Dyspnea / shortness of breath (35%) [11]
Pneumonia (13%) [7]
Pulmonary hypertension (2%)
Pulmonary toxicity [2]
Upper respiratory tract infection (28%) [5]

Other
Adverse effects / adverse reactions [3]
Infection [2]

CARIPRAZINE

Trade name: Vraylar (Forest)
Indications: Schizophrenia, manic or mixed episodes associated with bipolar I disorder
Class: Antipsychotic
Half-life: 2–4 days
Clinically important, potentially hazardous interactions with: CYP3A4 inducers
Pregnancy category: N/A (Neonatal risk in third trimester exposure)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Rash (<2%)

Mucosal
Oropharyngeal pain (<3%)
Xerostomia (dry mouth) (<3%)

Cardiovascular
Hypertension (2–6%)
Tachycardia (<3%)

Central Nervous System
Agitation (3–5%)
Akathisia (20–21%) [28]
Anxiety (3–6%) [3]
Extrapyramidal symptoms (15–29%) [19]
Fever (pyrexia) (includes hyperpyrexia) (<4%) [4]
Headache (9–18%) [12]
Insomnia (8–13%) [15]
Mania (worsening) [2]
Parkinsonism (13–26%) [5]
Restlessness (4–7%) [9]
Schizophrenia (worsening) [3]
Sedation [9]
Somnolence (drowsiness) (5–10%) [5]
Tremor [11]
Vertigo / dizziness (3–7%) [8]

Endocrine/Metabolic
Appetite decreased (<4%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<3%)
Weight gain (2–3%) [7]

Gastrointestinal/Hepatic
Abdominal pain (3–8%) [2]
Constipation (6–11%) [11]
Diarrhea (<5%) [5]
Dyspepsia / functional dyspepsia / gastroparesis (4–9%) [6]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<3%)
Nausea (5–13%) [14]
Vomiting (4–10%) [9]

Genitourinary
Urinary tract infection (<2%)

Neuromuscular/Skeletal
Arthralgia (<2%)
Asthenia / fatigue (<5%) [2]
Back pain (<3%)
Dystonia (2–5%) [3]
Pain in extremities [2]

Ocular
Vision blurred (4%) [4]

Respiratory
Cough (<4%)
Nasopharyngitis (<2%)

Other
Adverse effects / adverse reactions [3]
Toothache (odontalgia) (3–6%) [2]

CARISOPRODOL

Trade name: Soma (MedPointe)
Indications: Painful musculoskeletal disorders
Class: Central muscle relaxant
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: CNS depressants, eucalyptus, meprobamate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with acute intermittent porphyria.

Skin
Angioedema (<10%)
Fixed eruption [2]
Flushing / rubefaction (<10%)
Urticaria / hives [2]

Central Nervous System
Amnesia [2]
Trembling (<10%)

Other
Death [2]

CARMUSTINE

Trade names: BiCNU (Bristol-Myers Squibb), Gliadel Wafer (Guilford)
Indications: Brain tumors, Hodgkin's disease, multiple myeloma
Class: Alkylating agent, Nitrosourea
Half-life: initial: 1.4 minutes; secondary: 20 minutes
Clinically important, potentially hazardous interactions with: aldesleukin, cimetidine, clorazepate
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Dermatitis [3]
Flushing / rubefaction (<10%) [2]
Pigmentation (on accidental contact) [2]
Telangiectasia [2]

Hair
Alopecia / hair loss (<10%)

Central Nervous System
Intracranial hemorrhage [2]
Meningococcal infection [2]
Seizures [2]

Gastrointestinal/Hepatic
Nausea [2]
Vomiting [2]

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
Thrombocytopenia [2]

Local
Injection-site burning (>10%)

Neuromuscular/Skeletal
Asthenia / fatigue [2]

CARTEOLOL

Trade name: Ocupress (ophthalmic) (Novartis)
Indications: Glaucoma, hypertension
Class: Adrenergic beta-receptor antagonist
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: clonidine, epinephrine, verapamil
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Note: Cutaneous side effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy.

Skin
Dermatitis (eyedrops) [3]
Rash (2%) [2]

Central Nervous System
Paresthesias (2%)

Ocular
Blepharitis [2]

CARVEDILOL

Trade name: Coreg (GSK)
Indications: Hypertension
Class: Adrenergic beta-receptor antagonist
Half-life: 7–10 hours
Clinically important, potentially hazardous interactions with: cinacalcet, delavirdine, efavirenz, irbesartan, leflunomide, propafenone, talazoparib, trimethoprim, venetoclax, voriconazole, zafirlukast
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Diaphoresis (see also hyperhidrosis) (3%)
- Edema / fluid retention (see also peripheral edema) (generalized) (5–6%) [2]
- Peripheral edema (see also edema) (<7%)
- Pruritus (itching) [2]
- Purpura (<3%)

Cardiovascular
- Angina (2–6%)
- Atrial fibrillation [2]
- Atrioventricular block (<3%)
- Bradycardia / sinus bradycardia (2–10%) [7]
- Cardiac failure [2]
- Congestive heart failure [2]
- Extrasystoles [2]
- Hypertension (<3%)
- Hypotension (9–14%) [8]
- Palpitation (<3%)
- Postural hypotension (<3%)

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) (<3%)
- Headache (5–8%) [2]
- Pain (9%)
- Paresthesias (2%)
- Somnolence (drowsiness) (<3%)
- Syncope / fainting (3–8%)
- Vertigo / dizziness (24–32%) [5]

Endocrine/Metabolic
- ALP increased (<3%) [2]
- Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<3%) [3]
- Diabetes mellitus (<3%)
- GGT increased (<3%)
- Hypercholesterolemia (<4%)
- Hyperglycemia (includes glucose increased) (5–12%)
- Hyperkalemia (<3%) [2]
- Hyperuricemia (<3%)
- Hypervolemia (fluid overload) (<3%)
- Hypoglycemia (see also insulin autoimmune syndrome) (<3%)
- Hyponatremia (<3%)
- Hypovolemia (<3%)
- Weight gain (10–12%)
- Weight loss (<3%)

Gastrointestinal/Hepatic
- Black stools / melena (<3%)
- Diarrhea (2–12%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea (4–9%)
- Vomiting (<6%)

Genitourinary
- Albuminuria (<3%)
- Hematuria (<3%)
- Impotence (<3%)

Hematologic
- Anemia [2]
- Prothrombin time decreased (<3%)
- Thrombocytopenia (<3%)

Neuromuscular/Skeletal
- Arthralgia (<6%)
- Asthenia / fatigue (7–24%) [2]
- Muscle spasm (<3%)
- Myalgia/Myopathy (3%)

Ocular
- Abnormal vision (5%)
- Vision blurred (<3%)

Respiratory
- Cough (5–8%)
- Dyspnea / shortness of breath [4]
- Stridor [2]

Other
- Adverse effects / adverse reactions [8]
- Infection (2%)

CASCARA

Family: Rhamnaceae
Scientific names: *Frangula purshianus, Rhamnus purshiana*
Indications: Atonic constipation, dyspepsia, colitis, diverticulitis, dyspepsia, gallstones, gout, hemorrhoids, hypertension, indigestion, insomnia, jaundice, liver disease, nervous disorders, parasites, stomach disorders
Class: Stimulant laxative
Half-life: N/A
Clinically important, potentially hazardous interactions with: antiarrhythmics, cardiac glycosides, corticosteroids, licorice, thiazide diuretics
Pregnancy category: N/A

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

CASPOFUNGIN

Trade name: Cancidas (Merck)
Indications: Invasive *Aspergillus* and *Candida* infections
Class: Antifungal / antimycotic, Antimicrobial, Antimycobacterial; echinocandin
Half-life: beta phase: 9–11 hours; terminal: 40–50 hours
Clinically important, potentially hazardous interactions with: carbamazepine, cyclosporine, dexamethasone, efavirenz, nevirapine, phenytoin, rifampin, tacrolimus
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%)
- Edema / fluid retention (see also peripheral edema) (~3%)
- Erythema (<4%)
- Facial edema (3%)
- Flushing / rubefaction (3%)
- Jaundice (<5%)
- Peripheral edema (see also edema) (11%)
- Petechiae (<5%)
- Pruritus (itching) (2–7%)
- Rash (4–16%) [5]
- Septic–toxic shock (11–13%)
- Ulcerations (3%)
- Urticaria / hives (<5%)
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) (2%)

Mucosal
- Epistaxis (nosebleed) (<5%)
- Mucosal inflammation (6–10%)

Cardiovascular
- Arrhythmias (<5%)
- Atrial fibrillation (<5%)
- Bradycardia / sinus bradycardia (<5%)
- Cardiac arrest (<5%)
- Hypertension (5–10%)
- Hypotension (6–12%)
- Myocardial infarction (<5%)
- Phlebitis (18%) [3]
- Tachycardia (4–7%)
- Thrombophlebitis [2]

Central Nervous System
- Anxiety (<5%)
- Chills (9–23%)
- Confusion (<5%)
- Depression (<5%)
- Fever (pyrexia) (includes hyperpyrexia) (6–29%) [8]
- Headache (5–15%) [3]
- Insomnia (<5%)
- Pain (<5%)
- Paresthesias (<3%)
- Seizures (<5%)
- Tremor (<2%)
- Vertigo / dizziness (<5%)

Endocrine/Metabolic
- ALP increased (12–23%) [4]
- ALT increased (4–18%) [4]
- Appetite decreased (<5%)
- AST increased (6–16%) [5]
- Hypercalcemia (<5%)
- Hyperglycemia (includes glucose increased) (<5%)
- Hypokalemia (6–8%) [4]
- Hypomagnesemia (<5%)

Gastrointestinal/Hepatic
- Abdominal distension (<5%)
- Abdominal pain (7–9%)
- Constipation (<5%)
- Diarrhea (6–27%)
- Dyspepsia / functional dyspepsia / gastroparesis (<5%)
- Hepatic failure (<5%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<5%) [8]
- Nausea (5–15%) [2]
- Vomiting (9–17%) [2]

Genitourinary
- Hematuria (<5%)
- Urinary tract infection (<5%)

Hematologic
- Anemia (2–11%)
- Coagulopathy (includes disseminated intravascular coagulation / DIC) (<5%)
- Eosinophilia [2]
- Febrile neutropenia (<5%)
- Neutropenia (neutrophils decreased) (<5%)
- Sepsis (5%)
- Thrombocytopenia (<5%) [2]

Local
Infusion-related reactions [4]
Infusion-site pain (<5%)
Infusion-site reactions (<5%) [2]
Injection-site induration (~3%)
Injection-site reaction (2–12%) [4]

Neuromuscular/Skeletal
Arthralgia (<5%)
Asthenia / fatigue (<5%)
Back pain (<5%)
Myalgia/Myopathy (~3%)
Pain in extremities (<5%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]
Renal failure (<5%)

Respiratory
Cough (6–11%)
Dyspnea / shortness of breath (9%)
Hypoxia (see also hypoxemia) (<5%)
Influenza- ('flu)-like syndrome (3%)
Pleural effusion (9%)
Pneumonia (4–11%)
Respiratory distress (8%)
Respiratory failure (6–11%)
Tachypnea / respiratory rate increased (8%)

Other
Adverse effects / adverse reactions [8]

CEFACLOR

Trade name: Ceclor (Lilly)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 2nd generation
Half-life: 0.6–0.9 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
AGEP [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [6]
Erythema multiforme [6]
Exanthems [9]
Fixed eruption [2]
Hypersensitivity [2]
Pruritus (itching) [4]
Purpura [2]
Rash (<2%) [2]
Serum sickness [7]
Serum sickness-like reaction [23]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives [5]

Gastrointestinal/Hepatic
Diarrhea [2]

Other
Adverse effects / adverse reactions [3]

CEFADROXIL

Trade name: Duricef (Warner Chilcott)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 1st generation
Half-life: 1.2–1.5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Urticaria / hives [2]

Gastrointestinal/Hepatic
Diarrhea [2]
Nausea [2]

Other
Adverse effects / adverse reactions [3]

CEFAZOLIN

Trade name: Ancef (GSK)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 1st generation
Half-life: 1.4–1.8 hours
Clinically important, potentially hazardous interactions with: BCG vaccine, phenytoin, probenecid, vitamin K antagonists
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Safety and effectiveness in premature infants and neonates have not been established. Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
AGEP [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [7]
Exanthems [3]
Hypersensitivity [3]
Pruritus (itching) [3]
Pustules / pustular eruption [3]
Radiation recall dermatitis [2]
Serum sickness-like reaction [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]

Hematologic
Hemolytic anemia [3]
Neutropenia (neutrophils decreased) [2]

Other
Adverse effects / adverse reactions [2]
Allergic reactions [2]

CEFDINIR

Trade name: Omnicef (Medicis)
Indications: Community-acquired pneumonia and various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Rash (3%)

Gastrointestinal/Hepatic
Red stools / hematochezia [2]

Genitourinary
Vulvovaginal candidiasis (5%)

Other
Adverse effects / adverse reactions [2]

CEFDITOREN

Trade name: Spectracef (Meiji)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: ~1.6 hours
Clinically important, potentially hazardous interactions with: antacids, famotidine, H_2 antagonists, high-fat foods, pantoprazole, probenecid, proton pump inhibitors, vitamin K antagonists
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contraindicated in patients with carnitine deficiency or inborn errors of metabolism that may result in clinically significant carnitine deficiency. Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Central Nervous System
Headache (2–3%) [3]

Gastrointestinal/Hepatic
Abdominal pain (2%)
Diarrhea (11–15%)
Dyspepsia / functional dyspepsia / gastroparesis (1–2%)

Nausea (4–6%) [2]

Genitourinary
Vulvovaginal candidiasis (3–6%)

CEFEPIME

Trade name: Maxipime (Elan)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 4th generation
Half-life: 2–2.3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Exanthems (2%)
Hypersensitivity [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Pruritus (itching) [3]
Rash (51%) [12]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Central Nervous System
Encephalopathy (includes hepatic encephalopathy) [14]
Headache [3]
Neurotoxicity [22]
Seizures [17]
Status epilepticus [6]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [2]
Neutropenia (neutrophils decreased) [5]
Thrombocytopenia [3]

Local
Injection-site reaction (3%) [2]

Neuromuscular/Skeletal
Myoclonus [2]

Renal
Nephritis / interstitial nephritis / tubulointerstitial nephritis [2]

Other
Adverse effects / adverse reactions [3]

CEFIXIME

Trade name: Suprax (Lupin)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: aminoglycosides, anticoagulants, BCG vaccine, carbamazepine, probenecid, typhoid vaccine, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%)
Angioedema (<2%)
Erythema multiforme (<2%)
Facial edema (<2%)
Jaundice (<2%)
Linear IgA bullous dermatosis [2]
Pruritus (itching) (<2%)
Pruritus ani et vulvae (<2%)
Rash (<2%) [2]
Serum sickness-like reaction (<2%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<2%) [4]
Urticaria / hives (<2%) [2]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<2%)

Endocrine/Metabolic
ALP increased (<2%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)

Gastrointestinal/Hepatic
Abdominal pain (3%)
Diarrhea (16%)
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Flatulence (4%)
Hepatitis (<2%)
Loose stools / soft feces (6%)
Nausea (7%)
Pseudomembranous colitis (<2%)

Genitourinary
Vaginitis (includes vulvitis) (<2%)
Vulvovaginal candidiasis (<2%)

Renal
Renal failure (<2%)

CEFMETAZOLE

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 2nd generation
Half-life: 72 minutes
Clinically important, potentially hazardous interactions with: none known
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Rash (1–10%)

CEFONICID

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 2nd generation
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: none known
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Local
Injection-site pain (6%)

CEFOPERAZONE

Trade name: Cefobid (Pfizer)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: 1.6–2.6 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Hypersensitivity (>2%)
Rash (2%)

Central Nervous System
Disulfiram-like reaction [2]

Gastrointestinal/Hepatic
Gastrointestinal bleeding [2]

Hematologic
Hemolytic anemia [2]

CEFOTAXIME

Trade name: Claforan (Sanofi-Aventis)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: 1 hour (adults)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (2%)
DRESS syndrome [5]
Erythema multiforme [2]
Exanthems [3]
Hypersensitivity [2]
Pruritus (itching) (2%) [3]
Rash (2%) [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives (2%)

Local
Injection-site inflammation (4%)
Injection-site pain (<10%)

Renal
Nephritis / interstitial nephritis / tubulointerstitial nephritis [2]

Other
Adverse effects / adverse reactions [2]

CEFOTETAN

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 2nd generation
Half-life: 3–5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Rash [2]

Hematologic
Hemolytic anemia [12]

Other
Death [5]

CEFPODOXIME

Trade name: Vantin (Pfizer)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: 2.1–2.8 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Diaper rash (12%)
Rash [3]

Gastrointestinal/Hepatic
Abdominal pain (2%)
Diarrhea [3]
Nausea (4%)

Genitourinary
Vulvovaginal candidiasis (3%)

Other
Adverse effects / adverse reactions [6]

CEFTAROLINE FOSAMIL

Trade name: Teflaro (Forest)
Indications: Acute bacterial skin and skin structure infections, community-acquired bacterial pneumonia
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 5th generation
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: BCG vaccine, probenecid, typhoid vaccine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%)
Hypersensitivity (<2%) [2]
Pruritus (itching) [7]
Rash (3%) [10]
Urticaria / hives (<2%)

Cardiovascular
Bradycardia / sinus bradycardia (<2%)
Hypertension [2]
Palpitation (<2%)
Phlebitis (2%) [3]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<2%)
Headache [9]
Insomnia [5]
Seizures (<2%)
Vertigo / dizziness (<2%)

Endocrine/Metabolic
ALT increased (2%)
Hyperglycemia (includes glucose increased) (<2%)
Hyperkalemia (<2%)
Hypokalemia (2%) [2]

Gastrointestinal/Hepatic
Abdominal pain (<2%)
Colitis (<2%)
Constipation (2%)
Diarrhea (5%) [10]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<2%)
Nausea (4%) [9]
Vomiting (2%)

Hematologic
Anemia (<2%)
Eosinophilia (<2%) [2]
Neutropenia (neutrophils decreased) (<2%) [4]
Thrombocytopenia (<2%)

Renal
Renal failure (<2%)

Respiratory
Eosinophilic pneumonia [3]

Other
Adverse effects / adverse reactions [4]
Infection [2]

CEFTAZIDIME

Trade names: Ceptaz (GSK), Fortaz (Concordia), Tazicef (Hospira)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins). See also separate profile for Ceftazidime & Avibactam.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (2%) [3]
Angioedema (2%)
Erythema multiforme (2%)
Hypersensitivity (2%)
Pemphigus erythematodes (pemphigus erythematosus) (Senear-Usher syndrome) [2]
Pruritus (itching) (2%) [3]
Rash (2%) [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (2%)

Central Nervous System
Encephalopathy (includes hepatic encephalopathy) [7]
Seizures [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Hematologic
Thrombocytopenia [2]

Local
Injection-site inflammation (2%)
Injection-site reaction [2]
Injection-site thrombophlebitis (2%)

Neuromuscular/Skeletal
Myoclonus [2]

Other
Adverse effects / adverse reactions [3]
Death [2]

CEFTAZIDIME & AVIBACTAM

Trade name: Avycaz (Cerexa)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; beta-lactam (avibactam), Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation (ceftazidime)
Half-life: <3 hours
Clinically important, potentially hazardous interactions with: probenecid
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: See also separate entry for ceftazidime.

Skin
Rash (<5%)
Central Nervous System
Anxiety (10%) [3]
Fever (pyrexia) (includes hyperpyrexia) [4]
Headache [4]
Vertigo / dizziness (6%)
Endocrine/Metabolic
ALP increased (3%)
ALT increased (3%) [4]
AST increased [3]
GGT increased (<5%)
Gastrointestinal/Hepatic
Abdominal pain (7%) [5]
Constipation (10%) [2]
Diarrhea [6]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (2%) [6]
Vomiting [5]
Hematologic
Eosinophilia (<5%)
Prothrombin time (INR) increased (<5%)
Thrombocytopenia (<5%)
Local
Injection-site reaction [4]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (<5%)
Renal failure (<5%) [4]
Other
Adverse effects / adverse reactions [3]

CEFTIBUTEN

Trade name: Cedax (Shionogi)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

CEFTIZOXIME

Trade name: Cefizox (Astellas)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: 1.6 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Pruritus (itching) (<5%)
Rash (<5%)
Central Nervous System
Paresthesias (<5%)
Local
Injection-site pain (<5%)
Injection-site phlebitis (<5%)

CEFTOBIPROLE

Trade names: BAL5788 (Basilea) (Cilag AG), Zeftera (Janssen)
Indications: Bacterial infections, MRSA
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 5th generation
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: alcohol, anticoagulants, BCG vaccine, carbenicillin, dipyridamole, heparin, pentoxifylline, plicamycin, sulfinpyrazone, ticarcillin, typhoid vaccine, valproic acid
Pregnancy category: N/A (not recommended in pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Erythema (9%)
Pruritus (itching) (9%)
Central Nervous System
Dysgeusia (taste perversion) (8%) [3]
Headache [2]
Endocrine/Metabolic
Hyponatremia [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea [4]
Nausea [6]
Vomiting [4]
Local
Infusion-site reactions [2]
Other
Adverse effects / adverse reactions [4]

CEFTOLOZANE & TAZOBACTAM

Trade name: Zerbaxa (Cubist)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; beta-lactam, Antimicrobial, Cephalosporin, Cephalosporin; 5th generation
Half-life: <3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Cardiovascular
Hypertension [3]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (2%) [5]
Headache (3%) [8]
Insomnia [2]
Somnolence (drowsiness) [2]
Endocrine/Metabolic
ALT increased (2%) [2]
AST increased (2%)
Hypokalemia [2]
Gastrointestinal/Hepatic
Constipation (4%) [4]
Diarrhea (2%) [11]
Nausea (3%) [11]
Vomiting [3]
Hematologic
Anemia [2]
Local
Infusion-site reactions [2]
Neuromuscular/Skeletal
Myalgia/Myopathy [2]

CEFTRIAXONE

Trade name: Rocephin (Roche)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Antimicrobial, Cephalosporin, Cephalosporin; 3rd generation
Half-life: 5–9 hours
Clinically important, potentially hazardous interactions with: aminoglycosides, coumarins, histamine H_2 antagonists, oral typhoid vaccine, probenecid
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic

to penicillin develop reactions to cephalosporins).

Skin
AGEP [9]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [15]
Angioedema [3]
Candidiasis / candidosis (5%) [3]
Dermatitis [2]
DRESS syndrome [3]
Erythroderma [2]
Exanthems [7]
Flushing / rubefaction [2]
Hypersensitivity [4]
Linear IgA bullous dermatosis [2]
Pruritus (itching) [2]
Rash (2%) [5]
Serum sickness-like reaction [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives [4]

Mucosal
Glossitis (inflammation of the tongue) [2]

Cardiovascular
Asystole [2]
Hypotension [2]
Phlebitis [2]

Central Nervous System
Encephalopathy (includes hepatic encephalopathy) [9]
Fever (pyrexia) (includes hyperpyrexia) [2]

Gastrointestinal/Hepatic
Cholelithiasis (gallstones in the gallbladder) [4]
Cholestatic liver injury / cholestatic hepatitis [2]
Diarrhea [7]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [9]
Nausea [4]
Vomiting [2]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [5]
Eosinophilia [2]
Hemolysis [11]
Hemolytic anemia [16]
Neutropenia (neutrophils decreased) [6]
Thrombocytopenia [8]

Local
Injection-site pain (<10%) [3]
Injection-site phlebitis [2]

Renal
Biliary pseudolithiasis [9]
Nephrolithiasis (formation of a kidney stone) [2]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]
Renal failure [3]

Respiratory
Dyspnea / shortness of breath [2]

Other
Adverse effects / adverse reactions [7]
Death [12]
Side effects (3%) [2]

CEFUROXIME

Trade names: Ceftin (GSK), Zinacef (Concordia)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 2nd generation
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
AGEP [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [7]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
Exanthems [2]
Hypersensitivity [4]
Serum sickness-like reaction [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives [2]

Cardiovascular
Kounis syndrome / allergic angina syndrome / allergic myocardial infarction [3]
Thrombophlebitis (<10%)

Gastrointestinal/Hepatic
Nausea [2]

Ocular
Ocular toxicity [2]

CELECOXIB

Trade name: Celebrex (Pfizer)
Indications: Osteoarthritis, rheumatoid arthritis (adults and juveniles aged 2 years and over), ankylosing spondylitis, acute pain, primary dysmenorrhea
Class: COX-2 inhibitor, Non-steroidal anti-inflammatory (NSAID), Sulfonamide
Half-life: 11 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, aliskiren, angiotensin II receptor antagonists, aspirin, dexibuprofen, fluconazole, furosemide, lithium, NSAIDs, warfarin
Pregnancy category: D (pregnancy category C prior to 30 weeks gestation; category D starting at 30 weeks gestation)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Celecoxib is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome. NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use. Contra-indicated in patients with known hypersensitivity to celecoxib, aspirin, or other NSAIDs; in patients who have demonstrated allergic-type reactions to sulfonamides; in patients who have experienced asthma, urticaria, or allergic-type reactions after taking aspirin or other NSAIDs; and for the treatment of peri-operative pain in the setting of coronary artery bypass graft surgery.
Warning: CARDIOVASCULAR AND GASTROINTESTINAL RISKS

Skin
AGEP [7]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [8]
Angioedema [9]
Bacterial infection (<2%)
Candidiasis / candidosis (<2%)
Dermatitis (<2%) [2]
Diaphoresis (see also hyperhidrosis) (<2%)
Edema / fluid retention (see also peripheral edema) (<2%) [5]
Erythema [2]
Erythema multiforme [3]
Exanthems (<2%) [7]
Facial edema (<2%)
Fixed eruption [2]
Herpes simplex (<2%)
Herpes zoster (<2%)
Hot flashes / hot flushes (<2%)
Hypersensitivity [9]
Nodular eruption (<2%)
Peripheral edema (see also edema) (2%) [2]
Photosensitivity (<2%)
Pruritus (itching) (<2%) [6]
Rash (2%) [11]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Sweet's syndrome [3]
Urticaria / hives (<2%) [11]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]
Xerosis / xeroderma (see also dry skin) (<2%)

Hair
Alopecia / hair loss (<2%) [3]

Nails
Nail changes (<2%)

Mucosal
Stomatitis (oral mucositis) (<2%) [4]
Xerostomia (dry mouth) (<2%)

Cardiovascular
Cardiotoxicity [2]
Hypertension [2]
Myocardial infarction [4]

Central Nervous System
Anorexia [3]
Depression [2]
Dysgeusia (taste perversion) (<2%) [2]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [3]
Paresthesias (<2%)
Stroke / cerebral infarction [3]
Vertigo / dizziness [3]

Endocrine/Metabolic
Dehydration [2]
Mastodynia (<2%)

Gastrointestinal/Hepatic
Abdominal pain [11]
Constipation [5]
Diarrhea [12]

Dyspepsia / functional dyspepsia / gastroparesis [10]
Flatulence [2]
Gastrointestinal bleeding [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [16]
Vomiting [10]

Genitourinary
Vaginitis (includes vulvitis) (<2%)
Vulvovaginal candidiasis (<2%)

Hematologic
Anemia [2]
Neutropenia (neutrophils decreased) [4]

Local
Application-site cellulitis (<2%)
Application-site reactions (<2%)

Neuromuscular/Skeletal
Asthenia / fatigue [6]
Myalgia/Myopathy (<2%)
Tendinopathy/Tendon rupture (<2%)

Ocular
Visual disturbances [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

Other
Adverse effects / adverse reactions [17]
Allergic reactions (<2%) [2]
Death [4]
Infection (<2%)
Tooth disorder (<2%)

CELIPROLOL

Trade names: Celectol (Winthrop), Celol (Pacific), Selectol (Sanofi-Aventis)
Indications: Hypertension, angina pectoris
Class: Beta blocker
Half-life: 5–6 hours
Clinically important, potentially hazardous interactions with: amiodarone, bepridil, diltiazem, disopyramide, floctafenine, quinidine, theophylline, verapamil
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Central Nervous System
Headache [2]
Vertigo / dizziness [2]

Neuromuscular/Skeletal
Asthenia / fatigue [3]

CEPHALEXIN

Synonym: cefalexin
Trade names: Keflex (Advancis), Keftab (Biovail)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 1st generation
Half-life: 0.9–1.2 hours
Clinically important, potentially hazardous interactions with: amikacin, gentamicin, metformin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
AGEP [5]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Angioedema [2]
Bullous pemphigoid / pemphigoid [3]
Erythema multiforme [3]
Exanthems [3]
Pemphigus [2]
Pruritus (itching) [3]
Pustules / pustular eruption [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [7]
Urticaria / hives [2]

Renal
Nephritis / interstitial nephritis / tubulointerstitial nephritis [2]

Other
Adverse effects / adverse reactions [2]
Side effects (2%) [2]

CEPHALOTHIN

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 1st generation
Half-life: 30–50 minutes
Clinically important, potentially hazardous interactions with: amphotericin B, colistin, gentamicin
Pregnancy category: B
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Exanthems (<5%) [5]
Purpura [2]
Urticaria / hives [4]

Cardiovascular
Phlebitis [5]

Hematologic
Hemolytic anemia [3]

Other
Allergic reactions [2]

CEPHRADINE

Synonym: cefradine
Trade name: Velosef (Bristol-Myers Squibb)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, Cephalosporin, Cephalosporin; 1st generation
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Note: Penicillin and cephalosporins share a common beta-lactam structure. People who are allergic to penicillin are approximately 4 times more likely to develop an allergic reaction to a cephalosporin than those people who have no penicillin allergy (from 5–16% of patients allergic to penicillin develop reactions to cephalosporins).

Skin
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

CERITINIB

Trade name: Zykadia (Novartis)
Indications: Anaplastic lymphoma kinase-positive metastatic non-small cell lung cancer
Class: Anaplastic lymphoma kinase (ALK) inhibitor
Half-life: 41 hours
Clinically important, potentially hazardous interactions with: alfentanil, carbamazepine, cyclosporine, CYP3A and CYP2C9 substrates, dihydroergotamine, ergotamine, fentanyl, grapefruit juice, ketoconazole, nefazodone, phenytoin, pimozide, quinidine, rifampin, ritonavir, sirolimus, St John's wort, strong CYP3A inhibitors and inducers, tacrolimus, telithromycin, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (16%)
Exanthems (16%)
Rash (16%)

Cardiovascular
Bradycardia / sinus bradycardia (3%)
QT interval prolonged / QT prolongation (4%)

Central Nervous System
Anorexia [2]
Dysesthesia (>2%)
Gait instability / postural instability (>2%)
Hypoesthesia (numbness) (>2%)
Neurotoxicity (17%)
Paresthesias (>2%)
Peripheral neuropathy (>2%)

Endocrine/Metabolic
ALT increased (80%) [7]
Appetite decreased (34%)
AST increased (75%) [5]
Dehydration [2]
Hyperglycemia (includes glucose increased) (49%)
Hypophosphatemia (36%)
Serum creatinine increased (58%) [2]

Gastrointestinal/Hepatic
Abdominal pain (54%) [3]
Constipation (29%)
Diarrhea (86%) [16]
Dyspepsia / functional dyspepsia / gastroparesis (16%)
Dysphagia (16%)
Gastroesophageal reflux (16%)
Gastrointestinal disorder / discomfort [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (80%) [12]
Vomiting (60%) [11]

Neuromuscular/Skeletal
Asthenia / fatigue (52%) [4]
Hypotonia (>2%)

Ocular
Accommodation disorder (>2%)
Ocular adverse effect (9%)
Photopsia (>2%)
Reduced visual acuity (>2%)
Vision blurred (>2%)
Vision impaired (>2%)

Respiratory
Pneumonitis (4%)
Pulmonary toxicity [2]

Other
Adverse effects / adverse reactions [3]

CERTOLIZUMAB

Synonym: Certolizumab pegol
Trade name: Cimzia (Celltech) (UCB)
Indications: Crohn's disease, rheumatoid arthritis
Class: Anti-Tumor Necrosis Factor-alpha (TNF-α antagonist), Biologic, Disease-modifying antirheumatic drug (DMARD), Monoclonal antibody
Half-life: 14 days
Clinically important, potentially hazardous interactions with: abatacept, anakinra, lenalidomide, live vaccines, natalizumab, rituximab
Pregnancy category: N/A (Limited evidence insufficient to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: TNF inhibitors should be used in patients with heart failure only after consideration of other treatment options. TNF inhibitors are contra-indicated in patients with a personal or family history of multiple sclerosis or demyelinating disease. TNF inhibitors should not be administered to patients with moderate to severe heart failure (New York Heart Association Functional Class III/IV).
Warning: SERIOUS INFECTIONS AND MALIGNANCY

Skin
Herpes zoster [3]
Psoriasis [7]
Rash [2]

Cardiovascular
Hypertension [2]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (5%) [2]
Headache (7–18%) [5]
Vertigo / dizziness (~6%)

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]

Gastrointestinal/Hepatic
Nausea [2]

Genitourinary
Urinary tract infection (~8%) [8]

Local
Injection-site pain [3]
Injection-site reaction (~7%) [4]

Neuromuscular/Skeletal
Arthralgia (6–7%) [4]
Back pain [3]

Respiratory
Nasopharyngitis (4–13%) [8]
Pneumonia [2]
Pulmonary toxicity [4]
Sinusitis [2]
Tuberculosis [2]
Upper respiratory tract infection (20%) [11]

Other
Adverse effects / adverse reactions [16]
Death [4]
Infection (14–38%) [19]
Neoplasms [2]

CETIRIZINE

Trade name: Zyrtec (Pfizer)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 8–11 hours
Clinically important, potentially hazardous interactions with: alcohol, CNS depressants, pilsicainide
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<2%)
AGEP [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%) [2]
Angioedema (<2%)
Bullous dermatosis (<2%)
Dermatitis (<2%)
Diaphoresis (see also hyperhidrosis) (<2%)
Exanthems (<2%)
Fixed eruption [7]
Flushing / rubefaction (<2%)
Furunculosis (<2%)
Hyperkeratosis (<2%)
Photosensitivity (<2%)
Phototoxicity (<2%)
Pruritus (itching) (<2%)
Purpura (<2%)
Rash (<2%)
Seborrhea (<2%)
Urticaria / hives (<2%) [9]
Xerosis / xeroderma (see also dry skin) (<2%)

Hair
Alopecia / hair loss (<2%)
Hypertrichosis (<2%)

Mucosal
Sialorrhea (ptyalism; hypersalivation) (<2%)
Stomatitis (oral mucositis) (<2%)
Tongue edema (<2%)
Tongue pigmentation (<2%)
Xerostomia (dry mouth) (6%) [2]

Cardiovascular
QT interval prolonged / QT prolongation [2]

Central Nervous System
Ageusia (taste loss) / taste disorder (<2%)
Dysgeusia (taste perversion) (<2%)
Headache [2]
Hyperesthesia (<2%)
Insomnia [2]
Paresthesias (<2%)
Parosmia (<2%)
Somnolence (drowsiness) [5]

Endocrine/Metabolic
Mastodynia (<2%)

Genitourinary
Vaginitis (includes vulvitis) (<2%)

Neuromuscular/Skeletal
Asthenia / fatigue [3]
Dystonia [7]
Myalgia/Myopathy (<2%)

Other
Adverse effects / adverse reactions [4]

CETUXIMAB

Trade name: Erbitux (Bristol-Myers Squibb)
Indications: Metastatic colorectal cancer, squamous cell carcinoma of the head and neck
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, Epidermal growth factor receptor (EGFR) inhibitor / antagonist, Monoclonal antibody
Half-life: 75–188 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SERIOUS INFUSION REACTIONS and CARDIOPULMONARY ARREST

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (88%) [69]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [7]
Cutaneous toxicity / skin toxicity [22]
Dermatitis [4]
Desquamation (89%) [3]
Erythema [3]
Exanthems [5]
Fissures [4]
Flushing / rubefaction [2]
Folliculitis [13]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [5]
Hypersensitivity [9]
Papulopustular eruption [7]
Peripheral edema (see also edema) (10%)
Pruritus (itching) (40%) [9]
Pustules / pustular eruption [2]
Radiation recall dermatitis [3]
Rash (89%) [52]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Xerosis / xeroderma (see also dry skin) (49%) [15]

Hair
Abnormal hair growth [2]
Alopecia / hair loss (5%) [2]
Hair changes [3]
Hypertrichosis [5]

Nails
Nail changes (21%)
Nail disorder [3]
Paronychia [19]

Mucosal
Mucositis [11]
Stomatitis (oral mucositis) (25%) [7]
Xerostomia (dry mouth) (11%)

Cardiovascular
Cardiotoxicity [3]
Chest pain [2]
Thromboembolism [2]

Central Nervous System
Anorexia [2]
Anxiety (14%)
Aseptic meningitis [6]
Chills (13%) [2]
Confusion (15%)
Depression (13%)
Fever (pyrexia) (includes hyperpyrexia) (30%) [5]
Headache (33%)
Insomnia (30%)
Pain (51%)
Peripheral neuropathy [3]
Rigors (13%)
Seizures [2]

Endocrine/Metabolic
Hypokalemia [6]
Hypomagnesemia [19]
Hyponatremia [5]

Gastrointestinal/Hepatic
Abdominal pain (59%)
Constipation (46%)
Diarrhea (39%) [22]
Dysphagia [2]
Gastrointestinal bleeding [2]
Gastrointestinal obstruction / gastrointestinal stricture [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea [12]
Pneumatosis intestinalis / pneumatosis cystoides intestinalis [2]
Vomiting (37%) [8]

Hematologic
Anemia [8]
Febrile neutropenia [7]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [11]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) [26]
Sepsis (<4%)
Thrombocytopenia [5]
Thrombosis [3]

Local
Application-site reactions (~3%)
Infusion-related reactions [8]
Infusion-site reactions (15–21%) [10]

Neuromuscular/Skeletal
Asthenia / fatigue (89%) [31]
Back pain (11%)
Bone or joint pain (15%)

Ocular
Blepharitis [3]
Conjunctivitis (conjunctival inflammation) (7%) [2]
Ectropion / cicatricial ectropion [2]
Eyelashes – hypertrichosis [3]
Trichomegaly [14]

Respiratory
Cough (29%)
Dyspnea / shortness of breath (48%) [6]
Pneumonia [3]
Pneumonitis [3]
Pulmonary toxicity [6]

Other
Adverse effects / adverse reactions [9]
Allergic reactions [5]
Death [11]
Infection (13–35%) [3]

CEVIMELINE

Trade name: Evoxac (Daiichi Sankyo)
Indications: Sicca syndrome in patients with Sjøgren's syndrome
Class: Muscarinic cholinergic agonist
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with uncontrolled asthma, acute iritis or narrow-angle glaucoma.

Skin
Abscess (<3%)
Candidiasis / candidosis (<3%)
Diaphoresis (see also hyperhidrosis) (20%)
Edema / fluid retention (see also peripheral edema) (<3%)
Erythema (<3%)
Exanthems (<10%)
Fungal dermatitis (<10%)
Hot flashes / hot flushes (2%)
Hyperhidrosis (see also diaphoresis) (19%) [5]
Peripheral edema (see also edema) (<3%)
Pruritus (itching) (<3%)
Rash (4%)

Mucosal
Epistaxis (nosebleed) (<3%)
Sialadenitis (<3%)
Sialorrhea (ptyalism; hypersalivation) (2%)
Ulcerative stomatitis (<3%)
Xerostomia (dry mouth) (<3%)

Cardiovascular
Chest pain (<3%)
Palpitation (<3%)

Central Nervous System
Anorexia (<3%)
Depression (<3%)
Fever (pyrexia) (includes hyperpyrexia) (<3%)
Headache (14%)
Hypoesthesia (numbness) (<3%)
Hyporeflexia (<3%)
Insomnia (2%)
Migraine (<3%)
Pain (3%)
Tremor (<3%)
Vertigo / dizziness (4%)

Gastrointestinal/Hepatic
Abdominal pain (8%)
Constipation (<3%)
Diarrhea (10%)
Dyspepsia / functional dyspepsia / gastroparesis (8%)
Eructation (belching) (<3%)
Gastroesophageal reflux (<3%)
Nausea (14%) [3]
Vomiting (5%)

Genitourinary
Urinary tract infection (6%)
Vaginitis (includes vulvitis) (<3%)

Hematologic
Anemia (<3%)

Neuromuscular/Skeletal
Arthralgia (4%)
Back pain (5%)
Bone or joint pain (3%)
Hypertonia (<3%)
Leg cramps (<3%)
Myalgia/Myopathy (<3%)

Ocular
Abnormal vision (<3%)
Conjunctivitis (conjunctival inflammation) (4%)
Ocular pain (<3%)
Xerophthalmia (dry eyes) (<3%)

Otic
Ear pain (<3%)
Otitis media (<3%)

Respiratory
Bronchitis (4%)
Cough (6%)
Influenza- ('flu)-like syndrome (<3%)
Pharyngitis (sore throat) (5%)
Pneumonia (<3%)
Rhinitis (11%)
Sinusitis (12%)
Upper respiratory tract infection (11%)

Other
Allergic reactions (<3%)
Infection (<3%)
Tooth disorder (<3%)

CHAMOMILE

Family: Asteraceae; Compositae
Scientific names: *Chamomilla recutita, Matricaria chamomilla, Matricaria recutita*
Indications: Flatulence, travel sickness, nervous diarrhea, restlessness, menstrual cramps, hemorrhoids, mastitis, leg ulcers, inflammation of the respiratory tract. Used in flavoring, cosmetics, soaps and mouthwashes
Class: Sedative
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Dermatitis [5]

Ocular
Ocular adverse effect [2]

Other
Adverse effects / adverse reactions [3]
Allergic reactions (to those allergic to ragweed, marigolds, daisies) [2]

CHARCOAL

Synonyms: activated carbon; activated charcoal; liquid antidote
Trade names: Actidose-Aqua (Cambridge), Carbomix (Meadow)
Indications: Emergency treatment in poisoning
Class: Antidote, Antimotility
Half-life: N/A
Clinically important, potentially hazardous interactions with: carbamazepine, ursodiol
Pregnancy category: C
Note: As an antidote, it is difficult to differentiate side effects due to the drug from those due to the effects of the poison.

CHASTEBERRY

Family: Verbenaceae
Scientific name: *Vitex agnus-castus*
Indications: Premenstrual syndrome, abnormal uterine bleeding, mastodynia
Class: Hormone modulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: dopamine-receptor antagonists
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Chasteberry is not a phytoestrogen; it appears to stimulate progesterone production. The Catholic Church once placed it in the pockets of neophyte monks to help them to maintain their vow of chastity.

Skin
Abscess [2]
Acneiform eruption / acneiform dermatitis / acneiform rash [4]
Erythema [2]
Pruritus (itching) [2]
Urticaria / hives [3]
Mucosal
Xerostomia (dry mouth) [3]
Central Nervous System
Headache [5]
Endocrine/Metabolic
Menstrual irregularities [3]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea [4]
Neuromuscular/Skeletal
Asthenia / fatigue [3]
Other
Adverse effects / adverse reactions [4]

CHICORY

Family: Compositae
Scientific name: *Cichorium intybus*
Indications: Coffee substitute, jaundice, liver enlargement, gout, rheumatism, skin eruptions connected with gout, inflammation. **Topical:** leaves used for swelling and inflammation. Culinary spice, flavoring
Class: Diuretic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Dermatitis [2]
Other
Allergic reactions [3]

CHLORAL HYDRATE

Indications: Insomnia, sedation
Class: Anesthetic; general, Hypnotic
Half-life: 8–11 hours
Clinically important, potentially hazardous interactions with: antihistamines, azatadine, azelastine, brompheniramine, buclizine, chlorpheniramine, clemastine, dexchlorpheniramine, diphenhydramine, meclizine, tripelennamine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Angioedema [2]
Dermatitis [2]
Erythema multiforme [2]
Exanthems [3]
Fixed eruption [5]
Pruritus (itching) [2]
Purpura [2]
Rash (<10%)
Urticaria / hives (<10%) [2]
Mucosal
Oral lesions [2]
Cardiovascular
Hypotension [2]
Central Nervous System
Agitation [3]
Sedation (prolonged) [3]
Gastrointestinal/Hepatic
Vomiting [5]
Respiratory
Apnea [2]
Other
Adverse effects / adverse reactions [4]
Death [3]

CHLORAMBUCIL

Trade name: Leukeran (GSK)
Indications: Chronic lymphocytic leukemia, lymphomas, carcinomas
Class: Alkylating agent
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: aldesleukin, antineoplastics, azathioprine, bone marrow suppressants, prednisone, vaccines
Pregnancy category: D

Skin
Exanthems [7]
Exfoliative dermatitis [2]
Herpes simplex [2]
Herpes zoster [3]
Hypersensitivity [2]
Pruritus (itching) [2]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
Urticaria / hives [4]
Hair
Alopecia / hair loss [4]
Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Hematologic
Neutropenia (neutrophils decreased) [5]
Thrombocytopenia [2]
Local
Infusion-related reactions [3]
Ocular
Periorbital edema (see also eyelid edema) [3]
Other
Infection [2]

CHLORAMPHENICOL

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial, CYP3A4 inhibitor
Half-life: 1.5–3.5 hours
Clinically important, potentially hazardous interactions with: amoxicillin, ampicillin, clopidogrel, clozapine, ethotoin, fosphenytoin, gliclazide, levodopa, mephenytoin, phenytoin, propyphenazone, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
AGEP [2]
Dermatitis [18]
Erythema multiforme [6]
Exanthems (<5%) [5]
Hypersensitivity [2]
Purpura [2]
Pustules / pustular eruption [2]
Sensitization [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives [3]
Nails
Photo-onycholysis [3]

CHLORDIAZEPOXIDE

Trade names: Libritabs (Valeant), Librium (Valeant), Limbitrol (Valeant)
Indications: Anxiety
Class: Benzodiazepine
Half-life: 6–25 hours
Clinically important, potentially hazardous interactions with: chlorpheniramine, clarithromycin, efavirenz, esomeprazole, imatinib, indinavir, ketoconazole, nelfinavir, nilutamide, ritonavir
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Limbitrol is chlordiazepoxide and amitriptyline.

Skin
Angioedema [3]
Dermatitis (<10%)

Diaphoresis (see also hyperhidrosis) (>10%)
Edema / fluid retention (see also peripheral edema) (<10%)
Erythema multiforme [5]
Erythema nodosum [2]
Exanthems [3]
Fixed eruption [7]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Photosensitivity [6]
Purpura [5]
Rash (>10%)
Urticaria / hives [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Hair
Alopecia / hair loss [3]

Mucosal
Sialopenia (>10%)
Sialorrhea (ptyalism; hypersalivation) (<10%)
Xerostomia (dry mouth) (>10%)

Endocrine/Metabolic
Galactorrhea [3]

CHLORHEXIDINE

Trade name: Hibiclens (SSL)
Indications: Skin antisepsis, gingivitis
Class: Antiseptic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [29]
Dermatitis [16]
Hypersensitivity [9]
Rash [2]
Urticaria / hives [4]

Mucosal
Gingival pigmentation [2]
Gingivitis [3]
Glossitis (inflammation of the tongue) (<10%)
Mucosal ulceration [2]
Oral burn [2]
Oral mucosal irritation [2]
Tongue irritation (<10%)
Tongue pigmentation (>10%)

Central Nervous System
Dysgeusia (taste perversion) (>10%) [8]

Other
Allergic reactions [6]
Tooth pigmentation / discoloration [6]

CHLOROQUINE

Trade name: Aralen (Sanofi-Aventis)
Indications: Malaria, rheumatoid arthritis, lupus erythematosus
Class: Antimalarial, Antimicrobial, Antiprotozoal, Covid-19 putative drug, Disease-modifying antirheumatic drug (DMARD)
Half-life: 3–5 days
Clinically important, potentially hazardous interactions with: acitretin, antacids, arsenic, cholera vaccine, cholestyramine, citalopram, dapsone, dasatinib, degarelix, dolasetron, droperidol, ethosuximide, furazolidone, halofantrine, hydroxychloroquine, lacosamide, lanthanum, lapatinib, levofloxacin, methotrexate, methoxsalen, mivacurium, moxifloxacin, neostigmine, nilotinib, oxcarbazepine, pazopanib, penicillamine, ribociclib, sulfonamides, telavancin, telithromycin, tiagabine, typhoid vaccine, vandetanib, vigabatrin, voriconazole, vorinostat, ziprasidone
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Cutaneous toxicity / skin toxicity [2]
Dermatitis [2]
Erythema annulare centrifugum (see also gyrate erythema) [2]
Erythroderma [3]
Exanthems (<5%) [3]
Exfoliative dermatitis [4]
Lichenoid eruption / lichenoid reaction [6]
Photosensitivity [8]
Pigmentation [15]
Pruritus (itching) [36]
Psoriasis [19]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [9]
Urticaria / hives [5]
Vitiligo [7]

Hair
Hair pigmentation [10]
Poliosis [3]

Nails
Nail pigmentation [2]

Mucosal
Mucosal membrane pigmentation [2]
Oral pigmentation [14]

Cardiovascular
Atrioventricular block [2]
Cardiac failure [3]
Cardiomyopathy [9]
Cardiotoxicity [3]
Cardiovascular adverse effect [2]
Congestive heart failure [2]
Myocardial toxicity [2]
QT interval prolonged / QT prolongation [3]
Torsades de pointes [4]
Ventricular arrhythmia [2]

Central Nervous System
Headache [4]
Psychosis [5]
Seizures [2]
Vertigo / dizziness [4]

Endocrine/Metabolic
Porphyria [7]

Gastrointestinal/Hepatic
Diarrhea [2]
Nausea [4]
Vomiting [5]

Neuromuscular/Skeletal
Myalgia/Myopathy [8]
Myasthenia gravis [7]

Ocular
Corneal deposits [2]
Keratopathy (see also cornea verticillata) [2]
Maculopathy [3]
Ocular adverse effect [2]
Ocular toxicity [4]
Retinopathy [10]
Vision blurred [2]

Other
Adverse effects / adverse reactions [7]
Death [3]

CHLOROTHIAZIDE

Trade names: Aldoclor (Merck), Diuril (Merck)
Indications: Hypertension, edema
Class: Diuretic, thiazide
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: cisplatin, digoxin, lithium, zinc
Pregnancy category: C
Note: Chlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Exanthems [6]
Lichenoid eruption / lichenoid reaction [4]
Photosensitivity [12]
Pruritus (itching) [3]
Purpura [6]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Cardiovascular
Pulmonary edema / cardiogenic pulmonary edema [3]

CHLORPHENIRAMINE

Synonym: chlorphenamine
Trade names: Chlor-Trimeton (Schering), Triaminic (Novartis)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist, Muscarinic antagonist
Half-life: 20–40 hours
Clinically important, potentially hazardous interactions with: alcohol, anticholinergics, barbiturates, benzodiazepines, butabarbital, chloral hydrate, chlordiazepoxide, chlorpromazine, clonazepam, clorazepate, diazepam, ethchlorvynol, fluphenazine, flurazepam, hypnotics, lopinavir, lorazepam, MAO inhibitors, mephobarbital, mesoridazine, midazolam, narcotics, oxazepam, pentobarbital, phenobarbital, phenothiazines, phenylbutazone, primidone, prochlorperazine, promethazine, quazepam, secobarbital, sedatives, temazepam, thioridazine, tranquilizers, trifluoperazine, zolpidem
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema (<10%)
Dermatitis (<10%) [4]
Photosensitivity (<10%)
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Seizures [2]

CHLORPROMAZINE

Trade name: Thorazine (GSK)
Indications: Psychosis, manic-depressive disorders
Class: Antiemetic, Antipsychotic, Muscarinic antagonist, Phenothiazine
Half-life: initial: 2 hours; terminal: 30 hours
Clinically important, potentially hazardous interactions with: alcohol, antihistamines, arsenic, asenapine, chlorpheniramine, dofetilide, epinephrine, evening primrose, guanethidine, lisdexamfetamine, mivacurium, pimavanserin, propranolol, quinolones, sodium picosulfate, sparfloxacin, tetrabenazine, zolpidem
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: The prolonged use of chlorpromazine can produce a gray-blue or purplish pigmentation over light-exposed areas. This is a result of either dermal deposits of melanin, a chlorpromazine metabolite, or a combination of both.
Chlorpromazine melanosis is seen more often in women.
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Exanthems (>5%) [8]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [12]
Photosensitivity (<10%) [23]
Phototoxicity [6]
Pigmentation [16]
Pruritus (itching) (<10%) [2]
Purpura [6]
Rash (<10%)
Seborrheic dermatitis [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]
Nails
Nail pigmentation [4]
Photo-onycholysis [2]
Mucosal
Xerostomia (dry mouth) (<10%)
Cardiovascular
Hypotension [4]
QT interval prolonged / QT prolongation [4]
Tachycardia [2]
Torsades de pointes [2]
Central Nervous System
Extrapyramidal symptoms [2]
Neuroleptic malignant syndrome [7]
Sedation [3]
Seizures [2]
Vertigo / dizziness [2]
Endocrine/Metabolic
Galactorrhea (<10%)
Gynecomastia (<10%)
Mastodynia (<10%)
Weight gain [2]
Genitourinary
Priapism [7]
Ocular
Cataract [2]
Corneal opacity [2]
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) [2]
Retinopathy [2]
Otic
Tinnitus [2]
Other
Adverse effects / adverse reactions [3]

CHLORPROPAMIDE

Trade name: Diabinese (Pfizer)
Indications: Diabetes
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Sulfonylurea
Half-life: 30–42 hours
Clinically important, potentially hazardous interactions with: alcohol, cortisone, cortisone, garlic, phenylbutazones
Pregnancy category: C
Note: Chlorpropamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Erythema multiforme [7]
Erythema nodosum [2]
Exanthems (<5%) [3]
Exfoliative dermatitis [7]
Flushing / rubefaction [19]
Lichenoid eruption / lichenoid reaction [4]
Photosensitivity (<10%) [3]
Pruritus (itching) (<3%) [2]
Purpura [8]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [7]
Urticaria / hives (<10%) [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Mucosal
Oral lichenoid eruption [3]
Endocrine/Metabolic
SIADH [4]
Other
Side effects [3]

CHLORTETRACYCLINE

Indications: Various infections due to susceptible organisms
Class: Antibiotic, Antibiotic; tetracycline, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: ACE inhibitors, coumarins, dairy products, ergotamine, kaolin, methysergide, oral iron, oral typhoid vaccine, penicillins, phenindione, quinapril, retinoids, strontium ranelate, sucralfate, sufonylureas, tripotassium dicitratobismuthate, zinc
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Not available in Canada or the US.

CHLORTHALIDONE

Synonym: chlortalidone
Trade names: Hygroton (Alliance), Tenoretic (AstraZeneca), Thalitone (Monarch)
Indications: Hypertension
Class: Diuretic, thiazide
Half-life: 35–50 hours
Clinically important, potentially hazardous interactions with: digoxin, lithium, zinc
Pregnancy category: B
Note: Chlorthalidone is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Tenoretic is chlorthalidone and atenolol.

Skin
Photosensitivity (<10%) [2]
Endocrine/Metabolic
Hypokalemia [2]
Serum creatinine increased [2]
Genitourinary
Erectile dysfunction [2]
Ocular
Glaucoma (includes acute angle-closure glaucoma) [2]
Myopia [3]

CHLORZOXAZONE

Trade names: Paraflex (Ortho-McNeil), Parafon Forte DSC (Ortho-McNeil)
Indications: Painful musculoskeletal conditions
Class: Central muscle relaxant
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: lemborexant
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly

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Skin
Angioedema (<10%)
Flushing / rubefaction (<10%)
Central Nervous System
Trembling (<10%)
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

CHOLESTYRAMINE

Trade name: Questran (Par)
Indications: Pruritus associated with biliary obstruction, primary hypercholesterolemia
Class: Bile acid sequestrant
Half-life: N/A
Clinically important, potentially hazardous interactions with: acarbose, acetaminophen, acitretin, amiodarone, aspirin, bezafibrate,

calcifediol, chloroquine, cyclopenthiazide, cyclosporine, deferasirox, digoxin, doxepin, doxercalciferol, ergocalciferol, ezetimibe, ezetimibe, hydroxychloroquine, isotretinoin, leflunomide, levodopa, lovastatin, meloxicam, mycophenolate, phytonadione, propranolol, raloxifene, sulfasalazine, sulfonylureas, tetracycline, tricyclic antidepressants, troglitazone, ursodiol, valproic acid, vitamin A, vitamin E
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with complete biliary obstruction.

Skin
Pruritus (itching) [2]
Hematologic
Hemorrhage [2]
Neuromuscular/Skeletal
Osteomalacia [2]

CHOLIC ACID

Trade name: Cholbam (Asklepion Pharmaceuticals)
Indications: Bile acid synthesis disorders, adjunctive treatment of peroxisomal disorders
Class: Bile acid
Half-life: N/A
Clinically important, potentially hazardous interactions with: cyclosporine
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

Gastrointestinal/Hepatic
Diarrhea (2%)

CHOLINE FENOFIBRATE

Synonym: fenofibric acid
Trade name: Trilipix (AbbVie)
Indications: As adjunctive therapy in hypertriglyceridemia, hypercholesterolemia or mixed dyslipidemia
Class: Fibrate
Half-life: 20 hours
Clinically important, potentially hazardous interactions with: cyclosporine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with renal impairment. Fenofibric acid is the active metabolite of fenofibrate (see separate entry).

Central Nervous System
Headache (13%)
Pain (4%)
Vertigo / dizziness (4%)
Endocrine/Metabolic
ALT increased (5%)
Gastrointestinal/Hepatic
Constipation (3%)
Diarrhea (4%)
Dyspepsia / functional dyspepsia / gastroparesis (4%)
Nausea (4%)
Neuromuscular/Skeletal
Arthralgia (4%)
Asthenia / fatigue (2%)
Back pain (6%)
Muscle spasm (2%)
Myalgia/Myopathy (3%)
Pain in extremities (5%)
Respiratory
Nasopharyngitis (4%)
Sinusitis (3%)
Upper respiratory tract infection (5%)

CHONDROITIN

Scientific names: *Chondroitin 4- and 6-sulfate, Chondroitin 4-sulfate, Condrosulf, Structum*
Indications: Osteoarthritis (often with glucosamine), ischemic heart disease, osteoporosis, hyperlipidemia, keratoconjunctivitis, agent in cataract surgery
Class: Amino sugar, Food supplement
Half-life: N/A
Clinically important, potentially hazardous interactions with: warfarin
Pregnancy category: N/A

Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [2]

CICLESONIDE

Trade names: Alvesco (Nycomed) (Oral inhalation), Omnaris (Nycomed) (Intranasal)
Indications: Allergic rhinitis, asthma
Class: Corticosteroid / Glucocorticoid
Half-life: 5–7 hours
Clinically important, potentially hazardous interactions with: aldesleukin, conivaptan, corticorelin, darunavir, dasatinib, delavirdine, indinavir, itraconazole, ketoconazole, mifepristone, moderate CYP3A4 inhibitors, nelfinavir, ritonavir, telithromycin, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Mucosal
Oral candidiasis [2]

CICLOPIROX

Trade names: Loprox (Medicis), Penlac (Sanofi-Aventis)
Indications: Various infections caused by susceptible organisms
Class: Antifungal / antimycotic, Antimicrobial
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: For topical use only.

Skin
Burning / skin burning sensation [3]
Contact dermatitis [2]
Erythema [2]
Pruritus (itching) [4]

CIDOFOVIR

Trade name: Vistide (Gilead)
Indications: Cytomegalovirus (CMV) retinitis in patients with acquired immunodeficiency syndrome (AIDS)
Class: Antiviral; nucleotide analog
Half-life: ~2.6 hours
Clinically important, potentially hazardous interactions with: amphotericin B, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, fomivirsen, tenofovir disoproxil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: RENAL TOXICITY and NEUTROPENIA

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>10%)
Cutaneous toxicity / skin toxicity [3]
Diaphoresis (see also hyperhidrosis) (<10%)
DRESS syndrome [2]
Pallor (<10%)
Pigmentation (>10%)
Pruritus (itching) (<10%) [2]
Rash (27%) [2]
Ulcerations [2]
Urticaria / hives (<10%)
Hair
Alopecia / hair loss (22%) [2]
Mucosal
Stomatitis (oral mucositis) (<10%)
Central Nervous System
Chills (24%)
Dysgeusia (taste perversion) (<10%)
Headache [4]
Paresthesias (>10%)
Local
Application-site reactions (39%) [4]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Myalgia/Myopathy [2]
Ocular
Intraocular inflammation [2]
Iritis [6]
Ocular hypotension [2]
Retinal detachment [3]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [18]
Vision impaired [3]
Vision loss [3]
Renal
Fanconi syndrome [2]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]
Other
Allergic reactions (<10%)

CILAZAPRIL

Trade names: Inhibase (Roche), Vascace (Roche)
Indications: Hypertension, chronic heart failure
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive, Vasodilator
Half-life: 9 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, allopurinol, alpha blockers, alprostadil, angiotensin II receptor antagonists, antacids, antidiabetics, antipsychotics, anxiolytics and hypnotics, aspirin, baclofen, beta blockers, calcium channel blockers, clonidine, corticosteroids, cyclosporine, diazoxide, diuretics, estrogens, general anesthetics, gold & gold compounds, heparins, hydralazine, insulin, levodopa, lithium, MAO inhibitors, metformin, methyldopa, minoxidil, moxisylyte, nitrates, nitroprusside, NSAIDs, potassium salts, sulfonylureas, sympathomimetics, tizanidine, trimethoprim
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a history of angioedema with or without previous ACE inhibitor treatment.
Not available in the USA.

Skin
- Angioedema [2]
- Pemphigus vulgaris [2]

Central Nervous System
- Headache [3]
- Vertigo / dizziness [2]

Neuromuscular/Skeletal
- Asthenia / fatigue [4]

Respiratory
- Cough [8]

CILOSTAZOL

Trade name: Pletal (Otsuka)
Indications: Peripheral vascular disease, intermittent claudication
Class: Antiplatelet, Phosphodiesterase inhibitor, Vasodilator, peripheral
Half-life: 11–13 hours
Clinically important, potentially hazardous interactions with: anagrelide, anticoagulants, antifungals, antiplatelet agents, clarithromycin, collagenase, conivaptan, CYP2C19 inhibitors, CYP3A4 inducers or inhibitors, dasatinib, deferasirox, diltiazem, drotrecogin alfa, erythromycin, esomeprazole, fondaparinux, glucosamine, grapefruit juice, high-fat foods, ibritumomab, itraconazole, ketoconazole, macrolide antibiotics, NSAIDs, omeprazole, PEG-interferon, pentosan, pentoxifylline, prostacyclin analogues, salicylates, St John's wort, telithromycin, thrombolytic agents, tositumomab & iodine^{131}, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with congestive heart failure or active pathological bleeding.

Warning: CONTRA-INDICATED IN HEART FAILURE PATIENTS

Skin
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (<2%)
- DRESS syndrome [2]
- Edema / fluid retention (see also peripheral edema) (<2%)
- Facial edema (<2%)
- Furunculosis (<2%)
- Hypertrophy (<2%)
- Peripheral edema (see also edema) (7–9%)
- Purpura (<2%)
- Rash (2%) [2]
- Urticaria / hives (<2%)
- Varicosities (<2%)
- Xerosis / xeroderma (see also dry skin) (<2%)

Mucosal
- Epistaxis (nosebleed) (<2%)
- Gingival bleeding (<2%)
- Perioral abscess (<2%)
- Rectal hemorrhage / rectal bleeding (<2%)
- Tongue edema (<2%)

Cardiovascular
- Arrhythmias (<2%)
- Atrial fibrillation (<2%)
- Atrial flutter (<2%)
- Cardiac arrest (<2%)
- Cardiotoxicity [4]
- Congestive heart failure (<2%)
- Extrasystoles (<2%)
- Hypotension (<2%)
- Myocardial infarction (<2%) [4]
- Myocardial ischemia (<2%)
- Palpitation (5–10%) [8]
- Postural hypotension (<2%)
- Supraventricular tachycardia (<2%)
- Tachycardia (4%) [4]
- Vasodilation (<2%)
- Ventricular tachycardia (<2%)

Central Nervous System
- Anorexia (<2%)
- Anxiety (<2%)
- Cerebral ischemia (<2%)
- Chills (<2%)
- Headache (27–34%) [20]
- Hyperesthesia (2%)
- Insomnia (<2%)
- Neurotoxicity (<2%)
- Paresthesias (2%)
- Syncope / fainting (<2%)
- Vertigo / dizziness (<10%) [4]

Endocrine/Metabolic
- Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)
- Diabetes mellitus (<2%)
- GGT increased (<2%)
- Hyperlipidemia (<2%)
- Hyperuricemia (<2%)

Gastrointestinal/Hepatic
- Abdominal pain (4–5%)
- Black stools / melena (<2%)
- Cholelithiasis (gallstones in the gallbladder) (<2%)
- Colitis (<2%)
- Diarrhea (12–19%) [8]
- Dyspepsia / functional dyspepsia / gastroparesis (6%)
- Esophagitis (<2%)
- Flatulence (2–3%)
- Gastritis / pangastritis / gastric irritation (<2%)
- Gastroenteritis (<2%)
- Gastrointestinal ulceration (<2%)
- Hematemesis (<2%)
- Nausea (6–7%) [4]
- Peptic ulceration (includes duodenal ulcer, esophageal ulcer) (<2%)
- Vomiting (>2%)

Genitourinary
- Albuminuria (<2%)
- Cystitis (<2%)
- Urinary frequency (<2%)
- Vaginal bleeding (<2%)
- Vaginitis (includes vulvitis) (<2%)

Hematologic
- Anemia (<2%)
- Hemorrhage (<2%)
- Polycythemia / erythrocytosis (<2%)
- Thrombosis [3]

Neuromuscular/Skeletal
- Arthralgia (<2%)
- Asthenia / fatigue (<2%)
- Back pain (6–7%)
- Bone or joint pain (<2%)
- Gouty tophi (<2%)
- Myalgia/Myopathy (2–3%)

Ocular
- Amblyopia (<2%)
- Blindness (<2%)
- Conjunctivitis (conjunctival inflammation) (<2%)
- Diplopia (double vision) (<2%)
- Ocular hemorrhage (<2%)

Otic
- Ear pain (<2%)
- Tinnitus (<2%)

Renal
- Retroperitoneal bleeding (<2%)

Respiratory
- Asthma (<2%)
- Cough (3–4%) [2]
- Hemoptysis (<2%)
- Pharyngitis (sore throat) (7–10%)
- Pneumonia (<2%)
- Rhinitis (7–12%)
- Sinusitis (<2%)

Other
- Adverse effects / adverse reactions [4]
- Death [3]
- Infection (10–14%)

CIMETIDINE

Trade name: Tagamet (GSK)
Indications: Duodenal ulcer
Class: CYP1A2 inhibitor, CYP3A4 inhibitor, Histamine H2 receptor antagonist
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: acenocoumarol, alfuzosin, aminophylline, amiodarone, amitriptyline, anisindione, anticoagulants, buprenorphine, butorphanol, caffeine, carmustine, citalopram, clobazam, clopidogrel, clozapine, cocoa, delavirdine, dicumarol, dofetilide, duloxetine, dutasteride, epirubicin, eszopiclone, fentanyl, ferrous sulfate, floxuridine, fluorouracil, galantamine, gliclazide, hydromorphone, itraconazole, ketoconazole, labetalol, levomepromazine, lidocaine, lomustine, meptazinol, metformin, metronidazole,

midazolam, mizolastine, moclobemide, morphine, narcotic analgesics, neratinib, oxprenolol, oxtriphylline, oxycodone, oxymorphone, pentazocine, phenytoin, pimecrolimus, posaconazole, prednisone, propranolol, quinine, rilpivirine, risperidone, roflumilast, sertindole, sildenafil, sufentanil, tamsulosin, terbinafine, thalidomide, tolazoline, uracil/tegafur, uracil/tegafur, warfarin, xanthines, zaleplon, zofenopril, zolmitriptan, zolpidem
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Angioedema [3]
Erythema annulare centrifugum (see also gyrate erythema) [2]
Erythema multiforme [5]
Exanthems [3]
Exfoliative dermatitis [2]
Fixed eruption [2]
Hypersensitivity [4]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Pruritus (itching) [6]
Pseudolymphoma [2]
Psoriasis [6]
Rash (<2%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
Urticaria / hives [6]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]
Hair
Alopecia / hair loss [4]
Central Nervous System
Hallucinations [3]
Endocrine/Metabolic
Gynecomastia [13]
Neuromuscular/Skeletal
Myalgia/Myopathy [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

CINACALCET

Trade names: Mimpara (Amgen), Sensipar (Amgen)
Indications: Secondary hyperparathyroidism, parathyroid carcinoma
Class: Calcimimetic
Half-life: 30–40 hours
Clinically important, potentially hazardous interactions with: amitriptyline, antifungal agents, atomoxetine, carvedilol, codeine, conivaptan, CYP2D6 substrates, CYP3A4 inhibitors, dasatinib, desipramine, fesoterodine, flecainide, food, itraconazole, ketoconazole, metoprolol, nebivolol, PEG-interferon, tacrolimus, tamoxifen, tetrabenazine, thioridazine, tramadol, tricyclic antidepressants, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with hypocalcemia.

Cardiovascular
Chest pain (6%)
Hypertension (7%)
Central Nervous System
Anorexia (6–15%)
Depression (13%)
Headache (13%)
Paresthesias (20%)
Vertigo / dizziness (10%)
Endocrine/Metabolic
Dehydration (15%)
Hypercalcemia (17%) [2]
Hypocalcemia [10]
Gastrointestinal/Hepatic
Constipation (13%)
Diarrhea (21%) [2]
Gastrointestinal disorder / discomfort [3]
Nausea (31–63%) [9]
Vomiting (27–46%) [5]
Genitourinary
Hypercalciuria [2]
Hematologic
Anemia (13%)
Neuromuscular/Skeletal
Arthralgia (13%)
Asthenia / fatigue (7–17%)
Fractures (17%)
Myalgia/Myopathy (15%) [2]
Pain in extremities (11%)
Respiratory
Upper respiratory tract infection (11%)
Other
Adverse effects / adverse reactions [3]
Infection (5%)

CINNARIZINE

Trade names: Stugeron (Janssen), Vertizin (Ram)
Indications: Dizziness, tinnitus, nystagmus, nausea and vomiting, motion sickness
Class: Histamine H1 receptor antagonist, Muscarinic antagonist, Vasodilator, peripheral
Half-life: 4 hours
Clinically important, potentially hazardous interactions with: alcohol, barbiturates, hypnotics, narcotic analgesics, sedatives, tranquilizers, tricyclic antidepressants
Pregnancy category: C

Skin
Lichen planus (includes hypertrophic lichen planus) [2]
Lichen planus pemphigoides [2]
Central Nervous System
Depression [7]
Headache [2]
Parkinsonism [28]
Tardive syndrome / tardive dyskinesia [4]
Other
Adverse effects / adverse reactions [3]

CIPROFIBRATE

Trade name: Modalim (Sanofi-Aventis)
Indications: Hyperlipidemia
Class: Fibrate, Lipid regulator
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: atorvastatin, fluvastatin, ibuprofen, norfloxacin, pravastatin, rosuvastatin, simvastatin
Pregnancy category: X

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Neuromuscular/Skeletal
Rhabdomyolysis [5]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

CIPROFLOXACIN

Trade names: Ciloxan Ophthalmic (Alcon), Cipro (Bayer), Ciproxin (Bayer)
Indications: Various infections caused by susceptible organisms, inhalational anthrax (post exposure)
Class: Antibiotic, Antibiotic; fluoroquinolone, Antibiotic; quinolone, Antimicrobial, CYP1A2 inhibitor, CYP3A4 inhibitor
Half-life: 4 hours
Clinically important, potentially hazardous interactions with: agomelatine, aminophylline, amiodarone, amitriptyline, antacids, antineoplastics, arsenic, artemether/lumefantrine, BCG vaccine, bendamustine, bepridil, bismuth, bismuth subsalicylate, bretylium, calcium salts, citalopram, clopidogrel, clozapine, corticosteroids, cyclosporine, dairy products, dasatinib, degarelix, didanosine, disopyramide, dolasetron, duloxetine, dutasteride, eluxadoline, erlotinib, erythromycin, flibanserin, insulin, lanthanum, lapatinib, levofloxacin, lumateperone, magnesium salts, meptazinol, methotrexate, methylxanthines, mifepristone, moxifloxacin, mycophenolate, neratinib, NSAIDs, olanzapine, olaparib, opiod analgesics, oral iron, oxtriphylline, P-glycoprotein inhibitors, pazopanib, pentoxifylline, phenothiazines, phenytoin, pirfenidone, probenecid, procainamide, propranolol, QT prolonging agents, quinapril, quinidine, rasagiline, ropinirole, ropivacaine, sevelamer, sotalol, St John's wort, strontium ranelate, sucralfate, sulfonylureas, telavancin, telithromycin, tizanidine, tricyclic antidepressants, typhoid vaccine, ubrogepant, venetoclax, vitamin K antagonists, voriconazole, vorinostat, warfarin, zinc, ziprasidone, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants.
Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis.
Ciprofloxacin is chemically related to nalidixic acid.
Warning: SERIOUS ADVERSE REACTIONS INCLUDING TENDINITIS, TENDON RUPTURE, PERIPHERAL NEUROPATHY, CENTRIAL NERVOUS SYSTEM EFFECTS and EXACERBATION OF MYASTHENIA GRAVIS

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]

AGEP [4]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [15]
Angioedema [8]
Bullae [2]
Candidiasis / candidosis [2]
Cutaneous toxicity / skin toxicity [3]
Diaphoresis (see also hyperhidrosis) [5]
DRESS syndrome [2]
Erythema multiforme [5]
Exanthems [4]
Facial edema [2]
Fixed eruption [14]
Hypersensitivity [5]
Jaundice [3]
Linear IgA bullous dermatosis [2]
Photosensitivity [20]
Phototoxicity [5]
Pruritus (itching) [11]
Purpura [4]
Rash (<10%) [14]
Serum sickness-like reaction [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [20]
Urticaria / hives [10]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [11]

Mucosal
Stomatitis (oral mucositis) [4]
Xerostomia (dry mouth) [3]

Cardiovascular
Palpitation [2]
QT interval prolonged / QT prolongation [11]
Torsades de pointes [8]

Central Nervous System
Delirium [5]
Dysgeusia (taste perversion) [3]
Encephalopathy (includes hepatic encephalopathy) [2]
Fever (pyrexia) (includes hyperpyrexia) [3]
Hallucinations, visual (see also Charles Bonnet syndrome) [6]
Headache [6]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Mania [5]
Peripheral neuropathy [2]
Psychosis [7]
Seizures [5]
Suicidal ideation [2]
Syncope / fainting [2]
Tremor [2]
Vertigo / dizziness [2]

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [2]

Gastrointestinal/Hepatic
Abdominal pain [2]
Cholestatic liver injury / cholestatic hepatitis [2]
Constipation [2]
Flatulence [2]
Hepatitis [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Nausea (3%) [4]
Pancreatitis / acute pancreatitis [2]
Vomiting [2]

Genitourinary
Vaginitis (includes vulvitis) [2]

Hematologic
Hemolytic anemia [2]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Thrombocytopenia [4]

Local
Injection-site pain [2]

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [3]
Myalgia/Myopathy [2]
Myasthenia gravis (exacerbation) [2]
Myoclonus [4]
Rhabdomyolysis [4]
Tendinitis [4]
Tendinopathy/Tendon rupture [32]

Ocular
Vision blurred [2]

Otic
Hearing loss (hypoacusis) [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [9]
Renal failure [3]

Other
Adverse effects / adverse reactions [8]
Death [8]

CISATRACURIUM

Trade name: Nimbex (AbbVie)
Indications: Adjunct to general anesthesia, relaxes skeletal muscle
Class: Non-depolarizing neuromuscular blocker
Half-life: 22 minutes
Clinically important, potentially hazardous interactions with: aminoglycosides, clindamycin, cyclopropane, enflurane, halothane, isoflurane, methoxyflurane, piperacillin, rocuronium
Pregnancy category: B

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [11]

CISPLATIN

Synonym: CDDP
Trade name: Platinol (Bristol-Myers Squibb)
Indications: Carcinomas, lymphomas
Class: Alkylating agent, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Platinum-based antineoplastic
Half-life: alpha phase: 25–49 minutes; beta phase: 58–73 hours
Clinically important, potentially hazardous interactions with: aldesleukin, atenolol, chlorothiazide, gadobenate, methotrexate, paclitaxel, pentamidine, rituximab, selenium, thalidomide, torsemide, torsemide, trilaciclib, zinc
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

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Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [7]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [10]
Angioedema [4]
Cutaneous toxicity / skin toxicity [8]
Edema / fluid retention (see also peripheral edema) [3]
Erythema [3]
Exanthems [4]
Flagellate dermatitis [2]
Flushing / rubefaction [5]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [10]
Hypersensitivity [5]
Necrosis (skin necrosis) [2]
Peripheral edema (see also edema) [2]
Pigmentation [5]
Pruritus (itching) [8]
Rash [22]
Raynaud's phenomenon [14]
Recall reaction [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Thrombocytopenic purpura [2]
Urticaria / hives [7]
Xerosis / xeroderma (see also dry skin) [2]

Hair
Alopecia / hair loss (>10%) [26]

Nails
Paronychia [2]

Mucosal
Epistaxis (nosebleed) [3]
Mucosal inflammation [2]
Mucositis [16]
Oral lesions [2]
Stomatitis (oral mucositis) [18]

Cardiovascular
Bradycardia / sinus bradycardia [3]
Cardiotoxicity [3]
Hypertension [9]
Thromboembolism [7]
Venous thromboembolism [4]

Central Nervous System
Anorexia [28]
Cerebrovascular accident [2]
Dysgeusia (taste perversion) [3]
Fever (pyrexia) (includes hyperpyrexia) [5]
Headache [4]
Insomnia [4]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [10]
Neurotoxicity [17]
Pain [3]
Peripheral neuropathy [9]
Seizures [4]
Vertigo / dizziness [2]

Endocrine/Metabolic
ALP increased [2]
ALT increased [7]
Appetite decreased [7]
AST increased [7]
Dehydration [3]
Hyperbilirubinemia [2]
Hyperglycemia (includes glucose increased) [4]
Hyperkalemia [2]
Hypocalcemia [2]
Hypokalemia [5]
Hypomagnesemia [14]
Hyponatremia [20]
Serum creatinine increased [9]
SIADH [19]
Weight loss [4]

Gastrointestinal/Hepatic
Abdominal pain [4]
Colitis [2]
Constipation [6]
Diarrhea [39]

Esophagitis [2]
Gastrointestinal bleeding [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]
Nausea [57]
Pancreatitis / acute pancreatitis [2]
Vomiting [42]

Hematologic
Anemia [53]
Coagulopathy (includes disseminated intravascular coagulation / DIC) [2]
Febrile neutropenia [41]
Hemolytic uremic syndrome [12]
Hemotoxicity [4]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [39]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [5]
Myelosuppression / bone marrow suppression / myelotoxicity [11]
Neutropenia (neutrophils decreased) [102]
Platelets decreased [2]
Sepsis [2]
Thrombocytopenia [50]
Thrombosis [2]

Local
Injection-site cellulitis [4]

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [41]
Ataxia [2]
Myalgia/Myopathy [4]
Myasthenia gravis [2]

Ocular
Ocular adverse effect [2]
Retinal artery occlusion [4]

Otic
Hearing loss (hypoacusis) [18]
Ototoxicity [42]
Tinnitus [28]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [70]
Proteinuria [3]
Renal failure [3]
Renal function abnormal / renal dysfunction [2]

Respiratory
Cough [4]
Dysphonia (includes voice disorders / voice changes) [4]
Dyspnea / shortness of breath [4]
Pneumonia [4]
Pneumonitis [3]
Pulmonary toxicity [5]

Other
Adverse effects / adverse reactions [16]
Death [17]
Hiccups / singultus [6]
Infection [11]

CITALOPRAM

Trade names: Celexa (Forest), Cipramil (Lundbeck)
Indications: Depression, obsessive-compulsive disorder, panic disorder
Class: Antidepressant, Selective serotonin reuptake inhibitor (SSRI)
Half-life: ~35 hours
Clinically important, potentially hazardous interactions with: alcohol, alfuzosin, alpha or beta blockers, antidepressants, antiepileptics, antiplatelet agents, artemether/lumefantrine, aspirin, atomoxetine, barbiturates, bupropion, buspirone, carbamazepine, chloroquine, cimetidine, ciprofloxacin, clozapine, CNS depressants, collagenase, conivaptan, coumarins/anticoagulants, CYP2C19 inhibitors, CYP3A4 inhibitors, cyproheptadine, desmopressin, dexibuprofen, dextromethorphan, dronedarone, drotrecogin alfa, duloxetine, efavirenz, fluconazole, gadobutrol, glucosamine, haloperidol, ibritumomab, iobenguane, isocarboxazid, lithium, macrolide antibiotics, MAO inhibitors, methadone, methylphenidate, metoclopramide, mexiletine, moclobemide, nilotinib, NSAIDs, opioid anagesics, pentoxifylline, phenelzine, phenytoin, pimozide, QT prolonging agents, quinine, rasagiline, risperidone, ritonavir, salicylates, selegiline, serotonin modulators, sibutramine, SSRIs, St John's wort, sumatriptan, tetrabenazine, thioridazine, thrombolytic agents, tositumomab & iodine^{131}, tramadol, tranylcypromine, trazodone, tricyclic antidepressants, tryptophan, vitamin K antagonists, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Escitalopram (q.v.) is the (S)-form citalopram.
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) (11%) [3]
Hyperhidrosis (see also diaphoresis) (11%) [2]
Pigmentation [2]
Pruritus (itching) (<10%) [2]
Rash (<10%)

Mucosal
Xerostomia (dry mouth) (20%) [4]

Cardiovascular
Bradycardia / sinus bradycardia [2]
Cardiotoxicity [4]
Chest pain [2]
Palpitation [2]
QT interval prolonged / QT prolongation [22]
Tachycardia [3]
Torsades de pointes [9]

Central Nervous System
Agitation (3%)
Akathisia [2]
Anorexia (4%)
Anxiety (4%) [2]
Fever (pyrexia) (includes hyperpyrexia) (2%)
Hallucinations, auditory [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [3]
Headache [5]
Incoordination [2]
Insomnia (15%) [4]
Nightmares [2]
Restless legs syndrome [4]
Sedation [2]
Seizures (overdose) [5]
Serotonin syndrome [19]
Somnolence (drowsiness) (18%) [6]
Suicidal ideation [3]
Tremor (8%) [5]
Vertigo / dizziness [5]
Yawning (2%)

Endocrine/Metabolic
Galactorrhea [4]
Hyponatremia [2]
Libido decreased (2%)
SIADH [19]
Weight gain [3]

Gastrointestinal/Hepatic
Abdominal pain (3%)
Constipation [2]
Diarrhea (8%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (5%)
Nausea (21%) [4]
Vomiting (4%) [2]

Genitourinary
Dysmenorrhea (3%)
Ejaculatory dysfunction (6%) [2]
Impotence (3%)
Priapism [4]
Sexual dysfunction [5]
Urinary frequency [2]

Neuromuscular/Skeletal
Arthralgia (2%)
Asthenia / fatigue (5%) [4]
Dystonia [2]
Myalgia/Myopathy (2%)

Ocular
Diplopia (double vision) [2]
Glaucoma (includes acute angle-closure glaucoma) [2]

Respiratory
Rhinitis (5%)
Sinusitis (3%)
Upper respiratory tract infection (5%)

Other
Adverse effects / adverse reactions [2]
Death [8]

CLADRIBINE

Trade name: Leustatin (Janssen Biotech)
Indications: Leukemias
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Immunomodulator
Half-life: alpha phase: 25 minutes; beta phase: 7 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Licensed for treating relapsing multiple sclerosis in Europe since 2017.

Skin
- Diaphoresis (see also hyperhidrosis) (<10%)
- Edema / fluid retention (see also peripheral edema) (6%)
- Erythema (6%)
- Exanthems (27–50%) [2]
- Herpes zoster [5]
- Petechiae (8%)
- Pruritus (itching) (6%)
- Purpura (10%)
- Rash (27%) [3]

Mucosal
- Mucositis [2]

Hematologic
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [12]
- Neutropenia (neutrophils decreased) [8]
- Thrombocytopenia [2]

Local
- Injection-site edema (9%)
- Injection-site erythema (9%)
- Injection-site pain (9%)
- Injection-site phlebitis (2%)
- Injection-site thrombosis (2%)

Neuromuscular/Skeletal
- Asthenia / fatigue [3]
- Myalgia/Myopathy (7%)

Other
- Adverse effects / adverse reactions [4]
- Death [3]
- Infection [10]

CLARITHROMYCIN

Trade name: Biaxin (AbbVie)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; macrolide, Antimicrobial, CYP3A4 inhibitor
Half-life: 5–7 hours
Clinically important, potentially hazardous interactions with: abiraterone, alprazolam, aprepitant, astemizole, atazanavir, atorvastatin, avanafil, benzodiazepines, betrixaban, boceprevir, brigatinib, cabazitaxel, cabozantinib, calcifediol, carbamazepine, chlordiazepoxide, cilostazol, clonazepam, clorazepate, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, conivaptan, copanlisib, crizotinib, cyclosporine, dabigatran, darunavir, dasatinib, deflazacort, delavirdine, diazepam, digoxin, dihydroergotamine, disopyramide, dronedarone, efavirenz, eletriptan, eluxadoline, ergot alkaloids, erlotinib, erlotinib, estradiol, etravirine, everolimus, fesoterodine, flibanserin, fluoxetine, flurazepam, fluticasone propionate, fluvastatin, HMG-CoA reductase inhibitors, ibrutinib, imatinib, indinavir, itraconazole, ivabradine, ivabradine, ixabepilone, lapatinib, lemborexant, lomitapide, lopinavir, lorazepam, lovastatin, lumateperone, maraviroc, methylergonovine, methylprednisolone, methysergide, midazolam, midostaurin, mifepristone, naldemedine, neratinib, nevirapine, nilotinib, olaparib, omeprazole, osilodrostat, oxazepam, oxtriphylline, paclitaxel, palbociclib, paroxetine hydrochloride, pazopanib, pimavanserin, pimozide, ponatinib, pravastatin, prednisone, quazepam, ranolazine, regorafenib, repaglinide, ribociclib, rilpivirine, rimonabant, rivaroxaban, romidepsin, ruxolitinib, sertraline, sildenafil, silodosin, simeprevir, simvastatin, solifenacin, sunitinib, tadalafil, talazoparib, temazepam, temsirolimus, tezacaftor/ivacaftor, ticagrelor, tipranavir, tolvaptan, trabectedin, triazolam, ubrogepant, ulipristal, valbenazine, vandetanib, vemurafenib, venetoclax, voclosporin, vorapaxar, warfarin, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
- Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [3]
- Exanthems [3]
- Fixed eruption [3]
- Hypersensitivity [3]
- Psoriasis [2]
- Purpura [3]
- Rash (3%) [2]
- Serum sickness-like reaction [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Mucosal
- Stomatitis (oral mucositis) [2]

Cardiovascular
- QT interval prolonged / QT prolongation [7]
- Torsades de pointes [9]

Central Nervous System
- Anorexia [2]
- Dysgeusia (taste perversion) (3%) [9]
- Hallucinations, visual (see also Charles Bonnet syndrome) [5]
- Mania [8]
- Neurotoxicity [4]
- Psychosis [3]

Endocrine/Metabolic
- Hypoglycemia (see also insulin autoimmune syndrome) [3]

Gastrointestinal/Hepatic
- Abdominal distension [2]
- Abdominal pain [5]
- Diarrhea [10]
- Dyspepsia / functional dyspepsia / gastroparesis [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
- Nausea [5]
- Vomiting [3]

Local
- Injection-site pain [2]

Neuromuscular/Skeletal
- Arthralgia [2]
- Rhabdomyolysis [14]

Otic
- Hearing loss (hypoacusis) [2]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
- Adverse effects / adverse reactions [11]

CLEMASTINE

Trade name: Tavist (Novartis)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: barbiturates, chloral hydrate, ethchlorvynol, phenothiazines, zolpidem
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Mucosal
- Xerostomia (dry mouth) (<10%) [2]

CLEVIDIPINE

Trade name: Cleviprex (The Medicines Company)
Indications: Reduction of blood pressure
Class: Calcium channel blocker
Half-life: 1 minute
Clinically important, potentially hazardous interactions with: alpha-1 blockers, amifostine, antihypertensives, black cohosh, blue cohosh, calicium channel blockers (non-dihydropyridine), diazoxide, ephedra, ginger, ginseng, goldenseal, hawthorn (fruit, leaf, flower extract), hypotensives, licorice, magnesium salts, MAO inhibitors, methylphenidate, mistletoe, neuromuscular blocking agents, nitroprusside, pentoxifylline, phosphodiesterase 5 inhibitors, quinidine, quinine, rituximab, yohimbine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with allergies to soy or egg products, with defective lipid metabolism, or severe aortic stenosis.

Cardiovascular
- Atrial fibrillation (21%)

Central Nervous System
- Headache (6%) [2]

Gastrointestinal/Hepatic
- Nausea (5%) [2]
- Vomiting (3%)

CLIDINIUM

Trade name: Librax (Valeant)
Indications: Duodenal and gastric ulcers
Class: Muscarinic antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticholinergics, arbutamine
Note: Librax is clidinium and chlordiazepoxide.

CLINDAMYCIN

Trade names: Benzaclin (Dermik), Cleocin (Pfizer), Cleocin-T (Pfizer), Clindagel (Galderma), Clindets (Stiefel)
Indications: Various serious infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; lincosamide, Antimicrobial
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: cisatracurium, erythromycin, kaolin, mivacurium, neostigmine, pyridostigmine, rocuronium, saquinavir
Pregnancy category: B
Note: See also separate entry for the combination product clindamycin/tretinoin.

Skin
- AGEP [10]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
- Dermatitis (from topical preparations) [7]
- DRESS syndrome [2]
- Erythema multiforme [2]
- Erythroderma [2]
- Exanthems [6]
- Hypersensitivity [5]
- Rash (<10%) [3]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [7]
- Sweet's syndrome [3]
- Urticaria / hives [3]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Mucosal
- Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis) [2]
- Xerostomia (dry mouth) [2]

Central Nervous System
- Ageusia (taste loss) / taste disorder [2]

Gastrointestinal/Hepatic
- Colitis [2]
- Diarrhea [4]
- Esophagitis [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Pseudomembranous colitis [5]

Hematologic
- Myelosuppression / bone marrow suppression / myelotoxicity [2]
- Neutropenia (neutrophils decreased) [2]

Local
- Application-site erythema [3]

Otic
- Tinnitus [2]

Other
- Adverse effects / adverse reactions [6]
- Death [3]

CLINDAMYCIN/ TRETINOIN

Trade names: Veltin (Astellas) (Stiefel), Ziana (Medicis)
Indications: Acne vulgaris (topical use only)
Class: Antibiotic, Antibiotic; lincosamide, Antimicrobial, Retinoid
Half-life: N/A
Clinically important, potentially hazardous interactions with: erythromycin, neuromuscular blocking agents, other topical medications with a skin drying effect
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with regional enteritis, ulcerative colitis, or history of antibiotic-associated colitis. Exposure to sunlight, sunlamps, and weather extremes should be avoided during the use of clindamycin/tretinoin gel. The reactions listed below are specific to the clindamycin/tretinoin combination product. See also profiles of clindamycin and tretinoin for reactions associated with the individual products.

Skin
- Erythema [2]
- Scaling [2]

Gastrointestinal/Hepatic
- Gastrointestinal disorder / discomfort (4%)

Local
- Application-site erythema [2]

Other
- Adverse effects / adverse reactions [2]

CLIOQUINOL

Synonyms: iodochlorhydroxyquin; chloroiodoquin
Trade name: Vioform (Novartis)
Indications: Athlete's foot, eczema, fungal infections, Parkinsonism
Class: Antifungal / antimycotic, Antimicrobial, Antiprotozoal, Chelator
Half-life: N/A
Clinically important, potentially hazardous interactions with: bacitracin
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Use banned or restricted in some countries.

Skin
- Contact dermatitis [4]
- Dermatitis [2]

Central Nervous System
- Amnesia [3]
- Neurotoxicity [9]

Hematologic
- Myelosuppression / bone marrow suppression / myelotoxicity [4]

Ocular
- Optic neuritis [3]

CLOBAZAM

Trade names: Frisium (Sanofi-Aventis), Onfi (Lundbeck)
Indications: Epilepsy adjunct therapy, psychosis
Class: Anticonvulsant, Antiepileptic, Benzodiazepine
Half-life: 36–42 hours
Clinically important, potentially hazardous interactions with: alcohol, cannabidiol, carbamazepine, cenobamate, cimetidine, disulfiram, fluconazole, fluvoxamine, hormonal contraceptives, levodopa, moxonidine, omeprazole, phenytoin, rifampin, sodium oxybate, stiripentol, theophylline, ticlopidine, valproic acid
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Rash [3]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]

Central Nervous System
- Aggression (includes anger) (8%) [2]
- Dysarthria (3%)
- Fever (pyrexia) (includes hyperpyrexia) (13%) [2]
- Insomnia (5%) [2]
- Irritability (7%)
- Sedation (5%)
- Somnolence (drowsiness) (22%) [4]

Endocrine/Metabolic
- Appetite decreased (3%)
- Appetite increased (3%)

Gastrointestinal/Hepatic
- Constipation (5%)
- Dysphagia (2%)
- Vomiting (7%)

Genitourinary
- Urinary tract infection (4%)

Neuromuscular/Skeletal
- Asthenia / fatigue (5–10%) [3]
- Ataxia (5%) [3]
- Psychomotor hyperactivity (4%)

Respiratory
- Bronchitis (2%)
- Cough (5%)
- Pneumonia (4%) [2]
- Upper respiratory tract infection (12%) [3]

Other
- Adverse effects / adverse reactions (47%) [2]
- Death [2]
- Side effects (35%) [2]

CLOFAZIMINE

Trade name: Lamprene (Novartis)
Indications: Leprosy
Class: Anti-inflammatory, Antimycobacterial (including antitubercular)
Half-life: 10 days after a single dose
Clinically important, potentially hazardous interactions with: fludarabine, pentostatin
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Chromhidrosis (red sweat) (<10%) [3]
Ichthyosis (8–28%) [7]
Pigmentation (pink to brownish-black) (75–100%) [28]
Pruritus (itching) (<5%)
Rash (<5%) [3]
Xerosis / xeroderma (see also dry skin) (8–28%) [3]

Nails
Discoloration / nails (dyschromia) [2]

Gastrointestinal/Hepatic
Abdominal pain [5]
Enteropathy [3]
Nausea [2]
Vomiting [2]

Other
Adverse effects / adverse reactions [6]

CLOFIBRATE

Trade name: Atromid-S (Wyeth)
Indications: Type III hyperlipidemia
Class: Fibrate
Half-life: 6–25 hours after a single dose
Clinically important, potentially hazardous interactions with: anisindione, anticoagulants, dicumarol, gliclazide, ursodiol, warfarin
Pregnancy category: C

Skin
Dermatitis [3]
Exanthems [6]
Photosensitivity [4]

Neuromuscular/Skeletal
Myalgia/Myopathy [3]
Rhabdomyolysis [3]

CLOMIPHENE

Trade names: Clomid (Sanofi-Aventis), Serophene (Merck)
Indications: Ovulatory failure
Class: Selective estrogen receptor modulator (SERM)
Half-life: 5–7 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Exanthems [2]
Flushing / rubefaction (10%)
Hot flashes / hot flushes (>10%)
Melanoma [4]

Hair
Alopecia / hair loss [2]

Central Nervous System
Mood changes [2]

Endocrine/Metabolic
Gynecomastia (<10%)
Mastodynia (<10%)

CLOMIPRAMINE

Trade name: Anafranil (Mallinckrodt)
Indications: Obsessive-compulsive disorder
Class: Antidepressant; tricyclic, Muscarinic antagonist
Half-life: 21–31 hours
Clinically important, potentially hazardous interactions with: amprenavir, arbutamine, arsenic, artemether/lumefantrine, clonidine, duloxetine, epinephrine, formoterol, guanethidine, isocarboxazid, linezolid, MAO inhibitors, milnacipran, moclobemide, phenelzine, quinolones, sparfloxacin, tranylcypromine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (2%)
Cellulitis (2%)
Dermatitis (2%)
Diaphoresis (see also hyperhidrosis) (29%) [2]
Edema / fluid retention (see also peripheral edema) (2%)
Flushing / rubefaction (8%)
Hypersensitivity [2]
Photosensitivity [3]
Pruritus (itching) (6%)
Purpura (3%)
Rash (8%)
Xerosis / xeroderma (see also dry skin) (2%)

Mucosal
Xerostomia (dry mouth) (84%) [6]

Cardiovascular
QT interval prolonged / QT prolongation [4]
Torsades de pointes [2]

Central Nervous System
Dysgeusia (taste perversion) (8%)
Seizures [4]
Serotonin syndrome [4]
Status epilepticus [2]
Vertigo / dizziness [2]

Endocrine/Metabolic
Gynecomastia (2%)
SIADH [3]

Gastrointestinal/Hepatic
Nausea [2]

Genitourinary
Vaginitis (includes vulvitis) (2%)

Neuromuscular/Skeletal
Myalgia/Myopathy (13%)

Other
Adverse effects / adverse reactions [4]
Allergic reactions (<3%)

CLONAZEPAM

Trade name: Klonopin (Roche)
Indications: Petit mal and myoclonic seizures
Class: Benzodiazepine
Half-life: 18–50 hours
Clinically important, potentially hazardous interactions with: amprenavir, chlorpheniramine, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, efavirenz, esomeprazole, imatinib, indinavir, nelfinavir, nevirapine, oxycodone, piracetam
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Bullous dermatosis [2]
Dermatitis (<10%)
Diaphoresis (see also hyperhidrosis) (>10%)
Lichenoid eruption / lichenoid reaction [2]
Pseudolymphoma [2]
Rash (>10%)

Hair
Alopecia / hair loss [2]

Mucosal
Sialopenia (>10%)
Sialorrhea (ptyalism; hypersalivation) (<10%)
Xerostomia (dry mouth) (>10%)

Central Nervous System
Insomnia [2]
Psychosis [2]
Seizures [2]

Other
Adverse effects / adverse reactions [2]
Allergic reactions (<10%)

CLONIDINE

Trade name: Catapres (Boehringer Ingelheim)
Indications: Hypertension
Class: Adrenergic alpha-receptor agonist
Half-life: 6–24 hours
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, amitriptyline, amoxapine, atenolol, betaxolol, captopril, carteolol, cilazapril, clomipramine, desipramine, dexmethylphenidate, diclofenac, doxepin, enalapril, esmolol, fosinopril, imipramine, insulin aspart, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, irbesartan, levodopa, levomepromazine, lisinopril, meloxicam, metoprolol, milnacipran, nadolol, nebivolol, nortriptyline, olmesartan, oxprenolol, penbutolol, pericyazine, pindolol, propranolol, protriptyline, quinapril, ramipril, sotalol, sulpiride, timolol, trandolapril, triamcinolone, tricyclic antidepressants, trimipramine, verapamil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Depigmentation [2]
Dermatitis (from patch) (20%) [23]
Eczema / eczematous reaction / eczematous eruption [2]
Erythema [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Pigmentation [2]
Pityriasis rosea [2]
Pruritus (itching) (>5%) [6]
Psoriasis [2]
Rash (<10%) [4]
Ulcerations (<10%)

Mucosal
Xerostomia (dry mouth) (40%) [14]

Cardiovascular
Bradycardia / sinus bradycardia [9]
Hypotension [19]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Hallucinations [3]
Headache [4]
Hyperesthesia (<10%)
Sedation [2]
Seizures [2]
Somnolence (drowsiness) [7]
Vertigo / dizziness [5]
Gastrointestinal/Hepatic
Nausea [2]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Other
Adverse effects / adverse reactions [3]

CLOPIDOGREL

Trade name: Plavix (Bristol-Myers Squibb) (Sanofi-Aventis)
Indications: Acute coronary syndrome, recent myocardial infarction, recent stroke, or established peripheral arterial disease
Class: Antiplatelet, Antiplatelet; thienopyridine
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: amiodarone, anisindione, anticoagulants, atorvastatin, calcium channel blockers, cangrelor, carbamazepine, chloramphenicol, cimetidine, ciprofloxacin, collagenase, dabigatran, dasatinib, delavirdine, dexlansoprazole, diclofenac, dicumarol, dipyridamole, drotrecogin alfa, efavirenz, enoxaparin, erythromycin, esomeprazole, etravirine, fluconazole, fluoxetine, fluvoxamine, fondaparinux, glucosamine, herbals with anticoagulant properties, ibritumomab, iloprost, inotersen, itraconazole, ketoconazole, lansoprazole, lepirudin, macrolide antibiotics, meloxicam, miconazole, moclobemide, NSAIDs, omega-3 fatty acids, omeprazole, oxcarbazepine, pantoprazole, pentosan, pentoxifylline, polysulfate sodium, prasugrel, rabeprazole, rifapentine, rivaroxaban, salicylates, simvastatin, telithromycin, thrombolytic agents, tinzaparin, tositumomab & iodine^{131}, voriconazole, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with active pathological bleeding.
Warning: DIMINISHED EFFECTIVENESS IN POOR METABOLIZERS

Skin
AGEP [2]
Angioedema [4]
Bullous dermatosis (<3%)
Eczema / eczematous reaction / eczematous eruption (<3%)
Edema / fluid retention (see also peripheral edema) (3–5%)
Exanthems (<3%) [2]
Hypersensitivity [9]
Pruritus (itching) (3%) [2]
Psoriasis [2]
Purpura [18]
Rash (4%) [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Thrombocytopenic purpura [9]
Ulcerations (<3%)
Urticaria / hives (<3%) [3]
Cardiovascular
Acute coronary syndrome [2]
Myocardial infarction [2]
Central Nervous System
Ageusia (taste loss) / taste disorder [3]
Fever (pyrexia) (includes hyperpyrexia) [4]
Hyperesthesia (<3%)
Intracranial hemorrhage [2]
Paresthesias (<3%)
Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [4]
Insulin autoimmune syndrome / insulin autoimmune hypoglycemia / Hirata's disease [5]
Gastrointestinal/Hepatic
Gastrointestinal bleeding [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Hematologic
Bleeding [17]
Hemolytic uremic syndrome [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [5]
Thrombocytopenia [3]
Thrombosis [2]
Neuromuscular/Skeletal
Arthritis / polyarthritis [17]
Hemarthrosis (articular bleeding) [2]
Rhabdomyolysis [3]
Ocular
Ocular hemorrhage [2]
Respiratory
Dyspnea / shortness of breath [3]
Influenza- ('flu)-like syndrome (8%)
Other
Adverse effects / adverse reactions [2]
Allergic reactions (<3%) [2]

CLORAZEPATE

Trade name: Tranxene (Recordati)
Indications: Anxiety and panic disorders
Class: Benzodiazepine
Half-life: 48–96 hours
Clinically important, potentially hazardous interactions with: aminophylline, amprenavir, antacids, carbamazepine, carmustine, chlorpheniramine, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, efavirenz, esomeprazole, imatinib, indinavir, itraconazole, ketoconazole, MAO inhibitors, midazolam, moclobemide, nelfinavir, phenytoin, sucralfate, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Dermatitis (<10%)
Diaphoresis (see also hyperhidrosis) (>10%)
Rash (>10%)
Mucosal
Sialopenia (>10%)
Sialorrhea (ptyalism; hypersalivation) (<10%)
Xerostomia (dry mouth) (>10%)

CLOTRIMAZOLE

Trade names: Canesten (Bayer), Mycelex (Bayer)
Indications: Candidiasis, dermatophyte infections of the skin
Class: Antifungal / antimycotic, Antifungal; imidazole, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: betamethasone, cyproterone, neratinib
Pregnancy category: B

Skin
Burning / skin burning sensation [2]
Dermatitis [9]

CLOXACILLIN

Trade name: Cloxapen (GSK)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 0.5–1.1 hours
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, demeclocycline, doxycycline, imipenem/cilastatin, methotrexate, minocycline, oxytetracycline, proguanil, tetracycline
Pregnancy category: B

Skin
Angioedema [2]
Nails
Nail loss [2]
Hematologic
Neutropenia (neutrophils decreased) [2]

CLOZAPINE

Trade names: Clozaril (Novartis), Denzapine (Merz), Leponex (Novartis), Zaponex (Teva)
Indications: Treatment-resistant schizophrenia
Class: Antipsychotic
Half-life: 4–12 hours
Clinically important, potentially hazardous interactions with: alcohol, amitriptyline, antimuscarinics, arsenic, benzodiazepines, cabazitaxel, caffeine, carbamazepine, chloramphenicol, cimetidine, ciprofloxacin, citalopram, cocoa, cyclophosphamide, cytotoxics, darifenacin, dasatinib, encainide, epinephrine, erythromycin, everolimus, flecainide, fluoxetine, flupentixol, fluphenazine, fluvoxamine, gefitinib, guarana, haloperidol, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, lapatinib, lithium, lomustine, lorazepam, MAO inhibitors, nilotinib, norfloxacin, ofloxacin, omeprazole, oxaliplatin, oxybutynin, paroxetine hydrochloride, pazopanib, pemetrexed, penicillamine, pipotiazine, propafenone, quinidine, rifampin, risperidone, ritonavir, saquinavir, selenium, sertraline, sorafenib, sulfonamides, sunitinib,

telithromycin, temozolomide, temsirolimus, tetrazepam, tricyclic antidepressants, trospium, uracil/tegafur, valproic acid, venlafaxine, viloxazine, zuclopenthixol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with myeloproliferative disorders, uncontrolled epilepsy, paralytic ileus, or a history of clozapine-induced agranulocytosis or severe granulocytopenia.
Warning: AGRANULOCYTOSIS / SEIZURES / MYOCARDITIS / OTHER ADVERSE CARDIOVASCULAR AND RESPIRATORY EFFECTS.
INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
- Angioedema [2]
- Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
- Cutaneous toxicity / skin toxicity [5]
- Diaphoresis (see also hyperhidrosis) (6%) [4]
- Exanthems [2]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
- Pityriasis rosea [2]
- Rash (2%) [2]

Mucosal
- Parotitis [4]
- Sialorrhea (ptyalism; hypersalivation) (31%) [82]
- Xerostomia (dry mouth) [3]

Cardiovascular
- Atrial fibrillation [2]
- Cardiomyopathy [17]
- Cardiotoxicity [2]
- Hypertension (4%) [6]
- Hypotension (9%) [5]
- Myocarditis [56]
- Orthostatic hypotension [4]
- Pericardial effusion [3]
- Pericarditis [12]
- QT interval prolonged / QT prolongation [6]
- Tachycardia (25%) [13]
- Venous thromboembolism [5]

Central Nervous System
- Akathisia [4]
- Anxiety [2]
- Compulsions / obsessive-compulsive symptoms [9]
- Fever (pyrexia) (includes hyperpyrexia) [11]
- Headache (7%) [2]
- Neuroleptic malignant syndrome [32]
- Neurotoxicity [2]
- Pain [2]
- Parkinsonism [2]
- Restless legs syndrome [2]
- Sedation (39%) [13]
- Seizures [26]
- Somnolence (drowsiness) [10]
- Stuttering (dysphemia) / stammering [2]
- Syncope / fainting [2]
- Tardive syndrome / tardive dyskinesia [6]
- Tic disorder [2]
- Tremor (<10%) [2]
- Vertigo / dizziness (19%) [2]

Endocrine/Metabolic
- Diabetes mellitus [7]
- Diabetic ketoacidosis [2]
- Dyslipidemia [3]
- Galactorrhea [2]
- Hyperglycemia (includes glucose increased) [7]
- Hyperlipidemia [3]
- Metabolic syndrome [13]
- Weight gain [30]

Gastrointestinal/Hepatic
- Colitis [2]
- Constipation (14%) [8]
- Diarrhea [3]
- Eosinophilic gastrointestinal disorders (includes eosinophilic esophagitis, eosinophilic gastroenteritis and eosinophilic colitis) [3]
- Gastric obstruction [3]
- Gastrointestinal hypomotility [9]
- Hepatic failure [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [10]
- Ileus [7]
- Intestinal pseudo-obstruction (Ogilvie syndrome) [2]
- Pancreatitis / acute pancreatitis [8]

Genitourinary
- Enuresis (urinary incontinence) [5]
- Priapism [14]

Hematologic
- Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [43]
- Eosinophilia [15]
- Granulocytopenia [2]
- Hemotoxicity [2]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [13]
- Neutropenia (neutrophils decreased) [28]
- Pancytopenia (includes bicytopenia) [3]
- Thrombosis [2]

Neuromuscular/Skeletal
- Myoclonus [2]
- Rhabdomyolysis [8]

Ocular
- Maculopathy [2]
- Periorbital edema (see also eyelid edema) [2]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
- Pleural effusion [4]
- Pneumonia [4]
- Pneumonitis [3]
- Pulmonary embolism [7]

Other
- Adverse effects / adverse reactions [15]
- Death [19]
- Serositis [6]

CO-TRIMOXAZOLE

Synonyms: Cotrimoxazole; sulfamethoxazole-trimethoprim; SMX-TMP; SMZ-TMP; TMP-SMX; TMP-SMZ
Trade names: Bactrim (GSK), Septra (Monarch)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; sulfonamide, Antimicrobial
Half-life: 6–10 hours
Clinically important, potentially hazardous interactions with: anticoagulants, azathioprine, cyclosporine, dofetilide, isotretinoin, methotrexate, prilocaine, repaglinide, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Co-trimoxazole is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Co-trimoxazole is sulfamethoxazole and trimethoprim.

Skin
- AGEP [4]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [6]
- Angioedema [3]
- Bullous dermatosis [2]
- Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR)) [3]
- Cutaneous toxicity / skin toxicity [2]
- Dermatitis [4]
- DRESS syndrome [14]
- Erythema multiforme [19]
- Erythema nodosum [2]
- Exanthems [35]
- Exfoliative dermatitis [5]
- Fixed eruption [52]
- Hypersensitivity [18]
- Jarisch–Herxheimer reaction [2]
- Linear IgA bullous dermatosis [5]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
- Photosensitivity [4]
- Pruritus (itching) [10]
- Purpura [3]
- Pustules / pustular eruption [6]
- Radiation recall dermatitis [3]
- Rash (>10%) [14]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<10%) [79]
- Sweet's syndrome [12]
- Thrombocytopenic purpura [3]
- Thrombotic thrombocytopenic purpura [2]
- Urticaria / hives [12]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [11]

Mucosal
- Oral mucosal eruption [2]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]

Cardiovascular
- QT interval prolonged / QT prolongation [2]
- Torsades de pointes [3]

Central Nervous System
- Aseptic meningitis [8]

Fever (pyrexia) (includes hyperpyrexia) [4]
Psychosis [5]
Tremor [4]
Vertigo / dizziness [2]

Endocrine/Metabolic
ALT increased [2]
Hyperkalemia [9]
Hypoglycemia (see also insulin autoimmune syndrome) [10]
Hyponatremia [9]
Serum creatinine increased [4]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Nausea [2]
Pancreatitis / acute pancreatitis [4]
Vomiting [4]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [3]
Anemia [3]
Hemolytic anemia [6]
Methemoglobinemia [2]
Neutropenia (neutrophils decreased) [6]
Thrombocytopenia [12]

Neuromuscular/Skeletal
Asthenia / fatigue [2]
Myalgia/Myopathy [2]
Rhabdomyolysis [7]

Ocular
Glaucoma (includes acute angle-closure glaucoma) [2]
Myopia [2]
Ocular adverse effect [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure [2]

Respiratory
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [2]

Other
Adverse effects / adverse reactions [15]
Allergic reactions [2]
Death [4]
Side effects [2]

COAGULATION FACTOR IX (RECOMBINANT)

Trade names: Alprolix (Biogen Idec), BeneFIX (Wyeth), Idelvion (CSL Behring), Rixubis (Baxter)
Indications: Treatment and prophylaxis of bleeding in patients with hemophilia B (congenital factor IX deficiency)
Class: Factor IX stimulant
Half-life: variable e.g. 13–43 hours (Xinity); 26 hours (Rixubis); 90–93 hours (Idelvion)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]

Central Nervous System
Dysgeusia (taste perversion) [2]

COBICISTAT/ ELVITEGRAVIR/ EMTRICITABINE/ TENOFOVIR ALAFENAMIDE

Trade name: Genvoya (Gilead)
Indications: HIV-1 infection
Class: Antiretroviral, CYP3A inhibitor (cobicistat), Hepatitis B virus necleoside analog reverse transcriptase inhibitor (tenofovir alafenamide), Integrase strand transfer inhibitor (elvitegravir), Nucleoside analog reverse transcriptase inhibitor (emtricitabine)
Half-life: 3.5 hours (cobicistat); 13 hours (elvitegravir); 10 hours (emtricitabine); <1 hour (tenofovir alafenamide)
Clinically important, potentially hazardous interactions with: acyclovir, aminoglycosides, amiodarone, amitriptyline, amlodipine, antacids, antiarrhythmics, atorvastatin, benzodiazepines, bepridil, beta blockers, bosentan, buprenorphine, bupropion, buspirone, calcium channel blockers, cidofovir, clarithromycin, clorazepate, colchicine, desipramine, dexamethasone, diazepam, digoxin, diltiazem, disopyramide, drugs affecting renal function, estazolam, ethosuximide, felodipine, flecainide, flurazepam, fluticasone furoate, fluticasone propionate, ganciclovir, gentamicin, hormonal contraceptives, imipramine, immunosuppressants, itraconazole, ketoconazole, lidocaine, lorazepam, metoprolol, mexiletine, midazolam, naloxone, neuroleptics, nicardipine, nifedipine, nortriptyline, oxcarbazepine, paroxetine hydrochloride, perphenazine, propafenone, quinidine, rifabutin, rifapentine, risperidone, salmeterol, sildenafil, SSRIs, tadalafil, telithromycin, thioridazine, timolol, trazodone, tricyclic antidepressants, valacyclovir, valganciclovir, vardenafil, verapamil, voriconazole, warfarin, zolpidem
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: See also separate profiles for emtricitabine and tenofovir alafenamide.
Warning: LACTIC ACIDOSIS/SEVERE HEPATOMEGALY WITH STEATOSIS and POST TREATMENT ACUTE EXACERBATION OF HEPATITIS B

Central Nervous System
Headache (6%)

Gastrointestinal/Hepatic
Diarrhea (7%)
Nausea (5%) [3]

Neuromuscular/Skeletal
Asthenia / fatigue (5%)

Other
Adverse effects / adverse reactions [2]

COBICISTAT/ ELVITEGRAVIR/ EMTRICITABINE/ TENOFOVIR DISOPROXIL

Trade name: Stribild (Gilead)
Indications: HIV-1 infection
Class: Antiretroviral, CYP3A inhibitor (cobicistat), Integrase strand transfer inhibitor (elvitegravir), Nucleoside analog reverse transcriptase inhibitor (emtricitabine and tenofovir disoproxil)
Half-life: 3.5 hours (cobicistat); 13 hours (elvitegravir); 10 hours (emtricitabine); 12–18 hours (tenofovir disoproxil)
Clinically important, potentially hazardous interactions with: acyclovir, adefovir, amiodarone, amitriptyline, amlodipine, antacids, antirarrhythmics, antiretrovirals, atorvastatin, benzodiazepines, bepridil, beta blockers, bosentan, buprenorphine, bupropion, buspirone, calcium channel blockers, carbamazepine, cidofovir, clarithromycin, clonazepam, clorazepate, colchicine, cyclosporine, desipramine, dexamethasone, diazepam, digoxin, diltiazem, disopyramide, drugs affecting renal function, elbasvir & grazoprevir, emtricitabine, estazolam, ethosuximide, felodipine, flecainide, flurazepam, fluticasone propionate, ganciclovir, hormonal contraceptives, imipramine, immunosuppressants, itraconazole, ketoconazole, lamivudine, ledipasvir & sofosbuvir, lidocaine, metoprolol, mexiletine, midazolam, naloxone, neuroleptics, nicardipine, nifedipine, non-nucleoside reverse transcriptase inhibitors, nortriptyline, oxcarbazepine, paroxetine hydrochloride, perphenazine, phenobarbital, phenytoin, propafenone, protease inhibitors, quinidine, rifabutin, rifapentine, risperidone, ritonavir, salmeterol, sedatives / hypnotics, sildenafil, simeprevir, sirolimus, SSRIs, tacrolimus, tadalafil, telithromycin, tenofovir disoproxil, thioridazine, timolol, trazodone, tricyclic antidepressants, valacyclovir, valganciclovir, vardenafil, verapamil, voriconazole, warfarin, zolpidem
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: See also separate profiles for emtricitabine and tenofovir disoproxil.
Warning: LACTIC ACIDOSIS/SEVERE HEPATOMEGALY WITH STEATOSIS and POST TREATMENT ACUTE EXACERBATION OF HEPATITIS B

Skin
Rash (3%) [3]

Central Nervous System
Abnormal dreams (9%) [3]
Headache (7%) [5]
Insomnia (3%) [2]
Vertigo / dizziness (3%) [3]

Endocrine/Metabolic
AST increased (2%)
Serum creatinine increased [2]

Gastrointestinal/Hepatic
Diarrhea (12%) [6]
Flatulence (2%)
Gastrointestinal disorder / discomfort [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (16%) [8]

Genitourinary
Hematuria (3%)

Neuromuscular/Skeletal
Asthenia / fatigue (5%) [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Proteinuria (39%)

Respiratory
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [5]

COBIMETINIB

Trade name: Cotellic (Genentech)
Indications: Melanoma (unresectable or metastatic) in patients with BRAF V600E or V600K mutations, in combination with vemurafenib
Class: MEK inhibitor (mitogen-activated protein kinase (MEK1 and MEK2) inhibitor)
Half-life: 23–70 hours
Clinically important, potentially hazardous interactions with: carbamazepine, efavirenz, itraconazole, phenytoin, rifampin, St John's wort, strong or moderate CYP3A4 inducers or inhibitors
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (16%) [4]
Basal cell carcinoma (5%)
Erythema (10%) [2]
Hyperkeratosis (11%) [3]
Keratoacanthoma (Grzybowski syndrome) [3]
Photosensitivity (46%) [8]
Rash [7]
Squamous cell carcinoma (6%) [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Hair
Alopecia / hair loss (15%) [3]

Mucosal
Stomatitis (oral mucositis) (14%)

Cardiovascular
Hypertension (15%)

Central Nervous System
Chills (10%)
Fever (pyrexia) (includes hyperpyrexia) (28%) [4]

Endocrine/Metabolic
ALP increased (71%) [3]
ALT increased (68%) [3]
AST increased (73%) [3]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (79%) [4]
GGT increased (65%)
Hyperkalemia (26%)
Hypoalbuminemia / albumin decreased (42%)
Hypocalcemia (24%)
Hypokalemia (25%)
Hyponatremia (38%)
Hypophosphatemia (68%)
Serum creatinine increased (100%)

Gastrointestinal/Hepatic
Diarrhea (60%) [9]
Gastrointestinal bleeding (4%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (41%) [8]
Vomiting (24%) [5]

Genitourinary
Hematuria (2%)

Hematologic
Anemia (69%) [3]
Hemorrhage (13%)
Lymphopenia (lymphocytopenia) / lymphocytes decreased (73%)
Thrombocytopenia (18%)

Neuromuscular/Skeletal
Arthralgia [4]
Asthenia / fatigue [7]
Myalgia/Myopathy [2]

Ocular
Chorioretinopathy (13%) [3]
Ocular adverse effect [2]
Retinal detachment (12%) [2]
Vision impaired (15%)

Respiratory
Pneumonitis (<10%)

Other
Adverse effects / adverse reactions [2]

COCAINE

Indications: Topical anesthesia
Class: Anesthetic; local, CNS stimulant
Half-life: 75 minutes
Clinically important, potentially hazardous interactions with: epinephrine, iobenguane, mazindol, mazindol
Pregnancy category: C (the pregnancy category is X for non-medicinal use)

Skin
Angioedema [3]
Diaphoresis (see also hyperhidrosis) [3]
Hyperkeratosis (fingers and palms) [2]
Necrosis (skin necrosis) [6]
Purpura [4]
Pyoderma gangrenosum [5]
Raynaud's phenomenon [2]
Scleroderma (see also morphea / localized scleroderma) (reversible) [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [14]

Mucosal
Nasal septal perforation [4]
Palatal perforation [7]

Cardiovascular
Angina [2]
Brugada syndrome [3]
Cardiac disorder / cardiac dysfunction [2]
Chest pain [6]
Myocardial infarction [6]
Myocardial ischemia [2]

Central Nervous System
Ageusia (taste loss) / taste disorder (>10%)
Anosmia (smell loss) / smell disorder (see also hyposmia) (>10%)
Compulsions / obsessive-compulsive symptoms [2]
Hallucinations [4]
Hallucinations, auditory [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [3]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [4]
Psychosis [2]
Seizures [6]
Suicidal ideation [2]
Tic disorder [2]
Tremor (<10%)

Gastrointestinal/Hepatic
Mesenteric ischemia / colonic ischemia / intestinal ischemia [4]

Genitourinary
Priapism [5]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [2]
Hemolytic uremic syndrome [2]
Neutropenia (neutrophils decreased) [6]

Neuromuscular/Skeletal
Arthralgia [2]
Rhabdomyolysis [19]

Otic
Hearing loss (hypoacusis) [5]

Renal
Glomerulonephritis (includes membranous nephropathy) [2]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Death [3]

COCOA

Family: Sterculiaceae
Scientific names: *Theobroma cacao, Theobroma sativum*
Indications: Oral: asthma, bronchitis, cardiovascular disease, diarrhea. **Topical:** cosmetics, pharmaceutical preparations, foods. Chocolate is produced from cocoa powder
Class: Food supplement
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: aminophylline, caffeine, cimetidine, clozapine, ephedra
Pregnancy category: N/A

Skin
Prurigo [2]

Central Nervous System
Headache [4]
Migraine [4]

CODEINE

Synonym: methylmorphine
Trade names: Halotussin (Watson), Nucofed (Monarch), Robitussin AC (Wyeth), Tussi-Organidin (MedPointe)
Indications: Pain, cough suppressant
Class: Opiate agonist
Half-life: 2.5–4 hours
Clinically important, potentially hazardous interactions with: alcohol, cinacalcet, CNS depressants, delavirdine, MAO inhibitors, mianserin, terbinafine, tipranavir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: September 2022: Codeine with ibuprofen – EMA warning for serious renal and gastrointestinal harms The European Medicine Agency Pharmacovigilance Risk Assessment Committee has recommended a change to the product information for codeine with ibuprofen combination medicines to include a warning of serious harms, including death, particularly when taken for prolonged periods at higher than recommended doses. The recommendation is based on several cases of renal, gastrointestinal and metabolic toxicities that have been reported in association with cases of abuse of and dependence from codeine with ibuprofen combinations, some of which have been fatal. .
Warning: DEATH RELATED TO ULTRA-RAPID METABOLISM OF CODEINE TO MORPHINE

Skin
- Angioedema [2]
- Dermatitis [5]
- Erythema multiforme [4]
- Exanthems [6]
- Fixed eruption [6]
- Pruritus (itching) [3]
- Rash (<10%)
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Urticaria / hives (<10%) [9]

Mucosal
- Xerostomia (dry mouth) (<10%)

Central Nervous System
- Somnolence (drowsiness) [4]
- Vertigo / dizziness [3]

Gastrointestinal/Hepatic
- Constipation [4]
- Nausea [3]
- Pancreatitis / acute pancreatitis [5]
- Vomiting [2]

Local
- Injection-site pain (<10%)

Respiratory
- Respiratory depression [4]

Other
- Death [5]

COENZYME Q-10

Family: None
Scientific names: *Mitoquinone, Ubidecarenone, Ubiquinone*
Indications: Congestive heart failure, angina, diabetes, hypertension, breast cancer, increasing exercise tolerance, muscular dystrophy, chronic fatigue
Class: Food supplement
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Note: CoQ-10 was first identified in 1957. It is widely used in Japan where millions of Japanese patients receive CoQ-10 as part of their treatment for congestive heart failure.

COLCHICINE

Indications: Gouty arthritis (in adults), gout, familial Mediterranean fever
Class: Alkaloid, Anti-inflammatory, Covid-19 putative drug
Half-life: 27–31 hours (following multiple doses)
Clinically important, potentially hazardous interactions with: amiodarone, aprepitant, atazanavir, atorvastatin, azithromycin, boceprevir, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, conivaptan, cyanocobalamin, cyclosporine, darunavir, dasatinib, delavirdine, digoxin, diltiazem, efavirenz, erythromycin, fenofibrate, fibrates, fluvastatin, gemfibrozil, grapefruit juice, HMG-CoA reductase inhibitors, indinavir, itraconazole, ketoconazole, lapatinib, lopinavir, ombitasvir/paritaprevir/ritonavir, P-glycoprotein inhibitors or inducers, pravastatin, protease inhibitors, ritonavir, rosuvastatin, saxagliptin, simvastatin, strong CYP3A4 inhibitors, telithromycin, troleandomycin, verapamil, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly
Note: Contra-indicated in patients with renal or hepatic impairment where P-glycoprotein or strong CYP3A4 inhibitors are also prescribed.

Skin
- Pruritus (itching) [2]
- Staphylococcal scalded skin syndrome [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Hair
- Alopecia / hair loss (<10%) [6]

Central Nervous System
- Headache (2%)
- Neurotoxicity [3]

Endocrine/Metabolic
- Hypertransaminasemia (transaminitis) / elevated transaminases [2]

Gastrointestinal/Hepatic
- Abdominal pain (<20%) [3]
- Diarrhea (23%) [11]
- Gastrointestinal adverse reaction [6]
- Gastrointestinal disorder / discomfort [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea (<20%) [3]
- Vomiting (<20%) [4]

Hematologic
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]

Neuromuscular/Skeletal
- Asthenia / fatigue (<4%)
- Gouty tophi (4%)
- Myalgia/Myopathy [22]
- Rhabdomyolysis [20]

Respiratory
- Pharyngolaryngeal pain (3%)

Other
- Adverse effects / adverse reactions [7]
- Death [3]
- Side effects (14%)

COLESEVELAM

Trade names: Cholestagel (Genzyme), Welchol (Sankyo)
Indications: Hypercholesterolemia, hyperlipidemia, Type II diabetes mellitus
Class: Bile acid sequestrant
Half-life: N/A
Clinically important, potentially hazardous interactions with: cyclosporine, deferasirox, estradiol, glyburide, levothyroxine, olmesartan, phenytoin, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Contra-indicated in patients with a history of bowel obstruction, with serum triglyceride concentrations >500 mg/dL or with a history of hypertriglyceridemia-induced pancreatitis.

Cardiovascular
- Hypertension (3%)

Central Nervous System
- Headache [2]

Endocrine/Metabolic
- Hypoglycemia (see also insulin autoimmune syndrome) (3%) [3]

Gastrointestinal/Hepatic
- Abdominal pain (4%)
- Constipation (9–10%) [3]
- Diarrhea (3%)
- Dyspepsia / functional dyspepsia / gastroparesis (4–6%) [3]
- Flatulence (11%)
- Gastrointestinal disorder / discomfort [4]
- Nausea (3%)

Neuromuscular/Skeletal
- Myalgia/Myopathy (2%)

Respiratory
- Nasopharyngitis (4%)

Other
- Adverse effects / adverse reactions [5]

COLESTIPOL

Trade name: Colestid (Pfizer)
Indications: Primary hypercholesterolemia
Class: Anion exchange resin, Lipid regulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: deferasirox, propranolol, tetracycline, ursodiol
Pregnancy category: C

COLISTIN

Synonym: Polymyxin E
Trade name: Colomycin (Forest)
Indications: Gram-negative bacterial infections, cystic fibrosis
Class: Antibiotic, Antibiotic; polymyxin, Antimicrobial
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: aminoglycosides, bacitracin, cephalothin, pyridostigmine, teicoplanin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis [3]
Central Nervous System
Neurotoxicity [5]
Paresthesias [3]
Seizures [3]
Neuromuscular/Skeletal
Ataxia [2]
Renal
Bartter-like syndrome [3]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [32]
Other
Death [2]

COLLAGEN (BOVINE)

Trade names: Bellafill (Suneva), Zyderm (Inamed), Zyplast (Inamed)
Indications: Cataract surgery (collagen shields), depressed cutaneous scars, facial lines, wrinkles, glottic insufficiency, phonosurgey, urinary incontinence
Class: Protein
Half-life: Several months to years
Clinically important, potentially hazardous interactions with: argatroban, avitene
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: A reaction to the anesthetic, lidocaine, in liquid collagen injections may occur. Artecoll and Bellafill contain polymethyl-methacrylate microspheres.

Skin
Abscess [2]
Churg-Strauss syndrome [7]
Dermatomyositis [3]
Edema / fluid retention (see also peripheral edema) [2]
Erythema [3]
Granulomatous reaction [2]
Hypersensitivity [10]
Induration [3]
Panniculitis [2]
Neuromuscular/Skeletal
Arthralgia [2]
Polymyositis [3]
Other
Adverse effects / adverse reactions [12]
Allergic reactions [7]

COMFREY

Family: Boraginaceae
Scientific names: *Symphytum asperum, Symphytum officinale, Symphytum peregrinum, Symphytum x uplandicum*
Indications: Leaf: Gastric and duodenal ulcer, rheumatic pain, gout, arthritis. **Topical:** poultice for bruises, sprains, athlete's foot, crural ulcers, mastitis, varicose ulcers. **Root**: Gastric and duodenal ulcers, hematemesis, colitis, diarrhea. **Topical:** ulcers, wounds, fractures, hernia
Class: Carminative
Half-life: N/A
Clinically important, potentially hazardous interactions with: eucalyptus
Pregnancy category: N/A
Note: The FDA warns that comfrey contains pyrrolizidine alkaloids that can cause cirrhosis and liver failure when taken orally in high doses. Topical application is safer and more effective; allantoin in comfrey stimulates cell proliferation, accelerating wound healing.
Oral products containing comfrey are banned in the USA, UK, Australia, Canada and Germany.

Skin
Erythema [2]
Pruritus (itching) [2]
Cardiovascular
Veno-occlusive disease [4]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Local
Application-site reactions [2]
Other
Adverse effects / adverse reactions [2]
Death [2]

CONIVAPTAN

Trade name: Vaprisol (Astellas)
Indications: Hyponatremia, SIADH
Class: CYP3A4 inhibitor, Vasopressin receptor antagonist
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: acetaminophen, albendazole, alfuzosin, almotriptan, alosetron, ambrisentan, amitriptyline, amlodipine, antifungals, aprepitant, artemether/lumefantrine, atorvastatin, bexarotene, bortezomib, brigatinib, brinzolamide, bupivacaine, cabazitaxel, cabozantinib, ciclesonide, cilostazol, cinacalcet, citalopram, clarithromycin, colchicine, copanlisib, cyclobenzaprine, CYP3A4 inhibitors or substrates, darunavir, dasatinib, deferasirox, delavirdine, dienogest, digoxin, docetaxel, dolasetron, dronedarone, dutasteride, efavirenz, enalapril, eplerenone, estradiol, eszopiclone, everolimus, fentanyl, fesoterodine, fingolimod, flibanserin, gefitinib, guanfacine, halofantrine, indinavir, itraconazole, ixabepilone, ketoconazole, lapatinib, lomitapide, maraviroc, meloxicam, metaxalone, methylprednisolone, micafungin, midazolam, midostaurin, mifepristone, mometasone, neratinib, nilotinib, nisoldipine, oxybutynin, pantoprazole, paricalcitol, pazopanib, pimecrolimus, pioglitazone, ponatinib, prasugrel, ramelteon, ranolazine, ribociclib, ritonavir, rivaroxaban, romidepsin, rosuvastatin, ruxolitinib, salmeterol, saxagliptin, sildenafil, silodosin, simvastatin, sorafenib, St John's wort, tadalafil, tamsulosin, telithromycin, temsirolimus, terbinafine, tiagabine, tiotropium, tipranavir, tolvaptan, trimethoprim, ulipristal, vardenafil, venetoclax, vorapaxar, voriconazole, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Erythema (3%)
Peripheral edema (see also edema) (3–8%)
Pruritus (itching) (<5%)
Mucosal
Oral candidiasis (2%)
Xerostomia (dry mouth) (4%)
Cardiovascular
Atrial fibrillation (2–5%)
Hypertension (6–8%)
Hypotension (5–8%) [4]
Orthostatic hypotension (6–14%)
Phlebitis (32–51%)
Central Nervous System
Confusion (<5%)
Fever (pyrexia) (includes hyperpyrexia) (5–11%) [2]
Headache (8–10%)
Insomnia (4–5%)
Endocrine/Metabolic
Hypokalemia (10–22%)
Hypomagnesemia (2–5%)
Hyponatremia (6–8%)
Gastrointestinal/Hepatic
Constipation (6–8%)
Diarrhea (<7%)
Nausea (3–5%)
Vomiting (5–7%)
Genitourinary
Urinary tract infection (4–5%)
Hematologic
Anemia (5–6%)
Local
Infusion-site erythema (<6%)
Infusion-site pain (<5%)
Infusion-site reactions (63–73%) [5]
Respiratory
Pharyngolaryngeal pain (<5%)
Pneumonia (2–5%)
Other
Dipsia (thirst) / polydipsia (3–6%) [2]

COPANLISIB

Trade name: Aliqopa (Bayer)
Indications: Relapsed follicular lymphoma in adult patients who have received at least two prior systemic therapies
Class: Kinase inhibitor, Phosphoinositide 3-kinase (Phosphatidylinositol 3-kinase) (PI3K) inhibitor
Half-life: 39 hours
Clinically important, potentially hazardous interactions with: boceprevir, carbamazepine, clarithromycin, cobicistat, conivaptan, danoprevir, diltiazem, elvitegravir, enzalutamide, grapefruit juice, idelalisib, indinavir, itraconazole, ketoconazole, lopinavir, mitotane, nefazodone, nelfinavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, phenytoin, posaconazole, rifampin,

ritonavir, saquinavir, St John's wort, strong CYP3A4 inducers or inhibitors, tipranavir, troleandomycin, voriconazole
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Rash (15%)
Mucosal
Mucosal inflammation (8%)
Stomatitis (oral mucositis) (14%)
Cardiovascular
Hypertension (26%) [7]
Central Nervous System
Dysesthesia (7%)
Paresthesias (7%)
Endocrine/Metabolic
Hyperglycemia (includes glucose increased) (54%) [9]
Hyperlipasemia (21%)
Hypertriglyceridemia (includes triglycerides increased) (58%)
Hyperuricemia (25%)
Hypophosphatemia (44%)
Gastrointestinal/Hepatic
Diarrhea (36%) [5]
Nausea (26%) [4]
Vomiting (13%)
Hematologic
Hemoglobin decreased (78%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (36%)
Lymphopenia (lymphocytopenia) / lymphocytes decreased (78%)
Neutropenia (neutrophils decreased) (32%) [4]
Platelets decreased [2]
Thrombocytopenia (22%)
Neuromuscular/Skeletal
Asthenia / fatigue (36%) [3]
Respiratory
Pneumonitis (9%)
Other
Infection (21%)

CORDYCEPS

Family: Ascomycetes; Clavicipitaceae
Scientific name: *Cordyceps sinensis*
Indications: Anemia, arrhythmia, anti-aging, atherosclerosis, bronchitis, cough, dizziness, hyperlipidemia, athletic performance, lethargy, liver disorders, male sexual dysfunction, nocturia, tinnitus
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

CORTISONE

Trade name: Cortone (Merck)
Indications: Arthralgia, dermatoses
Class: Corticosteroid / Glucocorticoid
Half-life: N/A
Clinically important, potentially hazardous interactions with: chlorpropamide, diuretics, ethambutol, live vaccines, pancuronium, rifampin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Neuromuscular/Skeletal
Osteonecrosis / avascular necrosis [15]
Osteoporosis [10]
Tendinopathy/Tendon rupture [2]
Ocular
Cataract [5]
Glaucoma (includes acute angle-closure glaucoma) [8]
Other
Adverse effects / adverse reactions [2]

COVID-19 VACCINE, MRNA

Synonym: Pfizer-BioNTech Covid-19 mRNA Vaccine
Trade names: BNT162b2 (Pfizer-BioNTech), Comirnaty (Pfizer-BioNTech), Comirnaty (Pfizer-BioNTech), Tozinameran (Pfizer-BioNTech)
Indications: Prevention of coronavirus disease 2019 (Covid-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)
Class: Covid-19 vaccine, Vaccine
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Insufficient data to inform of vaccine-associated risks in pregnancy.)
Note: Increased risks of myocarditis and pericarditis, particularly within 7 days following the second dose. The observed risk is higher among males under 40 years of age than among females and older males. The observed risk is highest in males 12 through 17 years of age. Although some cases required intensive care support, available data from short-term follow-up suggest that most individuals have had resolution of symptoms with conservative management. Information is not yet available about potential long-term sequelae. The Centers for Disease Control and Prevention (CDC) have published considerations related to myocarditis and pericarditis after vaccination, including for vaccination of individuals with a history of myocarditis or pericarditis.

Skin
Pernio / chilblain (includes pernio-like lesions) [4]
Pityriasis lichenoides / pityriasis lichenoides chronica / pityriasis lichenoides et varioliformis acuta (see also Mucha-Habermann disease) [2]
Sweet's syndrome [2]
Thrombocytopenic purpura [4]
Cardiovascular
Myocarditis [2]
Central Nervous System
Chills (25–42%)
Fever (pyrexia) (includes hyperpyrexia) (12–18%)
Headache (46–65%)
Parsonage-Turner syndrome (PTS) (brachial plexopathy; neuralgic amyotrophy) [2]
Genitourinary
Vulvar ulceration [3]
Hematologic
Aplastic anemia [5]
Thrombocytopenia [3]
Local
Injection-site erythema (10%)
Injection-site pain (78–89%) [2]
Injection-site swelling (11–12%)
Neuromuscular/Skeletal
Asthenia / fatigue (57–70%)
Bone or joint pain (22–28%)
Musculoskeletal pain (33–46%)
Other
Adverse effects / adverse reactions [13]

CRANBERRY

Family: Ericaceae
Scientific name: *Vaccinium oxycoccus*
Indications: Erythema, hyperplasia, thrush, cystitis, prevention of urinary tract infections, tumor inhibition, influenza, common cold, scurvy, pleurisy
Class: Diuretic, Proanthocyanadin
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Cranberry juice contains oxalates, a common component of kidney stones, and should be limited in patients with a history of nephrolithiasis.

CREATINE

Scientific names: *N-(aminoiminomethyl)-N methyl glycine, N-amidinosarcosine*
Indications: Improve exercise performance, increase muscle mass, heart failure, neuromuscular disease, cholesterol-lowering, amyotrophic lateral sclerosis, rheumatoid arthritis, cardiac surgery (IV)
Class: Food supplement
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Creatine is found primarily in skeletal muscle (95%), also in heart, brain, testes and other tissues. The body synthesizes 1–2 grams of creatine a day.
Creatine use is widespread among amateur and professional athletes. Americans use more than 4 million kilograms of creatine each year.

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Neuromuscular/Skeletal
Myalgia/Myopathy [2]
Rhabdomyolysis [5]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Other
Adverse effects / adverse reactions [2]

CRISABOROLE

Trade name: Eucrisa (Pfizer)
Indications: Atopic dermatitis
Class: Phosphodiesterase type 4 (PDE4) inhibitor
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No available data)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Local
Application-site burning [3]
Application-site pain (4%) [6]
Application-site reactions [2]
Application-site stinging [2]
Other
Adverse effects / adverse reactions [2]

CRIZOTINIB

Trade name: Xalkori (Pfizer)
Indications: Advanced or metastatic non-small cell lung cancer in ALK-positive patients
Class: Anaplastic lymphoma kinase (ALK) inhibitor, MET (mesenchymal-epithelial transition) inhibitor / MET tyrosine kinase inhibitor, Tyrosine kinase inhibitor
Half-life: 42 hours
Clinically important, potentially hazardous interactions with: alfentanil, atazanavir, carbamazepine, clarithromycin, cyclosporine, CYP3A4 inducers, inhibitors or substrates, dihydroergotamine, efavirenz, ergotamine, fentanyl, grapefruit juice, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, neratinib, olaparib, phenobarbital, phenytoin, pimozide, quinidine, rifabutin, rifampin, ritonavir, saquinavir, sirolimus, St John's wort, tacrolimus, telithromycin, troleandomycin, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Edema / fluid retention (see also peripheral edema) (38%) [15]
Peripheral edema (see also edema) [7]
Photosensitivity [3]
Rash (16%) [5]
Mucosal
Rectal perforation [2]
Stomatitis (oral mucositis) (11%)
Cardiovascular
Bradycardia / sinus bradycardia (5%) [7]
Cardiotoxicity [2]
Chest pain (12%)
QT interval prolonged / QT prolongation [9]
Central Nervous System
Dysgeusia (taste perversion) (13%) [7]
Fever (pyrexia) (includes hyperpyrexia) (12%) [2]
Headache (13%)
Insomnia (12%)
Neurotoxicity (23%) [2]
Vertigo / dizziness (24%) [6]
Endocrine/Metabolic
ALT increased (15%) [14]
Appetite decreased (27%) [5]
AST increased (11%) [12]
Dehydration [2]
Hyperbilirubinemia [3]
Hypertransaminasemia (transaminitis) / elevated transaminases [2]
Hypocalcemia [2]
Hypogonadism [6]
Hypophosphatemia [5]
Gastrointestinal/Hepatic
Abdominal pain (16%) [2]
Constipation (38%) [14]
Diarrhea (49%) [30]
Dyspepsia / functional dyspepsia / gastroparesis [3]
Dysphagia [3]
Esophagitis [8]
Gastroesophageal reflux [2]
Hepatitis [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [15]
Nausea (57%) [30]
Vomiting (45%) [27]
Hematologic
Anemia [4]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (11%) [5]
Neutropenia (neutrophils decreased) (5%) [10]
Neuromuscular/Skeletal
Arthralgia (11%)
Asthenia / fatigue (31%) [16]
Back pain (11%)
Bone or joint pain [2]
Ocular
Diplopia (double vision) [2]
Ocular adverse effect (64%) [14]
Photophobia [2]
Photopsia [4]
Reduced visual acuity [2]
Vision blurred [7]
Vision impaired [5]
Visual disturbances [18]
Vitreous floaters [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [10]
Respiratory
Cough (21%)
Dyspnea / shortness of breath (22%) [2]
Pneumonia [3]
Pneumonitis [6]
Pneumothorax [2]
Pulmonary toxicity [11]
Upper respiratory tract infection (20%)
Other
Adverse effects / adverse reactions [5]
Death [4]
Side effects [2]

CROMOLYN

Synonyms: cromolyn sodium; disodium cromoglycate
Trade names: Gastrocrom (Celltech), Intal (Monarch), Nasalcrom (Pfizer), Opticrom (Allergan)
Indications: Allergic rhinitis, asthma, mastocytosis
Class: Mast cell stabilizer
Half-life: 80 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
Angioedema (<10%) [4]
Dermatitis (generalized) [4]
Facial rash [2]
Urticaria / hives [3]
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Dysgeusia (taste perversion) (>10%)

CYANOCOBALAMIN

Synonym: Vitamin B_{12}
Trade name: Nascobal (Nastech)
Indications: Vitamin B_{12} deficiency, pernicious anemia
Class: Vitamin
Half-life: 6 days
Clinically important, potentially hazardous interactions with: colchicine
Pregnancy category: C

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [8]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [6]
Dermatitis [2]
Exanthems [3]
Hypersensitivity [2]
Nicolau syndrome [2]
Pruritus (itching) (<10%)
Urticaria / hives [7]
Other
Allergic reactions [3]

CYCLAMATE

Trade name: Sucaryl (AbbVie)
Indications: Sweetening
Class: Sweetening agent
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Note: Cyclamate is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Photosensitivity [7]
Pruritus (itching) [3]
Urticaria / hives [2]

CYCLOBENZAPRINE

Trade name: Flexeril (McNeil)
Indications: Muscle spasms
Class: Central muscle relaxant
Half-life: 8–37 hours
Clinically important, potentially hazardous interactions with: acetylcholinesterase inhibitors, anticholinergics, barbiturates, cisapride, CNS depressants, conivaptan, CYP1A2 inhibitors, droperidol, levomepromazine, linezolid, MAO inhibitors, phendimetrazine, pramlintide, safinamide
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Mucosal
- Xerostomia (dry mouth) (7–32%) [7]

Central Nervous System
- Confusion (<3%)
- Dysgeusia (taste perversion) (<3%)
- Headache (5%) [3]
- Irritability (<3%)
- Nervousness (<3%)
- Serotonin syndrome [3]
- Somnolence (drowsiness) (29–39%) [8]
- Vertigo / dizziness (<11%) [8]

Gastrointestinal/Hepatic
- Abdominal pain (<3%)
- Constipation (<3%) [3]
- Diarrhea (<3%)
- Nausea (<3%)

Neuromuscular/Skeletal
- Asthenia / fatigue (6%) [3]

Ocular
- Vision blurred (<3%)

Respiratory
- Pharyngitis (sore throat) (<3%)
- Upper respiratory tract infection (<3%)

Other
- Adverse effects / adverse reactions [2]

CYCLOPENTHIAZIDE

Trade name: Navidrex (Goldshield)
Indications: Hypertension
Class: Antihypertensive
Clinically important, potentially hazardous interactions with: ACE inhibitors, ACTH, allopurinol, amantadine, amphotericin, atropine, beta blockers, biperiden, calcium antagonists, calcium salts, carbenoxolone, cholestyramine, corticosteroids, cyclophosphamide, diazoxide, digitalis, digoxin, ergocalciferol, guanethidine, indomethacin, lithium, methotrexate, methyldopa, vasodilators

CYCLOPHOSPHAMIDE

Synonyms: CPM; CTX; CYT
Trade names: Cytoxan (Mead Johnson), Neosar (Gensia)
Indications: Lymphomas, minimal change nephrotic syndrome in pediatric patients
Class: Alkylating agent
Half-life: 3–12 hours
Clinically important, potentially hazardous interactions with: aldesleukin, azathioprine, belimumab, clozapine, cyclopenthiazide, cyclosporine, dexamethasone, etanercept, itraconazole, mycophenolate, pentostatin, prednisone, vaccines
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contra-indicated in patients with urinary outflow obstruction.

Skin
- Acral erythema [3]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
- Cutaneous toxicity / skin toxicity [6]
- Edema / fluid retention (see also peripheral edema) [5]
- Exanthems [4]
- Flushing / rubefaction (<10%)
- Graft-versus-host reaction [2]
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) [10]
- Herpes zoster [4]
- Hypersensitivity [6]
- Kaposi's sarcoma [2]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
- Lymphoma [4]
- Pemphigus [2]
- Peripheral edema (see also edema) [2]
- Pigmentation [16]
- Pruritus (itching) [2]
- Radiation recall dermatitis [6]
- Rash (<10%) [6]
- Scleroderma (see also morphea / localized scleroderma) [2]
- Squamous cell carcinoma [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
- Urticaria / hives [8]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Hair
- Alopecia / hair loss [32]

Nails
- Beau's lines (transverse nail bands) [2]
- Melanonychia [3]
- Muehrcke's lines [4]
- Nail pigmentation [17]

Mucosal
- Gingival pigmentation [2]
- Mucositis [4]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
- Stomatitis (oral mucositis) (10%) [8]

Cardiovascular
- Atrial fibrillation [2]
- Cardiotoxicity [6]
- Hypotension [2]

Central Nervous System
- Anorexia [3]
- Dysgeusia (taste perversion) [2]
- Fever (pyrexia) (includes hyperpyrexia) [3]
- Headache [3]
- Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [7]
- Neurotoxicity [7]
- Peripheral neuropathy [8]

Endocrine/Metabolic
- Amenorrhea [16]
- Diabetes mellitus [2]
- Hyperglycemia (includes glucose increased) [2]
- Hyponatremia [5]
- Menstrual irregularities [2]
- SIADH [9]

Gastrointestinal/Hepatic
- Abdominal pain [2]
- Constipation [2]
- Diarrhea [10]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [12]
- Nausea [12]
- Vomiting [12]

Genitourinary
- Cystitis [11]
- Urinary tract infection [2]

Hematologic
- Anemia [11]
- Cytopenia [2]
- Febrile neutropenia [17]
- Hemorrhage [2]
- Hemotoxicity [10]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [14]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [3]
- Myelosuppression / bone marrow suppression / myelotoxicity [6]
- Neutropenia (neutrophils decreased) [38]
- Sepsis [2]
- Thrombocytopenia [17]

Local
- Infusion-related reactions [2]

Neuromuscular/Skeletal
- Arthralgia [2]
- Asthenia / fatigue [16]
- Myalgia/Myopathy [7]

Respiratory
- Pneumonia [4]

Other
- Adverse effects / adverse reactions [17]
- Allergic reactions [2]
- Death [9]
- Hiccups / singultus [4]
- Infection [23]
- Malignancies [2]

CYCLOSERINE

Synonym: D-cycloserine
Trade name: Seromycin (Lilly)
Indications: Tuberculosis
Class: Antibiotic, Antimicrobial, Drug-resistant antituberculosis agent
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Dermatitis [2]
- Exanthems [4]
- Lichenoid eruption / lichenoid reaction [2]

Mucosal
- Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [3]

Central Nervous System
- Depression [2]
- Insomnia [2]
- Neuropsychiatric / neuropsychological adverse effect [2]

Neurotoxicity [2]
Psychosis [9]
Seizures [5]
Suicidal ideation [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Adverse effects / adverse reactions [4]

CYCLOSPORINE

Synonyms: Cyclosporine-A; CsA; CyA
Trade names: Neoral (Novartis), Restasis (Allergan), Sandimmune (Novartis)
Indications: Rheumatoid arthritis, prophylaxis of organ rejection in transplants, psoriasis, Restasis is indicated for patients with moderate-to-severe dry eye syndrome
Class: Antipsoriatic agent, Calcineurin inhibitor, Disease-modifying antirheumatic drug (DMARD), Immunosuppressant
Half-life: 10–27 hours (adults)
Clinically important, potentially hazardous interactions with: afatinib, aliskiren, ambrisentan, amiloride, aminoglycosides, amiodarone, amphotericin B, ampicillin, amprenavir, anisindione, anticoagulants, armodafinil, atazanavir, atorvastatin, azathioprine, azithromycin, bacampicillin, basiliximab, benazepril, berotralstat, bezafibrate, boceprevir, bosentan, bupropion, captopril, carbenicillin, caspofungin, ceritinib, cholestyramine, cholic acid, choline fenofibrate, cilazapril, ciprofloxacin, clarithromycin, cloxacillin, co-trimoxazole, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, colesevelam, corticosteroids, crizotinib, cyclophosphamide, dabigatran, daclizumab, danazol, daptomycin, darifenacin, darunavir, dasatinib, delavirdine, dichlorphenamide, diclofenac, dicloxacillin, dicumarol, digoxin, diltiazem, disulfiram, docetaxel, doxycycline, dronedarone, echinacea, efavirenz, elbasvir & grazoprevir, eluxadoline, enalapril, enzalutamide, erythromycin, ethotoin, etoposide, etoricoxib, everolimus, ezetimibe, flunisolide, fluoxymesterone, fluvastatin, foscarnet, fosinopril, fosphenytoin, gemfibrozil, glecaprevir & pibrentasvir, grapefruit juice, Hemophilus B vaccine, HMG-CoA reductase inhibitors, imatinib, imipenem/cilastatin, indinavir, influenza vaccine, irbesartan, itraconazole, ketoconazole, lanreotide, letermovir, levofloxacin, lisinopril, lopinavir, lovastatin, lumateperone, meloxicam, mephenytoin, methicillin, methoxsalen, methylphenidate, methylprednisolone, methyltestosterone, mezlocillin, micafungin, mifepristone, mizolastine, moxifloxacin, mycophenolate, nafcillin, naldemedine, natalizumab, nelfinavir, neratinib, nevirapine, nifedipine, nisoldipine, norfloxacin, NSAIDs, ofloxacin, olmesartan, omeprazole, orlistat, osimertinib, oxacillin, oxcarbazepine, ozanimod, pasireotide, penicillins, phenytoin, pitavastatin, posaconazole, pravastatin, prednisolone, prednisone, pristinamycin, quinapril, rabeprazole, ramipril, ranolazine, revefenacin, ribociclib, rifabutin, rifampin, rifapentine, ritonavir, rosuvastatin, sevelamer, silodosin, simvastatin, sirolimus, sofosbuvir/velpatasvir/voxilaprevir, spironolactone, St John's wort, sulfacetamide, sulfadiazine, sulfamethoxazole, sulfisoxazole, sulfonamides, tacrolimus, telithromycin, temsirolimus, tenoxicam, terbinafine, testosterone, ticarcillin, tinidazole, tipranavir, tofacitinib, tolvaptan, trabectedin, trandolapril, triamterene, trimethoprim, troleandomycin, ubrogepant, ursodiol, vaccines, vecuronium, venetoclax, voriconazole, warfarin, zofenopril
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Restasis is an ophthalmic emulsion.

Skin
Acne keloid [2]
Acneiform eruption / acneiform dermatitis / acneiform rash [7]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [8]
Basal cell carcinoma [4]
Candidiasis / candidosis [2]
Cutaneous toxicity / skin toxicity [2]
Cyst [5]
Edema / fluid retention (see also peripheral edema) (5–14%)
Erythromelalgia / erythermalgia [3]
Fibroadenoma [2]
Flushing / rubefaction (2–5%) [5]
Folliculitis [8]
Herpes simplex [4]
Herpes zoster [2]
Hot flashes / hot flushes [2]
Hypersensitivity [2]
Kaposi's sarcoma [5]
Keratoses [3]
Keratosis pilaris [2]
Linear IgA bullous dermatosis [2]
Lymphocytic infiltration / Jessner lymphocytic infiltration [5]
Lymphoma [12]
Lymphoproliferative disease / lymphoproliferative disorder [2]
Mycosis fungoides [2]
Peripheral edema (see also edema) [3]
Pruritus (itching) (<2%) [2]
Pseudolymphoma [6]
Psoriasis [2]
Purpura (3%) [4]
Rash (7–12%)
Raynaud's phenomenon [2]
Sebaceous hyperplasia [9]
Squamous cell carcinoma [12]
Thrombocytopenic purpura [5]
Urticaria / hives [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Hair
Alopecia / hair loss (3–4%) [2]
Alopecia areata [6]
Hirsutism [12]
Hypertrichosis (5–19%) [35]
Pseudofolliculitis barbae [2]

Nails
Brittle nails (<2%)
Leukonychia striata (Mees' lines) [2]

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [2]
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth (2–6%) [163]
Gingivitis (3–4%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Rectal hemorrhage / rectal bleeding (<3%)
Stomatitis (oral mucositis) (5–7%)

Cardiovascular
Arrhythmias (2–5%)
Capillary leak syndrome [2]
Chest pain (4–6%)
Hypertension (8–28%) [28]

Central Nervous System
Akinetic mutism / mutism [2]
Anorexia (3%)
Depression (<6%)
Dysesthesia [2]
Encephalopathy (includes hepatic encephalopathy) [4]
Fever (pyrexia) (includes hyperpyrexia) (3–6%)
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache (14–25%) [5]
Insomnia (<4%)
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [19]
Migraine (2–3%)
Neurotoxicity [12]
Pain (3–13%)
Paresthesias (5–11%) [8]
Parkinsonism [6]
Pseudotumor cerebri (see also intracranial hypertension) [3]
Rigors (<3%)
Seizures [4]
Tremor (7–13%) [5]
Vertigo / dizziness (6–8%)

Endocrine/Metabolic
Diabetes mellitus [2]
Dyslipidemia [4]
Gynecomastia (>3%) [3]
Hypertriglyceridemia (includes triglycerides increased) [2]
Hypomagnesemia (4–6%)
Menstrual irregularities (<3%)
Serum creatinine increased (16–43%) [4]

Gastrointestinal/Hepatic
Abdominal pain (15%) [3]
Diarrhea (5–13%) [3]
Dyspepsia / functional dyspepsia / gastroparesis (2–12%)
Flatulence (4–5%)
Gastrointestinal disorder / discomfort (2–4%) [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [9]
Nausea (6–23%) [2]
Vomiting (6–9%) [2]

Genitourinary
Urinary frequency (2–4%)
Urinary tract infection (3%) [2]

Hematologic
Anemia [4]
Hemolytic uremic syndrome [17]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [3]

Neuromuscular/Skeletal
Arthralgia (<6%)
Asthenia / fatigue (3–6%) [4]
Myalgia/Myopathy [11]
Rhabdomyolysis [13]

Ocular
Ocular burning (Restasis) (17%)
Ocular pain [3]

Papilledema [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [94]
Renal function abnormal / renal dysfunction [4]

Respiratory
Bronchitis (<3%)
Bronchospasm (5%)
Cough (3–5%)
Dyspnea / shortness of breath (<5%) [2]
Influenza (<10%)
Pharyngitis (sore throat) (3–4%)
Pneumonia (<4%)
Rhinitis (<5%)
Sinusitis (3–4%)
Upper respiratory tract infection (8–15%)

Other
Adverse effects / adverse reactions [22]
Infection [6]
Malignancies [2]

CYCLOTHIAZIDE

Indications: Edema, hypertension
Class: Diuretic, thiazide
Half-life: N/A
Clinically important, potentially hazardous interactions with: digoxin
Note: Cyclothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

CYPROHEPTADINE

Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 1–4 hours
Clinically important, potentially hazardous interactions with: anticholinergics, citalopram, MAO inhibitors, paroxetine hydrochloride, phenelzine, tranylcypromine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Mucosal
Xerostomia (dry mouth) (1–10%) [3]

Central Nervous System
Agitation [2]
Hallucinations [2]
Somnolence (drowsiness) [4]

Endocrine/Metabolic
Weight gain [3]

CYPROTERONE

Trade name: Androcur (Bayer)
Indications: Control of libido in severe hypersexuality and/or sexual deviation in the adult male
Class: Androgen antagonist, Progesterone agonist
Half-life: 1.7 days
Clinically important, potentially hazardous interactions with: alcohol, clotrimazole, fingolimod, itraconazole, ketoconazole, pazopanib, phenytoin, rifampin, ritonavir, St John's wort
Pregnancy category: X (not indicated for use in women)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Tumors [3]

Cardiovascular
Venous thromboembolism [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [24]

Neuromuscular/Skeletal
Osteoporosis [2]

Respiratory
Dyspnea / shortness of breath [4]

CYSTEAMINE

Synonym: mercaptamine
Trade names: Cystagon (Mylan), Procysbi (Raptor Pharma)
Indications: Nephropathic cystinosis
Class: Aminothiol, Anticystine agent
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contra-indicated in patients with hypersensitivity to penicillamine.

Skin
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Rash (7%)
Urticaria / hives (<5%)

Mucosal
Halitosis [3]

Cardiovascular
Hypertension (<5%)

Central Nervous System
Anorexia (31%)
Confusion (<5%)
Depression (<5%)
Encephalopathy (includes hepatic encephalopathy) (<5%)
Fever (pyrexia) (includes hyperpyrexia) (22%)
Hallucinations (<5%)
Headache (<5%)
Nervousness (<5%)
Neurotoxicity [2]
Seizures (<5%)
Somnolence (drowsiness) (<5%)
Tremor [2]
Vertigo / dizziness (<5%)

Endocrine/Metabolic
Dehydration (<5%)

Gastrointestinal/Hepatic
Constipation (<5%)
Diarrhea (16%)
Duodenitis (<5%)
Dyspepsia / functional dyspepsia / gastroparesis (<5%)
Gastroenteritis (<5%)
Gastrointestinal bleeding (<5%)
Gastrointestinal ulceration (<5%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<5%) [2]
Nausea (<5%)
Vomiting (35%)

Hematologic
Anemia (<5%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<5%)

Neuromuscular/Skeletal
Asthenia / fatigue (11%) [2]
Ataxia (<5%)

Otic
Hearing loss (hypoacusis) (<5%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (<5%)

CYTARABINE

Synonym: ara-C
Trade names: Cytosar-U (Sicor), DepoCyt (Pacira)
Indications: Leukemias
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Antiviral
Half-life: initial: 10–15 minutes
Clinically important, potentially hazardous interactions with: aldesleukin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: DepoCyt is a liposomal formulation. Vasculitis, a part of the cytarabine syndrome, consists of fever, malaise, myalgia, conjunctivitis, arthralgia and a diffuse erythematous maculopapular eruption that occurs from 6–12 hours following the administration of the drug.
Warning: DepoCyt: CHEMICAL ARACHNOIDITIS ADVERSE REACTIONS

Skin
Acral erythema [16]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Cutaneous toxicity / skin toxicity [5]
Desquamation [2]
Ephelides (freckles) (<10%)
Erythema [7]
Exanthems [7]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [22]
Herpes zoster [2]
Hypersensitivity [2]
Neutrophilic eccrine hidradenitis [11]
Pruritus (itching) (<10%)
Rash (>10%) [4]

Seborrheic keratoses (inflammation of) (Leser–Trélat syndrome) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Hair
Alopecia / hair loss (<10%) [5]

Nails
Leukonychia striata (Mees' lines) [3]

Mucosal
Mucositis [3]
Oral lesions [5]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (>10%)
Perianal ulcerations (>10%)
Stomatitis (oral mucositis) [2]

Cardiovascular
Thrombophlebitis (>10%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [3]
Headache [4]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [8]
Neurotoxicity [11]
Peripheral neuropathy [2]

Endocrine/Metabolic
Hypokalemia [2]

Gastrointestinal/Hepatic
Diarrhea [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea [4]
Pancreatitis / acute pancreatitis [5]
Vomiting [4]

Hematologic
Anemia [2]
Bleeding [2]
Febrile neutropenia [8]
Hemotoxicity [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Myelosuppression / bone marrow suppression / myelotoxicity [3]
Neutropenia (neutrophils decreased) [7]
Sepsis [2]
Thrombocytopenia [6]

Local
Injection-site cellulitis (<10%)

Neuromuscular/Skeletal
Myalgia/Myopathy (<10%)
Rhabdomyolysis [3]

Ocular
Ocular adverse effect [3]

Respiratory
Pneumonia [3]

Other
Adverse effects / adverse reactions [5]
Death [4]
Infection [6]

DABIGATRAN

Trade name: Pradaxa (Boehringer Ingelheim)
Indications: Prevention of venous thromboembolic events, reduce stroke risk
Class: Anticoagulant, Thrombin inhibitor
Half-life: 2.5 days
Clinically important, potentially hazardous interactions with: amiodarone, antacids, anticoagulants, atorvastatin, carbamazepine, clarithromycin, clopidogrel, collagenase, cyclosporine, daclatasvir, darunavir, dasatinib, deferasirox, desirudin, dextran, diclofenac, dronedarone, fondaparinux, heparin, ibritumomab, itraconazole, ketoconazole, ketorolac, lapatinib, meloxicam, nandrolone, neratinib, NSAIDs, P-glycoprotein inducers and inhibitors, pantoprazole, pentosan, phenytoin, polysulfate sodium, prostacyclin analogues, proton pump inhibitors, quinidine, rifampin, rivaroxaban, salicylates, St John's wort, sulfinpyrazone, tacrolimus, telaprevir, thrombolytic agents, ticlopidine, tipranavir, tositumomab & iodine^{131}, ulipristal, verapamil, vitamin K antagonists
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with active pathological bleeding or with a mechanical prosthetic heart valve.
Warning: DISCONTINUING PRADAXA IN PATIENTS WITHOUT ADEQUATE CONTINUOUS ANTICOAGULATION INCREASES RISK OF STROKE

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (<10%)
Exanthems [2]
Rash [2]

Mucosal
Epistaxis (nosebleed) [3]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]

Cardiovascular
Myocardial infarction [5]

Central Nervous System
Headache [2]
Intracranial hemorrhage [4]
Subarachnoid hemorrhage [2]

Gastrointestinal/Hepatic
Abdominal pain [2]
Dyspepsia / functional dyspepsia / gastroparesis (11%) [8]
Esophagitis [7]
Gastritis / pangastritis / gastric irritation [2]
Gastrointestinal bleeding (6%) [13]

Genitourinary
Hematuria [2]

Hematologic
Anemia (<4%)
Anticoagulation [2]
Bleeding [3]
Hemorrhage [9]
Thrombosis [3]

Renal
Nephropathy [3]
Renal failure [4]

Other
Adverse effects / adverse reactions [6]
Death [6]

DABRAFENIB

Trade name: Tafinlar (Novartis)
Indications: Melanoma (unresectable or metastatic) in patients with BRAF V600E mutation
Class: BRAF inhibitor, Kinase inhibitor
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: strong CYP3A4 or CYP2C8 inducers or inhibitors inhibitors
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [5]
Actinic keratoses [3]
Basal cell carcinoma [4]
Bullae (<10%)
Cutaneous toxicity / skin toxicity [5]
Erythema [2]
Exanthems [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (20%) [7]
Hyperkeratosis (37%) [14]
Hypersensitivity (<10%)
Keratoacanthoma (Grzybowski syndrome) (7%) [7]
Keratosis pilaris [4]
Lesions [2]
Malignant melanoma (2%)
Panniculitis [6]
Papillomas (27%) [5]
Peripheral edema (see also edema) [4]
Photosensitivity [8]
Pruritus (itching) [4]
Rash (17%) [8]
Seborrheic keratoses [2]
Squamous cell carcinoma (7%) [18]
Sweet's syndrome [4]
Transient acantholytic dermatosis (Grover's disease) [4]
Verrucae vulgaris / warts / verrucae [2]
Xerosis / xeroderma (see also dry skin) [5]

Hair
Alopecia / hair loss (22%) [8]
Hair changes [2]

Cardiovascular
Cardiotoxicity [2]
Chest pain [2]
Hypertension [4]

Central Nervous System
Chills [6]
Fever (pyrexia) (includes hyperpyrexia) (28%) [29]
Headache (32%) [9]
Intracranial hemorrhage [3]

Endocrine/Metabolic
ALP increased (19%) [2]
ALT increased [4]
Appetite decreased [3]
AST increased [5]
Hyperglycemia (includes glucose increased) (50%)
Hyponatremia (8%) [2]
Hypophosphatemia (37%)

Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation (11%) [2]
Diarrhea [8]

Nausea [11]
Pancreatitis / acute pancreatitis (<10%)
Vomiting [10]

Hematologic
Anemia [5]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [4]

Neuromuscular/Skeletal
Arthralgia (27%) [12]
Asthenia / fatigue [17]
Back pain (12%)
Myalgia/Myopathy (11%) [2]
Rhabdomyolysis [2]

Ocular
Chorioretinopathy [2]
Retinopathy [2]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [3]
Vision blurred [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (<10%) [2]

Respiratory
Cough (12%) [3]
Nasopharyngitis (10%)

Other
Adverse effects / adverse reactions [10]

DACARBAZINE

Synonym: DIC
Trade name: DTIC-Dome (Bayer)
Indications: Malignant melanoma, carcinomas
Class: Alkylating agent, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: aldesleukin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%)
Flushing / rubefaction (<10%) [2]
Hypersensitivity [2]
Photosensitivity [10]
Rash (<10%) [2]
Urticaria / hives [2]

Hair
Alopecia / hair loss (<10%) [4]

Mucosal
Stomatitis (oral mucositis) (48%)

Central Nervous System
Dysgeusia (taste perversion) (<10%)
Peripheral neuropathy [2]

Endocrine/Metabolic
ALT increased [2]
AST increased [2]

Gastrointestinal/Hepatic
Diarrhea [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [3]
Vomiting [2]

Hematologic
Neutropenia (neutrophils decreased) [5]
Thrombocytopenia [2]

Local
Injection-site burning (>10%)
Injection-site necrosis (>10%)
Injection-site pain (>10%)

Neuromuscular/Skeletal
Asthenia / fatigue (75%) [4]
Myalgia/Myopathy (<10%)

Respiratory
Influenza- ('flu)-like syndrome [2]
Pulmonary toxicity [2]

Other
Adverse effects / adverse reactions [7]

DACLATASVIR

Trade name: Daklinza (Bristol-Myers Squibb)
Indications: Hepatitis C (in combination with sofosbuvir)
Class: Covid-19 putative drug, Direct-acting antiviral, Hepatitis C virus NS5A inhibitor
Half-life: 12–15 hours
Clinically important, potentially hazardous interactions with: amiodarone, carbamazepine, dabigatran, phenytoin, rifampin, St John's wort
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: See also separate entry for sofosbuvir.

Skin
Pruritus (itching) [4]
Rash [3]

Central Nervous System
Anorexia [2]
Fever (pyrexia) (includes hyperpyrexia) [4]
Headache (14%) [22]
Insomnia [5]
Irritability [2]

Endocrine/Metabolic
ALT increased [10]
AST increased [4]
Hyperbilirubinemia [2]

Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea (5%) [12]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (8%) [17]
Vomiting [2]

Hematologic
Anemia [8]
Hemoglobin decreased [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Neutropenia (neutrophils decreased) [4]
Thrombocytopenia [2]

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue (14%) [19]

Renal
Renal failure [2]

Respiratory
Dyspnea / shortness of breath [2]
Nasopharyngitis [2]

Other
Adverse effects / adverse reactions [10]

DACLIZUMAB

Trade names: Zenapax (Roche), Zinbryta (Biogen)
Indications: Transplant rejection (Zenapax), relapsing forms of multiple sclerosis (Zinbryta)
Class: Immunosuppressant, Monoclonal antibody
Half-life: 11–38 days
Clinically important, potentially hazardous interactions with: corticosteroids, cyclosporine, Hemophilus B vaccine, methylprednisolone, mycophenolate, prednisolone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: Zinbryta: HEPATIC INJURY INCLUDING AUTOIMMUNE HEPATITIS and OTHER IMMUNE-MEDIATED DISORDERS

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>5%)
Cutaneous toxicity / skin toxicity [2]
Dermatitis [2]
Eczema / eczematous reaction / eczematous eruption [6]
Edema / fluid retention (see also peripheral edema) (>5%)
Hypersensitivity [2]
Hypohidrosis (2–5%)
Lymphadenopathy [4]
Peripheral edema (see also edema) (>5%)
Pruritus (itching) (2–5%)
Psoriasis [2]
Rash (2–5%) [8]
Wound complications (>5%)

Hair
Hirsutism (2–5%)

Cardiovascular
Chest pain (>5%)
Hypertension (>5%)
Hypotension (>5%)
Pulmonary edema / cardiogenic pulmonary edema (>5%)
Tachycardia (>5%)

Central Nervous System
Anxiety (2–5%)
Depression (2–5%)
Fever (pyrexia) (includes hyperpyrexia) (>5%)
Headache (>5%) [3]
Insomnia (>5%)
Pain (>5%)
Tremor (>5%)
Vertigo / dizziness (>5%)

Endocrine/Metabolic
ALT increased [2]
AST increased [2]
Dehydration (2–5%)
Diabetes mellitus (2–5%)

Gastrointestinal/Hepatic
Abdominal distension (>5%)
Abdominal pain (>5%)
Colitis [2]
Constipation (>5%)
Diarrhea (>5%)
Flatulence (2–5%)
Gastritis / pangastritis / gastric irritation (2–5%)
Hemorrhoids (2–5%)

Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (>5%)
Vomiting (>5%)

Genitourinary
Urinary retention (2–5%)
Urinary tract infection [2]

Hematologic
Hemorrhage (>5%)
Thrombosis (>5%)

Local
Application-site reactions (2–5%)

Neuromuscular/Skeletal
Arthralgia (2–5%)
Asthenia / fatigue (>5%)
Back pain (>5%)
Bone or joint pain (>5%)
Myalgia/Myopathy (2–5%)

Ocular
Vision blurred (2–5%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (2–5%)

Respiratory
Cough (>5%)
Dyspnea / shortness of breath (>5%)
Hypoxia (see also hypoxemia) (2–5%)
Nasopharyngitis [2]
Pharyngitis (sore throat) (2–5%)
Pleural effusion (2–5%)
Pneumonia [2]
Rhinitis (2–5%)
Upper respiratory tract infection [3]

Other
Adverse effects / adverse reactions [5]
Infection [7]

DACTINOMYCIN

Synonyms: ACT; actinomycin-D
Trade name: Cosmegen (Merck)
Indications: Melanomas, sarcomas
Class: Antibiotic, Antibiotic; anthracycline, Antimicrobial
Half-life: 36 hours
Clinically important, potentially hazardous interactions with: aldesleukin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with chickenpox or herpes zoster infection.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>10%) [6]
Erythema [2]
Folliculitis [2]
Pigmentation [4]
Pruritus (itching) [2]
Pustules / pustular eruption [2]
Radiation recall dermatitis (>10%) [4]

Hair
Alopecia / hair loss (>10%)

Mucosal
Oral lesions [3]
Stomatitis (oral mucositis) (ulcerative) (>5%)

Gastrointestinal/Hepatic
Nausea [2]

Hematologic
Febrile neutropenia [2]
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [2]

Local
Injection-site extravasation (>10%)
Injection-site necrosis (>10%)
Injection-site phlebitis (>10%)

Other
Death [2]

DALBAVANCIN

Trade name: Dalvance (Durata)
Indications: Skin infections and drug resistant gram-positive coccal infections
Class: Antibiotic, Antibiotic; lipoglycopeptide, Antimicrobial, Cell wall synthesis inhibitor
Half-life: 170–210 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%) [3]
Flushing / rubefaction (<2%)
Hematoma (<2%)
Petechiae (<2%)
Pruritus (itching) [4]
Rash [3]
Urticaria / hives (<2%)
Wound complications (<2%)

Mucosal
Oral candidiasis (12%) [3]

Cardiovascular
Hypotension [2]
Phlebitis (<2%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (50%) [8]
Headache (25%) [10]
Vertigo / dizziness (<2%)

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) (<2%)

Gastrointestinal/Hepatic
Abdominal pain (<2%)
Black stools / melena (<2%)
Constipation [6]
Diarrhea (21%) [10]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<2%)
Loose stools / soft feces [2]
Nausea (6%) [12]
Vomiting [2]

Genitourinary
Vulvovaginal candidiasis (<2%)

Hematologic
Anemia (<2%)
Eosinophilia (<2%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<2%)
Neutropenia (neutrophils decreased) (<2%)
Thrombocytopenia (<2%)

Local
Infusion-related reactions (<2%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Bronchospasm (<2%)

Other
Adverse effects / adverse reactions [4]

DALFAMPRIDINE

Synonyms: Fampridine; 4-aminopyridine; 4-AP
Trade name: Ampyra (Acorda)
Indications: Multiple sclerosis (to improve walking)
Class: Potassium channel blocker
Half-life: 5–6.5 hours
Clinically important, potentially hazardous interactions with: trilaciclib
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a history of seizure, or with moderate or severe renal impairment.

Central Nervous System
Balance disorder (5%)
Gait instability / postural instability [2]
Headache (7%) [6]
Insomnia (9%) [5]
Multiple sclerosis (relapse) (4%)
Paresthesias (4%) [2]
Seizures [5]
Vertigo / dizziness (7%) [10]

Gastrointestinal/Hepatic
Constipation (3%)
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Nausea (7%) [4]

Genitourinary
Urinary tract infection (12%) [2]

Neuromuscular/Skeletal
Asthenia / fatigue (7%) [3]
Back pain (5%)

Respiratory
Nasopharyngitis (4%)
Pharyngolaryngeal pain (2%)

Other
Adverse effects / adverse reactions [5]

DALTEPARIN

Trade name: Fragmin (Pfizer)
Indications: Prophylaxis of deep vein thrombosis
Class: Heparin, low molecular weight
Half-life: 4–8 hours
Clinically important, potentially hazardous interactions with: butabarbital, danaparoid
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SPINAL/EPIDURAL HEMATOMA

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%) [2]
Bullous dermatosis (<10%)

Pruritus (itching) (<10%)
Rash (<10%)

Hair
Alopecia / hair loss [2]

Local
Injection-site hematoma (<10%)
Injection-site pain (<10%)

Other
Allergic reactions (<10%) [3]

DAN-SHEN

Family: Labiatae; Lamiaceae
Scientific name: *Salvia miltiorrhiza*
Indications: Circulation problems, ischemic stroke, angina pectoris, menstrual problems, chronic hepatitis, abdominal masses, insomnia, acne, psoriasis, eczema, bruising, hearing loss
Class: Food supplement, Platelet aggregation inhibitor
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Hematologic
Anticoagulation [4]

Other
Adverse effects / adverse reactions [3]

DANAPAROID

Trade name: Orgaran (Organon)
Indications: Prevention of postoperative deep thrombosis
Class: Anticoagulant, Heparinoid
Half-life: ~24 hours
Clinically important, potentially hazardous interactions with: butabarbital, dalteparin, enoxaparin, heparin, nandrolone
Pregnancy category: B

Skin
Edema / fluid retention (see also peripheral edema) (3%)
Peripheral edema (see also edema) (3%)
Pruritus (itching) (4%)
Rash (2–5%)

Local
Injection-site hematoma (5%)
Injection-site pain (8–14%)
Injection-site plaques [3]

Other
Infection (2%)

DANAZOL

Indications: Endometriosis, fibrocystic breast disease
Class: Pituitary hormone inhibitor
Half-life: ~4.5 hours
Clinically important, potentially hazardous interactions with: acenocoumarol, acitretin, atorvastatin, cyclosporine, insulin aspart, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, oral contraceptives, paricalcitol, simvastatin, tacrolimus, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>10%) [6]
Diaphoresis (see also hyperhidrosis) (3%)
Edema / fluid retention (see also peripheral edema) (>10%)
Erythema multiforme [2]
Exanthems [2]
Flushing / rubefaction [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
Rash (3%)
Seborrhea [4]

Hair
Alopecia / hair loss [3]
Hirsutism (<10%) [5]

Endocrine/Metabolic
Pseudomenopause [2]
Weight gain [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]

Neuromuscular/Skeletal
Rhabdomyolysis [5]

Other
Adverse effects / adverse reactions [3]
Death [2]

DAPAGLIFLOZIN

Trade names: Farxiga (AstraZeneca), Qtern (AstraZeneca), Xigduo XR (AstraZeneca)
Indications: Type II diabetes mellitus
Class: Antidiabetic, Sodium-glucose co-transporter 2 (SGLT2) inhibitor ('gliflozin')
Half-life: 13 hours
Clinically important, potentially hazardous interactions with: pioglitazone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with severe renal impairment, end-stage renal disease, or undergoing dialysis. Qtern is dapagliflozin and saxagliptin; Xigduo XR is dapagliflozin and metformin.

Skin
Eczema / eczematous reaction / eczematous eruption [2]

Cardiovascular
Hypertension [2]
Hypotension [3]

Central Nervous System
Headache [3]
Vertigo / dizziness [2]

Endocrine/Metabolic
Dehydration [2]
Diabetic ketoacidosis [5]
Dyslipidemia (2–3%)
Euglycemic diabetic ketoacidosis [3]
Hypoglycemia (see also insulin autoimmune syndrome) (>10%) [17]
Hypovolemia [2]

Gastrointestinal/Hepatic
Constipation (2%)
Diarrhea [3]
Nausea (3%) [3]

Genitourinary
Balanitis (glans penile inflammation) [2]
Dysuria [2]
Genital mycotic infection (particularly in women) (3–8%) [33]
Pollakiuria [2]
Urinary frequency (3–4%)
Urinary tract infection (4–6%) [37]
Vulvovaginal candidiasis [2]
Vulvovaginal pruritus [2]

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [2]
Back pain (3–4%) [3]
Pain in extremities (2%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure [2]

Respiratory
Bronchitis [2]
Cough [2]
Influenza (2–3%) [2]
Nasopharyngitis (6–7%) [7]
Upper respiratory tract infection [5]

Other
Adverse effects / adverse reactions [10]
Dipsia (thirst) / polydipsia [2]
Infection (<10%)

DAPSONE

Trade name: Aczone (Allergan)
Indications: Leprosy, dermatitis herpetiformis, acne
Class: Antibiotic, Antimicrobial, Antimycobacterial (including antitubercular)
Half-life: 10–50 hours
Clinically important, potentially hazardous interactions with: atovaquone/proguanil, chloroquine, didanosine, furazolidone, ganciclovir, hydroxychloroquine, methotrexate, pyrimethamine, rifabutin, rifampin, rifapentine, sulfonamides, trimethoprim, ursodiol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: A hypersensitivity reaction – termed the 'sulfone syndrome' or 'dapsone syndrome' – may infrequently develop during the first six weeks of treatment. This syndrome consists of exfoliative dermatitis, fever, malaise, nausea, anorexia, hepatitis, jaundice, lymphadenopathy and hemolytic anemia.

Skin
AGEP [2]
Bullous dermatosis [2]
Cyanosis / acrocyanosis [2]
Dapsone syndrome [45]
DRESS syndrome [15]
Erythema multiforme [9]
Erythema nodosum [5]
Exanthems (<5%) [12]
Exfoliative dermatitis [10]
Fixed eruption [5]
Hypersensitivity [21]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [6]
Photosensitivity [9]

Pigmentation [6]
Rash [7]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [12]
Urticaria / hives [2]

Nails
Beau's lines (transverse nail bands) [3]

Central Nervous System
Headache (4%) [2]
Insomnia [2]
Peripheral neuropathy [4]

Gastrointestinal/Hepatic
Cholangitis / sclerosing cholangitis [2]
Hepatitis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Pancreatitis / acute pancreatitis [2]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [8]
Anemia [5]
Hemolysis [8]
Hemolytic anemia [7]
Methemoglobinemia [29]
Pure red cell aplasia [2]

Local
Application-site erythema (13%) [2]
Application-site reactions (18%)

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Respiratory
Cough (2%)
Eosinophilic pneumonia [2]
Nasopharyngitis (5%)
Pharyngitis (sore throat) (2%)
Sinusitis (2%)
Upper respiratory tract infection (3%)

Other
Adverse effects / adverse reactions [4]
Death [6]

DAPTOMYCIN

Trade name: Cubicin (Cubist)
Indications: Complicated skin and skin structure infections, *Staphylococcus aureus* bloodstream infections
Class: Antibiotic, Antibiotic; glycopeptide, Antimicrobial
Half-life: ~8 hours
Clinically important, potentially hazardous interactions with: atorvastatin, cyclosporine, fibrates, HMG-CoA reductase inhibitors, rosuvastatin, statins, tobramycin, typhoid vaccine, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
AGEP [2]
Cellulitis (<2%)
Edema / fluid retention (see also peripheral edema) (<7%)
Fungal dermatitis (3%)
Hyperhidrosis (see also diaphoresis) (5%)
Pruritus (itching) (3–6%)
Rash (4%)

Cardiovascular
Chest pain (7%)
Hypertension (6%)
Hypotension (2%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache (5%)
Insomnia (9%)
Peripheral neuropathy [2]
Vertigo / dizziness (2%)

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (7%) [8]
Hyperkalemia [2]

Gastrointestinal/Hepatic
Abdominal pain (<6%)
Constipation (6%)
Diarrhea (5%) [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (6%) [2]
Vomiting (3%)

Genitourinary
Urinary tract infection (2%)

Hematologic
Eosinophilia [2]
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [2]

Local
Injection-site reaction (6%)

Neuromuscular/Skeletal
Back pain (<2%)
Myalgia/Myopathy [10]
Rhabdomyolysis [10]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure [3]

Respiratory
Cough (<2%)
Dyspnea / shortness of breath (2%)
Eosinophilic pneumonia [25]
Pharyngolaryngeal pain (8%)
Pneumonia [2]

Other
Adverse effects / adverse reactions [3]

DARATUMUMAB

Trade name: Darzalex (Janssen Biotech)
Indications: Multiple myeloma in patients who have received at least three prior lines of therapy including a proteasome inhibitor (PI) and an immunomodulatory agent or who are double-refractory to a PI and an immunomodulatory agent
Class: Monoclonal antibody
Half-life: 18 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Herpes zoster (3%)

Mucosal
Nasal congestion (17%)

Cardiovascular
Atrial fibrillation [2]
Chest pain (12%)
Hypertension (10%)

Central Nervous System
Chills (10%)
Cytokine release syndrome / cytokine storm [2]
Fever (pyrexia) (includes hyperpyrexia) (21%) [3]
Headache (12%)

Endocrine/Metabolic
Appetite decreased (15%)

Gastrointestinal/Hepatic
Constipation (15%)
Diarrhea (16%) [4]
Nausea (27%)
Vomiting (14%)

Hematologic
Anemia (45%) [8]
Hemotoxicity [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (72%) [6]
Neutropenia (neutrophils decreased) (60%) [9]
Thrombocytopenia (48%) [8]

Local
Infusion-related reactions (48%) [13]

Neuromuscular/Skeletal
Arthralgia (17%)
Asthenia / fatigue (39%) [7]
Back pain (23%) [2]
Pain in extremities (15%)

Respiratory
Bronchospasm (<2%) [3]
Cough (21%) [3]
Dyspnea / shortness of breath (15%) [4]
Hypoxia (see also hypoxemia) (<2%)
Nasopharyngitis (15%)
Pneumonia (11%) [4]
Respiratory tract infection [2]
Rhinitis (>5%)
Upper respiratory tract infection (20%) [3]

DARBEPOETIN ALFA

Synonym: erythropoiesis stimulating protein
Trade name: Aranesp (Amgen)
Indications: Anemia associated with renal failure and chemotherapy
Class: Colony stimulating factor, Erythropoiesis-stimulating agent (ESA), Erythropoietin
Half-life: 21 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: There is an increased risk of death for patients suffering from chronic renal failure with this drug (6%).
Warning: ERYTHROPOIESIS-STIMULATING AGENTS (ESAs) INCREASE THE RISK OF DEATH, MYOCARDIAL INFARCTION, STROKE, VENOUS THROMBOEMBOLISM, THROMBOSIS OF VASCULAR ACCESS AND TUMOR PROGRESSION OR RECURRENCE

Skin
Edema / fluid retention (see also peripheral edema) (21%)
Peripheral edema (see also edema) (11%)
Pruritus (itching) (8%)
Rash (7%) [2]

Cardiovascular
Hypertension [2]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (9–19%)
Headache [2]
Vertigo / dizziness (8–14%)
Gastrointestinal/Hepatic
Abdominal pain (12%)
Hematologic
Thrombosis [2]
Local
Injection-site pain (7%)
Neuromuscular/Skeletal
Arthralgia (11–13%)
Asthenia / fatigue (9–33%)
Back pain (8%)
Muscle spasm [2]
Myalgia/Myopathy (21%)
Respiratory
Cough (10%)
Influenza- ('flu)-like syndrome (6%)
Upper respiratory tract infection (14%)
Other
Adverse effects / adverse reactions [4]

DARIFENACIN

Trade names: Emselex (Novartis), Enablex (Novartis)
Indications: Overactive bladder
Class: Anticholinergic, Muscarinic antagonist
Half-life: 13–19 hours
Clinically important, potentially hazardous interactions with: anticholinergics, antihistamines, atazanavir, clozapine, cyclosporine, digoxin, disopyramide, domperidone, erythromycin, flecainide, fosamprenavir, haloperidol, imipramine, indinavir, itraconazole, ketoconazole, levodopa, lopinavir, MAO inhibitors, memantine, metoclopramide, nefopam, nelfinavir, nitrates (sublingual), parasympathomimetics, paroxetine hydrochloride, phenothiazines, potent CYP3A4 inhibitors, ritonavir, saquinavir, thioridazine, tipranavir, tricyclic antidepressants, verapamil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with, or at risk for, urinary retention, gastric retention or uncontrolled narrow-angle glaucoma.

Mucosal
Xerostomia (dry mouth) (20%) [12]
Central Nervous System
Headache [2]
Gastrointestinal/Hepatic
Abdominal pain (2%)
Constipation [3]

DARUNAVIR

Trade names: Prezcobix (Janssen), Prezista (Janssen)
Indications: HIV infection (must be co-administered with ritonavir and with other antiretroviral agents)
Class: Antiretroviral, Covid-19 putative drug, HIV-1 protease inhibitor
Half-life: 15 hours
Clinically important, potentially hazardous interactions with: abacavir, alfuzosin, almotriptan, alosetron, alprazolam, amiodarone, antifungals, apixaban, artemether/lumefantrine, astemizole, atorvastatin, bortezomib, brinzolamide, calcium channel blockers, captopril, carbamazepine, ciclesonide, cisapride, clarithromycin, colchicine, conivaptan, cyclosporine, CYP2D6 substrates, CYP3A4 inhibitors, inducers and substrates, dabigatran, dasatinib, deferasirox, delavirdine, didanosine, dienogest, digoxin, dihydroergotamine, dronedarone, duloxetine, dutasteride, efavirenz, elbasvir & grazoprevir, enfuvirtide, eplerenone, ergotamine, estrogens, etravirine, everolimus, fentanyl, fesoterodine, food, fusidic acid, glecaprevir & pibrentasvir, guanfacine, halofantrine, HMG-CoA reductase inhibitors, indinavir, inhaled corticosteroids, ixabepilone, ketoconazole, lidocaine, lopinavir, lovastatin, maraviroc, meperidine, methadone, methylprednisolone, midazolam, mifepristone, mometasone, nefazodone, nilotinib, nisoldipine, olaparib, P-glycoprotein substrates, paricalcitol, paroxetine hydrochloride, pazopanib, phenobarbital, phenytoin, pimecrolimus, pimozide, prasugrel, pravastatin, protease inhibitors, quetiapine, quinidine, quinine, ranolazine, rifabutin, rifampin, rilpivirine, rivaroxaban, romidepsin, rosuvastatin, salmeterol, saquinavir, saxagliptin, sertraline, sildenafil, silodosin, simeprevir, simvastatin, sirolimus, sorafenib, St John's wort, tacrolimus, tadalafil, tamsulosin, telaprevir, temsirolimus, tenofovir disoproxil, terfenadine, theophylline, tolvaptan, topotecan, trazodone, triazolam, tricyclic antidepressants, vardenafil, viloxazine, voriconazole, warfarin, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Darunavir is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Prezcobix is darunavir and cobicistat.

Skin
Angioedema (<2%)
Hypersensitivity (<2%) [2]
Pruritus (itching) (<2%)
Rash (6–10%) [9]
Urticaria / hives (<2%)
Central Nervous System
Abnormal dreams (<2%)
Anorexia (2%)
Headache (7%) [6]
Endocrine/Metabolic
Diabetes mellitus (new onset or exacebated) (2%)
Gastrointestinal/Hepatic
Abdominal distension (2%)
Abdominal pain (6%)
Diarrhea (9–14%) [11]
Dyspepsia / functional dyspepsia / gastroparesis (<3%)
Flatulence (<2%)
Gastrointestinal disorder / discomfort [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<2%) [6]
Nausea (4–7%) [6]
Pancreatitis / acute pancreatitis (<2%)
Vomiting (2–5%)
Neuromuscular/Skeletal
Asthenia / fatigue (2–3%)
Osteonecrosis / avascular necrosis (<2%)
Other
Adverse effects / adverse reactions [7]

DASATINIB

Trade name: Sprycel (Bristol-Myers Squibb)
Indications: Leukemia (chronic myeloid), acute lymphoblastic leukemia
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Tyrosine kinase inhibitor, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 3–5 hours
Clinically important, potentially hazardous interactions with: abciximab, alfentanil, alfuzosin, ambrisentan, antacids, anticoagulants, antiplatelet agents, aprepitant, argatroban, artemether/lumefantrine, astemizole, atazanavir, atorvastatin, boceprevir, cabazitaxel, carbamazepine, chloroquine, ciclesonide, cilostazol, cinacalcet, ciprofloxacin, cisapride, clarithromycin, clopidogrel, clozapine, colchicine, conivaptan, cyclosporine, CYP3A4 inhibitors, inducers and substrates, dabigatran, darunavir, deferasirox, dexamethasone, dihydroergotamine, docetaxel, dronedarone, efavirenz, eptifibatide, ergotamine, erythromycin, eszopiclone, famotidine, fentanyl, fesoterodine, gadobutrol, gefitinib, H_2 antagonists, indinavir, itraconazole, ixabepilone, ketoconazole, lopinavir, lurasidone, maraviroc, meloxicam, nefazodone, nelfinavir, nilotinib, omeprazole, pantoprazole, phenobarbital, phenytoin, pimozide, proton pump inhibitors, QT prolonging agents, quinidine, quinine, rifampin, ritonavir, saquinavir, saxagliptin, sildenafil, simvastatin, sirolimus, St John's wort, tacrolimus, tadalafil, temsirolimus, terfenadine, tetrabenazine, thioridazine, tiagabine, tinzaparin, vardenafil, ziprasidone
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<10%) [2]
Cutaneous toxicity / skin toxicity [8]
Dermatitis (<10%)
Eczema / eczematous reaction / eczematous eruption (<10%)
Edema / fluid retention (see also peripheral edema) (13–18%) [8]
Erythema [2]
Flushing / rubefaction (<10%)
Herpes (<10%)

Hyperhidrosis (see also diaphoresis) (<10%)
Panniculitis [4]
Peripheral edema (see also edema) [3]
Pruritus (itching) (<10%) [5]
Rash (11–21%) [12]
Urticaria / hives (<10%)
Xerosis / xeroderma (see also dry skin) (<10%)

Hair
Alopecia / hair loss (<10%) [3]
Hair pigmentation [2]

Mucosal
Mucositis (16%)

Cardiovascular
Arrhythmias (<10%)
Cardiac failure (3%)
Cardiotoxicity (left ventricular dysfunction) [2]
Congestive heart failure (2%)
Hypertension (<10%)
Palpitation (<10%)
Pericardial effusion (2–3%) [6]
QT interval prolonged / QT prolongation [4]
Tachycardia (<10%)

Central Nervous System
Anorexia (<10%) [6]
Anxiety [2]
Depression (<10%)
Dysgeusia (taste perversion) (<10%)
Fever (pyrexia) (includes hyperpyrexia) (5–39%)
Headache (12–33%) [11]
Insomnia (<10%)
Neurotoxicity (13%)
Pain (26%) [2]
Peripheral neuropathy (<10%)
Somnolence (drowsiness) (<10%)
Subdural hemorrhage [4]
Vertigo / dizziness (<10%)

Endocrine/Metabolic
ALT increased [2]
Hypophosphatemia [2]
Weight gain (<10%)
Weight loss (<10%)

Gastrointestinal/Hepatic
Abdominal distension (<10%)
Abdominal pain (<25%) [2]
Colitis (<10%) [9]
Constipation (<10%)
Diarrhea (18–31%) [22]
Dyspepsia / functional dyspepsia / gastroparesis (<10%)
Enterocolitis (<10%)
Gastritis / pangastritis / gastric irritation (<10%)
Gastrointestinal bleeding (2–8%) [3]
Hemorrhagic colitis [4]
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (9–23%) [11]
Vomiting (7–15%) [6]

Hematologic
Anemia [6]
Bleeding (6–26%)
Cytopenia [3]
Febrile neutropenia (<12%)
Hemorrhage [2]
Hemotoxicity [4]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Myelosuppression / bone marrow suppression / myelotoxicity [10]
Neutropenia (neutrophils decreased) [9]
Pancytopenia (includes bicytopenia) (<10%)
Thrombocytopenia [16]

Neuromuscular/Skeletal
Arthralgia (<19%)
Asthenia / fatigue (8%) [18]
Bone or joint pain (12–19%) [3]
Myalgia/Myopathy (6–13%) [2]

Ocular
Ocular adverse effect [2]
Reduced visual acuity (<10%)
Vision blurred (<10%)
Visual disturbances (<10%)
Xerophthalmia (dry eyes) (<10%)

Otic
Tinnitus (<10%)

Renal
Nephrotic syndrome [7]
Proteinuria [4]
Renal failure [3]

Respiratory
Chylothorax [12]
Cough (<10%)
Dyspnea / shortness of breath (20%) [5]
Pleural effusion (12–21%) [41]
Pneumonia (<10%) [4]
Pneumonitis (<10%)
Pulmonary hypertension (<10%) [16]
Pulmonary toxicity [4]
Upper respiratory tract infection (<10%)

Other
Adverse effects / adverse reactions [4]
Death [2]
Infection (<14%) [3]
Side effects [2]

DAUNORUBICIN

Synonyms: daunomycin; DNR; rubidomycin
Trade name: DaunoXome (Gilead)
Indications: Acute leukemias
Class: Antibiotic, Antibiotic; anthracycline, Antimicrobial
Half-life: 14–20 hours; 4 hours (intramuscular)
Clinically important, potentially hazardous interactions with: aldesleukin, gadobenate
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: MYOCARDIAL TOXICITY / MYELOSUPPRESSION

Skin
Angioedema [4]
Dermatitis [2]
Edema / fluid retention (see also peripheral edema) (11%)
Exanthems [2]
Flushing / rubefaction (14%)
Folliculitis (<5%)
Hot flashes / hot flushes (<5%)
Hyperhidrosis (see also diaphoresis) (14%)
Lymphadenopathy (<5%)
Neutrophilic eccrine hidradenitis [2]
Pigmentation [3]
Pruritus (itching) (7%)
Seborrhea (<5%)
Urticaria / hives [3]
Xerosis / xeroderma (see also dry skin) (<5%)

Hair
Alopecia / hair loss (8%) [4]

Nails
Leukonychia striata (Mees' lines) [2]
Nail pigmentation [5]

Mucosal
Gingival bleeding (<5%)
Oral lesions [2]
Sialorrhea (ptyalism; hypersalivation) (<5%)
Stomatitis (oral mucositis) (10%)
Xerostomia (dry mouth) (<5%)

Cardiovascular
Chest pain (9–14%)
Hypertension (<5%)
Myocardial toxicity [5]
Palpitation (<5%)
Tachycardia (<5%)

Central Nervous System
Amnesia (<5%)
Anorexia (23%)
Anxiety (<5%)
Cognitive impairment (<5%)
Depression (10%)
Dysgeusia (taste perversion) (<5%)
Fever (pyrexia) (includes hyperpyrexia) [2]
Gait instability / postural instability (<5%)
Hallucinations (<5%)
Headache (25%)
Insomnia (6%)
Meningococcal infection (<5%)
Neurotoxicity (13%)
Rigors (19%)
Seizures (<5%)
Somnolence (drowsiness) (<5%)
Syncope / fainting (<5%)
Tremor (<5%)
Vertigo / dizziness (8%)

Endocrine/Metabolic
Appetite increased (<5%)
Dehydration (<5%)

Gastrointestinal/Hepatic
Abdominal pain (23%)
Black stools / melena (<5%)
Constipation (7%)
Diarrhea (38%)
Dysphagia (<5%)
Gastritis / pangastritis / gastric irritation (<5%)
Gastrointestinal bleeding (<5%)
Hemorrhoids (<5%)
Hepatomegaly (<5%)
Nausea (54%)
Tenesmus (5%)
Vomiting (23%)

Genitourinary
Dysuria (<5%)
Nocturia (<5%)
Polyuria (<5%)

Hematologic
Neutropenia (neutrophils decreased) (15–36%)
Splenomegaly (<5%)

Local
Injection-site inflammation (<5%)
Injection-site necrosis (<10%) [2]
Injection-site ulceration (<10%)

Neuromuscular/Skeletal
Arthralgia (7%)
Asthenia / fatigue (10%)
Ataxia (<5%)
Back pain (16%)
Hyperkinesia (<5%)

Hypertonia (<5%)
Myalgia/Myopathy (7%)

Ocular
Abnormal vision (5%)
Conjunctivitis (conjunctival inflammation) (<5%)
Ocular pain (<5%)

Otic
Ear pain (<5%)
Hearing loss (hypoacusis) (<5%)
Tinnitus (<5%)

Respiratory
Cough (28%)
Dyspnea / shortness of breath (26%)
Hemoptysis (<5%)
Influenza- ('flu)-like syndrome (5%)
PIE syndrome (<5%)
Rhinitis (12%)
Sinusitis (8%)

Other
Dipsia (thirst) / polydipsia (<5%)
Hiccups / singultus (<5%)
Infection (40%)
Tooth decay (<5%)

DECITABINE

Synonym: 5-aza-2'-deoxycytidine
Trade name: Dacogen (MGI Pharma)
Indications: Myelodysplastic syndromes, leukemia
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: ~30 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Bacterial infection (5%)
Bruise / bruising / contusion / ecchymosis (ecchymoses) (22%)
Candidiasis / candidosis (10%)
Cellulitis (12%)
Edema / fluid retention (see also peripheral edema) (18%)
Erythema (14%)
Facial edema (6%)
Hematoma (5%)
Lymphadenopathy (12%)
Pallor (23%)
Peripheral edema (see also edema) (25%)
Petechiae (39%)
Pruritus (itching) (11%)
Rash (19%) [2]
Urticaria / hives (6%)

Mucosal
Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis) (5%)
Gingival bleeding (8%)
Lip ulceration (5%)
Mucositis [2]
Oral candidiasis (6%)
Stomatitis (oral mucositis) (12%)
Tongue ulceration (7%)

Cardiovascular
Chest pain (7%)
Hypotension (6%)
Pulmonary edema / cardiogenic pulmonary edema (6%)
QT interval prolonged / QT prolongation [2]

Central Nervous System
Anorexia (16%) [2]
Anxiety (11%)
Confusion (12%)
Fever (pyrexia) (includes hyperpyrexia) (53%) [2]
Headache (28%)
Hypoesthesia (numbness) (11%)
Insomnia (28%)
Pain (13%)
Rigors (22%)
Vertigo / dizziness (18%)

Endocrine/Metabolic
ALP increased (11%)
Appetite decreased (16%)
AST increased (10%)
Dehydration (6%)
Hyperglycemia (includes glucose increased) (33%)
Hyperkalemia (13%)
Hypoalbuminemia / albumin decreased (24%)
Hypokalemia (22%)
Hypomagnesemia (24%)
Hyponatremia (19%)

Gastrointestinal/Hepatic
Abdominal distension (5%)
Abdominal pain (14%)
Ascites (10%)
Constipation (35%)
Diarrhea (34%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (12%)
Dysphagia (6%)
Gastroesophageal reflux (5%)
Hemorrhoids (8%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Loose stools / soft feces (7%)
Nausea (42%) [8]
Vomiting (25%) [5]

Genitourinary
Dysuria (6%)
Urinary frequency (5%)
Urinary tract infection (7%)

Hematologic
Anemia (82%) [5]
Bacteremia (5%)
Febrile neutropenia (29%) [8]
Hemotoxicity [4]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (28%) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Myelosuppression / bone marrow suppression / myelotoxicity [11]
Neutropenia (neutrophils decreased) (90%) [13]
Thrombocytopenia (89%) [9]

Local
Injection-site edema (5%)
Injection-site erythema (5%)

Neuromuscular/Skeletal
Arthralgia (20%)
Asthenia / fatigue (5–12%) [7]
Back pain (17%)
Bone or joint pain (6–19%)
Myalgia/Myopathy (5%)

Ocular
Vision blurred (6%)

Respiratory
Cough (40%)
Hypoxia (see also hypoxemia) (10%)
Pharyngitis (sore throat) (16%)
Pneumonia (22%) [2]
Sinusitis (5%)

Other
Adverse effects / adverse reactions [2]
Allergic reactions [2]
Death [2]
Infection [5]

DEFERASIROX

Trade names: Exjade (Novartis), Jadenu (Novartis)
Indications: Chronic iron overload due to blood transfusions and in non-transfuson dependent thalassemia syndromes
Class: Chelator, iron
Half-life: 8–16 hours
Clinically important, potentially hazardous interactions with: alfuzosin, aluminum-containing antacids, ambrisentan, aprepitant, cabazitaxel, cholestyramine, cilostazol, colesevelam, colestipol, conivaptan, dabigatran, darunavir, dasatinib, delavirdine, docetaxel, efavirenz, enalapril, estradiol, eszopiclone, fesoterodine, gefitinib, indinavir, ixabepilone, lapatinib, lurasidone, maraviroc, pazopanib, phenobarbital, phenytoin, pioglitazone, repaglinide, rifampin, ritonavir, sildenafil, telithromycin, theophylline, tiagabine, tipranavir, trimethoprim, ulipristal
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Warning: RENAL FAILURE, HEPATIC FAILURE, AND GASTROINTESTINAL HEMORRHAGE

Skin
Exanthems [2]
Jaundice [2]
Rash (2–11%) [24]
Urticaria / hives (4%)

Central Nervous System
Headache (16%) [2]

Endocrine/Metabolic
ALT increased [9]
Appetite decreased [2]
AST increased [4]
Serum creatinine increased [24]

Gastrointestinal/Hepatic
Abdominal pain (21–28%) [13]
Diarrhea (5–20%) [18]
Gastrointestinal bleeding [3]
Gastrointestinal disorder / discomfort [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [10]
Nausea (2–6%) [20]
Vomiting (10–21%) [7]

Neuromuscular/Skeletal
Arthralgia (7%)
Asthenia / fatigue [3]
Back pain (6%)

Renal
Fanconi syndrome [11]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [7]

Proteinuria [4]
Renal failure [3]
Renal function abnormal / renal dysfunction [2]

Respiratory
Cough (14%)
Influenza- ('flu)-like syndrome (11%)
Upper respiratory tract infection (9%)

Other
Adverse effects / adverse reactions [16]

DEFERIPRONE

Trade name: Ferriprox (ApoPharma)
Indications: Treatment of patients with transfusional iron overload due to thalassemia syndromes when current chelation therapy is inadequate
Class: Chelator, iron
Half-life: 1.9 hours
Clinically important, potentially hazardous interactions with: antacids containing iron, aluminum, zinc, diclofenac, mineral supplements, probenecid
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: AGRANULOCYTOSIS / NEUTROPENIA

Central Nervous System
Headache (3%)

Endocrine/Metabolic
ALT increased (8%) [5]
Appetite increased (4%)
AST increased [2]
Serum creatinine increased [2]
Weight gain (2%)

Gastrointestinal/Hepatic
Abdominal pain (10%) [2]
Diarrhea (3%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Gastrointestinal disorder / discomfort [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea (13%) [4]
Vomiting (10%)

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') (2%) [16]
Neutropenia (neutrophils decreased) [13]
Thrombocytopenia [2]

Neuromuscular/Skeletal
Arthralgia (10%) [8]
Arthropathy [5]
Back pain (2%)
Bone or joint pain [2]
Pain in extremities (2%)

Renal
Chromaturia (15%)

Other
Adverse effects / adverse reactions [2]
Death [2]

DEFEROXAMINE

Trade name: Desferal (Novartis)
Indications: Hemochromatosis, acute iron overload
Class: Chelator, iron
Half-life: 6.1 hours
Clinically important, potentially hazardous interactions with: ascorbic acid, ferrous sulfate, pericyazine, pericyazine, zinc
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Hypersensitivity [2]

Central Nervous System
Neurotoxicity [2]

Endocrine/Metabolic
Serum creatinine increased [2]

Local
Injection-site inflammation (<10%)
Injection-site pain (<10%)

Neuromuscular/Skeletal
Arthralgia [6]

Ocular
Night blindness [2]
Retinopathy [12]

Otic
Hearing loss (hypoacusis) [2]
Ototoxicity [7]

Other
Death [3]

DEFIBROTIDE

Trade name: Defitelio (Jazz)
Indications: Hepatic veno-occlusive disease in patients with renal or pulmonary dysfunction following hematopoietic stem-cell transplantation
Class: Oligonucleotide
Half-life: <2 hours
Clinically important, potentially hazardous interactions with: alteplase, heparin
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contra-indicated for concomitant administration with systemic anticoagulant or fibrinolytic therapy.

Skin
Graft-versus-host reaction (6%)

Mucosal
Epistaxis (nosebleed) (14%)

Cardiovascular
Hypotension (37%) [5]

Central Nervous System
Cerebral hemorrhage (2%)
Intracranial hemorrhage (3%)

Endocrine/Metabolic
Hyperuricemia (2%)

Gastrointestinal/Hepatic
Diarrhea (24%)
Gastrointestinal bleeding (9%) [3]
Nausea (16%)
Vomiting (18%)

Hematologic
Hemorrhage [3]
Sepsis (7%)

Respiratory
Alveolar hemorrhage (pulmonary) (9%)
Pneumonia (5%)
Pulmonary hemorrhage (4%)
Pulmonary toxicity (6%)

Other
Adverse effects / adverse reactions [4]
Infection (3%)

DEFLAZACORT

Trade name: Emflaza (Marathon)
Indications: Duchenne muscular dystrophy
Class: Corticosteroid / Glucocorticoid
Half-life: N/A
Clinically important, potentially hazardous interactions with: carbamazepine, clarithromycin, diltiazem, efavirenz, fluconazole, grapefruit juice, live vaccines, pancuronium, phenytoin, rifampin, verapamil
Pregnancy category: N/A (Should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Skin
Cushingoid features (33%) [3]
Erythema (8%)
Hypersensitivity [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Hair
Hirsutism (10%) [2]

Mucosal
Rhinorrhea (8%)

Central Nervous System
Behavioral disturbances / personality changes [2]
Irritability (8%)

Endocrine/Metabolic
Appetite increased (14%) [2]
Weight gain (20%) [6]

Gastrointestinal/Hepatic
Abdominal pain (6%)

Genitourinary
Pollakiuria (12%)

Ocular
Cataract [3]

Respiratory
Cough (12%)
Nasopharyngitis (10%)
Upper respiratory tract infection (12%)

Other
Adverse effects / adverse reactions [3]
Side effects [2]

DEGARELIX

Trade name: Firmagon (Ferring)
Indications: Advanced hormone-dependent prostate cancer
Class: Gonadotropin-releasing hormone (GnRH) antagonist
Half-life: 43 days
Clinically important, potentially hazardous interactions with: alfuzosin, amiodarone, antipsychotics, artemether/lumefantrine, chloroquine, ciprofloxacin, cisapride, disopyramide, dofetilide, dronedarone,

gadobutrol, ibutilide, moxifloxacin, nilotinib, pimozide, QT prolonging agents, quinidine, quinine, sotalol, tetrabenazine, thioridazine, ziprasidone
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Flushing / rubefaction (<10%) [2]
Hot flashes / hot flushes (26%) [2]
Hyperhidrosis (see also diaphoresis) (<5%)
Cardiovascular
Hypertension (6–7%)
Central Nervous System
Chills (4–5%) [2]
Fever (pyrexia) (includes hyperpyrexia) (<5%) [2]
Headache (<5%)
Insomnia (<5%)
Vertigo / dizziness (<5%)
Endocrine/Metabolic
ALT increased (10%)
GGT increased (10%)
Weight gain (9–11%) [3]
Weight loss (<10%)
Gastrointestinal/Hepatic
Constipation (3–5%)
Nausea (<5%)
Genitourinary
Urinary tract infection (2–5%)
Local
Injection-site edema (6%)
Injection-site erythema (17%)
Injection-site nodules (3%)
Injection-site pain (28%) [2]
Injection-site reaction (35–44%) [5]
Injection-site scarring (4%)
Neuromuscular/Skeletal
Arthralgia (4–5%)
Asthenia / fatigue (9–11%)
Respiratory
Influenza- ('flu)-like syndrome (<10%)

DELAFLOXACIN

Trade name: Baxdela (Melinta)
Indications: Acute bacterial skin and skin structure infections caused by designated susceptible bacteria
Class: Antibiotic, Antibiotic; fluoroquinolone, Antimicrobial
Half-life: 4–9 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants.
Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis.

Warning: SERIOUS ADVERSE REACTIONS INCLUDING TENDINITIS, TENDON RUPTURE, PERIPHERAL NEUROPATHY, CENTRAL NERVOUS SYSTEM EFFECTS, and EXACERBATION OF MYASTHENIA GRAVIS

Skin
Dermatitis (<2%)
Edema / fluid retention (see also peripheral edema) (<2%)
Erythema (<2%)
Flushing / rubefaction (<2%)
Hypersensitivity (<2%)
Irritation (skin) (<2%)
Pruritus (itching) (<2%)
Rash (<2%)
Urticaria / hives (<2%)
Mucosal
Oral candidiasis (<2%)
Cardiovascular
Bradycardia / sinus bradycardia (<2%)
Hypertension (<2%)
Hypotension (<2%)
Palpitation (<2%)
Phlebitis (<2%)
Tachycardia (<2%)
Central Nervous System
Abnormal dreams (<2%)
Anxiety (<2%)
Dysgeusia (taste perversion) (<2%)
Headache (3%) [3]
Hypoesthesia (numbness) (<2%)
Insomnia (<2%)
Paresthesias (<2%)
Presyncope (<2%)
Syncope / fainting (<2%)
Vertigo / dizziness (<2%)
Endocrine/Metabolic
ALT increased (>2%)
AST increased (>2%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)
Hyperglycemia (includes glucose increased) (<2%)
Hyperphosphatemia (<2%)
Hypoglycemia (see also insulin autoimmune syndrome) (<2%)
Serum creatinine increased (<2%)
Gastrointestinal/Hepatic
Abdominal pain (<2%)
Diarrhea (8%) [7]
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Nausea (8%) [7]
Vomiting (2%) [3]
Genitourinary
Vulvovaginal candidiasis (<2%)
Hematologic
Thrombosis (<2%)
Local
Injection-site bruising (<2%)
Injection-site extravasation (<2%)
Neuromuscular/Skeletal
Myalgia/Myopathy (<2%)
Ocular
Vision blurred (<2%)
Otic
Tinnitus (<2%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (<2%)
Renal failure (<2%)
Other
Adverse effects / adverse reactions [2]
Infection (<2%)

DELAVIRDINE

Trade name: Rescriptor (ViiV)
Indications: HIV-1 infection
Class: Antiretroviral, CYP3A4 inhibitor, Non-nucleoside reverse transcriptase inhibitor
Half-life: 2–11 hours
Clinically important, potentially hazardous interactions with: adefovir, alfuzosin, almotriptan, alosetron, alprazolam, amiodarone, amlodipine, amphetamines, amprenavir, anisindione, antacids, anticoagulants, artemether/lumefantrine, astemizole, atomoxetine, atorvastatin, bepridil, bortezomib, brinzolamide, buprenorphine, carbamazepine, carvedilol, cerivastatin, ciclesonide, cimetidine, cisapride, clarithromycin, clopidogrel, codeine, colchicine, conivaptan, cyclosporine, CYP2C19 substrates, CYP2C9 substrates, CYP2D6 substrates, CYP3A4 inducers and substrates, darunavir, deferasirox, dexamethasone, dicumarol, dienogest, dihydroergotamine, diltiazem, dronedarone, dutasteride, eplerenone, ergonovine, ergotamine, estradiol, etravirine, everolimus, famotidine, felodipine, fentanyl, fesoterodine, flecainide, fluticasone propionate, fluvastatin, fosamprenavir, guanfacine, halofantrine, indinavir, isradipine, ixabepilone, lansoprazole, lidocaine, lopinavir, lovastatin, maraviroc, methadone, methylergonovine, methylprednisolone, methysergide, midazolam, mometasone, nebivolol, nelfinavir, nicardipine, nifedipine, nilotinib, nimodipine, nisoldipine, nizatidine, omeprazole, paclitaxel, pantoprazole, paricalcitol, pazopanib, PEG-interferon, phenobarbital, phenytoin, pimecrolimus, pimozide, prasugrel, propafenone, propranolol, protease inhibitors, proton pump inhibitors, quinidine, ranitidine, ranolazine, rifabutin, rifampin, rifapentine, rilpivirine, ritonavir, rivaroxaban, romidepsin, salmeterol, saquinavir, saxagliptin, sildenafil, silodosin, simeprevir, simvastatin, sirolimus, sorafenib, St John's wort, tacrolimus, tadalafil, tamoxifen, tamsulosin, terfenadine, tetrabenazine, thioridazine, tipranavir, tolvaptan, tramadol, trazodone, triazolam, verapamil, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Angioedema (<2%)
Bruise / bruising / contusion / ecchymosis (ecchymoses) (<2%)
Cyst (<2%)
Dermatitis (<2%)
Desquamation (<2%)
Diaphoresis (see also hyperhidrosis) (<2%)
Edema of lip (<2%)
Erythema (<2%)
Erythema multiforme (<2%)

Exanthems (7%)
Folliculitis (<2%)
Fungal dermatitis (<2%)
Nodular eruption (<2%)
Peripheral edema (see also edema) (<2%)
Petechiae (<2%)
Pruritus (itching) (<2%)
Purpura (<2%)
Rash (3–20%) [5]
Seborrhea (<2%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<2%)
Urticaria / hives (<2%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) (<2%)
Vesiculobullous eruption (<2%)
Xerosis / xeroderma (see also dry skin) (<2%)

Hair
Alopecia / hair loss (<2%)

Nails
Nail changes (<2%)

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (<2%)
Gingivitis (<2%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (<2%)
Sialorrhea (ptyalism; hypersalivation) (<2%)
Stomatitis (oral mucositis) (<2%)
Tongue edema (<2%)
Xerostomia (dry mouth) (<2%)

Central Nervous System
Anxiety (2–7%)
Depression (4–5%)
Dysgeusia (taste perversion) (<2%)
Fever (pyrexia) (includes hyperpyrexia) (2–7%)
Headache (11–17%)
Insomnia (1–5%)
Pain (2–6%)
Paresthesias (<2%)

Endocrine/Metabolic
Gynecomastia (<2%)

Gastrointestinal/Hepatic
Abdominal pain (2–5%)
Diarrhea (2–9%)
Nausea (9–20%)
Vomiting (3–9%)

Genitourinary
Vulvovaginal candidiasis (<2%)

Neuromuscular/Skeletal
Asthenia / fatigue (5–16%)
Myalgia/Myopathy (<2%)

Respiratory
Bronchitis (4–7%)
Cough (4–10%)
Influenza- ('flu)-like syndrome (2–7%)
Pharyngitis (sore throat) (2–9%)
Sinusitis (1–11%)

Other
Allergic reactions (<2%)

DEMECLOCYCLINE

Trade name: Declomycin (ESP Pharma)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; tetracycline, Antimicrobial
Half-life: 10–16 hours
Clinically important, potentially hazardous interactions with: acitretin, amoxicillin, ampicillin, antacids, bacampicillin, BCG vaccine, bismuth, calcium salts, carbenicillin, cloxacillin, coumarins, dairy products, desmopressin, digoxin, dong quai, ergotamine, kaolin, methotrexate, methoxyflurane, methysergide, mezlocillin, nafcillin, oral iron, oral typhoid vaccine, oxacillin, penicillins, phenindione, piperacillin, quinapril, retinoids, St John's wort, strontium ranelate, sucralfate, sulfonylureas, ticarcillin, tripotassium dicitratobismuthate, zinc
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Fixed eruption [4]
Photosensitivity (<10%) [19]
Phototoxicity [3]

Nails
Photo-onycholysis [6]

DENILEUKIN

Trade name: Ontak (Ligand)
Indications: Cutaneous T-cell lymphoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 70–80 minutes
Clinically important, potentially hazardous interactions with: BCG vaccine, belimumab, denosumab, leflunomide, natalizumab, pimecrolimus, roflumilast, sipuleucel-T, tacrolimus, trastuzumab, vaccines
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SERIOUS INFUSION REACTIONS, CAPILLARY LEAK SYNDROME AND LOSS OF VISUAL ACUITY

Skin
Diaphoresis (see also hyperhidrosis) (10%)
Edema / fluid retention (see also peripheral edema) (47%) [2]
Hypersensitivity (69%) [2]
Peripheral edema (see also edema) (20–26%)
Pruritus (itching) (16–18%)
Rash (20–24%) [2]

Cardiovascular
Hypotension (7–16%) [2]
Vascular leak syndrome [5]

Central Nervous System
Anorexia (9–20%)
Chills (81%) [3]
Dysgeusia (taste perversion) (11%)
Fever (pyrexia) (includes hyperpyrexia) (49–64%) [3]
Headache (26–29%)
Pain (11–13%)
Paresthesias (13%)
Rigors (42–47%)
Vertigo / dizziness (11–13%)

Endocrine/Metabolic
ALT increased (84%) [2]
AST increased (84%)
Hypoalbuminemia / albumin decreased [2]

Gastrointestinal/Hepatic
Diarrhea (22%)
Nausea (47–60%) [4]
Vomiting (13–35%) [3]

Local
Infusion-site reactions [2]

Neuromuscular/Skeletal
Arthralgia (13–16%)
Asthenia / fatigue (17–47%) [4]
Back pain (16–18%) [2]
Myalgia/Myopathy (18–20%) [2]

Ocular
Vision loss [2]

Respiratory
Cough (18–20%)
Dyspnea / shortness of breath (11–13%)
Influenza- ('flu)-like syndrome [2]
Upper respiratory tract infection (13%)

Other
Adverse effects / adverse reactions [3]
Death [2]
Infection (48%)

DENOSUMAB

Trade names: Prolia (Amgen), Xgeva (Amgen)
Indications: Osteoporosis (postmenopausal women), prevention of skeletal-related events in patients with bone metastases from solid tumors
Class: Bone resorption inhibitor, Monoclonal antibody, RANK ligand (RANKL) inhibitor
Half-life: 25–28 days
Clinically important, potentially hazardous interactions with: abatacept, alcohol, azacitidine, betamethasone, cabazitaxel, denileukin, docetaxel, fingolimod, gefitinib, immuosuppressants, leflunomide, lenalidomide, oxaliplatin, pazopanib, pralatrexate, pralatrexate, temsirolimus, triamcinolone
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with hypocalcemia.

Skin
Cellulitis [9]
Dermatitis [2]
Eczema / eczematous reaction / eczematous eruption [10]
Herpes zoster (2%)
Hypersensitivity [3]
Peripheral edema (see also edema) (5%)
Pruritus (itching) (2%)
Rash (3%) [4]

Cardiovascular
Angina (3%)
Atrial fibrillation (2%)
Cardiotoxicity [2]

Central Nervous System
Headache [3]
Insomnia (3%)
Pain [2]

Vertigo / dizziness (5%)

Endocrine/Metabolic
Hypercalcemia [4]
Hypercholesterolemia (7%) [2]
Hypocalcemia (2%) [42]
Hypophosphatemia [5]

Gastrointestinal/Hepatic
Abdominal pain (3%)
Flatulence (2%)
Gastroesophageal reflux (2%)
Pancreatitis / acute pancreatitis [2]

Genitourinary
Cystitis (6%)

Hematologic
Anemia (3%) [2]

Neuromuscular/Skeletal
Arthralgia [5]
Asthenia / fatigue (2%) [2]
Back pain (35%) [8]
Bone or joint pain (4–8%) [3]
Fractures [10]
Myalgia/Myopathy (3%)
Osteonecrosis / avascular necrosis (jaw) [30]
Pain in extremities (12%) [6]

Respiratory
Nasopharyngitis [2]
Pharyngitis (sore throat) (2%)
Pneumonia (4%)
Upper respiratory tract infection (5%)

Other
Adverse effects / adverse reactions [12]
Death [2]
Infection [14]
Malignancies [2]

DEOXYCHOLIC ACID

Trade name: Kybella (Kythera)
Indications: Improvement in the appearance of moderate to severe convexity or fullness associated with submental fat
Class: Cytolytic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients
Note: Contra-indicated in the presence of infection at the injection sites.

Skin
Lymphadenopathy (<2%)

Mucosal
Oropharyngeal pain (3%)

Cardiovascular
Hypertension (3%)

Central Nervous System
Headache (8%)
Syncope / fainting (<2%)

Gastrointestinal/Hepatic
Dysphagia (2%)
Nausea (2%)

Local
Injection-site bruising (72%) [2]
Injection-site edema [2]
Injection-site erythema (27%)
Injection-site hemorrhage (<2%)
Injection-site induration (23%) [2]
Injection-site nodules (13%)
Injection-site numbness (66%) [2]
Injection-site pain (70%) [2]
Injection-site pigmentation / injection-site discoloration (<2%)
Injection-site pruritus (12%)
Injection-site urticaria (<2%)

Neuromuscular/Skeletal
Neck pain (<2%)

Other
Adverse effects / adverse reactions [2]

DESFLURANE

Trade name: Suprane (Baxter)
Indications: Induction or maintenance of anesthesia
Class: Anesthetic; inhalation
Half-life: 5–12 minutes
Clinically important, potentially hazardous interactions with: tramadol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Cardiovascular
QT interval prolonged / QT prolongation [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]

Respiratory
Cough (34%) [4]

DESIPRAMINE

Trade name: Norpramin (Sanofi-Aventis)
Indications: Depression
Class: Antidepressant; tricyclic, Norepinephrine reuptake inhibitor
Half-life: 7–60 hours
Clinically important, potentially hazardous interactions with: amprenavir, arbutamine, boceprevir, buspirone, cinacalcet, clonidine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, epinephrine, fentanyl, fluoxetine, formoterol, guanethidine, isocarboxazid, linezolid, lithium, MAO inhibitors, mirabegron, phenelzine, quinolones, sparfloxacin, St John's wort, telaprevir, terbinafine, tramadol, tranylcypromine, tricyclic antidepressants, tryptophan, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) (<10%) [2]
Exanthems [5]
Pigmentation (blue-gray) (photosensitive) [3]
Pruritus (itching) [4]
Pseudolymphoma [2]
Purpura [2]
Urticaria / hives [3]

Mucosal
Xerostomia (dry mouth) (>10%) [5]

Central Nervous System
Dysgeusia (taste perversion) (>10%)

Other
Allergic reactions [2]
Side effects [2]

DESLORATADINE

Trade name: Clarinex (Schering)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 27 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Urticaria / hives [2]

Mucosal
Xerostomia (dry mouth) [6]

Central Nervous System
Headache [7]
Seizures [2]
Somnolence (drowsiness) [7]

Gastrointestinal/Hepatic
Diarrhea [2]
Nausea [3]

Neuromuscular/Skeletal
Asthenia / fatigue [8]
Convulsions [2]

Other
Adverse effects / adverse reactions [6]

DESMOPRESSIN

Trade names: DDAVP (Sanofi-Aventis), Minirin (Ferring), Noctiva (Serenity), Stimate (CSL Behring)
Indications: Primary nocturnal enuresis, nocturia due to nocturnal polyuria (Noctiva)
Class: Antidiuretic hormone analog
Half-life: 75 minutes
Clinically important, potentially hazardous interactions with: amitriptyline, citalopram, demeclocycline, hydromorphone, meloxicam, tapentadol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: Noctiva: HYPONATREMIA

Skin
Flushing / rubefaction (<10%)

Cardiovascular
Myocardial infarction [2]

Central Nervous System
Headache [7]
Seizures [5]

Endocrine/Metabolic
Hyponatremia [16]
SIADH [2]

Local
Injection-site pain (<10%)

DESVENLAFAXINE

Trade name: Pristiq (Wyeth)
Indications: Major depressive disorder
Class: Antidepressant, Serotonin-norepinephrine reuptake inhibitor
Half-life: 11 hours
Clinically important, potentially hazardous interactions with: alcohol, aspirin, CNS-active agents, heparin, ketoconazole, linezolid, lithium, MAO inhibitors, NSAIDs, sibutramine, tramadol, venlafaxine, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SUICIDAL THOUGHTS AND BEHAVIORS

Skin
- Hot flashes / hot flushes (<2%)
- Hyperhidrosis (see also diaphoresis) (10–21%)
- Hypersensitivity (2%)
- Rash (<2%)

Mucosal
- Epistaxis (nosebleed) (<2%)
- Xerostomia (dry mouth) (11–25%) [3]

Cardiovascular
- Hypertension (<2%)
- Hypotension (~2%)
- Orthostatic hypotension (<2%)
- Palpitation (<3%)
- Tachycardia (<2%)

Central Nervous System
- Abnormal dreams (2–4%)
- Anorexia (5–8%) [2]
- Anorgasmia (3–8%)
- Anxiety (3–5%)
- Chills (<4%)
- Dysgeusia (taste perversion) (<2%)
- Extrapyramidal symptoms (<2%)
- Headache (20–29%) [3]
- Impaired concentration (<2%)
- Insomnia (9–12%) [3]
- Irritability (2%)
- Nervousness (<2%) [2]
- Paresthesias (<3%)
- Seizures (~2%)
- Somnolence (drowsiness) (4–12%) [4]
- Suicidal ideation [3]
- Syncope / fainting (<2%)
- Tremor (~3%)
- Vertigo / dizziness (10–16%) [5]
- Yawning (<4%)

Endocrine/Metabolic
- Appetite decreased (5–10%)
- Libido decreased (3–6%)
- Weight gain (<2%)
- Weight loss (<2%)

Gastrointestinal/Hepatic
- Constipation (9–14%)
- Diarrhea (5–11%)
- Nausea (22–41%) [7]
- Vomiting (3–9%)

Genitourinary
- Ejaculatory dysfunction (<5%)
- Erectile dysfunction (3–11%)
- Sexual dysfunction (<2%)

Neuromuscular/Skeletal
- Asthenia / fatigue (7–11%) [2]

Ocular
- Mydriasis (2–6%)
- Vision blurred (3–4%)

Otic
- Tinnitus (<2%)

DEUTETRABENAZINE

Trade name: Austedo (Teva)
Indications: Chorea associated with Huntington's disease
Class: Vesicular monoamine transporter 2 inhibitor
Half-life: 9–10 hours
Clinically important, potentially hazardous interactions with: alcohol or other sedating drugs, bupropion, dopamine antagonists or antipsychotics, fluoxetine, MAO inhibitors, paroxetine hydrochloride, quinidine, strong CYP2D6 inhibitors, tetrabenazine
Pregnancy category: N/A (Based on animal data, may cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in suicidal or untreated/inadequately treated depression, in hepatic impairment. or in patients taking MAO inhibitors, reserpine or tetrabenazine.
Warning: DEPRESSION AND SUICIDALITY

Skin
- Hematoma (4%)

Mucosal
- Xerostomia (dry mouth) (9%)

Central Nervous System
- Akathisia [3]
- Anxiety (4%) [4]
- Depression [5]
- Insomnia (7%) [4]
- Parkinsonism [2]
- Somnolence (drowsiness) (11%) [8]
- Suicidal ideation [2]
- Vertigo / dizziness (4%)

Gastrointestinal/Hepatic
- Constipation (4%)
- Diarrhea (9%) [3]

Genitourinary
- Urinary tract infection (7%)

Neuromuscular/Skeletal
- Asthenia / fatigue (9%) [3]

Respiratory
- Nasopharyngitis [2]

DEVIL'S CLAW

Family: Pedaliaceae
Scientific names: *Harpagophytum procumbens, Harpagophytum zeyheri*
Indications: Oral: anorexia, arteriosclerosis, rheumatoid arthritis, GI disorders, fibromyalgia, loss of appetite, headache, fever, high cholesterol, menstrual complaints, liver and gallbladder problems. **Topical:** rash, ulcers
Class: Analgesic, Anti-inflammatory
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: anesthetics, antacids, antiarrhythmics, anticoagulants, aspirin, beta blockers, histamine H_2-antagonists, hypoglycemics, NSAIDs, sympathomimetics, terfenadine
Pregnancy category: N/A
Note: Devil's claw stimulates stomach acid production, and should be avoided by those with stomach or duodenal ulcers. It should not be taken by people with cardiac arrhythmias or other heart problems.

Other
- Adverse effects / adverse reactions [5]

DEXAMETHASONE

Trade names: Decadron (Merck), Dexone (Solvay), Ozurdex (Allergan)
Indications: Antiemetic, arthralgias, dermatoses, diagnostic aid, macular edema following branch retinal vein occlusion (BRVO) or central retinal vein occlusion (CRVO), non-infectious uveitis affecting the posterior segment of the eye
Class: Antiemetic, Corticosteroid / Glucocorticoid, Corticosteroid, systemic, Corticosteroid, topical, Covid-19 putative drug
Half-life: N/A
Clinically important, potentially hazardous interactions with: albendazole, aminoglutethimide, amprenavir, aprepitant, aspirin, bexarotene, boceprevir, carbamazepine, caspofungin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, cyclophosphamide, dasatinib, delavirdine, diuretics, emtricitabine/rilpivirine/tenofovir alafenamide, ephedrine, imatinib, itraconazole, ixabepilone, lapatinib, lenalidomide, live vaccines, lopinavir, methotrexate, midazolam, phenobarbital, phenytoin, praziquantel, primidone, rifampin, rilpivirine, romidepsin, simeprevir, sorafenib, sunitinib, telaprevir, temsirolimus, ticagrelor, vandetanib, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash [6]
- AGEP [2]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
- Cutaneous toxicity / skin toxicity [5]
- Dermatitis [5]
- Edema / fluid retention (see also peripheral edema) [4]
- Erythema multiforme [3]
- Exanthems [4]
- Flushing / rubefaction [5]
- Herpes zoster [2]
- Hyperhidrosis (see also diaphoresis) [2]
- Hypersensitivity [6]
- Peripheral edema (see also edema) [9]
- Pigmentation [2]
- Pruritus (itching) [7]
- Pruritus ani et vulvae [2]
- Rash [11]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Striae [4]
- Xerosis / xeroderma (see also dry skin) [2]

Mucosal
Oral candidiasis [2]
Cardiovascular
Bradycardia / sinus bradycardia [9]
Cardiac failure [2]
Cardiotoxicity [2]
Hypertension [18]
Myocardial toxicity [11]
Tachycardia [2]
Thromboembolism [3]
Venous thromboembolism [5]
Central Nervous System
Anorexia [2]
Catatonia [2]
Dysgeusia (taste perversion) [3]
Fever (pyrexia) (includes hyperpyrexia) [8]
Headache (<5%) [8]
Insomnia [9]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Neuropsychiatric / neuropsychological adverse effect [6]
Neurotoxicity [10]
Paresthesias [2]
Peripheral neuropathy [28]
Psychosis [5]
Somnolence (drowsiness) [2]
Vertigo / dizziness [3]
Endocrine/Metabolic
ALT increased [2]
AST increased [2]
Cushing's syndrome [2]
Dehydration [3]
Hyperglycemia (includes glucose increased) [9]
Hypokalemia [5]
Hypophosphatemia [4]
Serum creatinine increased [2]
Gastrointestinal/Hepatic
Abdominal distension [2]
Abdominal pain [5]
Constipation [11]
Diarrhea [21]
Dyspepsia / functional dyspepsia / gastroparesis [3]
Gastroesophageal reflux [2]
Gastrointestinal disorder / discomfort [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea [12]
Pancreatitis / acute pancreatitis [2]
Vomiting [7]
Hematologic
Anemia [41]
Febrile neutropenia [8]
Hemoglobin decreased [2]
Hemotoxicity [8]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [13]
Leukocytosis (elevated white blood cell (WBC) count) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [12]
Myelosuppression / bone marrow suppression / myelotoxicity [5]
Neutropenia (neutrophils decreased) [54]
Sepsis [3]
Thrombocytopenia [54]
Thrombosis [2]
Local
Infusion-related reactions [2]
Infusion-site reactions [2]
Neuromuscular/Skeletal
Arthralgia [5]
Asthenia / fatigue [45]
Back pain [5]
Bone or joint pain [4]
Muscle spasm [5]
Myalgia/Myopathy [6]
Osteonecrosis / avascular necrosis [17]
Osteoporosis [4]
Ocular
Cataract (<10%) [10]
Conjunctival hemorrhage (>10%)
Glaucoma (includes acute angle-closure glaucoma) [9]
Intraocular pressure increased (>10%) [15]
Ocular adverse effect [2]
Ocular hypertension (<10%) [8]
Ocular pain (<10%) [6]
Vision blurred [3]
Otic
Ototoxicity [4]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure [2]
Tumor lysis syndrome (TLS) [3]
Respiratory
Cough [4]
Dyspnea / shortness of breath [5]
Pneumonia [14]
Pneumonitis [2]
Upper respiratory tract infection [3]
Other
Adverse effects / adverse reactions [21]
Allergic reactions [2]
Death [11]
Hiccups / singultus [20]
Infection [32]
Side effects [3]

DEXCHLORPHENIRAMINE

Trade name: Tanafed (First Horizon)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 20–24 hours
Clinically important, potentially hazardous interactions with: barbiturates, chloral hydrate, ethchlorvynol, glutethimide, phenothiazines, zolpidem
Pregnancy category: B

Mucosal
Xerostomia (dry mouth) (<10%)

DEXIBUPROFEN

Trade names: Actifen (Gebro), Deltaran (Strathmann), Dexoptifen (Spirig), Seractil (Genus)
Indications: Dental pain, dysmenorrhea, muscular pain and osteoarthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: aspirin, celecoxib, citalopram, etoricoxib, fluoxetine, NSAIDs, paroxetine hydrochloride, venlafaxine, warfarin
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

DEXKETOPROFEN

Trade names: Enangel (Topical), Keral (Menarini), Ketesse (Pharmaforte)
Indications: Pain
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Photocontact dermatitis [5]
Gastrointestinal/Hepatic
Nausea [3]
Vomiting [2]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Other
Adverse effects / adverse reactions [2]

DEXLANSOPRAZOLE

Trade name: Dexilant (Takeda)
Indications: Erosive esophagitis, heartburn associated with gastroesophageal reflux disease
Class: Proton pump inhibitor (PPI)
Half-life: <2 hours
Clinically important, potentially hazardous interactions with: atazanavir, clopidogrel, digoxin, emtricitabine/rilpivirine/tenofovir alafenamide, ketoconazole, tacrolimus, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<2%)
Dermatitis (<2%)
Erythema (<2%)
Hot flashes / hot flushes (<2%)
Lesions (<2%)
Lymphadenopathy (<2%)
Pruritus (itching) (<2%)
Rash (<2%)
Urticaria / hives (<2%)
Mucosal
Mucosal inflammation (<2%)
Oral candidiasis (<2%)
Xerostomia (dry mouth) (<2%)
Cardiovascular
Cardiac disorder / cardiac dysfunction (<2%)
Central Nervous System
Headache [3]
Gastrointestinal/Hepatic
Abdominal pain (4%) [5]
Constipation [2]
Diarrhea (5%) [4]
Flatulence (<3%) [3]
Gastrointestinal disorder / discomfort (<2%)
Nausea (3%) [4]
Vomiting (<2%) [2]

Hematologic
Anemia (<2%)
Ocular
Ocular edema (eye edema) (<2%)
Ocular itching / ocular pruritus (<2%)
Otic
Ear pain (<2%)
Tinnitus (<2%)
Respiratory
Upper respiratory tract infection (2–3%) [4]
Other
Adverse effects / adverse reactions [2]

DEXMEDETOMIDINE

Trade name: Precedex (AbbVie)
Indications: Sedation for intensive care unit intubation
Class: Adrenergic alpha-receptor agonist
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: digoxin, opioids
Pregnancy category: C

Mucosal
Xerostomia (dry mouth) [2]
Cardiovascular
Asystole [2]
Bradycardia / sinus bradycardia [30]
Hypotension [22]
Central Nervous System
Delirium [2]
Fever (pyrexia) (includes hyperpyrexia) [9]
Hyperthermia (see also pyrexia / hyperpyrexia) [3]
Pain (3%)
Sedation [2]
Gastrointestinal/Hepatic
Nausea [3]
Vomiting [2]
Genitourinary
Polyuria [3]
Respiratory
Bradypnea / respiratory rate decreased [2]
Other
Infection (2%)

DEXMETHYL-PHENIDATE

Trade name: Focalin (Novartis)
Indications: Attention deficit disorder
Class: Anti-attention deficit hyperactivity disorder (anti-ADHD), CNS stimulant
Half-life: 2–4.5 hours
Clinically important, potentially hazardous interactions with: amitriptyline, clonidine, linezolid, MAO inhibitors, pantoprazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with marked anxiety, tension and agitation, with glaucoma, or with motor tics or history/diagnosis of Tourette's syndrome.

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (5%)
Headache [4]
Endocrine/Metabolic
Appetite decreased [2]
Gastrointestinal/Hepatic
Abdominal pain (15%) [2]

DEXRAZOXANE

Trade names: Cardioxane (Novartis), Zinecard (Pfizer)
Indications: Protective agent against cardiomyopathy, anthracycline-induced extravasation
Class: Cardioprotective agent
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Local
Injection-site pain (12–16%)

DEXTRO-AMPHETAMINE

Trade names: Adderall (Shire), Dexedrine (Alliant), Mydayis (Shire)
Indications: Narcolepsy, attention deficit disorder (ADD)
Class: Amphetamine, CNS stimulant
Half-life: 10–12 hours
Clinically important, potentially hazardous interactions with: fluoxetine, fluvoxamine, MAO inhibitors, paroxetine hydrochloride, phenelzine, sertraline, tranylcypromine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: ABUSE AND DEPENDENCE

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Headache [2]
Insomnia [2]
Endocrine/Metabolic
Appetite decreased [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Neuromuscular/Skeletal
Rhabdomyolysis [10]

DEXTRO-METHORPHAN

Trade names: Robitussin (Wyeth), Vicks Formula 44 (Procter & Gamble)
Indications: Nonproductive cough
Class: Analgesic; narcotic, NMDA receptor antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: amiodarone, citalopram, iloperidone, linezolid, lorcaserin, memantine, moclobemide, phenelzine, rasagiline, safinamide, sibutramine, tranylcypromine, valdecoxib, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Bullous dermatosis [2]
Fixed eruption [2]
Central Nervous System
Headache [3]
Psychosis [2]
Serotonin syndrome [4]
Vertigo / dizziness [4]
Gastrointestinal/Hepatic
Diarrhea [5]
Genitourinary
Urinary tract infection [2]
Neuromuscular/Skeletal
Dystonia [3]
Other
Adverse effects / adverse reactions [2]

DIATRIZOATE

Trade name: Gastrografin (Schering)
Indications: Imaging (gastrointestinal tract)
Class: Contrast agent, Iodine-containing radiocontrast medium
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
Hematologic
Thrombocytopenia [5]
Other
Death [2]

DIAZEPAM

Trade names: Diastat (Xcel), Valium (Roche)
Indications: Anxiety
Class: Benzodiazepine, Skeletal muscle relaxant
Half-life: 20–70 hours
Clinically important, potentially hazardous interactions with: alcohol, amprenavir, barbiturates, buprenorphine, chlorpheniramine, clarithromycin, CNS depressants, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, efavirenz, esomeprazole, eucalyptus, fluoroquinolones, imatinib, indinavir, itraconazole, ivermectin, macrolide antibiotics, MAO inhibitors,

methadone, mianserin, nalbuphine, narcotics, nelfinavir, nilutamide, olanzapine, omeprazole, phenothiazines, propranolol, ritonavir, SSRIs, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Dermatitis (<10%) [3]
Diaphoresis (see also hyperhidrosis) (>10%)
Exanthems [6]
Exfoliative dermatitis [2]
Fixed eruption [2]
Pigmentation [2]
Purpura [4]
Rash (>10%) [2]
Mucosal
Nasal discomfort [3]
Xerostomia (dry mouth) (>10%)
Central Nervous System
Amnesia [17]
Dysgeusia (taste perversion) [2]
Hallucinations [2]
Headache [2]
Sedation [3]
Somnolence (drowsiness) [8]
Vertigo / dizziness [2]
Endocrine/Metabolic
Gynecomastia [4]
Porphyria [2]
Local
Injection-site pain [2]
Injection-site phlebitis (>10%) [2]
Neuromuscular/Skeletal
Ataxia [2]
Other
Adverse effects / adverse reactions [4]
Allergic reactions [2]

DIAZOXIDE

Trade name: Hyperstat (Schering)
Indications: Hypoglycemia, hypertension
Class: Vasodilator
Half-life: 20–36 hours
Clinically important, potentially hazardous interactions with: acarbose, acebutolol, alfuzosin, benazepril, captopril, cilazapril, clevidipine, cyclopenthiazide, diclofenac, enalapril, fosinopril, irbesartan, levodopa, levomepromazine, lisinopril, meloxicam, metformin, olmesartan, phenytoin, quinapril, ramipril, saxagliptin, sitagliptin, trandolapril, triamcinolone, trifluoperazine
Pregnancy category: C

Skin
Edema / fluid retention (see also peripheral edema) [2]
Lichenoid eruption / lichenoid reaction [2]
Hair
Alopecia / hair loss [2]
Hypertrichosis [14]
Endocrine/Metabolic
Hyperglycemia (includes glucose increased) [3]

DICHLORPHENAMIDE

Trade name: Keveyis (Taro)
Other common trade names: Dichlorophenamide
Indications: Glaucoma (Daranide), primary hyperkalemic or hypokalemic periodic paralysis (Keveyis)
Class: Carbonic anhydrase inhibitor
Half-life: 8 minutes
Clinically important, potentially hazardous interactions with: aspirin, cyclosporine, diflunisal, lithium, metformin, primidone, salicylates, salsalate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Rash [2]
Central Nervous System
Cognitive impairment [2]
Depression [2]
Dysgeusia (taste perversion) [3]
Paresthesias [6]
Endocrine/Metabolic
Acidosis (includes lactic acidosis) [3]
Libido decreased [2]
Weight loss [2]
Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis [2]
Ocular
Myopia [2]
Renal
Nephrolithiasis (formation of a kidney stone) [3]

DICLOFENAC

Trade names: Arthrotec (Pfizer), Cataflam (Novartis), Dicolmax (Galen), Motifene (Daiichi Sankyo), Pennsaid (Mallinckrodt), Solaraze Gel (Nycomed), Voltaren (Novartis), Voltarol (Novartis), Zipsor (Depomed)
Indications: Rheumatoid and osteoarthritis, topical treatment of actinic keratosis, postoperative inflammation in patients who have undergone cataract extraction and for the temporary relief of pain and photophobia in patients undergoing corneal refractive surgery
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, adrenergic neurone blockers, aldosterone antagonists, aliskiren, alpha blockers, angiotensin II receptor antagonists, anticoagulants, aspirin, baclofen, beta blockers, calcium channel blockers, cardiac glycosides, clonidine, clopidogrel, corticosteroids, coumarins, cyclosporine, dabigatran, deferiprone, diazoxide, diuretics, enoxaparin, erlotinib, furosemide, heparins, hydralazine, iloprost, ketorolac, lithium, methotrexate, methyldopa, mifamurtide, minoxidil, moxonidine, nitrates, nitroprusside, penicillamine, pentoxifylline, phenindione, potassium canrenoate, prasugrel, rifampin, ritonavir, rivaroxaban, SSRIs, sulfonylureas, tacrolimus, thiazides, tinzaparin, venlafaxine, voriconazole, warfarin, zidovudine
Pregnancy category: D (category B for topical use; category C for oral and ophthalmic use; category D in third trimester.)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
Contra-indicated in patients who have experienced asthma, urticaria, or allergic-type reactions after taking aspirin or other NSAIDs. Severe, rarely fatal, anaphylactic-like reactions to NSAIDs have been reported in such patients. Arthrotec is diclofenac and misoprostol.
Warning: RISK OF SERIOUS CARDIOVASCULAR AND GASTROINTESTINAL EVENTS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<3%) [16]
Angioedema (<3%) [2]
Bullous dermatosis (<3%) [2]
Dermatitis (<3%) [10]
Dermatitis herpetiformis [2]
Eczema / eczematous reaction / eczematous eruption (<3%)
Erythema [4]
Erythema multiforme [6]
Exanthems (<5%) [6]
Fixed eruption [4]
Hypersensitivity [5]
Linear IgA bullous dermatosis [7]
Necrosis (skin necrosis) [2]
Nicolau syndrome [18]
Photosensitivity (<3%) [4]
Pruritus (itching) (<10%) [6]
Purpura (<3%) [2]
Purpura fulminans [2]
Rash (>10%) [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [11]
Urticaria / hives (<3%) [7]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]
Xerosis / xeroderma (see also dry skin) [3]
Hair
Alopecia / hair loss (<3%)
Mucosal
Oral erythema multiforme [2]
Tongue edema (<3%)
Xerostomia (dry mouth) (<3%) [2]
Cardiovascular
Atrial fibrillation [2]
Cardiotoxicity [2]
Myocardial infarction [5]
Central Nervous System
Dysgeusia (taste perversion) (<3%)
Headache [2]
Stroke / cerebral infarction [3]
Vertigo / dizziness [4]
Gastrointestinal/Hepatic
Abdominal pain [8]
Constipation [3]
Diarrhea [4]
Dyspepsia / functional dyspepsia / gastroparesis [7]
Flatulence [2]
Gastritis / pangastritis / gastric irritation [3]
Gastrointestinal bleeding [7]
Gastrointestinal ulceration [4]

Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [10]
Nausea [10]
Vomiting [4]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [3]
Anemia [2]
Bleeding [2]
Hemolytic anemia [8]

Local
Application-site reactions [4]

Neuromuscular/Skeletal
Rhabdomyolysis [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]
Renal failure [2]

Other
Adverse effects / adverse reactions [12]
Allergic reactions [2]
Death [7]

DICLOXACILLIN

Trade name: Dycill (GSK)
Indications: Infections due to penicillinase-producing staphylococci
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 30–60 minutes
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, imipenem/cilastatin, methotrexate, tetracycline, warfarin
Pregnancy category: B

Skin
Urticaria / hives [2]

Cardiovascular
Phlebitis [2]

DICUMAROL

Indications: Atrial fibrillation, pulmonary embolism, venous thrombosis
Class: Coumarin
Half-life: 1–4 days
Clinically important, potentially hazardous interactions with: allopurinol, amiodarone, amobarbital, anabolic steroids, anti-thyroid agents, aprobarbital, aspirin, barbiturates, bivalirudin, butabarbital, butalbital, cimetidine, clofibrate, clopidogrel, cyclosporine, delavirdine, disulfiram, fenofibrate, fluconazole, gemfibrozil, glutethimide, imatinib, itraconazole, ketoconazole, levothyroxine, liothyronine, mephobarbital, methimazole, metronidazole, miconazole, penicillins, pentobarbital, phenobarbital, phenylbutazones, piperacillin, prednisone, primidone, propylthiouracil, quinidine, quinine, rifabutin, rifampin, rifapentine, rofecoxib, salicylates, secobarbital, sulfinpyrazone, sulfonamides, testosterone, zileuton
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Dermatitis [2]
Exanthems [5]
Necrosis (skin necrosis) [10]
Purplish erythema (feet and toes) [2]
Purpura [2]
Urticaria / hives [3]

Hair
Alopecia / hair loss (<10%) [5]

Hematologic
Hemorrhage [3]

DICYCLOMINE

Trade name: Bentyl (Aptalis)
Indications: Irritable bowel syndrome
Class: Anticholinergic, Muscarinic antagonist
Half-life: initial: 1.8 hours; terminal: 9–10 hours
Clinically important, potentially hazardous interactions with: antacids, anticholinergics, antiglaucoma agents, arbutamine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Exanthems [2]
Rash [2]
Xerosis / xeroderma (see also dry skin) (>10%)

Mucosal
Xerostomia (dry mouth) (33%) [2]

Central Nervous System
Nervousness (6%)
Somnolence (drowsiness) (9%)
Vertigo / dizziness (40%) [2]

Gastrointestinal/Hepatic
Constipation [2]
Nausea (14%)

Local
Injection-site reaction (>10%)

Neuromuscular/Skeletal
Asthenia / fatigue (7%)

Ocular
Vision blurred (27%)

DIDANOSINE

Trade name: Videx (Bristol-Myers Squibb)
Indications: Advanced HIV infection
Class: Antiretroviral, Nucleoside analog reverse transcriptase inhibitor
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: acetaminophen, amprenavir, ciprofloxacin, corticosteroids, dapsone, darunavir, febuxostat, gemifloxacin, indinavir, itraconazole, ketoconazole, levofloxacin, lomefloxacin, lopinavir, moxifloxacin, norfloxacin, ofloxacin, ribavirin, ribavirin, sulfones, tenofovir disoproxil, tetracycline, tipranavir, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Warning: PANCREATITIS, LACTIC ACIDOSIS and HEPATOMEGALY with STEATOSIS

Skin
Erythema multiforme [2]
Lipodystrophy [2]
Pruritus (itching) (9%)
Rash (9%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]

Mucosal
Xerostomia (dry mouth) [4]

Cardiovascular
Myocardial infarction [2]

Central Nervous System
Neurotoxicity [4]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [6]
Diabetes mellitus [2]
Gynecomastia [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Non-cirrhotic portal hypertension [5]
Pancreatitis / acute pancreatitis [23]

Ocular
Retinopathy [3]

Renal
Fanconi syndrome [5]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Death [3]

DIETHYLPROPION

Synonym: amfepramone
Trade name: Tenuate (Sanofi-Aventis)
Indications: Weight reduction
Class: Amphetamine
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: fluoxetine, fluvoxamine, linezolid, MAO inhibitors, paroxetine hydrochloride, phenelzine, sertraline, tranylcypromine
Pregnancy category: B

Skin
Scleroderma (see also morphea / localized scleroderma) [2]

Mucosal
Xerostomia (dry mouth) [2]

Central Nervous System
Insomnia [2]
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Constipation [2]

DIFLUNISAL

Trade name: Dolobid (Merck)
Indications: Rheumatoid and osteoarthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 8–12 hours
Clinically important, potentially hazardous interactions with: acemetacin, dichlorphenamide, indomethacin
Pregnancy category: C
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Diaphoresis (see also hyperhidrosis) [2]
Erythema multiforme [5]

Erythroderma [2]
Exanthems [4]
Fixed eruption [2]
Pruritus (itching) (<10%) [3]
Rash (3–9%) [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [10]
Urticaria / hives [6]

Other
Adverse effects / adverse reactions [3]

DIGOXIN

Trade name: Lanoxin (Concordia)
Indications: Congestive heart failure, atrial fibrillation
Class: Antiarrhythmic class IV, Cardiac glycoside, Inotrope
Half-life: 36–48 hours
Clinically important, potentially hazardous interactions with: acarbose, alprazolam, amiodarone, amphotericin B, arbutamine, atorvastatin, azithromycin, bendroflumethiazide, benzthiazide, bisacodyl, boceprevir, bosutinib, bumetanide, canagliflozin, captopril, carbimazole, chlorothiazide, chlorthalidone, cholestyramine, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, conivaptan, cyclopenthiazide, cyclosporine, cyclothiazide, darifenacin, darunavir, demeclocycline, dexlansoprazole, dexmedetomidine, doxycycline, dronedarone, erythromycin, eslicarbazepine, esomeprazole, ethacrynic acid, etravirine, everolimus, ezogabine, fingolimod, flibanserin, flunisolide, furosemide, glycopyrrolate, glycopyrronium, hydrochlorothiazide, hydroflumethiazide, indapamide, indinavir, itraconazole, lapatinib, lenalidomide, liraglutide, lomustine, lopinavir, meloxicam, mepenzolate, metformin, methyclothiazide, metolazone, milnacipran, minocycline, mirabegron, neratinib, nifedipine, nilotinib, omeprazole, oxprenolol, oxytetracycline, pantoprazole, paricalcitol, paroxetine hydrochloride, pemetrexed, phenylbutazone, polythiazide, ponesimod, posaconazole, propafenone, propantheline, quinethazone, quinidine, quinine, rabeprazole, rifampin, roxithromycin, sitagliptin, sodium picosulfate, sorafenib, sotorasib, St John's wort, sunitinib, telaprevir, telithromycin, temozolomide, temsirolimus, teriparatide, tetracycline, thalidomide, thiazide diuretics, ticagrelor, tipranavir, tolvaptan, trichlormethiazide, trimethoprim, troglitazone, tucatinib, ulipristal, valbenazine, venetoclax, verapamil, vibegron, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: This is the pure form of Digitalis. Contra-indicated in ventricular fibrillation.

Skin
Cutaneous toxicity / skin toxicity [5]
Exanthems (2%) [2]
Psoriasis [2]

Cardiovascular
Arrhythmias [7]
Atrial fibrillation [4]
Bradycardia / sinus bradycardia [4]
Tachycardia [2]

Central Nervous System
Anorexia [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]

Endocrine/Metabolic
Gynecomastia [2]

Gastrointestinal/Hepatic
Nausea [4]
Vomiting [2]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Ocular
Dyschromatopsia (green) [6]

Other
Death [5]

DIHYDROERGOTAMINE

Trade names: D.H.E. 45 (Xcel), Migranal (Xcel)
Indications: Prevention of vascular headaches
Class: Ergot alkaloid
Half-life: 1.3–3.9 hours
Clinically important, potentially hazardous interactions with: almotriptan, amprenavir, boceprevir, ceritinib, clarithromycin, crizotinib, darunavir, dasatinib, delavirdine, efavirenz, eletriptan, eluxadoline, enzalutamide, erythromycin, fosamprenavir, frovatriptan, indinavir, itraconazole, itraconazole, letermovir, methylergonovine, mifepristone, naratriptan, nelfinavir, nilotinib, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, posaconazole, ribociclib, ritonavir, rizatriptan, saquinavir, sibutramine, sumatriptan, telaprevir, telithromycin, tipranavir, troleandomycin, zolmitriptan
Pregnancy category: X

Skin
Edema / fluid retention (see also peripheral edema) (>10%)
Necrosis (skin necrosis) [3]

Mucosal
Xerostomia (dry mouth) (>10%)

Central Nervous System
Amnesia [2]
Dysgeusia (taste perversion) [2]
Headache [5]
Paresthesias (>10%)
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Nausea [3]

Neuromuscular/Skeletal
Leg cramps [4]

DIHYDROTACHYSTEROL

Trade names: DHT (Roxane), Hytakerol (Sanofi-Aventis)
Indications: Hypocalcemia associated with hypoparathyroidism
Class: Vitamin D receptor agonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Pruritus (itching) (<10%)

DILTIAZEM

Trade names: Cardizem (Biovail), Dilacor XR (Watson), Teczem (Sanofi-Aventis), Tiazac (Forest)
Indications: Angina, essential hypertension
Class: Antiarrhythmic class IV, Calcium channel blocker, CYP3A4 inhibitor
Half-life: 5–8 hours (for extended-release capsules)
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, amiodarone, amitriptyline, amprenavir, aprepitant, atazanavir, atenolol, atorvastatin, avanafil, bisoprolol, bosentan, carbamazepine, celiprolol, cilostazol, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, copanlisib, corticosteroids, cyclosporine, deflazacort, delavirdine, dronedarone, dutasteride, efavirenz, epirubicin, erythromycin, fingolimod, flibanserin, ivabradine, ivabradine, lumateperone, lurasidone, midostaurin, mifepristone, moricizine, naldemedine, naloxegol, neratinib, nevirapine, nifedipine, olaparib, oxprenolol, ponesimod, posaconazole, ranolazine, silodosin, simvastatin, sonidegib, sulpiride, telaprevir, venetoclax, voclosporin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Teczem is diltiazem and enalapril.

Skin
AGEP [21]
Angioedema [3]
Cutaneous toxicity / skin toxicity [2]
Diaphoresis (see also hyperhidrosis) [2]
Edema / fluid retention (see also peripheral edema) (<10%) [4]
Erythema [2]
Erythema multiforme (<31%) [11]
Exanthems [17]
Exfoliative dermatitis [6]
Flushing / rubefaction (<10%) [6]
Hyperpigmentation (see also pigmentation) [2]
Hypersensitivity [2]
Leg ulceration [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Palmar–plantar desquamation [2]
Peripheral edema (see also edema) (5–8%)
Photosensitivity [12]
Phototoxicity [2]
Pigmentation [10]
Pruritus (itching) [6]
Psoriasis [3]
Purpura [3]
Pustules / pustular eruption [2]
Rash [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Thickening [2]
Toxic erythema [2]
Urticaria / hives [5]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [6]

Hair
Alopecia / hair loss [2]
Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth (21%) [10]
Xerostomia (dry mouth) [2]
Cardiovascular
Atrial fibrillation [2]
Bradycardia / sinus bradycardia [8]
Cardiogenic shock [2]
Hypotension [2]
QT interval prolonged / QT prolongation [2]
Central Nervous System
Dysgeusia (taste perversion) [2]
Parkinsonism [3]
Somnolence (drowsiness) [2]
Neuromuscular/Skeletal
Rhabdomyolysis [4]
Other
Side effects [2]

DIMENHYDRINATE

Trade name: Dramamine (Pfizer)
Indications: Motion sickness, dizziness, nausea, vomiting
Class: Antiemetic, Cholinesterase absorption inhibitor
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Fixed eruption [12]
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Somnolence (drowsiness) [5]

DIMERCAPROL

Synonym: British anti-Lewisite
Trade name: BAL (Taylor)
Indications: Heavy metal poisoning (arsenic, gold, mercury, lead)
Class: Antidote, Chelator
Half-life: N/A
Clinically important, potentially hazardous interactions with: ferric maltol, ferrous sulfate, insulin, iron, selenium
Pregnancy category: C
Note: As an antidote, it is difficult to differentiate side effects due to the drug from those due to the effects of the poison.

DIMETHYL FUMARATE

Synonyms: dimethyl (E) butenedioate; BG-12
Trade names: Fumaderm (Biogen Idec), Tecfidera (Biogen Idec)
Indications: Relapsing forms of multiple sclerosis, psoriasis
Class: Fumaric acid ester
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Fumaderm is mixed dimethyl fumarate and monoethylfumarate salts.

Skin
Contact dermatitis (from topical contact) [14]
Erythema (5%) [2]
Flushing / rubefaction (40%) [34]
Pruritus (itching) (8%) [6]
Rash (8%) [2]
Central Nervous System
Headache [3]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [6]
Endocrine/Metabolic
AST increased (4%) [3]
Gastrointestinal/Hepatic
Abdominal pain (18%) [13]
Diarrhea (14%) [10]
Dyspepsia / functional dyspepsia / gastroparesis (5%) [2]
Gastrointestinal disorder / discomfort [7]
Nausea [7]
Vomiting (9%) [3]
Genitourinary
Albuminuria (6%)
Urinary tract infection [2]
Hematologic
Hemotoxicity [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (2%) [16]
Neuromuscular/Skeletal
Asthenia / fatigue [4]
Renal
Proteinuria [2]
Respiratory
Nasopharyngitis [2]
Other
Adverse effects / adverse reactions (gastrointestinal) [20]
Infection [2]

DINOPROSTONE

Trade names: Cervidel (Forest), Prepidil (Pfizer)
Indications: Pregnancy termination, uterine content evacuation, cervical ripening
Class: Prostaglandin
Half-life: 2.5–5 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Note: Dinoprostone is the naturally occurring form of Prostaglandin E2 (PGE2).

DIPHENHYDRAMINE

Trade name: Benadryl (Pfizer)
Indications: Allergic rhinitis, urticaria
Class: Antiemetic, Histamine H1 receptor antagonist, Muscarinic antagonist
Half-life: 2–8 hours
Clinically important, potentially hazardous interactions with: alcohol, anticholinergics, chloral hydrate, CNS depressants, glutethimide, MAO inhibitors
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Contact dermatitis [2]
Cutaneous toxicity / skin toxicity [2]
Dermatitis [4]
Eczema / eczematous reaction / eczematous eruption [2]
Fixed eruption [4]
Photosensitivity [3]
Pruritus (itching) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Mucosal
Xerostomia (dry mouth) (<10%)
Cardiovascular
QT interval prolonged / QT prolongation [5]
Torsades de pointes [3]
Central Nervous System
Delirium [3]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Sedation [2]
Seizures [2]
Somnolence (drowsiness) [7]
Neuromuscular/Skeletal
Dystonia [2]
Rhabdomyolysis [5]
Other
Death [4]

DIPHENOXYLATE

Trade name: Lomotil (Pfizer)
Indications: Diarrhea
Class: Antimotility, Opioid agonist
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: oxybutynin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Diphenoxylate is almost always prescribed with atropine sulfate.

Mucosal
Xerostomia (dry mouth) (3%)

DIPYRIDAMOLE

Trade names: Aggrenox (Boehringer Ingelheim), Persantine (Boehringer Ingelheim)
Indications: Thromboembolic complications following cardiac valve replacement
Class: Adenosine reuptake inhibitor, Antiplatelet
Half-life: 10–12 hours
Clinically important, potentially hazardous interactions with: adenosine, ceftobiprole, clopidogrel, enoxaparin, fondaparinux, regadenoson, reteplase, riociguat, tinzaparin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Aggrenox is dipyridamole and aspirin.

Skin
Flushing / rubefaction (3%)
Rash (2%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Central Nervous System
Headache [4]
Other
Adverse effects / adverse reactions [3]

DIRITHROMYCIN

Trade name: Dynabac (Muro)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; macrolide, Antimicrobial
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: pimozide, warfarin
Pregnancy category: C

Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea [2]
Nausea [3]

DISOPYRAMIDE

Trade name: Norpace (Pfizer)
Indications: Ventricular arrhythmias
Class: Antiarrhythmic, Antiarrhythmic class Ia, Muscarinic antagonist
Half-life: 4–10 hours
Clinically important, potentially hazardous interactions with: acebutolol, amiodarone, amisulpride, amitriptyline, arsenic, artemether/lumefantrine, astemizole, atenolol, bisoprolol, celiprolol, ciprofloxacin, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, darifenacin, degarelix, dronedarone, droperidol, enoxacin, erythromycin, gatifloxacin, gliclazide, glycopyrrolate, glycopyrronium, insulin aspart, insulin degludec, insulin glargine, insulin glulisine, itraconazole, ketoconazole, levomepromazine, lomefloxacin, lurasidone, metformin, moxifloxacin, nevirapine, nilotinib, norfloxacin, ofloxacin, oxprenolol, oxybutynin, pimavanserin, quinine, quinolones, ribociclib, rifapentine, roxithromycin, sildenafil, sotalol, sparfloxacin, sulpiride, tadalafil, telithromycin, tiotropium, trospium, vandetanib, vardenafil, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis (<3%)
Edema / fluid retention (see also peripheral edema) (<3%)
Exanthems (<5%)
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Pruritus (itching) (<3%)
Rash (generalized) (<3%)
Mucosal
Oral lesions (40%)
Xerostomia (dry mouth) (32%) [2]
Cardiovascular
Chest pain (<3%)
Hypotension (<3%)
QT interval prolonged / QT prolongation [8]
Torsades de pointes [13]
Central Nervous System
Anorexia (<3%)
Headache (3–9%)
Nervousness (<3%)
Syncope / fainting (<3%)
Vertigo / dizziness (3–9%)
Endocrine/Metabolic
Hypocalcemia [3]
Hypoglycemia (see also insulin autoimmune syndrome) [4]
Hypokalemia (<3%)
Weight gain (<3%)
Gastrointestinal/Hepatic
Abdominal pain (3–9%)
Constipation (11%) [2]
Diarrhea (<3%)
Nausea (3–9%)
Vomiting (<3%)
Genitourinary
Impotence (<3%)
Urinary hesitancy (14%)
Urinary retention (3–9%)
Neuromuscular/Skeletal
Asthenia / fatigue (3–9%)
Ocular
Vision blurred (3–9%)
Xerophthalmia (dry eyes) (3–9%)
Respiratory
Dyspnea / shortness of breath (<3%)

DISTIGMINE

Trade name: Ubretid (Sanofi)
Indications: Post-operative urinary retention, post operative ileus and intestinal atony, adjunct in the treatment of myasthenia gravis
Class: Acetylcholine inhibitor
Half-life: N/A
Clinically important, potentially hazardous interactions with: beta blockers, local anesthetics, muscle relaxants
Pregnancy category: C

Cardiovascular
Bradycardia / sinus bradycardia [2]

DISULFIRAM

Trade name: Antabuse (Odyssey)
Indications: Alcoholism
Class: Antialcoholism, Antioxidant
Half-life: N/A
Clinically important, potentially hazardous interactions with: acenocoumarol, alcohol, amitriptyline, anisindione, anticoagulants, benznidazole, clobazam, cyclosporine, dicumarol, dronabinol, ethanolamine, ethotoin, fosphenytoin, lopinavir, mephenytoin, metronidazole, omeprazole, oxtriphylline, phenytoin, thalidomide, tipranavir, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
Bullous dermatosis [2]
Dermatitis [17]
Eczema / eczematous reaction / eczematous eruption [2]
Exanthems [2]
Fixed eruption [2]
Flushing / rubefaction (with alcohol) [5]
Rash (<10%)
Recall reaction (nickel) [4]
Urticaria / hives [3]
Mucosal
Halitosis [2]
Cardiovascular
Hypertension [2]
Hypotension [2]
Polyarteritis nodosa [2]
Tachycardia [2]
Central Nervous System
Dysgeusia (taste perversion) (metallic or garlic aftertaste) (<10%)
Neurotoxicity [7]
Psychosis [5]
Seizures [3]
Somnolence (drowsiness) [2]
Vertigo / dizziness [2]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Ocular
Optic neuropathy [2]
Other
Adverse effects / adverse reactions [2]

DOCETAXEL

Trade name: Taxotere (Sanofi-Aventis)
Indications: Metastatic breast cancer, non-small cell lung cancer, with prednisone in hormone refractory prostate cancer, with cisplatin and fluorouracil for gastric adenocarcinoma and squamous cell carcinoma of the head and neck
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Taxane
Half-life: 11–18 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, anthracyclines, antifungals, aprepitant, BCG vaccine, conivaptan, cyclosporine, CYP3A4 inhibitors or inducers, dasatinib, deferasirox, denosumab, echinacea, erythromycin, itraconazole, ketoconazole, lapatinib, leflunomide, natalizumab, P-glycoprotein inhibitors or inducers, pimecrolimus, prednisone, ritonavir, sipuleucel-T, sorafenib, St John's wort, tacrolimus, thalidomide, trastuzumab, vaccines, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with hypersensitivity to docetaxel or polysorbate 80, or with neutrophil counts of <1500 cells/mm^3.
Warning: TOXIC DEATHS, HEPATOTOXICITY, NEUTROPENIA, HYPERSENSITIVITY REACTIONS, and FLUID RETENTION

Skin
AGEP [2]

Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Cutaneous toxicity / skin toxicity (20–48%) [10]
Edema / fluid retention (see also peripheral edema) (34%) [24]
Erythema [4]
Exanthems [3]
Facial erythema [2]
Flagellate erythema/pigmentation [3]
Flushing / rubefaction [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [48]
Hypersensitivity (6%) [15]
Peripheral edema (see also edema) [9]
Photosensitivity [6]
Pigmentation [2]
Psoriasis [3]
Radiation recall dermatitis [18]
Rash [13]
Recall reaction [3]
Scleroderma (see also morphea / localized scleroderma) [9]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Thrombocytopenic purpura [2]
Xerosis / xeroderma (see also dry skin) [2]

Hair
Alopecia / hair loss (56–76%) [33]

Nails
Beau's lines (transverse nail bands) [3]
Discoloration / nails (dyschromia) [2]
Leukonychia striata (Mees' lines) [2]
Melanonychia [2]
Nail changes [18]
Nail disorder (11–41%) [2]
Nail loss [3]
Nail pigmentation [7]
Onycholysis [15]
Onychopathy [2]
Paronychia [5]
Pyogenic granuloma [2]
Subungual abscess [2]
Subungual hematoma / subungual hemorrhage [2]
Subungual hyperkeratosis [2]
Transverse superficial loss of nail plate [2]

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [2]
Mucosal inflammation [2]
Mucositis [15]
Stomatitis (oral mucositis) (19–53%) [26]

Cardiovascular
Capillary leak syndrome [2]
Cardiotoxicity [2]
Hypertension [10]
Hypotension (3%)
Thromboembolism [2]

Central Nervous System
Anorexia [13]
Dysesthesia (4%)
Dysgeusia (taste perversion) (6%) [7]
Fever (pyrexia) (includes hyperpyrexia) (31–35%) [8]
Headache [2]
Mood changes [2]
Neurotoxicity [20]
Pain [5]
Paresthesias (4%) [3]
Peripheral neuropathy [13]
Vertigo / dizziness [2]

Endocrine/Metabolic
ALP increased (4–7%)
ALT increased [5]
Amenorrhea [4]
Appetite decreased [4]
AST increased [4]
Dehydration [2]
Hyperglycemia (includes glucose increased) [3]
Hypomagnesemia [2]
Hyponatremia [4]
Hypophosphatemia [3]

Gastrointestinal/Hepatic
Abdominal pain [4]
Constipation [3]
Diarrhea (23–43%) [50]
Dysphagia [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (34–42%) [31]
Vomiting (22–23%) [23]

Hematologic
Anemia (65–94%) [26]
Febrile neutropenia (6%) [56]
Granulocytopenia [2]
Hemolytic uremic syndrome [3]
Hemotoxicity [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (84–99%) [36]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [5]
Myelosuppression / bone marrow suppression / myelotoxicity [5]
Neutropenia (neutrophils decreased) (84–99%) [97]
Thrombocytopenia (8–14%) [14]

Local
Injection-site erythema [2]
Injection-site extravasation [3]
Injection-site pigmentation / injection-site discoloration [3]
Injection-site reaction [2]

Neuromuscular/Skeletal
Arthralgia (3–9%) [3]
Asthenia / fatigue (53–66%) [66]
Bone or joint pain [2]
Myalgia/Myopathy (3–23%) [14]

Ocular
Epiphora [8]
Lacrimal duct stenosis / punctal stenosis [2]

Respiratory
Acute respiratory distress syndrome [2]
Cough [2]
Dyspnea / shortness of breath [5]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [16]
Pleural effusion [2]
Pneumonia [3]
Pneumonitis [10]
Pulmonary embolism [2]
Pulmonary toxicity (41%) [4]
Respiratory failure [2]
Upper respiratory tract infection [3]

Other
Adverse effects / adverse reactions [6]
Allergic reactions [2]
Death [21]
Infection (<34%) [9]

DOCOSANOL

Trade name: Abreva (GSK)
Indications: Herpes simplex (labialis)
Class: Antiviral; topical
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

DOCUSATE

Trade names: Colase (Purdue), Peri-Colase (Purdue), Surfak (Pfizer)
Indications: Constipation
Class: Stimulant laxative
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

DOFETILIDE

Trade name: Tikosyn (Pfizer)
Indications: Conversion of atrial fibrillation and atrial flutter to normal sinus rhythm
Class: Antiarrhythmic, Antiarrhythmic class III
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: atazanavir, bictegravir/emtricitabine/tenofovir alafenamide, chlorpromazine, cimetidine, co-trimoxazole, degarelix, dolutegravir, fluphenazine, hydrochlorothiazide, itraconazole, ketoconazole, medroxyprogesterone, megestrol, mesoridazine, phenothiazines, prochlorperazine, progestins, promethazine, quinine, ranolazine, thioridazine, trifluoperazine, trilaciclib, trimethoprim, vandetanib, verapamil, voriconazole, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with congenital or acquired long QT syndromes.

Skin
Angioedema (<2%)
Diaphoresis (see also hyperhidrosis) (>2%)
Edema / fluid retention (see also peripheral edema) (<2%)
Peripheral edema (see also edema) (>2%)
Rash (3%)

Cardiovascular
Arrhythmias [2]
Atrioventricular block (<2%)
Chest pain (10%)
QT interval prolonged / QT prolongation [12]
Torsades de pointes (<11%) [30]
Ventricular fibrillation (<5%)
Ventricular tachycardia (3–13%) [2]

Central Nervous System
Headache (11%)
Insomnia (4%)
Paresthesias (<2%)
Vertigo / dizziness (8%)

Gastrointestinal/Hepatic
Abdominal pain (3%)
Diarrhea (3%)
Nausea (5%)

Neuromuscular/Skeletal
Back pain (3%)
Respiratory
Dyspnea / shortness of breath (6%)
Influenza- ('flu)-like syndrome (4%)
Upper respiratory tract infection (7%)

DOLASETRON

Trade name: Anzemet (Sanofi-Aventis)
Indications: Prevention of nausea and vomiting
Class: 5-HT3 antagonist, Serotonin type 3 receptor antagonist (CCR5 co-receptor antagonist)
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: alfuzosin, apomorphine, artemether/lumefantrine, chloroquine, ciprofloxacin, conivaptan, dronedarone, gadobutrol, indacaterol, nilotinib, pimozide, QT prolonging agents, quetiapine, quinine, tetrabenazine, thioridazine, tocilizumab, toremifene, vandetanib, vemurafenib, ziprasidone
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Skin
Diaphoresis (see also hyperhidrosis) (<2%)
Edema / fluid retention (see also peripheral edema) (<2%)
Peripheral edema (see also edema) (<2%)
Pruritus (itching) (3%)
Rash (<2%)
Cardiovascular
Bradycardia / sinus bradycardia (4–5%)
Hypertension (2%)
Hypotension (5%)
QT interval prolonged / QT prolongation [5]
Tachycardia (2–3%)
Torsades de pointes [2]
Central Nervous System
Chills (<2%)
Fever (pyrexia) (includes hyperpyrexia) (4%)
Headache (7–22%) [13]
Pain (3%)
Shivering (<2%)
Vertigo / dizziness (<4%) [8]
Gastrointestinal/Hepatic
Constipation (<2%)
Diarrhea (2–5%)
Dyspepsia / functional dyspepsia / gastroparesis (2–3%)
Genitourinary
Oliguria (3%)
Neuromuscular/Skeletal
Asthenia / fatigue (3–6%)

DOLUTEGRAVIR

Trade names: Juluca (ViiV), Tivicay (ViiV), Triumeq (ViiV)
Indications: HIV-1 infection
Class: Antiretroviral, Integrase strand transfer inhibitor
Half-life: ~14 hours
Clinically important, potentially hazardous interactions with: dofetilide
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Triumeq is dolutegravir, abacavir and lamivudine. Juluca is dolutegravir and rilpivirine.

Skin
Hypersensitivity [5]
Pruritus (itching) (<2%)
Rash [3]
Central Nervous System
Abnormal dreams [2]
Headache (<2%) [18]
Insomnia (<3%) [4]
Neuropsychiatric / neuropsychological adverse effect [2]
Neurotoxicity [2]
Endocrine/Metabolic
ALT increased (<2%) [3]
AST increased (<3%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<4%)
Hyperglycemia (includes glucose increased) (5–7%)
Serum creatinine increased [3]
Gastrointestinal/Hepatic
Abdominal pain (<2%)
Diarrhea [16]
Flatulence (<2%)
Hepatitis (<2%)
Nausea [16]
Vomiting (<2%)
Neuromuscular/Skeletal
Asthenia / fatigue (<2%) [3]
Myalgia/Myopathy (<2%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (<2%)
Respiratory
Nasopharyngitis [4]
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [7]
Neural tube defects [3]

DOMPERIDONE

Trade name: Motilium (Johnson & Johnson)
Indications: Investigational antiemetic, gastroesophageal reflux disease (GERD), nausea, vomiting
Class: Antiemetic, Dopamine receptor antagonist
Half-life: 7–8 hours
Clinically important, potentially hazardous interactions with: bromocriptine, darifenacin, hydromorphone, ketoconazole, meptazinol, oxybutynin, tiotropium, trospium
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Mucosal
Xerostomia (dry mouth) [2]
Cardiovascular
Cardiotoxicity [3]
QT interval prolonged / QT prolongation [15]
Ventricular arrhythmia [3]
Central Nervous System
Headache [2]
Neuroleptic malignant syndrome [2]
Tardive syndrome / tardive dyskinesia [2]
Endocrine/Metabolic
Galactorrhea [6]
Gynecomastia [5]
Other
Death [6]

DONEPEZIL

Trade names: Aricept (Eisai), Aricept Evess (Eisai)
Indications: Mild, moderate and severe dementia of the Alzheimer's type
Class: Acetylcholinesterase inhibitor, Cholinesterase inhibitor, Parasympathomimetic
Half-life: 50–70 hours
Clinically important, potentially hazardous interactions with: anticholinergics, cholinergic agonists, galantamine, non-depolarising muscle relaxants, ramelteon, succinylcholine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with known hypersensitivity to donepezil hydrochloride or to piperidine derivatives.

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (4–5%)
Diaphoresis (see also hyperhidrosis) [2]
Eczema / eczematous reaction / eczematous eruption (3%)
Purpura (<10%)
Cardiovascular
Atrioventricular block [2]
Bradycardia / sinus bradycardia [7]
Chest pain (2%)
Hypertension [2]
Hypotension (3%)
QT interval prolonged / QT prolongation [4]
Torsades de pointes [2]
Central Nervous System
Abnormal dreams (3%) [3]
Agitation [2]
Anorexia (4–8%) [6]
Confusion (2%) [3]
Delirium [2]
Depression (2–3%) [3]
Emotional lability (2%)
Fever (pyrexia) (includes hyperpyrexia) (3%)
Gait instability / postural instability [2]
Hallucinations (3%)
Headache (4–10%) [7]
Hostility (3%)
Insomnia (5–9%) [5]
Mania [2]
Nervousness (3%)
Neuroleptic malignant syndrome [2]
Pain (3–9%)
Parkinsonism [2]
Somnolence (drowsiness) (2%) [2]
Syncope / fainting (2%) [5]
Tremor [3]
Vertigo / dizziness (2–8%) [7]
Endocrine/Metabolic
Appetite decreased [4]

Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (3%)
Dehydration (2%)
Hyperlipidemia (2%)
Weight loss (3%)

Gastrointestinal/Hepatic
Constipation [3]
Diarrhea (10%) [14]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea (6–11%) [18]
Vomiting (5–8%) [11]

Genitourinary
Enuresis (urinary incontinence) (2%)
Urinary frequency (2%) [2]
Urinary tract infection [3]

Hematologic
Hemorrhage (2%)

Neuromuscular/Skeletal
Arthralgia (2%)
Asthenia / fatigue (5%) [4]
Back pain (3%)
Dystonia [2]
Muscle spasm [2]
Myoclonus [2]
Pisa syndrome (pleurothotonus) [2]

Other
Adverse effects / adverse reactions [10]
Infection (11%)

DONG QUAI

Family: Umbelliferae; Apioideae
Scientific name: *Angelica sinensis (Angelica polymorpha sinensis)*
Indications: Menopausal symptoms, PMS, menstrual disorders, anemia, constipation, insomnia, rheumatism, neuralgia, hypertension, hypopigmentation, psoriasis
Class: Immunomodulator, Phytoestrogen
Half-life: N/A
Clinically important, potentially hazardous interactions with: acetaminophen, bexarotene, demeclocycline, gemifloxacin
Pregnancy category: N/A
Note: Some recent research has questioned the efficacy of Dong Quai, and also suggested that it may be a potential carcinogen.

Endocrine/Metabolic
Gynecomastia [2]

DOPAMINE

Trade name: Intropin (Hospira)
Indications: Hemodynamic imbalances present in shock
Class: Adrenergic alpha-receptor agonist, Catecholamine, Inotropic sympathomimetic
Half-life: 2 minutes
Clinically important, potentially hazardous interactions with: ethotoin, fosphenytoin, furazolidone, lurasidone, MAO inhibitors, mephenytoin, phenelzine, phenytoin, quetiapine, tranylcypromine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Cardiovascular
QT interval prolonged / QT prolongation [2]

Local
Injection-site extravasation [2]
Injection-site necrosis [3]

DORIPENEM

Trade name: Doribax (Ortho-McNeil)
Indications: Complicated infections
Class: Antibiotic, Antibiotic; carbapenem, Antimicrobial
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: BCG vaccine, oral typhoid vaccine, probenecid, valproic acid
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Pruritus (itching) (<3%)
Rash (3%) [3]

Central Nervous System
Headache (16%) [4]
Seizures [3]

Endocrine/Metabolic
ALT increased (2%)
AST increased (2%)

Gastrointestinal/Hepatic
Diarrhea [4]
Nausea [3]

Genitourinary
Vulvovaginalmycotic infection (2%)

Hematologic
Anemia (2–5%)

DORZOLAMIDE

Trade names: Cosopt (Merck), Trusopt (Banyu)
Indications: Glaucoma, ocular hypertension
Class: Carbonic anhydrase inhibitor, Diuretic
Half-life: ~4 months
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Dorzolamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Cosopt is dorzolamide and timolol.

Skin
Contact dermatitis [4]

Central Nervous System
Dysgeusia (taste perversion) (25%) [9]

Ocular
Ocular burning (33%) [5]
Ocular itching / ocular pruritus [5]
Ocular pain [3]
Ocular stinging [10]
Vision blurred [3]

Other
Adverse effects / adverse reactions [2]

DOXACURIUM

Trade name: Nuromax (GSK)
Indications: Neuromuscular blockade
Class: Non-depolarizing neuromuscular blocker
Half-life: 100–200 minutes
Clinically important, potentially hazardous interactions with: amikacin, aminoglycosides, carbamazepine, cyclopropane, enflurane, gentamicin, halothane, isoflurane, kanamycin, methoxyflurane, neomycin, piperacillin, streptomycin, tobramycin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

DOXAPRAM

Trade name: Dopram (Baxter)
Indications: Chronic obstructive pulmonary disease, drug-induced CNS depression
Class: Analeptic
Half-life: N/A
Clinically important, potentially hazardous interactions with: linezolid
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Cardiovascular
QT interval prolonged / QT prolongation [2]

Other
Adverse effects / adverse reactions [2]

DOXAZOSIN

Trade name: Cardura (Pfizer)
Indications: Hypertension
Class: Adrenergic alpha-receptor antagonist
Half-life: 19–22 hours
Clinically important, potentially hazardous interactions with: tadalafil, vardenafil, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Skin
Edema / fluid retention (see also peripheral edema) (4%)
Exanthems (2%)

Mucosal
Xerostomia (dry mouth) (2%) [2]

Cardiovascular
Hypotension [3]
Orthostatic hypotension [2]
Postural hypotension [2]

Central Nervous System
Headache [2]
Vertigo / dizziness [9]

Gastrointestinal/Hepatic
Abdominal pain [2]

Genitourinary
Erectile dysfunction [3]

Neuromuscular/Skeletal
Asthenia / fatigue [4]

Ocular
Floppy iris syndrome [3]

DOXEPIN

Trade names: Adapin (LGM Pharma), Silenor (Somaxon), Sinquan (Pfizer)
Indications: Mental depression, anxiety, insomnia
Class: Antidepressant; tricyclic, Muscarinic antagonist
Half-life: 6–8 hours
Clinically important, potentially hazardous interactions with: alcohol, amprenavir, arbutamine, cholestyramine, clonidine, CNS depressants, epinephrine, formoterol, guanethidine, isocarboxazid, linezolid, MAO inhibitors, phenelzine, QT prolonging agents, quinolones, ramelteon, selegiline, sparfloxacin, sympathomimetics, tranylcypromine
Pregnancy category: C (pregnancy category is B for topical use)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Dermatitis (from topical) [9]
Diaphoresis (see also hyperhidrosis) (<10%)
Pseudolymphoma [2]
Mucosal
Xerostomia (dry mouth) (>10%) [6]
Cardiovascular
QT interval prolonged / QT prolongation [2]
Central Nervous System
Dysgeusia (taste perversion) (>10%)
Headache [4]
Somnolence (drowsiness) [7]

DOXERCALCIFEROL

Trade name: Hectorol (Genzyme)
Indications: Secondary hyperparathyroidism in patients with chronic kidney disease on dialysis
Class: Vitamin D receptor agonist
Half-life: 32–37 hours
Clinically important, potentially hazardous interactions with: aminoglutethimide, cholestyramine, erythromycin, ketoconazole, magnesium-containing antacids, mineral oil, phenobarbital
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a tendency towards hypercalcemia or current evidence of vitamin D toxicity.

Skin
Abscess (3%)
Edema / fluid retention (see also peripheral edema) (34%)
Pruritus (itching) (8%)
Cardiovascular
Bradycardia / sinus bradycardia (7%)
Central Nervous System
Anorexia (5%)
Headache (28%)
Sleep-related disorder (3%)
Vertigo / dizziness (12%)
Endocrine/Metabolic
Weight gain (5%)
Gastrointestinal/Hepatic
Constipation (3%)
Dyspepsia / functional dyspepsia / gastroparesis (5%)
Nausea (21%)
Vomiting (21%)
Neuromuscular/Skeletal
Arthralgia (5%)
Asthenia / fatigue (28%)
Respiratory
Dyspnea / shortness of breath (12%)

DOXORUBICIN

Synonym: hydroxydaunomycin
Trade names: Adriamycin (Bedford), Doxil (Tibotec), Rubex (Mead Johnson)
Indications: Carcinomas, leukemias, sarcomas
Class: Antibiotic, Antibiotic; anthracycline, Antimicrobial
Half-life: 20–48 hours
Clinically important, potentially hazardous interactions with: aldesleukin, cabazitaxel, CYP2D6 inhibitors or inducers, CYP3A4 inhibitors or inducers, gadobenate, P-glycoprotein inhibitors or inducers, paclitaxel, sorafenib, stavudine, trastuzumab, zidovudine
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: CARDIOMYOPATHY, SECONDARY MALIGNANCIES, EXTRAVASATION AND TISSUE NECROSIS, and SEVERE MYELOSUPPRESSION

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema [5]
Cutaneous toxicity / skin toxicity [12]
Erythema [2]
Exanthems [4]
Exfoliative dermatitis [2]
Flushing / rubefaction (<10%) [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [64]
Hypersensitivity [2]
Intertrigo [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Necrosis (skin necrosis) (local) [5]
Palmar–plantar erythema (painful) [4]
Pigmentation [15]
Pruritus (itching) [2]
Purpura [2]
Radiation recall dermatitis [8]
Rash [6]
Urticaria / hives [10]
Hair
Alopecia / hair loss (>10%) [41]
Nails
Beau's lines [3]
Melanonychia [4]
Muehrcke's lines [2]
Nail changes [2]
Nail pigmentation [17]
Onycholysis [5]
Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [2]
Mucositis [19]
Oral lesions [7]
Stomatitis (oral mucositis) (>10%) [22]
Tongue pigmentation [3]
Cardiovascular
Atrial fibrillation [2]
Cardiomyopathy [6]
Cardiotoxicity [21]
Chest pain [2]
Congestive heart failure [7]
Myocardial toxicity [4]
Central Nervous System
Anorexia [3]
Dysgeusia (taste perversion) [2]
Fever (pyrexia) (includes hyperpyrexia) [5]
Headache [3]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [4]
Neurotoxicity [4]
Pain [2]
Peripheral neuropathy [7]
Endocrine/Metabolic
ALT increased [3]
Amenorrhea [2]
Hyperglycemia (includes glucose increased) [3]
Hypokalemia [2]
Weight loss [2]
Gastrointestinal/Hepatic
Constipation [4]
Diarrhea [9]
Gastrointestinal perforation / perforated colon / gastric perforation [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea [16]
Pancreatitis / acute pancreatitis [2]
Vomiting [12]
Hematologic
Anemia [19]
Febrile neutropenia [19]
Hemorrhage [2]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [6]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) [38]
Thrombocytopenia [22]
Local
Injection-site erythema [7]
Injection-site extravasation (>10%) [12]
Injection-site necrosis (>10%) [5]
Injection-site reaction [2]
Injection-site ulceration (>10%) [4]
Neuromuscular/Skeletal
Asthenia / fatigue [19]
Bone or joint pain [3]
Myalgia/Myopathy [3]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Dyspnea / shortness of breath [3]
Pneumonia [4]
Pneumonitis [3]
Other
Adverse effects / adverse reactions [6]
Allergic reactions [4]
Death [11]
Infection [5]

DOXYCYCLINE

Trade names: Adoxa (Bioglan), Doryx (Warner Chilcott), Oracea (Galderma), Vibra-Tabs (Pfizer), Vibramycin-D (Pfizer)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; tetracycline, Antimicrobial
Half-life: 12–22 hours
Clinically important, potentially hazardous interactions with: acitretin, amoxicillin, ampicillin, antacids, bacampicillin, barbiturates, BCG vaccine, bismuth, calcium salts, carbamazepine, carbenicillin, cloxacillin, corticosteroids, coumarins, cyclosporine, dairy products, digoxin, ergotamine, kaolin, methotrexate, methoxyflurane, methysergide, mezlocillin, nafcillin, oral contraceptives, oral iron, oral typhoid vaccine, oxacillin, penicillins, phenindione, phenytoin, piperacillin, primidone, quinapril, retinoids, rifampin, St John's wort, strontium ranelate, sucralfate, sulfonylureas, ticarcillin, tripotassium dicitratobismuthate, zinc
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- AGEP [2]
- Angioedema [2]
- Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
- Candidiasis / candidosis [3]
- Erythema multiforme [4]
- Exanthems [2]
- Fixed eruption [11]
- Hypersensitivity [2]
- Photosensitivity [21]
- Phototoxicity [9]
- Pigmentation [5]
- Pruritus (itching) [3]
- Rash [5]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [9]
- Sweet's syndrome [2]
- Urticaria / hives [6]

Nails
- Photo-onycholysis [13]

Mucosal
- Black tongue / black hairy tongue (lingua villosa nigra) [2]
- Mucosal candidiasis [2]

Central Nervous System
- Anosmia (smell loss) / smell disorder (see also hyposmia) [2]
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Headache [4]
- Intracranial pressure increased (intracranial hypertension) (see also pseudotumor cerebri) [3]
- Paresthesias [4]
- Vertigo / dizziness [3]

Endocrine/Metabolic
- Hypoglycemia (see also insulin autoimmune syndrome) [2]

Gastrointestinal/Hepatic
- Abdominal pain [3]
- Diarrhea [4]
- Esophagitis [5]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
- Nausea [5]
- Pancreatitis / acute pancreatitis [12]
- Ulcerative esophagitis [2]
- Vomiting [3]

Genitourinary
- Vaginitis (includes vulvitis) [2]

Neuromuscular/Skeletal
- Myalgia/Myopathy [2]

Other
- Adverse effects / adverse reactions [6]
- Allergic reactions [3]
- Tooth pigmentation / discoloration (>10%) [6]

DRONABINOL

Synonyms: tetrahydrocannabinol; THC
Trade names: Marinol (AbbVie), Syndros (Insys)
Indications: Chemotherapy-induced nausea, anorexia associated with weight loss in patients with AIDS
Class: Antiemetic, Cannabinoid
Half-life: 19–24 hours
Clinically important, potentially hazardous interactions with: disulfiram, metronidazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Mucosal
- Xerostomia (dry mouth) (<10%)

Central Nervous System
- Euphoria / elation (<10%)
- Paranoia (<10%)
- Somnolence (drowsiness) (<10%) [2]
- Vertigo / dizziness (<10%) [6]

Gastrointestinal/Hepatic
- Abdominal pain (<10%)
- Nausea (<10%) [3]
- Vomiting (<10%)

Other
- Adverse effects / adverse reactions [4]

DRONEDARONE

Trade name: Multaq (Sanofi-Aventis)
Indications: Atrial fibrillation and atrial flutter
Class: Antiarrhythmic, Antiarrhythmic class III
Half-life: 13–19 hours
Clinically important, potentially hazardous interactions with: amiodarone, amitriptyline, amoxapine, antiarrhythmics, antipsychotics prolonging QT interval, arsenic, atorvastatin, beta blockers, bupivacaine, calcium channel blockers, carbamazepine, citalopram, clarithromycin, conivaptan, coumarins, cyclosporine, CYP3A inducers, dabigatran, darunavir, dasatinib, degarelix, delavirdine, digoxin, diltiazem, disopyramide, dolasetron, efavirenz, erythromycin, fingolimod, grapefruit juice, indinavir, itraconazole, ketoconazole, lapatinib, levobupivacaine, levofloxacin, levomepromazine, metoprolol, moxifloxacin, nefazodone, neratinib, nifedipine, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, oxcarbazepine, pazopanib, phenindione, phenobarbital, phenothiazines, phenytoin, posaconazole, prilocaine, propranolol, rifampin, rifapentine, ritonavir, ropivacaine, rosuvastatin, saquinavir, simvastatin, sirolimus, sotalol, St John's wort, statins, tacrolimus, telavancin, telithromycin, tricyclic antidepressants, venetoclax, verapamil, voriconazole, vorinostat, warfarin, ziprasidone
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: INCREASED RISK OF DEATH, STROKE AND HEART FAILURE IN PATIENTS WITH DECOMPENSATED HEART FAILURE OR PERMANENT ATRIAL FIBRILLATION

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
- Dermatitis (5%)
- Eczema / eczematous reaction / eczematous eruption (5%)
- Erythema (5%)
- Phototoxicity [2]
- Pruritus (itching) (5%)
- Rash (5%) [8]

Cardiovascular
- Arrhythmias [3]
- Bradycardia / sinus bradycardia (3%) [8]
- Cardiac failure (new or worsening) [9]
- Cardiotoxicity [3]
- Congestive heart failure [2]
- QT interval prolonged / QT prolongation (28%) [10]
- Torsades de pointes [3]

Central Nervous System
- Vertigo / dizziness [2]

Endocrine/Metabolic
- Serum creatinine increased (51%) [6]

Gastrointestinal/Hepatic
- Abdominal pain (4%) [2]
- Diarrhea (9%) [14]
- Dyspepsia / functional dyspepsia / gastroparesis (2%)
- Gastrointestinal disorder / discomfort [4]
- Hepatic failure [5]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [9]
- Nausea (5%) [12]
- Vomiting (2%) [6]

Neuromuscular/Skeletal
- Asthenia / fatigue (7%) [3]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
- Renal failure [2]

Respiratory
- Pulmonary toxicity [9]

Other
- Adverse effects / adverse reactions [3]
- Death [2]
- Side effects [2]

DROPERIDOL

Trade names: Inapsine (Akorn), Xomolix (ProStrakan)
Indications: Tranquilizer and antiemetic in surgical procedures
Class: Antiemetic, Antipsychotic, Butyrophenone
Half-life: 2.3 hours
Clinically important, potentially hazardous interactions with: amiodarone, amisulpride, amitriptyline, arsenic, atomoxetine, azithromycin, chloroquine, CNS depressants, cyclobenzaprine, disopyramide, duloxetine, eszopiclone, fluoxetine, fluvoxamine, hydromorphone, hydroxychloroquine, levomepromazine, lurasidone, macrolides, metaxalone, milnacipran, moxifloxacin, paliperidone, pentamidine, pimozide, QT prolonging agents, quinine, ramelteon, sertraline, sotalol, sulpiride, tamoxifen, tapentadol, thiopental, tiagabine, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with known or suspected QT prolongation.
This product is not available in the European market.
Warning: QT PROLONGATION AND TORSADE DE POINTES

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Angioedema [2]
Cardiovascular
Arrhythmias [2]
Hypotension [3]
QT interval prolonged / QT prolongation [13]
Torsades de pointes [6]
Central Nervous System
Akathisia [5]
Extrapyramidal symptoms [2]
Neuroleptic malignant syndrome [2]
Restlessness [2]
Sedation [2]
Neuromuscular/Skeletal
Dystonia [7]
Other
Death [3]

DROTRECOGIN ALFA

Trade name: Xigris (Lilly)
Indications: Severe sepsis
Class: Recombinant protein C
Half-life: 1.6 hours
Clinically important, potentially hazardous interactions with: abciximab, cilostazol, citalopram, clopidogrel, enoxaparin, eptifibatide, meloxicam, tinzaparin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: This drug has been withdrawn.

Skin
Purpura (>10%)
Hematologic
Bleeding [8]

DROXIDOPA

Synonym: L-DOPS
Trade name: Northera (Chelsea Therapeutics)
Indications: Neurogenic orthostatic hypotension
Class: Amino acid analog (synthetic)
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SUPINE HYPERTENSION

Cardiovascular
Hypertension (2–7%)
Central Nervous System
Gait instability / postural instability (15%) [2]
Headache (6–15%) [3]
Syncope / fainting (13%)
Vertigo / dizziness (4–10%) [2]
Gastrointestinal/Hepatic
Nausea (2–9%)
Genitourinary
Urinary tract infection (15%) [2]

DULAGLUTIDE

Trade name: Trulicity (Lilly)
Indications: To improve glycemic control in adults with Type II diabetes mellitus
Class: Antidiabetic, Glucagon-like peptide-1 (GLP-1) receptor agonist
Half-life: 5 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a personal or family history of medullary thyroid carcinoma or in patients with multiple endocrine neoplasia syndrome Type 2.
Warning: RISK OF THYROID C-CELL TUMORS

Cardiovascular
Atrioventricular block (2%)
Tachycardia (3–6%)
Central Nervous System
Headache [3]
Endocrine/Metabolic
Appetite decreased (5–9%) [3]
Hypoglycemia (see also insulin autoimmune syndrome) [3]
Gastrointestinal/Hepatic
Abdominal distension [2]
Abdominal pain (7–9%)
Constipation [5]
Diarrhea [24]
Dyspepsia / functional dyspepsia / gastroparesis (4–6%) [3]
Gastrointestinal adverse reaction [2]
Gastrointestinal disorder / discomfort [3]
Nausea (12–21%) [27]
Pancreatitis / acute pancreatitis [4]
Vomiting (6–13%) [19]
Local
Injection-site reaction [5]
Neuromuscular/Skeletal
Asthenia / fatigue (4–6%)
Respiratory
Nasopharyngitis [7]
Other
Adverse effects / adverse reactions (gastrointestinal) [5]

DULOXETINE

Trade names: Cymbalta (Lilly), Yentreve (Lilly)
Indications: Depression
Class: Antidepressant, Noradrenaline reuptake inhibitor, Serotonin reuptake inhibitor
Half-life: 8–17 hours
Clinically important, potentially hazardous interactions with: 5HT1 agonists, alcohol, amitriptyline, artemether/lumefantrine, aspirin, atomoxetine, cimetidine, ciprofloxacin, citalopram, clomipramine, CYP1A2 inducers, CYP2D6 inhibitors and substrates, darunavir, droperidol, enoxacin, fesoterodine, fluoxetine, fluvoxamine, iobenguane, levomepromazine, MAO inhibitors, meperidine, moclobemide, naratriptan, nebivolol, NSAIDs, paroxetine hydrochloride, PEG-interferon, quinidine, sibutramine, SSRIs, St John's wort, tamoxifen, teriflunomide, thioridazine, tramadol, tricyclic antidepressants, tryptophan, venlafaxine, viloxazine, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SUICIDAL THOUGHTS AND BEHAVIORS

Skin
Diaphoresis (see also hyperhidrosis) (6%) [2]
Flushing / rubefaction (3%)
Hot flashes / hot flushes (>2%)
Hyperhidrosis (see also diaphoresis) (7%) [8]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Mucosal
Oropharyngeal pain (>2%)
Xerostomia (dry mouth) (13%) [25]
Cardiovascular
Palpitation (>2%)
Central Nervous System
Agitation (5%)
Anxiety (3%)
Dyskinesia [2]
Headache (14%) [11]
Insomnia (10%) [13]
Paresthesias (>2%)
Restless legs syndrome [2]
Serotonin syndrome [5]
Somnolence (drowsiness) (10%) [18]
Suicidal ideation [5]
Tardive syndrome / tardive dyskinesia [4]
Tremor (3%)
Vertigo / dizziness (10%) [17]
Yawning (>2%) [2]
Endocrine/Metabolic
ALT increased [2]
Appetite decreased (8–9%) [3]
Hyponatremia [6]

Libido decreased (4%)
SIADH [6]
Weight loss (>2%)

Gastrointestinal/Hepatic
Abdominal pain (>2%)
Colitis [2]
Constipation (10%) [12]
Diarrhea (9%) [6]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (rare) [4]
Nausea (24%) [27]
Vomiting (>2%) [4]

Genitourinary
Ejaculatory dysfunction (2–5%)
Priapism [2]
Sexual dysfunction [6]

Neuromuscular/Skeletal
Arthralgia (>2%)
Asthenia / fatigue (10%) [15]
Back pain (>2%)
Bone or joint pain (4%)
Muscle spasm (3%)

Ocular
Vision blurred (>2%)

Renal
Renal disorder [2]

Respiratory
Cough (>2%)
Influenza (3%)
Nasopharyngitis (5%)
Upper respiratory tract infection (4%)

Other
Adverse effects / adverse reactions [13]
Bruxism (teeth grinding) [3]
Death [2]
Side effects [2]

DUPILUMAB

Trade name: Dupixent (Regeneron)
Indications: Moderate-to-severe atopic dermatitis
Class: Interleukin-4 receptor alpha antagonist, Monoclonal antibody
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

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Skin
Facial erythema [2]
Herpes simplex (2%) [2]
Psoriasis [4]

Hair
Alopecia / hair loss [2]

Mucosal
Oral candidiasis (4%)

Central Nervous System
Headache [6]

Gastrointestinal/Hepatic
Pancreatitis / acute pancreatitis [2]

Hematologic
Eosinophilia [6]

Local
Injection-site reaction (10%) [16]

Ocular
Blepharoconjunctivitis [6]
Conjunctivitis (conjunctival inflammation) (10%) [19]
Ectropion / cicatricial ectropion [3]
Ocular adverse effect [3]
Ocular surface disorder / ocular surface disease [8]

Respiratory
Nasopharyngitis [10]
Upper respiratory tract infection [3]

Other
Adverse effects / adverse reactions [2]
Infection [2]

DURVALUMAB

Trade name: Imfinzi (AstraZeneca)
Indications: Locally advanced or metastatic urothelial carcinoma in patients having disease progression following platinum-containing chemotherapy
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Immune checkpoint inhibitor, Monoclonal antibody, Programmed death-ligand (PD-L1) inhibitor
Half-life: 17 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Skin
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Peripheral edema (see also edema) (15%)
Pruritus (itching) [3]
Psoriasis [2]
Rash (11%) [2]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (14%)

Endocrine/Metabolic
ALP increased (4%)
Appetite decreased (19%) [4]
AST increased (2%) [4]
Diabetes mellitus [2]
Diabetic ketoacidosis [2]
Hypercalcemia (3%)
Hyperglycemia (includes glucose increased) (3%)
Hypermagnesemia (4%)
Hyperthyroidism (5–6%)
Hyponatremia (12%)
Hypothyroidism (6–10%) [2]
Thyroiditis [3]

Gastrointestinal/Hepatic
Abdominal pain (14%)
Colitis (13%) [3]
Constipation (21%)
Diarrhea (13%) [11]
Hepatitis [2]
Nausea (16%) [3]
Vomiting [3]

Genitourinary
Urinary tract infection (15%)

Hematologic
Anemia (8%) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (11%)
Thrombocytopenia [3]

Local
Infusion-related reactions (2%)

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue (39%) [11]
Bone or joint pain (24%)
Myalgia/Myopathy [3]
Myasthenia gravis [3]

Respiratory
Cough (10%)
Dyspnea / shortness of breath (13%)
Pneumonitis (2%) [6]

Other
Adverse effects / adverse reactions [4]
Death [6]
Infection (30–38%)

DUTASTERIDE

Trade names: Avodart (GSK), Jalyn (GSK)
Indications: Benign prostatic hyperplasia, male pattern baldness (anecdotal)
Class: 5-alpha reductase inhibitor, Androgen antagonist
Half-life: 3–5 weeks
Clinically important, potentially hazardous interactions with: cimetidine, ciprofloxacin, conivaptan, darunavir, delavirdine, diltiazem, indinavir, ketoconazole, ritonavir, telithromycin, troleandomycin, verapamil, voriconazole
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Jalyn is dutasteride and tamsulosin.

Endocrine/Metabolic
Gynecomastia [2]
Libido decreased (<3%) [3]

Genitourinary
Ejaculatory dysfunction [3]
Erectile dysfunction [8]
Impotence (<5%)
Sexual dysfunction [7]

Other
Adverse effects / adverse reactions [2]

ECHINACEA

Family: Asteraceae; Compositae
Scientific names: *Echinacea angustifola, Echinacea pallida, Echinacea purpurea*
Indications: Colds, upper respiratory infections, peripheral vasodilator, urinary tract infections, yeast infections, ulcers, psoriasis, herpes simplex, septicemia, boils, abscesses, rheumatism, migraine, dyspepsia, eczema, bee stings and hemorrhoids
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: abatacept, alefacept, amiodarone, azacitidine, betamethasone, cabazitaxel, corticosteroids, cyclosporine, docetaxel, gefitinib, ketoconazole, leflunomide, methotrexate, pralatrexate
Pregnancy category: N/A

Note: Individuals with atopy may be more likely to experience an allergic reaction when taking echinacea.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Angioedema [2]
Rash [3]
Urticaria / hives [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Ocular
Ocular adverse effect [2]
Other
Adverse effects / adverse reactions [10]
Allergic reactions [2]

ECONAZOLE

Trade name: Gyno-Pervaryl (Janssen)
Indications: Fungal infections caused by Mycotic vulvovaginitis, Mycotic balanitis, *Candida albicans*
Class: Antifungal / antimycotic, Antifungal; imidazole, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: acenocoumarol, condoms, contraceptive diaphragms, imidazole, warfarin
Pregnancy category: C

Skin
Contact dermatitis [2]

ECULIZUMAB

Trade name: Soliris (Alexion)
Indications: Paroxysmal nocturnal hemoglobinuria, atypical hemolytic uremic syndrome
Class: Complement inhibitor, Covid-19 putative drug, Monoclonal antibody
Half-life: ~12 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SERIOUS MENINGOCOCCAL INFECTIONS

Skin
Peripheral edema (see also edema) [2]
Pruritus (itching) [2]
Mucosal
Nasal congestion [2]
Cardiovascular
Hypertension [2]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [4]
Headache (44%) [9]
Insomnia [2]
Meningococcal infection [4]
Vertigo / dizziness [3]
Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [4]
Nausea [5]
Vomiting [3]
Genitourinary
Urinary tract infection [3]
Hematologic
Anemia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neuromuscular/Skeletal
Asthenia / fatigue (12%) [5]
Back pain (19%) [3]
Pain in extremities [3]
Respiratory
Cough (12%) [5]
Nasopharyngitis (23%) [6]
Pharyngolaryngeal pain [2]
Upper respiratory tract infection [4]
Other
Adverse effects / adverse reactions [2]

EDARAVONE

Trade name: Radicava (Mitsubishi Tanabe Pharma)
Indications: Amyotrophic lateral sclerosis
Class: Antioxidant
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (May cause fetal toxicity based on findings in animal studies)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Radicava contains sodium bisulfite which may cause allergic type reactions.

Skin
Dermatitis (8%) [2]
Eczema / eczematous reaction / eczematous eruption (7%) [3]
Hematoma (15%) [3]
Tinea (4%) [2]
Central Nervous System
Gait instability / postural instability (13%) [3]
Headache (10%) [3]
Insomnia [2]
Gastrointestinal/Hepatic
Constipation [2]
Diarrhea [2]
Dysphagia [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Genitourinary
Glycosuria (4%) [3]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Hypoxia (see also hypoxemia) (6%)
Nasopharyngitis [2]
Respiratory failure (6%) [3]
Other
Adverse effects / adverse reactions [3]

EDOXABAN

Trade name: Savaysa (Daiichi Sankyo)
Indications: Reduce the risk of stroke and systemic embolism in patients with nonvalvular atrial fibrillation, treatment of deep vein thrombosis and pulmonary embolism
Class: Direct factor Xa inhibitor
Half-life: 10–14 hours
Clinically important, potentially hazardous interactions with: anticoagulants, rifampin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with active pathological bleeding.
Warning: REDUCED EFFICACY IN NONVALVULAR ATRIAL FIBRILLATION PATIENTS WITH CRCL>95ml/min, ISCHEMIC EVENTS ON PREMATURE DISCONTINUATION and SPINAL/EPIDURAL HEMATOMA

Skin
Rash (4%)
Mucosal
Epistaxis (nosebleed) (5%)
Gingival bleeding [2]
Oral bleeding (3%)
Gastrointestinal/Hepatic
Diarrhea [2]
Gastrointestinal bleeding (4%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (5–8%) [2]
Genitourinary
Hematuria (2%) [2]
Hematologic
Anemia (2–10%)
Bleeding (>5%) [13]
Other
Adverse effects / adverse reactions [4]

EFAVIRENZ

Trade names: Atripla (Gilead), Sustiva (Bristol-Myers Squibb)
Indications: HIV infection
Class: Antiretroviral, CYP1A2 inhibitor, CYP3A4 inducer, Non-nucleoside reverse transcriptase inhibitor
Half-life: 52–76 hours
Clinically important, potentially hazardous interactions with: alcohol, alprazolam, amprenavir, aripiprazole, artesunate, atazanavir, atorvastatin, atovaquone, avapritinib, benzodiazepines, bepridil, boceprevir, bortezomib, brentuximab vedotin, budesonide, buprenorphine, bupropion, carbamazepine, carvedilol, caspofungin, chlordiazepoxide, cisapride, citalopram, clarithromycin, clonazepam, clopidogrel, clorazepate, CNS depressants, cobimetinib, colchicine, conivaptan, crizotinib, cyclosporine, CYP2B6 inhibitors and inducers, CYP2C19 substrates, CYP2C9 substrates, CYP3A4 substrates and inducers, darunavir, dasatinib, deferasirox, deflazacort, diazepam, dihydroergotamine, diltiazem, doravirine, dronedarone, elbasvir & grazoprevir, enzalutamide, eplerenone, ergot, etravirine,

everolimus, exemestane, fentanyl, finerenone, flurazepam, fosamprenavir, fosphenytoin, gefitinib, glecaprevir & pibrentasvir, grapefruit juice, guanfacine, halofantrine, hydroxyzine, ibrexafungerp, imatinib, indinavir, itraconazole, ixabepilone, lapatinib, lemborexant, levomepromazine, levonorgestrel, linagliptin, lopinavir, lorazepam, lovastatin, lumateperone, lurasidone, maraviroc, methadone, methysergide, midazolam, mifepristone, neratinib, nevirapine, nifedipine, nilotinib, nisoldipine, olaparib, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, oral contraceptives, oxazepam, paclitaxel, palbociclib, pazopanib, phenytoin, pimecrolimus, pimozide, posaconazole, pravastatin, praziquantel, progestogens, propafenone, protease inhibitors, quazepam, raltegravir, ranolazine, rifabutin, rifampin, rilpivirine, ritonavir, rivaroxaban, roflumilast, romidepsin, salmeterol, saquinavir, saxagliptin, sertraline, simeprevir, simvastatin, sirolimus, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, sonidegib, sorafenib, SSRIs, St John's wort, sunitinib, tacrolimus, tadalafil, telaprevir, temazepam, ticagrelor, tipranavir, tocilizumab, tolvaptan, toremifene, triazolam, ulipristal, vandetanib, vemurafenib, venetoclax, vilazodone, vitamin K antagonists, voriconazole, warfarin, zuclopenthixol
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Atripla is efavirenz, emtricitabine and tenofovir disoproxil.

Skin
- Cutaneous toxicity / skin toxicity [2]
- DRESS syndrome [2]
- Eczema / eczematous reaction / eczematous eruption (<2%)
- Erythema (11%)
- Exanthems (27%) [3]
- Exfoliative dermatitis (<2%)
- Flushing / rubefaction (<2%)
- Folliculitis (<2%)
- Hot flashes / hot flushes (<2%)
- Hypersensitivity [5]
- Lipodystrophy [2]
- Peripheral edema (see also edema) (<2%)
- Photosensitivity [5]
- Pruritus (itching) (11%)
- Rash (26%) [16]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
- Urticaria / hives (<2%)

Hair
- Alopecia / hair loss (<2%)

Mucosal
- Xerostomia (dry mouth) (<2%)

Cardiovascular
- Thrombophlebitis (<2%)

Central Nervous System
- Abnormal dreams (<3%) [9]
- Aggression (includes anger) [2]
- Anorexia (<2%)
- Anxiety (13%) [4]
- Depression (19%) [9]
- Dysgeusia (taste perversion) (<2%)
- Hallucinations [2]
- Headache (2–8%) [3]
- Impaired concentration (3–5%) [5]
- Insomnia (7%) [4]
- Nervousness (7%)
- Neuropsychiatric / neuropsychological adverse effect [2]
- Neurotoxicity [14]
- Nightmares [3]
- Pain (<13%)
- Paresthesias (<2%)
- Parosmia (<2%)
- Psychosis [7]
- Sleep-related disorder [2]
- Somnolence (drowsiness) (2%) [3]
- Suicidal ideation [5]
- Tremor (<2%)
- Vertigo / dizziness (2–9%) [15]

Endocrine/Metabolic
- ALT increased [2]
- Dyslipidemia [2]
- Gynecomastia [15]

Gastrointestinal/Hepatic
- Abdominal pain (2–3%)
- Diarrhea (3–14%) [2]
- Dyspepsia / functional dyspepsia / gastroparesis (4%)
- Hepatic failure [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [13]
- Nausea (2–10%) [3]
- Vomiting (3–6%)

Genitourinary
- Urolithiasis [3]

Neuromuscular/Skeletal
- Asthenia / fatigue (2–8%) [3]
- Myalgia/Myopathy (<2%)

Other
- Adverse effects / adverse reactions [10]
- Teratogenicity [4]

EFINACONAZOLE

Trade name: Jublia (Valeant)
Indications: Onychomycosis
Class: Antifungal / antimycotic, Antifungal; triazole, Antimicrobial
Half-life: 30 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Nails
- Onychocryptosis (ingrowing toe nail) (2%)

Local
- Application-site dermatitis (2%)
- Application-site reactions [5]
- Application-site vesicles (2%)

EFLORNITHINE

Trade name: Vaniqa (Women First)
Indications: Sleeping sickness, hypertrichosis
Class: Ornithine decarboxylase inhibitor
Half-life: 3–3.5 hours (intravenous); 8 hours (topical)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (24%)
- Burning / skin burning sensation (4%)
- Facial edema (3%)
- Pruritus (itching) (4%) [2]
- Rash (3%)
- Stinging (8%)
- Xerosis / xeroderma (see also dry skin) (2%)

Hair
- Alopecia / hair loss (5–10%)
- Ingrown (2%)
- Pseudofolliculitis barbae (5–15%)

Central Nervous System
- Headache (5%)
- Paresthesias (4%)
- Seizures (7%) [2]
- Vertigo / dizziness (<10%)

Gastrointestinal/Hepatic
- Diarrhea (<10%)
- Vomiting (<10%)

Hematologic
- Eosinophilia (<10%)

Otic
- Hearing impairment (<10%)

ELBASVIR & GRAZOPREVIR

Trade name: Zepatier (Merck)
Indications: Chronic hepatitis C virus genotypes 1 or 4 (with or without ribavirin)
Class: Direct-acting antiviral, Hepatitis C virus NS3/4A protease inhibitor (grazoprevir), Hepatitis C virus NS5A inhibitor (elbasvir)
Half-life: 24 hours (elbasvir); 31 hours (grazoprevir)
Clinically important, potentially hazardous interactions with: atazanavir, atorvastatin, bosentan, carbamazepine, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, cyclosporine, darunavir, efavirenz, fluvastatin, ketoconazole, lopinavir, lovastatin, modafinil, moderate CYP3A inducers, nafcillin, OATP1B1/3 inhibitors, phenytoin, rifampin, rosuvastatin, saquinavir, simvastatin, strong CYP3A inducers, tacrolimus, tipranavir
Pregnancy category: N/A (No available data; contra-indicated in pregnant women and in men with pregnant partners when administered with ribavirin)
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Contra-indicated in patients with moderate or severe hepatic impairment (Child-Pugh B or C).

Central Nervous System
- Headache (10–11%) [10]

Gastrointestinal/Hepatic
- Abdominal pain (2%)
- Diarrhea (2%) [3]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
- Nausea (11%) [9]

Hematologic
- Anemia [2]

Neuromuscular/Skeletal
Asthenia / fatigue (5–11%) [10]
Other
Adverse effects / adverse reactions [3]

ELETRIPTAN

Trade name: Relpax (Pfizer)
Indications: Migraine headaches
Class: 5-HT1 agonist, Serotonin receptor agonist, Triptan
Half-life: 4–5 hours
Clinically important, potentially hazardous interactions with: clarithromycin, dihydroergotamine, itraconazole, ketoconazole, methysergide, nefazodone, nelfinavir, paclitaxel, ritonavir, SNRIs, SSRIs, telithromycin, triptans, troleandomycin, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with history, symptoms, or signs of ischemic cardiac, cerebrovascular, or peripheral vascular syndromes, or in patients with uncontrolled hypertension.

Skin
Flushing / rubefaction (2%)
Mucosal
Xerostomia (dry mouth) (2–4%)
Cardiovascular
Chest pain (<4%) [3]
Central Nervous System
Headache (3–4%)
Neurotoxicity [2]
Paresthesias (3–4%)
Somnolence (drowsiness) (3–7%) [2]
Vertigo / dizziness (3–7%)
Warm feeling (includes feeling hot) (2%)
Gastrointestinal/Hepatic
Abdominal pain (<2%)
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Dysphagia (<2%)
Nausea (3–7%) [5]
Vomiting [2]
Neuromuscular/Skeletal
Asthenia / fatigue (4–10%) [4]
Other
Adverse effects / adverse reactions [2]

ELIGLUSTAT

Trade name: Cerdelga (Genzyme)
Indications: Gaucher disease
Class: Glucosylceramide synthase inhibitor
Half-life: 7–9 hours
Clinically important, potentially hazardous interactions with: carbamazepine, grapefruit juice, phenobarbital, phenytoin, rifampin, St John's wort, strong or moderate CYP2D6 inhibitors
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Rash (5%)
Mucosal
Oropharyngeal pain (10%)
Cardiovascular
Palpitation (5%) [3]
Central Nervous System
Headache (13–40%) [2]
Migraine (10%)
Vertigo / dizziness (8%)
Gastrointestinal/Hepatic
Abdominal pain (10%) [2]
Constipation (5%)
Diarrhea (12%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (7%)
Flatulence (10%)
Gastroesophageal reflux (7%)
Nausea (10–12%)
Neuromuscular/Skeletal
Asthenia / fatigue (8–14%)
Back pain (12%)
Pain in extremities (11%)
Respiratory
Cough (7%)
Other
Adverse effects / adverse reactions [2]

ELOSULFASE ALFA

Trade name: Vimizim (BioMarin)
Indications: Mucopolysaccharidosis IVA (Morquio A syndrome)
Class: Enzyme
Half-life: 8–36 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: RISK OF ANAPHYLAXIS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (8%)
Hypersensitivity (19%) [2]
Central Nervous System
Chills (10%)
Fever (pyrexia) (includes hyperpyrexia) (33%)
Headache (26%)
Gastrointestinal/Hepatic
Abdominal pain (21%)
Nausea (24%)
Vomiting (31%) [2]
Local
Infusion-related reactions [2]
Neuromuscular/Skeletal
Asthenia / fatigue (10%)

ELOTUZUMAB

Trade name: Empliciti (Bristol-Myers Squibb)
Indications: Multiple myeloma (in combination with lenalidomide and dexamethasone) in patients who have received one to three prior therapies
Class: Monoclonal antibody
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Embryo-fetal toxicity with combination dosage)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: See separate entries for dexamethasone and lenalidomide.

Skin
Flushing / rubefaction [2]
Herpes zoster (14%)
Hyperhidrosis (see also diaphoresis) (>5%)
Hypersensitivity (>5%) [2]
Peripheral edema (see also edema) [5]
Rash [2]
Mucosal
Oropharyngeal pain (10%)
Cardiovascular
Chest pain (>5%) [3]
Tachycardia [2]
Central Nervous System
Anorexia [3]
Chills [4]
Fever (pyrexia) (includes hyperpyrexia) (37%) [7]
Headache (15%) [5]
Hypoesthesia (numbness) (>5%)
Insomnia [4]
Mood changes (>5%)
Neurotoxicity [2]
Peripheral neuropathy (27%) [3]
Endocrine/Metabolic
ALP increased (39%)
Appetite decreased (21%)
Hyperglycemia (includes glucose increased) (89%) [2]
Hyperkalemia (32%)
Hypocalcemia (78%)
Hypokalemia [4]
Serum creatinine increased [3]
Weight loss (14%) [2]
Gastrointestinal/Hepatic
Constipation (36%) [5]
Diarrhea (47%) [7]
Nausea [5]
Vomiting (15%) [4]
Hematologic
Anemia [4]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (91%) [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (13–99%) [6]
Neutropenia (neutrophils decreased) [8]
Thrombocytopenia (84%) [5]
Local
Infusion-related reactions (10%) [10]
Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue (62%) [11]
Back pain [3]
Muscle spasm [4]
Pain in extremities (16%)
Ocular
Cataract (12%)
Respiratory
Cough [4]
Dyspnea / shortness of breath [5]
Nasopharyngitis (25%)
Pneumonia (20%) [5]
Upper respiratory tract infection (23%) [2]

ELTROMBOPAG

Trade names: Promacta (Novartis), Revolade (Novartis)
Indications: Thrombocytopenic purpura, severe aplastic anemia in patients with insufficient response to immunosuppressive therapy
Class: Thrombopoietin receptor (TPO) agonist
Half-life: 21–32 hours
Clinically important, potentially hazardous interactions with: antacids, atorvastatin, dairy products, eluxadoline, lopinavir, mineral supplements, olmesartan, rosuvastatin, selenium, zinc
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: RISK FOR HEPATIC DECOMPENSATION IN PATIENTS WITH CHRONIC HEPATITIS C

Skin
Peripheral edema (see also edema) (3–4%)
Pigmentation [2]
Rash (3–7%)
Hair
Alopecia / hair loss (2%)
Mucosal
Oropharyngeal pain (4%)
Xerostomia (dry mouth) (2%)
Cardiovascular
Myocardial infarction [2]
Thromboembolism [5]
Venous thromboembolism [4]
Central Nervous System
Dysgeusia (taste perversion) (4%)
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (10–21%) [12]
Ischemic stroke [2]
Paresthesias (3%)
Endocrine/Metabolic
ALP increased (2%)
ALT increased (5–6%) [6]
AST increased (4%)
Hyperbilirubinemia [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [2]
Diarrhea (9%) [2]
Hepatic (liver) disorder / hepatobiliary disorder / hepatic (liver) dysfunction [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (4–9%) [5]
Vomiting (6%)
Genitourinary
Urinary tract infection (5%)
Hematologic
Bleeding [3]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [2]
Thrombosis [6]
Neuromuscular/Skeletal
Arthralgia (3%) [2]
Asthenia / fatigue (3–4%) [5]
Back pain (3%)
Myalgia/Myopathy (5%)
Pain in extremities (7%)
Ocular
Cataract (5%) [3]
Renal
Renal failure [3]
Respiratory
Cough (5%)
Nasopharyngitis [4]
Pharyngitis (sore throat) (4%)
Upper respiratory tract infection (7%) [3]
Other
Adverse effects / adverse reactions [8]

ELUXADOLINE

Trade name: Viberzi (Forest)
Indications: Irritable bowel syndrome with diarrhea
Class: Opioid mu receptor agonist
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: alfentanil, alosetron, anticholinergics, atazanavir, bupropion, ciprofloxacin, clarithromycin, cyclosporine, dihydroergotamine, eltrombopag, ergotamine, fentanyl, fluconazole, gemfibrozil, lopinavir, opioids, paroxetine hydrochloride, paroxetine mesylate, pimozide, quinidine, rifampin, ritonavir, rosuvastatin, saquinavir, sirolimus, tacrolimus, tipranavir
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Contra-indicated in patients with known or suspected biliary duct obstruction, or sphincter of Oddi disease or dysfunction; alcoholism, alcohol abuse, alcohol addiction, or drink more than 3 alcoholic beverages/day; a history of pancreatitis; structural diseases of the pancreas, including known or suspected pancreatic duct obstruction; severe hepatic impairment (Child-Pugh Class C); severe constipation or sequelae from constipation, or known or suspected mechanical gastrointestinal obstruction.

Skin
Rash (3%)
Central Nervous System
Euphoria / elation (<2%)
Sedation (<2%)
Somnolence (drowsiness) (<2%)
Vertigo / dizziness (3%) [2]
Endocrine/Metabolic
ALT increased (2–3%)
AST increased (<2%)
Gastrointestinal/Hepatic
Abdominal distension (3%) [2]
Abdominal pain (6–7%) [4]
Constipation (7–8%) [7]
Flatulence (3%)
Gastroenteritis (<3%) [2]
Gastroesophageal reflux (<2%)
Nausea (7–8%) [5]
Pancreatitis / acute pancreatitis [7]
Vomiting (4%) [3]
Respiratory
Asthma (<2%)
Bronchitis (3%)
Bronchospasm (<2%)
Nasopharyngitis (3–4%) [2]
Respiratory failure (<2%)
Wheezing (<2%)
Other
Adverse effects / adverse reactions [2]

EMICIZUMAB

Trade name: Hemlibra (Genentech)
Indications: Routine prophylaxis to prevent or reduce the frequency of bleeding episodes in patients with hemophilia A (congenital factor VIII deficiency) with factor VIII inhibitors
Class: Factor IXa- and factor X-directed antibody, Monoclonal antibody
Half-life: ~30 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No available data to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: THROMBOTIC MICROANGIOPATHY and THROMBOEMBOLISM

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (7%)
Headache (15%)
Gastrointestinal/Hepatic
Diarrhea (6%)
Hematologic
Thrombotic microangiopathy [2]
Local
Injection-site bruising (<5%)
Injection-site edema (<5%)
Injection-site erythema (7%)
Injection-site hematoma (<5%)
Injection-site induration (<5%)
Injection-site pain (5%)
Injection-site pruritus (5%)
Injection-site reaction (19%) [3]
Injection-site urticaria (<5%)
Neuromuscular/Skeletal
Arthralgia (10%)
Myalgia/Myopathy (5%)

EMPAGLIFLOZIN

Trade names: Glyxambi (Boehringer Ingelheim), Jardiance (Boehringer Ingelheim), Synjardy (Boehringer Ingelheim)
Indications: Type II diabetes mellitus. Repurposed for the treatment of glycogen storage disease type Ib (GSD Ib)
Class: Antidiabetic, Sodium-glucose co-transporter 2 (SGLT2) inhibitor ('gliflozin')
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with severe renal impairment, end stage renal disease, or on dialysis. Glyxambi is empagliflozin and linagliptin; Synjardy is empagliflozin and metformin.

Central Nervous System
Headache [2]
Vertigo / dizziness [2]

Endocrine/Metabolic
Diabetic ketoacidosis [4]
Hypoglycemia (see also insulin autoimmune syndrome) [7]
Gastrointestinal/Hepatic
Constipation [2]
Pancreatitis / acute pancreatitis [4]
Genitourinary
Genital mycotic infection (2–6%) [13]
Pollakiuria [3]
Urinary frequency (3%)
Urinary tract infection (8–9%) [11]
Respiratory
Nasopharyngitis [4]
Other
Adverse effects / adverse reactions [8]
Death [2]
Dipsia (thirst) / polydipsia (2%)

EMTRICITABINE

Trade names: Atripla (Gilead), Complera (Gilead), Descovy (Gilead), Emtriva (Gilead), Truvada (Gilead)
Indications: HIV-1 infection
Class: Antiretroviral, Nucleoside analog reverse transcriptase inhibitor
Half-life: ~10 hours
Clinically important, potentially hazardous interactions with: cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, ganciclovir, lamivudine, ribavirin, valganciclovir
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Emtricitabine is a fluorinated derivative of lamivudine. Atripla is emtricitabine, efavirenz and tenofovir disoproxil; Complera is emtricitabine, rilpivirine and tenofovir disoproxil; Descovy is emtricitabine and tenofovir alafenamide; Truvada is emtricitabine and tenofovir disoproxil. See also separate profiles for emtricitabine in combination with cobicistat, elvitegravir and tenofovir disoproxil or tenofovir alafenamide.
Warning: LACTIC ACIDOSIS / SEVERE HEPATOMEGALY WITH STEATOSIS and POST TREATMENT EXACERBATION OF HEPATITIS B

Skin
Exanthems (17%)
Pigmentation (palms and soles) (32%)
Pruritus (itching) (17–30%)
Pustules / pustular eruption (17–30%)
Rash (17–30%) [6]
Urticaria / hives (17–30%)
Vesiculobullous eruption (17–30%)
Central Nervous System
Abnormal dreams (2–11%) [3]
Anxiety [2]
Depression (6–9%)
Fever (pyrexia) (includes hyperpyrexia) (18%)
Headache (13–22%) [6]
Insomnia (7–16%)
Neurotoxicity [5]
Paresthesias (6%)
Peripheral neuropathy (4%)
Somnolence (drowsiness) [2]
Vertigo / dizziness (4–25%) [4]
Gastrointestinal/Hepatic
Abdominal pain (8–14%) [2]
Diarrhea (20–23%) [6]
Dyspepsia / functional dyspepsia / gastroparesis (4–8%)
Gastroenteritis (11%)
Hepatic failure [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (13–18%) [7]
Vomiting (9–23%) [4]
Hematologic
Anemia (7%)
Pure red cell aplasia [2]
Neuromuscular/Skeletal
Arthralgia (3–5%)
Asthenia / fatigue (12–16%) [4]
Myalgia/Myopathy (4–6%) [2]
Otic
Otitis media (23%)
Respiratory
Cough (14–28%)
Pneumonia (15%)
Rhinitis (12–20%)
Other
Adverse effects / adverse reactions [5]
Allergic reactions (17–30%)
Infection (44%)

EMTRICITABINE/ RILPIVIRINE/ TENOFOVIR ALAFENAMIDE

Trade name: Odefsey (Gilead)
Indications: HIV-1 infection
Class: Hepatitis B virus necleoside analog reverse transcriptase inhibitor (tenofovir alafenamide), Non-nucleoside reverse transcriptase inhibitor (rilpivirine), Nucleoside analog reverse transcriptase inhibitor (emtricitabine)
Half-life: 10 hours (emtricitabine); 50 hours (rilpivirine); <1 hour (tenofovir alafenamide)
Clinically important, potentially hazardous interactions with: carbamazepine, dexamethasone, dexlansoprazole, esomeprazole, lansoprazole, omeprazole, oxcarbazepine, pantoprazole, phenobarbital, phenytoin, rabeprazole, rifampin, rifapentine, St John's wort
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: LACTIC ACIDOSIS/SEVERE HEPATOMEGALY WITH STEATOSIS and POST TREATMENT ACUTE EXACERBATION OF HEPATITIS B

Central Nervous System
Depression (<2%)
Headache (<2%)
Insomnia (<2%)

ENALAPRIL

Trade names: Innovace (Merck Sharpe & Dohme), Lexxel (AstraZeneca), Teczem (Sanofi-Aventis), Vaseretic (Valeant), Vasotec (Valeant)
Indications: Hypertension, symptomatic congestive heart failure, asymptomatic left ventricular dysfunction
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive, Vasodilator
Half-life: 11 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, allopurinol, alpha blockers, alprostadil, amifostine, amiloride, angiotensin II receptor antagonists, antacids, antidiabetics, antihypertensives, antipsychotics, anxiolytics and hypnotics, aprotinin, azathioprine, baclofen, beta blockers, calcium channel blockers, clonidine, conivaptan, corticosteroids, cyclosporine, CYP3A4 inducers, deferasirox, diazoxide, diuretics, eplerenone, estrogens, everolimus, general anesthetics, gold & gold compounds, grapefruit juice, heparins, hydralazine, hypotensives, insulin, levodopa, lithium, MAO inhibitors, metformin, methyldopa, methylphenidate, minoxidil, moxisylyte, moxonidine, nitrates, nitroprusside, NSAIDs, pentoxifylline, phosphodiesterase 5 inhibitors, potassium salts, prostacyclin analogues, quinine, rituximab, salicylates, sirolimus, spironolactone, sulfonylureas, tadalafil, temsirolimus, tizanidine, tolvaptan, triamterene, trimethoprim
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Lexxel is enalapril and felodipine; Teczem is enalapril and diltiazem; Vaseretic is enalapril and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Contra-indicated in patients with a history of angioedema with or without previous ACE inhibitor treatment.
Warning: FETAL TOXICITY

Skin
Angioedema [75]
Bullous pemphigoid / pemphigoid [2]
Exanthems [9]
Flushing / rubefaction [4]
Lichenoid eruption / lichenoid reaction [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Pemphigus [11]
Pemphigus foliaceus [2]
Peripheral edema (see also edema) [2]
Photosensitivity [2]
Pruritus (itching) [3]
Psoriasis [3]
Rash [5]
Urticaria / hives [5]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Mucosal
Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis) [2]
Oral lesions [4]

Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Tongue edema [4]

Cardiovascular
Hypotension [2]

Central Nervous System
Ageusia (taste loss) / taste disorder [4]
Dysgeusia (taste perversion) (<10%) [7]
Headache (5%)
Vertigo / dizziness (4–8%) [2]

Endocrine/Metabolic
Hyperkalemia [4]
SIADH [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Pancreatitis / acute pancreatitis [2]

Neuromuscular/Skeletal
Asthenia / fatigue (<3%)
Pseudopolymyalgia [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Cough (8–23%) [41]

Other
Adverse effects / adverse reactions [9]
Death [4]

ENASIDENIB

Trade name: Idhifa (Celgene)
Indications: Relapsed or refractory acute myeloid leukemia
Class: Isocitrate dehydrogenase-2 inhibitor
Half-life: 137 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: DIFFERENTIATION SYNDROME

Skin
Differentiation syndrome (14%) [2]

Cardiovascular
Pulmonary edema / cardiogenic pulmonary edema (<10%)

Central Nervous System
Dysgeusia (taste perversion) (12%)

Endocrine/Metabolic
Appetite decreased (34%)
Hyperbilirubinemia (81%) [2]
Hypocalcemia (74%)
Hypokalemia (41%)
Hypophosphatemia (27%)

Gastrointestinal/Hepatic
Diarrhea (43%)
Nausea (50%)
Vomiting (34%)

Hematologic
Leukocytosis (elevated white blood cell (WBC) count) (12%)

Respiratory
Acute respiratory distress syndrome (<10%)

ENFLURANE

Trade name: Ethrane (Baxter)
Indications: Maintenance of general anesthesia
Class: Anesthetic; inhalation
Half-life: N/A
Clinically important, potentially hazardous interactions with: cisatracurium, doxacurium, mivacurium, pancuronium, rapacuronium
Pregnancy category: B

Cardiovascular
Arrhythmias [3]
Myocardial ischemia [2]

Central Nervous System
Headache [2]
Seizures [15]

Neuromuscular/Skeletal
Rhabdomyolysis [2]

Other
Death [3]

ENFUVIRTIDE

Trade name: Fuzeon (Roche)
Indications: HIV-1 infection (in combination with other antiretroviral agents)
Class: Antiretroviral, HIV cell fusion inhibitor
Half-life: 3.8 hours
Clinically important, potentially hazardous interactions with: darunavir, indinavir, tipranavir
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

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Skin
Folliculitis (2%)
Herpes simplex (4%)
Hypersensitivity [3]
Papillomas (4%)
Pruritus (itching) (62%)

Mucosal
Xerostomia (dry mouth) (2%)

Central Nervous System
Anorexia (2%)
Depression (9%)

Endocrine/Metabolic
ALT increased (<4%)
Appetite decreased (3%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (3–7%)
Weight loss (7%)

Gastrointestinal/Hepatic
Abdominal pain (4%)
Pancreatitis / acute pancreatitis (3%)

Hematologic
Eosinophilia (2–9%)

Local
Injection-site bruising (52%)
Injection-site erythema (91%)
Injection-site induration (90%)
Injection-site nodules (80%) [4]
Injection-site pain (96%)
Injection-site pruritus (65%)
Injection-site reaction (98%) [27]
Injection-site scleroderma [2]

Neuromuscular/Skeletal
Asthenia / fatigue (16%) [2]
Myalgia/Myopathy (3%)
Pain in extremities (3%)

Ocular
Conjunctivitis (conjunctival inflammation) (2%)

Respiratory
Cough (4%)
Influenza- ('flu)-like syndrome (2%)
Pneumonia (3%)
Sinusitis (6%)

Other
Infection [3]

ENOXACIN

Trade name: Penetrex (Sanofi-Aventis)
Indications: Urinary tract infections
Class: Antibiotic, Antibiotic; fluoroquinolone, Antimicrobial
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: amiodarone, arsenic, bepridil, bretylium, disopyramide, duloxetine, erythromycin, fenbufen, oxtriphylline, phenothiazines, procainamide, quinidine, roflumilast, sotalol, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants.
Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis.

Skin
Photosensitivity [5]
Phototoxicity [5]

Other
Adverse effects / adverse reactions [2]

ENOXAPARIN

Trade names: Clexane (Sanofi-Aventis), Lovenox (Sanofi-Aventis)
Indications: Prevention of deep vein thrombosis, ischemic complications of unstable angina and non-Q wave myocardial infarction, treatment of acute ST-segment elevation myocardial infarction
Class: Heparin, low molecular weight
Half-life: 4.5 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, angiotensin II receptor antagonists, anticoagulants, aspirin, butabarbital, clopidogrel, danaparoid, diclofenac, dipyridamole, drotrecogin alfa, iloprost, infused nitrates, ketorolac, NSAIDs, platelet inhibitors, rivaroxaban, salicylates, sulfinpyrazone
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Epidural or spinal hematomas may occur in patients who are anticoagulated with low molecular weight heparins or heparinoids and are receiving neuraxial anesthesia or undergoing spinal puncture.
Contra-indicated in patients with active major

bleeding; thrombocytopenia with a positive *in vitro* test for anti-platelet antibody in the presence of enoxaparin; hypersensitivity to heparin or pork products; hypersensitivity to benzyl alcohol (multi-dose formulation only).
Warning: SPINAL/EPIDURAL HEMATOMA

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Angioedema [2]
Bruise / bruising / contusion / ecchymosis (ecchymoses) (2%)
Bullous hemorrhagic dermatosis [8]
Edema / fluid retention (see also peripheral edema) (3%)
Erythema (<10%) [2]
Exanthems [2]
Hematoma [11]
Hypersensitivity [7]
Necrosis (skin necrosis) [6]
Peripheral edema (see also edema) (3%)
Pruritus (itching) [2]
Purpura (<10%)

Cardiovascular
Venous thromboembolism [2]

Endocrine/Metabolic
ALT increased [4]
AST increased [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]

Genitourinary
Hematuria [3]

Hematologic
Bleeding [9]
Hemorrhage [4]
Thrombocythemia (thrombocytosis) [6]
Thrombocytopenia [6]

Local
Injection-site necrosis [4]
Injection-site plaques [2]

Other
Adverse effects / adverse reactions [5]
Death [2]

ENTACAPONE

Trade names: Comtan (Orion), Comtess (Orion), Stalevo (Orion)
Indications: Parkinsonism
Class: Catechol-O-methyl transferase inhibitor
Half-life: 2.4 hours
Clinically important, potentially hazardous interactions with: amitriptyline, MAO inhibitors, paroxetine hydrochloride, phenelzine, rasagiline, tranylcypromine, venlafaxine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (2%)
Purpura (2%)

Mucosal
Xerostomia (dry mouth) (3%)

Central Nervous System
Anxiety (2%)
Dyskinesia (25%) [3]
Hyperactivity (10%)
Hypokinesia (9%)
Parkinsonism (17%)
Somnolence (drowsiness) (2%)
Vertigo / dizziness (8%) [2]

Gastrointestinal/Hepatic
Abdominal pain (8%)
Constipation (6%)
Diarrhea (10%) [3]
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Flatulence (2%)
Nausea (14%) [3]
Vomiting (4%)

Genitourinary
Melanuria (10%) [2]

Neuromuscular/Skeletal
Asthenia / fatigue (8%)
Back pain (4%)

Respiratory
Dyspnea / shortness of breath (3%)

ENTECAVIR

Trade name: Baraclude (Bristol-Myers Squibb)
Indications: Chronic hepatitis B virus infection
Class: Antiviral, Guanosine nucleoside analog
Half-life: ~24 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SEVERE ACUTE EXACERBATIONS OF HEPATITIS B, PATIENTS CO-INFECTED WITH HIV AND HBV, and LACTIC ACIDOSIS AND HEPATOMEGALY

Skin
Rash [2]

Hair
Alopecia / hair loss [2]

Central Nervous System
Headache (2–4%) [4]
Neurotoxicity [3]
Peripheral neuropathy [2]
Vertigo / dizziness [2]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [6]
ALT increased (2–12%) [2]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)
Hypophosphatemia [2]

Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [2]
Nausea [2]
Pancreatitis / acute pancreatitis [3]

Genitourinary
Hematuria (9%)

Neuromuscular/Skeletal
Asthenia / fatigue (<3%) [7]
Myalgia/Myopathy [3]

Respiratory
Cough [2]
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [4]

ENZALUTAMIDE

Trade name: Xtandi (Medivation)
Indications: Metastatic castration-resistant prostate cancer in patients who have previously received docetaxel
Class: Androgen antagonist
Half-life: 8–9 days
Clinically important, potentially hazardous interactions with: alfentanil, bosentan, carbamazepine, copanlisib, cyclosporine, dihydroergotamine, doravirine, doravirine/lamiduvine/tenofovir disoproxil, efavirenz, ergotamine, fentanyl, fostemsavir, gemfibrozil, itraconazole, midazolam, midostaurin, modafinil, nafcillin, neratinib, omeprazole, phenobarbital, phenytoin, pimozide, quinidine, rifabutin, rifampin, rifapentine, sirolimus, St John's wort, tacrolimus, warfarin
Pregnancy category: X (not indicated for use in women)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Hot flashes / hot flushes (20%) [11]
Peripheral edema (see also edema) (15%) [3]
Pruritus (itching) (4%)
Xerosis / xeroderma (see also dry skin) (4%)

Mucosal
Epistaxis (nosebleed) (3%)

Cardiovascular
Cardiotoxicity [2]
Congestive heart failure [3]
Hypertension (6%) [5]

Central Nervous System
Amnesia (>2%)
Anxiety (7%)
Cognitive impairment (4%)
Gait instability / postural instability [3]
Hallucinations (2%)
Headache (12%) [4]
Hypoesthesia (numbness) (4%)
Insomnia (9%)
Paresthesias (7%) [2]
Seizures [13]
Spinal cord compression (7%)
Vertigo / dizziness (10%) [2]

Endocrine/Metabolic
ALT increased (10%)
Appetite decreased [7]
Gynecomastia [2]
Weight loss [3]

Gastrointestinal/Hepatic
Constipation [4]
Diarrhea (22%) [10]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [6]
Vomiting [2]

Genitourinary
Hematuria (7%) [2]
Pollakiuria (5%)
Urinary tract infection [2]

Hematologic
Anemia [3]
Neutropenia (neutrophils decreased) (15%)
Thrombocytopenia [2]

Neuromuscular/Skeletal
Arthralgia (21%) [5]
Asthenia / fatigue (51%) [28]
Back pain (26%) [6]
Bone or joint pain (15%) [8]
Fractures (4%) [2]

Respiratory
Bronchitis (>2%)
Dyspnea / shortness of breath [2]
Laryngitis (>2%)
Nasopharyngitis (>2%)
Pharyngitis (sore throat) (>2%)
Pneumonia (>2%)
Sinusitis (>2%)
Upper respiratory tract infection (11%) [3]

Other
Adverse effects / adverse reactions [7]
Death [3]

EPHEDRA

Family: Gnetaceae
Scientific names: *Ephedra equisetina, Ephedra intermedia, Ephedra sinica, Ephedra vulgaris*
Indications: Bronchospasm, asthma, bronchitis, allergy, appetite suppressant, colds, flu, fever, chills, edema, headache, anhidrosis, diuretic, joint and bone pain
Class: Ephedrine alkaloid, Stimulant
Half-life: N/A
Clinically important, potentially hazardous interactions with: acetazolamide, amitriptyline, caffeine, clevidipine, cocoa, corticosteroids, guanethidine, guarana, MAO inhibitors, phenelzine, selegiline, sibutramine, sodium bicarbonate
Note: Banned in the USA.

Cardiovascular
Cardiotoxicity [2]
Hypertension [4]
Palpitation [2]
Tachycardia [3]

Central Nervous System
Seizures [7]

Other
Adverse effects / adverse reactions [4]
Death [5]
Side effects [2]

EPHEDRINE

Trade names: Rynatuss (MedPointe), Vicks Vatronol (Procter & Gamble)
Indications: Nasal congestion, acute hypotensive states, asthma
Class: Adrenergic alpha-receptor agonist, Sympathomimetic
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: antihypertensives, dexamethasone, furazolidone, guanethidine, iobenguane, levomepromazine, MAO inhibitors, methyldopa, oxprenolol, phenelzine, phenylpropanolamine, selegiline, tranylcypromine, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Dermatitis [5]
Diaphoresis (see also hyperhidrosis) (<10%)
Fixed eruption [6]
Pallor (<10%)
Urticaria / hives [2]

Mucosal
Xerostomia (dry mouth) (<10%)

Central Nervous System
Trembling (<10%)
Tremor (<10%)

EPINEPHRINE

Synonym: adrenaline
Trade names: Adrenaclick (Amedra), Adrenalin (JHP Pharmaceuticals), Auvi-Q (Sanofi-Aventis), Epipen (Mylan)
Indications: Cardiac arrest, hay fever, asthma, anaphylaxis
Class: Catecholamine, Sympathomimetic
Half-life: N/A
Clinically important, potentially hazardous interactions with: albuterol, alpha blockers, amitriptyline, amoxapine, atenolol, beta blockers, carteolol, chlorpromazine, clomipramine, clozapine, cocaine, desipramine, doxepin, ergotamine, furazolidone, halothane, imipramine, insulin aspart, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, levalbuterol, lisdexamfetamine, lurasidone, MAO inhibitors, metoprolol, milnacipran, nadolol, nortriptyline, oxprenolol, penbutolol, phenelzine, phenoxybenzamine, phenylephrine, pindolol, prazosin, propranolol, protriptyline, sympathomimetics, terbutaline, thioridazine, timolol, tranylcypromine, tricyclic antidepressants, trimipramine, vasopressors
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly

Skin
Dermatitis [4]
Diaphoresis (see also hyperhidrosis) (<10%) [2]
Flushing / rubefaction (<10%)
Necrosis (skin necrosis) [3]
Pemphigus (cicatricial) [2]

Cardiovascular
Arrhythmias [3]
Chest pain [2]
Hypertension [3]
Hypotension [4]
Myocardial infarction [5]
Palpitation [3]
QT interval prolonged / QT prolongation [2]
Ventricular tachycardia [2]

Central Nervous System
Anxiety [2]
Trembling (<10%)
Tremor [3]

Gastrointestinal/Hepatic
Nausea [2]

EPIRUBICIN

Trade name: Ellence (Pfizer)
Indications: Adjuvant therapy in primary breast cancer
Class: Antibiotic, Antibiotic; anthracycline, Antimicrobial
Half-life: 33 hours
Clinically important, potentially hazardous interactions with: amlodipine, bepridil, cimetidine, diltiazem, felodipine, isradipine, nicardipine, nifedipine, nimodipine, nisoldipine, verapamil
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: SEVERE OR LIFE-THREATENING HEMATOLOGICAL AND OTHER ADVERSE REACTIONS

Skin
Erythroderma (5%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [5]
Hot flashes / hot flushes (5–39%)
Pruritus (itching) (9%)
Rash (<9%) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Hair
Alopecia / hair loss (69–95%) [19]

Mucosal
Mucositis [5]
Stomatitis (oral mucositis) [9]

Cardiovascular
Cardiotoxicity [3]
QT interval prolonged / QT prolongation [3]

Central Nervous System
Anorexia [5]
Dysgeusia (taste perversion) [2]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [2]
Neurotoxicity [2]
Peripheral neuropathy [4]

Endocrine/Metabolic
ALT increased [2]
Amenorrhea [2]
AST increased [2]

Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [3]
Diarrhea [7]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [13]
Vomiting [11]

Hematologic
Anemia [9]
Febrile neutropenia [5]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
Neutropenia (neutrophils decreased) [13]
Thrombocytopenia [5]

Local
Injection-site reaction (3–20%)

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue (6%) [9]
Myalgia/Myopathy (55%) [5]

Other
Allergic reactions [2]

EPLERENONE

Trade name: Inspra (Pfizer)
Indications: Hypertension
Class: Aldosterone antagonist / mineralocorticoid receptor antagonist (MRA), Diuretic
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, angiotensin II receptor antagonist, aprepitant, benazepril, captopril, conivaptan, darunavir, delavirdine, efavirenz, enalapril, erythromycin, fluconazole, grapefruit juice, indinavir, irbesartan, itraconazole, ketoconazole, lapatinib, lisinopril, meloxicam, nelfinavir, olmesartan, quinapril, ramipril, saquinavir, St John's wort, telithromycin, tipranavir, trimethoprim, verapamil, voriconazole
Pregnancy category: B

Central Nervous System
Vertigo / dizziness (3%)
Endocrine/Metabolic
Hyperkalemia [4]
Neuromuscular/Skeletal
Asthenia / fatigue (2%)
Respiratory
Cough (2%)
Influenza- ('flu)-like syndrome (2%)

EPOETIN ALFA

Synonyms: erythropoietin; EPO
Trade names: Epogen (Amgen), Eprex (Janssen-Cilag), Procrit (Ortho)
Indications: Anemia
Class: Erythropoiesis-stimulating agent (ESA), Erythropoietin
Half-life: 4–13 hours (in patients with chronic renal failure)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: ERYTHROPOIESIS-STIMULATING AGENTS (ESAs) INCREASE THE RISK OF DEATH, MYOCARDIAL INFARCTION, STROKE, VENOUS THROMBOEMBOLISM, THROMBOSIS OF VASCULAR ACCESS AND TUMOR PROGRESSION OR RECURRENCE

Skin
Angioedema (<5%)
Edema / fluid retention (see also peripheral edema) (17%)
Pruritus (itching) (12–21%) [2]
Rash (2–19%)
Cardiovascular
Hypertension (3–28%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (10–42%) [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache (5–18%)
Paresthesias (11%)
Gastrointestinal/Hepatic
Constipation [2]
Nausea (35–56%)
Hematologic
Thrombocytopenia [2]
Local
Injection-site reaction (7%)
Neuromuscular/Skeletal
Arthralgia (10–16%)
Respiratory
Cough (4–26%)
Dyspnea / shortness of breath [2]

EPOPROSTENOL

Trade names: Flolan (GSK), Veletri (Actelion)
Indications: Pulmonary arterial hypertension
Class: Vasodilator, peripheral
Half-life: 6 minutes
Clinically important, potentially hazardous interactions with: anticoagulants, antihypertensives, diuretics, vasodilators
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with heart failure induced by reduced left ventricular ejection fraction.

Skin
Diaphoresis (see also hyperhidrosis) (41%)
Flushing / rubefaction [6]
Pruritus (itching) (4%)
Rash (10%) [2]
Cardiovascular
Bradycardia / sinus bradycardia (5%) [2]
Cardiac failure (31%)
Chest pain (11%) [2]
Hypotension (16%) [5]
Tachycardia (35%) [2]
Central Nervous System
Agitation (11%)
Anxiety (21%) [2]
Chills (25%)
Fever (pyrexia) (includes hyperpyrexia) (25%)
Headache (83%) [13]
Insomnia (9%)
Paresthesias (12%)
Seizures (4%)
Somnolence (drowsiness) (4%)
Syncope / fainting (13%)
Tremor (21%)
Endocrine/Metabolic
Weight loss (27%)
Gastrointestinal/Hepatic
Abdominal pain (14%)
Diarrhea [2]
Nausea [5]
Hematologic
Sepsis (25%)
Local
Injection-site infection (21%)
Injection-site pain (13%)
Neuromuscular/Skeletal
Back pain (13%)
Jaw pain (54%) [6]
Myalgia/Myopathy (44%)
Respiratory
Alveolar hemorrhage (pulmonary) [2]
Dyspnea / shortness of breath (2%)
Influenza- ('flu)-like syndrome (25%)
Pneumonia [2]
Other
Adverse effects / adverse reactions [3]

EPROSARTAN

Trade name: Teveten (AbbVie)
Indications: Hypertension
Class: Angiotensin receptor antagonist (blocker), Antihypertensive
Half-life: 5–9 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: FETAL TOXICITY

Central Nervous System
Dysgeusia (taste perversion) [2]
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Abdominal pain (2%)
Neuromuscular/Skeletal
Arthralgia (2%)
Asthenia / fatigue (2%)
Respiratory
Cough (4%) [3]
Pharyngitis (sore throat) (4%)
Rhinitis (4%)
Upper respiratory tract infection (8%) [2]
Other
Adverse effects / adverse reactions [3]

EPTIFIBATIDE

Trade name: Integrilin (Merck)
Indications: Acute coronary syndrome, unstable angina
Class: Antiplatelet, Glycoprotein IIb/IIIa inhibitor
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: anticoagulants, antiplatelet agents, collagenase, dasatinib, drotrecogin alfa, fondaparinux, glucosamine, ibritumomab, iloprost, lepirudin, NSAIDs, pentoxifylline, salicylates, thrombolytic agents, tositumomab & iodine^{131}
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a history of bleeding diathesis, or evidence of active abnormal bleeding within the previous 30 days; severe hypertension not adequately controlled on antihypertensive therapy; major surgery within the preceding 6 weeks; history of stroke within 30 days or any history of hemorrhagic stroke; current or planned administration of another parenteral GP IIb/IIIa inhibitor; or dependency on renal dialysis.

Cardiovascular
Hypotension (7%)
Hematologic
Bleeding [3]
Hemorrhage (<10%)
Thrombocytopenia [22]
Thrombosis [4]
Other
Death [2]

ERDOSTEINE

Trade name: Erdotin (Galen)
Indications: Chronic obstructive pulmonary disease (COPD)
Class: Mucolytic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known

ERGOCALCIFEROL

Synonyms: viosterol; vitamin D_2
Trade name: Drisdol (Sanofi-Aventis)
Indications: Rickets, hypoparathyroidism
Class: Vitamin
Half-life: 19–48 hours
Clinically important, potentially hazardous interactions with: cholestyramine, cyclopenthiazide, orlistat, paricalcitol
Pregnancy category: C

Skin
Pruritus (itching) (<10%)
Central Nervous System
Dysgeusia (taste perversion) (<10%)
Endocrine/Metabolic
Hypercalcemia [2]
Other
Adverse effects / adverse reactions [2]

ERGOMETRINE

Trade name: Ergometrine (Hameln)
Indications: Management of the third stage of labor and in the treatment of postpartum hemorrhage
Class: Amine alkaloid
Half-life: N/A
Clinically important, potentially hazardous interactions with: halothane, sympathomimetic agents
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Cardiovascular
Myocardial infarction [4]
Myocardial ischemia [3]

ERGOTAMINE

Trade name: Wigrettes (Organon)
Indications: Migraine, migraine variants
Class: Ergot alkaloid
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: acebutolol, almotriptan, amprenavir, azithromycin, boceprevir, ceritinib, chlortetracycline, crizotinib, darunavir, dasatinib, delavirdine, demeclocycline, doxycycline, eluxadoline, enzalutamide, epinephrine, erythromycin, indinavir, itraconazole, letermovir, lopinavir, lymecycline, methylergonovine, mifepristone, minocycline, naratriptan, nelfinavir, nilotinib, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, oxytetracycline, posaconazole, propyphenazone, ribociclib, ritonavir, telaprevir, telithromycin, tetracycline, tigecycline, tipranavir, troleandomycin, voriconazole, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Ergotamine is excreted in breast milk and may cause symptoms of vomiting, diarrhea, weak pulse and unstable blood pressure in nursing infants.

Skin
Cutaneous toxicity / skin toxicity [4]
Cardiovascular
Valvulopathy [3]
Respiratory
Pleural effusion [2]

ERIBULIN

Trade name: Halaven (Eisai)
Indications: Metastatic breast cancer in patients who have previously received at least two chemotherapeutic regimens (prior therapy should have included an anthracycline and a taxane in either the adjuvant or metastatic setting), unresectable or metastatic liposarcoma in patients who have received a prior anthracycline-containing regimen
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Microtubule inhibitor
Half-life: 40 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No available data but caused embryo-fetal toxicity in animal studies)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Peripheral edema (see also edema) (5–10%)
Rash (5–10%)
Hair
Alopecia / hair loss (45%) [12]
Mucosal
Mucosal inflammation (9%)
Mucositis [2]
Stomatitis (oral mucositis) (5–10%) [2]
Xerostomia (dry mouth) (5–10%)
Central Nervous System
Anorexia (20%) [3]
Depression (5–10%)
Dysgeusia (taste perversion) (5–10%)
Fever (pyrexia) (includes hyperpyrexia) (21%) [2]
Headache (19%)
Insomnia (5–10%)
Neurotoxicity [7]
Peripheral neuropathy (35%) [29]
Vertigo / dizziness (5–10%)
Endocrine/Metabolic
ALT increased [3]
Appetite decreased [2]
Hypokalemia (5–10%)
Weight loss (21%)
Gastrointestinal/Hepatic
Abdominal pain (5–10%)
Constipation (25%) [2]
Diarrhea (18%) [3]
Dyspepsia / functional dyspepsia / gastroparesis (5–10%)
Gastrointestinal disorder / discomfort [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (35%) [10]
Vomiting (18%)
Genitourinary
Urinary tract infection (10%)
Hematologic
Anemia (58%) [17]
Febrile neutropenia (5%) [18]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [21]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [5]
Neutropenia (neutrophils decreased) (82%) [65]
Thrombocytopenia [3]
Thrombosis [2]
Neuromuscular/Skeletal
Arthralgia (22%)
Asthenia / fatigue (54%) [33]
Back pain (16%)
Muscle spasm (5–10%)
Myalgia/Myopathy (22%)
Pain in extremities (11%)
Ocular
Lacrimation (increased) (5–10%)
Respiratory
Cough (14%)
Dyspnea / shortness of breath (16%) [2]
Upper respiratory tract infection (5–10%)
Other
Adverse effects / adverse reactions [7]
Death [3]

ERLOTINIB

Trade name: Tarceva (OSI)
Indications: Non-small cell lung cancer, pancreatic cancer (with gemcitabine)
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, Epidermal growth factor receptor (EGFR) inhibitor / antagonist, Tyrosine kinase inhibitor
Half-life: ~36 hours
Clinically important, potentially hazardous interactions with: atazanavir, capecitabine, carbamazepine, ciprofloxacin, clarithromycin, diclofenac, itraconazole, ketoconazole, meloxicam, nefazodone, nelfinavir, omeprazole, pantoprazole, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, troleandomycin, voriconazole, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acne keloid [2]
Acneiform eruption / acneiform dermatitis / acneiform rash [29]
AGEP [3]
Cutaneous toxicity / skin toxicity [10]
Dermatitis [5]
DRESS syndrome [2]
Erythema (18%)
Exanthems [3]
Folliculitis [9]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [3]
Papulopustular eruption [9]

Pruritus (itching) (13%) [10]
Purpura [3]
Rash (75%) [119]
Rosacea [2]
Xerosis / xeroderma (see also dry skin) (12%) [13]

Hair
Alopecia / hair loss [10]
Folliculitis decalvans [3]
Hair changes [4]
Hypertrichosis [4]

Nails
Nail changes [3]
Paronychia [14]

Mucosal
Mucositis [10]
Stomatitis (oral mucositis) (17%) [12]

Cardiovascular
Hypertension [5]

Central Nervous System
Anorexia [9]
Fever (pyrexia) (includes hyperpyrexia) [2]
Neurotoxicity [2]

Endocrine/Metabolic
ALT increased [3]
Appetite decreased [4]
AST increased [3]
Dehydration [3]
Hyperglycemia (includes glucose increased) [3]

Gastrointestinal/Hepatic
Abdominal pain (11%)
Cholangitis / sclerosing cholangitis [2]
Diarrhea [73]
Gastrointestinal bleeding [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [13]
Nausea [18]
Pneumatosis intestinalis / pneumatosis cystoides intestinalis [2]
Vomiting [10]

Hematologic
Anemia [12]
Febrile neutropenia [2]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [5]
Neutropenia (neutrophils decreased) [14]
Thrombocytopenia [10]

Neuromuscular/Skeletal
Asthenia / fatigue (52%) [33]
Rhabdomyolysis [2]

Ocular
Conjunctivitis (conjunctival inflammation) (12%) [3]
Corneal perforation [2]
Ectropion / cicatricial ectropion [4]
Ocular adverse effect [3]
Periorbital rash [2]
Trichomegaly [13]

Respiratory
Cough (33%)
Dyspnea / shortness of breath [4]
Pneumonia [2]
Pneumonitis [7]
Pneumothorax [2]
Pulmonary toxicity [15]

Other
Adverse effects / adverse reactions [12]
Death [10]
Infection (24%) [7]

ERTAPENEM

Trade name: Invanz (Merck)
Indications: Severe resistant bacterial infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; carbapenem, Antimicrobial
Half-life: 4 hours
Clinically important, potentially hazardous interactions with: probenecid
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

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Skin
Edema / fluid retention (see also peripheral edema) (3%)
Erythema (<2%)
Pruritus (itching) (<2%)
Rash (2–3%)
Wound complications [2]

Cardiovascular
Phlebitis (2%)
Thrombophlebitis (2%)

Central Nervous System
Delirium [2]
Encephalopathy (includes hepatic encephalopathy) [6]
Hallucinations [2]
Neurotoxicity [9]
Peripheral neuropathy [2]
Seizures [7]

Gastrointestinal/Hepatic
Nausea [2]

Genitourinary
Vaginitis (includes vulvitis) (<3%)

Local
Injection-site extravasation (2%)

Respiratory
Cough (<2%)

Other
Death (2%)

ERTUGLIFLOZIN

Trade name: Steglatro (Merck Sharpe & Dohme)
Indications: Type II diabetes mellitus
Class: Sodium-glucose co-transporter 2 (SGLT2) inhibitor ('gliflozin')
Half-life: 17 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Not recommended during the second and third trimesters of pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with severe renal impairment, end stage renal disease, or on dialysis.

Central Nervous System
Headache (3–4%)

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) (3%) [2]
Weight loss (<2%)

Genitourinary
Genital mycotic infection (4–9%) [10]
Urinary frequency (2–3%)
Urinary tract infection (4%) [2]
Vaginal pruritus (2–3%)

Neuromuscular/Skeletal
Back pain (<3%)

Respiratory
Nasopharyngitis (2–3%)

Other
Dipsia (thirst) / polydipsia (<3%)

ERYTHROMYCIN

Trade names: Eryc (Warner Chilcott), PCE (AbbVie)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; macrolide, Antimicrobial, CYP3A4 inhibitor
Half-life: 1.4–2 hours
Clinically important, potentially hazardous interactions with: afatinib, alfentanil, aminophylline, amisulpride, amoxicillin, ampicillin, anticonvulsants, arsenic, astemizole, atorvastatin, avanafil, benzodiazepines, bosentan, bromocriptine, buprenorphine, bupropion, carbamazepine, cilostazol, ciprofloxacin, cisapride, clindamycin, clindamycin/tretinoin, clopidogrel, clozapine, colchicine, cyclosporine, CYP3A inhibitors, darifenacin, dasatinib, digoxin, dihydroergotamine, diltiazem, disopyramide, docetaxel, doxercalciferol, dronedarone, enoxacin, eplerenone, ergotamine, estradiol, eszopiclone, everolimus, finerenone, flibanserin, fluconazole, fluoxetine, fluvastatin, gatifloxacin, HMG-CoA reductase inhibitors, imatinib, indacaterol, itraconazole, ketoconazole, levodopa, lomefloxacin, lorazepam, lovastatin, lumateperone, methadone, methylergonovine, methylprednisolone, methysergide, midazolam, mifepristone, mizolastine, moxifloxacin, naldemedine, naloxegol, neratinib, nintedanib, nitrazepam, norfloxacin, ofloxacin, olaparib, oliceridine, oxtriphylline, paroxetine hydrochloride, pentamidine, pimecrolimus, pimozide, pitavastatin, pravastatin, quetiapine, quinolones, ranolazine, relugolix, repaglinide, rilpivirine, rivaroxaban, roflumilast, rosuvastatin, rupatadine, sertraline, sildenafil, silodosin, simeprevir, simvastatin, sparfloxacin, sulpiride, tacrolimus, tadalafil, tamsulosin, terfenadine, tezacaftor/ivacaftor, tramadol, triamcinolone, triazolam, troleandomycin, vardenafil, venetoclax, verapamil, vilazodone, vinblastine, warfarin, zafirlukast, zaleplon, zolpidem, zuclopenthixol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

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Skin
AGEP [3]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
Dermatitis (systemic) [4]
Exanthems (<5%) [4]
Fixed eruption [6]
Hypersensitivity (<10%) [3]

Rash [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [13]
Urticaria / hives [4]

Mucosal
Oral candidiasis (<10%)

Cardiovascular
QT interval prolonged / QT prolongation [5]
Torsades de pointes [8]

Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [4]
Nausea [4]

Local
Injection-site phlebitis (<10%) [2]

Neuromuscular/Skeletal
Rhabdomyolysis [4]

Otic
Tinnitus [3]

Other
Allergic reactions (<2%) [3]

ESCITALOPRAM

Trade name: Lexapro (Forest)
Indications: Major depressive disorders, anxiety
Class: Antidepressant, Selective serotonin reuptake inhibitor (SSRI)
Half-life: 27–32 hours
Clinically important, potentially hazardous interactions with: alcohol, bupropion, gilteritinib, MAO inhibitors, methylphenidate, omeprazole, selegiline, St John's wort, sumatriptan, telaprevir, valerian
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Escitalopram is the (S)-form of citalopram (q.v.).
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) (5%)
Hot flashes / hot flushes (<10%)
Rash (<10%) [3]

Mucosal
Epistaxis (nosebleed) [2]
Oral vesiculation (<19%)
Xerostomia (dry mouth) (6%) [6]

Cardiovascular
QT interval prolonged / QT prolongation [9]
Torsades de pointes [2]

Central Nervous System
Anxiety [3]
Headache (24%) [5]
Insomnia (9–12%) [5]
Paresthesias (<10%)
Parkinsonism [2]
Restless legs syndrome [5]
Serotonin syndrome [5]
Somnolence (drowsiness) (6–13%) [7]
Tremor (<10%)
Vertigo / dizziness (5%) [7]

Endocrine/Metabolic
Galactorrhea [2]
Hyponatremia [4]
SIADH [7]
Weight gain [3]

Gastrointestinal/Hepatic
Abdominal pain [3]
Constipation [2]
Diarrhea [4]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [12]
Vomiting [3]

Genitourinary
Ejaculatory dysfunction (9–14%)
Sexual dysfunction [5]

Neuromuscular/Skeletal
Asthenia / fatigue [4]
Myalgia/Myopathy (<10%)

Ocular
Glaucoma (includes acute angle-closure glaucoma) [4]

Otic
Tinnitus (<10%)

Respiratory
Cough (<10%)
Influenza- ('flu)-like syndrome (5%)

Other
Adverse effects / adverse reactions [3]
Allergic reactions (<10%)
Toothache (odontalgia) (<10%)

ESLICARBAZEPINE

Trade names: Aptiom (Sunovion), Zebinix (Eisai)
Indications: Partial-onset seizures
Class: Anticonvulsant, Antiepileptic
Half-life: 13–20 hours
Clinically important, potentially hazardous interactions with: carbamazepine, digoxin, lamotrigine, levetiracetam, MAO inhibitors, oral contraceptives, oxcarbazepine, phenytoin, topiramate, valproic acid, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Peripheral edema (see also edema) (<2%)
Rash (<3%) [4]

Cardiovascular
Hypertension (<2%)

Central Nervous System
Balance disorder (3%)
Depression (<3%)
Dysarthria (<2%)
Gait instability / postural instability (2%)
Headache (13–15%) [16]
Incoordination [3]
Insomnia (2%)
Seizures [2]
Somnolence (drowsiness) (11–18%) [24]
Tremor (2–4%)
Vertigo / dizziness (20–28%) [28]

Endocrine/Metabolic
Hyponatremia (2%) [7]

Gastrointestinal/Hepatic
Constipation (2%)
Diarrhea (2–4%)
Nausea (10–16%) [14]
Vomiting (6–10%) [7]

Genitourinary
Urinary tract infection (2%)

Neuromuscular/Skeletal
Asthenia / fatigue (4–7%) [12]
Ataxia (4–6%)

Ocular
Diplopia (double vision) (9–11%) [10]
Nystagmus (<2%)
Vision blurred (5–6%) [4]
Vision impaired (<2%)

Respiratory
Cough (<2%)
Nasopharyngitis [3]

Other
Adverse effects / adverse reactions [5]

ESMOLOL

Trade name: Brevibloc (Baxter)
Indications: Tachyarrhythmias, tachycardia
Class: Adrenergic beta-receptor antagonist, Antiarrhythmic class II
Half-life: 9 minutes
Clinically important, potentially hazardous interactions with: clonidine, verapamil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (>10%)

Cardiovascular
Bradycardia / sinus bradycardia [5]
Hypotension [12]

Local
Injection-site pain (8%)
Injection-site reaction (<10%)

Other
Death [2]

ESOMEPRAZOLE

Trade name: Nexium (AstraZeneca)
Indications: Gastroesophageal reflux disease
Class: Proton pump inhibitor (PPI)
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: benzodiazepines, chlordiazepoxide, cilostazol, clonazepam, clopidogrel, clorazepate, diazepam, digoxin, emtricitabine/rilpivirine/tenofovir alafenamide, flurazepam, lorazepam, midazolam, oxazepam, posaconazole, quazepam, rifampin, rilpivirine, St John's wort, temazepam, tipranavir, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
DRESS syndrome [2]
Fixed eruption [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]

Cardiovascular
Chest pain [2]

Central Nervous System
Dysgeusia (taste perversion) [3]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (8–11%) [6]
Somnolence (drowsiness) [2]
Vertigo / dizziness [3]

Endocrine/Metabolic
Hypomagnesemia [2]
Gastrointestinal/Hepatic
Abdominal pain [3]
Constipation [3]
Diarrhea [7]
Nausea [5]
Vomiting [4]
Neuromuscular/Skeletal
Rhabdomyolysis [2]
Respiratory
Bronchitis (4%)
Other
Adverse effects / adverse reactions [6]

ESTAZOLAM

Indications: Insomnia
Class: Benzodiazepine
Half-life: 10–24 hours
Clinically important, potentially hazardous interactions with: cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, indinavir, ritonavir
Pregnancy category: X

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Flushing / rubefaction (<10%)
Pruritus (itching) (<10%)
Rash (>10%)
Urticaria / hives (<10%)
Mucosal
Sialopenia (>10%)
Xerostomia (dry mouth) (>10%)
Central Nervous System
Dysgeusia (taste perversion) (<10%)
Paresthesias (<10%)
Genitourinary
Vaginal pruritus (<10%)
Neuromuscular/Skeletal
Myalgia/Myopathy (<10%)
Other
Adverse effects / adverse reactions [2]

ESTRADIOL

Trade names: Alora (Watson), Climara (Bayer), Divigel (Upsher-Smith), Elestrin (Azur Pharma), Esclim (Women First), Estrace (Bristol-Myers Squibb) (Warner Chilcott), Estraderm (Novartis), Estring (Pharmacia & Upjohn), Estrogel (Ascend), Evamist (KV Pharm), Fempatch (Pfizer), Gynodiol (Barr), Innofem (Novo Nordisk), Menostar (Bayer), Vagifem (Novo Nordisk), Vivelle (Novartis), Vivelle-Dot (Novartis)
Indications: Menopausal symptoms, hypoestrogenism due to hypogonadism, castration or primary ovarian failure, postmenopausal osteoporosis
Class: Estrogen, Hormone
Half-life: 1.75±2.87 hours
Clinically important, potentially hazardous interactions with: alcohol, amprenavir, anastrozole, ascorbic acid, atorvastatin, boceprevir, carbamazepine, chenodiol, clarithromycin, colesevelam, conivaptan, corticosteroids, CYP1A2 inducers, CYP3A4 inducers, deferasirox, delavirdine, erythromycin, folic acid, grapefruit juice, itraconazole, ketoconazole, lopinavir, minocycline, oxtriphylline, P-glycoprotein inhibitors or inducers, PEG-interferon, phenobarbital, rifampin, ritonavir, ropinirole, saxagliptin, somatropin, St John's wort, telaprevir, thyroid products, tipranavir, ursodiol
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: See also separate entry for estrogens.
Warning: ENDOMETRIAL CANCER, CARDIOVASCULAR DISORDERS, BREAST CANCER and PROBABLE DEMENTIA

Central Nervous System
Headache [2]
Endocrine/Metabolic
Mastodynia (7%)
Gastrointestinal/Hepatic
Nausea [3]
Genitourinary
Metrorrhagia (4%)
Respiratory
Nasopharyngitis (10%)
Upper respiratory tract infection (6%)
Other
Adverse effects / adverse reactions [3]

ESTRAMUSTINE

Trade name: Emcyt (Pfizer)
Indications: Prostate carcinoma
Class: Alkylating agent, Nitrosourea
Half-life: 20 hours
Clinically important, potentially hazardous interactions with: aldesleukin
Pregnancy category: X (not indicated for use in women)

Skin
Angioedema [2]
Edema / fluid retention (see also peripheral edema) (>10%) [4]
Peripheral edema (see also edema) [2]
Pruritus (itching) (2%) [2]
Purpura (3%)
Xerosis / xeroderma (see also dry skin) (2%)
Cardiovascular
Thrombophlebitis (3%)
Endocrine/Metabolic
Gynecomastia (>10%) [5]
Mastodynia (66%)
Gastrointestinal/Hepatic
Diarrhea [3]
Nausea [3]
Hematologic
Anemia [3]
Febrile neutropenia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [5]
Local
Injection-site thrombophlebitis (<10%) [3]
Neuromuscular/Skeletal
Asthenia / fatigue [3]
Other
Allergic reactions [2]
Death [2]

ESTROGENS

Trade names: Estrace (Warner Chilcott), Estraderm (Novartis), Estratab (Solvay), Menest (Monarch), Ogen (Pfizer), Premarin (Wyeth)
Indications: Menopausal symptoms, hypoestrogenism due to hypogonadism, castration or primary ovarian failure, postmenopausal osteoporosis
Class: Estrogen
Half-life: N/A
Clinically important, potentially hazardous interactions with: acarbose, acebutolol, alfuzosin, amitriptyline, anastrozole, aprepitant, atazanavir, beclomethasone, betamethasone, captopril, cilazapril, darunavir, enalapril, flunisolide, fosinopril, hydrocortisone, indinavir, insulin aspart, insulin degludec, insulin detemir, insulin glargine, lisinopril, metformin, minocycline, nelfinavir, olmesartan, oxtriphylline, penicillin G, penicillin V, prednisone, quinapril, ramipril, saxagliptin, sitagliptin, somatropin, terbinafine, tipranavir, trandolapril, triamcinolone, ursodiol, voriconazole
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Estrogen administration to women who are breastfeeding has been shown to decrease the quantity and quality of the milk. Estrogens are not indicated for the prevention of postpartum breast engorgement. A Women's Health Initiative (WHI) estrogen alone study reported increased risks of stroke and deep vein thrombosis (DVT) in postmenopausal women (50–79 years of age) and an increased risk of developing probable dementia in postmenopausal women over 65 years of age. Large and repeated doses of estrogen over an extended time period have been shown to accelerate epiphyseal closure, which could result in short adult stature if treatment is initiated before the completion of physiologic puberty in normally developing children. Estrogen treatment of prepubertal girls also induces premature breast development and vaginal cornification, and may induce gynecomastia.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (5%)
Angioedema [4]
Dermatitis [2]
Erythema nodosum [2]
Exanthems [4]
Flushing / rubefaction (5%) [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [11]
Melasma [2]
Papulovesicular eruption [2]
Photosensitivity [3]
Pigmentation [2]
Pruritus (itching) [7]
Tumors [3]
Urticaria / hives [4]
Hair
Alopecia / hair loss [2]
Hirsutism [2]
Endocrine/Metabolic
Gynecomastia (>10%) [9]
Mastodynia (>10%) [3]
Porphyria [2]
Porphyria cutanea tarda [21]

Gastrointestinal/Hepatic
Pancreatitis / acute pancreatitis [4]
Local
Injection-site pain (<10%)

ESZOPICLONE

Trade names: Imovane (Sanofi-Aventis), Lunesta (Sunovion), Zimovane (Sanofi-Aventis)
Indications: Insomnia
Class: Hypnotic, non-benzodiazepine
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: alcohol, antifungals, cimetidine, CNS depressants, conivaptan, CYP3A4 inhibitors and inducers, dasatinib, deferasirox, droperidol, erythromycin, ethanol, flumazenil, ketoconazole, levomepromazine, lorazepam, nefazodone, nelfinavir, olanzapine, rifampin, ritonavir, St John's wort, telithromycin, tricyclic antidepressants, valerian, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Skin
Pruritus (itching) (<4%)
Rash (<5%)
Mucosal
Xerostomia (dry mouth) (3–7%) [5]
Central Nervous System
Abnormal dreams (<3%)
Amnesia [3]
Anxiety (<3%)
Confusion (<3%)
Depression (<4%)
Dysgeusia (taste perversion) (8–34%) [22]
Hallucinations (<3%)
Headache (13–21%) [9]
Nervousness (<5%)
Neurotoxicity (<3%)
Pain (4–5%)
Somnolence (drowsiness) (8–10%) [2]
Vertigo / dizziness [3]
Endocrine/Metabolic
Gynecomastia (<3%)
Libido decreased (<3%)
Gastrointestinal/Hepatic
Diarrhea (2–4%)
Dyspepsia / functional dyspepsia / gastroparesis (2–6%)
Nausea (4–5%) [2]
Vomiting (<3%)
Genitourinary
Dysmenorrhea (<3%)
Urinary tract infection (<3%)
Other
Adverse effects / adverse reactions [4]
Infection (3–10%)

ETAMSYLATE

Trade name: Dicynene (Sanofi-Aventis)
Indications: Primary and IUD-induced menorrhagia
Class: Hemostatic, Vitamin K
Half-life: 4–8 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

ETANERCEPT

Trade names: Enbrel (Amgen), Erelzi (Sandoz)
Indications: Rheumatoid arthritis, polyarticular juvenile idiopathic arthritis in patients aged 2 years or older, psoriatic arthritis, ankylosing spondylitis, plaque psoriasis
Class: Anti-Tumor Necrosis Factor-alpha (TNF-α antagonist), Antipsoriatic agent, Biologic, Biologic disease-modifying antirheumatic drug (bDMARD), Cytokine inhibitor, Disease-modifying antirheumatic drug (DMARD)
Half-life: 4–13 days
Clinically important, potentially hazardous interactions with: abatacept, anakinra, cyclophosphamide, live vaccines
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: TNF inhibitors should be used in patients with heart failure only after consideration of other treatment options. Contra-indicated in patients with sepsis. TNF inhibitors are contra-indicated in patients with a personal or family history of multiple sclerosis or demyelinating disease. TNF inhibitors should not be administered to patients with moderate to severe heart failure (New York Heart Association Functional Class III/IV).
Warning: SERIOUS INFECTIONS AND MALIGNANCIES

Skin
Abscess [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Carcinoma [2]
Cellulitis [2]
Dermatitis [3]
Dermatomyositis [4]
Exanthems [2]
Granulomas [2]
Granulomatous reaction [5]
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis [3]
Herpes zoster [6]
Hidradenitis suppurativa (acne inversa) [2]
Leprosy [2]
Lichen planus (includes hypertrophic lichen planus) [2]
Lichenoid eruption / lichenoid reaction [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [25]
Lupus syndrome / drug-induced lupus (DIL) [4]
Lymphoma [3]
Melanoma [2]
Nodular eruption [3]
Pruritus (itching) (2–5%) [2]
Psoriasis [21]
Pustules / pustular eruption [2]
Rash (3–13%) [8]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [10]
Squamous cell carcinoma [4]
Urticaria / hives (2%) [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [23]
Hair
Alopecia / hair loss [5]
Cardiovascular
Atrial fibrillation [2]
Cardiotoxicity [2]
Congestive heart failure [2]
Hypertension [2]
Central Nervous System
Demyelinating neuropathy / demyelination [3]
Fever (pyrexia) (includes hyperpyrexia) (2–3%) [3]
Headache [20]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [3]
Multiple sclerosis [2]
Neurotoxicity [4]
Paresthesias [2]
Peripheral neuropathy [2]
Vertigo / dizziness [3]
Endocrine/Metabolic
ALT increased [3]
Hypertriglyceridemia (includes triglycerides increased) [2]
Thyroiditis [3]
Weight gain [2]
Gastrointestinal/Hepatic
Abdominal pain [4]
Colitis [2]
Crohn's disease [5]
Diarrhea (8–16%) [5]
Gastroenteritis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Inflammatory bowel disease [2]
Nausea [5]
Genitourinary
Cystitis [2]
Urinary tract infection [2]
Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Macrophage activation syndrome [2]
Neutropenia (neutrophils decreased) [3]
Pancytopenia (includes bicytopenia) [3]
Thrombocytopenia [2]
Local
Injection-site reaction (37–43%) [65]
Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue [7]
Back pain [2]
Myalgia/Myopathy [2]
Myasthenia gravis [3]
Ocular
Uveitis / anterior uveitis / posterior uveitis / panuveitis [13]
Otic
Otitis media [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Asthma [2]
Bronchitis [5]
Cough [4]
Influenza- ('flu)-like syndrome [3]
Laryngitis [2]
Nasopharyngitis [6]
Pharyngitis (sore throat) [5]
Pneumonia [7]
Pneumonitis [2]
Pulmonary toxicity [4]
Rhinitis [4]

Sinusitis [5]
Tuberculosis [2]
Upper respiratory tract infection (38–65%) [14]

Other
Adverse effects / adverse reactions [38]
Allergic reactions (<3%)
Death [7]
Infection (50–81%) [47]
Malignancies (<3%) [4]
Neoplasms [2]

ETHACRYNIC ACID

Trade name: Edecrin (Merck)
Indications: Edema
Class: Diuretic, loop
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: amikacin, aminoglycosides, digoxin, gentamicin, kanamycin, neomycin, streptomycin, tobramycin
Pregnancy category: B

Skin
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Otic
Ototoxicity [4]

ETHAMBUTOL

Trade name: Myambutol (Stat Trade)
Indications: Tuberculosis
Class: Antimycobacterial (including antitubercular)
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: cortisone, zinc
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Bullous dermatosis [2]
Dermatitis [2]
DRESS syndrome [5]
Erythema multiforme [2]
Exanthems (<5%) [4]
Hypersensitivity [3]
Lichenoid eruption / lichenoid reaction [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Pruritus (itching) [4]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives [2]

Central Nervous System
Peripheral neuropathy [2]

Ocular
Amblyopia [2]
Ocular toxicity [9]
Optic neuritis [5]
Optic neuropathy [11]
Vision impaired [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Adverse effects / adverse reactions [4]

ETHANOLAMINE

Trade name: Ethamolin (GSK)
Indications: Bleeding esophageal varices
Class: Sclerosant, local
Half-life: N/A
Clinically important, potentially hazardous interactions with: acitretin, amobarbital, aprobarbital, butabarbital, disulfiram, insulin, mephobarbital, pentobarbital, phenobarbital, primidone, secobarbital, thiopental
Pregnancy category: C

Skin
Dermatitis [5]

ETHCHLORVYNOL

Indications: Insomnia
Class: Sedative
Half-life: 10–20 hours
Clinically important, potentially hazardous interactions with: antihistamines, brompheniramine, buclizine, chlorpheniramine, clemastine, dexchlorpheniramine, meclizine, tripelennamine
Pregnancy category: C

Skin
Bullous dermatosis (from overdose) [2]
Rash (<10%)

Central Nervous System
Dysgeusia (taste perversion) (>10%)

ETHIONAMIDE

Trade name: Trecator-SC (Wyeth)
Indications: Tuberculosis
Class: Antibiotic, Antimicrobial, Antimycobacterial (including antitubercular)
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
Exanthems [2]
Pellagra [2]
Photosensitivity [2]
Urticaria / hives (<5%)

Hair
Alopecia / hair loss [3]

Central Nervous System
Dysgeusia (taste perversion) (<10%)
Peripheral neuropathy [3]

Endocrine/Metabolic
Gynecomastia [3]
Hypothyroidism [3]

Other
Adverse effects / adverse reactions [5]

ETHOSUXIMIDE

Trade name: Zarontin (Pfizer)
Indications: Absence (petit mal) seizures
Class: Antiepileptic; succinimide
Half-life: 50–60 hours
Clinically important, potentially hazardous interactions with: antipsychotics, carbamazepine, chloroquine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, hydroxychloroquine, isoniazid, levomepromazine, lisdexamfetamine, MAO inhibitors, mefloquine, nevirapine, orlistat, phenobarbital, phenytoin, primidone, risperidone, SSRIs, St John's wort, tricyclic antidepressants, valproic acid, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Cases of birth defects have been reported with ethosuximide.

Skin
Exanthems (<5%) [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (>10%) [22]
Raynaud's phenomenon [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (>10%)
Urticaria / hives (<5%)

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [2]

Other
Side effects (3%)

ETHOTOIN

Trade name: Peganone (Ovation)
Indications: Tonic–clonic (grand mal) seizures
Class: Antiepileptic; hydantoin
Half-life: 3–9 hours
Clinically important, potentially hazardous interactions with: chloramphenicol, cyclosporine, disulfiram, dopamine, imatinib, itraconazole, phenacemide
Pregnancy category: D

ETHOXZOLAMIDE

Trade names: Cardase (Pharmacia & Upjohn), Ethamide (Allergan)
Other common trade names: Ethoxazolamide, Ethoxyzolamide, Etoxzolamide
Indications: Glaucoma, duodenal ulcers, may be used as a diuretic in the treatment of epileptic seizures
Class: Carbonic anhydrase inhibitor, Sulfonamide
Half-life: 2.5–5.5 hours
Clinically important, potentially hazardous interactions with: amphotericin B, corticosteroids, lithium, procainamide, quinidine
Note: Ethoxzolamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Central Nervous System
Depression [2]

Dysgeusia (taste perversion) [2]
Paresthesias [2]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [2]
Libido decreased [2]
Weight loss [2]

Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis [2]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Ocular
Myopia [3]

Renal
Nephrolithiasis (formation of a kidney stone) [2]

ETIDRONATE

Trade name: Didronel (Procter & Gamble)
Indications: Paget's disease, osteoporosis
Class: Bisphosphonate
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: ferrous sulfate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Gastrointestinal/Hepatic
Esophagitis [2]

Neuromuscular/Skeletal
Fractures [6]
Osteomalacia [3]
Pseudogout (see crystal arthritis) [2]
Skeletal toxicity [2]

ETODOLAC

Trade name: Lodine (Wyeth)
Indications: Pain
Class: COX-2 inhibitor, Non-steroidal anti-inflammatory (NSAID)
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: aspirin, methotrexate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Exanthems [2]
Facial edema [2]
Fixed eruption [2]
Pruritus (itching) (<10%) [7]
Rash (>10%) [5]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Gastrointestinal/Hepatic
Abdominal pain [3]
Constipation [2]
Dyspepsia / functional dyspepsia / gastroparesis [4]
Nausea [3]

Other
Adverse effects / adverse reactions [2]

ETOPOSIDE

Trade name: VePesid (Bristol-Myers Squibb)
Indications: Lymphomas, carcinomas
Class: Topoisomerase 2 inhibitor
Half-life: 4–11 hours
Clinically important, potentially hazardous interactions with: aldesleukin, atovaquone, atovaquone/proguanil, cyclosporine, gadobenate, prednisolone, St John's wort
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%) [3]
Cutaneous toxicity / skin toxicity [2]
Erythema [3]
Exanthems [4]
Flushing / rubefaction [3]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [4]
Hypersensitivity [9]
Pigmentation [2]
Radiation recall dermatitis [3]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]

Hair
Alopecia / hair loss (8–66%) [10]

Mucosal
Mucositis (>10%)
Oral lesions (<5%) [2]
Stomatitis (oral mucositis) (<10%) [2]

Central Nervous System
Anorexia [4]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Neurotoxicity [3]

Endocrine/Metabolic
Hyponatremia [2]

Gastrointestinal/Hepatic
Diarrhea [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [8]
Vomiting [8]

Hematologic
Anemia [9]
Febrile neutropenia [7]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [5]
Myeloid leukemia [2]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) [14]
Thrombocytopenia [11]

Neuromuscular/Skeletal
Asthenia / fatigue [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

Respiratory
Pulmonary toxicity [2]

Other
Adverse effects / adverse reactions [3]
Allergic reactions (<2%)
Death [3]
Infection [5]

ETORICOXIB

Trade name: Arcoxia (MSD)
Indications: Rheumatoid arthritis, osteoarthritis, ankylosing spondylitis, chronic low back pain, dysmenorrhea, acute gouty arthritis
Class: COX-2 inhibitor, Non-steroidal anti-inflammatory (NSAID)
Half-life: 22 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, cyclosporine, dexibuprofen, lithium, methotrexate, rifampin, tacrolimus, warfarin
Pregnancy category: N/A (Contra-indicated in pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Angioedema [3]
Fixed eruption [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Urticaria / hives [4]

Cardiovascular
Cardiotoxicity [6]
Hypertension [3]
Myocardial infarction [2]

Central Nervous System
Stroke / cerebral infarction [2]

Other
Adverse effects / adverse reactions [4]

ETRAVIRINE

Trade name: Intelence (Tibotec)
Indications: HIV infection
Class: Non-nucleoside reverse transcriptase inhibitor
Half-life: 41 hours
Clinically important, potentially hazardous interactions with: atazanavir, atorvastatin, carbamazepine, clarithromycin, clopidogrel, darunavir, delavirdine, digoxin, doravirine, efavirenz, fosamprenavir, ibrexafungerp, indinavir, lemborexant, lumateperone, maraviroc, nelfinavir, neratinib, nevirapine, non-nucleoside reverse transcriptase inhibitors, olaparib, palbociclib, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, rilpivirine, ritonavir, sildenafil, simeprevir, St John's wort, tadalafil, telithromycin, tipranavir, vardenafil, venetoclax, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Facial edema (<2%)
Hyperhidrosis (see also diaphoresis) (<2%)
Lipohypertrophy (<2%)
Prurigo (<2%)
Rash (9%) [17]

Xerosis / xeroderma (see also dry skin) (<2%)

Mucosal
Stomatitis (oral mucositis) (<2%)
Xerostomia (dry mouth) (<2%)

Cardiovascular
Angina (<2%)
Atrial fibrillation (<2%)
Hypertension (3%)
Myocardial infarction (<2%)

Central Nervous System
Abnormal dreams (<2%)
Amnesia (<2%)
Anorexia (<2%)
Anxiety (<2%)
Confusion (<2%)
Disorientation (<2%)
Headache (3%) [3]
Hypersomnia (<2%)
Hypoesthesia (numbness) (<2%)
Insomnia (<2%)
Nervousness (<2%)
Neurotoxicity [3]
Nightmares (<2%)
Paresthesias (<2%)
Peripheral neuropathy (3%)
Seizures (<2%)
Sleep-related disorder (<2%)
Somnolence (drowsiness) (<2%)
Syncope / fainting (<2%)
Tremor (<2%)
Vertigo / dizziness (<2%)

Endocrine/Metabolic
Diabetes mellitus (<2%)
Dyslipidemia (<2%)
Gynecomastia (<2%)

Gastrointestinal/Hepatic
Abdominal distension (<2%)
Abdominal pain (3%)
Constipation (<2%)
Diarrhea [3]
Flatulence (<2%)
Gastritis / pangastritis / gastric irritation (<2%)
Gastroesophageal reflux (<2%)
Hematemesis (<2%)
Hepatic failure (<2%)
Hepatomegaly (<2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [4]
Pancreatitis / acute pancreatitis (<2%)
Retching (<2%)

Hematologic
Hemolytic anemia (<2%)

Neuromuscular/Skeletal
Asthenia / fatigue (3%)

Ocular
Vision blurred (<2%)

Renal
Renal failure (<2%)

Respiratory
Bronchospasm (<2%)
Dyspnea / shortness of breath (<2%)

Other
Adverse effects / adverse reactions [6]

EUCALYPTUS

Family: Myrtacceae
Scientific names: *Eucalyptus bicostata, Eucalyptus fruticetorum, Eucalyptus globulus, Eucalyptus odorata, Eucalyptus pauciflora, Eucalyptus polybractea, Eucalyptus smithii*
Indications: Asthma, bronchitis, cough, croup, fever, joint and muscle pains, nasal congestion, sore throats, rheumatism. Flavoring, fragrance, toothpaste, substances used in root canal fillings
Class: Anti-inflammatory, Diuretic
Half-life: N/A
Clinically important, potentially hazardous interactions with: aminophylline, amitriptyline, borage, carisoprodol, coltsfoot, comfrey, diazepam, insulin, lansoprazole, nelfinavir, pantoprazole
Pregnancy category: N/A
Note: [O] = Oral.

EVENING PRIMROSE

Family: Onagraceae
Scientific names: *Oenothera biennis, Oenothera muricata, Oenothera purpurata, Oenothera rubricaulis, Oenothera suaveolens*
Indications: Mastalgia, osteoporosis, atopic dermatitis, rheumatoid arthritis, hypercholesterolemia, chronic fatigue syndrome, neurodermatitis, ulcerative colitis, irritable bowel syndrome. Used in soaps and cosmetics
Class: Anti-inflammatory, Gamma linoleic acid
Half-life: N/A
Clinically important, potentially hazardous interactions with: aspirin, chlorpromazine, fluphenazine, phenothiazine
Pregnancy category: N/A
Note: The Medicines Control Agency (MCA) has withdrawn licenses for prescription evening primrose drug products under the brand names of Epogam and Efamast. This was because there is not enough evidence that they are effective.

Other
Adverse effects / adverse reactions [3]

EVEROLIMUS

Trade names: Afinitor (Novartis), Certican (Novartis), Zortress (Novartis)
Indications: Prophylaxis of organ rejection in adults following kidney or liver transplant, advanced renal cell carcinoma, neuroendocrine tumors of pancreatic, gastrointestinal or lung origin, breast cancer in post-menopausal women with advanced hormone-receptor positive, HER2-negative type cancer, renal angiomyolipoma and tuberous sclerosis complex, subependymal giant cell astrocytoma associated with tuberous sclerosis
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Immunosuppressant, mTOR inhibitor
Half-life: ~30 hours
Clinically important, potentially hazardous interactions with: aprepitant, atazanavir, atorvastatin, benazepril, captopril, clarithromycin, clozapine, conivaptan, cyclosporine, darunavir, delavirdine, digoxin, efavirenz, enalapril, erythromycin, grapefruit juice, indinavir, itraconazole, ketoconazole, lapatinib, lisinopril, live vaccines, nelfinavir, oxcarbazepine, phenytoin, posaconazole, quinapril, ramipril, ribociclib, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, telithromycin, venetoclax, verapamil, viloxazine, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: In immunosuppression therapy: MALIGNANCIES AND SERIOUS INFECTIONS, KIDNEY GRAFT THROMBOSIS; NEPHROTOXICITY
In heart transplantation: MORTALITY

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (3–25%) [5]
Angioedema [4]
Cellulitis (21%)
Contact dermatitis (14%)
Cutaneous toxicity / skin toxicity [9]
Dermatitis [2]
Edema / fluid retention (see also peripheral edema) (39%) [6]
Erythema (4%) [2]
Exanthems [4]
Excoriations (14%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (5%) [9]
Hypersensitivity [2]
Lymphedema [2]
Peripheral edema (see also edema) (4–39%) [8]
Pityriasis rosea (4%)
Pruritus (itching) (14–21%) [5]
Rash (18–59%) [51]
Tinea (18%)
Xerosis / xeroderma (see also dry skin) (13–18%)

Nails
Nail disorder (4–22%) [2]

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [5]
Epistaxis (nosebleed) (18–22%) [3]
Mucosal inflammation (19%) [3]
Mucositis [18]
Nasal congestion (14%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [4]
Oropharyngeal pain (11%)
Rhinorrhea (3%)
Stomatitis (oral mucositis) (44–86%) [87]
Xerostomia (dry mouth) (8–11%)

Cardiovascular
Chest pain (5%)
Hypertension (4–13%) [14]
Tachycardia (3%)

Central Nervous System
Anorexia (25%) [12]
Anxiety (7%)
Chills (4%)
Dysgeusia (taste perversion) (10–19%) [2]
Fever (pyrexia) (includes hyperpyrexia) (20–32%) [7]
Headache (18–30%) [4]
Insomnia (9%)
Migraine (30%)
Pain [2]
Peripheral neuropathy [2]
Seizures (29%)
Somnolence (drowsiness) (7%)

Vertigo / dizziness (7–14%)

Endocrine/Metabolic
ALT increased (21–48%) [4]
Amenorrhea [2]
Appetite decreased (30%) [5]
AST increased (25–56%) [3]
Diabetes mellitus (2–10%) [2]
Dyslipidemia [2]
GGT increased [2]
Hypercholesterolemia [8]
Hyperglycemia (includes glucose increased) [40]
Hyperlipidemia [9]
Hypertriglyceridemia (includes triglycerides increased) [3]
Hypokalemia [5]
Hypomagnesemia [2]
Hyponatremia [3]
Hypophosphatemia [5]
Hypothyroidism [2]
Serum creatinine increased (19–50%) [4]
Weight loss (9–28%) [3]

Gastrointestinal/Hepatic
Abdominal pain (9–36%) [4]
Constipation (11–14%)
Diarrhea (25–50%) [36]
Dysphagia (4%)
Gastritis / pangastritis / gastric irritation (7%)
Gastroenteritis (18%)
Gastrointestinal bleeding [3]
Hemorrhoids (5%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Nausea (26–32%) [12]
Pancreatitis / acute pancreatitis [2]
Vomiting (20–29%) [3]

Genitourinary
Urinary tract infection (15%)

Hematologic
Anemia [39]
Cytopenia [2]
Febrile neutropenia [5]
Hemoglobin decreased (86–92%) [2]
Hemolytic uremic syndrome [2]
Hemorrhage (3%) [3]
Hemotoxicity [5]
Immunosupression [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [8]
Neutropenia (neutrophils decreased) [19]
Platelets decreased (23–45%)
Sepsis [2]
Thrombocytopenia [23]

Neuromuscular/Skeletal
Arthralgia (15%)
Asthenia / fatigue (7–45%) [64]
Back pain (15%)
Jaw pain (3%)
Muscle spasm (10%)
Pain in extremities (10–14%)

Ocular
Conjunctivitis (conjunctival inflammation) (2%)
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) (4%) [2]
Ocular hyperemia (4%)

Otic
Otitis media (36%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [7]
Proteinuria (7%) [17]
Renal failure (3%) [3]

Respiratory
Cough (21–30%) [6]
Dyspnea / shortness of breath (20–24%) [8]
Nasopharyngitis (25%)
Pharyngitis (sore throat) (11%)
Pharyngolaryngeal pain (4%)
Pleural effusion (7%)
Pneumocystis jirovecii pneumonia [5]
Pneumonia [11]
Pneumonitis (14–17%) [45]
Pulmonary toxicity [11]
Rhinitis (25%)
Sinusitis (39%)
Upper respiratory tract infection (25–82%) [2]

Other
Adverse effects / adverse reactions [32]
Death [10]
Infection (18%) [32]
Side effects [2]

EVOLOCUMAB

Trade name: Repatha (Amgen)
Indications: Heterozygous or homozygous familial hypercholesterolemia where additional lowering of low density lipoprotein cholesterol is required, hyperlipidemia
Class: Monoclonal antibody, Proprotein convertase subtilisin kexin type 9 (PCSK9) inhibitor
Half-life: 11–17 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No data available but likely to cross the placenta in second and third trimester)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

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Mucosal
Nasal congestion [3]
Oropharyngeal pain [3]

Cardiovascular
Hypertension (2%)

Central Nervous System
Headache (4%) [11]
Neurotoxicity [2]
Vertigo / dizziness (3%)

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [9]

Gastrointestinal/Hepatic
Diarrhea (3%) [6]
Gastroenteritis (2%) [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea [4]

Genitourinary
Urinary tract infection (<4%)

Local
Injection-site bruising [4]
Injection-site edema [2]
Injection-site erythema [3]
Injection-site pain [7]
Injection-site reaction (3–5%) [10]

Neuromuscular/Skeletal
Arthralgia (2%) [9]
Asthenia / fatigue [3]
Back pain (2–6%) [10]
Bone or joint pain (3%) [4]
Muscle spasm [7]
Myalgia/Myopathy (3%) [11]
Pain in extremities [5]

Respiratory
Cough (<4%) [4]
Influenza (<6%) [10]
Nasopharyngitis (4–10%) [14]
Pharyngitis (sore throat) [2]
Sinusitis (3%) [2]
Upper respiratory tract infection (2–6%) [12]

Other
Adverse effects / adverse reactions [8]
Allergic reactions (5%)

EXEMESTANE

Trade name: Aromasin (Pfizer)
Indications: Advanced breast cancer
Class: Aromatase inhibitor
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: efavirenz, oxcarbazepine, rifapentine
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Diaphoresis (see also hyperhidrosis) (6–12%) [2]
Edema / fluid retention (see also peripheral edema) (7%)
Hot flashes / hot flushes (30%) [7]
Lymphedema (2–5%)
Peripheral edema (see also edema) (9%) [2]
Pruritus (itching) (2–5%)
Radiation recall dermatitis [2]
Rash (2–5%) [6]

Hair
Alopecia / hair loss (2–5%)

Mucosal
Stomatitis (oral mucositis) [11]

Central Nervous System
Dysgeusia (taste perversion) [2]
Headache [3]
Insomnia [2]
Paresthesias (2–5%)
Tumor pain (30%)

Endocrine/Metabolic
Hyperglycemia (includes glucose increased) [5]

Gastrointestinal/Hepatic
Cholestatic liver injury / cholestatic hepatitis [2]
Diarrhea [4]
Nausea [2]

Hematologic
Anemia [3]

Neuromuscular/Skeletal
Arthralgia [4]
Asthenia / fatigue [7]
Back pain [2]
Bone or joint pain [2]
Myalgia/Myopathy [2]

Respiratory
Dyspnea / shortness of breath [2]
Pneumonitis [6]
Pulmonary toxicity [2]
Other
Adverse effects / adverse reactions [2]

EXENATIDE

Trade names: Bydureon (Amylin), Byetta (Amylin)
Indications: Type II diabetes mellitus
Class: Antidiabetic, Glucagon-like peptide-1 (GLP-1) receptor agonist, Incretin mimetic, Insulin secretagogue
Half-life: 2.4 hours
Clinically important, potentially hazardous interactions with: acetaminophen, alcohol, antibiotics, corticosteroids, lovastatin, oral contraceptives, pegvisomant, prandial insulin, somatropin, sulfonylureas, thiazide diuretics, vitamin K antagonists, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Risk of thyroid C-cell tumors with exenatide extended release formulations. Bydureon is contra-indicated in patients with a personal or family history of medullary thyroid carcinoma or in patients with multiple endocrine neoplasia syndrome Type 2.

Skin
Hyperhidrosis (see also diaphoresis) (<10%)
Urticaria / hives [2]
Cardiovascular
Cardiotoxicity [2]
Central Nervous System
Chills (<2%)
Headache (<10%) [9]
Vertigo / dizziness (<10%) [4]
Endocrine/Metabolic
Appetite decreased (<10%) [3]
Hypoglycemia (see also insulin autoimmune syndrome) (>5%) [7]
Gastrointestinal/Hepatic
Abdominal distension (<10%)
Abdominal pain (<10%) [2]
Constipation (>5%) [3]
Diarrhea (<11%) [19]
Dyspepsia / functional dyspepsia / gastroparesis (<10%)
Flatulence (2%)
Gastroenteritis (<10%)
Gastroesophageal reflux (3%)
Gastrointestinal disorder / discomfort [3]
Nausea (<11%) [46]
Pancreatitis / acute pancreatitis [10]
Vomiting (~10%) [27]
Genitourinary
Urinary tract infection [2]
Local
Injection-site erythema (5–7%)
Injection-site nodules (~10%) [4]
Injection-site pruritus (5–6%) [2]
Injection-site reaction [8]
Neuromuscular/Skeletal
Asthenia / fatigue (<10%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure [3]
Respiratory
Nasopharyngitis [2]
Other
Adverse effects / adverse reactions [10]
Cancer [2]

EZETIMIBE

Trade names: Ezetrol (Merck), Liptruzet (Merck Sharpe & Dohme), Vytorin (MSD), Zetia (Merck)
Indications: Hypercholesterolemia
Class: Cholesterol inhibitor
Half-life: 22 hours
Clinically important, potentially hazardous interactions with: cholestyramine, cyclosporine, fenofibrate, gemfibrozil, HMG-CoA reductase inhibitors, ritonavir
Pregnancy category: C (Pregnancy category is X when combined with a statin.)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Liptruzet is ezetimibe and atorvastatin; vytorin is ezetimibe and simvastatin.

Skin
Rash [3]
Central Nervous System
Headache [5]
Vertigo / dizziness [4]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [8]
Gastrointestinal/Hepatic
Abdominal pain (2%)
Diarrhea [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea [4]
Pancreatitis / acute pancreatitis [3]
Genitourinary
Urinary tract infection [2]
Hematologic
Thrombocytopenia [2]
Local
Injection-site erythema [2]
Injection-site reaction [6]
Neuromuscular/Skeletal
Arthralgia (4%) [3]
Asthenia / fatigue [2]
Back pain (4%) [4]
Bone or joint pain [4]
Muscle spasm [3]
Myalgia/Myopathy (5%) [16]
Pain in extremities [2]
Respiratory
Cough (2%)
Influenza [3]
Nasopharyngitis [5]
Upper respiratory tract infection [3]
Other
Adverse effects / adverse reactions [8]

EZOGABINE

Synonym: retigabine
Trade names: Potiga (GSK), Trobalt (GSK)
Indications: Epilepsy
Class: Anticonvulsant, Potassium channel opener
Half-life: 7–11 hours
Clinically important, potentially hazardous interactions with: alcohol, carbamazepine, digoxin, phenytoin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: In 2013, the FDA placed a black boxed warning on the retigabine (ezogabine) drug label, related to risks of retinal abnormalities, potential vision loss, and blue discoloration of the skin, nail, mucous membrane, and eyes. Retigabine was withdrawn in the UK from the beginning of 2017.
Warning: RETINAL ABNORMALITIES AND POTENTIAL VISION LOSS

Skin
Hyperhidrosis (see also diaphoresis) (<2%)
Peripheral edema (see also edema) (<2%)
Pigmentation [2]
Mucosal
Mucosal membrane pigmentation [4]
Xerostomia (dry mouth) (<2%)
Central Nervous System
Amnesia (2%)
Anxiety (3%)
Aphasia (4%)
Balance disorder (4%)
Confusion (9%) [6]
Disorientation (2%)
Dysarthria (4%) [3]
Dysphasia (2%)
Gait instability / postural instability (4%)
Hallucinations (<2%)
Headache [6]
Hypokinesia (<2%)
Impaired concentration (6%)
Incoordination (7%)
Memory loss/memory impaired (6%)
Neurotoxicity [3]
Paresthesias (3%)
Somnolence (drowsiness) (22%) [14]
Speech disorder [3]
Tremor (8%) [3]
Vertigo / dizziness (31%) [14]
Endocrine/Metabolic
Appetite increased (<2%)
Weight gain (dose related) (3%)
Gastrointestinal/Hepatic
Constipation (3%)
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Dysphagia (<2%)
Nausea (7%) [5]
Genitourinary
Dysuria (2%)
Hematuria (2%)
Urinary hesitancy (2%)
Urinary retention (<2%) [6]
Urinary tract infection [3]
Neuromuscular/Skeletal
Asthenia / fatigue (20%) [11]
Ataxia [3]
Myoclonus (<2%)

Ocular
Diplopia (double vision) (7%) [2]
Ocular pigmentation [5]
Vision blurred (5%) [2]
Renal
Chromaturia (2%)
Respiratory
Influenza (3%)
Other
Adverse effects / adverse reactions [2]

FACTOR VIII - VON WILLEBRAND FACTOR

Trade names: Alphanate (Grifols), Haemate (CSL Behring), Opivate (BPL)
Indications: Control and prevention of bleeding in patients with hemophilia A, surgical procedures in patients with von Willebrand disease in whom desmopressin is either ineffective or contraindicated
Class: Antihemorrhagic, Coagulation factor VIII
Half-life: 12.4 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Peripheral edema (see also edema) (<10%)
Pruritus (itching) (<10%)
Rash (<10%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<10%)
Headache (<10%)
Rigors (<10%)
Somnolence (drowsiness) (<10%)
Vertigo / dizziness (<10%)
Local
Infusion-site erythema (<10%)
Infusion-site pain (<10%)
Infusion-site rash (<10%)

FAMCICLOVIR

Trade name: Famvir (Novartis)
Indications: Acute herpes zoster, recurrent genital herpes
Class: Antiviral, Guanine nucleoside analog
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Pruritus (itching) (4%)
Rash (<4%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]
Central Nervous System
Headache (9–39%) [5]
Paresthesias (<3%)
Gastrointestinal/Hepatic
Abdominal pain (<8%) [2]
Diarrhea (2–9%)
Flatulence (<5%)
Nausea (2–13%) [3]
Vomiting (<5%) [2]
Genitourinary
Dysmenorrhea (<8%)
Neuromuscular/Skeletal
Asthenia / fatigue (<5%)
Other
Adverse effects / adverse reactions [4]

FAMOTIDINE

Trade names: Duexis (Horizon), Pepcid (Valeant)
Indications: Duodenal ulcer, gastric ulcer, gastroesophageal reflux disease
Class: Histamine H2 receptor antagonist
Half-life: 2.5–3.5 hours
Clinically important, potentially hazardous interactions with: acalabrutinib, atazanavir, cefditoren, dasatinib, delavirdine, rilpivirine, sotorasib, thalidomide
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Duexis is famotidine and ibuprofen.

Skin
Dermatitis [3]
Peripheral edema (see also edema) [2]
Pruritus (itching) [2]
Rash [3]
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Cardiovascular
Hypertension [3]
Central Nervous System
Confusion [2]
Delirium [3]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (5%) [4]
Neurotoxicity [2]
Somnolence (drowsiness) [2]
Endocrine/Metabolic
Hypomagnesemia [2]
Hypophosphatemia [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea (2%) [3]
Dyspepsia / functional dyspepsia / gastroparesis [3]
Gastroesophageal reflux [2]
Nausea [4]
Vomiting [4]
Genitourinary
Urinary tract infection [2]
Hematologic
Eosinophilia [2]
Thrombocytopenia [2]
Neuromuscular/Skeletal
Arthralgia [2]
Back pain [2]
Respiratory
Influenza [2]
Sinusitis [2]
Upper respiratory tract infection [2]

FEBUXOSTAT

Trade name: Uloric (Takeda)
Indications: Hyperuricemia in gout
Class: Xanthine oxidase inhibitor
Half-life: 5–8 hours
Clinically important, potentially hazardous interactions with: aminophylline, azathioprine, didanosine, mercaptopurine, oxtriphylline, theophylline
Pregnancy category: C

Skin
Rash (2%) [7]
Cardiovascular
Cardiac disorder / cardiac dysfunction [2]
Cardiotoxicity [2]
Central Nervous System
Headache [5]
Vertigo / dizziness [5]
Gastrointestinal/Hepatic
Diarrhea [9]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (5%) [14]
Nausea [7]
Vomiting [2]
Neuromuscular/Skeletal
Arthralgia [5]
Bone or joint pain [2]
Gouty tophi (flare) [3]
Joint disorder [2]
Respiratory
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [7]

FELBAMATE

Trade name: Felbatol (MedPointe)
Indications: Partial seizures
Class: Anticonvulsant
Half-life: 13–23 hours
Clinically important, potentially hazardous interactions with: levonorgestrel, ulipristal
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contraindicated in patients with a history of any blood dyscrasia or hepatic dysfunction.
Warning: APLASTIC ANEMIA and HEPATIC FAILURE

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (3%)
Facial edema (3%)
Rash (4%) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Mucosal
Xerostomia (dry mouth) (3%)
Central Nervous System
Dysgeusia (taste perversion) (6%)
Paresthesias (4%)
Endocrine/Metabolic
Hypophosphatemia (3%)
Weight loss [2]
Gastrointestinal/Hepatic
Constipation (7%)

Diarrhea (5%)
Dyspepsia / functional dyspepsia / gastroparesis (9%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Vomiting (9%)

Genitourinary
Urinary tract infection (3%)
Vaginal bleeding (intramenstual) (3%)

Hematologic
Anemia [4]

Neuromuscular/Skeletal
Myalgia/Myopathy (3%)

Ocular
Diplopia (double vision) (3%)

Otic
Otitis media (3%)

Respiratory
Rhinitis (7%)
Upper respiratory tract infection (9%)

Other
Side effects [2]

FELODIPINE

Trade names: Lexxel (AstraZeneca), Plendil (AstraZeneca)
Indications: Hypertension
Class: Calcium channel blocker
Half-life: 11–16 hours
Clinically important, potentially hazardous interactions with: amprenavir, atazanavir, boceprevir, carbamazepine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, delavirdine, epirubicin, grapefruit juice, imatinib, indinavir, itraconazole, lopinavir, paclitaxel, posaconazole, telaprevir, venetoclax
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Lexxel is felodipine and enalapril.

Skin
Erythema (2%)
Exanthems [2]
Facial edema (2%)
Flushing / rubefaction (>25%) [10]
Peripheral edema (see also edema) (22%) [6]
Rash (2%)
Telangiectasia [2]
Urticaria / hives (2%)

Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth (2–10%) [6]

Central Nervous System
Paresthesias (2%)

Neuromuscular/Skeletal
Myalgia/Myopathy (2%)

FENOFIBRATE

Trade name: Tricor (AbbVie)
Indications: Hyperlipidemia
Class: Fibrate, Lipid regulator
Half-life: 20 hours
Clinically important, potentially hazardous interactions with: atorvastatin, colchicine, dicumarol, ezetimibe, lovastatin, nicotinic acid, rosuvastatin, statins, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Photosensitivity [11]
Phototoxicity [2]
Pruritus (itching) (4%)
Rash (2–8%) [3]

Endocrine/Metabolic
Gynecomastia [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [15]
Pancreatitis / acute pancreatitis [3]

Hematologic
Thrombocytopenia [2]

Neuromuscular/Skeletal
Myalgia/Myopathy [11]
Rhabdomyolysis [19]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Renal failure [3]

Other
Adverse effects / adverse reactions (<10%)

FENOLDOPAM

Trade name: Corlopam (AbbVie) (Neurex)
Indications: Hypertension (severe), hypertensive emergency
Class: Dopamine receptor agonist
Half-life: ~5 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

FENOPROFEN

Trade name: Nalfon (Ranbaxy)
Indications: Arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 2.5–3 hours
Clinically important, potentially hazardous interactions with: methotrexate
Pregnancy category: C
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Exanthems [2]
Pruritus (itching) (3–9%) [3]
Purpura [2]
Rash (>10%)
Urticaria / hives (1–3%) [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

FENTANYL

Trade names: Actiq (Cephalon), Duragesic (Janssen)
Indications: Chronic pain
Class: Analgesic; opioid, Anesthetic
Half-life: ~7 hours
Clinically important, potentially hazardous interactions with: amiodarone, amprenavir, aprepitant, atazanavir, ceritinib, cimetidine, conivaptan, crizotinib, darunavir, dasatinib, delavirdine, desipramine, efavirenz, eluxadoline, enzalutamide, indinavir, itraconazole, ketoconazole, lapatinib, letermovir, lopinavir, mifepristone, nelfinavir, nevirapine, nifedipine, osimertinib, ranitidine, ribociclib, rifapentine, ritonavir, saquinavir, telithromycin, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in opioid non-tolerant patients, and for the management of acute or postoperative pain including headache/migraines and dental pain.
Warning: ADDICTION, ABUSE, and MISUSE; LIFE-THREATENING RESPIRATORY DEPRESSION; ACCIDENTAL EXPOSURE; NEONATAL OPIOID WITHDRAWAL SYNDROME; CYTOCHROME P450 3A4 INTERACTION.
EXPOSURE TO HEAT (for topical patches)

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [6]
Diaphoresis (see also hyperhidrosis) (>10%) [2]
Edema / fluid retention (see also peripheral edema) (>10%)
Erythema (at application site) [3]
Flushing / rubefaction (3–10%)
Pruritus (itching) (3–44%) [30]
Rash [3]

Mucosal
Xerostomia (dry mouth) (>10%) [3]

Cardiovascular
Bradycardia / sinus bradycardia (>10%) [3]
Hypotension [9]
Tachycardia [2]

Central Nervous System
Agitation [2]
Anorexia [2]
Coma [2]
Confusion (>10%)
Delirium [2]
Depression (>10%)
Hallucinations [2]
Headache (>10%)
Hyperalgesia [2]
Neuroleptic malignant syndrome [2]
Sedation [3]
Serotonin syndrome [4]
Somnolence (drowsiness) [15]
Vertigo / dizziness [13]

Endocrine/Metabolic
Adrenal insufficiency (hypoadrenalism) [3]

Gastrointestinal/Hepatic
Constipation (>10%) [11]
Nausea (>10%) [33]
Vomiting (>10%) [23]
Local
Application-site erythema [2]
Neuromuscular/Skeletal
Asthenia / fatigue (>10%) [2]
Chest wall rigidity [2]
Myoclonus [3]
Ocular
Miosis (>10%)
Respiratory
Cough [18]
Respiratory depression [8]
Other
Adverse effects / adverse reactions [8]
Death [7]

FERRIC GLUCONATE

Trade name: Ferrlecit (Sanofi-Aventis)
Indications: Iron replacement
Class: Iron supplement
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Edema / fluid retention (see also peripheral edema) (5%)
Pruritus (itching) (<6%)
Cardiovascular
Chest pain (<10%)
Hypertension (<23%)
Hypotension (2–35%) [2]
Tachycardia (5–17%)
Central Nervous System
Anorexia (6%)
Fever (pyrexia) (includes hyperpyrexia) (5–9%)
Headache (7–24%)
Pain (<10%)
Paresthesias (6%)
Syncope / fainting (6%)
Vertigo / dizziness (13%)
Endocrine/Metabolic
Hyperkalemia (6%)
Gastrointestinal/Hepatic
Abdominal pain (6–9%)
Diarrhea (2–35%)
Nausea (2–35%) [2]
Vomiting (2–35%)
Hematologic
Thrombosis (6%)
Local
Injection-site reaction (33%)
Neuromuscular/Skeletal
Asthenia / fatigue (6–7%)
Cramps (25%)
Leg cramps (10%)
Respiratory
Cough (6%)
Dyspnea / shortness of breath (11%)
Pharyngitis (sore throat) (9%)
Rhinitis (6%)
Upper respiratory tract infection (6%)
Other
Adverse effects / adverse reactions [3]
Infection (8%)

FERROUS SULFATE

Trade names: Feosol (Meda), Fer-In-Sol (Mead Johnson), Feratab (Upsher-Smith)
Indications: Iron deficiency anemia
Class: Iron supplement
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: antacids, caffeine, calcium supplements, cimetidine, deferoxamine, dimercaprol, etidronate, fluoroquinolones, pancreatin, pancrelipase, penicillamine, tetracylines, trientine, zinc
Pregnancy category: N/A

Other
Adverse effects / adverse reactions [2]

FERUMOXYTOL

Trade name: Feraheme (AMG Pharma)
Indications: Iron deficiency anemia in adults with chronic kidney disease
Class: Iron supplement
Half-life: 15 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: May cause hypersensitivity reactions, hypotension and iron overload. Feraheme may transiently affect magnetic resonance (MRI) imaging for up to 3 months following dosage. Contra-indicated in patients with evidence of iron overload or anemia not caused by iron deficiency.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Hypersensitivity [3]
Pruritus (itching) [5]
Rash [2]
Urticaria / hives [2]
Cardiovascular
Hypotension (3%) [3]
Central Nervous System
Headache [6]
Vertigo / dizziness (3%) [3]
Gastrointestinal/Hepatic
Abdominal pain [2]
Nausea (3%) [6]
Vomiting [2]
Local
Injection-site pain [3]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Back pain [2]
Respiratory
Dyspnea / shortness of breath [3]
Other
Adverse effects / adverse reactions [2]

FESOTERODINE

Trade name: Toviaz (Pfizer)
Indications: Overactive bladder syndrome, urinary incontinence, urgency and frequency
Class: Muscarinic antagonist
Half-life: 7 hours; 4 hours (oral)
Clinically important, potentially hazardous interactions with: alcohol, amantadine, anticholinergics, antidepressants, antimuscarinics, atazanavir, botulinum toxin (A & B), carbamazepine, cinacalcet, clarithromycin, conivaptan, CYP2D6 inhibitors, CYP3A4 inhibitors, CYP3AF inhibitors, darunavir, dasatinib, deferasirox, delavirdine, duloxetine, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, PEG-interferon, phenobarbital, phenytoin, pramlintide, rifampin, ritonavir, saquinavir, secretin, St John's wort, telithromycin, terbinafine, tipranavir, tocilizumab, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with urinary retention, gastric retention, or uncontrolled narrow-angle glaucoma.

Mucosal
Xerostomia (dry mouth) (19–35%) [29]
Central Nervous System
Headache [3]
Gastrointestinal/Hepatic
Constipation (4–6%) [17]
Diarrhea (<10%)
Dyspepsia / functional dyspepsia / gastroparesis (<2%) [2]
Nausea (<2%) [2]
Genitourinary
Dysuria (<2%)
Urinary retention [2]
Urinary tract infection (3–4%) [3]
Neuromuscular/Skeletal
Back pain (2%)
Ocular
Vision blurred [2]
Xerophthalmia (dry eyes) (<4%) [2]
Respiratory
Upper respiratory tract infection (2–3%)
Other
Adverse effects / adverse reactions [3]

FEVERFEW

Family: Asteraceae; Compositae
Scientific names: *Chrysanthemum parthenium, Pyrethrum parthenium, Tanacetum parthenium*
Indications: Fever, headache, migraine, menstrual irregularities, arthritis, psoriasis, allergy, asthma, tinnitus, vertigo, nausea, cold, earache, orthopedic disorders, swollen feet, diarrhea, dyspepsia
Class: Antipyretic
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticoagulants, NSAIDs
Pregnancy category: N/A

Skin
Angioedema (lips) [3]
Dermatitis [4]

Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [3]
Central Nervous System
Ageusia (taste loss) / taste disorder [2]
Other
Adverse effects / adverse reactions [4]

FEXOFENADINE

Trade name: Allegra (Sanofi-Aventis)
Indications: Allergic rhinitis, pruritus, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 14.4 hours
Clinically important, potentially hazardous interactions with: neratinib, St John's wort
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Skin
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives [3]
Central Nervous System
Headache (5–11%) [2]

FIDAXOMICIN

Trade name: Dificid (Optimer)
Indications: *Clostridium difficile* associated diarrhea
Class: Antibiotic, Antibiotic; macrolide, Antimicrobial
Half-life: 1–5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Pruritus (itching) (<2%)
Rash (<2%)
Endocrine/Metabolic
Acidosis (includes lactic acidosis) (<2%)
ALP increased (<2%)
Hyperglycemia (includes glucose increased) (<2%)
Gastrointestinal/Hepatic
Abdominal distension (<2%)
Abdominal pain (6%)
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Dysphagia (<2%)
Flatulence (<2%)
Gastrointestinal bleeding (4%)
Nausea (11%)
Vomiting (7%)
Hematologic
Anemia (2%)
Neutropenia (neutrophils decreased) (2%)
Platelets decreased (<2%)
Other
Adverse effects / adverse reactions [4]

FINASTERIDE

Trade names: Propecia (Merck), Proscar (Merck)
Indications: Benign prostatic hypertrophy, male-pattern baldness
Class: 5-alpha reductase inhibitor, Androgen antagonist, Enzyme inhibitor
Half-life: 5–8 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Contra-indicated in women)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Folliculitis [2]
Rash [3]
Urticaria / hives [2]
Xerosis / xeroderma (see also dry skin) [2]
Hair
Hirsutism [3]
Cardiovascular
Postural hypotension [2]
Central Nervous System
Depression [7]
Headache [2]
Vertigo / dizziness (7%) [3]
Endocrine/Metabolic
Gynecomastia (<2%) [17]
Libido decreased (2–10%) [10]
Mastodynia (<2%)
Menstrual irregularities [2]
Genitourinary
Ejaculatory dysfunction [11]
Erectile dysfunction [9]
Impotence (5–19%)
Sexual dysfunction [8]
Neuromuscular/Skeletal
Asthenia / fatigue (5%) [3]
Myalgia/Myopathy (severe) [2]
Other
Adverse effects / adverse reactions [7]

FINGOLIMOD

Trade name: Gilenya (Novartis)
Indications: Multiple sclerosis
Class: Covid-19 putative drug, Immunosuppressant
Half-life: 6–9 days
Clinically important, potentially hazardous interactions with: BCG vaccine, beta blockers, class Ia antiarrhythmics, class III antiarrhythmics, conivaptan, cyproterone, denosumab, digoxin, diltiazem, dronedarone, ketoconazole, leflunomide, live vaccines, natalizumab, PEG-interferon, pimecrolimus, QT prolonging drugs, roflumilast, sipuleucel-T, tacrolimus, tocilizumab, trastuzumab, typhoid vaccine, verapamil, yellow fever vaccine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with recent (within the last 6 months) occurrence of: myocardial infarction, unstable angina, stroke, transient ischemic attack, decompensated heart failure requiring hospitalization, or Class III/IV heart failure; history or presence of Mobitz Type II 2nd degree or 3rd degree AV block or sick sinus syndrome, unless patient has a pacemaker; baseline QT interval ≥500 ms; or is receiving treatment with Class Ia or Class III anti-arrhythmic drugs.

Skin
Basal cell carcinoma [4]
Eczema / eczematous reaction / eczematous eruption (3%)
Herpes (9%) [6]
Herpes simplex [3]
Herpes zoster [3]
Kaposi's sarcoma [2]
Lymphoma [2]
Melanoma [2]
Pruritus (itching) (3%)
Skin cancer [3]
Tinea (4%)
Varicella zoster [5]
Hair
Alopecia / hair loss (4%)
Cardiovascular
Asystole [2]
Atrial fibrillation [2]
Atrioventricular block [20]
Bradycardia / sinus bradycardia (4%) [25]
Cardiac failure [2]
Cardiotoxicity [3]
Hypertension (6%) [10]
Central Nervous System
Depression (8%)
Encephalopathy (includes hepatic encephalopathy) [2]
Headache (25%) [11]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [6]
Migraine (5%)
Paresthesias (5%)
Vertigo / dizziness (7%) [2]
Endocrine/Metabolic
ALT increased (14%) [3]
AST increased (14%)
GGT increased (5%)
Weight loss (5%)
Gastrointestinal/Hepatic
Diarrhea (12%) [4]
Gastroenteritis (5%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [11]
Genitourinary
Urinary tract infection [2]
Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (3%) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (4%) [15]
Neuromuscular/Skeletal
Asthenia / fatigue (3%) [5]
Back pain (12%) [6]
Ocular
Macular edema [23]
Ocular pain (3%)
Vision blurred (4%)
Respiratory
Bronchitis (8%)
Cough (10%) [4]
Dyspnea / shortness of breath (8%) [2]
Influenza (13%) [4]
Nasopharyngitis [5]

Pulmonary toxicity [4]
Respiratory tract infection [2]
Sinusitis (7%)
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [13]
Death [7]
Infection [18]
Neoplasms [2]

FISH OILS

Scientific names: *docosahexaenoic acid (DHA), eicosapentaenoic acid (EPA), Omega-3 fatty acids*
Indications: Albuminuria, anorexia nervosa, cardiovascular disease, hypertension, lupus erythematosus, macular degeneration, osteoarthritis, otitis media, psoriasis
Class: Anti-inflammatory, Lipid regulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: More than 25 mL or 3 g per day can decrease blood coagulation and increase the risk of bleeding. Fish oils contain a significant amount of vitamins A and D and high doses may be toxic.

Central Nervous System
Dysgeusia (taste perversion) [2]

FLAVOXATE

Trade name: Urispas (Ortho-McNeil)
Indications: Dysuria, urgency, nocturia
Class: Anticholinergic, Muscarinic antagonist
Half-life: Onset of action: 55–60 minutes
Clinically important, potentially hazardous interactions with: anticholinergics, arbutamine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Mucosal
Xerostomia (dry mouth) (>10%)

Ocular
Glaucoma (includes acute angle-closure glaucoma) [2]

FLECAINIDE

Trade name: Tambocor (3M)
Indications: Atrial fibrillation
Class: Antiarrhythmic, Antiarrhythmic class Ic
Half-life: 12–16 hours
Clinically important, potentially hazardous interactions with: acebutolol, amiodarone, amisulpride, amitriptyline, artemether/lumefantrine, boceprevir, cinacalcet, clozapine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, darifenacin, delavirdine, fosamprenavir, lopinavir, mirabegron, quinine, ritonavir, telaprevir, tipranavir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (<3%)
Edema / fluid retention (see also peripheral edema) (4%)
Flushing / rubefaction (<3%)
Psoriasis [2]
Rash (<3%)

Cardiovascular
Arrhythmias [7]
Atrial fibrillation [3]
Atrial flutter [3]
Atrioventricular block [2]
Bradycardia / sinus bradycardia [4]
Brugada syndrome [5]
Bundle branch block [5]
Cardiomyopathy [2]
Cardiotoxicity [4]
Chest pain (5%)
Congestive heart failure [2]
Extrasystoles [2]
Hypotension [2]
Palpitation (6%)
QT interval prolonged / QT prolongation [7]
Supraventricular tachycardia [2]
Tachycardia [2]
Torsades de pointes [4]
Ventricular dysfunction (left ventricular dysfunction / right ventricular dysfunction) [2]

Central Nervous System
Headache (10%) [4]
Hyperesthesia (<10%)
Neurotoxicity [3]
Seizures [2]
Syncope / fainting [2]
Tremor (5%)
Vertigo / dizziness (19%) [5]

Gastrointestinal/Hepatic
Abdominal pain (3%)
Constipation (4%)
Diarrhea (<3%) [2]
Nausea (9%) [3]

Neuromuscular/Skeletal
Asthenia / fatigue (5–8%)

Ocular
Vision blurred [2]
Visual disturbances (16%) [3]

Respiratory
Dyspnea / shortness of breath (10%)

Other
Adverse effects / adverse reactions [2]

FLIBANSERIN

Trade name: Addyi (Sprout)
Indications: Hypoactive sexual desire disorder in premenopausal women
Class: Serotonin type 1A receptor agonist, Serotonin type 2A receptor antagonist
Half-life: 11 hours
Clinically important, potentially hazardous interactions with: alcohol, amprenavir, atazanavir, boceprevir, carbamazepine, ciprofloxacin, clarithromycin, conivaptan, digoxin, diltiazem, erythromycin, fluconazole, fosamprenavir, grapefruit juice, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, phenobarbital, phenytoin, posaconazole, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, telaprevir, telithromycin, verapamil
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: HYPOTENSION AND SYNCOPE IN CERTAIN SETTINGS

Mucosal
Xerostomia (dry mouth) (2%) [2]

Central Nervous System
Anxiety (2%)
Insomnia (5%) [4]
Sedation [2]
Somnolence (drowsiness) (11%) [10]
Vertigo / dizziness (2%) [11]

Gastrointestinal/Hepatic
Abdominal pain (2%)
Constipation (2%)
Nausea (10%) [7]

Neuromuscular/Skeletal
Asthenia / fatigue (9%) [5]

FLORBETAPIR F18

Trade name: Amyvid (Avid Pharmaceuticals)
Indications: Postiron Emission Tomography (PET) imaging
Class: Radiopharmaceutical, diagnostic agent
Half-life: 110 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Florbetapir F18 injection emits radiation. Use procedures to minimize radiation exposure.

Central Nervous System
Headache (2%)

FLUCLOXACILLIN

Trade name: Floxapen (Actavis)
Indications: Infections due to sensitive Gram-positive organisms
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 53 minutes
Clinically important, potentially hazardous interactions with: oral contraceptives, probenecid
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
AGEP [2]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [2]
Hypokalemia [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [22]

Hematologic
Anemia [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

FLUCONAZOLE

Trade name: Diflucan (Pfizer)
Indications: Candidiasis
Class: Antifungal / antimycotic, Antifungal; triazole, Antimicrobial, CYP3A4 inhibitor
Half-life: 25–30 hours
Clinically important, potentially hazardous interactions with: alprazolam, amphotericin B, anisindione, anticoagulants, atorvastatin, avanafil, avapritinib, betamethasone, bosentan, celecoxib, citalopram, clobazam, clopidogrel, deflazacort, dicumarol, eluxadoline, eplerenone, erythromycin, flibanserin, irbesartan, ivacaftor, lemborexant, lesinurad, lumateperone, methadone, midazolam, mifepristone, naldemedine, neratinib, nevirapine, olaparib, ospemifene, pantoprazole, phenobarbital, phenytoin, pimecrolimus, propranolol, quetiapine, ramelteon, rifapentine, rilpivirine, rimegepant, ruxolitinib, selumetinib, simeprevir, sonidegib, sulfonylureas, temsirolimus, terbinafine, tezacaftor/ivacaftor, tipranavir, tofacitinib, trabectedin, triamcinolone, ubrogepant, venetoclax, vinblastine, vincristine, voclosporin, voxelotor, warfarin, zidovudine
Pregnancy category: D (fluconazole is pregnancy category C for vaginal candidiasis)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

Skin
- AGEP [5]
- Erythema multiforme [5]
- Exfoliative dermatitis [2]
- Fixed eruption [10]
- Hypersensitivity (<4%)
- Rash (2%) [4]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [10]

Hair
- Alopecia / hair loss [5]

Nails
- Nail changes [2]

Mucosal
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]

Cardiovascular
- Hypotension [2]
- QT interval prolonged / QT prolongation [7]
- Torsades de pointes [11]

Central Nervous System
- Dysgeusia (taste perversion) [2]
- Headache (2–13%) [3]
- Neurotoxicity [2]

Endocrine/Metabolic
- Adrenal insufficiency (hypoadrenalism) [5]

Gastrointestinal/Hepatic
- Abdominal pain [2]
- Diarrhea [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
- Nausea (2–7%)

Neuromuscular/Skeletal
- Rhabdomyolysis [4]

Renal
- Renal failure [2]

Other
- Adverse effects / adverse reactions [5]

FLUCYTOSINE

Trade name: Ancobon (Valeant)
Indications: Candidal and cryptococcal infections
Class: Antimycobacterial (including antitubercular)
Half-life: 3–8 hours
Clinically important, potentially hazardous interactions with: amphotericin B, tegafur/gimeracil/oteracil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Exanthems [2]
- Photosensitivity [2]
- Rash (<10%)

FLUDARABINE

Trade names: Fludara (Genzyme), Oforta (Sanofi-Aventis)
Indications: Chronic lymphocytic leukemia (B-cell)
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 9 hours
Clinically important, potentially hazardous interactions with: aldesleukin, clofazimine, live vaccines, pentostatin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Severe neurologic effects, including blindness, coma, and death were observed in dose-ranging studies in patients with acute leukemia when fludarabine phosphate was administered at high doses. Instances of life-threatening and sometimes fatal autoimmune hemolytic anemia have been reported after one or more cycles of treatment with fludarabine phosphate.
Warning: CNS TOXICITY, HEMOLYTIC ANEMIA, AND PULMONARY TOXICITY

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<3%)
- Diaphoresis (see also hyperhidrosis) (14%)
- Edema / fluid retention (see also peripheral edema) (8–19%)
- Herpes simplex (7–8%)
- Herpes zoster [2]
- Paraneoplastic pemphigus [4]
- Peripheral edema (see also edema) (7%)
- Pruritus (itching) (<3%)
- Rash (4–15%)

Hair
- Alopecia / hair loss (<10%)

Mucosal
- Mucositis (2%)
- Stomatitis (oral mucositis) (9%)

Cardiovascular
- Aneurysm (<2%)
- Angina (6%)
- Arrhythmias (<4%)
- Chest pain (5%)
- Congestive heart failure (<4%)
- Myocardial infarction (<4%)
- Phlebitis (<3%)
- Supraventricular tachycardia (<4%)

Central Nervous System
- Anorexia (7–34%)
- Cerebrovascular accident (<4%)
- Chills (11–19%)
- Fever (pyrexia) (includes hyperpyrexia) (11–69%) [2]
- Headache (3–9%)
- Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [9]
- Neurotoxicity [3]
- Pain (5–22%)
- Paresthesias (4–12%)
- Sleep-related disorder (<3%)

Endocrine/Metabolic
- Hyperglycemia (includes glucose increased) (<6%)
- Weight loss (<6%)

Gastrointestinal/Hepatic
- Abdominal pain (8–10%)
- Cholelithiasis (gallstones in the gallbladder) (3%)
- Constipation (<3%)
- Diarrhea (5–15%)
- Esophagitis (3%)
- Gastrointestinal bleeding (3–13%) [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
- Nausea (<36%)

Genitourinary
- Dysuria (3–4%)
- Hematuria (<3%)
- Urinary hesitancy (3%)
- Urinary tract infection (4–15%)

Hematologic
- Anemia [3]
- Cytopenia [2]
- Febrile neutropenia [2]
- Hemolytic anemia [2]
- Hemotoxicity [3]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
- Myelosuppression / bone marrow suppression / myelotoxicity [5]
- Neutropenia (neutrophils decreased) [6]
- Sepsis [2]
- Thrombocytopenia [4]
- Thrombosis (<3%)

Neuromuscular/Skeletal
- Asthenia / fatigue (6–65%)
- Back pain (4–9%)
- Myalgia/Myopathy (>10%)

Ocular
- Visual disturbances (3–15%)

Otic
- Hearing loss (hypoacusis) (2–6%)

Respiratory
- Bronchitis (<9%)
- Cough (6–44%)
- Dyspnea / shortness of breath (<22%)
- Hemoptysis (<6%)
- Influenza- ('flu)-like syndrome (5–8%)
- Pharyngitis (sore throat) (9%)
- Pneumonia (3–22%) [3]
- Pneumonitis (6%)
- Pulmonary toxicity [4]
- Rhinitis (3–11%)
- Sinusitis (<5%)
- Upper respiratory tract infection (2–14%)

Other
- Adverse effects / adverse reactions [2]

Death [4]
Infection (12–44%) [6]

FLUDEOXYGLUCOSE F18

Indications: Positron emission tomography (PET) imaging
Class: Radiopharmaceutical, diagnostic agent
Half-life: 110 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Fludeoxyglucose F18 injection emits radiation. Use procedures to minimize radiation exposure. Use alternatives to breast feeding (e.g., stored breast milk or infant formula) for at least 10 half-lives of radioactive decay, if Fludeoxyglucose F18 injection is administered to a woman who is breast-feeding.

FLUMAZENIL

Trade name: Romazicon (Roche)
Indications: Benzodiazepine overdose
Class: Benzodiazepine antagonist
Half-life: terminal: 41–79 minutes
Clinically important, potentially hazardous interactions with: alcohol, eszopiclone, nalmefene, neuromuscular blockers
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Diaphoresis (see also hyperhidrosis) (3–9%)
Flushing / rubefaction (<3%)
Hot flashes / hot flushes (<10%)

Mucosal
Xerostomia (dry mouth) (<10%)

Central Nervous System
Paresthesias (<10%)
Seizures [17]
Tremor (<10%)

FLUNISOLIDE

Trade names: Aerobid (Roche), Nasalide (Ivax), Nasarel (Ivax)
Indications: Asthma, rhinitis
Class: Corticosteroid / Glucocorticoid, Corticosteroid, inhaled
Half-life: N/A
Clinically important, potentially hazardous interactions with: aspirin, cyclosporine, digoxin, diuretics, estrogens, ketoconazole, live vaccines, oral contraceptives, phenobarbital, phenytoin, rifampin, warfarin
Pregnancy category: C

Central Nervous System
Dysgeusia (taste perversion) [3]
Headache [4]

FLUOCINOLONE

Trade names: Capex (Galderma), Derma-Smoothe (Hill Dermac), Retisert (Bausch & Lomb), Synalar (Medicis)
Indications: Dermatoses, asthma, inflammatory ocular conditions
Class: Corticosteroid / Glucocorticoid, Corticosteroid, topical
Half-life: N/A
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Derma-Smoothe is formulated with refined peanut oil and should be used with caution in peanut-sensitive individuals.

Ocular
Cataract [11]
Glaucoma (includes acute angle-closure glaucoma) [2]
Intraocular pressure increased [11]
Ocular pressure [3]

Other
Adverse effects / adverse reactions [2]

FLUORIDES

Indications: Caries prevention (topical), osteoporosis prevention (oral)
Class: Chemical
Half-life: N/A
Clinically important, potentially hazardous interactions with: caffeine
Pregnancy category: C

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Burning / skin burning sensation [12]
Cutaneous toxicity / skin toxicity [27]
Dermatitis [4]
Edema / fluid retention (see also peripheral edema) [2]
Erythema [2]
Hypersensitivity [6]
Necrosis (skin necrosis) [2]
Pruritus (itching) [5]
Urticaria / hives [7]

Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Stomatitis (oral mucositis) [3]

Central Nervous System
Headache [2]

Gastrointestinal/Hepatic
Abdominal pain [2]

Neuromuscular/Skeletal
Arthralgia [5]
Bone or joint pain [12]
Skeletal fluorosis [35]

Ocular
Cataract [2]

Other
Adverse effects / adverse reactions [9]
Death [7]
Tooth fluorosis [39]

FLUOROURACIL

Trade names: 5-fluorouracil (Taj), Carac (Valeant), Efudex (Valeant), Fluoroplex (Allergan), Fluorouracil Injection, USP (Bioniche), Tolak (Hill Dermac)
Indications: Palliative management of malignant neoplasms especially of the gastrointestinal tract, breast, liver and pancreas, topical therapy for actinic keratoses. Advanced pancreatic cancer (in combination with oxaliplatin/irinotecan/leucovorin (FOLFIRINOX or FOLFOXIRI)). Used in combination with leucovorin and irinotecan (FOLFIRI) for treatment of advanced-stage and metastatic colorectal cancer. Used in combination with leucovorin and oxaliplatin (FOLFOX, mFOLFOX6) for treatment of colorectal cancer
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Fluoropyrimidine
Half-life: 8–20 minutes
Clinically important, potentially hazardous interactions with: aldesleukin, bromelain, cimetidine, granulocyte colony-stimulating factor (G-CSF), metronidazole, tegafur/gimeracil/oteracil, tegafur/gimeracil/oteracil, tinidazole
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with dihydropyrimidine dehydrogenase deficiency. Tolak cream contains peanut oil and should be used with caution in peanut-sensitive individuals.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
Acral erythema [4]
Actinic keratoses [4]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Cutaneous toxicity / skin toxicity [5]
Dermatitis (>10%) [4]
Eczema / eczematous reaction / eczematous eruption [2]
Edema / fluid retention (see also peripheral edema) [2]
Erythema [4]
Erythema multiforme [3]
Exanthems (<10%) [3]
Folliculitis [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (<38%) [54]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [6]
Palmar–plantar pigmentation [2]
Peripheral edema (see also edema) [2]
Photosensitivity [3]
Pigmentation [11]
Pruritus (itching) [5]
Radiation recall dermatitis [3]
Rash [8]
Recall reaction [3]
Seborrheic dermatitis [3]
Ulcerations [2]
Xerosis / xeroderma (see also dry skin) (<10%) [3]

Hair
Alopecia / hair loss (>10%) [19]

Nails
Nail pigmentation [3]
Paronychia [3]

Mucosal
- Epistaxis (nosebleed) [2]
- Mucosal inflammation [2]
- Mucositis (<79%) [18]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
- Stomatitis (oral mucositis) (>10%) [31]
- Tongue pigmentation [2]

Cardiovascular
- Acute coronary syndrome [3]
- Angina [9]
- Bradycardia / sinus bradycardia [2]
- Cardiac failure [5]
- Cardiomyopathy [4]
- Cardiotoxicity [19]
- Hypertension [12]
- Myocardial infarction [4]
- QT interval prolonged / QT prolongation [4]
- Thromboembolism [2]
- Venous thromboembolism [2]
- Ventricular tachycardia [2]

Central Nervous System
- Anorexia [13]
- Dysgeusia (taste perversion) [2]
- Encephalopathy (includes hepatic encephalopathy) [4]
- Fever (pyrexia) (includes hyperpyrexia) [6]
- Headache [2]
- Insomnia [2]
- Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [30]
- Neurotoxicity [12]
- Peripheral neuropathy [7]
- Syncope / fainting [2]
- Vertigo / dizziness [2]

Endocrine/Metabolic
- Acidosis (includes lactic acidosis) [2]
- ALP increased [2]
- ALT increased [2]
- AST increased [2]
- Hyperammonemia [6]
- Hyperglycemia (includes glucose increased) [3]
- Hypocalcemia [2]
- Hypokalemia [3]
- Hypomagnesemia [3]
- Hyponatremia [3]
- Serum creatinine increased [2]
- SIADH [4]
- Weight loss [2]

Gastrointestinal/Hepatic
- Abdominal pain [4]
- Constipation [4]
- Diarrhea [40]
- Gastrointestinal perforation / perforated colon / gastric perforation [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
- Nausea [31]
- Vomiting [23]

Hematologic
- Anemia [21]
- Febrile neutropenia [23]
- Hemolytic uremic syndrome [3]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [18]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
- Myelosuppression / bone marrow suppression / myelotoxicity [4]
- Neutropenia (neutrophils decreased) [60]
- Thrombocytopenia [21]

Local
- Application-site edema [2]
- Application-site pruritus [3]
- Injection-site burning [2]
- Injection-site desquamation [4]
- Injection-site edema [3]
- Injection-site erythema [4]
- Injection-site necrosis [2]
- Injection-site pain [2]
- Injection-site ulceration [2]

Neuromuscular/Skeletal
- Asthenia / fatigue [26]

Ocular
- Ectropion / cicatricial ectropion [2]
- Epiphora [2]
- Lacrimal duct stenosis / punctal stenosis [3]
- Ocular inflammation [2]

Renal
- Proteinuria [5]

Respiratory
- Dysphonia (includes voice disorders / voice changes) [2]
- Pneumonia [2]
- Pulmonary embolism [2]

Other
- Adverse effects / adverse reactions [9]
- Death [7]
- Infection [7]
- Side effects [2]

FLUOXETINE

Trade names: Prozac (Lilly), Sarafem (Warner Chilcott), Symbyax (Lilly)
Indications: Depression, obsessive-compulsive disorder
Class: Antidepressant, Selective serotonin reuptake inhibitor (SSRI)
Half-life: 2–3 days
Clinically important, potentially hazardous interactions with: alprazolam, amoxapine, amphetamines, astemizole, clarithromycin, clopidogrel, clozapine, desipramine, deutetrabenazine, dexibuprofen, dextroamphetamine, diethylpropion, droperidol, duloxetine, erythromycin, gilteritinib, haloperidol, iloperidone, imipramine, insulin aspart, insulin degludec, insulin glargine, insulin glulisine, isocarboxazid, linezolid, lithium, MAO inhibitors, mazindol, meperidine, methamphetamine, midazolam, moclobemide, nifedipine, nortriptyline, olanzapine, oliceridine, PEG-interferon, phendimetrazine, phenelzine, phentermine, phenylpropanolamine, phenytoin, pimozide, propranolol, pseudoephedrine, rasagiline, risperidone, selegiline, serotonin agonists, sibutramine, St John's wort, sumatriptan, sympathomimetics, tramadol, tranylcypromine, trazodone, tricyclic antidepressants, troleandomycin, tryptophan, valbenazine, vortioxetine, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Increased risk of suicidal thinking and behavior in children, adolescents, and young adults taking antidepressants for Major Depressive Disorder (MDD) and other psychiatric disorders. Sarafem is not approved for use in pediatric patients with MDD and obsessive compulsive disorder. Symbyax is not approved for use in children and adolescents.
Symbyax is fluoxetine and olanzapine.
Warning: SUICIDAL THOUGHTS AND BEHAVIORS

Skin
- Bruise / bruising / contusion / ecchymosis (ecchymoses) [2]
- Cutaneous toxicity / skin toxicity [2]
- Diaphoresis (see also hyperhidrosis) (8%) [3]
- Exanthems (4%) [7]
- Flushing / rubefaction (<2%)
- Mycosis fungoides [2]
- Phototoxicity [2]
- Pruritus (itching) (2%) [4]
- Pseudolymphoma [4]
- Rash (6%) [4]
- Raynaud's phenomenon [2]
- Serum sickness-like reaction [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
- Urticaria / hives (4%) [5]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Hair
- Alopecia / hair loss [9]

Mucosal
- Black tongue / black hairy tongue (lingua villosa nigra) [3]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
- Xerostomia (dry mouth) (12%) [7]

Cardiovascular
- Hypertension [2]
- Orthostatic hypotension [2]
- QT interval prolonged / QT prolongation [7]
- Torsades de pointes [2]

Central Nervous System
- Akathisia [6]
- Amnesia [2]
- Anxiety [2]
- Delirium [3]
- Depression [2]
- Dysgeusia (taste perversion) (2%)
- Extrapyramidal symptoms [3]
- Hallucinations [3]
- Hallucinations, visual (see also Charles Bonnet syndrome) [4]
- Headache (<27%) [3]
- Insomnia [3]
- Neuroleptic malignant syndrome [2]
- Paresthesias [2]
- Parkinsonism [2]
- Restless legs syndrome [4]
- Serotonin syndrome [14]
- Somnolence (drowsiness) [4]
- Stuttering (dysphemia) / stammering [2]
- Suicidal ideation [11]
- Tremor (2–10%) [2]
- Vertigo / dizziness [4]

Endocrine/Metabolic
- Gynecomastia [2]
- Libido decreased [2]
- SIADH [20]
- Weight gain [4]

Gastrointestinal/Hepatic
- Nausea [4]
- Pancreatitis / acute pancreatitis [2]

Genitourinary
- Priapism [2]
- Sexual dysfunction [6]

Neuromuscular/Skeletal
Asthenia / fatigue [3]
Rhabdomyolysis [2]
Other
Adverse effects / adverse reactions [4]
Bruxism (teeth grinding) [4]
Death [3]

FLUOXYMESTERONE

Trade name: Halotestin (Pfizer)
Indications: Breast carcinoma, hypogonadism, anemia
Class: Anabolic steroid
Half-life: 9.2 hours
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, warfarin
Pregnancy category: X

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>10%) [12]
Edema / fluid retention (see also peripheral edema) (>10%)
Flushing / rubefaction (<5%)
Hair
Alopecia / hair loss [2]
Hirsutism (<10%) [9]
Endocrine/Metabolic
Mastodynia (>10%)
Genitourinary
Priapism (>10%)

FLUPHENAZINE

Trade name: Prolixin (Bristol-Myers Squibb)
Indications: Psychoses
Class: Antipsychotic, Phenothiazine
Half-life: 84–96 hours
Clinically important, potentially hazardous interactions with: antihistamines, arsenic, chlorpheniramine, clozapine, dofetilide, evening primrose, quinolones, sparfloxacin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
Rash (<10%)
Vitiligo [2]
Central Nervous System
Neuroleptic malignant syndrome [14]
Parkinsonism [3]
Somnolence (drowsiness) [4]
Endocrine/Metabolic
Galactorrhea (<10%)
Gynecomastia (<10%)
Mastodynia (<10%)
Genitourinary
Priapism [2]
Neuromuscular/Skeletal
Dystonia [3]
Ocular
Maculopathy [3]

FLUPREDNISOLONE

Trade names: Alphadrol (Pharmacia & Upjohn), Isopredon (Sanofi-Aventis), Selectren (Sanofi-Aventis)
Indications: Inflammation
Class: Anti-inflammatory, Corticosteroid / Glucocorticoid
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known

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Skin
Edema / fluid retention (see also peripheral edema) [2]
Cardiovascular
Hypertension [5]
Endocrine/Metabolic
Hypokalemia [5]
Neuromuscular/Skeletal
Rhabdomyolysis [4]

FLURAZEPAM

Trade names: Dalmane (Valeant), Flurazepam (Watson)
Indications: Insomnia
Class: Benzodiazepine
Half-life: 40–114 hours
Clinically important, potentially hazardous interactions with: amprenavir, chlorpheniramine, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, efavirenz, esomeprazole, imatinib, indinavir, nelfinavir, ritonavir
Pregnancy category: X

Skin
Dermatitis (<10%)
Diaphoresis (see also hyperhidrosis) (>10%)
Rash (>10%)
Mucosal
Sialopenia (>10%)
Sialorrhea (ptyalism; hypersalivation) (<10%)
Xerostomia (dry mouth) (>10%)
Central Nervous System
Dysgeusia (taste perversion) (metallic taste) (3%)
Other
Adverse effects / adverse reactions [2]

FLURBIPROFEN

Trade name: Ansaid (Pfizer)
Indications: Rheumatoid arthritis, osteoarthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, aspirin, furosemide, lithium, methotrexate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use. Elderly patients are at greater risk for serious gastrointestinal events.
Warning: CARDIOVASCULAR AND GASTROINTESTINAL RISKS

Skin
Eczema / eczematous reaction / eczematous eruption (3–9%)
Edema / fluid retention (see also peripheral edema) (3–9%)
Exanthems [3]
Fixed eruption [2]
Hypersensitivity [4]
Pruritus (itching) (<5%)
Rash (<3%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Mucosal
Oral lichenoid eruption [2]
Central Nervous System
Headache [4]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Other
Side effects (6%) [2]

FLUTICASONE FUROATE

Synonym: FF
Trade names: Arnuity (GSK), Breo (GSK)
Indications: Asthma
Class: Corticosteroid / Glucocorticoid, Corticosteroid, inhaled
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Breo is fluticasone furoate and vilanterol.

Mucosal
Epistaxis (nosebleed) [2]
Nasal congestion (3%)
Oral candidiasis (<3%) [9]
Oropharyngeal pain (3–4%) [9]
Cardiovascular
Extrasystoles [2]
Hypertension [2]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [4]
Headache (6–13%) [18]
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Abdominal pain (3%)
Gastroenteritis (3%)
Nausea [2]
Neuromuscular/Skeletal
Arthralgia (3%) [3]
Back pain (3%) [6]
Fractures [3]
Respiratory
Asthma [2]
Bronchitis (7–12%) [6]
Cough (<3%) [10]
Dysphonia (includes voice disorders / voice changes) (2–3%) [6]
Influenza (7%) [5]

Nasopharyngitis (8–13%) [15]
Pharyngitis (sore throat) (3–6%) [7]
Pneumonia [3]
Rhinitis (3%) [4]
Sinusitis (4–7%) [8]
Upper respiratory tract infection (6%) [13]

Other
Adverse effects / adverse reactions [11]
Toothache (odontalgia) (3%) [2]

FLUTICASONE PROPIONATE

Synonym: FP
Trade names: Advair (GSK), Cutivate (GSK) (Nycomed), Flonase (GSK), Flovent (GSK), Flutiform (Napp)
Indications: Dermatoses, rhinitis, maintenance treatment of asthma (as inhalation)
Class: Corticosteroid / Glucocorticoid, Corticosteroid, inhaled, Corticosteroid, topical
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: amprenavir, atazanavir, boceprevir, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, delavirdine, indinavir, itraconazole, ketoconazole, live vaccines, lopinavir, nefazodone, nelfinavir, oral contraceptives, ritonavir, saquinavir, telaprevir, telithromycin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Advair is fluticasone propionate and salmeterol; Flutiform is fluticasone propionate and formoterol. [INH] = Inhalation.

Skin
Burning / skin burning sensation [2]
Perioral dermatitis [2]
Pruritus (itching) (6%) [3]
Rash (8%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Mucosal
Nasal congestion (16%)
Oral candidiasis (<31%) [12]
Oropharyngeal pain (3–22%) [4]

Cardiovascular
Hypertension [2]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<7%) [2]
Headache (2–14%) [15]
Pain (10%)
Vertigo / dizziness [2]

Endocrine/Metabolic
Cushing's syndrome [5]

Gastrointestinal/Hepatic
Abdominal pain (2–4%)
Nausea (<9%)
Vomiting (<9%)

Genitourinary
Urinary tract infection [2]

Neuromuscular/Skeletal
Arthralgia (17%)
Asthenia / fatigue (16%)
Back pain [6]
Bone or joint pain (2–5%)
Myalgia/Myopathy (12%) [2]

Ocular
Cataract [INH] [2]

Respiratory
Asthma (exacerbation) [6]
Bronchitis (2–8%) [3]
COPD (exacerbation) [3]
Cough (<9%) [8]
Dysphonia (includes voice disorders / voice changes) (9%) [9]
Nasopharyngitis [10]
Pharyngitis (sore throat) [3]
Pneumonia [6]
Rhinitis (<13%) [2]
Sinusitis (>3%) [4]
Upper respiratory tract infection (14–31%) [8]

Other
Adverse effects / adverse reactions [10]
Infection (2–5%) [6]

FLUVASTATIN

Trade name: Lescol (Novartis)
Indications: Hypercholesterolemia
Class: HMG-CoA reductase inhibitor / statin
Half-life: 1.2 hours
Clinically important, potentially hazardous interactions with: azithromycin, bosentan, ciprofibrate, clarithromycin, colchicine, cyclosporine, delavirdine, elbasvir & grazoprevir, erythromycin, gemfibrozil, imatinib, letermovir, mifepristone, red rice yeast
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Rash (3%)

Central Nervous System
Headache (9%)

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]

Gastrointestinal/Hepatic
Diarrhea (5%)
Dyspepsia / functional dyspepsia / gastroparesis (8%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]

Neuromuscular/Skeletal
Asthenia / fatigue (3%)
Myalgia/Myopathy (5%) [4]
Rhabdomyolysis [13]

Respiratory
Sinusitis (3%)
Upper respiratory tract infection (16%)

Other
Allergic reactions (3%)

FLUVOXAMINE

Trade name: Luvox (Solvay)
Indications: Obsessive-compulsive disorder, depression
Class: Antidepressant, CYP1A2 inhibitor, CYP3A4 inhibitor, Selective serotonin reuptake inhibitor (SSRI)
Half-life: 15 hours
Clinically important, potentially hazardous interactions with: alosetron, alprazolam, aminophylline, amphetamines, anagrelide, asenapine, astemizole, bendamustine, clobazam, clopidogrel, clozapine, dextroamphetamine, diethylpropion, droperidol, duloxetine, isocarboxazid, linezolid, lumateperone, MAO inhibitors, mazindol, methadone, methamphetamine, neratinib, olanzapine, oxtriphylline, phendimetrazine, phenelzine, phentermine, phenylpropanolamine, pirfenidone, propranolol, pseudoephedrine, ramelteon, rasagiline, roflumilast, ropivacaine, selegiline, sibutramine, St John's wort, sumatriptan, sympathomimetics, tacrine, tasimelteon, tizanidine, tramadol, tranylcypromine, trazodone, troleandomycin, tryptophan, ubrogepant, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) (<7%)
Photosensitivity [3]

Mucosal
Oral lesions (10%)
Xerostomia (dry mouth) (<14%) [2]

Cardiovascular
Chest pain (3%)
Palpitation (3%)
QT interval prolonged / QT prolongation [3]

Central Nervous System
Anorexia (6–14%)
Anxiety (5–8%)
Dysgeusia (taste perversion) (3%)
Headache (22–35%)
Insomnia (21–35%)
Neuroleptic malignant syndrome [2]
Pain (10%)
Seizures [2]
Serotonin syndrome [6]
Somnolence (drowsiness) (22–27%)
Tremor (5–8%)
Vertigo / dizziness (11–15%)
Yawning (2–5%)

Endocrine/Metabolic
Galactorrhea [2]
Libido decreased (2–10%)
SIADH [2]

Gastrointestinal/Hepatic
Diarrhea (16–18%)
Dyspepsia / functional dyspepsia / gastroparesis (8–10%)
Nausea (34–40%)

Genitourinary
Ejaculatory dysfunction (8–11%)
Sexual dysfunction [2]

Neuromuscular/Skeletal
Asthenia / fatigue (14–26%) [3]
Myalgia/Myopathy (5%)
Respiratory
Pharyngitis (sore throat) (6%)
Upper respiratory tract infection (9%)

FOLFIRINOX

Synonym: FOLFOXIRI
Indications: A combination of folinic acid folate; vitamin B_9
Indications: Anemias
Class: Vitamin
Half-life: N/A
Clinically important, potentially hazardous interactions with: balsalazide, estradiol, raltitrexed
Pregnancy category: A

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Exanthems [2]
Pruritus (itching) [2]
Urticaria / hives [2]

FOMEPIZOLE

Trade name: Antizol (Orphan Medical)
Indications: Toxicity to methanol and ethylene glycol
Class: Antidote
Half-life: not calculated, varies with dose
Clinically important, potentially hazardous interactions with: alcohol
Pregnancy category: C
Note: As an antidote, it is difficult to differentiate side effects due to the drug from those due to the effects of the poison.

Skin
Facial flushing (~3%)
Rash (~3%) [2]
Mucosal
Oral vesiculation (~3%)
Cardiovascular
Phlebitis (<10%)
Central Nervous System
Dysgeusia (taste perversion) (6%)
Parosmia (<10%)
Seizures (~3%)
Vertigo / dizziness (6%) [2]
Local
Application-site reactions (<10%)
Injection-site inflammation (<10%)
Injection-site pain (<10%)
Neuromuscular/Skeletal
Back pain (<10%)
Other
Hiccups / singultus (<10%)

FONDAPARINUX

Trade name: Arixtra (Mylan)
Indications: Prophylaxis of deep vein thrombosis
Class: Anticoagulant, Heparinoid
Half-life: 17–21 hours
Clinically important, potentially hazardous interactions with: abciximab, anagrelide, anticoagulants, cilostazol, clopidogrel, dabigatran, dipyridamole, eptifibatide, nandrolone, salicylates, ticlopidine, tirofiban
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SPINAL/EPIDURAL HEMATOMAS

Skin
Bullous dermatosis (3%)
Edema / fluid retention (see also peripheral edema) (9%)
Hematoma [2]
Hypersensitivity [4]
Purpura (4%)
Rash (8%)
Central Nervous System
Pain (2%)
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Local
Injection-site bleeding (<10%)
Injection-site pruritus (<10%)

FORMOTEROL

Trade names: Dulera (Merck Sharpe & Dohme), Foradil (Novartis), Perforomist (Mylan), Symbicort (AstraZeneca)
Indications: Asthma, bronchospasm
Class: Beta-2 adrenergic agonist, Bronchodilator
Half-life: 10–14 hours
Clinically important, potentially hazardous interactions with: beta blockers, clomipramine, desipramine, doxepin, imipramine, iobenguane, nortriptyline, protriptyline, trimipramine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Dulera is formoterol and mometasone; Symbicort is formoterol and budesonide.
Warning: ASTHMA-RELATED DEATH

Skin
Pruritus (itching) (2%)
Mucosal
Xerostomia (dry mouth) (<3%) [4]
Cardiovascular
Atrial fibrillation [2]
Chest pain (2%)
Hypertension [2]
Myocardial infarction [2]
Palpitation [2]
Central Nervous System
Anxiety (2%)
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache [9]
Insomnia (2%)
Tremor (2%) [7]
Vertigo / dizziness (2–3%) [3]
Gastrointestinal/Hepatic
Diarrhea (5%) [2]
Nausea (5%)
Vomiting (2%)
Genitourinary
Urinary tract infection [2]
Neuromuscular/Skeletal
Back pain (4%)
Cramps (2%)
Leg cramps (2%)
Muscle spasm [2]
Respiratory
Asthma (exacerbation) [4]
Bronchitis (5%) [2]
Cough [7]
Dysphonia (includes voice disorders / voice changes) [3]
Dyspnea / shortness of breath (2%) [2]
Nasopharyngitis [9]
Pharyngitis (sore throat) (4%) [2]
Pneumonia [2]
Rhinitis [2]
Upper respiratory tract infection (7%) [3]
Other
Adverse effects / adverse reactions [3]
Death [2]
Infection (17%)

FOSAMPRENAVIR

Trade name: Lexiva (ViiV)
Indications: HIV infections (in combination with other antiretrovirals)
Class: Antiretroviral, HIV-1 protease inhibitor
Half-life: 7.7 hours
Clinically important, potentially hazardous interactions with: amiodarone, atorvastatin, avanafil, bepridil, carbamazepine, darifenacin, delavirdine, dihydroergotamine, efavirenz, etravirine, flecainide, flibanserin, itraconazole, ketoconazole, lidocaine, lopinavir, lovastatin, midazolam, mifepristone, nevirapine, olaparib, phenobarbital, phenytoin, pimozide, posaconazole, propafenone, quinidine, quinine, rifabutin, rifampin, rilpivirine, ritonavir, rivaroxaban, rosuvastatin, sildenafil, simeprevir, simvastatin, St John's wort, tadalafil, telaprevir, telithromycin, tipranavir, triazolam, vardenafil, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Fosamprenavir is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Fosamprenavir is a prodrug of amprenavir (see separate entry).

Skin
Hypersensitivity [2]
Pruritus (itching) (7%)
Rash (~19%) [5]
Central Nervous System
Depression (8%)
Headache (19%)
Paresthesias (oral) (2%)
Gastrointestinal/Hepatic
Abdominal pain (5%)
Diarrhea [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Vomiting [2]
Neuromuscular/Skeletal
Asthenia / fatigue (10%)
Respiratory
Bronchitis [2]
Cough [2]
Nasopharyngitis [3]

Rhinitis [2]
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [4]

FOSCARNET

Trade name: Foscavir (AstraZeneca)
Indications: Cytomegalovirus retinitis in patients with AIDS
Class: Antiviral, DNA and RNA polymerase inhibitor
Half-life: ~3 hours
Clinically important, potentially hazardous interactions with: adefovir, cyclosporine, pentamidine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: RENAL IMPAIRMENT; SEIZURES

Skin
Diaphoresis (see also hyperhidrosis) (>5%)
Exanthems (>5%) [2]
Facial edema (>5%)
Flushing / rubefaction (<5%)
Penile ulceration (4–30%) [15]
Pigmentation (>5%)
Pruritus (itching) (>5%)
Rash (generalized) (>5%) [2]
Seborrhea (>5%)
Ulcerations (>5%)

Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [5]
Ulcerative stomatitis (>5%)

Central Nervous System
Dysgeusia (taste perversion) (>5%)
Paresthesias (<10%)

Genitourinary
Vulvar ulceration [2]

Local
Injection-site pain (<10%)

Neuromuscular/Skeletal
Myalgia/Myopathy (>5%)

Other
Crystal precipitation [2]

FOSFOMYCIN

Trade name: Monurol (Forest)
Indications: Urinary tract infections
Class: Antibiotic, Antimicrobial
Half-life: 3–9 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Rash [3]

Central Nervous System
Headache (4%)

Endocrine/Metabolic
Hypokalemia [2]

Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea (9%) [6]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Loose stools / soft feces [2]
Nausea (4%) [4]

Genitourinary
Vaginitis (includes vulvitis) (6%)

Local
Injection-site pain [2]

Other
Adverse effects / adverse reactions [3]

FOSINOPRIL

Trade name: Monopril (Bristol-Myers Squibb)
Indications: Hypertension, heart failure
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive, Vasodilator
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, allopurinol, alpha blockers, alprostadil, amifostine, amiloride, angiotensin II receptor blocking agents, antacids, antidiabetics, antihypertensives, antipsychotics, anxiolytics and hypnotics, azathioprine, baclofen, beta blockers, calcium channel blockers, clonidine, corticosteroids, cyclosporine, diazoxide, diuretics, estrogens, general anesthetics, gold & gold compounds, heparins, hydralazine, hypotensives, insulin, levodopa, lithium, MAO inhibitors, metformin, methyldopa, minoxidil, moxisylyte, moxonidine, nitrates, nitroprusside, NSAIDs, pentoxifylline, phosphodiesterase 5 inhibitors, potassium salts, prostacyclin analogues, rituximab, sirolimus, spironolactone, sulfonylureas, temsirolimus, tizanidine, tolvaptan, triamterene, trimethoprim
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: USE IN PREGNANCY

Skin
Angioedema [3]

Respiratory
Cough [3]

FOSPHENYTOIN

Trade name: Cerebyx (Eisai)
Indications: Seizure prophylaxis, status epilepticus
Class: Antiepileptic; hydantoin
Half-life: 15 minutes
Clinically important, potentially hazardous interactions with: chloramphenicol, cyclosporine, disulfiram, dopamine, efavirenz, imatinib, itraconazole, lacosamide, tinidazole
Pregnancy category: D
Note: Fosphenytoin is a prodrug of phenytoin (see separate entry).

Skin
Pruritus (itching) (49%) [5]
Purple glove syndrome [2]

Mucosal
Xerostomia (dry mouth) (4%)

Cardiovascular
Hypotension [2]

Central Nervous System
Dysgeusia (taste perversion) (3%)
Hyperesthesia (2%)
Paresthesias (4%) [3]

FROVATRIPTAN

Trade names: Frova (Vernalis), Migard (Menarini)
Indications: Migraine headaches
Class: 5-HT1 agonist, Serotonin receptor agonist, Triptan
Half-life: 26 hours
Clinically important, potentially hazardous interactions with: dihydroergotamine, methysergide, SNRIs, SSRIs, triptans
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Flushing / rubefaction (4%) [3]

Mucosal
Sialopenia (3%)
Xerostomia (dry mouth) (3%) [3]

Cardiovascular
Chest pain (2%) [3]

Central Nervous System
Headache (4%) [4]
Paresthesias (4%) [4]
Somnolence (drowsiness) (>2%)
Vertigo / dizziness (4%) [6]

Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis (2%) [2]
Nausea (>2%) [4]

Neuromuscular/Skeletal
Asthenia / fatigue (5%) [6]
Bone or joint pain (3%) [2]

Other
Adverse effects / adverse reactions [6]

FULVESTRANT

Trade name: Faslodex (AstraZeneca)
Indications: Metastatic breast cancer
Class: Estrogen receptor antagonist
Half-life: ~40 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (5%)
Edema / fluid retention (see also peripheral edema) (9%)
Hot flashes / hot flushes (6–7%) [11]
Peripheral edema (see also edema) (9%)
Rash (7%) [2]

Mucosal
Stomatitis (oral mucositis) [3]

Cardiovascular
Chest pain (7%)
Vasodilation (18%) [3]

Central Nervous System
Anorexia (4–9%) [2]
Anxiety (5%)
Depression (6%)
Fever (pyrexia) (includes hyperpyrexia) (6%) [2]
Headache (7–8%) [8]
Insomnia (7%)
Pain (19%) [2]
Paresthesias (6%)
Vertigo / dizziness (7%)

Endocrine/Metabolic
ALP increased (>15%)
ALT increased (>15%) [2]
AST increased (>15%)
Hyperglycemia (includes glucose increased) [2]

Gastrointestinal/Hepatic
Abdominal pain (12%)
Constipation (4–13%) [2]
Diarrhea (12%) [5]
Gastrointestinal disorder / discomfort [4]
Nausea (10–26%) [11]
Vomiting (6–13%) [3]

Genitourinary
Urinary tract infection (6%) [2]
Vaginitis (includes vulvitis) [2]

Hematologic
Anemia (5%) [5]
Febrile neutropenia [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
Neutropenia (neutrophils decreased) [7]
Thrombocytopenia [2]

Local
Injection-site pain (9–12%) [5]
Injection-site reaction (11%) [5]

Neuromuscular/Skeletal
Arthralgia (3–8%) [5]
Asthenia / fatigue (6–22%) [8]
Back pain (8–14%)
Bone or joint pain (3–16%) [4]
Joint disorder [6]
Myalgia/Myopathy [2]
Pain in extremities (7%)

Respiratory
Cough (5–10%)
Dyspnea / shortness of breath (4–15%) [2]
Influenza- ('flu)-like syndrome (7%)
Nasopharyngitis [2]
Pharyngitis (sore throat) (16%)

Other
Adverse effects / adverse reactions [7]

FURAZOLIDONE

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; nitrofuran, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: amphetamines, benzphetamine, chloroquine, dapsone, dobutamine, dopamine, ephedrine, epinephrine, meperidine, morphine, phenylephrine, phenylpropanolamine, pseudoephedrine, sympathomimetics
Pregnancy category: C

Skin
Dermatitis [4]
Erythema multiforme [2]
Rash [2]

Central Nervous System
Anorexia [2]
Vertigo / dizziness [3]

Gastrointestinal/Hepatic
Diarrhea [2]
Nausea [3]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

FUROSEMIDE

Trade name: Lasix (Sanofi-Aventis)
Indications: Edema
Class: Diuretic, loop
Half-life: ~2 hours
Clinically important, potentially hazardous interactions with: acemetacin, aliskiren, amikacin, amyl nitrite, celecoxib, diclofenac, digoxin, flurbiprofen, gentamicin, hyaluronic acid, hydrocortisone, kanamycin, mivacurium, neomycin, piroxicam, probenecid, streptomycin, tobramycin, tolmetin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Furosemide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
AGEP [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Bullous dermatosis [16]
Bullous pemphigoid / pemphigoid [11]
Erythema multiforme [3]
Exanthems (12%) [7]
Exfoliative dermatitis [3]
Lichenoid eruption / lichenoid reaction [2]
Linear IgA bullous dermatosis [2]
Photosensitivity (<10%) [2]
Phototoxicity [4]
Pruritus (itching) [2]
Purpura [3]
Pustules / pustular eruption [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Sweet's syndrome [2]
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [7]

Mucosal
Xerostomia (dry mouth) [3]

Cardiovascular
Hypotension [2]

Endocrine/Metabolic
Porphyria cutanea tarda [3]

Gastrointestinal/Hepatic
Pancreatitis / acute pancreatitis [3]

Hematologic
Hemolytic anemia [2]

Otic
Hearing loss (hypoacusis) [2]
Ototoxicity [4]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Adverse effects / adverse reactions [3]
Side effects [2]

FUSIDIC ACID

Trade names: Fucidin (Leo), Fucithalmic (Leo)
Indications: Angular cheilitis, bacterial infections, ocular infections
Class: Antibiotic, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: atorvastatin, darunavir, indinavir, rosuvastatin, simvastatin, tipranavir
Pregnancy category: C

Skin
Dermatitis [7]
Jaundice [3]
Rash [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Neuromuscular/Skeletal
Rhabdomyolysis [9]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

GABAPENTIN

Trade names: Horizant (GSK), Neurontin (Pfizer)
Indications: Postherpetic neuralgia in adults, seizures
Class: Anticonvulsant, GABA analog, Gabapentinoid
Half-life: 5–7 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Gabapentin (Neurontin) and risk of abuse and dependence: new scheduling requirements from 1 April 2019 (UK) As of 1 April 2019 in the UK, gabapentin is controlled under the Misuse of Drugs Act 1971 as a Class C substance and scheduled under the Misuse of Drugs Regulations 2001 as Schedule 3. Patients should be evaluated carefully for a history of drug abuse before prescribing gabapentin and patients should be observed for development of signs of abuse and dependence.
Gabapentin enacarbil is a prodrug of gabapentin.

Skin
Bullous pemphigoid / pemphigoid [2]
DRESS syndrome [2]
Edema / fluid retention (see also peripheral edema) [5]
Exanthems [2]
Peripheral edema (see also edema) (8%) [14]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Hair
Alopecia / hair loss [2]
Mucosal
Xerostomia (dry mouth) (5%)
Cardiovascular
Atrial fibrillation [2]
Central Nervous System
Aggression (includes anger) [2]
Coma [3]
Confusion [4]
Delirium [2]
Fever (pyrexia) (includes hyperpyrexia) (10%)
Gait instability / postural instability (2%) [4]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache (3%) [9]
Incoordination (2%)
Myokymia / twitching [2]
Neurotoxicity [4]
Psychosis [2]
Sedation [5]
Seizures [4]
Somnolence (drowsiness) (21%) [41]
Tremor [3]
Vertigo / dizziness (17–28%) [52]
Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [3]
Weight gain (2%) [8]
Gastrointestinal/Hepatic
Abdominal pain (3%)
Constipation (4%) [2]
Diarrhea (6%)
Fecal incontinence [2]
Flatulence (2%) [2]
Nausea (4%) [5]
Vomiting (3%) [3]
Genitourinary
Enuresis (urinary incontinence) [5]
Priapism [2]
Sexual dysfunction [5]
Urinary retention [2]
Neuromuscular/Skeletal
Asthenia / fatigue (6%) [13]
Ataxia (3%) [10]
Dystonia [2]
Myalgia/Myopathy [5]
Myasthenia gravis [3]
Myoclonus [5]
Rhabdomyolysis [5]
Ocular
Diplopia (double vision) [2]
Nystagmus [2]
Vision blurred (3%)
Otic
Hearing loss (hypoacusis) [2]
Respiratory
Respiratory depression [3]
Other
Adverse effects / adverse reactions [7]
Infection (5%)

GADOBENATE

Synonym: gadobenate dimeglumine
Trade name: Multihance (Bracco)
Indications: Magnetic resonance imaging and magnetic resonance angiography
Class: Contrast agent, Gadolinium-based contrast agent (GBCA)
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: cisplatin, daunorubicin, doxorubicin, etoposide, methotrexate, paclitaxel, tamoxifen, vincristine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: NEPHROGENIC SYSTEMIC FIBROSIS (NSF)

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Urticaria / hives [2]
Cardiovascular
Cardiac arrest [4]
Gastrointestinal/Hepatic
Nausea [6]
Vomiting [4]
Respiratory
Dyspnea / shortness of breath [2]
Other
Adverse effects / adverse reactions [10]
Death [2]

GADOBUTROL

Trade name: Gadovist (Bayer)
Indications: Magnetic resonance imaging
Class: Gadolinium-based contrast agent (GBCA)
Half-life: 90 minutes
Clinically important, potentially hazardous interactions with: amitriptyline, arsenic, citalopram, dasatinib, degarelix, dolasetron, lapatinib, levofloxacin, moxifloxacin, pazopanib, telavancin, telithromycin, voriconazole, vorinostat, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: NEPHROGENIC SYSTEMIC FIBROSIS (NSF)

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
Central Nervous System
Headache (2%) [2]
Gastrointestinal/Hepatic
Nausea [6]
Vomiting [3]
Renal
Nephrogenic systemic fibrosis [2]
Other
Adverse effects / adverse reactions [3]

GADOFOSVESET

Trade names: Ablavar (Lantheus Medical Imaging), Vasovist (Schering)
Indications: Radiological contrast agent
Class: Gadolinium-based contrast agent (GBCA)
Half-life: ~16 hours
Clinically important, potentially hazardous interactions with: electrolyte-altering agents, QT-prolonging agents
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: NEPHROGENIC SYSTEMIC FIBROSIS

Skin
Burning / skin burning sensation (2%)
Pruritus (itching) (5%)
Cardiovascular
Vasodilation (3%)
Central Nervous System
Dysgeusia (taste perversion) (2%)
Headache (4%)
Paresthesias (3%)
Gastrointestinal/Hepatic
Nausea (4%)
Local
Injection-site bruising (2%)
Injection-site burning (2%)
Other
Adverse effects / adverse reactions [2]

GADOXETATE

Trade names: Eovist (Bayer), Primovist (Bayer)
Indications: Magnetic resonance imaging (MRI) of the liver
Class: Gadolinium-based contrast agent (GBCA)
Half-life: ~1.0 hour
Clinically important, potentially hazardous interactions with: anionic drugs, rifampin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: NEPHROGENIC SYSTEMIC FIBROSIS

Central Nervous System
Headache [3]
Paresthesias [2]
Parosmia [2]
Gastrointestinal/Hepatic
Nausea [4]
Local
Injection-site pain [2]
Neuromuscular/Skeletal
Back pain [2]
Respiratory
Dyspnea / shortness of breath [3]

GALANTAMINE

Trade names: Razadyne (Janssen), Reminyl (Janssen)
Indications: Alzheimer's disease
Class: Acetylcholinesterase inhibitor, Cholinesterase inhibitor
Half-life: ~7 hours
Clinically important, potentially hazardous interactions with: bethanechol, cimetidine, donepezil, edrophonium, paroxetine hydrochloride, physostigmine, pilocarpine, rivastigmine, succinylcholine, tacrine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Originally derived from snowdrop (*Galanthus* sp) bulbs.

Skin
Peripheral edema (see also edema) (>2%)
Purpura (>2%)
Cardiovascular
Bradycardia / sinus bradycardia (2%) [5]
QT interval prolonged / QT prolongation [5]
Central Nervous System
Anorexia (7–9%) [2]
Depression (7%)
Headache (8%) [2]
Insomnia (5%)
Somnolence (drowsiness) (4%)
Syncope / fainting (2%) [3]
Tremor (3%)
Vertigo / dizziness (9%) [4]
Endocrine/Metabolic
Weight loss (5–7%)
Gastrointestinal/Hepatic
Abdominal pain (5%)
Diarrhea (6–12%) [5]
Dyspepsia / functional dyspepsia / gastroparesis (5%)
Nausea (6–24%) [7]
Vomiting (4–13%) [7]
Genitourinary
Hematuria (3%)
Urinary tract infection (8%)
Hematologic
Anemia (3%)
Neuromuscular/Skeletal
Asthenia / fatigue (5%)
Pisa syndrome (pleurothotonus) [4]
Respiratory
Rhinitis (4%)
Upper respiratory tract infection (>2%)
Other
Adverse effects / adverse reactions [3]

GANCICLOVIR

Trade name: Cytovene (Roche)
Indications: Cytomegalovirus retinitis in immunocompromised patients
Class: Antiviral, Guanine nucleoside analog
Half-life: 2.5–3.6 hours
Clinically important, potentially hazardous interactions with: abacavir, amphotericin B, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, dapsone, emtricitabine, imipenem/cilastatin, imipenem/cilastatin/relebactam, tenofovir disoproxil, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: GRANULOCYTOPENIA, ANEMIA AND THROMBOCYTOPENIA

Skin
Exanthems (2–5%) [2]
Pruritus (itching) (5%)
Rash (>10%)
Cardiovascular
Phlebitis (2%)
Central Nervous System
Agitation [2]
Paresthesias (6–10%)
Local
Injection-site inflammation (2%)
Injection-site pain (4%)

GARLIC

Family: Liliaceae
Scientific name: *Allium sativum*
Indications: Hypertension, hypercholesterolemia, atherosclerosis, earache, menstrual disorders, allergy, flu, arthritis, diarrhea, bacterial and fungal infections, tinea corporis, tinea pedis, onychomycosis, vaginitis
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: arsenic, atazanavir, chlorpropamide, HIV medications, tipranavir
Pregnancy category: N/A

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Burning / skin burning sensation [9]
Dermatitis [20]
Hypersensitivity [2]
Gastrointestinal/Hepatic
Esophagitis [2]
Hematologic
Bleeding [2]
Other
Adverse effects / adverse reactions [4]
Allergic reactions [4]

GATIFLOXACIN

Trade names: Tequin (Bristol-Myers Squibb), Zymar (Allergan), Zymaxid (Allergan)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; fluoroquinolone, Antimicrobial, Drug-resistant antituberculosis agent
Half-life: 7–14 hours
Clinically important, potentially hazardous interactions with: amiodarone, arsenic, asenapine, bepridil, bretylium, disopyramide, erythromycin, phenothiazines, pimavanserin, procainamide, quinidine, sotalol, tricyclic antidepressants, zinc
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants. Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis.

Skin
Diaphoresis (see also hyperhidrosis) (<3%)
Peripheral edema (see also edema) (3%)
Photosensitivity [2]
Rash (3%)
Mucosal
Glossitis (inflammation of the tongue) (3%)
Oral candidiasis (3%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (3%)
Stomatitis (oral mucositis) (3%)
Cardiovascular
Torsades de pointes [3]
Central Nervous System
Chills (<3%)
Delirium [2]
Dysgeusia (taste perversion) (<4%) [2]
Headache (<4%)
Paresthesias (3%)
Psychosis [2]
Seizures [3]
Tremor (3%)
Vertigo / dizziness (<2%) [2]
Endocrine/Metabolic
Hyperglycemia (includes glucose increased) [3]
Hypoglycemia (see also insulin autoimmune syndrome) [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Genitourinary
Vaginitis (includes vulvitis) (6%)
Local
Injection-site reaction (5%) [2]
Ocular
Conjunctival edema (<4%)
Conjunctival hemorrhage (<4%)
Conjunctivitis (conjunctival inflammation) (5–10%)
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) (<4%)
Keratitis (5–10%)
Lacrimation (increased) (5–10%)
Ocular discharge (<4%)
Ocular itching / ocular pruritus (<4%)
Ocular pain (<4%)
Reduced visual acuity (<4%)
Xerophthalmia (dry eyes) (<4%)

GEFITINIB

Trade name: Iressa (AstraZeneca)
Indications: Advanced non-small cell lung cancer
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, Epidermal growth factor receptor (EGFR) inhibitor / antagonist, Tyrosine kinase inhibitor
Half-life: 48 hours
Clinically important, potentially hazardous interactions with: antifungals, BCG vaccine, boceprevir, carbamazepine, cardiac glycosides, clozapine, conivaptan, CYP3A4 inhibitors and inducers, dasatinib, deferasirox, denosumab, echinacea, efavirenz, grapefruit juice, itraconazole, leflunomide, natalizumab, phenobarbital, phenytoin, pimecrolimus, ranitidine, rifampin, rifapentine, sipuleucel-T, St John's wort, tacrolimus, topotecan, trastuzumab, vaccines, vitamin K antagonists, voriconazole, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (25–33%) [34]
- Cutaneous toxicity / skin toxicity [12]
- Desquamation (39%) [2]
- Exanthems [3]
- Folliculitis [4]
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) [3]
- Papulopustular eruption [3]
- Peripheral edema (see also edema) (2%)
- Pruritus (itching) (8–9%) [6]
- Rash (43–54%) [69]
- Seborrhea [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Ulcerations [2]
- Xerosis / xeroderma (see also dry skin) (13–26%) [13]

Hair
- Alopecia / hair loss [6]
- Hypertrichosis [2]

Nails
- Nail changes (17%)
- Paronychia (6%) [16]
- Pyogenic granuloma [2]

Mucosal
- Mucositis [4]
- Stomatitis (oral mucositis) [10]

Cardiovascular
- Hypertension [3]

Central Nervous System
- Anorexia (7–10%) [2]

Endocrine/Metabolic
- ALT increased [10]
- Appetite decreased [3]
- AST increased [8]
- Dehydration [2]
- Hyponatremia [2]
- Weight loss (3–5%)

Gastrointestinal/Hepatic
- Abdominal pain [3]
- Constipation [2]
- Diarrhea (48–67%) [44]
- Gastrointestinal perforation / perforated colon / gastric perforation [2]
- Hepatic (liver) disorder / hepatobiliary disorder / hepatic (liver) dysfunction [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [28]
- Nausea (13–18%) [12]
- Pneumatosis intestinalis / pneumatosis cystoides intestinalis [3]
- Vomiting (9–12%) [6]

Genitourinary
- Bladder disorder [2]
- Cystitis [3]

Hematologic
- Anemia [5]
- Neutropenia (neutrophils decreased) [7]
- Thrombocytopenia [3]

Neuromuscular/Skeletal
- Asthenia / fatigue [13]
- Myalgia/Myopathy [2]

Ocular
- Amblyopia (2%)
- Blepharitis [3]
- Conjunctivitis (conjunctival inflammation) [2]
- Corneal erosion [2]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
- Proteinuria [2]

Respiratory
- Alveolar hemorrhage (pulmonary) [2]
- Dyspnea / shortness of breath (2%)
- Pneumonia [2]
- Pneumonitis [4]
- Pulmonary toxicity [16]

Other
- Adverse effects / adverse reactions [12]
- Death [8]

GEMCITABINE

Trade name: Gemzar (Lilly)
Indications: Pancreatic carcinoma as a single agent, ovarian cancer (with carboplatin), breast cancer (with paclitaxel), non-small cell lung cancer (with cisplatin)
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 42–94 minutes for short infusions; 4–11 hours for longer infusions
Clinically important, potentially hazardous interactions with: aldesleukin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash [3]
- Bullous dermatosis [2]
- Cellulitis [6]
- Cutaneous toxicity / skin toxicity [7]
- Dermatitis [6]
- Dermatomyositis [2]
- Eczema / eczematous reaction / eczematous eruption (13%)
- Edema / fluid retention (see also peripheral edema) (13%) [4]
- Exanthems [2]
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) [22]
- Hypersensitivity [3]
- Livedo reticularis [2]
- Necrosis (skin necrosis) [3]
- Peripheral edema (see also edema) (20%) [4]
- Petechiae (16%)
- Pruritus (itching) (13%) [2]
- Radiation recall dermatitis (<74%) [17]
- Rash (30%) [35]
- Raynaud's phenomenon [3]
- Seborrheic keratoses [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
- Thrombocytopenic purpura [7]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Hair
- Alopecia / hair loss (15%) [15]

Mucosal
- Mucositis [7]
- Stomatitis (oral mucositis) (11%) [14]

Cardiovascular
- Arrhythmias [3]
- Atrial fibrillation [4]
- Capillary leak syndrome [11]
- Cardiotoxicity [3]
- Hypertension [3]
- Hypotension [2]
- Large-vessel vasculitis [2]
- Myocardial infarction [3]
- Thromboembolism [2]
- Venous thromboembolism [4]

Central Nervous System
- Anorexia [13]
- Fever (pyrexia) (includes hyperpyrexia) (41%) [13]
- Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [4]
- Neurotoxicity [11]
- Pain [2]
- Paresthesias (10%) [2]
- Peripheral neuropathy [8]
- Somnolence (drowsiness) (11%)

Endocrine/Metabolic
- ALT increased [6]
- Appetite decreased [2]
- AST increased [6]
- Dehydration [2]
- Hyperglycemia (includes glucose increased) [2]
- Hypomagnesemia [7]
- Hyponatremia [2]

Gastrointestinal/Hepatic
- Abdominal pain [2]
- Cholangitis / sclerosing cholangitis [2]
- Constipation [3]
- Diarrhea (19%) [26]
- Gastrointestinal bleeding [2]
- Hepatic (liver) disorder / hepatobiliary disorder / hepatic (liver) dysfunction [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [11]
- Nausea (69%) [29]
- Vomiting (69%) [22]

Genitourinary
- Hematuria (30%)

Hematologic
- Anemia (70%) [42]
- Febrile neutropenia [19]
- Hemolytic uremic syndrome [34]
- Hemotoxicity [7]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (62%) [30]
- Myelosuppression / bone marrow suppression / myelotoxicity [10]

Neutropenia (neutrophils decreased) (61%) [95]
Thrombocytopenia (30%) [66]
Thrombosis [3]
Thrombotic microangiopathy [6]

Local
Injection-site reaction (4%)

Neuromuscular/Skeletal
Asthenia / fatigue (18%) [50]
Myalgia/Myopathy (>10%) [6]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]
Renal failure [2]

Respiratory
Dyspnea / shortness of breath (10–23%) [2]
Influenza- ('flu)-like syndrome (19%) [2]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [8]
Pneumonitis [4]
Pulmonary toxicity [11]

Other
Adverse effects / adverse reactions [9]
Allergic reactions (4%)
Death [13]
Infection (16%) [11]

GEMEPROST

Trade name: Gemeprost (Sanofi-Aventis)
Indications: Therapeutic termination of pregnancy conducted during the second trimester of pregnancy.
Class: Prostaglandin analog
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: labor accelerators, labor inducers, oxytocin

Cardiovascular
Myocardial infarction [2]

GEMFIBROZIL

Trade name: Lopid (Pfizer)
Indications: Hyperlipidemia
Class: Fibrate, Lipid regulator
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: atorvastatin, bexarotene, colchicine, cyclosporine, dicumarol, eluxadoline, enzalutamide, ezetimibe, fluvastatin, interferon alfa, lovastatin, nicotinic acid, ombitasvir/paritaprevir/ritonavir and dasabuvir, ozanimod, paclitaxel, pioglitazone, pitavastatin, pravastatin, repaglinide, rosiglitazone, rosuvastatin, roxithromycin, selexipag, simvastatin, treprostinil, tucatinib, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with preexisting gallbladder disease.

Skin
Eczema / eczematous reaction / eczematous eruption (2%)
Exanthems (3%) [2]
Psoriasis [3]
Rash (2%)

Central Nervous System
Headache [3]

Gastrointestinal/Hepatic
Abdominal pain (10%)
Dyspepsia / functional dyspepsia / gastroparesis (20%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Pancreatitis / acute pancreatitis [2]

Neuromuscular/Skeletal
Asthenia / fatigue (2%)
Compartment syndrome [2]
Myalgia/Myopathy [5]
Rhabdomyolysis [35]

Other
Death [2]

GEMIFLOXACIN

Trade name: Factive (LG Life Sciences)
Indications: Infections due to various microorganisms
Class: Antibiotic, Antibiotic; fluoroquinolone, Antimicrobial
Half-life: 4–12 hours
Clinically important, potentially hazardous interactions with: antacids, BCG vaccine, calcium salts, corticosteroids, didanosine, dong quai, insulin, iron salts, magnesium salts, mycophenolate, NSAIDs, probenecid, quinapril, sevelamer, St John's wort, sucralfate, sulfonylureas, typhoid vaccine, vitamin K antagonists, zinc
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants.
Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis.
The incidence of rash increases significantly when duration of therapy exceeds seven days, reaching 7.4% at 14 days.
Warning: SERIOUS ADVERSE REACTIONS INCLUDING TENDINITIS, TENDON RUPTURE, PERIPHERAL NEUROPATHY, CENTRIAL NERVOUS SYSTEM EFFECTS and EXACERBATION OF MYASTHENIA GRAVIS

Skin
Photosensitivity [2]
Rash (2–7%) [7]

Cardiovascular
QT interval prolonged / QT prolongation [2]

Central Nervous System
Vertigo / dizziness (2%)

Gastrointestinal/Hepatic
Abdominal pain (2%)
Diarrhea (5%)
Nausea (4%)
Vomiting (2%)

Genitourinary
Vaginitis (includes vulvitis) [4]

Other
Adverse effects / adverse reactions [2]

GEMTUZUMAB

Trade name: Mylotarg (Wyeth)
Indications: Acute myeloid leukemia
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Monoclonal antibody
Half-life: 45 hours (initial dose)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: HEPATOTOXICITY

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (10%)
Herpes simplex (21%)
Peripheral edema (see also edema) (14%)
Petechiae (19%)
Pruritus (itching) (6%)
Rash (18%)

Mucosal
Gingival bleeding (9%)
Mucositis [4]
Stomatitis (oral mucositis) (25%)

Cardiovascular
Veno-occlusive disease [2]

Central Nervous System
Chills (66%)
Headache (37%)
Pain (18%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea [2]
Vomiting [2]

Hematologic
Febrile neutropenia [3]
Hemorrhage [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [7]
Thrombocytopenia (50%) [5]

Local
Infusion-related reactions [2]
Injection-site reaction (22%)

Neuromuscular/Skeletal
Arthralgia (10%)

Other
Infection (9%) [5]

GENTAMICIN

Trade names: Garamycin (Schering), Genoptic (Allergan)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; aminoglycoside, Antimicrobial
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: adefovir, aldesleukin, aminoglycosides, atracurium, bumetanide, carbenicillin, cephalexin, cephalothin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, doxacurium, ethacrynic acid, furosemide, methoxyflurane, non-polarizing muscle relaxants, pancuronium, pipecuronium, polypeptide

antibiotics, rocuronium, succinylcholine, teicoplanin, torsemide, tubocurarine, vecuronium
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Aminoglycosides may cause neurotoxicity and/or nephrotoxicity.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Dermatitis [8]
Edema / fluid retention (see also peripheral edema) (<10%)
Erythema (<10%)
Exanthems [5]
Photosensitivity [2]
Pruritus (itching) (<10%)

Hair
Alopecia / hair loss [2]

Local
Injection-site necrosis [5]

Otic
Ototoxicity [12]
Tinnitus [4]

Renal
Bartter-like syndrome [3]
Fanconi syndrome [2]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [14]

GESTRINONE

Trade name: Dimetriose (Sanofi-Aventis)
Indications: Endometriosis
Class: Antigonadotrophin
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: antiepileptics, rifampin

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [4]
Seborrhea [2]

Hair
Hirsutism [2]

Endocrine/Metabolic
Weight gain [3]

Other
Adverse effects / adverse reactions [2]

GINGER

Family: Zingiberaceae
Scientific name: *Zingiber officinale*
Indications: Colic, dyspepsia, flatulence, rheumatoid arthritis, loss of appetite, nausea, vomiting, upper respiratory infections, cough, bronchitis, burns, tinnitus, flavoring agent, fragrance component
Class: Carminative, Oleoresin
Half-life: N/A
Clinically important, potentially hazardous interactions with: arsenic, clevidipine, squill
Pregnancy category: N/A

Gastrointestinal/Hepatic
Diarrhea [2]
Nausea [2]

GINKGO BILOBA

Family: Ginkgoaceae
Scientific name: *Ginkgo biloba (Mericon)*
Indications: Dementia, memory loss, headache, tinnitus, dizziness, mood disturbances, hearing disorders, intermittent claudication, attention deficit hyperactivity disorder, premenstrual syndrome, heart disease
Class: Food supplement, Vascular stimulant
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticoagulants, aspirin, diuretics, NSAIDs, platelet inhibitors, SSRIs, St John's wort, thiazide diuretics, trazodone
Pregnancy category: N/A
Note: *Ginkgo biloba* is the oldest living tree species in the world. Ginkgo is the most frequently prescribed herbal medicine in Germany.

Skin
Dermatitis [3]
Exanthems [2]
Fixed eruption [2]

Cardiovascular
Hypertension [2]

Central Nervous System
Cerebral hemorrhage [2]
Seizures [5]

Hematologic
Bleeding [2]

Ocular
Ocular adverse effect [2]

Other
Adverse effects / adverse reactions [9]

GINSENG

Family: Araliaceae; oriental ginseng
Scientific name: *Panax ginseng*
Indications: General tonic, improving stamina, cognitive function, concentration, diuretic, antidepressant, gastritis, neurasthenia, impotence, fever, hangover, cancer, cardiovascular diseases
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: alcohol, arsenic, aspirin, caffeine, clevidipine, phenelzine, squill, tamoxifen
Pregnancy category: N/A
Note: Ginseng has been used for medicinal purposes for more than 2000 years. Approximately 6,000,000 Americans use it regularly.

Skin
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Cardiovascular
Hypertension [2]

Central Nervous System
Insomnia [2]
Mania [4]

Endocrine/Metabolic
Mastodynia [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Other
Adverse effects / adverse reactions [8]
Side effects [2]

GLATIRAMER

Synonym: copolymer-1
Trade names: Copaxone (Teva), Glatopa (Novartis)
Indications: Multiple sclerosis
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: Hemophilus B vaccine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>2%)
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Bruise / bruising / contusion / ecchymosis (ecchymoses) (8%)
Cyst (2%)
Diaphoresis (see also hyperhidrosis) (15%)
Eczema / eczematous reaction / eczematous eruption (8%)
Edema / fluid retention (see also peripheral edema) (8%)
Erythema (4%)
Facial edema (6%)
Flushing / rubefaction [6]
Herpes simplex (4%)
Hyperhidrosis (see also diaphoresis) (15%)
Hypersensitivity (3%)
Lipoatrophy [3]
Nicolau syndrome [5]
Nodular eruption (2%)
Panniculitis [2]
Peripheral edema (see also edema) (7%)
Pruritus (itching) (4%)
Purpura (8%)
Rash (18%)
Urticaria / hives [2]

Hair
Alopecia / hair loss (>2%)

Nails
Nail changes (>2%)

Mucosal
Oral vesiculation (6%)
Xerostomia (dry mouth) (>2%)

Cardiovascular
Chest pain (13%) [3]
Palpitation (7%) [7]
Vasodilation (20%) [2]

Central Nervous System
Anxiety (13%) [4]
Chills (4%)
Depression (>2%)
Dysgeusia (taste perversion) (>2%)
Fever (pyrexia) (includes hyperpyrexia) (6%)
Hyperesthesia (>2%)
Migraine (4%)
Pain (28%) [3]
Paresthesias (>2%) [2]
Tremor (7%)
Vertigo / dizziness (>2%)

Endocrine/Metabolic
Mastodynia (>2%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea (15%) [2]
Vomiting (7%)
Genitourinary
Urinary tract infection [2]
Vaginitis (includes vulvitis) (4%)
Local
Injection-site bleeding (5%)
Injection-site ecchymoses (>2%)
Injection-site edema [2]
Injection-site erythema (66%) [4]
Injection-site induration (13%) [3]
Injection-site inflammation (49%)
Injection-site lipoatrophy/lipohypertrophy [2]
Injection-site pain (73%) [3]
Injection-site pruritus (40%) [3]
Injection-site reaction (6–67%) [15]
Injection-site urticaria (5%)
Neuromuscular/Skeletal
Arthralgia (24%)
Asthenia / fatigue (19%)
Myalgia/Myopathy (>2%)
Otic
Tinnitus (>2%)
Respiratory
Cough (>2%)
Dyspnea / shortness of breath [4]
Influenza- ('flu)-like syndrome (26%)
Sinusitis (>2%)
Other
Adverse effects / adverse reactions [5]
Infection (50%) [2]

GLECAPREVIR 6 INFECTION

Class: Direct-acting antiviral, Hepatitis C virus NS3/4A protease inhibitor (glecaprevir), Hepatitis C virus NS5A inhibitor (pibrentasvir)
Half-life: 6 hours (glecaprevir); 13 hours (pibrentasvir)
Clinically important, potentially hazardous interactions with: atazanavir, atorvastatin, carbamazepine, cyclosporine, darunavir, efavirenz, lopinavir, lovastatin, oral contraceptives, rifampin, ritonavir, simvastatin, St John's wort
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with severe hepatic impairment (Child-Pugh C).
Warning: RISK OF HEPATITIS B VIRUS REACTIVATION IN PATIENTS COINFECTED WITH HCV AND HBV

Skin
Pruritus (itching) [12]
Central Nervous System
Headache (13%) [12]
Endocrine/Metabolic
Hyperbilirubinemia (<4%) [4]
Gastrointestinal/Hepatic
Diarrhea [2]
Nausea (8%) [6]
Neuromuscular/Skeletal
Asthenia / fatigue (11%) [14]
Other
Adverse effects / adverse reactions [9]

GLICLAZIDE

Trade names: Diamicron (Servier), Diamicron MR (Servier)
Indications: Non-insulin dependent diabetes mellitus
Class: Sulfonylurea
Half-life: 10–12 hours
Clinically important, potentially hazardous interactions with: beta andrenergic blocking agents, chloramphenicol, cimetidine, clofibrate, coumarin derivatives, disopyramide, MAO inhibitors, miconazole, phenylbutazone, salicylates, sulfonamides, tetracycline
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Gliclazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Pancreatitis / acute pancreatitis [2]
Neuromuscular/Skeletal
Arthralgia (<5%)
Back pain (<5%)
Respiratory
Bronchitis (<5%)

GLIMEPIRIDE

Trade names: Amaryl (Sanofi-Aventis), Avandaryl (GSK)
Indications: Non-insulin dependent diabetes Type II
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Sulfonylurea
Half-life: 5–9 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Glimepiride is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome
Avandaryl is glimepiride and rosiglitazone.

Central Nervous System
Headache [4]
Vertigo / dizziness [2]
Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [11]
Weight gain [3]
Gastrointestinal/Hepatic
Diarrhea [5]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Nausea [4]
Pancreatitis / acute pancreatitis [2]
Genitourinary
Genital mycotic infection [4]
Urinary tract infection [3]
Neuromuscular/Skeletal
Arthralgia [2]
Other
Adverse effects / adverse reactions [5]

GLIPIZIDE

Trade names: Glucotrol (Pfizer), Metaglip (Bristol-Myers Squibb)
Indications: Non-insulin dependent diabetes Type II
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Sulfonylurea
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Glipizide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Photosensitivity (<10%)
Pruritus (itching) (<3%)
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives (<10%)
Central Nervous System
Hyperesthesia (<3%)
Paresthesias (<3%)
Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [3]
Neuromuscular/Skeletal
Myalgia/Myopathy (<3%)
Other
Adverse effects / adverse reactions [2]

GLUCAGON

Trade name: Glucagon Emergency Kit (Lilly)
Indications: Hypoglycemic reactions
Class: Hormone, polypeptide
Half-life: 3–10 minutes
Clinically important, potentially hazardous interactions with: insulin degludec, insulin glargine, insulin glulisine, warfarin
Pregnancy category: B

Skin
Erythema necrolyticum migrans [2]
Exanthems [7]
Folliculitis [2]
Pyoderma gangrenosum [3]
Rash [2]
Sweet's syndrome [7]

Urticaria / hives (<10%) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [9]

Local
Injection-site reaction [3]

GLUCARPIDASE

Synonyms: carboxypeptidase G_2; CPG2
Trade name: Voraxaze (BTG)
Indications: Treatment of toxic plasma methotrexate concentrations in patients with delayed methotrexate clearance due to impaired renal function
Class: Enzyme
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: leucovorin, reduced folates and folate antimetabolites
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
Flushing / rubefaction (2%) [2]

Central Nervous System
Paresthesias (2%)

Gastrointestinal/Hepatic
Nausea (2%)
Vomiting (2%)

GLUCOSAMINE

Trade names: Arthro-Aid (NutraSense), Glucosamine sulfate (Rottapharm)
Indications: Arthritis, osteoarthritis, cartilage repair and maintenance, strained joints, improving joint function and range of motion, alleviating joint pain
Class: Amino sugar, Food supplement
Half-life: N/A
Clinically important, potentially hazardous interactions with: abciximab, cilostazol, citalopram, clopidogrel, eptifibatide, meloxicam
Pregnancy category: C

Mucosal
Oral vesiculation (7%)

Central Nervous System
Depression (6%)

Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [2]

Neuromuscular/Skeletal
Asthenia / fatigue (9%) [2]

Other
Adverse effects / adverse reactions (6%) [4]
Allergic reactions (4%) [2]

GLYBURIDE

Synonyms: glibenclamide; glybenclamide
Trade names: Diabeta (Sanofi-Aventis), Glucovance (Bristol-Myers Squibb), Glynase (Pfizer), Micronase (Pfizer)
Indications: Non-insulin dependent diabetes Type II
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Sulfonylurea
Half-life: 5–16 hours
Clinically important, potentially hazardous interactions with: bosentan, colesevelam, letermovir, norfloxacin
Pregnancy category: C
Note: Glyburide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Glucovance is glyburide and metformin.

Skin
Erythema (<5%)
Exanthems (<5%) [3]
Flushing / rubefaction [2]
Linear IgA bullous dermatosis [2]
Pemphigus [2]
Photosensitivity (<10%) [5]
Pruritus (itching) (<10%) [3]
Psoriasis [2]
Purpura [2]
Rash (<10%)
Urticaria / hives (<5%) [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [5]

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [2]
Weight gain [2]

Other
Adverse effects / adverse reactions [2]

GLYCOPYRROLATE

Synonyms: glycopyrronium bromide, glycopyrronium tosylate
Trade names: Cuvposa (Shionogi), Robinul (Forte), Seebri Neohaler (Novartis), Utibron Neohaler (Novartis)
Indications: Duodenal ulcer, irritable bowel syndrome, hyperhidrosis
Class: Anticholinergic, Muscarinic antagonist, Non-depolarizing muscle relaxant
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticholinergics, arbutamine, belladonna alkaloids, digoxin, disopyramide, meperidine, phenothiazines, procainamide, quinidine, ritodrine, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Utibron Neohaler is glycopyrrolate and indacaterol.

Skin
Flushing / rubefaction (30%)
Photosensitivity (<10%)
Rash [2]
Xerosis / xeroderma (see also dry skin) (>10%)

Mucosal
Nasal congestion (30%)
Xerostomia (dry mouth) (40%) [11]

Cardiovascular
Bradycardia / sinus bradycardia [2]

Central Nervous System
Headache (15%) [2]

Gastrointestinal/Hepatic
Constipation (35%) [2]
Vomiting (40%)

Genitourinary
Urinary retention (15%)

Local
Application-site pruritus [2]
Injection-site irritation (>10%)

Ocular
Mydriasis [4]
Vision blurred [2]

Respiratory
Nasopharyngitis [2]
Sinusitis (15%)
Upper respiratory tract infection (15%)

GOLD & GOLD COMPOUNDS

Synonyms: auranofin; aurothioglucose
Trade names: Myochrysine (Merck), Myocrisin (Sanofi-Aventis), Ridaura (Prometheus), Solganal (Schering)
Indications: Rheumatoid arthritis
Class: Disease-modifying antirheumatic drug (DMARD)
Half-life: 5 days
Clinically important, potentially hazardous interactions with: ACE inhibitors, benazepril, captopril, cilazapril, enalapril, fosinopril, lisinopril, penicillamine, phenytoin, quinapril, ramipril, trandolapril
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a history of any of the following gold-induced disorders: anaphylactic reactions, necrotizing enterocolitis, pulmonary fibrosis, exfoliative dermatitis, bone marrow aplasia or other severe hematologic disorders. Adverse reactions can occur months after therapy has been discontinued.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Bullous dermatosis [3]
Chrysiasis (blue-green pigmentation) [3]
Cutaneous toxicity / skin toxicity [5]
Dermatitis [64]
Eczema / eczematous reaction / eczematous eruption [3]
Erythema multiforme [2]
Erythema nodosum [4]
Exanthems (>5%) [10]
Exfoliative dermatitis [9]
Granuloma annulare [2]
Herpes zoster [2]
Lichen planus (includes hypertrophic lichen planus) (<32%) [11]
Lichenoid eruption / lichenoid reaction [8]

Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Pemphigus [3]
Photosensitivity [2]
Pigmentation [20]
Pityriasis rosea [10]
Pruritus (itching) (17%) [10]
Pseudolymphoma [3]
Purpura [3]
Rash (24%) [12]
Seborrheic dermatitis [3]
Squamous cell carcinoma [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Urticaria / hives (<10%) [7]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Hair
Alopecia / hair loss (<10%) [7]

Nails
Nail dystrophy [2]
Nail pigmentation [3]

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [4]
Cheilitis (inflammation of the lips) [2]
Gingivitis (>10%) [2]
Glossitis (inflammation of the tongue) (>10%) [2]
Mucocutaneous reactions [4]
Oral lichen planus [3]
Oral pigmentation [2]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [6]
Stomatitis (oral mucositis) (13%) [22]

Cardiovascular
Myocardial infarction [2]

Central Nervous System
Dysgeusia (taste perversion) [4]
Neurotoxicity [5]
Syncope / fainting [3]

Gastrointestinal/Hepatic
Abdominal pain (14%)
Diarrhea (47%) [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Loose stools / soft feces (47%)
Nausea (10%) [3]
Vomiting [2]

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Thrombocytopenia [4]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Proteinuria [5]

Respiratory
Pneumonitis [2]

Other
Death [4]

GOLDENSEAL

Family: Ranunculaceae
Scientific name: *Hydrastis canadensis*
Indications: Oral: Anorexia, fever, hemorrhoids, hemorrhage, liver disorders, menstrual disorders, rhinitis, upper respiratory tract infections, urinary tract infections. **Topical:** Acne, conjunctivitis, dandruff, earache, eczema, eye inflammation, herpes, itching, mouthwash, rash, ringworm, tinnitus, wounds
Class: Immunomodulator, Isoquinolone alkaloid
Half-life: N/A
Clinically important, potentially hazardous interactions with: clevidipine
Pregnancy category: N/A

GOLIMUMAB

Trade name: Simponi (Centocor)
Indications: Rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, ulcerative colitis
Class: Anti-Tumor Necrosis Factor-alpha (TNF-α antagonist), Biologic, Biologic disease-modifying antirheumatic drug (bDMARD), Disease-modifying antirheumatic drug (DMARD), Monoclonal antibody
Half-life: 2 weeks
Clinically important, potentially hazardous interactions with: abatacept, anakinra, live vaccines
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: TNF inhibitors should be used in patients with heart failure only after consideration of other treatment options. TNF inhibitors are contra-indicated in patients with a personal or family history of multiple sclerosis or demyelinating disease. TNF inhibitors should not be administered to patients with moderate to severe heart failure (New York Heart Association Functional Class III/IV).
Warning: SERIOUS INFECTIONS AND MALIGNANCY

Skin
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Psoriasis [2]
Rash [4]

Cardiovascular
Hypertension [2]

Central Nervous System
Headache [7]

Endocrine/Metabolic
ALT increased [4]
AST increased [3]

Gastrointestinal/Hepatic
Colitis [2]
Diarrhea [4]
Nausea [6]

Genitourinary
Urinary tract infection [2]

Hematologic
Sepsis [4]

Local
Injection-site erythema [7]
Injection-site reaction (6%) [7]

Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue [3]

Respiratory
Cough [2]
Nasopharyngitis (6%) [7]
Pneumonia [4]
Pulmonary toxicity [2]
Tuberculosis [2]
Upper respiratory tract infection (7%) [8]

Other
Adverse effects / adverse reactions [15]
Death [3]
Infection (28%) [19]
Malignancies [6]

GOSERELIN

Trade name: Zoladex (AstraZeneca)
Indications: Breast and prostate carcinoma, endometriosis
Class: Gonadotropin-releasing hormone (GnRH) agonist
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: X (category D in patients with advanced breast cancer)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>20%)
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Diaphoresis (see also hyperhidrosis) (>20%)
Edema / fluid retention (see also peripheral edema) (<10%)
Hot flashes / hot flushes (>10%) [5]
Peripheral edema (see also edema) (>20%)
Pruritus (itching) (<5%)
Rash (<10%)
Seborrhea (>20%)

Hair
Hirsutism (>5%)

Cardiovascular
Arrhythmias (<5%)
Chest pain (<5%)
Congestive heart failure (>5%)
Hypertension (<5%)
Myocardial infarction (<5%)
Vasodilation (>5%)

Central Nervous System
Anorexia (>5%)
Anxiety (<5%)
Cerebrovascular accident (<5%)
Chills (<5%)
Depression (>20%) [2]
Emotional lability (>20%)
Fever (pyrexia) (includes hyperpyrexia) (<5%)
Headache (>20%)
Insomnia (>5%)
Nervousness (<5%)
Pain (>10%)
Vertigo / dizziness (>5%)

Endocrine/Metabolic
Appetite increased (<5%)
Breast atrophy (>20%)
Gynecomastia (>10%)

Hyperglycemia (includes glucose increased) (in men) (<5%)
Libido decreased (>20%)
Libido increased (in women) (>10%)
Mastodynia (<10%)
Weight gain (<5%)

Gastrointestinal/Hepatic
Abdominal pain (>5%)
Constipation (<5%)
Diarrhea (<5%)
Gastrointestinal ulceration (<5%)
Nausea (>5%)
Vomiting (<5%)

Genitourinary
Dyspareunia (>10%)
Urinary obstruction (<5%)
Urinary tract infection (<5%)
Vaginitis (includes vulvitis) (>20%)

Hematologic
Anemia (<5%)

Local
Infusion-site reactions (>5%)
Injection-site pain (<10%)

Neuromuscular/Skeletal
Arthralgia [4]
Asthenia / fatigue (>10%)
Back pain (>5%)
Gouty tophi (<5%)
Hypertonia (<5%)
Leg cramps (<5%)
Myalgia/Myopathy (<5%)

Respiratory
COPD (>5%)
Dysphonia (includes voice disorders / voice changes) (<5%)
Influenza- ('flu)-like syndrome (<5%)
Pharyngitis (sore throat) (<5%)

Other
Infection (>10%)

GRANISETRON

Trade names: Kytril (Roche), Sancuso (ProStrakan), Sustol (Heron)
Indications: Chemotherapy-related emesis
Class: 5-HT3 antagonist, Antiemetic, Serotonin type 3 receptor antagonist
Half-life: 3–4 hours; cancer patients: 10–12 hours
Clinically important, potentially hazardous interactions with: apomorphine, apomorphine, vandetanib
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Hair
Alopecia / hair loss (3%)

Central Nervous System
Dysgeusia (taste perversion) (2%)
Headache [12]
Vertigo / dizziness [3]

Gastrointestinal/Hepatic
Constipation [9]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

GRANULOCYTE COLONY-STIMULATING FACTOR (G-CSF)

Synonyms: filgrastim; sargramostim; pegfilgrastim; mecapegfilgrastim (pegfilgrastim biosimilar)
Trade names: Granix (Sicor), Leukine (Bayer) (Berlex), Neulasta (Amgen), Neupogen (Amgen), Zarxio (Novartis)
Indications: Bone marrow allograft and autograft
Class: Biologic, Colony stimulating factor, Covid-19 putative drug, Hematopoietic
Half-life: filgrastim: 3.5 hours; sargramostim: 2–3 hours; pegfilgrastim: 15–80 hours; tbo-filgrastim: 3–4 hours
Clinically important, potentially hazardous interactions with: fluorouracil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: rGM-CSF is granulocyte-macrophage colony-stimulating factor; rG-CSF is granulocyte colony-stimulating factor.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Erythema [5]
Erythema nodosum [2]
Exanthems (5–63%) [11]
Exfoliative dermatitis (10%)
Flushing / rubefaction (>10%)
Graft-versus-host reaction [4]
Leukocytoclastic vasculitis (angiitis) [4]
Lymphoproliferative disease / lymphoproliferative disorder [2]
Peripheral edema (see also edema) (<10%)
Pruritus (itching) (<5%) [5]
Psoriasis [5]
Pyoderma gangrenosum [4]
Rash (<40%) [8]
Sweet's syndrome [43]
Urticaria / hives [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [9]

Hair
Alopecia / hair loss (>10%)

Mucosal
Mucositis (40%) [2]
Stomatitis (oral mucositis) (>10%) [2]

Cardiovascular
Aortitis / periaortitis [4]
Capillary leak syndrome [6]
Large-vessel vasculitis [7]

Central Nervous System
Anorexia [2]
Fever (pyrexia) (includes hyperpyrexia) (5–50%) [21]
Headache (39–80%) [13]
Neurotoxicity [2]
Pain [2]
Vertigo / dizziness (>5%)

Gastrointestinal/Hepatic
Colitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [5]

Hematologic
Anemia [3]
Febrile neutropenia [6]
Leukocytosis (elevated white blood cell (WBC) count) [5]
Neutropenia (neutrophils decreased) [4]
Thrombocytopenia [3]

Local
Injection-site pain (1–10%)
Injection-site pruritus [2]
Injection-site reaction (>5%) [6]

Neuromuscular/Skeletal
Arthralgia [5]
Asthenia / fatigue [11]
Back pain [2]
Bone or joint pain (13–84%) [45]
Musculoskeletal pain [2]
Myalgia/Myopathy (>10%) [4]
Rhabdomyolysis [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

Respiratory
Influenza- ('flu)-like syndrome [2]
Pneumonitis [2]
Respiratory distress [2]

Other
Adverse effects / adverse reactions (19%) [14]
Allergic reactions (19%)
Death [6]
Infection [3]

GRAPEFRUIT JUICE

Family: Rutaceae
Scientific names: *Citrus decumana, Citrus maxima, Citrus paradisi*
Indications: Atherosclerosis, anti-cancer agent, cholesterol reduction, psoriasis, weight reduction, source of potassium, vitamin C, and fiber
Class: CYP3A4 inhibitor, Food supplement
Half-life: N/A
Clinically important, potentially hazardous interactions with: abemaciclib, alprazolam, ambrisentan, amiodarone, amitriptyline, aprepitant, astemizole, atorvastatin, bexarotene, brigatinib, buspirone, cabazitaxel, cabozantinib, ceritinib, cilostazol, colchicine, copanlisib, corticosteroids, crizotinib, cyclosporine, deflazacort, dronedarone, efavirenz, eliglustat, enalapril, eplerenone, estradiol, everolimus, felodipine, finerenone, flibanserin, gefitinib, ibrutinib, indinavir, itraconazole, ivabradine, ivacaftor, ixabepilone, lapatinib, lercanidipine, lomitapide, lonafarnib, lovastatin, lumateperone, midazolam, midostaurin, mifepristone, naloxegol, neratinib, nifedipine, nilotinib, nisoldipine, olaparib, palbociclib, pazopanib, pimozide, ponatinib, prednisolone, prednisone, propafenone, ranolazine, red rice yeast, regorafenib, repaglinide, ribociclib, rosiglitazone, rupatadine, ruxolitinib, sildenafil, simvastatin, sunitinib, tacrolimus, tadalafil, temsirolimus, terfenadine, tezacaftor/ivacaftor, tolvaptan, ubrogepant, vardenafil, venetoclax, voriconazole, warfarin
Pregnancy category: N/A

Skin
Cutaneous toxicity / skin toxicity [2]

Central Nervous System
Headache [3]

Neuromuscular/Skeletal
Rhabdomyolysis [3]
Other
Adverse effects / adverse reactions [2]

GREEN TEA

Family: Theaceae
Scientific names: *Camellia sinensis, Camellia thea, Camellia theifera, Thea bohea, Thea sinensis, Thea viridis*
Indications: Improving cognitive performance, stomach disorders, nausea, vomiting, diarrhea, anticancer, headaches, Crohn's disease. **Topical**: soothe sunburn, bleeding gums, reduce sweating
Class: Anti-Tumor Necrosis Factor-alpha (TNF-α antagonist), Food supplement, Xanthine alkaloid
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Tea is consumed as a beverage.

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [9]
Other
Adverse effects / adverse reactions [6]

GRISEOFULVIN

Trade names: Fulvicin (Schering), Grifulvin V (Ortho), Gris-PEG (Pedinol)
Indications: Fungal infections of the skin, hair and nails
Class: Antifungal / antimycotic, Antimicrobial
Half-life: 9–24 hours
Clinically important, potentially hazardous interactions with: alcohol, amphotericin B, levonorgestrel, liraglutide, midazolam, thalidomide, ulipristal
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Angioedema [3]
Bullous dermatosis [2]
Cold urticaria [2]
Erythema multiforme [6]
Exanthems [6]
Exfoliative dermatitis [2]
Fixed eruption [7]
Lichenoid eruption / lichenoid reaction [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [14]
Petechiae [2]
Photosensitivity (<10%) [18]
Pigmentation [2]
Pruritus (itching) [4]
Rash (>10%)
Serum sickness-like reaction [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [7]
Urticaria / hives (>10%) [5]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Mucosal
Oral candidiasis (<10%)
Central Nervous System
Dysgeusia (taste perversion) [3]
Endocrine/Metabolic
Gynecomastia [2]
Porphyria [12]
Other
Adverse effects / adverse reactions [2]
Allergic reactions (<5%)

GUANETHIDINE

Trade name: Ismelin (Novartis)
Indications: Hypertension
Class: Adrenergic alpha-receptor agonist
Half-life: 5–10 days
Clinically important, potentially hazardous interactions with: amitriptyline, amoxapine, benzphetamine, bisoprolol, chlorpromazine, clomipramine, cyclopenthiazide, desipramine, doxepin, ephedra, ephedrine, imipramine, insulin, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, minoxidil, nortriptyline, oxprenolol, pericyazine, protriptyline, sotalol, tricyclic antidepressants, trimipramine, zuclopenthixol, zuclopenthixol acetate, zuclopenthixol decanoate, zuclopenthixol dihydrochloride
Pregnancy category: C

Skin
Peripheral edema (see also edema) (>10%)
Mucosal
Glossitis (inflammation of the tongue) (5%)
Xerostomia (dry mouth) (<10%)
Central Nervous System
Paresthesias (16%)

GUANFACINE

Trade name: Tenex (ESP)
Indications: Hypertension, attention deficit hyperactivity disorder (ADHD)
Class: Adrenergic alpha-receptor agonist, Anti-attention deficit hyperactivity disorder (anti-ADHD)
Half-life: 10–30 hours
Clinically important, potentially hazardous interactions with: conivaptan, darunavir, delavirdine, efavirenz, indinavir, oxcarbazepine, rifapentine, telithromycin, voriconazole
Pregnancy category: B

Skin
Dermatitis (<3%)
Diaphoresis (see also hyperhidrosis) (<3%) [3]
Pruritus (itching) (<3%)
Purpura (<3%)
Mucosal
Xerostomia (dry mouth) (47%) [9]
Cardiovascular
Bradycardia / sinus bradycardia [4]
Hypotension [3]
Central Nervous System
Dysgeusia (taste perversion) (<3%)
Headache [6]
Insomnia [2]
Irritability [3]
Paresthesias (<3%)
Sedation [2]
Somnolence (drowsiness) [8]
Vertigo / dizziness [4]
Gastrointestinal/Hepatic
Abdominal pain [3]
Constipation [2]
Neuromuscular/Skeletal
Asthenia / fatigue [6]
Respiratory
Nasopharyngitis [4]
Other
Dipsia (thirst) / polydipsia [2]

GUARANA

Family: Sapindaceae
Scientific names: *Paullinia cupana, Paullinia sorbilis*
Indications: Aphrodisiac, diarrhea, fatigue, fever, heart problems, headache, mental alertness, neuralgia, weight loss. Cosmetic products, anti-cellulite creams, shampoo for hair loss. Flavoring
Class: Stimulant, mild
Half-life: N/A
Clinically important, potentially hazardous interactions with: caffeine, clozapine, ephedra, MAO inhibitors
Pregnancy category: N/A
Note: The main constituent of guarana is caffeine. It contains more than twice as much caffeine as coffee or tea. Excessive consumption of caffeine is contraindicated for persons with high blood pressure, cardiac disorders, diabetes, ulcers, and epilepsy. See also separate profile for caffeine.

Central Nervous System
Seizures [2]
Other
Adverse effects / adverse reactions [7]

GUSELKUMAB

Trade name: Tremfya (Janssen Biotech)
Indications: Moderate-to-severe plaque psoriasis
Class: Interleukin-23 inhibitor, Monoclonal antibody
Half-life: 15–18 days
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Pruritus (itching) [2]
Central Nervous System
Headache (5%) [8]
Gastrointestinal/Hepatic
Diarrhea (2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (3%)
Local
Injection-site erythema [2]
Injection-site reaction (5%) [2]
Neuromuscular/Skeletal
Arthralgia (3%) [2]
Back pain [3]

Respiratory
Nasopharyngitis [15]
Upper respiratory tract infection (14%) [10]
Other
Adverse effects / adverse reactions [2]
Infection [6]

HALOBETASOL

Trade name: Ultravate (Ranbaxy)
Indications: Plaque psoriasis
Class: Corticosteroid / Glucocorticoid, Corticosteroid, topical
Half-life: N/A
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Burning / skin burning sensation [2]
Pruritus (itching) [3]
Stinging [2]
Other
Adverse effects / adverse reactions [5]

HALOFANTRINE

Trade name: Halfan (GSK)
Indications: Malaria
Class: Antimalarial
Half-life: 6–10 days
Clinically important, potentially hazardous interactions with: aprepitant, artemether/lumefantrine, chloroquine, conivaptan, darunavir, delavirdine, efavirenz, indinavir, itraconazole, ketoconazole, mefloquine, nilotinib, quinine, ribociclib, sulpiride, telithromycin, voriconazole
Pregnancy category: C

Skin
Pruritus (itching) (3%) [3]
Rash [2]
Cardiovascular
Palpitation [2]
QT interval prolonged / QT prolongation [14]
Ventricular tachycardia [2]
Central Nervous System
Anorexia (5%)
Headache (5%)
Rigors (2%)
Vertigo / dizziness (5%)
Gastrointestinal/Hepatic
Abdominal pain (10%) [4]
Diarrhea (5%) [2]
Nausea (10%) [2]
Vomiting (10%) [2]
Respiratory
Cough (3%)
Other
Death [6]

HALOPERIDOL

Trade name: Haldol (Ortho-McNeil)
Indications: Schizophrenia, Tourette's disorder
Class: Antiemetic, Antipsychotic
Half-life: 20 hours
Clinically important, potentially hazardous interactions with: acemetacin, arsenic, benztropine, citalopram, clozapine, darifenacin, fluoxetine, itraconazole, lisdexamfetamine, lithium, meloxicam, methotrexate, moxifloxacin, nilotinib, oxybutynin, propranolol, quinine, ribociclib, sotalol, sulpiride, tetrabenazine, tiotropium, trospium, vandetanib, venlafaxine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Cellulitis [2]
Diaphoresis (see also hyperhidrosis) [2]
Photosensitivity [3]
Seborrheic dermatitis [2]
Hair
Alopecia areata [2]
Mucosal
Xerostomia (dry mouth) [4]
Cardiovascular
Arrhythmias [2]
QT interval prolonged / QT prolongation [23]
Torsades de pointes [12]
Central Nervous System
Agitation [4]
Akathisia [9]
Delirium [3]
Extrapyramidal symptoms [9]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [2]
Insomnia [4]
Neuroleptic malignant syndrome [36]
Parkinsonism [10]
Sedation [3]
Somnolence (drowsiness) [6]
Tardive syndrome / tardive dyskinesia (<37%) [5]
Tremor [7]
Vertigo / dizziness [3]
Endocrine/Metabolic
Galactorrhea [4]
Hyperprolactinemia [2]
Hypoglycemia (see also insulin autoimmune syndrome) [2]
SIADH [3]
Weight gain [2]
Gastrointestinal/Hepatic
Constipation [2]
Pancreatitis / acute pancreatitis [2]
Genitourinary
Priapism [3]
Urinary retention [3]
Local
Injection-site reaction [4]
Neuromuscular/Skeletal
Dystonia [5]
Myoclonus [2]
Rhabdomyolysis [7]
Respiratory
Pneumonia [2]
Other
Adverse effects / adverse reactions [5]
Death [7]

HALOTHANE

Indications: Induction and maintenance of general anesthesia
Class: Anesthetic; inhalation
Half-life: N/A
Clinically important, potentially hazardous interactions with: aminophylline, atracurium, carbetocin, cisatracurium, doxacurium, epinephrine, ergometrine, labetalol, mivacurium, non-depolarizing muscle relaxants, oxprenolol, oxytocin, pancuronium, rapacuronium, rifampin, vecuronium, xanthines
Pregnancy category: C

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Neuromuscular/Skeletal
Rhabdomyolysis [5]

HAWTHORN (FRUIT, LEAF, FLOWER EXTRACT)

Family: Rosaceae
Scientific names: *Crataegus laevigata, Crataegus monogyna, Crataegus oxyacantha, Crataegus pentagyna*
Indications: Amenorrhea, arrhythmias, atherosclerosis, diuretic, hyperlipidemia, hypertension, hypotension, sedative, appetite stimulant, arthritis, enteritis, indigestion, sore throats. **Topical**: boils, sores and ulcers
Class: Cardio-stimulant
Half-life: N/A
Clinically important, potentially hazardous interactions with: clevidipine, squill, vasodilators
Pregnancy category: N/A
Note: The American Herbal Products Association (AHPA) gives hawthorn a class 1 safety rating, indicating that it is very safe. However, hawthorn should be used with caution in patients with heart disease.

Skin
Hypersensitivity [2]
Rash (hands) [4]
Cardiovascular
Circulatory collapse [2]
Palpitation [2]
Central Nervous System
Headache [2]
Migraine [2]
Vertigo / dizziness [4]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Other
Adverse effects / adverse reactions [2]

HEMOPHILUS B VACCINE

Trade names: ActHIB (Sanofi-Aventis), Comvax (Merck), HibTITER (Lederle), OmniHIB (GSK), PedivaxHIB (Merck), ProHIBIT (Connaught)
Indications: Hemophilus B immunization
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: azathioprine, basiliximab, corticosteroids, cyclosporine, daclizumab, glatiramer, mycophenolate, sirolimus, tacrolimus
Pregnancy category: C

Skin
Erythema [2]

HENNA

Family: Lythraceae
Scientific names: *Lawsonia alba, Lawsonia inermis*
Indications: Analgesic, antipyretic, seborrheic dermatitis, fungal infections, gastrointestinal ulcers, sunscreen, dandruff, scabies, headache, jaundice, decorative tattoos, Used in cosmetics, body paint, hair dyes, hair care products
Class: Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Black Henna is henna plus paraphenylenediamine (PPD). PPD is added to henna to make it stain black. PPD is a transdermal toxin and may be used alone as hair dye or to stain skin black. Other products called 'black henna' may have indigo or food dyes added, and are generally not harmful to the skin.
Adverse side effects to pure henna are rare; those reported above may be due to additives. Henna tattoos were popularized by the singer, Madonna. Her black patterns, however, were created with body paint, not henna.

Skin
Angioedema [3]
Dermatitis [34]
Edema / fluid retention (see also peripheral edema) [3]
Erythema [3]
Hypersensitivity [10]
Lichenoid eruption / lichenoid reaction [4]
Pigmentation [3]
Pruritus (itching) [3]
Urticaria / hives [3]

Other
Adverse effects / adverse reactions [2]
Allergic reactions [3]
Death [3]

HEPARIN

Trade names: Hep-Flush (Wyeth), Viaflex (Baxter)
Indications: Venous thrombosis, pulmonary embolism, intravascular coagulation, peripheral arterial embolism
Class: Anticoagulant, Heparinoid
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: acenocoumarol, aliskiren, antihistamines, aspirin, balsalazide, bivalirudin, butabarbital, ceftobiprole, dabigatran, danaparoid, defibrotide, desvenlafaxine, iloprost, inotersen, nandrolone, nicotine, nitroglycerin, palifermin, piperacillin/tazobactam, salicylates, tirofiban, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly
Note: A higher incidence of bleeding has been reported in patients over 60 years of age, especially women. Contra-indicated in patients with severe thrombocyopenia.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Bruise / bruising / contusion / ecchymosis (ecchymoses) [3]
Bullous hemorrhagic dermatosis [7]
Dermatitis [6]
Erythema [2]
Exanthems [2]
Hypersensitivity [17]
Lesions [2]
Livedo reticularis [2]
Necrosis (skin necrosis) [57]
Petechiae [2]
Purpura (>10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives [6]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [6]

Hair
Alopecia / hair loss [2]

Mucosal
Gingivitis (>10%)

Central Nervous System
Cerebral venous sinus thrombosis (includes cavernous sinus thrombosis) [2]

Genitourinary
Priapism [6]

Hematologic
Bleeding [2]
Hemorrhage [7]
Thrombocytopenia [126]
Thrombosis [9]

Local
Injection-site eczematous eruption [5]
Injection-site induration [4]
Injection-site necrosis [4]
Injection-site plaques [2]

Other
Allergic reactions (<10%) [3]
Death [6]

HEPATITIS A VACCINE

Trade names: Avaxim (Sanofi Pasteur), Havrix (GSK), Vaqta (Merck)
Indications: Hepatitis A immunization
Class: Vaccine
Half-life: >2 years
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Rash (<10%)

Central Nervous System
Anorexia (<10%)
Chills (<10%)
Fever (pyrexia) (includes hyperpyrexia) (>10%) [2]
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [2]
Headache (>10%) [3]
Somnolence (drowsiness) (>10%)

Gastrointestinal/Hepatic
Constipation (<10%)
Diarrhea (<10%)
Nausea (<10%)
Vomiting (<10%)

Local
Injection-site erythema [2]
Injection-site pain (<10%) [7]
Injection-site reaction [6]

Neuromuscular/Skeletal
Arm pain (<10%)
Asthenia / fatigue (<10%)
Back pain (<10%)

Ocular
Conjunctivitis (conjunctival inflammation) (<10%)

Otic
Otitis media (<10%)

Respiratory
Cough (<10%)
Nasopharyngitis (<10%)
Pharyngitis (sore throat) (<10%)
Rhinitis (<10%)
Upper respiratory tract infection (<10%)

Other
Adverse effects / adverse reactions [2]

HEPATITIS B VACCINE

Trade names: Comvax (Merck), Engerix B (GSK), Pediatrix (GSK), Recombivax HB (Merck), Twinrix (GSK)
Other common trade names: Heptavax-B
Indications: For immunization of infection caused by all known subtypes of hepatitis B virus
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [6]
Churg-Strauss syndrome [2]
Dermatomyositis [2]
Erythema multiforme [2]
Erythema nodosum [3]

Gianotti–Crosti syndrome [2]
Granuloma annulare [2]
Lichen planus (includes hypertrophic lichen planus) [18]
Lichenoid eruption / lichenoid reaction [4]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [9]
Pemphigus [2]
Pseudolymphoma [2]
Purpura [6]
Raynaud's phenomenon [2]
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [11]

Hair
Alopecia / hair loss [2]

Cardiovascular
Polyarteritis nodosa [5]

Central Nervous System
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [4]
Neurotoxicity [2]

Local
Injection-site edema [2]
Injection-site erythema [2]
Injection-site pain (22%) [3]

Neuromuscular/Skeletal
Arthralgia [4]

Ocular
Optic neuropathy [3]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [2]

Other
Adverse effects / adverse reactions [2]
Death [2]

HOPS

Family: Cannabaceae
Scientific name: *Humulus lupulus*
Indications: Insomnia, anxiety, diuretic, appetite stimulant. Flavoring in foods and beverages
Class: Cannabinoid, Phytoestrogen, Sedative
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Urticaria / hives [2]

HORSE CHESTNUT (BARK, FLOWER, LEAF, SEED)

Family: Hippocastanaceae
Scientific name: *Aesculus hippocastanum*
Indications: Oral: malaria, dysentery, tinnitus, pancreatitis, cough, arthritis, rheumatism, chronic venous insufficiency. **Topical**: lupus, skin ulcers eczema, phlebitis, varicose veins, hemorrhoids, rectal problems
Class: Diuretic
Half-life: N/A
Clinically important, potentially hazardous interactions with: NSAIDs
Pregnancy category: N/A
Note: The active ingredient is a toxic glycoside, escin.

Other
Adverse effects / adverse reactions (mild) [2]

HORSETAIL

Family: Equisetaceae
Scientific names: *Equisetum arvense, Equisetum myriochaetum, Equisetum ramosissimum, Equisetum telmateia*
Indications: Oral: Alopecia, diabetes, hepatitis, bacterial infections, osteoarthritis, pressure ulcers, urinary tract infections. **Topical:** burns
Class: Anti-inflammatory, Antioxidant, Diuretic
Half-life: N/A
Clinically important, potentially hazardous interactions with: diuretics, nicotine
Pregnancy category: N/A

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

HUMAN PAPILLOMAVIRUS VACCINE (BIVALENT)

Trade name: Cervarix (GSK)
Indications: Prevention of human papillomavirus (HPV) types 16 and 18 in females aged 10–25 years old
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: immunosuppressants
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (3%) [2]
Erythema (<10%) [4]
Pruritus (itching) (<10%)
Rash (<10%)
Urticaria / hives (7%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (13%) [3]
Headache (53%) [3]

Gastrointestinal/Hepatic
Abdominal pain (28%)
Diarrhea (28%)
Nausea (28%)
Vomiting (28%)

Local
Injection-site edema (44%) [3]
Injection-site erythema (48%)
Injection-site pain (92%) [9]
Injection-site reaction [6]

Neuromuscular/Skeletal
Arthralgia (21%)
Asthenia / fatigue (55%)
Myalgia/Myopathy (49%)

Other
Adverse effects / adverse reactions [2]

HYALURONIC ACID

Synonym: Hyaluronan
Trade names: Euflexxa (Ferring), Hyalgan (Sanofi-Aventis), Hylan G-F 20 (Synvisc), Juvederm (Allergan), Perlane (Q-Med AB), Restylane Fine Lines (Medicis), Vitrase (ISTA Pharma)
Indications: Oral: joint disorders **Injection**: adjunct in eye surgery, viscosupplementation in orthopedics, cosmetic surgery **Topical**: wounds, burns, skin ulcers, stomatitis
Class: Dermal filler, Food supplement, Glycoaminoglycan
Half-life: 2.5–5.5 minutes
Clinically important, potentially hazardous interactions with: furosemide, local anesthetics, NSAIDs, oral anticoagulants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Most reported reactions relate to orthopedic use.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<29%)
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema [6]
Bruise / bruising / contusion / ecchymosis (ecchymoses) [3]
Churg-Strauss syndrome [12]
Dermatitis (24%) [2]
Edema / fluid retention (see also peripheral edema) [9]
Erythema [6]
Erythema multiforme [2]
Facial edema [3]
Granulomatous reaction [2]
Hematoma [2]
Herpes simplex [2]
Hypersensitivity [6]
Induration [2]
Inflammation [7]
Necrosis (skin necrosis) [4]
Nodular eruption [2]
Pigmentation [2]
Pruritus (itching) [4]

Cardiovascular
Arterial occlusion [2]
Hypertension (4%)

Central Nervous System
Pain [4]

Gastrointestinal/Hepatic
Nausea (2%)

Local
Injection-site bruising [4]
Injection-site ecchymoses [2]
Injection-site edema (20%) [13]
Injection-site erythema (47%) [9]
Injection-site granuloma [2]
Injection-site nodules [3]
Injection-site pain (8–47%) [16]
Injection-site pruritus [2]
Injection-site reaction (<11%) [12]

Neuromuscular/Skeletal
Arthralgia [9]
Back pain (5%)
Chondritis (<11%) [2]
Gouty tophi [3]

Tendinitis (2%)

Ocular
Orbital inflammation (see also orbital (ocular) myositis) [2]

Other
Adverse effects / adverse reactions [15]
Infection [2]

HYDRALAZINE

Trade names: Apresazide (Novartis), Apresoline (Novartis), Ser-Ap-Es (Novartis)
Indications: Hypertension
Class: Vasodilator
Half-life: 3–7 hours
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, captopril, cilazapril, diclofenac, enalapril, fosinopril, levodopa, levomepromazine, lisinopril, meloxicam, olmesartan, quinapril, ramipril, trandolapril, triamcinolone, trifluoperazine, zuclopenthixol
Pregnancy category: C
Note: Apresazide is hydralazine and hydrochlorothiazide; Ser-Ap-Es is hydralazine, reserpine and hydrochlorothiazide.
Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Anti-neutrophil cytoplasmic antibody (ANCA) vasculitis (angiitis) (see also allergic granulomatous angiitis / Eosinophilic Granulomatosis with Polyangiitis (EGPA) / Churg-Strauss syndrome [12]
Edema / fluid retention (see also peripheral edema) [2]
Exanthems [4]
Flushing / rubefaction (>10%)
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (7%) [114]
Lupus syndrome / drug-induced lupus (DIL) [5]
Photosensitivity [2]
Purpura [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Sweet's syndrome [7]
Ulcerations [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [17]

Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Orogenital ulceration [2]

Gastrointestinal/Hepatic
Cholestatic liver injury / cholestatic hepatitis [2]
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]

Renal
Glomerulonephritis (includes membranous nephropathy) [8]
Nephritis / interstitial nephritis / tubulointerstitial nephritis [4]

Respiratory
Alveolar hemorrhage (pulmonary) [2]
Pulmonary-renal syndrome [2]

HYDROCHLORO-THIAZIDE

Trade names: Accuretic (Pfizer), Aldactazide (Pfizer), Aldoril (Merck), Atacand HCT (AstraZeneca), Avalide (Bristol-Myers Squibb), Capozide (Par), Diovan HCT (Novartis), Dyazide (GSK), Hyzaar (Merck), Inderide (Wyeth), Lopressor (Novartis), Lotensin (Novartis), Lotensin HCT (Novartis), Micardis (Boehringer Ingelheim), Microzide (Watson), Moduretic (Merck), Prinzide (Merck), Tekturna HCT (Novartis), Teveten HCT (Biovail), Uniretic (Schwarz), Vaseretic (Biovail), Zestoretic (AstraZeneca), Ziac (Barr)
Indications: Edema
Class: Diuretic, thiazide
Half-life: 5.6–14.8 hours
Clinically important, potentially hazardous interactions with: digoxin, dofetilide, lithium, zinc
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Hydrochlorothiazide is often used in combination, e.g. with aliskiren (Tekturna HCT); amiloride (Moduretic); benazepril (Lotensin HCT); bisoprolol (Ziac); captopril (Capozide); enalapril (Vaseretic); irbesartan (Avalide); lisinopril (Prinzide and Zestoretic); losartan (Hyzaar); methyldopa (Aldoril); moexipril (Uniretic); spironolactone (Aldactazide); triamterene (Dyazide and Maxzide).

Skin
AGEP [2]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
Dermatitis [2]
Diaphoresis (see also hyperhidrosis) [2]
Edema / fluid retention (see also peripheral edema) [3]
Erythema annulare centrifugum (see also gyrate erythema) [2]
Lichenoid eruption / lichenoid reaction [5]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [16]
Peripheral edema (see also edema) [5]
Photosensitivity [21]
Phototoxicity [5]
Purpura [7]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Cardiovascular
Capillary leak syndrome [2]
Hypotension [6]
Orthostatic hypotension [2]

Central Nervous System
Headache [7]
Vertigo / dizziness [10]

Endocrine/Metabolic
Hypokalemia [5]
Hyponatremia [4]
Serum creatinine increased [2]
SIADH [4]

Gastrointestinal/Hepatic
Diarrhea [2]
Nausea [2]
Pancreatitis / acute pancreatitis [5]

Hematologic
Hemolytic anemia [4]

Neuromuscular/Skeletal
Asthenia / fatigue [3]

Ocular
Glaucoma (includes acute angle-closure glaucoma) [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Upper respiratory tract infection [3]

Other
Adverse effects / adverse reactions [5]
Death [3]

HYDROCODONE

Trade names: Duratuss (UCB), Entex HC (Andrx), Hycotuss (Endo), Hydromet (Actavis), Hysingla ER (Purdue), Lortab (UCB), Maxidone (Watson), Norco (Watson), Tussionex (Celltech), Vicodin (AbbVie), Vicoprofen (AbbVie), Zohydro ER (Pernix), Zydone (Endo)
Indications: Acute pain, coughing
Class: Opiate agonist
Half-life: 3.8 hours
Clinically important, potentially hazardous interactions with: alcohol, buprenorphine, butorphanol, CYP3A4 inhibitors or inducers, MAO inhibitors, nalbuphine, pentazocine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Hydrocodone is included in many combination drugs. Other medications that can be included in these preparations include: phenylpropanolamine, phenylephrine, pyrilamine, pseudoephedrine, acetaminophen, ibuprofen, and others. Zohydro ER is the first extended-release, single-entity hydrocodone-containing drug product approved by the FDA and reflects the newly updated labeling requirements recently announced by the FDA.
Warning: ADDICTION, ABUSE, AND MISUSE; LIFE-THREATENING RESPIRATORY DEPRESSION; ACCIDENTAL INGESTION; NEONATAL OPIOID WITHDRAWAL SYNDROME; INTERACTION WITH ALCOHOL; and CYTOCHROME P450 3A4 INTERACTION

Skin
Hot flashes / hot flushes (<10%)
Hyperhidrosis (see also diaphoresis) (<10%)
Peripheral edema (see also edema) (<3%)
Pruritus (itching) (3%) [2]
Rash (<10%)

Mucosal
Xerostomia (dry mouth) (3%)

Cardiovascular
Chest pain (<10%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<10%)
Headache [2]
Migraine (<10%)
Paresthesias (<10%)
Somnolence (drowsiness) (<5%) [4]
Tremor (3%)
Vertigo / dizziness (2–3%) [4]

Endocrine/Metabolic
Dehydration (<10%)
GGT increased (<10%)
Hypokalemia (<10%)

Gastrointestinal/Hepatic
Abdominal pain (2–3%)
Constipation (8–11%) [7]
Gastroesophageal reflux (<10%)
Nausea (7–10%) [9]
Vomiting [8]

Genitourinary
Urinary tract infection (<5%)

Neuromuscular/Skeletal
Arthralgia (<10%)
Asthenia / fatigue (<4%)
Back pain (<4%) [2]
Bone or joint pain (<10%)
Muscle spasm (<3%)
Myalgia/Myopathy (<10%)
Neck pain (<10%)
Pain in extremities (<10%)

Respiratory
Cough (<10%)
Dyspnea / shortness of breath (<10%)
Respiratory depression [2]
Upper respiratory tract infection (<3%)

HYDROCORTISONE

Trade names: Ala-Cort (Del-Ray), Cortef (Pharmacia), Cortenema (Solvay), Hydrocortone (Merck), Hytone (Dermik), Solu-Cortef (Pharmacia)
Indications: Arthralgias, asthma, inflammatory ocular conditions, rhinitis
Class: Corticosteroid / Glucocorticoid, Corticosteroid, topical
Half-life: N/A
Clinically important, potentially hazardous interactions with: amphotericin B, chlorotrianisene, colestyramine, diuretics, estrogens, furosemide, insulin, live vaccines, methotrexate, oral contraceptives, pancuronium, phenobarbital, phenytoin, rifampin
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [18]
Dermatitis [11]
Eczema / eczematous reaction / eczematous eruption [4]
Hypersensitivity [6]
Pruritus (itching) [2]
Rash [2]
Urticaria / hives [5]

Cardiovascular
Bradycardia / sinus bradycardia [3]
Hypertension [2]

Neuromuscular/Skeletal
Myalgia/Myopathy [5]
Osteonecrosis / avascular necrosis [2]

Other
Allergic reactions [10]
Infection [2]

HYDROFLU-METHIAZIDE

Indications: Hypertension, edema
Class: Diuretic, thiazide
Half-life: 12–24 hours
Clinically important, potentially hazardous interactions with: digoxin, lithium
Pregnancy category: C
Note: Hydroflumethiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

HYDROMORPHONE

Trade names: Dilaudid (AbbVie), Exalgo (Mallinckrodt), Jurnista (Janssen-Cilag), Palladone (Napp)
Indications: Pain
Class: Opiate agonist
Half-life: 1–3 hours; 2 hours (IV)
Clinically important, potentially hazardous interactions with: alcohol, alvimopan, ammonium chloride, amphetamines, anticholinergics, anxiolytics and hypnotics, buprenorphine, butorphanol, cimetidine, CNS depressants, desmopressin, domperidone, droperidol, linezolid, MAO inhibitors, metoclopramide, moclobemide, nalbuphine, pegvisomant, pentazocine, phenothiazines, sodium oxybate, SSRIs, St John's wort, succinylcholine, thiazide diuretics
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: OROS hydromorphone prolonged release (Jurnista) is a once-daily formulation of hydromorphone that utilizes OROS (osmotic-controlled release oral delivery system) technology to deliver the drug at a near constant rate.
Warning: ADDICTION, ABUSE, AND MISUSE; LIFE-THREATENING RESPIRATORY DEPRESSION; ACCIDENTAL INGESTION; NEONATAL OPIOID WITHDRAWAL SYNDROME; and INTERACTION WITH ALCOHOL

Skin
Flushing / rubefaction (<10%)
Pruritus (itching) (<11%) [12]

Mucosal
Xerostomia (dry mouth) (<10%)

Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypotension [2]

Central Nervous System
Agitation [3]
Dysgeusia (taste perversion) [3]
Hallucinations [2]
Headache [5]
Hyperalgesia [3]
Somnolence (drowsiness) [6]
Tremor [2]
Vertigo / dizziness [10]

Endocrine/Metabolic
Appetite decreased [2]

Gastrointestinal/Hepatic
Constipation [11]
Nausea [18]
Vomiting [11]

Neuromuscular/Skeletal
Asthenia / fatigue [5]
Myoclonus [3]

Other
Adverse effects / adverse reactions [7]

HYDROQUINONE

Trade names: Ambi (Johnson & Johnson), Lustra (Taro)
Indications: Ultraviolet induced dyschromia and discoloration resulting from the use of oral contraceptives, pregnancy, hormone replacement therapy, or skin trauma
Class: Depigmentation agent
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Burning / skin burning sensation [2]
Contact dermatitis (localized) [2]
Depigmentation [2]
Erythema [4]
Ochronosis [15]
Peeling [2]
Pigmentation [3]
Pruritus (itching) [2]
Scaling [2]
Striae [2]
Xerosis / xeroderma (see also dry skin) [2]

Other
Adverse effects / adverse reactions [3]

HYDROXY-CHLOROQUINE

Trade name: Plaquenil (Sanofi-Aventis)
Indications: Malaria, lupus erythematosus, rheumatoid arthritis
Class: Antimalarial, Antimicrobial, Antiprotozoal, Covid-19 putative drug, Disease-modifying antirheumatic drug (DMARD)
Half-life: 32–50 days
Clinically important, potentially hazardous interactions with: chloroquine, cholestyramine, dapsone, droperidol, ethosuximide, lacosamide, lanthanum, moxifloxacin, neostigmine, oxcarbazepine, penicillamine, tiagabine, typhoid vaccine, vigabatrin, yellow fever vaccine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
AGEP [27]
Bullous dermatosis [2]

Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR)) [2]
DRESS syndrome [4]
Erythema annulare centrifugum (see also gyrate erythema) [3]
Erythema multiforme [3]
Erythroderma [5]
Exanthems (<5%) [4]
Exfoliative dermatitis [3]
Lichenoid eruption / lichenoid reaction [4]
Photosensitivity [6]
Phototoxicity [3]
Pigmentation (<10%) [21]
Pruritus (itching) (>10%) [13]
Psoriasis (exacerbation) [17]
Rash (<10%) [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Thrombocytopenic purpura [2]
Urticaria / hives [2]

Hair
Alopecia / hair loss [2]
Hair pigmentation (bleaching) (<10%) [8]

Nails
Nail pigmentation [3]

Mucosal
Oral pigmentation [7]
Stomatitis (oral mucositis) [2]

Cardiovascular
Cardiomyopathy [11]
Cardiotoxicity [4]
Cardiovascular adverse effect [4]
QT interval prolonged / QT prolongation [6]
Torsades de pointes [2]
Ventricular arrhythmia [3]

Central Nervous System
Anorexia [2]
Dysgeusia (taste perversion) [2]
Headache [2]
Neurotoxicity [3]

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [5]
Porphyria [7]
Weight loss [2]

Gastrointestinal/Hepatic
Diarrhea [6]
Dysphagia [2]
Gastrointestinal adverse reaction [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [6]
Vomiting [4]

Hematologic
Anemia [3]
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [4]

Neuromuscular/Skeletal
Asthenia / fatigue [3]
Myalgia/Myopathy [9]

Ocular
Maculopathy [5]
Ocular adverse effect [2]
Ocular toxicity [9]
Reduced visual acuity [2]
Retinopathy [31]
Vision blurred [3]

Otic
Hearing loss (hypoacusis) [2]

Other
Adverse effects / adverse reactions [15]
Death [4]

HYDROXYUREA

Synonym: hydroxycarbamide
Trade names: Droxia (Bristol-Myers Squibb), Hydrea (Bristol-Myers Squibb)
Indications: Leukemia, malignant tumors
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Antiretroviral
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: adefovir, aldesleukin
Pregnancy category: D

Skin
Acral erythema [8]
Atrophy / Skin atrophy [4]
Dermatitis [3]
Dermatomyositis [29]
Exanthems (<10%)
Fixed eruption [4]
Ichthyosis [3]
Keratoses [2]
Leg ulceration (29%) [20]
Lichen planus (includes hypertrophic lichen planus) [3]
Lichenoid eruption / lichenoid reaction [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Palmar–plantar desquamation [6]
Pigmentation (<58%) [19]
Poikiloderma [3]
Pruritus (itching) [3]
Purpura [2]
Radiation recall dermatitis [2]
Squamous cell carcinoma [2]
Telangiectasia [2]
Tumors [5]
Ulcerations [28]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [6]
Xerosis / xeroderma (see also dry skin) (<10%) [7]

Hair
Alopecia / hair loss (<10%) [8]

Nails
Atrophic nails (onychatrophy) [3]
Melanonychia [9]
Nail changes [4]
Nail dystrophy [2]
Nail pigmentation [19]
Onycholysis [2]

Mucosal
Oral lesions [2]
Oral pigmentation [2]
Oral squamous cell carcinoma [2]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [8]
Stomatitis (oral mucositis) (>10%) [4]
Tongue pigmentation (<29%) [3]

Gastrointestinal/Hepatic
Pancreatitis / acute pancreatitis [3]

Genitourinary
Genital ulceration [3]

Other
Adverse effects / adverse reactions [2]
Death [2]
Side effects (7–35%) [3]

HYDROXYZINE

Trade names: Atarax (Pfizer), Vistaril (Pfizer)
Indications: Anxiety and tension, pruritus
Class: Histamine H1 receptor antagonist, Muscarinic antagonist
Half-life: 3–7 hours
Clinically important, potentially hazardous interactions with: alcohol, barbiturates, CNS depressants, efavirenz, lurasidone, narcotics, non-narcotic analgesics
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
AGEP [3]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema [3]
Erythema multiforme [2]
Exanthems [3]
Fixed eruption [3]
Urticaria / hives [4]

Mucosal
Xerostomia (dry mouth) (12%) [6]

Central Nervous System
Somnolence (drowsiness) [6]

Gastrointestinal/Hepatic
Vomiting [2]

Genitourinary
Priapism [2]

HYOSCYAMINE

Trade names: IB-Stat (InKline), Levbid (Schwarz), Levsin (Schwarz), Levsin/SL (Schwarz), Levsinex (Schwarz), Nulev (Schwarz)
Indications: Treatment of gastrointestinal tract disorders caused by spasm, adjunctive therapy for peptic ulcers, cystitis, Parkinsonism, biliary and renal colic
Class: Anticholinergic, Muscarinic antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticholinergics, arbutamine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Photosensitivity (<10%)
Xerosis / xeroderma (see also dry skin) (>10%)

Mucosal
Xerostomia (dry mouth) (>10%)

Cardiovascular
Tachycardia [2]

Local
Injection-site inflammation (>10%)

IBANDRONATE

Synonym: ibandronic acid
Trade names: Bondronat (Roche), Boniva (Roche)
Indications: Postmenopausal osteoporosis
Class: Bisphosphonate
Half-life: 37–157 hours
Clinically important, potentially hazardous interactions with: alcohol, aminoglycosides, antacids, calcium salts, food, magnesium salts, NSAIDs, oral iron
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Rash (<2%)
Cardiovascular
Hypertension (6–7%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (~9%) [4]
Headache (3–7%)
Vertigo / dizziness (<4%)
Endocrine/Metabolic
Hypercholesterolemia (5%)
Hypocalcemia [3]
Hypophosphatemia [2]
Gastrointestinal/Hepatic
Abdominal pain (5–8%)
Constipation (3–4%)
Diarrhea (4–7%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (6–12%) [4]
Gastritis / pangastritis / gastric irritation (2%)
Gastrointestinal disorder / discomfort [3]
Nausea (5%) [4]
Vomiting (3%) [4]
Genitourinary
Urinary tract infection (2–6%)
Neuromuscular/Skeletal
Arthralgia (3–6%) [2]
Asthenia / fatigue (4%) [3]
Back pain (4–14%)
Bone or joint pain [3]
Cramps (2%)
Joint disorder (4%)
Myalgia/Myopathy (<6%)
Osteonecrosis / avascular necrosis [15]
Pain in extremities (<8%)
Respiratory
Bronchitis (3–10%)
Influenza- ('flu)-like syndrome (<4%) [7]
Nasopharyngitis (4%)
Pharyngitis (sore throat) (3%)
Pneumonia (6%)
Upper respiratory tract infection (2–34%)
Other
Adverse effects / adverse reactions [5]
Allergic reactions (3%)
Infection (4%)
Tooth disorder (4%)

IBRITUMOMAB

Trade name: Zevalin (Biogen)
Indications: Non-Hodgkin's lymphoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, CD20-directed cytolytic monoclonal antibody, Monoclonal antibody
Half-life: 30 hours
Clinically important, potentially hazardous interactions with: argatroban, cilostazol, citalopram, clopidogrel, dabigatran, eptifibatide, meloxicam, tinzaparin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SERIOUS INFUSION REACTIONS, PROLONGED AND SEVERE CYTOPENIAS, and SEVERE CUTANEOUS AND MUCOCUTANEOUS REACTIONS

Skin
Angioedema (5%)
Bruise / bruising / contusion / ecchymosis (ecchymoses) (7%)
Diaphoresis (see also hyperhidrosis) (4%)
Flushing / rubefaction (6%)
Hyperhidrosis (see also diaphoresis) (8%)
Peripheral edema (see also edema) (8%)
Petechiae (8%)
Pruritus (itching) (7%)
Purpura (7%)
Rash (7%)
Urticaria / hives (4%)
Mucosal
Epistaxis (nosebleed) (5%)
Cardiovascular
Hypertension (7%)
Central Nervous System
Anorexia (8%)
Chills (24%)
Fever (pyrexia) (includes hyperpyrexia) (10%)
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Pain (13%)
Vertigo / dizziness (7%)
Gastrointestinal/Hepatic
Abdominal pain (17%)
Diarrhea (11%)
Nausea (18%)
Genitourinary
Urinary tract infection (7%)
Hematologic
Anemia (22%)
Hemotoxicity [7]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (26%)
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) [4]
Thrombocytopenia (62%) [8]
Neuromuscular/Skeletal
Arthralgia (7%)
Asthenia / fatigue (15–33%)
Back pain (8%)
Myalgia/Myopathy (9%)
Respiratory
Bronchitis (8%)
Cough (11%)
Influenza- ('flu)-like syndrome (8%)
Nasopharyngitis (19%)
Pharyngolaryngeal pain (7%)
Rhinitis (8%)
Sinusitis (7%)
Other
Adverse effects / adverse reactions [2]
Allergic reactions (2%)
Infection (29%) [3]

IBRUTINIB

Trade name: Imbruvica (Pharmacyclics)
Indications: Mantle cell lymphoma
Class: Bruton's tyrosine kinase (BTK) inhibitor
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: carbamazepine, clarithromycin, grapefruit juice, itraconazole, ketoconazole, phenytoin, posaconazole, rifampin, St John's wort, strong or moderate CYP3A inhibitors or inducers, telithromycin, viloxazine, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (30%) [4]
Cellulitis [3]
Cutaneous toxicity / skin toxicity (14%) [3]
Panniculitis [2]
Peripheral edema (see also edema) (35%) [4]
Petechiae (11%)
Pyoderma gangrenosum [2]
Rash (25%) [5]
Mucosal
Epistaxis (nosebleed) (11%)
Stomatitis (oral mucositis) (17%)
Cardiovascular
Atrial fibrillation [19]
Hypertension [8]
Hypotension [2]
Pericardial effusion [6]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (18%) [5]
Headache (13%) [2]
Peripheral neuropathy [2]
Vertigo / dizziness (14%)
Endocrine/Metabolic
Appetite decreased (21%) [2]
Dehydration (12%) [2]
Hyperuricemia (15%)
Hypokalemia [2]
Hyponatremia [2]
Gastrointestinal/Hepatic
Abdominal pain (24%)
Constipation (25%)
Diarrhea (51%) [34]
Dyspepsia / functional dyspepsia / gastroparesis (11%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (31%) [19]
Vomiting (24%) [5]
Genitourinary
Urinary tract infection (14%) [2]

Hematologic
Anemia [15]
Bleeding [16]
Cytopenia [4]
Febrile neutropenia [4]
Hemorrhage [4]
Lymphocytosis / lymphocytes increased [2]
Neutropenia (neutrophils decreased) [20]
Sepsis [2]
Thrombocytopenia [15]

Neuromuscular/Skeletal
Arthralgia (11%) [4]
Asthenia / fatigue (14–41%) [24]
Bone or joint pain (37%)
Muscle spasm (14%) [2]

Ocular
Uveitis / anterior uveitis / posterior uveitis / panuveitis [4]

Renal
Tumor lysis syndrome (TLS) [3]

Respiratory
Cough (19%) [3]
Dyspnea / shortness of breath (27%)
Pneumonia (14%) [10]
Sinusitis (13%) [2]
Upper respiratory tract infection (34%) [6]

Other
Adverse effects / adverse reactions [7]
Death [2]
Infection [13]

IBUPROFEN

Trade names: Advil (Wyeth), Motrin (McNeil), Vicoprofen (AbbVie)
Indications: Arthritis, pain
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: aspirin, ciprofibrate, diuretics, methotrexate, methyl salicylate, NSAIDs, oxycodone hydrochloride, salicylates, tacrine, tacrolimus, urokinase, voriconazole
Pregnancy category: D (category C prior to 30 weeks gestation; category D starting at 30 weeks gestation)
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use. September 2022: Codeine with ibuprofen – EMA warning for serious renal and gastrointestinal harms The European Medicine Agency Pharmacovigilance Risk Assessment Committee has recommended a change to the product information for codeine with ibuprofen combination medicines to include a warning of serious harms, including death, particularly when taken for prolonged periods at higher than recommended doses. The recommendation is based on several cases of renal, gastrointestinal and metabolic toxicities that have been reported in association with cases of abuse of and dependence from codeine with ibuprofen combinations, some of which have been fatal. .

Skin
AGEP [5]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
Angioedema [8]
Bullous dermatosis [3]
Bullous pemphigoid / pemphigoid [2]
Dermatitis [5]
DRESS syndrome [4]
Erythema multiforme [11]
Erythema nodosum (<5%)
Exanthems [9]
Fixed eruption [15]
Hypersensitivity [5]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Nicolau syndrome [2]
Peripheral edema (see also edema) [2]
Photosensitivity [6]
Pruritus (itching) (<5%) [6]
Psoriasis (palms) [2]
Rash (>10%) [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [15]
Urticaria / hives (>10%) [10]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [8]
Vesiculobullous eruption [2]

Hair
Alopecia / hair loss [2]

Cardiovascular
Cardiotoxicity [2]
Hypertension [4]
Kounis syndrome / allergic angina syndrome / allergic myocardial infarction [4]

Central Nervous System
Aseptic meningitis [20]
Headache [4]
Somnolence (drowsiness) [2]

Endocrine/Metabolic
Pseudoporphyria [2]

Gastrointestinal/Hepatic
Abdominal pain [6]
Constipation [4]
Diarrhea [4]
Dyspepsia / functional dyspepsia / gastroparesis [5]
Gastroesophageal reflux [2]
Gastrointestinal bleeding [2]
Gastrointestinal disorder / discomfort [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea [8]
Pancreatitis / acute pancreatitis [2]
Vanishing bile duct syndrome / ductopenia [3]
Vomiting [6]

Genitourinary
Urinary tract infection [2]

Hematologic
Thrombocytopenia [5]

Neuromuscular/Skeletal
Arthralgia [2]
Back pain [2]
Rhabdomyolysis [3]

Ocular
Amblyopia [2]
Optic neuritis [2]
Periorbital edema (see also eyelid edema) [3]
Visual disturbances [2]

Otic
Hearing loss (hypoacusis) [2]
Tinnitus [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

Respiratory
Influenza [2]
Sinusitis [2]
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [13]

IBUTILIDE

Trade name: Corvert (Pfizer)
Indications: Atrial fibrillation and flutter
Class: Antiarrhythmic, Antiarrhythmic class III
Half-life: 2–12 hours
Clinically important, potentially hazardous interactions with: degarelix
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Cardiovascular
Bradycardia / sinus bradycardia [4]
Hypotension [2]
QT interval prolonged / QT prolongation [5]
Tachycardia (3%)
Torsades de pointes [14]
Ventricular arrhythmia [4]
Ventricular tachycardia [6]

Central Nervous System
Headache (4%)

Gastrointestinal/Hepatic
Nausea (2%) [3]

IDARUBICIN

Synonyms: 4-demethoxydaunorubicin; 4-DMDR
Trade name: Idamycin (Pfizer)
Indications: Acute myeloid leukemia
Class: Antibiotic, Antibiotic; anthracycline, Antimicrobial
Half-life: 14–35 hours (oral)
Clinically important, potentially hazardous interactions with: aldesleukin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Rash (>10%) [4]
Urticaria / hives (>10%)

Hair
Alopecia / hair loss (77%) [8]

Mucosal
Mucositis (50%) [5]
Stomatitis (oral mucositis) (>10%)

Gastrointestinal/Hepatic
Diarrhea [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [2]
Vomiting [2]

Hematologic
Febrile neutropenia [2]
Neutropenia (neutrophils decreased) [2]

Other
Infection [2]

IDARUCIZUMAB

Trade name: Praxbind (Boehringer Ingelheim)
Indications: Reversal of the anticoagulant effects of dabigatran in patients requiring emergency or urgent surgery or with life-threatening or uncontrolled bleeding
Class: Monoclonal antibody, Reversal agent for dabigatran
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Risk of serious adverse reactions in patients with hereditary fructose intolerance due to sorbitol excipient.

Skin
Irritation (skin) [2]
Central Nervous System
Delirium (7%)
Fever (pyrexia) (includes hyperpyrexia) (6%)
Headache [2]
Endocrine/Metabolic
Hypokalemia (7%)
Gastrointestinal/Hepatic
Constipation (7%)
Neuromuscular/Skeletal
Back pain [2]
Respiratory
Nasopharyngitis [2]
Pneumonia (6%)

IDEBENONE

Trade names: Catena (Santhera), Mnesis (Takeda)
Indications: Alzheimer's dementia, cardiovascular disease, cerebrovascular disease, demyelination, depression, Friedreich's ataxia, improving memory, Leber's hereditary optic neuropathy
Class: Coenzyme Q10 analog
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known

Skin
Contact dermatitis [2]
Central Nervous System
Headache [2]
Gastrointestinal/Hepatic
Loose stools / soft feces [2]
Other
Adverse effects / adverse reactions [2]

IDELALISIB

Trade name: Zydelig (Gilead)
Indications: Relapsed chronic lymphocytic leukemia (with rituximab), follicular B-cell non-Hodgkin lymphoma, small lymphocytic lymphoma
Class: Phosphoinositide 3-kinase (Phosphatidylinositol 3-kinase) (PI3K) inhibitor
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: carbamazepine, copanlisib, midostaurin, neratinib, phenytoin, rifampin, St John's wort, strong CYP3A inducers and substrates
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: FATAL AND SERIOUS TOXICITIES: HEPATIC, SEVERE DIARRHEA, COLITIS, PNEUMONITIS, and INTESTINAL PERFORATION

Skin
Cutaneous toxicity / skin toxicity [2]
Diaphoresis (see also hyperhidrosis) (12%)
Peripheral edema (see also edema) (10%)
Rash (21%) [8]
Central Nervous System
Chills [5]
Fever (pyrexia) (includes hyperpyrexia) [11]
Headache (11%)
Insomnia (12%)
Endocrine/Metabolic
ALT increased (50%) [8]
Appetite decreased (16%) [3]
AST increased (41%) [8]
Gastrointestinal/Hepatic
Abdominal pain (26%)
Colitis [6]
Constipation [2]
Diarrhea (47%) [18]
Gastrointestinal perforation / perforated colon / gastric perforation [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [10]
Nausea (29%) [8]
Vomiting (15%) [3]
Hematologic
Anemia [6]
Febrile neutropenia [6]
Neutropenia (neutrophils decreased) [8]
Thrombocytopenia [6]
Neuromuscular/Skeletal
Asthenia / fatigue (30%) [8]
Respiratory
Cough (29%) [5]
Dyspnea / shortness of breath (17%)
Pneumonia (25%) [10]
Pneumonitis [5]
Upper respiratory tract infection (12%) [3]
Other
Adverse effects / adverse reactions [3]
Infection [2]
Side effects [2]

IFOSFAMIDE

Trade name: Ifex (Bristol-Myers Squibb)
Indications: Cancers, sarcomas, leukemias, lymphomas
Class: Alkylating agent
Half-life: 4–15 hours
Clinically important, potentially hazardous interactions with: aldesleukin, aprepitant
Pregnancy category: D

Skin
Cutaneous toxicity / skin toxicity [2]
Dermatitis (<10%)
Pigmentation (<10%) [2]
Hair
Alopecia / hair loss (50–100%) [6]
Nails
Ridging (<10%)
Cardiovascular
Phlebitis (2%)
Central Nervous System
Anorexia [2]
Confusion [2]
Delirium [2]
Encephalopathy (includes hepatic encephalopathy) [12]
Neurotoxicity [12]
Seizures [2]
Endocrine/Metabolic
SIADH [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [7]
Pancreatitis / acute pancreatitis [2]
Vomiting [7]
Hematologic
Anemia [3]
Febrile neutropenia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) [4]
Thrombocytopenia [4]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Osteomalacia [2]
Renal
Fanconi syndrome [4]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [34]
Other
Allergic reactions (<10%)
Death [2]
Infection [2]

ILOPERIDONE

Trade name: Fanapt (Vanda)
Indications: Schizophrenia
Class: Antipsychotic
Half-life: 18–33 hours
Clinically important, potentially hazardous interactions with: alcohol, dextromethorphan, fluoxetine, itraconazole, ketoconazole, paroxetine hydrochloride, QT prolonging agents
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Rash (2%)
Mucosal
Nasal congestion (8%) [2]
Xerostomia (dry mouth) (10%) [9]
Cardiovascular
Hypotension (3%)
Orthostatic hypotension (3%) [4]
QT interval prolonged / QT prolongation [8]
Tachycardia (12%) [4]
Central Nervous System
Akathisia (2%) [3]
Anxiety [2]
Headache [3]
Insomnia (18%) [3]
Sedation [3]
Somnolence (drowsiness) (15%) [8]
Tremor (3%)
Vertigo / dizziness (20%) [11]
Endocrine/Metabolic
Weight gain (9%) [10]
Gastrointestinal/Hepatic
Diarrhea (7%)
Dyspepsia / functional dyspepsia / gastroparesis [3]
Nausea (10%) [2]
Genitourinary
Ejaculatory dysfunction (2%) [2]
Neuromuscular/Skeletal
Arthralgia (3%)
Asthenia / fatigue (6%) [2]
Respiratory
Dyspnea / shortness of breath (2%)
Nasopharyngitis (3%)
Upper respiratory tract infection (3%)

ILOPROST

Trade name: Ventavis (Schering) (Cotherix)
Indications: Pulmonary arterial hypertension, peripheral neuropathy
Class: Antihypertensive, Prostaglandin, Vasodilator
Half-life: 20–30 minutes
Clinically important, potentially hazardous interactions with: anticoagulants, aspirin, clopidogrel, coumarins, diclofenac, enoxaparin, eptifibatide, heparin, meloxicam, NSAIDs, phenindione, tinzaparin, tirofiban
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Ventavis is for oral inhalation only.

Skin
Flushing / rubefaction (27%) [11]
Cardiovascular
Angina [3]
Hypotension (11%) [4]
Palpitation (7%)
Central Nervous System
Headache (30%) [16]
Vertigo / dizziness (8%)
Neuromuscular/Skeletal
Back pain (7%)
Jaw pain [2]
Myalgia/Myopathy (6%)
Respiratory
Cough (39%) [6]

IMATINIB

Trade name: Gleevec (Novartis)
Indications: Chronic myeloid leukemia
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, CYP3A4 inhibitor, Tyrosine kinase inhibitor
Half-life: 18 hours
Clinically important, potentially hazardous interactions with: acetaminophen, amlodipine, anisindione, anticoagulants, aprepitant, atorvastatin, barbiturates, benzodiazepines, butabarbital, carbamazepine, chlordiazepoxide, clarithromycin, clonazepam, clorazepate, corticosteroids, cyclosporine, dexamethasone, diazepam, dicumarol, efavirenz, erythromycin, ethotoin, felodipine, flurazepam, fluvastatin, fosphenytoin, isradipine, itraconazole, ketoconazole, lorazepam, lovastatin, mephenytoin, mephobarbital, midazolam, mifepristone, neratinib, nicardipine, nifedipine, nimodipine, nisoldipine, olaparib, oxazepam, oxcarbazepine, pentobarbital, phenobarbital, phenytoin, pimozide, pravastatin, primidone, quazepam, rifampin, rifapentine, safinamide, secobarbital, simvastatin, St John's wort, tafamidis meglumine, temazepam, voriconazole, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
AGEP [7]
Cutaneous toxicity / skin toxicity [9]
Diaphoresis (see also hyperhidrosis) (13%)
DRESS syndrome [5]
Edema / fluid retention (see also peripheral edema) (<5%) [40]
Erythema (<10%) [5]
Erythema multiforme [2]
Erythroderma [4]
Exanthems [9]
Exfoliative dermatitis [4]
Facial edema (<10%) [3]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [3]
Hypomelanosis [5]
Lichen planus (includes hypertrophic lichen planus) [7]
Lichenoid eruption / lichenoid reaction [14]
Mycosis fungoides [2]
Neutrophilic eccrine hidradenitis [3]
Panniculitis [3]
Pemphigus [2]
Peripheral edema (see also edema) (<10%) [5]
Petechiae (<10%)
Photosensitivity (<10%) [3]
Pigmentation [14]
Pityriasis rosea [6]
Pruritus (itching) (6–10%) [3]
Pseudolymphoma [3]
Psoriasis [3]
Pyoderma gangrenosum [2]
Rash (32–39%) [27]
Squamous cell carcinoma [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [15]
Sweet's syndrome [4]
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Xerosis / xeroderma (see also dry skin) (<10%) [2]
Hair
Alopecia / hair loss (10–15%) [2]
Follicular mucinosis [2]
Nails
Nail dystrophy [2]
Nail pigmentation [2]
Mucosal
Mucositis [2]
Oral lichenoid eruption [3]
Oral pigmentation [4]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [3]
Cardiovascular
Cardiac failure [2]
Cardiotoxicity [2]
Congestive heart failure [2]
Pericardial effusion [3]
QT interval prolonged / QT prolongation [2]
Central Nervous System
Anorexia [4]
Chills (11%)
Depression (15%) [2]
Fever (pyrexia) (includes hyperpyrexia) (13–41%) [3]
Headache (19–37%) [5]
Hypoesthesia (numbness) (<10%)
Insomnia (10–19%)
Pain [2]
Subdural hemorrhage [2]
Tremor [3]
Vertigo / dizziness [2]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Gynecomastia [4]
Hypophosphatemia [6]
Hypothyroidism [2]
Porphyria cutanea tarda [3]
Pseudoporphyria [6]
Weight gain (5–32%) [3]
Gastrointestinal/Hepatic
Abdominal pain [5]
Ascites [2]
Constipation (9–16%) [2]
Diarrhea (25–59%) [21]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Gastric antral vascular ectasia (GAVE) [5]
Gastrointestinal bleeding [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (6–12%) [20]
Nausea (42–73%) [21]
Vomiting (23–58%) [14]
Hematologic
Anemia [12]
Febrile neutropenia [2]
Hemotoxicity [5]
Hypofibrinogenemia [2]
Hypogammaglobulinemia [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]

Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) [14]
Pure red cell aplasia [2]
Thrombocytopenia [12]

Neuromuscular/Skeletal
Arthralgia (21–26%) [4]
Asthenia / fatigue (29–75%) [23]
Bone or joint pain (11–31%) [13]
Muscle spasm [10]
Myalgia/Myopathy (16–62%) [12]
Osteonecrosis / avascular necrosis [3]

Ocular
Epiphora (25%)
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) [2]
Optic edema [3]
Periorbital edema (see also eyelid edema) (33%) [14]

Otic
Hearing loss (hypoacusis) [4]

Renal
Fanconi syndrome [2]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure [2]

Respiratory
Cough (11–27%)
Dyspnea / shortness of breath (21%)
Nasopharyngitis (10–31%)
Pharyngitis (sore throat) (10–15%)
Pleural effusion [4]
Pneumonitis (4–13%) [2]
Pulmonary toxicity [2]
Rhinitis (17%)
Upper respiratory tract infection (3–21%)

Other
Adverse effects / adverse reactions [15]
Death [3]
Side effects [2]

IMIDAPRIL

Indications: Hypertension
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: allopurinol, azathioprine, procainamide
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Respiratory
Cough [7]

IMIPENEM/CILASTATIN

Synonym: imipemide
Trade name: Primaxin (Merck)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; carbapenem, Antimicrobial, Thienamycin
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: amoxicillin, ampicillin, azlocillin, bacampicillin, carbenicillin, cloxacillin, cyclosporine, dicloxacillin, ganciclovir, methicillin, mezlocillin, nafcillin, oxacillin, penicillin G, penicillin V, piperacillin, ticarcillin
Pregnancy category: C

Skin
Exanthems (<5%) [3]
Pruritus (itching) [3]
Rash (4%)
Urticaria / hives [3]

Cardiovascular
Phlebitis (3%)
Thrombophlebitis (3%)

Gastrointestinal/Hepatic
Diarrhea [2]
Nausea [4]
Vomiting [4]

Local
Injection-site pain [2]
Injection-site phlebitis (<4%) [4]

Other
Allergic reactions (<3%) [2]

IMIPRAMINE

Trade name: Tofranil (Mallinckrodt)
Indications: Depression
Class: Antidepressant; tricyclic, Muscarinic antagonist
Half-life: 6–18 hours
Clinically important, potentially hazardous interactions with: amprenavir, arbutamine, artemether/lumefantrine, clonidine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, darifenacin, epinephrine, fluoxetine, formoterol, guanethidine, iobenguane, isocarboxazid, labetalol, linezolid, MAO inhibitors, phenelzine, propranolol, quinolones, ropivacaine, sparfloxacin, tranylcypromine, zaleplon, zolpidem
Pregnancy category: D
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) (<25%) [8]
Exanthems (<6%) [6]
Exfoliative dermatitis [4]
Photosensitivity [3]
Pigmentation [13]
Pruritus (itching) (3%) [6]
Purpura [3]
Urticaria / hives [6]

Hair
Alopecia / hair loss [2]

Mucosal
Glossitis (inflammation of the tongue) [2]
Oral lesions [3]
Stomatitis (oral mucositis) [2]
Xerostomia (dry mouth) (>10%) [16]

Cardiovascular
QT interval prolonged / QT prolongation [3]
Tachycardia [2]

Central Nervous System
Dysgeusia (taste perversion) (metallic taste) (>10%) [2]
Parkinsonism (<10%)

Endocrine/Metabolic
SIADH [4]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Otic
Tinnitus [4]

IMIQUIMOD

Trade names: Aldara (3M), Zyclara (Graceway)
Indications: External genital and perianal warts, actinic keratoses
Class: Antiviral, Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Angioedema [2]
Burning / skin burning sensation (9–31%) [7]
Crusting [3]
Depigmentation [3]
Eczema / eczematous reaction / eczematous eruption (<10%)
Edema / fluid retention (see also peripheral edema) (12–17%) [2]
Erosions (10–32%) [5]
Erythema (33–85%) [14]
Erythema multiforme [8]
Excoriations (18–25%) [2]
Flaking (18–67%) [3]
Fungal dermatitis (<10%)
Herpes simplex (<10%)
Hypomelanosis [2]
Induration (5%)
Lichen planus (includes hypertrophic lichen planus) [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Lymphadenopathy (2%)
Pemphigus [4]
Pemphigus foliaceus [3]
Pigmentation [3]
Pityriasis rubra pilaris [4]
Pruritus (itching) (22–75%) [10]
Psoriasis [4]
Scabbing (4%)
Scar [3]
Seborrheic keratoses (<10%)
Tenderness (local) (12%) [2]
Ulcerations (5–10%) [5]
Vesiculation (2–3%)
Vitiligo [7]

Hair
Alopecia / hair loss (<10%)
Poliosis [2]

Cardiovascular
Chest pain (<10%)

Central Nervous System
Anorexia (<10%)
Anxiety (<10%)
Fever (pyrexia) (includes hyperpyrexia) (<10%) [2]
Headache (<10%) [4]
Neurotoxicity [2]
Pain (2–11%) [6]
Rigors (<10%)
Vertigo / dizziness (<10%)

Gastrointestinal/Hepatic
Nausea (<10%) [2]
Vomiting (<10%)

Genitourinary
Urinary tract infection (<10%)
Hematologic
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Local
Application-site burning (<10%)
Application-site edema (<10%) [4]
Application-site erythema (<10%) [3]
Application-site pruritus (<10%) [5]
Application-site reactions [9]
Neuromuscular/Skeletal
Asthenia / fatigue (<10%) [3]
Back pain (<10%)
Myalgia/Myopathy (<10%) [2]
Respiratory
Cough (<10%)
Influenza- ('flu)-like syndrome (<3%) [3]
Pharyngitis (sore throat) (<10%)
Rhinitis (<10%)
Sinusitis (<10%)
Upper respiratory tract infection (<10%)
Other
Adverse effects / adverse reactions [6]

IMMUNE GLOBULIN (EQUINE)

Trade name: Anascorp (Rare Disease Therapeutics)
Indications: Prophylaxis of clinical signs of scorpion envenomation
Class: Antivenom
Half-life: 4–9 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (4%)
Gastrointestinal/Hepatic
Vomiting (5%)

IMMUNE GLOBULIN IV

Synonyms: IGIV; IVIG; Octagam; intravenous immunoglobulin (IVIg)
Trade names: Gamimune (Bayer), Gammagard (Baxter), Gammar PIV (ZLB Behring), Gamunex (Bayer), Iveegam (Baxter), Panzyga (Octapharma), Venoglobulin (Alpha Therapeutics)
Indications: Immunodeficiency in patients unable to produce sufficient amounts of IgG antibodies
Class: Covid-19 putative drug, Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: THROMBOSIS, RENAL DYSFUNCTION and ACUTE RENAL FAILURE

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
Eczema / eczematous reaction / eczematous eruption [4]
Flushing / rubefaction [2]
Lichenoid eruption / lichenoid reaction [2]
Pompholyx / dyshidrotic eczema [3]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]
Cardiovascular
Hypertension [4]
Myocardial infarction [2]
Palpitation [2]
Thromboembolism [4]
Central Nervous System
Aseptic meningitis [10]
Chills [4]
Fever (pyrexia) (includes hyperpyrexia) [12]
Headache [22]
Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea [2]
Nausea [10]
Vomiting [2]
Hematologic
Anemia [2]
Hemolysis [2]
Hemolytic anemia [5]
Neutropenia (neutrophils decreased) [6]
Thrombocytopenia [3]
Thrombosis [3]
Local
Application-site pain (16%)
Infusion-related reactions [6]
Injection-site edema [2]
Injection-site erythema [2]
Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue [5]
Back pain [3]
Bone or joint pain [2]
Myalgia/Myopathy [4]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [6]
Renal failure [3]
Respiratory
Cough [2]
Dyspnea / shortness of breath [2]
Pulmonary embolism [2]
Other
Adverse effects / adverse reactions [10]

IMMUNE GLOBULIN SC

Synonym: SCIG
Trade names: Cuvitru (Shire), Hizentra (CSL Behring), Vivaglobin (CSL Behring)
Indications: Primary immune deficiency
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Warning: THROMBOSIS

Skin
Pruritus (itching) [2]
Rash (<3%)
Mucosal
Oropharyngeal pain (17%)
Cardiovascular
Tachycardia (<3%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<3%) [2]
Headache (2–32%) [3]
Gastrointestinal/Hepatic
Gastrointestinal disorder / discomfort (<5%)
Nausea (<11%)
Local
Injection-site reaction (49–92%) [5]
Neuromuscular/Skeletal
Asthenia / fatigue (<5%)
Respiratory
Bronchitis [2]
Cough (10%)
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [2]
Allergic reactions (11%)

INACTIVATED POLIO VACCINE

Trade names: IMOVAX Polio (Sanofi-Aventis), IPV (Sanofi-Aventis)
Indications: Polio immunization
Class: Vaccine
Half-life: 4 years
Clinically important, potentially hazardous interactions with: immunosuppressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]

INAMRINONE

Synonym: amrinone
Indications: Congestive heart failure
Class: Phosphodiesterase inhibitor
Half-life: 4.6 hours
Clinically important, potentially hazardous interactions with: anagrelide
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

INDACATEROL

Trade names: Arcapta Neohaler (Novartis), Onbrez Breezhaler (Novartis), Utibron Neohaler (Novartis)
Indications: Long term, once-daily maintenance bronchodilator treatment of airflow obstruction in chronic obstructive pulmonary disease (COPD), including chronic bronchitis and/or emphysema
Class: Beta-2 adrenergic agonist, Bronchodilator
Half-life: 40–56 hours
Clinically important, potentially hazardous interactions with: acetazolamide, adrenergics, aminophylline, arsenic, corticosteroids, diuretics, dolasetron, erythromycin, ketoconazole, MAO

inhibitors, pazopanib, QT prolonging agents, ritonavir, steroids, telavancin, theophylline, tricyclic antidepressants, verapamil, xanthine derivatives
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Studies in asthma patients showed that long-acting beta$_2$-adrenergic agonists may increase the risk of asthma-related death. Contra-indicated in patients with asthma without use of a long-term asthma control medication. Utibron Neohaler is indacaterol and glycopyrrolate.
Warning: ASTHMA-RELATED DEATH

Mucosal
Oropharyngeal pain [2]
Cardiovascular
QT interval prolonged / QT prolongation [2]
Central Nervous System
Headache (5%) [4]
Pain (oropharyngeal) (2%)
Endocrine/Metabolic
Hyperglycemia (includes glucose increased) [2]
Gastrointestinal/Hepatic
Nausea (2%)
Respiratory
Asthma [2]
COPD (exacerbation) [8]
Cough (7%) [11]
Dyspnea / shortness of breath [2]
Influenza [2]
Nasopharyngitis (5%) [7]
Upper respiratory tract infection [4]
Other
Adverse effects / adverse reactions [7]
Death [2]

INDAPAMIDE

Trade name: Lozol (Sanofi-Aventis)
Indications: Edema
Class: Diuretic, thiazide
Half-life: 14–18 hours
Clinically important, potentially hazardous interactions with: digoxin, lithium, zinc
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Indapamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Angioedema [3]
Erythema multiforme [2]
Flushing / rubefaction (<5%)
Pemphigus foliaceus [2]
Peripheral edema (see also edema) (<5%) [2]
Pruritus (itching) (<5%) [2]
Rash (<5%) [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Urticaria / hives (<5%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) (<5%)
Mucosal
Xerostomia (dry mouth) (<5%) [2]
Cardiovascular
QT interval prolonged / QT prolongation [5]
Central Nervous System
Paresthesias (<5%)
Vertigo / dizziness [2]
Endocrine/Metabolic
Hypokalemia [3]
Hyponatremia [3]
Ocular
Myopia [5]

INDINAVIR

Trade name: Crixivan (Merck)
Indications: HIV infection
Class: Antiretroviral, CYP3A4 inhibitor, HIV-1 protease inhibitor
Half-life: ~1.8 hours
Clinically important, potentially hazardous interactions with: abiraterone, alfuzosin, almotriptan, alosetron, alprazolam, amiodarone, amprenavir, antacids, antiarrhythmics, antifungal agents, artemether/lumefantrine, astemizole, atazanavir, atorvastatin, atovaquone, atovaquone/proguanil, avanafil, bepridil, bortezomib, bosentan, brigatinib, brinzolamide, cabazitaxel, cabozantinib, calcifediol, calcium channel blockers, carbamazepine, chlordiazepoxide, ciclesonide, cisapride, clarithromycin, clonazepam, clorazepate, colchicine, conivaptan, copanlisib, corticosteroids, crizotinib, cyclosporine, CYP3A4 inducers and substrates, darifenacin, darunavir, dasatinib, deferasirox, delavirdine, diazepam, didanosine, dienogest, digoxin, dihydroergotamine, dronedarone, dutasteride, efavirenz, enfuvirtide, eplerenone, ergot derivatives, ergotamine, estazolam, estrogens, etravirine, everolimus, felodipine, fentanyl, fesoterodine, flibanserin, flurazepam, fluticasone propionate, food, fusidic acid, grapefruit juice, guanfacine, H_2-antagonists, halazepam, halofantrine, HMG-CoA reductase inhibitors, itraconazole, ixabepilone, ketoconazole, lapatinib, lidocaine, lomitapide, lopinavir, lovastatin, maraviroc, meperidine, methylergonovine, methylprednisolone, methysergide, midazolam, midostaurin, mifepristone, mometasone, nefazodone, nelfinavir, neratinib, nevirapine, nicardipine, nifedipine, nilotinib, nisoldipine, olaparib, P-glycoprotein inhibitors and inducers, paclitaxel, palbociclib, pantoprazole, paricalcitol, pazopanib, PEG-interferon, phenobarbital, phenytoin, pimavanserin, pimecrolimus, pimozide, ponatinib, prasugrel, protease inhibitors, proton pump inhibitors, quazepam, quinidine, quinine, ranolazine, ribociclib, rifabutin, rifampin, rifapentine, rilpivirine, rivaroxaban, romidepsin, rosuvastatin, ruxolitinib, salmeterol, saxagliptin, sildenafil, silodosin, simeprevir, simvastatin, sirolimus, solifenacin, sorafenib, St John's wort, sunitinib, tacrolimus, tadalafil, tamsulosin, telithromycin, temsirolimus, tenofovir disoproxil, theophylline, ticagrelor, tolvaptan, trazodone, triazolam, tricyclic antidepressants, valproic acid, vardenafil, vemurafenib, venetoclax, venlafaxine, vorapaxar, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Protease inhibitors cause dyslipidemia which includes elevated triglycerides and cholesterol and redistribution of body fat centrally to produce the so-called 'protease paunch', breast enlargement, facial atrophy, and 'buffalo hump'.

Skin
Bromhidrosis (<2%)
Dermatitis (<2%)
Diaphoresis (see also hyperhidrosis) (<2%)
Flushing / rubefaction (<2%)
Folliculitis (<2%)
Herpes simplex (<2%)
Herpes zoster (<2%)
Jaundice (2%)
Lipodystrophy [8]
Lipomatosis [2]
Pruritus (itching) [2]
Rash [2]
Seborrhea (<2%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Xerosis / xeroderma (see also dry skin) [2]
Hair
Alopecia / hair loss [5]
Nails
Onychocryptosis (ingrowing toe nail) [2]
Paronychia [5]
Pyogenic granuloma [3]
Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (<2%)
Cheilitis (inflammation of the lips) [4]
Gingivitis (<2%)
Central Nervous System
Anorexia (3%)
Dysesthesia (<2%)
Dysgeusia (taste perversion) (3%)
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache (5%)
Hyperesthesia (<2%)
Paresthesias (<2%)
Somnolence (drowsiness) (2%)
Vertigo / dizziness (3%)
Endocrine/Metabolic
ALT increased (5%)
Appetite increased (2%)
AST increased (4%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Diabetes mellitus [2]
Gynecomastia [4]
Porphyria (acute) [2]
Gastrointestinal/Hepatic
Abdominal pain (17%) [2]
Diarrhea (3%)
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Nausea (12%)
Vomiting (8%)
Genitourinary
Crystalluria [2]
Dysuria (2%)
Neuromuscular/Skeletal
Asthenia / fatigue (2%)
Back pain (8%)
Myalgia/Myopathy with lovastatin or simvastatin (<2%)

Ocular
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) (<2%)
Renal
Nephrolithiasis (formation of a kidney stone) (9%) [4]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [14]
Respiratory
Cough (2%)
Other
Bruxism (teeth grinding) (<2%)

INDOMETHACIN

Synonym: indometacin
Indications: Arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 4.5 hours
Clinically important, potentially hazardous interactions with: aldesleukin, aspirin, atenolol, cyclopenthiazide, dasiglucagon, diflunisal, diuretics, methotrexate, NSAIDs, prednisolone, prednisone, sermorelin, tiludronate, torsemide, triamterene, urokinase
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
Warning: RISK OF SERIOUS CARDIOVASCULAR AND GASTROINTESTINAL EVENTS

Skin
Angioedema [2]
Bullous dermatosis [2]
Dermatitis [5]
Dermatitis herpetiformis (exacerbation) [2]
Edema / fluid retention (see also peripheral edema) (3–9%)
Exanthems (<5%) [7]
Fixed eruption [3]
Pruritus (itching) (<10%) [3]
Psoriasis [7]
Purpura [5]
Rash (>10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Urticaria / hives [7]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [5]
Mucosal
Oral lesions (<7%) [2]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [4]
Central Nervous System
Headache [2]
Psychosis [3]
Gastrointestinal/Hepatic
Gastrointestinal bleeding [2]
Gastrointestinal perforation / perforated colon / gastric perforation [3]
Gastrointestinal ulceration [3]
Pancreatitis / acute pancreatitis [2]
Ocular
Periorbital edema (see also eyelid edema) [2]
Otic
Tinnitus [2]
Other
Adverse effects / adverse reactions [8]

INDORAMIN

Trade names: Baratol (Amdipharm), Doralese Tiltab (GSK)
Indications: Hypertension, alpha blockade, benign prostatic hyperplasia
Class: Alpha 1 adrenoreceptor antagonist
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: anesthetics, antidepressants, antihypertensives, anxiolytics, beta-blockers, calcium channel blockers, diuretics, MAO inhibitors, moxisylyte

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Central Nervous System
Sedation (>10%)
Somnolence (drowsiness) (>10%)

INFLIXIMAB

Synonym: CT-P13 is biosimilar infliximab
Trade names: Inflectra (Celltrion), Remicade (Centocor), Remsima (Celltrion), Renflexis (Samsung Bioepsis)
Indications: Crohn's disease, ulcerative colitis, rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis, plaque psoriasis
Class: Anti-Tumor Necrosis Factor-alpha (TNF-α antagonist), Antipsoriatic agent, Biologic, Biologic disease-modifying antirheumatic drug (bDMARD), Cytokine inhibitor, Disease-modifying antirheumatic drug (DMARD), Monoclonal antibody
Half-life: 8–10 days
Clinically important, potentially hazardous interactions with: abatacept, anakinra, live vaccines, methotrexate, tocilizumab
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: TNF inhibitors should be used in patients with heart failure only after consideration of other treatment options.
Contra-indicated in patients with a personal or family history of multiple sclerosis or demyelinating disease. TNF inhibitors should not be administered to patients with moderate to severe heart failure (New York Heart Association Functional Class III/IV).
Warning: SERIOUS INFECTIONS and MALIGNANCY

Skin
Abscess [4]
Acneiform eruption / acneiform dermatitis / acneiform rash [6]
AGEP [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [11]
Angioedema [2]
Candidiasis / candidosis (5%) [4]
Cellulitis [5]
Cutaneous toxicity / skin toxicity [2]
Dermatitis [4]
Eczema / eczematous reaction / eczematous eruption [5]
Edema / fluid retention (see also peripheral edema) [3]
Erythema multiforme [3]
Exanthems [4]
Flushing / rubefaction [2]
Folliculitis [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [2]
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis [5]
Herpes [2]
Herpes simplex [4]
Herpes zoster [11]
Hypersensitivity [11]
Leukocytoclastic vasculitis (angiitis) [3]
Lichen planus (includes hypertrophic lichen planus) [2]
Lichenoid eruption / lichenoid reaction [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [35]
Lupus syndrome / drug-induced lupus (DIL) [13]
Lymphoma [9]
Molluscum contagiosum [2]
Nevi [2]
Palmoplantar pustulosis [3]
Pityriasis lichenoides / pityriasis lichenoides chronica / pityriasis lichenoides et varioliformis acuta (see also Mucha-Habermann disease) [3]
Pruritus (itching) (7%) [8]
Pseudolymphoma [2]
Psoriasiform eruption (see also psoriasis) [4]
Psoriasis [57]
Pustules / pustular eruption [5]
Pyoderma gangrenosum [2]
Rash (10%) [13]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [5]
Serum sickness [2]
Serum sickness-like reaction (<3%) [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives [7]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [18]
Vitiligo [4]
Hair
Alopecia / hair loss [7]
Alopecia areata [4]
Lichen planopilaris [2]
Cardiovascular
Cardiotoxicity [2]
Chest pain [4]
Hypertension (7%) [3]
Palpitation [2]
Pericarditis [3]
Tachycardia [2]
Central Nervous System
Aseptic meningitis [2]
Chills (5–9%) [2]
Demyelinating neuropathy / demyelination [4]
Depression [3]
Fever (pyrexia) (includes hyperpyrexia) (7%) [10]
Headache (18%) [12]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Neurotoxicity [8]
Pain (8%) [3]
Paresthesias (<4%) [2]
Peripheral neuropathy [7]
Seizures [2]

Suicidal ideation [2]
Vertigo / dizziness [3]

Endocrine/Metabolic
ALT increased [2]

Gastrointestinal/Hepatic
Abdominal pain (12%) [4]
Crohn's disease (26%)
Diarrhea (12%)
Dyspepsia / functional dyspepsia / gastroparesis (10%)
Hepatitis [11]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [18]
Nausea (21%) [3]
Pancreatitis / acute pancreatitis [2]

Genitourinary
Cystitis [2]
Urinary tract infection (8%) [3]

Hematologic
Hemolytic anemia [2]
Neutropenia (neutrophils decreased) [5]
Sepsis [2]
Thrombocytopenia [5]

Local
Application-site reactions (mild) (<4%) [6]
Infusion-related reactions [26]
Infusion-site reactions (20%) [13]
Injection-site reaction (6%) [9]

Neuromuscular/Skeletal
Arthralgia (<8%) [16]
Asthenia / fatigue (9%) [5]
Back pain (8%)
Myalgia/Myopathy (5%) [8]
Polymyositis [2]

Ocular
Optic neuritis [3]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Bronchitis (10%)
Cough (12%) [3]
Dyspnea / shortness of breath (6%) [4]
Influenza [2]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [8]
Pharyngitis (sore throat) (12%)
Pleural effusion [2]
Pneumonia [12]
Pulmonary toxicity [6]
Respiratory tract infection [2]
Rhinitis (8%)
Sinusitis (14%) [5]
Tuberculosis [17]
Upper respiratory tract infection (32%) [8]

Other
Adverse effects / adverse reactions [48]
Allergic reactions [8]
Death [15]
Infection (36%) [66]
Malignancies [2]
Neoplasms [2]
Nocardiosis [3]
Side effects [2]
Systemic reactions [2]

INFLUENZA VACCINE

Trade names: Afluria (Seqirus), Agrippal (Chiron), Comvax (Merck), Fluad (Novartis), Fluarix (GSK), FluMist (Medimmune) (Wyeth), Flurix (GSK), Fluviral (Shire), Inflexal V (Berna Biotech), Invivac (Solvay), Vaxigrip (Sanofi-Aventis)
Indications: Influenza prevention
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: aminophylline, carbamazepine, cyclosporine, mercaptopurine, phenobarbital, phenytoin, prednisone, vincristine, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Inactivated influenza vaccine should not be given to persons with anaphylactic hypersensitivity to eggs or other components of the vaccine. For current data on influenza in the USA consult the Centers for Disease Control and Protection website (www.cdc.gov/flu).

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (rare) [4]
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis [2]
Hypersensitivity [2]
Linear IgA bullous dermatosis [2]
Purpura [2]
Rash [3]
Serum sickness-like reaction [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [10]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [15]
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [11]
Headache [11]
Seizures [3]
Syncope / fainting [2]

Gastrointestinal/Hepatic
Abdominal pain [2]

Hematologic
Thrombocytopenia [2]

Local
Injection-site edema [4]
Injection-site erythema [7]
Injection-site induration [5]
Injection-site inflammation [3]
Injection-site pain (20–28%) [16]
Injection-site reaction [4]

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [8]
Myalgia/Myopathy [11]
Polymyositis [4]

Ocular
Oculorespiratory syndrome [15]
Optic neuritis [2]

Respiratory
Asthma [2]
Cough [2]

Other
Adverse effects / adverse reactions [9]
Side effects [4]
Systemic reactions (injection site) [5]

INGENOL MEBUTATE

Trade name: Picato (Leo Pharma)
Indications: Actinic keratosis
Class: Cell death inducer
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Crusting [4]
Erythema [4]
Flaking [4]
Scaling [3]

Central Nervous System
Headache (2%) [4]

Local
Application-site erythema [2]
Application-site infection (3%) [2]
Application-site pain (2–15%) [6]
Application-site pruritus (8%) [4]
Application-site reactions [3]

Ocular
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) [2]
Periorbital edema (see also eyelid edema) (3%) [2]

Respiratory
Nasopharyngitis (2%) [2]

INOTUZUMAB OZOGAMICIN

Trade name: Besponsa (Wyeth)
Indications: Relapsed or refractory B-cell precursor acute lymphoblastic leukemia
Class: Antibody drug conjugate (ADC), CD22-directed antibody-drug conjugate
Half-life: 12 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: HEPATOTOXICITY, INCLUDING HEPATIC VENOOCCLUSIVE DISEASE (ALSO KNOWN AS SINUSOIDAL OBSTRUCTION SYNDROME) and INCREASED RISK OF POSTHEMATOPOIETIC STEM CELL TRANSPLANT NONRELAPSE MORTALITY

Skin
Hypersensitivity (2%)

Mucosal
Stomatitis (oral mucositis) (13%)

Cardiovascular
Hypotension [2]
Veno-occlusive disease (23%) [6]

Central Nervous System
Chills (11%)

Fever (pyrexia) (includes hyperpyrexia) (32%) [4]
Headache (28%) [2]

Endocrine/Metabolic
ALP increased (13%)
ALT increased (>10%) [2]
Appetite decreased (12%)
AST increased (>10%) [3]
GGT increased (21%)
Hyperbilirubinemia (21%) [6]
Hyperlipasemia (9%)
Hyperuricemia (4%)

Gastrointestinal/Hepatic
Abdominal distension (6%)
Abdominal pain (23%)
Ascites (4%)
Constipation (16%)
Diarrhea (17%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (14%) [4]
Nausea (31%) [4]
Vomiting (15%)

Hematologic
Anemia (36%)
Febrile neutropenia (26%) [2]
Hemorrhage (33%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (35%) [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (18%) [4]
Myelosuppression / bone marrow suppression / myelotoxicity (>10%)
Neutropenia (neutrophils decreased) (49%) [10]
Pancytopenia (includes bicytopenia) (2%)
Sepsis [2]
Thrombocytopenia (51%) [11]

Local
Infusion-related reactions (2%)

Neuromuscular/Skeletal
Asthenia / fatigue (35%) [2]

Respiratory
Pneumonia [2]

Other
Death [2]
Infection (48%) [3]

INSULIN

Trade names: Humulin (Lilly), Iletin Lente (Lilly), Novolin R (Novo Nordisk), Velosulin (Novo Nordisk)
Indications: Diabetes
Class: Antidiabetic, CYP1A2 inducer, Hormone, polypeptide
Half-life: N/A
Clinically important, potentially hazardous interactions with: acebutolol, alcohol, captopril, cilazapril, ciprofloxacin, dimercaprol, enalapril, ethanolamine, eucalyptus, fosinopril, gemifloxacin, guanethidine, hydrocortisone, lanreotide, levofloxacin, lisinopril, moxifloxacin, nifedipine, ofloxacin, pegvisomant, pioglitazone, propranolol, quinapril, ramipril, semaglutide, sermorelin, sotalol, trandolapril, vidarabine, zofenopril
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: About 25% of patients with insulin allergy have a concomitant history of penicillin allergy. Various forms of insulin are available - see other insulin profiles for reaction details.

Skin
Acanthosis nigricans [3]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%) [10]
Angioedema [6]
Dermatitis [2]
Diaphoresis (see also hyperhidrosis) (<10%)
Edema / fluid retention (see also peripheral edema) (<10%) [4]
Hyperkeratosis [3]
Hypersensitivity [5]
Lipoatrophy (<10%) [29]
Lipodystrophy [26]
Lipohypertrophy (<10%) [10]
Pallor (<10%)
Peripheral edema (see also edema) [4]
Pruritus (itching) (<10%) [4]
Purpura [2]
Urticaria / hives (<10%) [17]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Central Nervous System
Headache [2]
Paresthesias (<10%)
Tremor (<10%)

Endocrine/Metabolic
Amyloidosis (localized) [2]
Hypoglycemia (see also insulin autoimmune syndrome) [8]
Weight gain [6]

Gastrointestinal/Hepatic
Nausea [2]
Vomiting [2]

Local
Injection-site induration [4]
Injection-site pruritus [2]
Injection-site reaction [3]

Respiratory
Cough [2]
Nasopharyngitis [2]

Other
Adverse effects / adverse reactions [2]
Allergic reactions (local) [14]

INSULIN ASPART

Trade names: NovoLog (Novo Nordisk), NovoRapid (Novo Nordisk), Ryzodeg (Novo Nordisk)
Indications: Diabetes mellitus
Class: Hormone, polypeptide
Half-life: 81 minutes
Clinically important, potentially hazardous interactions with: ACE inhibitors, alcohol, atypical antipsychotics, beta blockers, clonidine, corticosteroids, danazol, disopyramide, diuretics, epinephrine, estrogens, fibrates, fluoxetine, isoniazid, isoniazid, lithium salts, MAO inhibitors, niacin, octreotide, oral contraceptives, pentamidine, phenothiazine derivatives, pramlintide, propoxyphene, salbutamol, salicylates, somatropin, sulfonamide antibiotics, terbutaline, thyroid hormones
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients
Note: Ryzodeg is insulin aspart and insulin degludec; various forms of insulin are available - see other insulin profiles for reaction details.

Skin
Lipodystrophy (>5%)
Peripheral edema (see also edema) (>5%)

Nails
Onychomycosis (10%)

Cardiovascular
Chest pain (5%)

Central Nervous System
Headache (12%) [3]
Hyporeflexia (11%)

Endocrine/Metabolic
Diabetic ketoacidosis [2]
Hypoglycemia (see also insulin autoimmune syndrome) (75%) [6]
Weight gain (>5%)

Gastrointestinal/Hepatic
Abdominal pain (5%)
Diarrhea (5%)
Nausea (7%)

Genitourinary
Urinary tract infection (8%)

Respiratory
Nasopharyngitis [3]
Sinusitis (5%)

INSULIN DEGLUDEC

Trade names: Ryzodeg (Novo Nordisk), Tresiba (Novo Nordisk), Xultophy (Novo Nordisk)
Indications: Diabetes mellitus
Class: Human insulin analog, long-acting
Half-life: 25 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, albuterol, alcohol, angiotensin II receptor blocking agents, beta blockers, clonidine, clozapine, corticosteroids, danazol, DDP-4-inhibitors, disopyramide, diuretics, epinephrine, estrogens, fibrates, fluoxetine, GLP-1 receptor agonists, glucagon, guanethidine, isoniazid, lithium, MAO inhibitors, niacin, octreotide, olanzapine, oral contraceptives, pentamidine, pentoxifylline, phenothiazines, pramlintide, propoxyphene, protease inhibitors, reserpine, salicylates, SGLT-2 inhibitors, somatropin, sulfonamide antibiotics, terbutaline, thyroid hormones
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated during episodes of hypoglycemia. Ryzodeg is insulin degludec and insulin aspart; Xultophy is insulin degludec and liraglutide; various forms of insulin are available - see other insulin profiles for reaction details.

Skin
Hypersensitivity [2]
Peripheral edema (see also edema) (<3%)

Central Nervous System
Headache (9–12%) [11]

Endocrine/Metabolic
Diabetic ketoacidosis [2]
Hypoglycemia (see also insulin autoimmune syndrome) [10]

Gastrointestinal/Hepatic
Diarrhea (6%) [6]
Gastroenteritis (5%)

Nausea [7]
Vomiting [2]

Local
Injection-site reaction (4%) [6]

Ocular
Retinopathy [2]

Respiratory
Nasopharyngitis (13–24%) [12]
Sinusitis (5%)
Upper respiratory tract infection (8–12%) [3]

Other
Adverse effects / adverse reactions [4]

INSULIN DETEMIR

Trade name: Levemir (Novo Nordisk)
Indications: Diabetes (Type I or II)
Class: Human insulin analog, long-acting
Half-life: 5–7 hours
Clinically important, potentially hazardous interactions with: albuterol, alcohol, antipsychotics, beta blockers, clonidine, clozapine, corticosteroids, danazol, diuretics, epinephrine, estrogens, guanethidine, isoniazid, lithium, niacin, olanzapine, oral antidiabetics, oral contraceptives, pentamidine, phenothiazines, propranolol, protease inhibitors, reserpine, somatropin, terbutaline, thiazolidinediones, thyroid hormones
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Various forms of insulin are available - see other insulin profiles for reaction details.

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (10%)
Headache (7–31%) [3]

Endocrine/Metabolic
Hyperglycemia (includes glucose increased) [2]
Hypoglycemia (see also insulin autoimmune syndrome) [4]

Gastrointestinal/Hepatic
Abdominal pain (6–13%)
Gastroenteritis (6–17%)
Nausea (7%)
Vomiting (7%)

Local
Injection-site reaction (3–4%) [4]

Neuromuscular/Skeletal
Back pain (8%)

Respiratory
Bronchitis (5%)
Cough (8%)
Influenza- ('flu)-like syndrome (6–14%)
Pharyngitis (sore throat) (10–17%)
Rhinitis (7%)
Upper respiratory tract infection (13–36%)

Other
Allergic reactions [3]
Infection (viral) (7%)

INSULIN GLARGINE

Trade names: Basaglar (Lilly), Lantus (Sanofi-Aventis), Soliqua (Sanofi-Aventis)
Indications: Diabetes (Type I or II)
Class: Hormone analog, polypeptide
Half-life: N/A
Clinically important, potentially hazardous interactions with: ACE inhibitors, albuterol, alcohol, beta blockers, clonidine, clozapine, corticosteroids, danazol, disopyramide, diuretics, epinephrine, estrogens, fibrates, fluoxetine, glucagon, guanethidine, isoniazid, lithium, MAO inhibitors, niacin, olanzapine, oral antidiabetic products, oral contraceptives, pentamidine, pentoxifylline, phenothiazine derivatives, pramlintide, propoxyphene, propranolol, protease inhibitors, reserpine, salicylates, somatostain analogs, somatropin, sulfonamide antibiotics, terbutaline, thyroid hormones
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Soliqua is insulin glargine and lixisenatide; various forms of insulin are available - see other insulin profiles for reaction details.

Skin
Lipoatrophy [2]
Peripheral edema (see also edema) (20%)

Central Nervous System
Depression (11%)
Headache (6–10%) [4]

Endocrine/Metabolic
Diabetic ketoacidosis [2]
Hypoglycemia (see also insulin autoimmune syndrome) [7]

Gastrointestinal/Hepatic
Diarrhea (11%) [6]
Nausea [5]
Vomiting [4]

Genitourinary
Urinary tract infection (11%)

Local
Injection-site pain (3%)
Injection-site reaction [4]

Neuromuscular/Skeletal
Arthralgia (14%)
Back pain (13%)
Pain in extremities (13%)

Ocular
Cataract (18%)
Retinopathy [2]

Respiratory
Bronchitis (15%)
Cough (12%)
Influenza (19%)
Nasopharyngitis [6]
Pharyngitis (sore throat) (8%)
Rhinitis (5%)
Sinusitis (19%)
Upper respiratory tract infection (11–29%) [3]

Other
Adverse effects / adverse reactions [6]
Infection (9–14%)

INSULIN GLULISINE

Trade name: Apidra (Sanofi-Aventis)
Indications: Diabetes
Class: Insulin analog
Half-life: 13–42 minutes
Clinically important, potentially hazardous interactions with: ACE inhibitors, albuterol, alcohol, anitpsychotics, beta blockers, clonidine, clozapine, corticosteroids, danazol, disopyramide, diuretics, epinephrine, fibrates, fluoxetine, glucagon, guanethidine, isoniazid, lithium, MAO inhibitors, niacin, oral antidiabetic agents, oral contraceptives, pentamidine, pentoxifylline, phenothiazine derivatives, pramlintide, propoxyphene, propranolol, protease inhibitors, reserpine, salicylates, somatostatin analogs, somatropin, sulfonamide antibiotics, terbutaline, thyroid hormones
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Various forms of insulin are available - see other insulin profiles for reaction details.

Skin
Peripheral edema (see also edema) (8%)

Cardiovascular
Hypertension (4%)

Central Nervous System
Headache (7%)

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) (6–7%) [3]

Local
Injection-site reaction (10%) [2]

Neuromuscular/Skeletal
Arthralgia (6%)

Respiratory
Influenza (4–6%)
Nasopharyngitis (8–11%)
Upper respiratory tract infection (7–11%)

INTERFERON ALFA

Synonyms: IFN; INF
Trade names: Infergen (Intermune), Intron A (Schering), Rebetron (Schering), Roferon-A (Roche)
Indications: Chronic hepatitis C virus infection, hairy cell leukemia
Class: Biologic, Immunomodulator, Interferon
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: aldesleukin, amitriptyline, captopril, gemfibrozil, metaxalone, methadone, ribavirin, telbivudine, theophylline, theophylline derivatives, zafirlukast, zidovudine
Pregnancy category: C (pregnancy category will be X when used in combination with ribavirin)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Many of the adverse reactions depend on the nature of the disease being treated. Either hairy cell leukemia [L] or AIDS-related Kaposi's sarcoma [K].

Skin
- Angioedema [3]
- Bullous dermatosis [4]
- Cutaneous toxicity / skin toxicity [4]
- Dermatitis (6%)
- Eczema / eczematous reaction / eczematous eruption [6]
- Edema / fluid retention (see also peripheral edema) [L] (11%) [2]
- Erythema [2]
- Exanthems [3]
- Herpes simplex [2]
- Kaposi's sarcoma [2]
- Lichen planus (includes hypertrophic lichen planus) [9]
- Linear IgA bullous dermatosis [3]
- Livedo reticularis [2]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [18]
- Lupus syndrome / drug-induced lupus (DIL) [2]
- Necrosis (skin necrosis) [6]
- Pemphigus [2]
- Photosensitivity [2]
- Pigmentation [3]
- Pruritus (itching) 13% [L] 5–7% [K] (13%) [4]
- Psoriasis [24]
- Purpura [2]
- Rash 44% [L] 11% [K] [5]
- Raynaud's phenomenon [11]
- Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [47]
- Seborrheic dermatitis [2]
- Sjögren's syndrome [4]
- Thrombocytopenic purpura [2]
- Urticaria / hives [K] (<3%) [3]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [7]
- Vitiligo [9]

Hair
- Alopecia / hair loss (23%) [16]
- Hair pigmentation [3]
- Hypertrichosis [3]
- Straight hair [2]

Mucosal
- Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [2]
- Oral lichen planus [7]
- Stomatitis (oral mucositis) (<10%)
- Xerostomia (dry mouth) (>10%) [4]

Cardiovascular
- Cardiotoxicity [2]
- Hypertension [3]
- Hypotension [2]

Central Nervous System
- Ageusia (taste loss) / taste disorder [2]
- Anorexia [5]
- Anosmia (smell loss) / smell disorder (see also hyposmia) [4]
- Anxiety [3]
- Chills [4]
- Depression (5–15%) [25]
- Dysgeusia (taste perversion) [K] (25%) [2]
- Fever (pyrexia) (includes hyperpyrexia) (37%) [7]
- Headache (54%) [6]
- Impaired concentration [2]
- Insomnia (19%)
- Irritability [3]
- Neurotoxicity [4]
- Paresthesias 8% [L] (12%)
- Parkinsonism [3]
- Restless legs syndrome [2]
- Rigors (35%)
- Seizures [2]
- Suicidal ideation [6]
- Tremor [2]
- Vertigo / dizziness (16%) [2]

Endocrine/Metabolic
- ALT increased [2]
- AST increased [2]
- Hyperglycemia (includes glucose increased) [2]
- Hyperthyroidism [3]
- Thyroid dysfunction [5]
- Thyroiditis [3]
- Weight loss (16%) [5]

Gastrointestinal/Hepatic
- Abdominal pain (15%)
- Constipation [2]
- Crohn's disease [2]
- Diarrhea (24%) [6]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
- Nausea (24%) [8]
- Pancreatitis / acute pancreatitis [7]
- Vomiting [5]

Genitourinary
- Impotence [2]

Hematologic
- Anemia (11%) [8]
- Febrile neutropenia [2]
- Hemolytic uremic syndrome [6]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [6]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased (14%)
- Neutropenia (neutrophils decreased) (21%) [5]
- Thrombocytopenia [8]

Local
- Injection-site alopecia [2]
- Injection-site erythema [2]
- Injection-site induration [3]
- Injection-site necrosis [16]

Neuromuscular/Skeletal
- Arthralgia (28%) [4]
- Asthenia / fatigue (56%) [11]
- Back pain (9%)
- Myalgia/Myopathy 69% [L] 71% [K] [11]
- Myasthenia gravis [11]
- Rhabdomyolysis [3]

Ocular
- Eyelashes – hypertrichosis [3]
- Optic neuropathy [4]
- Retinopathy [6]
- Vision blurred (4%)

Otic
- Tinnitus [4]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
- Proteinuria [2]

Respiratory
- Cough [2]
- Dyspnea / shortness of breath (13%) [2]
- Influenza- ('flu)-like syndrome (>10%) [11]
- Pulmonary hypertension [3]

Other
- Adverse effects / adverse reactions [6]
- Infection [4]
- Vogt-Koyanagi-Harada syndrome [6]

INTERFERON BETA

Trade names: Avonex (Biogen), Betaferon (Bayer), Betaseron (Bayer), Plegridy (Biogen), Rebif (Merck)
Indications: Relapsing multiple sclerosis, cancers
Class: Covid-19 putative drug, Immunomodulator, Interferon
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: theophylline, theophylline derivatives, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Cyst (4%)
- Diaphoresis (see also hyperhidrosis) (23%)
- Edema / fluid retention (see also peripheral edema) (generalized) (8%)
- Herpes simplex (2–3%)
- Herpes zoster (3)
- Hypersensitivity (3%)
- Lipoatrophy [2]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [8]
- Nevi (3%)
- Nicolau syndrome [2]
- Psoriasis [2]
- Rash [2]
- Raynaud's phenomenon [2]
- Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [2]
- Thrombocytopenic purpura [4]
- Urticaria / hives (5%)
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Hair
- Alopecia / hair loss (4%)

Mucosal
- Mucosal bleeding (12–38%)

Cardiovascular
- Capillary leak syndrome [3]

Central Nervous System
- Chills (21%)
- Depression [8]
- Fever (pyrexia) (includes hyperpyrexia) [4]
- Headache [5]
- Multiple sclerosis [2]
- Pain (52%)
- Paresthesias [2]
- Psychosis [2]
- Seizures (2%) [2]
- Vertigo / dizziness (35%)

Endocrine/Metabolic
- Mastodynia (7%)
- Thyroid dysfunction [4]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]

Genitourinary
- Vaginitis (includes vulvitis) (4%)

Hematologic
- Hemolytic uremic syndrome [3]
- Thrombocytopenia [2]
- Thrombotic microangiopathy [4]

Local
- Injection-site ecchymoses (2%)
- Injection-site erythema [2]

Injection-site inflammation (3%)
Injection-site necrosis [3]
Injection-site purpura (2%)
Injection-site reaction (4%) [10]

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [3]
Myalgia/Myopathy (44%)
Rhabdomyolysis [2]

Ocular
Retinopathy [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Influenza- ('flu)-like syndrome (61%) [15]
Upper respiratory tract infection (31%)

Other
Adverse effects / adverse reactions [4]
Death [4]
Infection (11%) [3]

INTERFERON GAMMA

Trade name: Actimmune (Horizon)
Indications: Chronic granulomatous disease, severe malignant osteopetrosis
Class: Immunomodulator, Interferon
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: tasonermin, typhoid vaccine
Pregnancy category: N/A (May cause fetal toxicity based on findings in animal studies)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Rash (17%)

Central Nervous System
Chills (14%) [3]
Fever (pyrexia) (includes hyperpyrexia) (52%) [8]
Headache (33%) [3]

Gastrointestinal/Hepatic
Diarrhea (14%)
Nausea (10%)
Vomiting (13%)

Hematologic
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]

Local
Injection-site erythema (14%) [2]

Neuromuscular/Skeletal
Arthralgia (2%)
Asthenia / fatigue (14%) [3]
Myalgia/Myopathy (6%)

Respiratory
Influenza- ('flu)-like syndrome [4]

IOBENGUANE

Synonyms: metaiodobenzylguanidine; MIBG
Trade name: AdreView (GE Healthcare)
Indications: Detection of primary or metastatic pheochromocytoma or neuroblastoma as an adjunct to other diagnostic tests
Class: Radiopharmaceutical, diagnostic agent
Half-life: 13 hours
Clinically important, potentially hazardous interactions with: amitriptyline, amoxapine, citalopram, cocaine, duloxetine, ephedrine, formoterol, formoterol, imipramine, labetalol, levalbuterol, lisdexamfetamine, phenylephrine, phenylpropanolamine, pseudoephedrine, reserpine, salmeterol, SSRIs, terbutaline
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Flushing / rubefaction (<2%)
Pruritus (itching) (<2%)
Rash (<2%)

Cardiovascular
Hypertension [3]

Central Nervous System
Vertigo / dizziness (<2%)

Local
Injection-site hemorrhage (<2%)

IODIXANOL

Trade name: Visipaque (Amersham Health)
Indications: Angiocardiography
Class: Iodine-containing radiocontrast medium
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

Skin
AGEP [2]
Erythema (2%)
Pruritus (itching) (<2%)
Rash (2%)

Central Nervous System
Dysgeusia (taste perversion) (4%)
Encephalopathy (includes hepatic encephalopathy) [2]
Headache [2]
Vertigo / dizziness (2%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

IOHEXOL

Trade name: Omnipaque (GE Healthcare)
Indications: Diagnostic aid in myelography, angiography and computerized tomography procedures
Class: Contrast agent
Half-life: variable
Clinically important, potentially hazardous interactions with: corticosteroids
Pregnancy category: B

Skin
Pruritus (itching) [2]

Central Nervous System
Dysgeusia (taste perversion) [2]
Encephalopathy (includes hepatic encephalopathy) [3]
Headache (18%) [7]

Neuromuscular/Skeletal
Myalgia/Myopathy (8%)

Ocular
Photophobia (2%)
Vision blurred (2%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

Other
Death [2]

IPILIMUMAB

Trade name: Yervoy (Bristol-Myers Squibb)
Indications: Melanoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, CTLA-4-blocking monoclonal antibody, Immune checkpoint inhibitor, Monoclonal antibody
Half-life: 15 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: IMMUNE-MEDIATED ADVERSE REACTIONS

Skin
Cutaneous toxicity / skin toxicity [4]
Dermatitis (12%) [14]
Dermatomyositis [4]
DRESS syndrome [3]
Erythema [6]
Erythema multiforme [2]
Exanthems [6]
Granulomas [5]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Lymphadenopathy [3]
Pruritus (itching) (21–31%) [24]
Psoriasis [2]
Rash (19–29%) [34]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Sweet's syndrome [3]
Thrombotic thrombocytopenic purpura [3]
Transient acantholytic dermatosis (Grover's disease) [3]
Urticaria / hives (2%) [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]
Vitiligo [4]

Hair
Alopecia / hair loss [3]

Cardiovascular
Atrial fibrillation [2]
Cardiomyopathy [2]
Cardiotoxicity [3]
Myocarditis [9]
Pericarditis [3]

Central Nervous System
Anorexia [3]
Aseptic meningitis [2]

Chills [2]
Cytokine release syndrome / cytokine storm [2]
Encephalitis [8]
Encephalopathy (includes hepatic encephalopathy) [4]
Fever (pyrexia) (includes hyperpyrexia) [4]
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [9]
Headache (14%) [4]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Meningoencephalitis [3]
Neurotoxicity [6]

Endocrine/Metabolic
Adrenal insufficiency (hypoadrenalism) [7]
ALT increased [14]
AST increased [12]
Autosplenectomy [2]
Diabetes mellitus [6]
Diabetic ketoacidosis [4]
Hyperamylasemia [4]
Hyperlipasemia [5]
Hyperthyroidism [4]
Hyponatremia [3]
Hypophysitis [52]
Hypopituitarism (<4%)
Hypothyroidism [16]
Thyroid dysfunction [4]
Thyroiditis [17]
Thyrotoxicosis [3]
Weight loss [2]

Gastrointestinal/Hepatic
Abdominal pain [3]
Colitis (5–8%) [67]
Constipation [2]
Diarrhea (32–37%) [56]
Enterocolitis (7%) [8]
Gastritis / pangastritis / gastric irritation [3]
Gastrointestinal perforation / perforated colon / gastric perforation [5]
Hepatitis [22]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<2%) [20]
Ileus [2]
Nausea [6]
Pancreatitis / acute pancreatitis [6]
Vomiting [2]

Hematologic
Anemia [4]
Coagulopathy (includes disseminated intravascular coagulation / DIC) [2]
Eosinophilia [3]
Hemolytic anemia [2]
Hemophagocytic lymphohistiocytosis / hemophagocytic syndrome [2]
Neutropenia (neutrophils decreased) [7]
Thrombocytopenia [6]

Local
Infusion-related reactions [4]
Injection-site reaction [2]

Neuromuscular/Skeletal
Arthralgia [5]
Asthenia / fatigue (34–41%) [14]
Myalgia/Myopathy [8]
Myasthenia gravis [8]
Rhabdomyolysis [2]

Ocular
Iridocyclitis [3]
Ocular adverse effect [3]
Optic neuropathy [2]
Orbital inflammation (see also orbital (ocular) myositis) [4]
Retinitis [2]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [10]
Xerophthalmia (dry eyes) [2]

Renal
Nephritis / interstitial nephritis / tubulointerstitial nephritis [3]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [9]
Renal failure [4]
Tumor lysis syndrome (TLS) [2]

Respiratory
Cough [2]
Dyspnea / shortness of breath [3]
Pneumonia [5]
Pneumonitis [11]

Other
Adverse effects / adverse reactions [32]
Death [19]
Vogt-Koyanagi-Harada syndrome [5]

IPRATROPIUM

Trade names: Atrovent (Boehringer Ingelheim), Combivent (Boehringer Ingelheim), Duoneb (Mylan Specialty), Ipratropium Steri-Neb (Ivax), Rinatec (Boehringer Ingelheim)
Indications: Bronchospasm
Class: Anticholinergic, Muscarinic antagonist
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: anticholinergics
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Combivent is ipratropium and albuterol.

Mucosal
Oral lesions (<5%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Xerostomia (dry mouth) (3%) [3]

Central Nervous System
Dysgeusia (taste perversion) [2]
Trembling (<10%)

Ocular
Mydriasis [2]

Other
Adverse effects / adverse reactions [2]

IRBESARTAN

Trade names: Aprovel (Bristol-Myers Squibb), Avalide (Bristol-Myers Squibb), Avapro (Sanofi-Aventis)
Indications: Hypertension, diabetic nephropathy
Class: Angiotensin receptor antagonist (blocker), Antihypertensive
Half-life: 11–15 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, adrenergic neurone blockers, alcohol, aldesleukin, aldosterone antagonists, aliskiren, alpha blockers, alprostadil, amifostine, antihypertensives, antipsychotics, anxiolytics and hypnotics, baclofen, beta blockers, calcium channel blockers, carvedilol, clonidine, corticosteroids, cyclosporine, CYP2C8 and CYP2C9 substrates, diazoxide, diuretics, eplerenone, fluconazole, general anesthetics, heparins, hypotensives, levodopa, lithium, MAO inhibitors, methyldopa, methylphenidate, moxisylyte, moxonidine, nitrates, NSAIDs, pentoxifylline, phosphodiesterase 5 inhibitors, potassium salts, prostacyclin analogues, rifamycin derivatives, rituximab, tacrolimus, tizanidine, tolvaptan, trimethoprim
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Avalide is irbesartan and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide which can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Warning: FETAL TOXICITY

Skin
Angioedema [3]
Edema / fluid retention (see also peripheral edema) (<10%)
Peripheral edema (see also edema) [2]
Rash (<10%)

Gastrointestinal/Hepatic
Pancreatitis / acute pancreatitis [2]

Respiratory
Cough [2]

IRINOTECAN

Trade names: Camptosar (Pfizer), Onivyde (Merrimack)
Indications: Metastatic colorectal carcinoma (Camptosar), metastatic adenocarcinoma of the pancreas (Onivyde - in combination with fluorouracil and leucovorin). Advanced pancreatic cancer in combination with oxaliplatin/fluorouracil/leucovorin (FOLFIRINOX or FOLFOXIRI). Used in combination with fluorouracil and leucovorin (FOLFIRI) for treatment of advanced-stage and metastatic colorectal cancer
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Topoisomerase I inhibitor
Half-life: 6–10 hours
Clinically important, potentially hazardous interactions with: aprepitant, atazanavir, bevacizumab, itraconazole, ketoconazole, lapatinib, safinamide, sorafenib, St John's wort, strong CYP3A4 inhibitors, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: DIARRHEA and MYELOSUPPRESSION (Camptosar). SEVERE NEUTROPENIA and SEVERE DIARRHEA (Onivyde)

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [4]
Cutaneous toxicity / skin toxicity [4]
Exfoliative dermatitis (14%)
Flushing / rubefaction (11%)

Hand–foot syndrome (palmar–plantar erythrodysesthesia) [6]
Pruritus (itching) [4]
Rash (46%) [7]

Hair
Alopecia / hair loss (13–61%) [24]

Mucosal
Mucositis (30%) [4]
Stomatitis (oral mucositis) (<14%) [6]

Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypertension [11]
Hypotension (5%) [2]
Thrombophlebitis (<10%)
Vasodilation (6%)

Central Nervous System
Anorexia (44%) [19]
Chills (14%)
Confusion (3%)
Dysarthria [10]
Fever (pyrexia) (includes hyperpyrexia) (44%) [3]
Insomnia [2]
Myokymia / twitching [2]
Neurotoxicity [5]
Pain (23%)
Somnolence (drowsiness) (9%)
Vertigo / dizziness (21%)

Endocrine/Metabolic
Dehydration [4]

Gastrointestinal/Hepatic
Abdominal pain (68%) [4]
Constipation (32%) [3]
Diarrhea (83%) [54]
Gastrointestinal perforation / perforated colon / gastric perforation [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (82%) [25]
Vomiting (63%) [22]

Hematologic
Anemia (97%) [20]
Febrile neutropenia [17]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (96%) [14]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Neutropenia (neutrophils decreased) (96%) [55]
Thrombocytopenia (96%) [11]

Neuromuscular/Skeletal
Asthenia / fatigue (69%) [25]

Renal
Proteinuria [5]

Respiratory
Cough (20%)
Dyspnea / shortness of breath (22%)
Pneumonia (4%) [5]

Other
Adverse effects / adverse reactions [4]
Allergic reactions (9%)
Death [7]
Infection (14%) [4]

ISAVUCONAZONIUM SULFATE

Synonym: Isavuconazole
Trade name: Cresemba (Astellas)
Indications: Invasive aspergillosis, mucormycosis
Class: Antifungal / antimycotic, Antifungal; triazole, Antimicrobial
Half-life: 130 hours
Clinically important, potentially hazardous interactions with: carbamazepine, ketoconazole, rifampin, ritonavir, St John's wort, strong CYP3A4 inducers or inhibitors
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Isavuconazonium sulfate is the water-soluble prodrug of isavuconazole. Contra-indicated in patients with familial short QT syndrome.

Skin
Dermatitis (<5%)
Erythema (<5%)
Exfoliative dermatitis (<5%)
Hypersensitivity (<5%)
Peripheral edema (see also edema) (15%)
Petechiae (<5%)
Pruritus (itching) (8%)
Rash (9%)
Urticaria / hives (<5%)

Hair
Alopecia / hair loss (<5%)

Mucosal
Gingivitis (<5%)
Stomatitis (oral mucositis) (<5%)

Cardiovascular
Atrial fibrillation (<5%)
Atrial flutter (<5%)
Bradycardia / sinus bradycardia (<5%)
Cardiac arrest (<5%)
Chest pain (9%)
Extrasystoles (<5%)
Hypotension (8%)
Palpitation (<5%)
QT interval shortening (<5%)
Thrombophlebitis (<5%)

Central Nervous System
Anxiety (8%)
Chills (<5%)
Confusion (<5%)
Delirium (9%)
Depression (<5%)
Dysgeusia (taste perversion) (<5%)
Encephalopathy (includes hepatic encephalopathy) (<5%)
Gait instability / postural instability (<5%)
Hallucinations (<5%)
Headache (17%)
Hypoesthesia (numbness) (<5%)
Insomnia (11%)
Migraine (<5%)
Paresthesias (<5%)
Peripheral neuropathy (<5%)
Seizures (<5%)
Somnolence (drowsiness) (<5%)
Stupor (<5%)
Syncope / fainting (<5%)
Tremor (<5%)
Vertigo / dizziness (<5%)

Endocrine/Metabolic
Appetite decreased (9%)
Hypoalbuminemia / albumin decreased (<5%)
Hypoglycemia (see also insulin autoimmune syndrome) (<5%)
Hypokalemia (19%)
Hypomagnesemia (5%)
Hyponatremia (<5%)

Gastrointestinal/Hepatic
Abdominal distension (<5%)
Abdominal pain (17%)
Cholecystitis (<5%)
Cholelithiasis (gallstones in the gallbladder) (<5%)
Constipation (14%)
Diarrhea (24%) [3]
Dyspepsia / functional dyspepsia / gastroparesis (6%)
Gastritis / pangastritis / gastric irritation (<5%)
Hepatic failure (<5%)
Hepatomegaly (<5%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (17%) [2]
Nausea (28%) [3]
Vomiting (25%)

Genitourinary
Hematuria (<5%)

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') (<5%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<5%)
Pancytopenia (includes bicytopenia) (<5%)

Local
Injection-site reaction (6%)

Neuromuscular/Skeletal
Asthenia / fatigue (11%)
Back pain (10%)
Bone or joint pain (<5%)
Myalgia/Myopathy (<5%)
Neck pain (<5%)

Ocular
Optic neuropathy (<5%)

Otic
Tinnitus (<5%)

Renal
Proteinuria (<5%)
Renal failure (10%)

Respiratory
Bronchospasm (<5%)
Dyspnea / shortness of breath (17%)
Respiratory failure (7%)
Tachypnea / respiratory rate increased (<5%)

Other
Adverse effects / adverse reactions [3]

ISOCARBOXAZID

Trade name: Marplan (Validus)
Indications: Depression
Class: Antidepressant, Monoamine oxidase (MAO) inhibitor
Half-life: N/A
Clinically important, potentially hazardous interactions with: amitriptyline, amoxapine, bupropion, citalopram, clomipramine, desipramine, doxepin, fluoxetine, fluvoxamine,

imipramine, meperidine, nefazodone, nortriptyline, opicapone, paroxetine hydrochloride, pizotifen, protriptyline, rizatriptan, sertraline, sibutramine, sumatriptan, trimipramine, tryptophan, valbenazine, venlafaxine, viloxazine, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Exanthems (7%)
Peripheral edema (see also edema) (<10%)
Photosensitivity (4%)
Pruritus (itching) (4%)
Mucosal
Xerostomia (dry mouth) (<10%) [2]
Central Nervous System
Vertigo / dizziness [2]

ISOETHARINE

Indications: Bronchial asthma
Class: Adrenergic beta-receptor agonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: phenelzine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Trembling (<10%)

ISOFLURANE

Trade name: Forane (Baxter)
Indications: Maintenance of general anesthesia
Class: Anesthetic; inhalation
Half-life: N/A
Clinically important, potentially hazardous interactions with: cisatracurium, doxacurium, mivacurium, muscle relaxants, pancuronium, rapacuronium
Pregnancy category: C

Central Nervous System
Hallucinations [2]
Malignant hyperthermia [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Other
Death [3]

ISONIAZID

Synonyms: INH; isonicotinic acid hydrazide
Trade names: Rifamate (Sanofi-Aventis), Rifater (Sanofi-Aventis)
Indications: Tuberculosis
Class: Antibiotic, Antimicrobial, Antimycobacterial (including antitubercular)
Half-life: <4 hours
Clinically important, potentially hazardous interactions with: acetaminophen, betamethasone, ethosuximide, insulin aspart, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, itraconazole, levodopa, metformin, phenytoin, prednisolone, propranolol, rifampin, rifapentine, safinamide, triamcinolone
Pregnancy category: C

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [7]
AGEP [2]
Angioedema [2]
Bullous dermatosis [2]
Cutaneous toxicity / skin toxicity [2]
Dermatitis [3]
DRESS syndrome [7]
Erythema multiforme [2]
Erythroderma [2]
Exanthems [4]
Exfoliative dermatitis [5]
Hypersensitivity [7]
Lichenoid eruption / lichenoid reaction [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [59]
Peripheral edema (see also edema) [22]
Photosensitivity [5]
Pruritus (itching) [3]
Purpura [7]
Pustules / pustular eruption [3]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [12]
Urticaria / hives (<5%) [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Hair
Alopecia / hair loss [3]
Mucosal
Oral lesions [2]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [3]
Hallucinations [3]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Mania [2]
Neurotoxicity [2]
Peripheral neuropathy [3]
Psychosis [3]
Seizures [9]
Endocrine/Metabolic
Gynecomastia [4]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [39]
Pancreatitis / acute pancreatitis [4]
Hematologic
Pure red cell aplasia [4]
Neuromuscular/Skeletal
Arthralgia [2]
Rhabdomyolysis (3%) [4]
Ocular
Optic neuritis [3]
Optic neuropathy [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Influenza- ('flu)-like syndrome [2]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [2]
Pleural effusion [2]
Pneumonitis [4]
Other
Adverse effects / adverse reactions [7]
Death [4]
Side effects (2%) [2]

ISOPROTERENOL

Trade name: Isuprel (Hospira)
Indications: Bronchospasm, ventricular arrhythmias
Class: Adrenergic beta-receptor agonist, Catecholamine, Sympathomimetic
Half-life: 2.5–5 minutes
Clinically important, potentially hazardous interactions with: amitriptyline, oxtriphylline
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Flushing / rubefaction (<10%)
Mucosal
Xerostomia (dry mouth) (>10%)
Cardiovascular
Bradycardia / sinus bradycardia [2]
Myocardial toxicity [2]
Palpitation [3]
Tachycardia [2]

ISOSORBIDE

Indications: Acute angle-closure glaucoma
Class: Diuretic
Half-life: 5–9.5 hours
Clinically important, potentially hazardous interactions with: sildenafil
Pregnancy category: C
Note: Various forms of isosorbide are available – see other isosorbide profiles for reaction details.

Central Nervous System
Headache [10]

ISOSORBIDE DINITRATE

Trade names: Dilatrate-SR (Schwarz), Isordil (Wyeth), Sorbitrate (AstraZeneca)
Indications: Angina pectoris
Class: Nitrate, Vasodilator
Half-life: 4 hours (oral)
Clinically important, potentially hazardous interactions with: sildenafil
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Various forms of isosorbide are available – see other isosorbide profiles for reaction details.

Skin
Flushing / rubefaction (>10%)
Central Nervous System
Headache [3]

ISOSORBIDE MONONITRATE

Trade names: Imdur (Schering), Monoket (Schwarz)
Indications: Angina pectoris
Class: Nitrate, Vasodilator
Half-life: ~4 hours
Clinically important, potentially hazardous interactions with: sildenafil
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Various forms of isosorbide are available – see other isosorbide profiles for reaction details.

Skin
Flushing / rubefaction (>10%) [2]
Cardiovascular
Palpitation [2]
Central Nervous System
Headache [7]
Vertigo / dizziness [2]
Other
Adverse effects / adverse reactions [2]

ISOTRETINOIN

Synonym: 13-*cis*-retinoic acid
Trade names: Accutane (Roche), Amnesteem (Genpharm), Claravis (Barr), Roaccutane (Roche)
Indications: Cystic acne
Class: Retinoid
Half-life: 21–24 hours
Clinically important, potentially hazardous interactions with: acitretin, alcohol (ethyl), antacids, bexarotene, carbamazepine, cholestyramine, co-trimoxazole, corticosteroids, dairy products, minocycline, oral contraceptives, phenytoin, retinoids, sarecycline, St John's wort, tetracycline, tetracyclines, vitamin A
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Oral retinoids can cause birth defects, and women should avoid isotretinoin when pregnant or trying to conceive.
April 2023. In the UK, 'The Isotretinoin Expert Working Group of the Commission on Human Medicines' has made recommendations to strengthen the safety of isotretinoin treatment. Recommendations include new warnings, the need for consistent monitoring requirements for psychiatric side effects, the introduction of new monitoring requirements for sexual side effects, and additional oversight of the initiation of treatment for patients younger than 18 years.

Skin
Abscess [3]
Acne fulminans (acne maligna) [3]
Acneiform eruption / acneiform dermatitis / acneiform rash [20]
Angioedema [3]
Desquamation (palms and soles) (5%)
Diaphoresis (see also hyperhidrosis) [2]
Edema / fluid retention (see also peripheral edema) (subcutaneous, recurrent) [2]
Erythema nodosum [4]
Exfoliative dermatitis (<10%)
Facial edema (<10%)
Facial erythema [3]
Fragility [3]
Granulation tissue [4]
Keloid [5]
Pallor (<10%)
Photosensitivity (>10%) [7]
Pigmentation [2]
Pityriasis rosea [2]
Pruritus (itching) (<5%) [5]
Pyoderma gangrenosum [3]
Rash [3]
Seborrheic dermatitis [2]
Sweet's syndrome [2]
Urticaria / hives [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]
Xanthomas [2]
Xerosis / xeroderma (see also dry skin) (>10%) [12]
Hair
Alopecia / hair loss (16%) [3]
Curly hair [3]
Nails
Brittle nails [2]
Elkonyxis [2]
Median canaliform dystrophy [3]
Onycholysis [3]
Paronychia [4]
Pyogenic granuloma [8]
Mucosal
Cheilitis (inflammation of the lips) (>90%) [18]
Epistaxis (nosebleed) [2]
Mucositis [2]
Xerostomia (dry mouth) (>10%) [5]
Central Nervous System
Depression [7]
Headache [7]
Pseudotumor cerebri (see also intracranial hypertension) [4]
Psychosis [6]
Endocrine/Metabolic
Amenorrhea [2]
Gynecomastia [2]
Hypercholesterolemia [2]
Hyperlipidemia [2]
Hypertriglyceridemia (includes triglycerides increased) [5]
Menstrual irregularities [3]
Gastrointestinal/Hepatic
Abdominal pain [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Pancreatitis / acute pancreatitis [3]
Genitourinary
Urethritis [3]
Hematologic
Neutropenia (neutrophils decreased) [2]
Neuromuscular/Skeletal
Arthralgia [4]
Asthenia / fatigue [2]
Myalgia/Myopathy [8]
Rhabdomyolysis [2]
Sacroiliitis [4]
Stiff person syndrome [2]
Ocular
Myopia [2]
Ocular adverse effect [2]
Photophobia [2]
Xerophthalmia (dry eyes) [2]
Other
Adverse effects / adverse reactions [10]
Side effects [2]
Teratogenicity [8]

ISRADIPINE

Trade name: DynaCirc (Reliant)
Indications: Hypertension
Class: Calcium channel blocker
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: amprenavir, delavirdine, epirubicin, imatinib, phenytoin
Pregnancy category: C

Skin
Edema / fluid retention (see also peripheral edema) (7%) [6]
Exanthems (2%)
Flushing / rubefaction (2–9%) [9]
Pruritus (itching) (<6%)
Rash (2%)
Mucosal
Oral lesions (6%)
Cardiovascular
QT interval prolonged / QT prolongation [2]
Central Nervous System
Headache (9%)
Vertigo / dizziness (9%)

ITRACONAZOLE

Trade names: Onmel (Merz), Sporanox (Janssen)
Indications: Onychomycosis, deep mycoses, oropharyngeal candidiasis (oral solution only)
Class: Antifungal / antimycotic, Antifungal; triazole, Antimicrobial, CYP3A4 inhibitor
Half-life: 21 hours
Clinically important, potentially hazardous interactions with: abiraterone, acalabrutinib, afatinib, alfentanil, alfuzosin, aliskiren, alprazolam, amphotericin B, amprenavir, anisindione, antacids, aprepitant, aripiprazole, artemether/lumefantrine, astemizole, atazanavir, atorvastatin, avanafil, avapritinib, boceprevir, bosentan, brigatinib, budesonide, buspirone, busulfan, cabazitaxel, cabozantinib, calcifediol, calcium channel blockers, capmatinib, carbamazepine, cerivastatin, ciclesonide, cilostazol, cimetidine, cinacalcet, cisapride, clarithromycin, clopidogrel, clorazepate, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, cobimetinib, colchicine, conivaptan, copanlisib, corticosteroids, coumarins, crizotinib, cyclophosphamide, cyclosporine, cyproterone, dabigatran, darifenacin, dasatinib, dexamethasone, diazepam, dicumarol, didanosine, digoxin,

dihydroergotamine, dihydropyridines, disopyramide, docetaxel, dofetilide, dronedarone, efavirenz, eletriptan, enzalutamide, eplerenone, ergotamine, erlotinib, erythromycin, estradiol, ethotoin, everolimus, felodipine, fentanyl, fesoterodine, flibanserin, fluticasone propionate, fosamprenavir, fosphenytoin, gefitinib, grapefruit juice, halofantrine, haloperidol, histamine H_2-antagonists, HMG-CoA reductase inhibitors, ibrexafungerp, ibrutinib, iloperidone, imatinib, indinavir, infigratinib, irinotecan, isoniazid, ivabradine, ixabepilone, lapatinib, lemborexant, lercanidipine, levomethadyl, lomitapide, lopinavir, lovastatin, lumateperone, lurasidone, mephenytoin, methadone, methylergonovine, methylprednisolone, methysergide, micafungin, midazolam(oral), midostaurin, mifepristone, mizolastine, naldemedine, neratinib, nevirapine, nilotinib, nisoldipine, olaparib, omeprazole, oral hypoglycemics, osimertinib, paclitaxel, palbociclib, paliperidone, pantoprazole, pazopanib, pemigatinib, phenobarbital, phenytoin, pimavanserin, pimecrolimus, pimozide, ponatinib, pralsetinib, prednisolone, prednisone, proton pump inhibitors, quetiapine, quinidine, ranolazine, reboxetine, regorafenib, repaglinide, ribociclib, rifabutin, rifampin, rilpivirine, rimegepant, rimonabant, ripretinib, ritonavir, rivaroxaban, romidepsin, ruxolitinib, saquinavir, selpercatinib, sildenafil, silodosin, simeprevir, simvastatin, sirolimus, solifenacin, sonidegib, sotorasib, sunitinib, tacrolimus, tadalafil, talazoparib, telaprevir, telithromycin, temsirolimus, terfenadine, tezacaftor/ivacaftor, ticagrelor, tolterodine, tolvaptan, triamcinolone, triazolam, trimetrexate, tucatinib, ubrogepant, ulipristal, valbenazine, vardenafil, vemurafenib, venetoclax, vinblastine, vincristine, vinflunine, vinorelbine, voclosporin, vorapaxar, warfarin

Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: nursing mothers

Note: Contra-indicated in patients with evidence of ventricular dysfunction such as congestive heart failure (CHF) or a history of CHF except for the treatment of life-threatening or other serious infections.

Warning: CONGESTIVE HEART FAILURE, CARDIAC EFFECTS AND DRUG INTERACTIONS

Skin
- AGEP [3]
- Angioedema [2]
- Diaphoresis (see also hyperhidrosis) (3%)
- Edema / fluid retention (see also peripheral edema) (<4%) [11]
- Exanthems (<3%) [7]
- Peripheral edema (see also edema) (4%)
- Phototoxicity [2]
- Pruritus (itching) (<3%) [8]
- Rash (8%) [10]
- Urticaria / hives [3]

Hair
- Alopecia / hair loss [3]

Mucosal
- Xerostomia (dry mouth) [3]

Cardiovascular
- Cardiac arrest [2]
- Cardiac failure [4]
- Congestive heart failure [4]
- Hypertension (3%) [3]
- QT interval prolonged / QT prolongation [5]
- Torsades de pointes [2]

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Headache (4%) [3]
- Neurotoxicity [5]
- Peripheral neuropathy [4]
- Seizures [2]
- Tremor [2]
- Vertigo / dizziness [2]

Endocrine/Metabolic
- ALT increased [2]
- AST increased [2]
- Hyperbilirubinemia [2]
- Hypertriglyceridemia (includes triglycerides increased) [2]
- Hypokalemia [6]

Gastrointestinal/Hepatic
- Abdominal pain (2–6%) [5]
- Constipation [2]
- Diarrhea [4]
- Hepatitis [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
- Nausea (5–7%) [8]
- Pancreatitis / acute pancreatitis [2]
- Vomiting [3]

Hematologic
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
- Thrombocytopenia [2]

Neuromuscular/Skeletal
- Asthenia / fatigue [3]
- Back pain [2]
- Rhabdomyolysis [7]

Renal
- Renal failure [2]

Respiratory
- Cough (4%)
- Dyspnea / shortness of breath (2%)
- Influenza- ('flu)-like syndrome [2]
- Pneumonia (2%)

Other
- Adverse effects / adverse reactions [8]
- Death [3]
- Side effects [2]

IVABRADINE

Trade names: Corlanor (Amgen), Procoralan (Servier)

Indications: Chronic stable angina pectoris

Class: Cardiotonic agent, HCN channel blocker

Half-life: 2 hours

Clinically important, potentially hazardous interactions with: azole antifungals, clarithromycin, CYP3A4 inducers, diltiazem, grapefruit juice, itraconazole, ketoconazole, macrolide antibiotics, nefazodone, nelfinavir, pentamidine, phenytoin, rifampin, ritonavir, sotalol, St John's wort, strong or moderate CYP3A4 inhibitors, telithromycin, verapamil

Pregnancy category: N/A

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Cardiovascular
- Atrial fibrillation (8%) [3]
- Atrioventricular block (<10%)
- Bradycardia / sinus bradycardia (10%) [6]
- Hypertension (9%)

Central Nervous System
- Headache (2–5%) [2]
- Vertigo / dizziness (<10%) [3]

Gastrointestinal/Hepatic
- Nausea [2]

Neuromuscular/Skeletal
- Myalgia/Myopathy (<10%)

Ocular
- Luminous phenomena (14%) [5]
- Vision blurred (<10%) [3]
- Visual disturbances [3]

IVACAFTOR

Trade name: Kalydeco (Vertex)

Indications: Cystic fibrosis in patients aged 6 years and older who have a *G551D* mutation in the *CFTR* gene

Class: CFTR potentiator

Half-life: 12 hours

Clinically important, potentially hazardous interactions with: CYP3A inducers or inhibitors, fluconazole, grapefruit juice, ketoconazole, rifampin, St John's wort

Pregnancy category: B

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Note: See also separate profiles for lumacaftor/ivacaftor and tezacaftor/ivacaftor.

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (4–7%)
- Rash (13%) [6]

Mucosal
- Nasal congestion (20%) [7]
- Oropharyngeal pain (22%) [7]

Cardiovascular
- Chest pain (4–7%)

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Headache (24%) [8]
- Vertigo / dizziness (9%) [4]

Endocrine/Metabolic
- AST increased (4–7%)

Gastrointestinal/Hepatic
- Abdominal pain (16%) [4]
- Diarrhea (13%) [6]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea (12%) [3]
- Vomiting [2]

Neuromuscular/Skeletal
- Arthralgia (4–7%)
- Myalgia/Myopathy (4–7%)

Otic
- Otitis media [2]

Respiratory
- Cough [5]
- Hemoptysis [2]
- Nasopharyngitis (15%) [4]
- Rhinitis (4–7%)
- Upper respiratory tract infection (22%) [7]
- Wheezing (4–7%)

Other
- Adverse effects / adverse reactions [4]

IVERMECTIN

Trade names: Sklice (Sanofi Pasteur), Soolantra (Galderma), Stromectol (Merck)
Indications: Various infections caused by susceptible helmintic organisms
Class: Anthelmintic, Covid-19 putative drug
Half-life: 16–35 hours
Clinically important, potentially hazardous interactions with: alprazolam, barbiturates, benzodiazepines, diazepam, midazolam, valproic acid
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Edema / fluid retention (see also peripheral edema) (10–53%) [7]
- Exanthems (<34%) [3]
- Facial edema [3]
- Pruritus (itching) (38–71%) [14]
- Rash (<93%) [6]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Urticaria / hives (23%)

Cardiovascular
- Tachycardia (4%)

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) (23%) [3]
- Headache [6]
- Psychosis [2]
- Vertigo / dizziness (3%) [6]

Gastrointestinal/Hepatic
- Abdominal pain [5]
- Nausea [2]

Neuromuscular/Skeletal
- Arthralgia (9%)
- Asthenia / fatigue [3]
- Myalgia/Myopathy (20%) [3]

Other
- Adverse effects / adverse reactions [6]
- Side effects (mild) [3]

IXABEPILONE

Trade name: Ixempra (Bristol-Myers Squibb)
Indications: Breast cancer (advanced or metastatic)
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Epithilone
Half-life: 52 hours
Clinically important, potentially hazardous interactions with: amprenavir, atazanavir, carbamazepine, clarithromycin, conivaptan, darunavir, dasatinib, deferasirox, delavirdine, dexamethasone, efavirenz, grapefruit juice, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, telithromycin, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Often prescribed along with capecitabine. Patients with diabetes may be at increased risk of severe neuropathy.

Skin
- Cutaneous toxicity / skin toxicity [2]
- Edema / fluid retention (see also peripheral edema) (9%)
- Exfoliative dermatitis (2%)
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) (8%)
- Hot flashes / hot flushes (6%)
- Hypersensitivity (5%)
- Pigmentation (2%)
- Pruritus (itching) (6%)
- Rash (9%)

Hair
- Alopecia / hair loss (48%) [2]

Nails
- Nail disorder (9%)

Mucosal
- Mucositis (29%) [2]
- Stomatitis (oral mucositis) (29%)

Cardiovascular
- Chest pain (5%)

Central Nervous System
- Anorexia (19%) [2]
- Dysgeusia (taste perversion) (6%)
- Fever (pyrexia) (includes hyperpyrexia) (8%)
- Headache (11%)
- Insomnia (5%)
- Neurotoxicity [5]
- Pain (8%)
- Peripheral neuropathy (63%) [3]
- Vertigo / dizziness (7%)

Endocrine/Metabolic
- Dehydration (2%)
- Weight loss (6%)

Gastrointestinal/Hepatic
- Abdominal pain (13%)
- Constipation (16%) [2]
- Diarrhea (22%) [2]
- Gastroesophageal reflux (6%)
- Nausea (42%) [2]
- Vomiting (29%)

Hematologic
- Anemia (6%) [3]
- Febrile neutropenia (3%)
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (36%) [2]
- Neutropenia (neutrophils decreased) (31%) [5]
- Thrombocytopenia (5%)

Neuromuscular/Skeletal
- Arthralgia [3]
- Asthenia / fatigue (56%) [6]
- Bone or joint pain (23%)
- Myalgia/Myopathy (49%) [2]

Ocular
- Lacrimation (4%)

Respiratory
- Cough (2%)
- Dyspnea / shortness of breath (9%)
- Upper respiratory tract infection (6%)

IXAZOMIB

Trade name: Ninlaro (Millennium)
Indications: Multiple myeloma (in combination with lenalidomide and dexamethasone) in patients who have received at least one prior therapy
Class: Proteasome inhibitor
Half-life: 10 days
Clinically important, potentially hazardous interactions with: carbamazepine, phenytoin, rifampin, St John's wort, strong CYP3A inducers
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: See separate profiles for dexamethasone and lenalidomide.

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash [3]
- Erythema [4]
- Erythema multiforme [2]
- Exanthems [8]
- Exfoliative dermatitis [4]
- Facial edema [2]
- Hyperhidrosis (see also diaphoresis) [4]
- Peripheral edema (see also edema) (25%) [4]
- Petechiae [3]
- Pigmentation [3]
- Pruritus (itching) [4]
- Rash (19%) [10]
- Sweet's syndrome [4]
- Urticaria / hives [2]
- Xerosis / xeroderma (see also dry skin) [3]

Hair
- Alopecia / hair loss [2]

Central Nervous System
- Chills [2]
- Fever (pyrexia) (includes hyperpyrexia) [4]
- Insomnia [2]
- Peripheral neuropathy (28%) [14]

Endocrine/Metabolic
- Appetite decreased [4]
- Dehydration [3]
- Hypokalemia [2]

Gastrointestinal/Hepatic
- Abdominal pain [2]
- Constipation (34%) [4]
- Diarrhea (42%) [14]
- Nausea (26%) [12]
- Vomiting (22%) [11]

Hematologic
- Anemia [11]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [6]
- Neutropenia (neutrophils decreased) (67%) [15]
- Platelets decreased [3]
- Thrombocytopenia (78%) [20]

Neuromuscular/Skeletal
- Asthenia / fatigue [12]
- Back pain (21%)

Ocular
- Conjunctivitis (conjunctival inflammation) (6%)
- Vision blurred (6%)
- Xerophthalmia (dry eyes) (5%)

Renal
Renal failure [2]
Respiratory
Dyspnea / shortness of breath [2]
Pneumonia [3]
Upper respiratory tract infection (19%)
Other
Adverse effects / adverse reactions [6]
Infection [3]

IXEKIZUMAB

Trade name: Taltz (Lilly)
Indications: Moderate-to-severe plaque psoriasis, active psoriatic arthritis
Class: Biologic, Interleukin-17A (IL-17A) antagonist / interleukin-17 inhibitor, Monoclonal antibody
Half-life: 13 days
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

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Skin
Candidiasis / candidosis [3]
Eczema / eczematous reaction / eczematous eruption [3]
Hypersensitivity [6]
Peripheral edema (see also edema) [2]
Pruritus (itching) [2]
Tinea [2]
Urticaria / hives [2]
Central Nervous System
Headache [8]
Endocrine/Metabolic
ALT increased [2]
AST increased [2]
Gastrointestinal/Hepatic
Colitis [4]
Crohn's disease [4]
Nausea (2%)
Hematologic
Neutropenia (neutrophils decreased) (11%) [4]
Thrombocytopenia (3%)
Local
Injection-site erythema [4]
Injection-site pain [3]
Injection-site reaction (17%) [21]
Neuromuscular/Skeletal
Arthralgia [2]
Otic
Ear infection (2%)
Respiratory
Bronchitis [3]
Nasopharyngitis [14]
Sinusitis [2]
Upper respiratory tract infection (14%) [14]
Other
Adverse effects / adverse reactions [9]
Death [5]
Infection [8]

JAPANESE ENCEPHALITIS VACCINE

Trade name: Ixiaro (Novartis)
Indications: Active immunization against Japanese encephalitis for adults
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: immunosuppressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Edema / fluid retention (see also peripheral edema) (4%)
Pruritus (itching) (4%)
Rash (<10%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [5]
Headache (28%) [5]
Seizures [2]
Gastrointestinal/Hepatic
Diarrhea (<10%)
Nausea (<10%)
Vomiting (<10%)
Local
Injection-site edema (<10%)
Injection-site erythema (<10%)
Injection-site induration (<10%)
Injection-site pain (33%) [4]
Injection-site pruritus (<10%)
Neuromuscular/Skeletal
Asthenia / fatigue (11%) [2]
Myalgia/Myopathy (16%)
Respiratory
Influenza- ('flu)-like syndrome (12%)
Other
Adverse effects / adverse reactions [5]

JOJOBA OIL

Family: Simmondsiaceae
Scientific names: *Buxus chinensis, Simmondsia chinensis*
Indications: Moisturizer in cosmetics and hair care products, edible oil
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Dermatitis [2]

JUNIPER

Family: Cupressaceae
Scientific names: *Juniperus communis, Juniperus oxycedrus, Juniperus phoenicea, Juniperus virginiana*
Indications: Cystitis, urethritis, urinary tract infections, flatulent colic, rheumatism, arthritis, gout, leucorrhea, blenorrhea, scrofula. **Topical:** joint pain, muscle pain, neuralgia, chronic eczema. **Inhalant:** bronchitis, lung infections. Condiment, flavor component (gin, Chartreuse, bitters), perfume
Class: Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: loop diuretics, thiazide diuretics
Pregnancy category: N/A

KANAMYCIN

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; aminoglycoside, Antimicrobial, Drug-resistant antituberculosis agent
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: aldesleukin, atracurium, bacitracin, bumetanide, doxacurium, ethacrynic acid, furosemide, methoxyflurane, neostigmine, non-depolarizing muscle relaxants, pancuronium, polypeptide antibiotics, rocuronium, succinylcholine, teicoplanin, torsemide, vecuronium
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Aminoglycosides may cause neurotoxicity and/or nephrotoxicity.

Skin
Edema / fluid retention (see also peripheral edema) (>10%)
Pruritus (itching) (<10%)
Rash (<10%)
Otic
Hearing loss (hypoacusis) [2]
Ototoxicity [8]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

KAVA

Family: Piperaceae
Scientific name: *Piper methysticum*
Indications: Psychosis, depression, headache, migraines, colds, rheumatism, cystitis, vaginal prolapse, otitis, abscesses, antistress, analgesic, local anesthetic, anticonvulsant
Class: Anxiolytic
Half-life: N/A
Clinically important, potentially hazardous interactions with: alcohol, alprazolam, amitriptyline, benzodiazepines
Pregnancy category: N/A
Note: Products containing kava have been implicated in cases of severe liver toxicity. Serious adverse effects include hepatitis, cirrhosis and liver failure. At least one patient required a liver

transplant. Kava has now been banned in many countries
Kava was discovered by Captain Cook, who named the plant "intoxicating pepper." In the South Pacific, kava is a popular social drink, similar to alcohol in Western societies.

Central Nervous System
Coma [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [13]
Other
Adverse effects / adverse reactions [8]
Side effects [3]

KETAMINE

Synonym: Esketamine (S-isomer)
Trade names: Ketalar (Monarch), Spravato (S-isomer) (Janssen) (S-ketamine)
Indications: Induction of anesthesia, treatment-resistant depression (S-isomer)
Class: Anesthetic, NMDA receptor antagonist (S-isomer)
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: memantine, mivacurium
Pregnancy category: D
Note: The S-form, S-ketamine (esketamine; Spravato) is indicated, in conjunction with an oral antidepressant, for the treatment of treatment-resistant depression in adults.

Skin
Pruritus (itching) [3]
Rash (<10%)
Mucosal
Sialorrhea (ptyalism; hypersalivation) [2]
Cardiovascular
Bradycardia / sinus bradycardia [4]
Hypertension [7]
Hypotension [5]
Tachycardia [2]
Central Nervous System
Agitation [6]
Amnesia [2]
Dissociation (psychology) [8]
Dysgeusia (taste perversion) [2]
Hallucinations [16]
Headache [9]
Mania [3]
Nightmares [2]
Sedation [4]
Somnolence (drowsiness) [3]
Tremor (>10%)
Vertigo / dizziness [13]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [17]
Vomiting [13]
Genitourinary
Cystitis [3]
Local
Injection-site pain (<10%)
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Ocular
Vision blurred [2]
Respiratory
Apnea [4]
Hypoxia (see also hypoxemia) [3]
Laryngospasm (laryngeal dystonia / spasmodic dysphonia) [4]
Other
Adverse effects / adverse reactions [14]

KETOCONAZOLE

Trade name: Nizoral (Janssen)
Indications: Fungal infections
Class: Antifungal / antimycotic, Antifungal; imidazole, Antimicrobial, CYP3A4 inhibitor
Half-life: initial: 2 hours; terminal: 8 hours
Clinically important, potentially hazardous interactions with: abemaciclib, abiraterone, afatinib, alcohol, alfuzosin, aliskiren, alitretinoin, almotriptan, alprazolam, amphotericin B, amprenavir, anisindione, anticoagulants, aprepitant, aripiprazole, astemizole, atazanavir, avanafil, axitinib, beclomethasone, bedaquiline, benzodiazepines, betrixaban, boceprevir, bosentan, bosutinib, brentuximab vedotin, brigatinib, budesonide, buprenorphine, cabazitaxel, cabozantinib, caffeine, calcifediol, ceritinib, chlordiazepoxide, ciclesonide, cilostazol, cimetidine, cinacalcet, cisapride, clopidogrel, clorazepate, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, conivaptan, copanlisib, crizotinib, cyclosporine, cyproterone, dabigatran, darifenacin, darunavir, dasatinib, desvenlafaxine, dexlansoprazole, dicumarol, didanosine, disopyramide, docetaxel, dofetilide, domperidone, doxercalciferol, dronedarone, dutasteride, echinacea, elbasvir & grazoprevir, eletriptan, eplerenone, erlotinib, erythromycin, estradiol, eszopiclone, everolimus, fentanyl, fesoterodine, fingolimod, flibanserin, flunisolide, fluticasone propionate, fosamprenavir, gastric alkanizers, halofantrine, HMG-CoA reductase inhibitors, ibrexafungerp, ibrutinib, iloperidone, imatinib, indacaterol, indinavir, irinotecan, isavuconazonium sulfate, ivabradine, ivacaftor, ixabepilone, lanthanum, lapatinib, levomilnacipran, lomitapide, lopinavir, lurasidone, macitentan, maraviroc, mefloquine, methadone, methylergonovine, methylprednisolone, midazolam, midostaurin, mizolastine, mometasone, naldemedine, neratinib, nevirapine, nilotinib, nisoldipine, non-sedating antihistamines, olaparib, oliceridine, omeprazole, ospemifene, oxybutynin, paclitaxel, palbociclib, pantoprazole, paricalcitol, pazopanib, pimavanserin, pimecrolimus, pimozide, pomalidomide, ponatinib, prednisolone, prednisone, proton-pump inhibitors, quetiapine, quinidine, rabeprazole, ramelteon, ranolazine, reboxetine, regorafenib, ribociclib, rifampin, rilpivirine, rimonabant, ritonavir, rivaroxaban, roflumilast, romidepsin, ropivacaine, rupatadine, ruxolitinib, saquinavir, saxagliptin, sildenafil, silodosin, simeprevir, simvastatin, solifenacin, sonidegib, sucralfate, sunitinib, tacrolimus, tadalafil, tamsulosin, tasimelteon, telaprevir, telithromycin, temsirolimus, tezacaftor/ivacaftor, ticagrelor, tiotropium, tofacitinib, tolterodine, tolvaptan, trabectedin, tramadol, triamcinolone, triazolam, trospium, ubrogepant, ulipristal, valbenazine, vardenafil, vemurafenib, venetoclax, venlafaxine, vilazodone, vinblastine, vincristine, voclosporin, vorapaxar, warfarin, zaleplon, ziprasidone, zolpidem, zotarolimus
Pregnancy category: C
Warning: HEPATOTOXICITY, QT PROLONGATION AND DRUG INTERACTIONS LEADING TO QT PROLONGATION

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Angioedema [3]
Dermatitis [3]
Exanthems (<9%) [7]
Exfoliative dermatitis [2]
Fixed eruption [2]
Hypersensitivity [3]
Pigmentation [3]
Pruritus (itching) (<9%) [5]
Purpura [2]
Rash (<3%) [3]
Urticaria / hives (<3%) [2]
Xerosis / xeroderma (see also dry skin) [3]
Hair
Alopecia / hair loss (<4%) [4]
Mucosal
Gingivitis [2]
Oral lesions (<5%) [3]
Oral lichenoid eruption [2]
Oral pigmentation [3]
Cardiovascular
QT interval prolonged / QT prolongation [5]
Central Nervous System
Chills (<3%)
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [2]
Neurotoxicity [3]
Endocrine/Metabolic
Gynecomastia (<3%) [8]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [18]
Nausea (3–10%) [5]
Vomiting (3–10%)
Hematologic
Eosinophilia [2]
Neuromuscular/Skeletal
Asthenia / fatigue [3]
Rhabdomyolysis [3]
Other
Adverse effects / adverse reactions [6]
Death [5]

KETOPROFEN

Trade names: Orudis (Sanofi-Aventis), Oruvail (Wyeth)
Indications: Arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 1.5–4 hours
Clinically important, potentially hazardous interactions with: aspirin, caffeine, methotrexate, probenecid
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Contact dermatitis [5]
Dermatitis [29]
Eczema / eczematous reaction / eczematous eruption [3]
Erythema [4]
Exanthems [3]
Peripheral edema (see also edema) (<3%)
Photoallergic reaction [2]
Photocontact dermatitis [5]
Photosensitivity [36]
Pruritus (itching) (<10%) [4]
Rash (>10%)
Urticaria / hives [6]

Endocrine/Metabolic
Pseudoporphyria [2]

Gastrointestinal/Hepatic
Abdominal pain (3–9%) [2]
Constipation [2]
Diarrhea (3–9%)
Dyspepsia / functional dyspepsia / gastroparesis (11%) [2]
Gastrointestinal bleeding [2]
Nausea (3–9%) [2]
Pancreatitis / acute pancreatitis [3]

Local
Application-site reactions [2]

Renal
Renal function abnormal / renal dysfunction (3–9%)

Other
Adverse effects / adverse reactions [11]
Allergic reactions [2]

KETOROLAC

Trade names: Acular (Allergan), Toradol (Roche)
Indications: Pain, relief of inflammation following cataract surgery (ophthalmic solution)
Class: Analgesic; non-opioid, Non-steroidal anti-inflammatory (NSAID)
Half-life: 2–8 hours
Clinically important, potentially hazardous interactions with: aspirin, buprenorphine, dabigatran, diclofenac, enoxaparin, meloxicam, methotrexate, probenecid, rivaroxaban, salicylates, tiagabine, tinzaparin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: GASTROINTESTINAL, CARDIOVASCULAR, RENAL, AND BLEEDING RISK

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Dermatitis (3–9%)
Diaphoresis (see also hyperhidrosis) (<10%) [2]
Edema / fluid retention (see also peripheral edema) (<10%)
Exanthems (3–9%)
Hematoma [2]
Hypersensitivity [2]
Pruritus (itching) (<10%)
Purpura (<10%)
Rash (<10%)

Mucosal
Stomatitis (oral mucositis) (<10%)
Xerostomia (dry mouth) [2]

Cardiovascular
Hypertension (<10%)

Central Nervous System
Headache (>10%) [4]
Somnolence (drowsiness) [3]
Vertigo / dizziness [4]

Gastrointestinal/Hepatic
Abdominal pain (>10%)
Constipation (<10%)
Diarrhea (7%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (>10%)
Flatulence (<10%)
Gastrointestinal bleeding [6]
Gastrointestinal ulceration (<10%) [2]
Nausea (>10%) [12]
Vomiting (<10%) [8]

Hematologic
Anemia (<10%)
Prothrombin time (INR) increased (<10%)

Local
Injection-site pain (<10%)

Ocular
Corneal melting [4]
Ocular burning [2]

Otic
Tinnitus (<10%)

Renal
Renal function abnormal / renal dysfunction (<10%)

Other
Adverse effects / adverse reactions [10]
Death [2]
Side effects [2]

KETOTIFEN

Trade name: Zaditor (Novartis)
Indications: Allergic conjunctivitis
Class: Histamine H1 receptor antagonist
Half-life: 22 hours
Clinically important, potentially hazardous interactions with: metformin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Pruritus (itching) (<10%)
Rash (<10%)

Central Nervous System
Headache (10–25%)

Ocular
Conjunctivitis (conjunctival inflammation) (<5%)
Keratitis (<5%)
Lacrimation (<5%)
Mydriasis (<5%)
Ocular burning (<5%)
Ocular discharge (<5%)
Ocular pain (<5%)
Ocular stinging (<5%)
Photophobia (<5%)
Xerophthalmia (dry eyes) (<5%)

Respiratory
Influenza- ('flu)-like syndrome (<5%)
Pharyngitis (sore throat) (<5%)
Rhinitis (10–25%)

Other
Allergic reactions (<10%)

L-CARNITINE

Indications: Improves lipid metabolism, red blood cell count, and antioxidant status, chronic fatigue syndrome, dementia, angina, post-MI cardioprotection, congestive heart failure, valproate toxicity, anorexia
Class: Food supplement
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Note: Mixed D-, L-carnitine has been associated with myasthenic syndrome.

L-METHYLFOLATE

Trade name: Deplin (PamLab)
Indications: Medicinal food for management of patients with low plasma and/or low red blood cell folate, antidepressant
Class: Dietary supplement, Trimonoamine modulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: raltitrexed

LABETALOL

Trade name: Trandate (Prometheus)
Indications: Hypertension
Class: Adrenergic beta-receptor antagonist, Antiarrhythmic class II
Half-life: 3–8 hours
Clinically important, potentially hazardous interactions with: cimetidine, halothane, imipramine, iobenguane, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Cutaneous side effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Edema / fluid retention (see also peripheral edema) (<2%)
Exanthems (<5%) [4]
Flushing / rubefaction (19%)
Lichenoid eruption / lichenoid reaction [4]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
Pityriasis rubra pilaris [2]
Pruritus (itching) (<10%) [3]
Psoriasis (exacerbation) [3]
Raynaud's phenomenon [2]
Scalp tingling [3]

Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypotension [5]

Central Nervous System
Dysgeusia (taste perversion) (<10%)
Paresthesias (7%) [2]

Neuromuscular/Skeletal
Myalgia/Myopathy [4]

Other
Side effects (6%) [2]

LACOSAMIDE

Trade name: Vimpat (UCB Pharma)
Indications: Partial-onset seizures
Class: Anticonvulsant, Antiepileptic
Half-life: 13 hours
Clinically important, potentially hazardous interactions with: alcohol, antipsychotics, carbamazepine, chloroquine, fosphenytoin, hydroxychloroquine, lamotrigine, MAO inhibitors, mefloquine, orlistat, phenobarbital, phenytoin, pregabalin, SSRIs, St John's wort, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Angioedema [2]
Pruritus (itching) (2%)
Rash [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]

Cardiovascular
Atrioventricular block [4]
Bradycardia / sinus bradycardia [4]
Hypotension [3]
Sinus node dysfunction [2]

Central Nervous System
Balance disorder (4%)
Depression (2%) [2]
Gait instability / postural instability (2%) [4]
Headache (13%) [18]
Incoordination [2]
Irritability [3]
Memory loss/memory impaired (2%)
Sedation [5]
Seizures [6]
Somnolence (drowsiness) (7%) [18]
Status epilepticus [2]
Tic disorder [2]
Tremor (7%) [4]
Vertigo / dizziness (31%) [43]

Endocrine/Metabolic
Weight gain [2]

Gastrointestinal/Hepatic
Diarrhea (4%)
Nausea (11%) [20]
Pancreatitis / acute pancreatitis [3]
Vomiting (9%) [12]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [2]

Local
Injection-site pain (2%)

Neuromuscular/Skeletal
Asthenia / fatigue (2–9%) [10]
Ataxia (8%) [10]
Back pain [2]

Ocular
Abnormal vision [3]
Diplopia (double vision) (11%) [15]
Nystagmus (5%) [2]
Vision blurred (8%) [4]

Respiratory
Nasopharyngitis [3]
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [10]

LACTOBACILLUS

Family: Lactobacillaceae
Scientific names: *Lactobacillus acidophilus, Lactobacillus amylovorus, Lactobacillus brevis, Lactobacillus bulgaricus, Lactobacillus casei, Lactobacillus crispatus, Lactobacillus delbrueckii, Lactobacillus fermentum, Lactobacillus gallinarum, Lactobacillus johnsonii, Lactobacillus paracasei, Lactobacillus plantarum, Lactobacillus reuteri, Lactobacillus rhamnosus, Lactobacillus salivarius, Lactobacillus sporogenes*
Indications: Oral: Acne, allergic rhinitis, atopic allergy, diarrhea, *Helicobacter pylori* infection, irritable bowel syndrome, rotavirus, ulcerative colitis, urinary tract infections. **Suppository**: vaginitis, urinary tract infections
Class: Immunomodulator, Probiotic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Note: Immune-deficient subjects or those with mucosal disease may experience serious adverse effects.

LACTULOSE

Trade names: Duphalac (Solvay), Lactugal (Intrapharm)
Indications: Constipation, hepatic encephalopathy, hepatic coma
Class: Laxative
Half-life: 1.7-2 hours
Clinically important, potentially hazardous interactions with: nonabsorbable antacids
Pregnancy category: B

LAMIVUDINE

Synonym: 3TC
Trade names: Combivir (ViiV), Epivir (ViiV), Epzicom (ViiV), Triumeq (ViiV), Trizivir (ViiV)
Indications: HIV progression
Class: Antiretroviral, Nucleoside analog reverse transcriptase inhibitor
Half-life: 5–7 hours
Clinically important, potentially hazardous interactions with: cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, emtricitabine, trimethoprim
Pregnancy category: C
Note: Combivir is lamivudine and zidovudine; Epzicom is lamivudine and abacavir; Triumeq is abacavir, dolutegravir and lamivudine; Trizivir is lamivudine, abacavir and zidovudine.

Skin
Angioedema [2]
Exanthems [2]
Hypersensitivity [4]
Jaundice [2]
Pigmentation [2]
Pruritus (itching) [3]
Rash (9%) [10]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]

Hair
Alopecia / hair loss [3]

Central Nervous System
Abnormal dreams [2]
Chills (<10%)
Headache [6]
Insomnia [3]
Neurotoxicity [2]
Paresthesias (>10%)
Peripheral neuropathy [3]
Vertigo / dizziness [4]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [3]

Gastrointestinal/Hepatic
Abdominal pain [4]
Diarrhea [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [7]
Pancreatitis / acute pancreatitis [4]
Vomiting [2]

Hematologic
Anemia [2]
Pure red cell aplasia [3]

Neuromuscular/Skeletal
Asthenia / fatigue [5]
Myalgia/Myopathy (8%)
Rhabdomyolysis [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Upper respiratory tract infection [3]

Other
Adverse effects / adverse reactions [10]

LAMOTRIGINE

Trade name: Lamictal (GSK)
Indications: Epilepsy
Class: Anticonvulsant, Antiepileptic, Mood stabilizer
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: cenobamate, eslicarbazepine, lacosamide, oral contraceptives, rufinamide
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Warning: SERIOUS SKIN RASHES

Skin
Angioedema (<10%)
DRESS syndrome [36]
Erythema (<10%) [2]
Erythema multiforme [4]
Exanthems (<10%) [19]
Hot flashes / hot flushes (<10%)
Hypersensitivity (<10%) [30]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Lupus syndrome / drug-induced lupus (DIL) [2]
Photosensitivity [2]
Pruritus (itching) (3%) [3]
Rash (10–20%) [55]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<10%) [86]

Hair
Alopecia / hair loss [2]

Mucosal
Xerostomia (dry mouth) (6%)
Cardiovascular
Brugada syndrome [4]
Central Nervous System
Agitation [2]
Aseptic meningitis [4]
Fever (pyrexia) (includes hyperpyrexia) [2]
Hallucinations [3]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache [7]
Insomnia (5–10%)
Mania [4]
Nervousness [2]
Neuroleptic malignant syndrome [2]
Pain (5%)
Seizures [9]
Somnolence (drowsiness) (9%) [8]
Suicidal ideation [2]
Tic disorder [3]
Tremor [5]
Vertigo / dizziness [9]
Endocrine/Metabolic
SIADH [2]
Gastrointestinal/Hepatic
Abdominal pain (6%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea [4]
Genitourinary
Urinary frequency (<5%)
Vaginitis (includes vulvitis) (4%)
Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [3]
Hemophagocytic lymphohistiocytosis / hemophagocytic syndrome [3]
Neuromuscular/Skeletal
Asthenia / fatigue (8%) [4]
Ataxia (2–5%) [3]
Rhabdomyolysis [3]
Ocular
Abnormal vision (2–5%)
Diplopia (double vision) [5]
Nystagmus (2–5%)
Ocular adverse effect [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Respiratory
Cough (5%)
Influenza- ('flu)-like syndrome (7%)
Pharyngitis (sore throat) (5%)
Rhinitis (7%)
Other
Adverse effects / adverse reactions [7]
Allergic reactions [2]
Death [7]
Multiorgan failure [2]
Side effects [2]
Teratogenicity [6]

LANREOTIDE

Trade names: Somatuline Autogel (Ipsen), Somatuline Depot (Ipsen), Somatuline LA (Ipsen)
Indications: Acromegaly, carcinoid syndrome, thyrotrophic adenoma
Class: Somatostatin analog
Half-life: 2 hours (immediate release) 5 days (sustained release).
Clinically important, potentially hazardous interactions with: antidiabetics, bromocriptine, cyclosporine, insulin, metformin, repaglinide, sulfonylureas
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Hair
Alopecia / hair loss [2]
Cardiovascular
Bradycardia / sinus bradycardia (5–18%)
Hypertension (5%)
Central Nervous System
Headache (7%)
Pain (7%)
Endocrine/Metabolic
Diabetes mellitus (7%)
Hyperglycemia (includes glucose increased) (7%)
Hypoglycemia (see also insulin autoimmune syndrome) (7%)
Weight loss (5–11%)
Gastrointestinal/Hepatic
Abdominal pain (7–19%) [9]
Cholelithiasis (gallstones in the gallbladder) (2–17%) [2]
Constipation (8%)
Diarrhea (31–65%) [7]
Flatulence (6–14%) [4]
Loose stools / soft feces (6%)
Nausea (11%) [3]
Steatorrhea (fatty stool) [2]
Vomiting (7%)
Hematologic
Anemia (5–14%)
Local
Injection-site induration [3]
Injection-site pain (4%) [4]
Injection-site reaction (6–22%) [3]
Neuromuscular/Skeletal
Arthralgia (7%) [2]
Asthenia / fatigue [2]
Other
Adverse effects / adverse reactions [2]

LANSOPRAZOLE

Trade name: Prevacid (TAP)
Indications: Active duodenal ulcer
Class: Proton pump inhibitor (PPI)
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: bosutinib, clopidogrel, delavirdine, emtricitabine/rilpivirine/tenofovir alafenamide, emtricitabine/rilpivirine/tenofovir alafenamide, eucalyptus, infigratinib, neratinib, prednisone, rilpivirine, sucralfate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [7]
Erythema multiforme [2]
Facial edema [2]
Hypersensitivity [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Peripheral edema (see also edema) [2]
Pruritus (itching) (3–10%)
Rash (3–10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
Urticaria / hives [3]
Mucosal
Stomatitis (oral mucositis) [2]
Central Nervous System
Dysgeusia (taste perversion) [3]
Headache (3%) [4]
Vertigo / dizziness [2]
Endocrine/Metabolic
Gynecomastia [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Colitis [2]
Constipation [2]
Diarrhea (<5%) [6]
Hepatitis [2]
Nausea [2]
Hematologic
Thrombocytopenia [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Other
Death [2]

LANTHANUM

Trade name: Fosrenol (Shire)
Indications: Hyperphosphatemia in end-stage renal disease
Class: Chelator
Half-life: 53 hours
Clinically important, potentially hazardous interactions with: chloroquine, ciprofloxacin, hydroxychloroquine, ketoconazole, levofloxacin, levothyroxine, moxifloxacin, norfloxacin, ofloxacin, quinolones
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with bowel obstruction, ileus, and/or fecal impaction.

Central Nervous System
Headache (21%)
Gastrointestinal/Hepatic
Abdominal pain (5%) [2]
Constipation [2]
Gastrointestinal disorder / discomfort [2]
Nausea (11%) [3]
Vomiting (9%)

LAPATINIB

Trade name: Tykerb (Novartis)
Indications: Breast cancer
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Epidermal growth factor receptor (EGFR) inhibitor / antagonist, HER2/neu receptor antagonist (HER2 receptor antagonist), Tyrosine kinase inhibitor
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: alfuzosin, artemether/lumefantrine, atazanavir, carbamazepine, chloroquine, ciprofloxacin, clarithromycin, clozapine, colchicine, conivaptan, CYP2C8 substrates, CYP3A4 inhibitors or inducers, dabigatran, deferasirox, dexamethasone, digoxin, docetaxel, dronedarone, efavirenz, eplerenone, everolimus, fentanyl, food, gadobutrol, grapefruit juice, histamine H_2-antagonists, indinavir, irinotecan, itraconazole, ketoconazole, nefazodone, nelfinavir, nilotinib, omeprazole, P-glycoprotein inducers, paclitaxel, pantoprazole, pazopanib, phenobarbital, phenytoin, pimecrolimus, pimozide, posaconazole, proton pump inhibitors, QT prolonging agents, quinine, repaglinide, rifabutin, rifampin, rifapentin, ritonavir, rivaroxaban, safinamide, salmeterol, saquinavir, saxagliptin, silodosin, St John's wort, telithromycin, tetrabenazine, thioridazine, tolvaptan, topotecan, voriconazole, ziprasidone
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Lapitinib is used in conjunction with capecitabine.
Warning: HEPATOXICITY

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (90%) [4]
- Cutaneous toxicity / skin toxicity [7]
- Depigmentation (21%)
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) (53%) [10]
- Inflammation (15%)
- Pruritus (itching) [3]
- Rash (28%) [26]
- Xerosis / xeroderma (see also dry skin) (10%)

Hair
- Alopecia / hair loss [2]

Nails
- Paronychia [4]

Mucosal
- Mucosal inflammation (15%)
- Mucositis [2]
- Stomatitis (oral mucositis) (14%)

Central Nervous System
- Anorexia (24%) [2]
- Insomnia (10%)

Endocrine/Metabolic
- ALT increased (37%) [5]
- AST increased (49%) [4]
- Hyperbilirubinemia [3]

Gastrointestinal/Hepatic
- Abdominal pain (15%)
- Diarrhea (65%) [45]
- Dyspepsia / functional dyspepsia / gastroparesis (11%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [11]
- Nausea (44%) [10]
- Vomiting (26%) [7]

Hematologic
- Anemia [5]
- Febrile neutropenia [2]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
- Neutropenia (neutrophils decreased) [8]

Neuromuscular/Skeletal
- Asthenia / fatigue (12%) [19]
- Back pain (11%)
- Bone or joint pain [2]
- Pain in extremities (12%)

Otic
- Tinnitus (14%)

Respiratory
- Dyspnea / shortness of breath (12%) [2]

Other
- Adverse effects / adverse reactions [11]
- Death [2]

LARONIDASE

Trade name: Aldurazyme (Genzyme)
Indications: Mucopolysaccharidosis I
Class: Enzyme
Half-life: 1.5–3.6 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

Skin
- Facial edema (9%)
- Flushing / rubefaction (23%)
- Peripheral edema (see also edema) (9%)
- Rash (36%)

Cardiovascular
- Chest pain (9%)

Central Nervous System
- Paresthesias (14%)

Local
- Application-site pain (9%)
- Application-site reactions (18%)

LATANOPROST

Trade name: Xalatan (Pfizer)
Indications: Reduction of elevated intraocular pressure in open angle glaucoma or ocular hypertension
Class: Prostaglandin analog
Half-life: 17 minutes
Clinically important, potentially hazardous interactions with: thimerosal
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Pigmentation [2]
- Pruritus (itching) [2]
- Rash (<10%)

Cardiovascular
- Angina (<10%)
- Chest pain (<10%)

Central Nervous System
- Headache [4]
- Vertigo / dizziness [2]

Neuromuscular/Skeletal
- Arthralgia (<10%)
- Back pain (<10%)
- Myalgia/Myopathy (<10%)

Ocular
- Blepharitis [3]
- Conjunctival hyperemia / conjunctival injection [20]
- Deepening of upper lid sulcus [5]
- Eyelashes – hypertrichosis [15]
- Eyelashes – pigmentation [9]
- Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) (<4%) [2]
- Eyelid erythema (<4%)
- Eyelid pain (<10%)
- Eyelid pigmentation [4]
- Eyelid pruritus (2%)
- Foreign body sensation [6]
- Intraocular pressure increased [2]
- Iris pigmentation [7]
- Keratitis [3]
- Macular edema [7]
- Ocular adverse effect [7]
- Ocular hyperemia [5]
- Ocular itching / ocular pruritus [8]
- Ocular pigmentation (5%) [13]
- Periorbitopathy / periorbital syndrome [2]
- Uveitis / anterior uveitis / posterior uveitis / panuveitis [5]
- Vision blurred [4]
- Xerophthalmia (dry eyes) (<10%)

Respiratory
- Influenza- ('flu)-like syndrome (<10%)
- Upper respiratory tract infection (<10%)

Other
- Allergic reactions (<10%)

LAVENDER

Family: Lamiaceae
Scientific names: *Lavandula angustifolia, Lavandula dentata, Lavandula spica, Lavandula vera*
Indications: Restlessness, insomnia, loss of appetite, flatulence, colic, giddiness, nervous headache, migraine, toothache, sprains, neuralgia, rheumatism, acne, pimples, nausea, vomiting. Flavoring, fragrance, insect repellent
Class: Anxiolytic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
- Dermatitis [4]

Endocrine/Metabolic
- Gynecomastia [2]

LEDIPASVIR & SOFOSBUVIR

Trade name: Harvoni (Gilead)
Indications: Hepatitis C
Class: Covid-19 putative drug, Hepatitis C virus NS5A inhibitor (ledipasvir), Hepatitis C virus nucleotide analog NS5B polymerase inhibitor (sofosbuvir)
Half-life: 47 hours (ledipasvir); <27 hours (sofosbuvir)
Clinically important, potentially hazardous interactions with: amiodarone, carbamazepine, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, doravirine/lamiduvine/tenofovir disoproxil, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, ritonavir, rosuvastatin, simeprevir, St John's wort, tenofovir disoproxil
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk; contra-indicated in pregnancy when given with ribavirin)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: See also separate entry for sofosbuvir.

Skin
- Pruritus (itching) [7]
- Rash [6]

Cardiovascular
- Bradycardia / sinus bradycardia [3]

Central Nervous System
- Headache (11–17%) [41]
- Insomnia (3–6%) [14]
- Irritability [5]
- Vertigo / dizziness [3]

Endocrine/Metabolic
- Hypophosphatemia [2]

Gastrointestinal/Hepatic
- Constipation [2]
- Diarrhea (3–7%) [14]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea (6–9%) [22]

Hematologic
- Anemia [8]

Neuromuscular/Skeletal
- Arthralgia [3]
- Asthenia / fatigue (7–18%) [39]
- Muscle spasm [2]
- Myalgia/Myopathy [3]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

Respiratory
- Cough [4]
- Dyspnea / shortness of breath [3]
- Nasopharyngitis [3]
- Upper respiratory tract infection [7]

Other
- Adverse effects / adverse reactions [8]
- Infection [2]

LEFLUNOMIDE

Trade name: Arava (Sanofi-Aventis)
Indications: Rheumatoid arthritis
Class: Disease-modifying antirheumatic drug (DMARD), Tyrosine kinase inhibitor
Half-life: 14–15 days
Clinically important, potentially hazardous interactions with: alefacept, azacitidine, BCG vaccine, betamethasone, cabazitaxel, carvedilol, cholestyramine(unless drug elimination required), CYP2C9 substrates, denileukin, denosumab, docetaxel, echinacea, fingolimod, gefitinib, immunosuppressants, lenalidomide, live vaccines, methotrexate, natalizumab, oxaliplatin, pazopanib, pemetrexed, phenytoin, pimecrolimus, pralatrexate, pralatrexate, rifampin, tacrolimus, temsirolimus, teriflunomide, tolbutamide, trastuzumab, triamcinolone, typhoid vaccine, vitamin K antagonists, warfarin, yellow fever vaccine
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (<10%)
- Bullous dermatosis [3]
- Dermatitis (<10%)
- Diaphoresis (see also hyperhidrosis) (<10%)
- DRESS syndrome [5]
- Eczema / eczematous reaction / eczematous eruption (2%)
- Lichenoid eruption / lichenoid reaction [2]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [9]
- Nodular eruption (<10%)
- Peripheral edema (see also edema) (<10%)
- Pigmentation (<10%)
- Pruritus (itching) (4%) [3]
- Purpura (<10%)
- Rash (10%) [17]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
- Ulcerations (<10%) [3]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) (<10%) [4]
- Xerosis / xeroderma (see also dry skin) (2%)

Hair
- Alopecia / hair loss (10%) [21]
- Alopecia areata [3]
- Hair pigmentation (<10%)

Nails
- Nail changes (<10%)

Mucosal
- Gingivitis (<10%)
- Oral candidiasis (3%)
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (3%)
- Stomatitis (oral mucositis) (3%)
- Xerostomia (dry mouth) (<10%)

Cardiovascular
- Hypertension (10%) [7]

Central Nervous System
- Anorexia (3%)
- Dysgeusia (taste perversion) (<10%)
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Headache (7%) [2]
- Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
- Neurotoxicity [2]
- Pain (2%)
- Paresthesias (2%)
- Peripheral neuropathy [3]
- Vertigo / dizziness (4%)

Endocrine/Metabolic
- ALT increased [3]
- Weight loss [3]

Gastrointestinal/Hepatic
- Abdominal pain (6%)
- Diarrhea (17%) [10]
- Dyspepsia / functional dyspepsia / gastroparesis (5%) [4]
- Gastroenteritis (3%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [20]
- Nausea (9%) [6]
- Vomiting (3%)

Genitourinary
- Urinary tract infection (5%)

Hematologic
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
- Neutropenia (neutrophils decreased) [2]
- Pancytopenia (includes bicytopenia) [2]

Neuromuscular/Skeletal
- Asthenia / fatigue (3%)
- Back pain (5%)
- Myalgia/Myopathy (<10%)
- Rhabdomyolysis [2]
- Synovial effusions (2%)
- Tendinopathy/Tendon rupture (<10%)

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
- Bronchitis (7%)
- Cough (increased) (3%)
- Influenza- ('flu)-like syndrome (2%)
- Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [2]
- Pharyngitis (sore throat) (3%)
- Pneumonia (2%)
- Pneumonitis [3]
- Pulmonary hypertension [2]
- Pulmonary toxicity [4]
- Sinusitis (2%)
- Upper respiratory tract infection (4–15%)

Other
- Adverse effects / adverse reactions [7]
- Allergic reactions (2%) [6]
- Death [2]
- Infection (4%) [5]
- Tooth disorder (<10%)

LEMON BALM

Family: Labiatae
Scientific name: *Melissa officinalis*
Indications: Oral: Alzheimer's disease, anxiety, attention deficit disorder, colic, dementia, depression, hyperactivity, hyperthyroidism, insomnia, menstrual cramps, fevers, headache. **Topical:** genital herpes, herpes simplex, insect bites, insect repellent, muscle tension, skin irritation
Class: Carminative, Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Other
Adverse effects / adverse reactions [2]

LENALIDOMIDE

Trade name: Revlimid (Celgene)
Indications: Transfusion-dependent anemia due to myeloplastic syndromes, multiple myeloma (in combination with dexamethasone)
Class: Biologic, Immunomodulator, Thalidomide analog
Half-life: 3–5 hours
Clinically important, potentially hazardous interactions with: abatacept, anakinra, canakinumab, certolizumab, denosumab, dexamethasone, digoxin, erythropoietin stimulating agents, estrogen containing therapies, leflunomide, natalizumab, pimecrolimus, rilonacept, sipuleucel-T, tacrolimus, trastuzumab, vaccines
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: FETAL RISK, HEMATOLOGIC TOXICITY, and DEEP VEIN THOMBOSIS AND PULMONARY EMBOLISM

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (5–8%)
Cellulitis (5%)
Cutaneous toxicity / skin toxicity [7]
DRESS syndrome [4]
Edema / fluid retention (see also peripheral edema) (10%)
Erythema (5%)
Exanthems [3]
Folliculitis [2]
Graft-versus-host reaction [2]
Hyperhidrosis (see also diaphoresis) (7%) [2]
Peripheral edema (see also edema) (26%) [5]
Pigmentation [2]
Pruritus (itching) (42%) [3]
Pyoderma gangrenosum [2]
Rash (36%) [21]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Sweet's syndrome [3]
Tumors [5]
Xerosis / xeroderma (see also dry skin) (14%) [2]

Mucosal
Epistaxis (nosebleed) (15%)
Xerostomia (dry mouth) (7%)

Cardiovascular
Cardiac failure [2]
Cardiotoxicity [2]
Chest pain (5%)
Hypertension (6%) [2]
Palpitation (5%)
Thromboembolism [6]
Venous thromboembolism [13]

Central Nervous System
Anorexia (10%)
Depression (5%)
Dysgeusia (taste perversion) (6%)
Fever (pyrexia) (includes hyperpyrexia) (21%) [5]
Headache (20%)
Hypoesthesia (numbness) (7%)
Insomnia (10%) [4]
Neurotoxicity (7%) [8]
Pain (7%)
Peripheral neuropathy (5%) [17]
Rigors (6%)
Somnolence (drowsiness) [2]
Tremor (21%)
Vertigo / dizziness (20%)

Endocrine/Metabolic
ALT increased (8%) [3]
Appetite decreased (7%)
AST increased [2]
Hyperglycemia (includes glucose increased) [3]
Hypocalcemia (9%)
Hypokalemia (11%) [5]
Hypomagnesemia (6%)
Hyponatremia [2]
Hypophosphatemia [3]
Hypothyroidism (7%)
Weight loss (20%)

Gastrointestinal/Hepatic
Abdominal pain (8–12%)
Constipation (24%) [11]
Diarrhea (49%) [20]
Gastrointestinal disorder / discomfort [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Loose stools / soft feces (6%)
Nausea (24%) [10]
Vomiting (10%) [6]

Genitourinary
Urinary tract infection (11%)

Hematologic
Anemia (31%) [32]
Cytopenia [3]
Febrile neutropenia (5%) [9]
Hemotoxicity [13]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (8%) [14]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (5%) [9]
Myelosuppression / bone marrow suppression / myelotoxicity [6]
Neutropenia (neutrophils decreased) (59%) [67]
Thrombocytopenia (62%) [58]
Thrombosis [4]

Local
Infusion-related reactions [2]
Infusion-site reactions [2]
Injection-site reaction [2]

Neuromuscular/Skeletal
Arthralgia (21%) [4]
Asthenia / fatigue (15–31%) [38]
Back pain (21%) [4]
Bone or joint pain (14%)
Cramps (33%)
Muscle spasm [5]
Myalgia/Myopathy (18%) [3]
Osteonecrosis / avascular necrosis [2]
Pain in extremities (12%)

Ocular
Vision blurred (17%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Tumor lysis syndrome (TLS) [3]

Respiratory
Acute respiratory distress syndrome [2]
Alveolar hemorrhage (pulmonary) [2]
Bronchitis (11%)
Cough (20%) [6]
Dyspnea / shortness of breath (7–17%) [4]
Nasopharyngitis (23%)
Pharyngitis (sore throat) (16%)
Pneumonia (12%) [10]
Pneumonitis [7]
Pulmonary toxicity [3]
Rhinitis (7%)
Sinusitis (8%)
Upper respiratory tract infection (15%) [4]

Other
Adverse effects / adverse reactions [14]
Cancer [2]
Death [4]
Infection [22]
Malignancies (secondary) [6]
Teratogenicity [2]

LENVATINIB

Trade name: Lenvima (Eisai)
Indications: Differentiated thyroid cancer, renal cell cancer (in combination with everolimus)
Class: Angiogenesis inhibitor / antiangiogenic agent, Tyrosine kinase inhibitor, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 28 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Cutaneous toxicity / skin toxicity [3]
Exanthems (21%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (32%) [14]
Hyperkeratosis (7%)
Peripheral edema (see also edema) (21%) [3]
Rash (21%)

Hair
Alopecia / hair loss (12%)

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (41%)
Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis) (25%)
Epistaxis (nosebleed) (12%)
Gingivitis (10%)
Glossitis (inflammation of the tongue) (41%)
Mucosal inflammation (41%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (41%)
Oropharyngeal pain (25%)
Parotitis (10%)
Stomatitis (oral mucositis) (41%) [5]
Xerostomia (dry mouth) (17%)

Cardiovascular
Cardiotoxicity [2]
Hypertension (73%) [38]
Hypotension (9%)
QT interval prolonged / QT prolongation (9%)

Central Nervous System
Anorexia [7]
Dysgeusia (taste perversion) (18%)
Headache (38%) [4]
Insomnia (12%)
Vertigo / dizziness (15%)

Endocrine/Metabolic
ALP increased (>5%)
ALT increased (4%) [2]
Appetite decreased (54%) [13]
AST increased (5%) [2]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (3%)
Dehydration (9%)
Hyperbilirubinemia (>5%) [2]
Hypercalcemia (>5%)
Hypercholesterolemia (>5%)
Hyperkalemia (>5%)
Hypoalbuminemia / albumin decreased (>5%)
Hypocalcemia (9%)
Hypoglycemia (see also insulin autoimmune syndrome) (>5%)
Hypokalemia (6%)
Hypomagnesemia (>5%)
Hypothyroidism [5]
Weight loss (51%) [9]

Gastrointestinal/Hepatic
Abdominal pain (31%) [3]
Constipation (29%) [3]
Diarrhea (67%) [21]
Dyspepsia / functional dyspepsia / gastroparesis (13%)
Nausea (47%) [7]
Vomiting (36%) [5]

Genitourinary
Hematuria [2]
Urinary tract infection (11%)

Hematologic
Anemia [2]
Hemorrhage [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [2]
Platelets decreased (2%)
Thrombocytopenia [5]

Neuromuscular/Skeletal
Arthralgia (62%)
Asthenia / fatigue (67%) [22]
Back pain (62%)
Bone or joint pain (62%)
Myalgia/Myopathy (62%)
Pain in extremities (62%)

Renal
Nephrotic syndrome [2]
Proteinuria (34%) [23]
Renal failure [3]

Respiratory
Cough (24%)
Dysphonia (includes voice disorders / voice changes) (31%) [2]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [4]
Nasopharyngitis [2]

Other
Adverse effects / adverse reactions [5]
Death [2]
Tooth disorder (10%)

LEPIRUDIN

Trade name: Refludan (ZLB Behring)
Indications: Anticoagulation in heparin-induced thrombocytopenia (HIT) and associated thromboembolic disease
Class: Anticoagulant, Thrombin inhibitor
Half-life: 1.3 hours
Clinically important, potentially hazardous interactions with: abciximab, acenocoumarol, clopidogrel, eptifibatide, streptokinase, thrombolytics, ticlopidine, tirofiban, vitamin K antagonists, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with a generalized hemostatic abnormality such as hemophilia, Christmas disease, idiopathic thrombocytopenic purpura and in patients with active bleeding from a local lesion such as acute ulcer or ulcerating carcinoma; in patients who have had recent cranial, spinal, eye or ear surgery or trauma; hypersensitivity to hirudins; shock.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]

Hematologic
Bleeding [4]

Respiratory
Bronchospasm (>10%)
Cough (>10%)
Dyspnea / shortness of breath (>10%)
Stridor (>10%)

Other
Death [3]

LESINURAD

Trade names: Duzallo (AstraZeneca), Zurampic (AstraZeneca)
Indications: Gout-associated hyperuricemia (in combination with a xanthine oxidase inhibitor)
Class: URAT1 inhibitor, Uricosuric
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: amiodarone, carbamazepine, CYP2C9 inducers or inhibitors, CYP3A substrates, fluconazole, rifampin, valproic acid
Pregnancy category: N/A (No available data)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with severe renal impairment (including end stage renal disease, kidney transplant recipients or patients on dialysis), tumor lysis syndrome or Lesch-Nylan syndrome. Duzallo is lesinurad and allopurinol (see separate entry).
Warning: RISK OF ACUTE RENAL FAILURE, MORE COMMON WHEN USED WITHOUT A XANTHINE OXIDASE INHIBITOR

Cardiovascular
Cardiotoxicity (<2%)

Central Nervous System
Headache (5%) [2]
Vertigo / dizziness [2]

Endocrine/Metabolic
Serum creatinine increased (4–8%) [3]

Gastrointestinal/Hepatic
Diarrhea [2]
Gastroesophageal reflux (3%)

Neuromuscular/Skeletal
Back pain [2]

Renal
Nephrolithiasis (formation of a kidney stone) (<3%)
Renal failure (<4%)

Respiratory
Influenza (5%)
Nasopharyngitis [2]

LETERMOVIR

Trade name: Prevymis (Merck Sharpe & Dohme)
Indications: Prophylaxis of cytomegalovirus (CMV) infection and disease in adult CMV-seropositive recipients of an allogeneic hematopoietic stem cell transplant
Class: Antiviral, Viral terminase complex inhibitor
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: alfentanil, amiodarone, atorvastatin, cyclosporine, dihydroergotamine, ergotamine, fentanyl, fluvastatin, glyburide, lovastatin, midazolam, omeprazole, pantoprazole, phenytoin, pimozide, pitavastatin, pravastatin, quinidine, repaglinide, rifampin, rosiglitazone, rosuvastatin, simvastatin, sirolimus, tacrolimus, voriconazole, warfarin
Pregnancy category: N/A (No adequate human data available)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Peripheral edema (see also edema) (14%)

Cardiovascular
Atrial fibrillation (3%)
Tachycardia (4%)

Central Nervous System
Headache (14%)

Endocrine/Metabolic
Serum creatinine increased (2–17%) [3]

Gastrointestinal/Hepatic
Abdominal pain (12%)
Diarrhea (26%)
Gastroenteritis [3]
Nausea (27%) [2]
Vomiting (19%) [2]

Hematologic
Anemia (2–41%)
Neutropenia (neutrophils decreased) (4–19%)
Thrombocytopenia (17–27%)

Neuromuscular/Skeletal
Asthenia / fatigue (13%)

Respiratory
Cough (14%)
Dyspnea / shortness of breath [3]
Nasopharyngitis [3]

LETROZOLE

Trade name: Femara (Novartis)
Indications: Breast cancer
Class: Aromatase inhibitor
Half-life: ~2 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Exanthems (5%)
- Hot flashes / hot flushes (6%) [9]
- Hyperhidrosis (see also diaphoresis) (<5%)
- Leukocytoclastic vasculitis (angiitis) [2]
- Pruritus (itching) (2%) [2]
- Psoriasis (5%)
- Rash (<10%) [8]
- Vesiculation (5%)

Hair
- Alopecia / hair loss (<5%) [6]

Mucosal
- Stomatitis (oral mucositis) [4]
- Xerostomia (dry mouth) [2]

Cardiovascular
- Cardiac failure [2]
- Hypertension [5]
- Myocardial toxicity [2]

Central Nervous System
- Anorexia [3]
- Depression [3]
- Fever (pyrexia) (includes hyperpyrexia) [3]
- Headache [5]
- Insomnia [2]
- Mood changes [2]
- Vertigo / dizziness [2]

Endocrine/Metabolic
- ALT increased [3]
- AST increased [4]
- Hypercholesterolemia [3]
- Hyperglycemia (includes glucose increased) [5]
- Libido decreased [2]

Gastrointestinal/Hepatic
- Constipation [3]
- Diarrhea [10]
- Nausea [12]
- Vomiting [6]

Genitourinary
- Vaginal dryness [4]

Hematologic
- Anemia [5]
- Febrile neutropenia [3]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [6]
- Neutropenia (neutrophils decreased) [12]
- Thrombocytopenia [3]

Neuromuscular/Skeletal
- Arthralgia [13]
- Asthenia / fatigue [15]
- Back pain [5]
- Bone or joint pain [4]
- Myalgia/Myopathy [7]
- Osteoporosis [7]

Respiratory
- Cough [2]
- Dyspnea / shortness of breath [3]

Other
- Adverse effects / adverse reactions [2]
- Infection [4]

LEUCOVORIN

Synonyms: citrovorum factor; folinic acid
Indications: Overdose of methotrexate, in combination with fluorouracil in the palliative treatment of patients with colorectal cancer. Advanced pancreatic cancer (in combination with oxaliplatin/irinotecan/fluorouracil (FOLFIRINOX or FOLFOXIRI)). Used in combination with fluorouracil and irinotecan (FOLFIRI) for treatment of advanced-stage and metastatic colorectal cancer. Used in combination with fluorouracil and oxaliplatin (FOLFOX, mFOLFOX6) for treatment of colorectal cancer
Class: Antidote, Chemotherapy modulating agent, Folate analogue
Half-life: 15 minutes
Clinically important, potentially hazardous interactions with: capecitabine, glucarpidase, trimethoprim
Pregnancy category: C

Skin
- Cutaneous toxicity / skin toxicity [3]
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) [3]
- Rash [6]

Hair
- Alopecia / hair loss [2]

Mucosal
- Mucositis [8]
- Stomatitis (oral mucositis) [7]

Cardiovascular
- Hypertension [8]

Central Nervous System
- Anorexia [8]
- Neurotoxicity [5]
- Peripheral neuropathy [5]

Endocrine/Metabolic
- ALP increased [2]
- Hyperammonemia [2]

Gastrointestinal/Hepatic
- Abdominal pain [2]
- Constipation [2]
- Diarrhea [31]
- Hepatic failure [2]
- Nausea [18]
- Vomiting [14]

Hematologic
- Anemia [10]
- Febrile neutropenia [9]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [7]
- Neutropenia (neutrophils decreased) [36]
- Thrombocytopenia [6]

Neuromuscular/Skeletal
- Asthenia / fatigue [13]

Renal
- Proteinuria [4]

Respiratory
- Pneumonia [2]

Other
- Adverse effects / adverse reactions [3]
- Death [3]
- Infection [3]

LEUPROLIDE

Synonym: leuprorelin
Trade names: Eligard (Sanofi-Aventis), Lupron (TAP), Lupron Depot-Ped (AbbVie), Viadur (Bayer)
Indications: Prostate carcinoma, endometriosis
Class: Gonadotropin-releasing hormone (GnRH) agonist
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (<5%)
- Dermatitis (5%)
- Dermatitis herpetiformis [2]
- Edema / fluid retention (see also peripheral edema) (<10%)
- Flushing / rubefaction (61%) [3]
- Granulomas [2]
- Hot flashes / hot flushes (12%) [7]
- Peripheral edema (see also edema) (4–12%)
- Pigmentation (<5%)
- Pruritus (itching) (<5%)
- Rash (<10%)
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
- Xerosis / xeroderma (see also dry skin) (<5%)

Hair
- Alopecia / hair loss (<5%)

Cardiovascular
- Thrombophlebitis (2%)

Central Nervous System
- Dysgeusia (taste perversion) (<5%)
- Paresthesias (<5%)

Endocrine/Metabolic
- Gynecomastia (7%)
- Mastodynia (7%)

Local
- Injection-site granuloma [6]
- Injection-site induration [2]
- Injection-site inflammation (2%)
- Injection-site pain [2]
- Injection-site reaction (24%)

Neuromuscular/Skeletal
- Myalgia/Myopathy [2]
- Osteoporosis [2]

Ocular
- Diplopia (double vision) [2]

LEVALBUTEROL

Trade name: Xopenex (Sepracor)
Indications: Bronchospasm
Class: Beta-2 adrenergic agonist, Bronchodilator
Half-life: 3.3–4.0 hours
Clinically important, potentially hazardous interactions with: alpha blockers, atomoxetine, beta blockers, betahistine, cannabinoids, epinephrine, iobenguane, loop diuretics, MAO inhibitors, sympathomimetics, tricyclic antidepressants
Pregnancy category: C

Skin
Diaphoresis (see also hyperhidrosis) (<2%)
Central Nervous System
Chills (<2%)
Hyperesthesia (<2%)
Pain (<3%)
Paresthesias (<2%)
Tremor (~7%)
Neuromuscular/Skeletal
Leg cramps (~3%)
Myalgia/Myopathy (<2%)
Ocular
Ocular itching / ocular pruritus (<2%)
Respiratory
Cough (<4%)
Influenza- ('flu)-like syndrome (<4%)

LEVAMISOLE

Trade name: Ergamisol (Janssen)
Indications: Susceptible helmintic organism infections, colorectal carcinoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Immunomodulator
Half-life: 2–6 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin
Pregnancy category: C
Note: Levamisole is a known contaminant of cocaine.
This drug has been withdrawn in Canada and the USA.

Skin
Cutaneous toxicity / skin toxicity [3]
Dermatitis (<10%)
Edema / fluid retention (see also peripheral edema) (<10%)
Exanthems (2–10%) [7]
Fixed eruption [2]
Lichenoid eruption / lichenoid reaction [3]
Necrosis (skin necrosis) [5]
Pruritus (itching) [5]
Purpura [7]
Pyoderma gangrenosum [3]
Rash [9]
Urticaria / hives [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [19]
Hair
Alopecia / hair loss (<10%)
Mucosal
Oral lesions (<10%) [5]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Stomatitis (oral mucositis) (<10%) [2]
Central Nervous System
Dysgeusia (taste perversion) (<10%) [2]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [19]
Paresthesias (<10%)
Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [7]
Neuromuscular/Skeletal
Arthralgia [2]
Myalgia/Myopathy (<10%)
Renal
Glomerulonephritis (includes membranous nephropathy) [2]
Other
Infection (<10%)
Side effects (<20%)

LEVETIRACETAM

Trade names: Elepsia XR (Sun Pharma), Keppra (UCB)
Indications: Partial onset seizures
Class: Anticonvulsant
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: carbamazepine, eslicarbazepine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
DRESS syndrome [7]
Erythema [2]
Erythema multiforme [2]
Rash [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Urticaria / hives [2]
Central Nervous System
Aggression (includes anger) [9]
Agitation [6]
Anorexia [3]
Behavioral disturbances / personality changes [8]
Compulsions / obsessive-compulsive symptoms [2]
Confusion [2]
Delirium [2]
Depression [9]
Encephalopathy (includes hepatic encephalopathy) [4]
Fever (pyrexia) (includes hyperpyrexia) [3]
Headache (25%) [13]
Irritability [12]
Nervousness [3]
Neurotoxicity [3]
Paresthesias (2%)
Psychosis [4]
Seizures [4]
Sleep-related disorder [2]
Somnolence (drowsiness) [20]
Suicidal ideation [4]
Vertigo / dizziness (9–18%) [23]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [3]
Libido decreased [2]
Weight gain [4]
Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea [4]
Vomiting [4]
Genitourinary
Sexual dysfunction [2]
Hematologic
Hemotoxicity [2]
Pancytopenia (includes bicytopenia) [4]
Thrombocytopenia [4]
Neuromuscular/Skeletal
Asthenia / fatigue (<22%) [21]
Osteoporosis [2]
Rhabdomyolysis [5]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]
Respiratory
Influenza [2]
Nasopharyngitis [5]
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [10]
Death [2]
Infection (13–26%) [7]

LEVOBUPIVACAINE

Trade name: Chirocaine (Purdue)
Indications: Regional anesthesia for surgery, postoperative pain management
Class: Anesthetic; local
Half-life: 1.3 hours
Clinically important, potentially hazardous interactions with: adenosine, dronedarone
Pregnancy category: B

Skin
Pruritus (itching) (4%)
Central Nervous System
Hyperesthesia (3%)
Pain (7–18%)
Paresthesias (2%)
Seizures [6]
Shivering [2]
Gastrointestinal/Hepatic
Nausea [2]
Vomiting [2]
Neuromuscular/Skeletal
Back pain (6%)

LEVOCETIRIZINE

Trade name: Xyzal (UCB Pharma)
Indications: Allergic rhinitis, chronic idiopathic urticaria
Class: Histamine H1 receptor antagonist
Half-life: 6–10 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Fixed eruption [3]
Mucosal
Xerostomia (dry mouth) (2–3%)
Central Nervous System
Headache [2]
Sedation [2]
Somnolence (drowsiness) (5–6%)
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Neuromuscular/Skeletal
Asthenia / fatigue (<4%)

Respiratory
Nasopharyngitis (4–6%)
Pharyngitis (sore throat) (<2%)

LEVODOPA

Synonyms: L-dopa; carbidopa
Trade names: Duopa (Abbvie), Rytary (Impax), Sinemet (Bristol-Myers Squibb), Stalevo (Orion)
Indications: Parkinsonism
Class: Dopamine precursor
Half-life: 1–3 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, acebutolol, alfuzosin, alpha blockers, amisulpride, ampicillin, angiotensin II receptor antagonists, antihypertensives, antimuscarinics, antipsychotics, baclofen, benzodiazepines, beta blockers, bupropion, calcium channel blockers, captopril, chloramphenicol, cholestyramine, cilazapril, clobazam, clonidine, darifenacin, diazoxide, diuretics, dopamine D_2 receptor antagonists, enalapril, erythromycin, fosinopril, hydralazine, irbesartan, iron salts, isoniazid, levomepromazine, linezolid, lisinopril, MAO inhibitors, memantine, methyldopa, metoclopramide, minoxidil, moclobemide, moxonidine, nitrates, olanzapine, olmesartan, oral iron, oxybutynin, paliperidone, papaverine, pericyazine, phenelzine, phenytoin, probenecid, pyridoxine, quetiapine, quinapril, ramipril, rifampin, risperidone, sapropterin, selegiline, sodium nitroprusside, sulpiride, tetrabenazine, tiotropium, trandolapril, tranylcypromine, tricyclic antidepressants, trospium, volatile liquid general anesthetics, ziprasidone, zuclopenthixol, zuclopenthixol acetate, zuclopenthixol decanoate, zuclopenthixol dihydrochloride
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Levodopa is always used in conjuntion with carbidopa. Stalevo is levodopa, carbidopa and entacapone. Contra-indicated in patients with narrow-angle glaucoma or those with a history of melanoma.

Skin
Chromhidrosis (<10%)
Edema / fluid retention (see also peripheral edema) [2]
Exanthems [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Melanoma [28]
Rash [3]
Hair
Hair pigmentation [2]
Nails
Nail growth [2]
Mucosal
Xerostomia (dry mouth) (<10%) [2]
Cardiovascular
Hypotension [2]
Orthostatic hypotension [4]
Central Nervous System
Agitation [2]
Anosmia (smell loss) / smell disorder (see also hyposmia) [2]
Anxiety [2]
Confusion [3]
Delusions [2]
Depression [3]
Dyskinesia [52]
Gait instability / postural instability [4]
Hallucinations [12]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Insomnia [6]
Narcolepsy [2]
Neuroleptic malignant syndrome [7]
Neurotoxicity [3]
Psychosis [6]
Restless legs syndrome [5]
Somnolence (drowsiness) [5]
Suicidal ideation [2]
Tardive syndrome / tardive dyskinesia [2]
Vertigo / dizziness [5]
Endocrine/Metabolic
Hyponatremia [3]
Weight loss [3]
Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [5]
Diarrhea [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [11]
Vomiting [5]
Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [2]
Back pain [2]
Ocular
Ocular adverse effect [2]
Other
Adverse effects / adverse reactions [4]
Hiccups / singultus [3]

LEVOFLOXACIN

Trade names: Iquix (Santen), Levaquin (Ortho-McNeil), Quixin (Johnson & Johnson), Tavanic (Sanofi-Aventis)
Indications: Various infections caused by susceptible organisms, inhalational anthrax (post exposure)
Class: Antibiotic, Antibiotic; fluoroquinolone, Antibiotic; quinolone, Antimicrobial, Drug-resistant antituberculosis agent
Half-life: 6–8 hours
Clinically important, potentially hazardous interactions with: alfuzosin, aminophylline, amiodarone, antacids, antidiabetics, arsenic, artemether/lumefantrine, BCG vaccine, chloroquine, ciprofloxacin, corticosteroids, cyclosporine, didanosine, dronedarone, gadobutrol, insulin, lanthanum, mycophenolate, nilotinib, NSAIDs, oral iron, oral typhoid vaccine, phenindione, pimozide, probenecid, QT prolonging agents, quinine, strontium ranelate, sucralfate, sulfonylureas, tetrabenazine, thioridazine, vitamin K antagonists, warfarin, zinc, ziprasidone, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants. Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis. Levofloxacin is the levo- or (S)-isomer of the racemic form, Ofloxacin. See Ofloxacin for the adverse reactions of the racemic form.
Warning: SERIOUS ADVERSE REACTIONS INCLUDING TENDINITIS, TENDON RUPTURE, PERIPHERAL NEUROPATHY, CENTRIAL NERVOUS SYSTEM EFFECTS and EXACERBATION OF MYASTHENIA GRAVIS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [6]
Erythema [2]
Erythema nodosum (<3%)
Exanthems [2]
Hypersensitivity [5]
Photosensitivity [3]
Phototoxicity [5]
Pruritus (itching) (2%) [3]
Purpura [3]
Radiation recall dermatitis [2]
Rash (2%) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]
Cardiovascular
Myocardial infarction [2]
Palpitation [2]
QT interval prolonged / QT prolongation [5]
Torsades de pointes [6]
Central Nervous System
Anorexia [2]
Anxiety [2]
Delirium [6]
Depression [2]
Dysgeusia (taste perversion) [2]
Hallucinations [2]
Headache (6%) [6]
Insomnia (4%) [3]
Peripheral neuropathy [3]
Psychosis [4]
Seizures [9]
Vertigo / dizziness [6]
Endocrine/Metabolic
ALT increased [3]
AST increased [3]
Hypoglycemia (see also insulin autoimmune syndrome) [4]
Gastrointestinal/Hepatic
Abdominal pain [3]
Constipation (3%)
Diarrhea (5%) [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (7%) [6]
Pancreatitis / acute pancreatitis [4]
Vomiting [3]
Genitourinary
Vaginitis (includes vulvitis) (2%)
Hematologic
Thrombocytopenia [5]
Neuromuscular/Skeletal
Arthralgia [4]
Myalgia/Myopathy [4]
Myasthenia gravis (exacerbation) [3]
Rhabdomyolysis [4]
Tendinitis [2]
Tendinopathy/Tendon rupture [37]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [8]
Other
Adverse effects / adverse reactions [14]
Death [5]
Side effects [2]

LEVOLEUCOVORIN

Trade names: Fusilev (Spectrum), Isovorin (Pfizer)
Indications: Antidote for folic acid antagonists, various cancers in combination with other medications
Class: Antidote, Chemotherapy modulating agent, Folate analogue
Half-life: 4–8 hours
Clinically important, potentially hazardous interactions with: trimethoprim
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: As an antidote, it is difficult to differentiate side effects due to the drug from those due to the effects of the poison.

Hematologic
Neutropenia (neutrophils decreased) [2]

LEVOMEPROMAZINE

Synonym: methotrimeprazine
Trade name: Nozinan (Sanofi-Aventis)
Indications: Pain, anxiety and distress in people with terminal illness, psychosis, schizophrenia
Class: Antipsychotic, Neuroleptic, Phenothiazine
Half-life: ~20 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, adrenergic neurone blockers, alcohol, alpha blockers, amantadine, amiodarone, angiotensin II receptor antagonists, antacids, antiarrhythmics prolonging QT interval, antimuscarinics, antiolytics and hypnotics, apomorphine, arsenic, artemether/lumefantrine, atomoxetine, barbiturates, beta blockers, bromocriptine, cabergoline, caffeine, calcium channel blockers, carbamazepine, cimetidine, clonidine, cyclobenzaprine, diazoxide, disopyramide, diuretics, dronedarone, droperidol, duloxetine, efavirenz, ephedrine, eszopiclone, ethosuximide, general anesthetics, histamine, hydralazine, kaolin, levodopa, lithium, lurasidone, memantine, metaxalone, methyldopa, metoclopramide, milnacipran, minoxidil, moxifloxacin, moxonidine, myelosuppressives, nitrates, nitroprusside, opioid analgesics, oxcarbazepine, paliperidone, pentamidine, pergolide, phenytoin, pimozide, pramipexole, primidone, ramelteon, ritonavir, ropinirole, rotigotine, saquinavir, sodium oxybate, sodium phenylbutyrate, sotalol, succinylcholine, sulfonylureas, sympathomimetics, tetrabenazine, tiagabine, tramadol, tricyclic antidepressants, valproic acid
Important contra-indications noted in the prescribing guidelines for: the elderly
Note: Elderly patients with dementia-related psychosis treated with antipsychotic drugs are at an increased risk of death. Nozinan is not indicated for the treatment of patients with dementia-related psychosis.
Contraindicated in cases of coma or CNS depression due to alcohol, hypnotics, analgesics or narcotics; also in patients with blood dyscrasia, hepatic problems or a sensitivity to phenothiazines.
Not available in the USA.

Endocrine/Metabolic
Hyponatremia [2]

LEVOMILNACIPRAN

Trade name: Fetzima (Forest)
Indications: Major depressive disorder
Class: Antidepressant, Serotonin-norepinephrine reuptake inhibitor
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: ketoconazole, MAO inhibitors, NSAIDs
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SUICIDAL THOUGHTS AND BEHAVIORS

Skin
Hyperhidrosis (see also diaphoresis) (9%) [9]
Pruritus (itching) (<2%)
Rash (2%)
Urticaria / hives (<2%)
Xerosis / xeroderma (see also dry skin) (<2%)
Mucosal
Xerostomia (dry mouth) [4]
Cardiovascular
Angina (<2%)
Extrasystoles (<2%)
Hypertension (3%) [2]
Hypotension (3%)
Palpitation (5%) [5]
Tachycardia (6%) [9]
Central Nervous System
Aggression (includes anger) (<2%)
Agitation (<2%)
Extrapyramidal symptoms (<2%)
Headache [5]
Insomnia [3]
Migraine (<2%)
Panic attack (<2%)
Paresthesias (<2%)
Syncope / fainting (<2%)
Vertigo / dizziness [4]
Yawning (<2%)
Endocrine/Metabolic
Appetite decreased (3%)
Gastrointestinal/Hepatic
Abdominal pain (<2%)
Constipation (9%) [9]
Flatulence (<2%)
Nausea (17%) [10]
Vomiting (5%) [5]
Genitourinary
Ejaculatory dysfunction (5%) [4]
Erectile dysfunction (6%) [7]
Hematuria (<2%)
Pollakiuria (<2%)
Testicular pain (4%)
Urinary hesitancy (4%) [3]
Ocular
Conjunctival hemorrhage (<2%)
Vision blurred (<2%)
Xerophthalmia (dry eyes) (<2%)
Renal
Proteinuria (<2%)
Respiratory
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [2]
Bruxism (teeth grinding) (<2%)

LEVONORGESTREL

Trade names: Kyleena (Bayer), Mirena (Bayer), Plan B (Duramed)
Indications: Intrauterine contraception, treatment of heavy menstrual bleeding, emergency contraception
Class: Hormone, Progestogen
Half-life: 17 hours
Clinically important, potentially hazardous interactions with: barbiturates, bosentan, carbamazepine, CYP3A4 inducers and inhibitors, efavirenz, felbamate, griseofulvin, nevirapine, oxcarbazepine, phenytoin, rifabutin, rifampin, St John's wort, topiramate, ulipristal
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Central Nervous System
Headache (17%) [8]
Vertigo / dizziness (11%)
Endocrine/Metabolic
Amenorrhea [3]
Mastodynia (11%) [2]
Menstrual irregularities (26%) [7]
Weight gain [2]
Gastrointestinal/Hepatic
Abdominal pain (18%)
Diarrhea (5%)
Nausea (23%) [8]
Vomiting (6%) [3]
Genitourinary
Dysmenorrhea [2]
Metrorrhagia [2]
Vaginal bleeding [4]
Neuromuscular/Skeletal
Asthenia / fatigue (17%)
Other
Adverse effects / adverse reactions [3]

LEVOTHYROXINE

Synonyms: L-thyroxine sodium; T_4
Trade names: Levothyroid (Forest), Levoxyl (Monarch), Synthroid (AbbVie), Unithroid (Watson)
Indications: Hypothyroidism
Class: Thyroid hormone, synthetic
Half-life: 6–7 days
Clinically important, potentially hazardous interactions with: colesevelam, dicumarol, lanthanum, oral anticoagulants, orlistat, propranolol, raloxifene, red rice yeast, ritonavir, warfarin

Pregnancy category: A

Skin
Angioedema [2]
Urticaria / hives [3]
Cardiovascular
Circulatory collapse [2]
Central Nervous System
Restless legs syndrome [2]
Endocrine/Metabolic
Thyrotoxicosis [3]
Gastrointestinal/Hepatic
Hepatic (liver) disorder / hepatobiliary disorder / hepatic (liver) dysfunction [2]
Neuromuscular/Skeletal
Bone loss [2]
Fractures [2]
Other
Adverse effects / adverse reactions [2]
Side effects [2]

LICORICE

Family: Fabaceae; Leguminosae
Scientific names: *Glycyrrhiza glabra, Glycyrrhiza uralensis*
Indications: Upper respiratory tract infection, gastric and duodenal ulcers, bronchitis, colic, dry cough, arthritis, lupus, sore throat, malaria, sores, abscesses, contact dermatitis. Flavoring in foods, beverages and tobacco
Class: Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: alclometasone, cascara, clevidipine, squill
Pregnancy category: N/A

Skin
Edema / fluid retention (see also peripheral edema) [2]
Cardiovascular
Hypertension [10]
Torsades de pointes [3]
Endocrine/Metabolic
Apparent mineralocorticoid excess [2]
Hypokalemia [5]
Neuromuscular/Skeletal
Rhabdomyolysis [22]
Ocular
Ocular adverse effect [2]
Other
Adverse effects / adverse reactions [2]

LIDOCAINE

Synonyms: lignocaine; xylocaine
Trade names: Anamantle HC (Doak), ELA-Max (Ferndale), EMLA (AstraZeneca), Lidoderm (Endo), Xylocaine (AstraZeneca)
Indications: Ventricular arrhythmias, topical anesthesia
Class: Anesthetic; local, Antiarrhythmic, Antiarrhythmic class Ib
Half-life: terminal: 1.5–2 hours
Clinically important, potentially hazardous interactions with: amiodarone, amprenavir, antiarrhythmics, atazanavir, cimetidine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, darunavir, delavirdine, fosamprenavir, indinavir, lopinavir, mivacurium, nevirapine, nilutamide, oxprenolol, propranolol, telaprevir
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [7]
Angioedema [3]
Cutaneous toxicity / skin toxicity [3]
Dermatitis [27]
Eczema / eczematous reaction / eczematous eruption [3]
Edema / fluid retention (see also peripheral edema) [2]
Erythema [3]
Erythema multiforme [2]
Exanthems [2]
Exfoliative dermatitis [2]
Fixed eruption [2]
Hypersensitivity [9]
Pruritus (itching) [3]
Urticaria / hives [5]
Cardiovascular
Bradycardia / sinus bradycardia [2]
Central Nervous System
Paresthesias [2]
Seizures [14]
Shivering (<10%)
Hematologic
Methemoglobinemia [4]
Local
Application-site erythema [2]
Application-site reactions [3]
Injection-site pain [2]
Otic
Tinnitus [3]
Other
Adverse effects / adverse reactions [3]
Death [3]
Hoigne's syndrome [2]

LIFITEGRAST

Trade name: Xiidra (Shire)
Indications: Ophthalmic solution for dry eye disease
Class: Lymphocyte function-associated antigen-1 (LFA-1) antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Central Nervous System
Dysgeusia (taste perversion) (5–25%) [6]
Headache (<5%)
Local
Application-site irritation [4]
Application-site pain [2]
Application-site reactions [7]
Ocular
Conjunctival hyperemia / conjunctival injection (<5%)
Lacrimation (<5%)
Ocular adverse effect [2]
Ocular burning [2]
Ocular discharge (<5%)
Ocular itching / ocular pruritus (5–25%) [2]
Reduced visual acuity (5–25%) [2]
Vision blurred (<5%)
Xerophthalmia (dry eyes) [2]
Respiratory
Sinusitis (<5%)

LINACLOTIDE

Trade name: Linzess (Forest)
Indications: Irritable bowel syndrome with constipation and chronic idiopathic constipation
Class: Amino acid, Guanylate cyclase-C agonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with known or suspected mechanical gastrointestinal obstruction.
Warning: PEDIATRIC RISK

Central Nervous System
Headache (4%)
Gastrointestinal/Hepatic
Abdominal distension (2–3%)
Abdominal pain (7%) [4]
Diarrhea (16–20%) [24]
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Flatulence (4–6%) [4]
Gastroenteritis (3%)
Gastroesophageal reflux (<2%)
Vomiting (<2%)
Neuromuscular/Skeletal
Asthenia / fatigue (<2%)
Respiratory
Sinusitis (3%)
Upper respiratory tract infection (5%)

LINAGLIPTIN

Trade names: Glyxambi (Boehringer Ingelheim), Tradjenta (Boehringer Ingelheim)
Indications: Type II diabetes mellitus
Class: Antidiabetic, Dipeptidyl peptidase-4 (DPP-4) (gliptin) inhibitor
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: efavirenz, rifampin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Linagliptin should not be used in patients with Type I diabetes or for the treatment of diabetic ketoacidosis, and has not been studied in combination with insulin. Glyxambi is linagliptin and empagliflozin.

Cardiovascular
Cardiotoxicity [3]
Hypertension [4]
Central Nervous System
Headache [5]

Endocrine/Metabolic
Diabetes mellitus [2]
Hyperglycemia (includes glucose increased) [2]
Hyperlipidemia [2]
Hypertriglyceridemia (includes triglycerides increased) [2]
Hypoglycemia (see also insulin autoimmune syndrome) [18]

Gastrointestinal/Hepatic
Constipation [2]
Diarrhea [2]
Nausea [3]
Pancreatitis / acute pancreatitis [4]

Genitourinary
Genital mycotic infection [2]
Urinary tract infection [4]

Neuromuscular/Skeletal
Arthralgia [2]
Back pain [3]
Pain in extremities [2]

Respiratory
Cough [4]
Nasopharyngitis [9]
Upper respiratory tract infection [6]

Other
Adverse effects / adverse reactions [19]
Infection [3]

LINCOMYCIN

Trade name: Lincocin (Pfizer)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; lincosamide, Antimicrobial
Half-life: 2–11.5 hours
Clinically important, potentially hazardous interactions with: mivacurium
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
AGEP [3]
Dermatitis [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Other
Allergic reactions (<5%)

LINDANE

Synonyms: hexachlorocyclohexane; gamma benzene hexachloride
Indications: Scabies, pediculosis capitis, pediculosis pubis
Class: Chemical, Scabicide
Half-life: 17–22 hours
Clinically important, potentially hazardous interactions with: oil-based hair dressings
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Cutaneous toxicity / skin toxicity [2]
Dermatitis [5]
Erythema (2%) [2]
Pruritus (itching) (2%) [5]
Urticaria / hives [2]

Central Nervous System
Neurotoxicity [3]
Pseudotumor cerebri (see also intracranial hypertension) [2]
Seizures [11]

Neuromuscular/Skeletal
Rhabdomyolysis [3]

Other
Adverse effects / adverse reactions [4]
Death [18]

LINEZOLID

Trade name: Zyvox (Pfizer)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; oxazolidinone, Antimicrobial
Half-life: 4–5 hours
Clinically important, potentially hazardous interactions with: alcohol, alpha blockers, altretamine, amitriptyline, amoxapine, amphetamines, anilidopiperidine opioids, antihypertensives, atomoxetine, beta blockers, buprenorphine, bupropion, buspirone, caffeine, carbamazepine, clomipramine, cyclobenzaprine, desipramine, desvenlafaxine, dexmethylphenidate, dextromethorphan, diethylpropion, doxapram, doxepin, fluoxetine, fluvoxamine, hydromorphone, imipramine, levodopa, lithium, MAO inhibitors, maprotiline, meperidine, methadone, methyldopa, methylphenidate, mirtazapine, nortriptyline, oral typhoid vaccine, ozanimod, paroxetine hydrochloride, paroxetine mesylate, paroxetine mesylate, propoxyphene, protriptyline, reserpine, rifampin, safinamide, serotonin 5-HT1D receptor agonists, serotonin/norepinephrine reuptake inhibitors, sertraline, sibutramine, SSRIs, tapentadol, tetrabenazine, tetrahydrozoline, tramadol, trazodone, tricyclic antidepressants, trimipramine, tryptophan, venlafaxine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Cellulitis [2]
Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR)) [2]
Edema / fluid retention (see also peripheral edema) (2%)
Fungal dermatitis (2%)
Pruritus (itching) [2]
Rash (<7%) [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Mucosal
Black tongue / black hairy tongue (lingua villosa nigra) [13]

Central Nervous System
Dysgeusia (taste perversion) (<2%) [2]
Encephalopathy (includes hepatic encephalopathy) [2]
Fever (pyrexia) (includes hyperpyrexia) (2–14%)
Headache (<11%) [6]
Insomnia (3%)
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Neurotoxicity [5]
Peripheral neuropathy [17]
Seizures (3%)
Serotonin syndrome [27]
Vertigo / dizziness (2%)

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [36]
ALP increased (<4%)
ALT increased (2–10%)
AST increased (2–5%)
Hyperlactatemia [3]
Hypoglycemia (see also insulin autoimmune syndrome) [5]
Hypokalemia (3%)
Hyponatremia [6]
SIADH [3]

Gastrointestinal/Hepatic
Abdominal pain (<2%)
Constipation (2%) [2]
Diarrhea (3–11%) [12]
Gastrointestinal bleeding (2%)
Gastrointestinal disorder / discomfort [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Loose stools / soft feces (<2%)
Nausea (3–10%) [11]
Pancreatitis / acute pancreatitis [3]
Vomiting (<10%) [5]

Genitourinary
Candidal vaginitis (<2%)

Hematologic
Anemia (<6%) [12]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
Myelosuppression / bone marrow suppression / myelotoxicity [12]
Pancytopenia (includes bicytopenia) [8]
Pure red cell aplasia [6]
Sepsis (8%)
Thrombocytopenia (<5%) [32]

Local
Injection-site reaction (3%)

Ocular
Optic neuropathy [18]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal function abnormal / renal dysfunction [2]

Respiratory
Apnea (2%)
Cough (<2%)
Dyspnea / shortness of breath (3%)
Pneumonia (3%)
Upper respiratory tract infection (4%)

Other
Adverse effects / adverse reactions (4%) [18]
Allergic reactions (4%)
Death [5]
Tooth pigmentation / discoloration [7]

LINSEED

Family: Linaceae
Scientific name: *Linum usitatissimum*
Indications: Dry mouth, menopause, osteoporosis, heart disease, catarrh, bronchitis, furunculosis, pleuritic pains, constipation, high cholesterol, benign prostatic hyperplasia, bladder inflammation, gastritis, enteritis, irritable bowel syndrome. **Topical:** poultice for skin inflammation. **Ophthalmologic:** oil used for removal of foreign bodies from the eye
Class: Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Linum is cultivated for both its stem fibers (the source of linen and some paper) and its seeds (oil used in cooking and in margarine). The oil is used in paints and varnishes and the seed residues are used in cattle cake.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]

LIOTHYRONINE

Synonym: T_3 sodium
Trade names: Cytomel (Pfizer), Triostat (Par)
Indications: Hypothyroidism
Class: Thyroid hormone, synthetic
Half-life: 16–49 hours
Clinically important, potentially hazardous interactions with: anticoagulants, dicumarol, warfarin
Pregnancy category: A

Skin
Urticaria / hives [3]

LIRAGLUTIDE

Trade names: Saxenda (Novo Nordisk), Victoza (Novo Nordisk), Xultophy (Novo Nordisk)
Indications: To improve glycemic control in adults with Type II diabetes mellitus (Victoza), adjunct to diet and exercise for chronic weight management (Saxenda)
Class: Antidiabetic, Glucagon-like peptide-1 (GLP-1) receptor agonist
Half-life: 13 hours
Clinically important, potentially hazardous interactions with: acetaminophen, atorvastatin, digoxin, griseofulvin, lisinopril, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a personal or family history of medullary thyroid carcinoma or in patients with multiple endocrine neoplasia syndrome Type 2. Xultophy is liraglutide and insulin degludec.
Warning: RISK OF THYROID C-CELL TUMORS

Cardiovascular
Cardiotoxicity [2]
Hypertension (3%)

Central Nervous System
Headache (~5%) [8]
Vertigo / dizziness (6%) [3]

Endocrine/Metabolic
Appetite decreased [7]
Hypoglycemia (see also insulin autoimmune syndrome) [12]
Weight loss [6]

Gastrointestinal/Hepatic
Abdominal distension [2]
Abdominal pain [4]
Cholelithiasis (gallstones in the gallbladder) [3]
Constipation (10%) [13]
Diarrhea (17%) [33]
Dyspepsia / functional dyspepsia / gastroparesis [5]
Gastrointestinal disorder / discomfort [8]
Nausea (28%) [65]
Pancreatitis / acute pancreatitis [13]
Vomiting (11%) [32]

Genitourinary
Urinary tract infection (6%)

Local
Injection-site reaction (2%) [4]

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [4]
Back pain (5%) [4]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Influenza (7%) [2]
Nasopharyngitis (5%) [6]
Sinusitis (6%)
Upper respiratory tract infection (10%) [4]

Other
Adverse effects / adverse reactions [15]
Malignant neoplasms (11%)

LISDEXAMFETAMINE

Trade name: Vyvanse (Shire)
Indications: Attention-deficit hyperactivity disorder (ADHD)
Class: Anti-attention deficit hyperactivity disorder (anti-ADHD), CNS stimulant, Dextroamphetamine prodrug
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: acetazolamide, ammonium chloride, analgesics, antacids, antihistamines, antihypertensives, antipsychotics, atomoxetine, cannabinoids, carbonic anhydrase inhibitors, chlorpromazine, epinephrine, ethosuximide, haloperidol, iobenguane, lithium, MAO inhibitors, meperidine, methenamine, phenobarbital, phenytoin, propoxyphene, sympathomimetics, tricyclic antidepressants, urinary alkalinizing agents
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: ABUSE AND DEPENDENCE

Skin
Hyperhidrosis (see also diaphoresis) (3%)
Rash (3%)

Mucosal
Xerostomia (dry mouth) (4–26%) [23]

Cardiovascular
Hypertension (3%) [2]
Tachycardia [3]

Central Nervous System
Agitation (3%)
Anorexia (5%) [3]
Anxiety [9]
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache [32]
Insomnia (13–23%) [31]
Irritability (10%) [21]
Restlessness (3%)
Sleep-related disorder [2]
Somnolence (drowsiness) (2%) [2]
Tic disorder (2%) [2]
Vertigo / dizziness (5%) [6]

Endocrine/Metabolic
Appetite decreased (27–39%) [31]
Libido decreased (<2%)
Weight loss (9%) [9]

Gastrointestinal/Hepatic
Abdominal pain (12%) [12]
Constipation [2]
Diarrhea (7%)
Nausea (6–7%) [10]
Vomiting (9%) [3]

Genitourinary
Erectile dysfunction (<2%)

Neuromuscular/Skeletal
Asthenia / fatigue [3]
Back pain [2]
Muscle spasm [2]

Respiratory
Dyspnea / shortness of breath (2%)
Influenza [2]
Nasopharyngitis [6]
Sinusitis [2]
Upper respiratory tract infection [12]

Other
Adverse effects / adverse reactions [6]

LISINOPRIL

Trade names: Prinivil (Merck), Prinzide (Merck), Zestoretic (AstraZeneca), Zestril (AstraZeneca)
Indications: Hypertension, as adjunctive therapy in the management of heart failure, short-term treatment following myocardial infarction in hemodynamically stable patients
Class: Angiotensin-converting enzyme (ACE) inhibitor
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, allopurinol, alpha blockers, alprostadil, amifostine, amiloride, angiotensin II receptor antagonists, antacids, antidiabetics, antihypertensives, antipsychotics, anxiolytics and hypnotics, aprotinin, azathioprine, baclofen, beta blockers, calcium channel blockers, clonidine, corticosteroids, cyclosporine, diazoxide, diuretics, eplerenone, estrogens, everolimus, general anesthetics, gold & gold compounds, heparins, hydralazine, hypotensives, insulin, levodopa, liraglutide, lithium, MAO inhibitors, metformin, methyldopa, methylphenidate, minoxidil, moxisylyte, moxonidine, nitrates, nitroprusside, NSAIDs, pentoxifylline, phosphodiesterase 5 inhibitors, potassium salts, prostacyclin analogues, rituximab, salicylates,

sirolimus, spironolactone, sulfonylureas, temsirolimus, tizanidine, tolvaptan, triamterene, trimethoprim, yohimbine
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Prinzide and Zestoretic are lisinopril and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Contra-indicated in patients with a history of angioedema related to previous treatment with an ACE inhibitor and in patients with hereditary or idiopathic angioedema.
Warning: FETAL TOXICITY

Skin
- Angioedema [44]
- Edema of lip [2]
- Exanthems (3%) [4]
- Exfoliative dermatitis [2]
- Flushing / rubefaction [2]
- Kaposi's sarcoma [2]
- Lichenoid eruption / lichenoid reaction [2]
- Pemphigus foliaceus [2]
- Pityriasis rosea [2]
- Purpura [2]
- Rash (2%) [5]
- Urticaria / hives [2]

Mucosal
- Tongue edema [3]

Cardiovascular
- Hypotension (<4%) [3]

Central Nervous System
- Headache (4–6%)
- Vertigo / dizziness (5–12%)

Endocrine/Metabolic
- Hyperkalemia [3]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
- Intestinal angioedema [8]
- Pancreatitis / acute pancreatitis [16]

Neuromuscular/Skeletal
- Asthenia / fatigue (3%)

Respiratory
- Cough (4–9%) [15]
- Upper respiratory tract infection (<2%)

Other
- Death [4]

LITHIUM

Trade names: Eskalith (GSK), Lithobid (Solvay)
Indications: Manic-depressive states
Class: Antipsychotic, Mood stabilizer
Half-life: 18–24 hours
Clinically important, potentially hazardous interactions with: aceclofenac, acemetacin, acetazolamide, acitretin, amitriptyline, arsenic, benazepril, bendroflumethiazide, benzthiazide, captopril, celecoxib, chlorothiazide, chlorthalidone, cilazapril, citalopram, clozapine, cyclopenthiazide, desipramine, desvenlafaxine, dichlorphenamide, diclofenac, enalapril, ethoxzolamide, etoricoxib, fluoxetine, flurbiprofen, fosinopril, haloperidol, hydrochlorothiazide, hydroflumethiazide, indapamide, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, irbesartan, levomepromazine, linezolid, lisdexamfetamine, lisinopril, lorcaserin, lurasidone, mazindol, mazindol, meloxicam, meperidine, mesoridazine, methyclothiazide, metolazone, metronidazole, milnacipran, neostigmine, olanzapine, olmesartan, paliperidone, paroxetine hydrochloride, pericyazine, phenylbutazone, piroxicam, polythiazide, quinapril, quinethazone, ramipril, rocuronium, rofecoxib, sacubitril/valsartan, sacubitril/valsartan, sibutramine, sulpiride, tenoxicam, tetrabenazine, thalidomide, thiazides, tinidazole, tolmetin, trandolapril, trichlormethiazide, trifluoperazine, valdecoxib, venlafaxine, xipamide, ziprasidone, zofenopril, zuclopenthixol
Pregnancy category: D

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash [21]
- Angioedema [2]
- Atopic dermatitis (3%)
- Cutaneous toxicity / skin toxicity [2]
- Darier's disease / keratosis follicularis [3]
- Dermatitis [4]
- Dermatitis herpetiformis [3]
- DRESS syndrome [2]
- Edema / fluid retention (see also peripheral edema) [3]
- Erythema [2]
- Exanthems [11]
- Exfoliative dermatitis [3]
- Follicular keratosis [3]
- Folliculitis [5]
- Hidradenitis suppurativa (acne inversa) [3]
- Ichthyosis [2]
- Keratosis pilaris [2]
- Linear IgA bullous dermatosis [4]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
- Myxedema (see also myxedema coma under 'Endocrine/Metabolic') [10]
- Papulo-nodular lesions (elbows) [2]
- Pruritus (itching) [9]
- Psoriasis (2%) [59]
- Purpura [2]
- Pustules / pustular eruption [2]
- Rash (<10%)
- Seborrheic dermatitis [3]
- Ulcerations (lower extremities) [5]
- Urticaria / hives [3]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Hair
- Alopecia / hair loss (10–19%) [18]
- Alopecia areata (2%) [3]

Nails
- Nail dystrophy [2]

Mucosal
- Lichenoid stomatitis [3]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [4]
- Sialorrhea (ptyalism; hypersalivation) [4]
- Stomatitis (oral mucositis) [2]
- Xerostomia (dry mouth) [6]

Cardiovascular
- Brugada syndrome [5]
- QT interval prolonged / QT prolongation [4]

Central Nervous System
- Amnesia [2]
- Delirium [3]
- Dysgeusia (taste perversion) (>10%) [2]
- Hallucinations [2]
- Neuroleptic malignant syndrome [7]
- Neurotoxicity [3]
- Parkinsonism [8]
- Pseudohallucinations [2]
- Restless legs syndrome [4]
- Serotonin syndrome [5]
- Somnambulism (sleepwalking; noctambulism) [4]
- Tardive syndrome / tardive dyskinesia [2]
- Tremor [5]

Endocrine/Metabolic
- Diabetes insipidus [6]
- Hypercalcemia [4]
- Hyperparathyroidism [6]
- Hyperthyroidism [2]
- Hypothyroidism [4]
- Myxedema coma [5]
- Thyroid dysfunction [2]
- Thyrotoxicosis [2]
- Weight gain [4]

Genitourinary
- Polyuria [3]
- Priapism [5]

Neuromuscular/Skeletal
- Myasthenia gravis [2]
- Rhabdomyolysis [3]

Renal
- Minimal change disease (minimal change glomerulopathy) [2]
- Nephrogenic diabetes insipidus [5]
- Nephropathy [3]
- Nephrotic syndrome [2]
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [15]

Other
- Adverse effects / adverse reactions [5]
- Dipsia (thirst) / polydipsia [2]
- Side effects (23–33%) [4]
- Teratogenicity [3]

LIXISENATIDE

Trade names: Adlyxin (Sanofi-Aventis), Lyxumia (Sanofi-Aventis), Soliqua (Sanofi-Aventis)
Indications: To improve glycemic control in adults with Type II diabetes mellitus
Class: Antidiabetic, Glucagon-like peptide-1 (GLP-1) receptor agonist
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Use during pregnancy only if the potential benefit justifies the potential risk to the fetus)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Soliqua is lixisenatide and insulin glargine.

Central Nervous System
- Headache (9%) [3]
- Vertigo / dizziness (7%) [2]

Endocrine/Metabolic
- Hypoglycemia (see also insulin autoimmune syndrome) (3%) [8]

Gastrointestinal/Hepatic
Abdominal distension (2%)
Abdominal pain (2%)
Constipation (3%)
Diarrhea (8%) [10]
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Nausea (25%) [25]
Vomiting (10%) [24]

Local
Injection-site reaction (4%) [2]

Other
Adverse effects / adverse reactions [3]
Allergic reactions [2]

LODOXAMIDE

Trade name: Alomide (Alcon)
Indications: Non-infectious conjunctivitis
Class: Mast cell stabilizer
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

Central Nervous System
Headache (2%)

Ocular
Lacrimation (<5%)
Ocular burning (15%)
Ocular itching / ocular pruritus (<5%)
Ocular stinging (15%)
Vision blurred (<5%)

LOMEFLOXACIN

Trade name: Maxaquin (Unimed)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; fluoroquinolone, Antimicrobial
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: amiodarone, antacids, arsenic, bepridil, bismuth, bretylium, didanosine, disopyramide, erythromycin, NSAIDs, phenothiazines, procainamide, quinidine, sotalol, sucralfate, tricyclic antidepressants, zinc salts
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants. Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis.

Skin
Diaphoresis (see also hyperhidrosis) [2]
Photosensitivity (2%) [16]
Phototoxicity [3]
Pruritus (itching) [6]
Rash [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

LOMITAPIDE

Trade name: Juxtapid (Aegerion)
Indications: Homozygous familial hypercholesterolemia
Class: Lipid regulator
Half-life: 39.7 hours
Clinically important, potentially hazardous interactions with: bile acid sequestrants, boceprevir, clarithromycin, conivaptan, grapefruit juice, indinavir, itraconazole, ketoconazole, lopinavir, lovastatin, mibefradil, nefazodone, nelfinavir, oral contraceptives, P-glycoprotein substrates, posaconazole, ritonavir, saquinavir, simvastatin, strong or moderate CYP3A4 inhibitors, telaprevir, telithromycin, viloxazine, voriconazole, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: RISK OF HEPATOTOXICITY

Mucosal
Nasal congestion (10%)

Cardiovascular
Angina (10%)
Chest pain (24%)
Palpitation (10%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (10%)
Headache (10%)
Vertigo / dizziness (10%)

Endocrine/Metabolic
ALT increased (17%) [3]
Weight loss (24%)

Gastrointestinal/Hepatic
Abdominal pain (21–34%)
Constipation (21%)
Defecation (urgency) (10%)
Diarrhea (79%) [3]
Dyspepsia / functional dyspepsia / gastroparesis (38%) [3]
Flatulence (21%)
Gastroenteritis (14%)
Gastroesophageal reflux (10%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea (65%) [2]
Tenesmus (10%)
Vomiting (34%) [3]

Neuromuscular/Skeletal
Asthenia / fatigue (17%)
Back pain (14%)

Respiratory
Influenza (21%)
Nasopharyngitis (17%)
Pharyngolaryngeal pain (14%)

Other
Adverse effects / adverse reactions [6]

LOMUSTINE

Trade name: CeeNU (Bristol-Myers Squibb)
Indications: Brain tumors, lymphomas, melanoma, Hodgkin's disease
Class: Alkylating agent, Nitrosourea
Half-life: 16–48 hours
Clinically important, potentially hazardous interactions with: aldesleukin, cimetidine, clozapine, digoxin, phenytoin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

Skin
Rash (<10%)

Mucosal
Stomatitis (oral mucositis) (<10%)

Cardiovascular
Hypertension [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Hematologic
Hemotoxicity [2]
Neutropenia (neutrophils decreased) [3]
Thrombocytopenia [3]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

LOPERAMIDE

Trade names: Imodium (McNeil), Maalox (Novartis)
Indications: Diarrhea
Class: Opiate agonist
Half-life: 9–14 hours
Clinically important, potentially hazardous interactions with: lonafarnib, St John's wort
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Cardiovascular
Torsades de pointes [2]

Central Nervous System
Syncope / fainting [2]

Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [3]
Nausea [2]

LOPINAVIR

Trade name: Kaletra (AbbVie)
Indications: HIV-1 infected children above the age of 2 years and adults, in combination with other antiretroviral agents
Class: Antiretroviral, Covid-19 putative drug, HIV-1 protease inhibitor
Half-life: 5–6 hours
Clinically important, potentially hazardous interactions with: abacavir, alfuzosin, amiodarone, amprenavir, aripiprazole, artemether/lumefantrine, atazanavir, atorvastatin, atovaquone, bepridil, bosentan, brigatinib, bupropion, cabozantinib, carbamazepine, chlorpheniramine, cisapride, clarithromycin,

colchicine, copanlisib, cyclosporine, darifenacin, darunavir, dasatinib, delavirdine, dexamethasone, didanosine, digoxin, disulfiram, efavirenz, elbasvir & grazoprevir, eltrombopag, eluxadoline, ergotamine, estradiol, felodipine, fentanyl, flecainide, fluticasone propionate, fosamprenavir, glecaprevir & pibrentasvir, indinavir, itraconazole, ketoconazole, lidocaine, lidocaine, lomitapide, lovastatin, maraviroc, methadone, methylergonovine, metronidazole, midazolam, midostaurin, mifepristone, nelfinavir, neratinib, nevirapine, nicardipine, nifedipine, nilotinib, olaparib, ombitasvir/paritaprevir/ritonavir, palbociclib, phenobarbital, phenytoin, pimozide, pitavastatin, ponatinib, primidone, quinidine, ranolazine, ribociclib, rifabutin, rifampin, rilpivirine, rivaroxaban, rosuvastatin, ruxolitinib, salmeterol, saquinavir, sildenafil, simeprevir, simvastatin, sirolimus, sofosbuvir/velpatasvir/voxilaprevir, St John's wort, tacrolimus, tadalafil, telithromycin, tenofovir disoproxil, tipranavir, tolterodine, trazodone, triazolam, vardenafil, venetoclax, vinblastine, vincristine, voriconazole, warfarin, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Kaletra is lopinavir and ritonavir.

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (<10%)
- Lipodystrophy (<10%)
- Rash (<10%) [5]

Hair
- Alopecia / hair loss [3]

Central Nervous System
- Vertigo / dizziness [2]

Gastrointestinal/Hepatic
- Diarrhea (>10%) [5]
- Flatulence (<10%)
- Nausea (<10%) [4]
- Pancreatitis / acute pancreatitis [2]
- Vomiting (<10%) [3]

Neuromuscular/Skeletal
- Asthenia / fatigue (<10%) [2]

Renal
- Nephrolithiasis (formation of a kidney stone) [2]
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

LORATADINE

Trade names: Alavert (Wyeth), Claritin (Schering), Claritin-D (Schering)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 3–20 hours
Clinically important, potentially hazardous interactions with: amiodarone
Pregnancy category: B

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (>2%)
- Angioedema (>2%)
- Dermatitis (>2%)
- Diaphoresis (see also hyperhidrosis) (>2%)
- Erythema multiforme (>2%)
- Fixed eruption [3]
- Flushing / rubefaction (>2%)
- Peripheral edema (see also edema) (>2%)
- Photosensitivity (>2%)
- Pruritus (itching) (>2%)
- Purpura (>2%)
- Rash (>2%)
- Urticaria / hives (>2%) [4]
- Xerosis / xeroderma (see also dry skin) (>2%)

Hair
- Alopecia / hair loss (>2%)
- Dry hair (>2%)

Mucosal
- Sialorrhea (ptyalism; hypersalivation) (>2%)
- Stomatitis (oral mucositis) (>2%)
- Xerostomia (dry mouth) (>10%) [9]

Cardiovascular
- QT interval prolonged / QT prolongation [2]
- Torsades de pointes [4]

Central Nervous System
- Dysgeusia (taste perversion) (>2%)
- Headache (12%) [3]
- Hyperesthesia (>2%)
- Paresthesias (>2%)
- Somnolence (drowsiness) [2]

Endocrine/Metabolic
- Gynecomastia (>2%)
- Mastodynia (<10%)

Genitourinary
- Vaginitis (includes vulvitis) (>2%)

Neuromuscular/Skeletal
- Asthenia / fatigue (4%) [2]
- Myalgia/Myopathy (>2%)

Respiratory
- Pharyngitis (sore throat) [2]

LORAZEPAM

Trade name: Ativan (Valeant)
Indications: Anxiety, depression
Class: Benzodiazepine
Half-life: 10–20 hours
Clinically important, potentially hazardous interactions with: alcohol, amprenavir, barbiturates, chlorpheniramine, clarithromycin, clozapine, CNS depressants, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, efavirenz, erythromycin, esomeprazole, eszopiclone, imatinib, MAO inhibitors, narcotics, nelfinavir, phenothiazines, valproate
Pregnancy category: D

Skin
- Dermatitis (<10%)
- Diaphoresis (see also hyperhidrosis) (>10%)
- Pseudolymphoma [2]
- Rash (>10%)

Mucosal
- Nasal congestion (<10%)
- Sialopenia (>10%)
- Xerostomia (dry mouth) (>10%)

Cardiovascular
- Hypotension [2]

Central Nervous System
- Agitation [2]
- Akathisia (<10%)
- Amnesia (<10%) [18]
- Catatonia [2]
- Confusion (<10%)
- Delirium [2]
- Depression (<10%)
- Hallucinations [2]
- Headache (<10%)
- Insomnia [2]
- Somnolence (drowsiness) (<10%) [4]
- Tremor (<10%)
- Vertigo / dizziness (<10%) [2]

Local
- Injection-site pain (>10%)
- Injection-site phlebitis (>10%)

Ocular
- Visual disturbances (<10%)

Respiratory
- Apnea (<10%)
- Hyperventilation (<10%)

Other
- Adverse effects / adverse reactions [2]

LORCASERIN

Trade name: Belviq (Eisai)
Indications: Obesity in adults who have at least one weight-related health condition, such as high blood pressure, Type II diabetes, or high cholesterol
Class: Serotonin receptor agonist
Half-life: ~11 hours
Clinically important, potentially hazardous interactions with: antipsychotics, bupropion, dextromethorphan, lithium, MAO inhibitors, SNRIs, SSRIs, St John's wort, tramadol, tricyclic antidepressants, triptans
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: On 2/13/2020, the U.S. Food and Drug Administration (FDA) requested that the manufacturer of lorcaserin (Belviq) voluntarily withdraw the weight-loss drug from the U.S. market because a safety clinical trial shows an increased occurrence of cancer. The drug manufacturer, Eisai, has submitted a request to voluntarily withdraw the drug.

Skin
- Peripheral edema (see also edema) (5%)
- Rash (2%)

Mucosal
- Nasal congestion (3%)
- Oropharyngeal pain (4%)
- Xerostomia (dry mouth) (5%) [2]

Cardiovascular
- Hypertension (5%)
- Valvulopathy (2–3%) [5]

Central Nervous System
- Anxiety (4%)
- Cognitive impairment (2%) [2]
- Depression (2%) [2]
- Euphoria / elation [3]
- Headache (15–17%) [12]
- Insomnia (4%)
- Vertigo / dizziness (7–9%) [10]

Endocrine/Metabolic
- Appetite decreased (2%)
- Diabetes mellitus (exacerbation) (3%)
- Hypoglycemia (see also insulin autoimmune syndrome) (29%) [4]

Gastrointestinal/Hepatic
- Constipation (6%)
- Diarrhea (7%)
- Gastroenteritis (3%)
- Nausea (8–9%) [10]

Vomiting (4%)

Genitourinary
Urinary tract infection (7–9%)

Neuromuscular/Skeletal
Asthenia / fatigue (7%) [3]
Back pain (6–12%) [2]
Bone or joint pain (2%)
Muscle spasm (5%)

Respiratory
Cough (4%)
Nasopharyngitis (11–13%) [2]
Upper respiratory tract infection (14%)

Other
Toothache (odontalgia) (3%)

LOSARTAN

Trade names: Cozaar (Merck), Hyzaar (Merck)
Indications: Hypertension
Class: Angiotensin receptor antagonist (blocker), Antihypertensive, Covid-19 putative drug
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: aliskiren, rifampin, voriconazole
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Hyzaar is losartan and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Warning: CONTRA-INDICATED IN PREGNANCY

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema [11]
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis [2]
Photosensitivity [2]

Mucosal
Nasal congestion (2%)

Central Nervous System
Ageusia (taste loss) / taste disorder [2]
Vertigo / dizziness (3%)

Endocrine/Metabolic
Hyperkalemia [7]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]

Neuromuscular/Skeletal
Back pain (2%)

Respiratory
Upper respiratory tract infection (8%)

Other
Adverse effects / adverse reactions [7]

LOTEPREDNOL

Trade names: Alrex (Bausch & Lomb), Lotemax (Bausch & Lomb)
Indications: Ophthalmic inflammation, seasonal allergic conjunctivitis, rhinitis
Class: Corticosteroid / Glucocorticoid, Corticosteroid, topical
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in most viral diseases of the cornea and conjunctiva including epithelial herpes simplex keratitis (dendritic keratitis), vaccinia, and varicella, and also in mycobacterial infection of the eye and fungal diseases of ocular structures.

Central Nervous System
Headache (<15%)

Ocular
Intraocular pressure increased [2]
Iritis (25%)

Respiratory
Rhinitis (<15%)

LOVASTATIN

Trade names: Advicor (Kos), Altoprev (Shionogi), Mevacor (Merck)
Indications: Hypercholesterolemia
Class: HMG-CoA reductase inhibitor / statin
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: amprenavir, atazanavir, azithromycin, boceprevir, bosentan, cholestyramine, clarithromycin, cyclosporine, darunavir, delavirdine, efavirenz, elbasvir & grazoprevir, erythromycin, exenatide, fenofibrate, fosamprenavir, gemfibrozil, glecaprevir & pibrentasvir, grapefruit juice, imatinib, indinavir, itraconazole, letermovir, lomitapide, lonafarnib, lopinavir, mifepristone, nelfinavir, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, paclitaxel, posaconazole, red rice yeast, tacrolimus, telaprevir, telithromycin, ticagrelor, tipranavir, tolvaptan, verapamil, viloxazine
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
Exanthems (<5%) [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
Pruritus (itching) (5%) [2]
Rash (5%) [3]

Central Nervous System
Parkinsonism [2]

Endocrine/Metabolic
Gynecomastia (<10%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Pancreatitis / acute pancreatitis [2]

Neuromuscular/Skeletal
Asthenia / fatigue [2]
Myalgia/Myopathy (<10%) [6]
Rhabdomyolysis [41]

LOXAPINE

Trade names: Adasuve (Teva), Loxitane (Watson)
Indications: Psychoses
Class: Antipsychotic
Half-life: 12–19 hours (terminal)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (May cause fetal harm based on animal studies)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: BRONCHOSPASM and INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Rash (<10%)

Mucosal
Xerostomia (dry mouth) (>10%)

Central Nervous System
Dysgeusia (taste perversion) (14%) [8]
Neuroleptic malignant syndrome [3]
Sedation (12%) [4]
Somnolence (drowsiness) [3]
Vertigo / dizziness [2]

Endocrine/Metabolic
Gynecomastia (<10%)

Gastrointestinal/Hepatic
Dysphagia [2]

Neuromuscular/Skeletal
Rhabdomyolysis [3]

Respiratory
Bronchospasm [3]
Pulmonary toxicity [3]

LUBIPROSTONE

Trade name: Amitiza (Takeda)
Indications: Constipation, irritable bowel syndrome
Class: Chloride channel activator
Half-life: 0–1.4 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with known or suspected mechanical gastrointestinal obstruction.

Skin
Peripheral edema (see also edema) (4%)

Central Nervous System
Headache (13%) [7]

Gastrointestinal/Hepatic
Abdominal distension [5]
Abdominal pain (7%) [9]
Diarrhea [22]
Flatulence [3]
Nausea [24]
Vomiting [7]

Neuromuscular/Skeletal
Arthralgia (3%)
Asthenia / fatigue (2%)
Back pain (2%)
Respiratory
Dyspnea / shortness of breath [4]
Influenza- ('flu)-like syndrome (2%)
Sinusitis (5%)
Upper respiratory tract infection (4%)
Other
Adverse effects / adverse reactions [3]

LULICONAZOLE

Trade name: Luzu (Medicis)
Indications: Interdigital tinea pedis, tinea cruris, and tinea corporis caused by the organisms *Trichophyton rubrum* and *Epidermophyton floccosum*
Class: Antifungal / antimycotic, Antifungal; imidazole, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Contact dermatitis [2]

LUMACAFTOR/ IVACAFTOR

Trade name: Orkambi (Vertex)
Indications: Cystic fibrosis in patients aged 12 years and older who are homozygous for the *F508del* mutation in the *CFTR* gene
Class: CFTR potentiator, CYP3A4 inducer
Half-life: 26 hours
Clinically important, potentially hazardous interactions with: rifampin, St John's wort
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: See also separate profile for ivacaftor.

Skin
Rash (7%) [3]
Mucosal
Rhinorrhea (6%) [2]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (7%) [2]
Menstrual irregularities (10%)
Gastrointestinal/Hepatic
Diarrhea (12%)
Flatulence (7%)
Nausea (13%) [2]
Neuromuscular/Skeletal
Asthenia / fatigue (9%) [2]
Respiratory
Cough [2]
Dyspnea / shortness of breath (13%) [4]
Influenza (5%)
Nasopharyngitis (13%)
Upper respiratory tract infection (10%)
Other
Adverse effects / adverse reactions [2]

LUMIRACOXIB

Trade names: Joicela (Novartis), Prexige (Novartis)
Indications: Osteoarthritis
Class: COX-2 selective inhibitor
Half-life: 4 hours
Clinically important, potentially hazardous interactions with: aspirin

Skin
Peripheral edema (see also edema) (2%)
Central Nervous System
Headache (8%)
Vertigo / dizziness (2%)
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Neuromuscular/Skeletal
Arthralgia (5%)
Asthenia / fatigue (2%)
Back pain (5%)
Myalgia/Myopathy (2%)
Respiratory
Cough (2%)
Nasopharyngitis (6%)

LURASIDONE

Trade name: Latuda (Sunovion)
Indications: Schizophrenia, depressive epidodes associated with bipolar I disorder
Class: Antipsychotic
Half-life: 18 hours
Clinically important, potentially hazardous interactions with: alcohol, amphetamines, CNS depressants, dasatinib, deferasirox, diltiazem, disopyramide, dopamine, dopamine agonists, droperidol, efavirenz, epinephrine, hydroxyzine, itraconazole, ketoconazole, levomepromazine, lithium, MAO inhibitors, methylphenidate, metoclopramide, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, pimozide, procainamide, quinagolide, quinidine, rifampin, strong CYP3A4 inducers or inhibitors, tetrabenazine, tocilizumab, viloxazine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Mucosal
Sialorrhea (ptyalism; hypersalivation) (2%)
Central Nervous System
Agitation (5%)
Akathisia (13%) [26]
Anxiety (5%)
Extrapyramidal symptoms [3]
Headache [3]
Insomnia (10%) [4]
Parkinsonism (10%) [6]
Restlessness (2%) [2]
Sedation [10]
Somnolence (drowsiness) (17%) [19]
Vertigo / dizziness (4%) [4]
Endocrine/Metabolic
Hyperprolactinemia [2]
Weight gain (5%) [6]
Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis (6%)
Nausea (10%) [16]
Vomiting (8%) [4]
Neuromuscular/Skeletal
Dystonia (5%) [4]
Other
Adverse effects / adverse reactions [4]

LYCOPENE

Scientific names: *All-Trans-Lycopene, Psi-Psi-Carotene*
Indications: Cancer (prevention), cardiovascular disease (prevention), asthma
Class: Antioxidant
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Note: Cooking increases bioavailability of lycopene. Major dietary sources are tomato paste, juice, and ketchup.

Skin
Pigmentation [2]
Other
Adverse effects / adverse reactions [2]

LYMECYCLINE

Trade name: Tetralysal (Galderma)
Indications: Various infections due to susceptible organisms
Class: Antibiotic, Antibiotic; tetracycline, Antimicrobial
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: acitretin, aluminium, antacids, bismuth, coumarins, diuretics, ergotamine, kaolin, methysergide, oral contraceptives, oral iron, penicillins, phenindione, quinapril, retinoids, strontium ranelate, sucralfate, sulfonylureas, tripotassium dicitratobismuthate, zinc
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Nails
Photo-onycholysis [2]
Other
Adverse effects / adverse reactions [2]

MACITENTAN

Trade name: Opsumit (Actelion)
Indications: Pulmonary arterial hypertension
Class: Endothelin receptor (ETR) antagonist
Half-life: 16 hours
Clinically important, potentially hazardous interactions with: ketoconazole, rifampin, ritonavir, strong CYP3A4 inducers or inhibitors
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in pregnancy.
Warning: EMBRYO-FETAL TOXICITY

Skin
Peripheral edema (see also edema) [3]

Central Nervous System
Headache (14%) [8]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Genitourinary
Urinary tract infection (9%)
Hematologic
Anemia (13%) [9]
Respiratory
Bronchitis (12%) [3]
Influenza (6%)
Nasopharyngitis (20%) [6]
Pharyngitis (sore throat) (20%)
Pulmonary hypertension [2]
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [3]

MAPROTILINE

Trade name: Ludiomil (Novartis)
Indications: Depression, anxiety
Class: Antidepressant; tetracyclic, Muscarinic antagonist
Half-life: 27–58 hours
Clinically important, potentially hazardous interactions with: linezolid, naphazoline
Pregnancy category: B

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
Diaphoresis (see also hyperhidrosis) (3–8%)
Exanthems (<9%) [3]
Photosensitivity [2]
Rash (>10%) [2]
Urticaria / hives (4%) [2]
Hair
Alopecia / hair loss [2]
Mucosal
Xerostomia (dry mouth) (20–40%) [2]
Central Nervous System
Seizures [4]

MARAVIROC

Trade names: Celsentri (ViiV), Selzentry (ViiV)
Indications: HIV infection
Class: Antiretroviral, CCR5 co-receptor antagonist
Half-life: 14–18 hours
Clinically important, potentially hazardous interactions with: atazanavir, clarithromycin, conivaptan, CYP3A4 inhibitors or inducers, darunavir, dasatinib, deferasirox, delavirdine, efavirenz, etravirine, indinavir, ketoconazole, lopinavir, nelfinavir, oxcarbazepine, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, telithromycin, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: HEPATOTOXICITY

Skin
Dermatitis (5%)
Folliculitis (5%)
Lipodystrophy (5%)
Pruritus (itching) (6%) [2]
Rash (17%) [2]
Mucosal
Stomatitis (oral mucositis) (4%)
Cardiovascular
Postural hypotension [2]
Central Nervous System
Depression (6%)
Fever (pyrexia) (includes hyperpyrexia) (21%) [2]
Headache [3]
Pain (8%)
Paresthesias (8%)
Peripheral neuropathy (5%)
Sleep disturbances (12%)
Vertigo / dizziness (14%)
Gastrointestinal/Hepatic
Abdominal pain (14%)
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Genitourinary
Urinary tract infection (4%)
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Myalgia/Myopathy (5%)
Respiratory
Cough (22%) [2]
Influenza- ('flu)-like syndrome (3%)
Nasopharyngitis [2]
Pneumonia (4%)
Upper respiratory tract infection (37%) [2]
Other
Adverse effects / adverse reactions [6]

MARIHUANA

Synonyms: marijuana; grass; hashish; pot; cannabis
Indications: Nausea and vomiting, substance abuse drug
Class: Antiemetic, Cannabinoid, Hallucinogen
Half-life: N/A
Clinically important, potentially hazardous interactions with: atazanavir
Pregnancy category: N/A
Note: Marihuana is the popular name for the dried flowering leaves of the hemp plant, *cannabis sativa*. It contains tetrahydrocannabinols.

Mucosal
Xerostomia (dry mouth) [2]
Cardiovascular
Cardiomyopathy [3]
Cardiotoxicity [5]
Myocardial infarction [2]
Central Nervous System
Amnesia [2]
Hallucinations [3]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Mania [5]
Neurotoxicity [2]
Psychosis [3]
Schizophrenia [3]
Seizures [2]
Stroke / cerebral infarction [2]
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Pancreatitis / acute pancreatitis [4]
Genitourinary
Priapism [2]
Respiratory
Acute respiratory distress syndrome [2]
Other
Adverse effects / adverse reactions [2]

MAZINDOL

Indications: Obesity
Class: Norepinephrine reuptake inhibitor
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: cocaine, fenfluramine, fluoxetine, fluvoxamine, lithium, MAO inhibitors, paroxetine hydrochloride, phenelzine, sertraline, tranylcypromine

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Mucosal
Xerostomia (dry mouth) [3]
Central Nervous System
Depression [2]

MDMA

Synonym: 3,4-methylenedioxymethamphetamine; ecstasy; E; X; molly; club drug
Indications: N/A
Class: Amphetamine
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known

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Skin
Diaphoresis (see also hyperhidrosis) [4]
Mucosal
Xerostomia (dry mouth) [5]
Cardiovascular
Cardiotoxicity [2]
Myocardial infarction [2]
Central Nervous System
Amnesia [2]
Confusion [2]
Depression (37%) [14]
Hallucinations [4]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache [2]
Hyperthermia (see also pyrexia / hyperpyrexia) [3]
Memory loss/memory impaired [3]
Neuroleptic malignant syndrome [4]
Neurotoxicity [5]
Parkinsonism [4]
Psychosis [4]
Seizures [3]
Serotonin syndrome [8]
Endocrine/Metabolic
Hyponatremia [7]
SIADH [8]
Gastrointestinal/Hepatic
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea [2]
Genitourinary
Priapism [2]
Hematologic
Coagulopathy (includes disseminated intravascular coagulation / DIC) [2]

Neuromuscular/Skeletal
Myalgia/Myopathy [2]
Rhabdomyolysis [35]
Respiratory
Acute respiratory distress syndrome [2]
Other
Bruxism (teeth grinding) [8]
Death [48]
Dipsia (thirst) / polydipsia [2]
Multiorgan failure [2]

MEADOWSWEET

Family: Rosaceae
Scientific names: *Filipendula ulmaria, Spiraea ulmaria*
Indications: Colds, fevers, cough, bronchitis, dyspepsia, heartburn, peptic ulcer, gout, rheumatic disorders
Class: Anti-inflammatory, Diuretic
Half-life: N/A
Clinically important, potentially hazardous interactions with: salicylates
Pregnancy category: N/A

MEBENDAZOLE

Trade name: Vermox (Janssen)
Indications: Parasitic worm infestations
Class: Anthelmintic, Antimicrobial
Half-life: 1–12 hours
Clinically important, potentially hazardous interactions with: aminophylline
Pregnancy category: C

Skin
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Hair
Alopecia / hair loss [3]
Central Nervous System
Headache [3]
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Abdominal pain [5]
Diarrhea [2]
Other
Adverse effects / adverse reactions [2]

MEBEVERINE

Trade name: Colofac (Solvay)
Indications: Irritable bowel syndrome
Class: Anticholinergic
Half-life: 1.5–1.87 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

MECAMYLAMINE

Trade name: Inversine (Targacept)
Indications: Hypertension
Class: Ganglion blocker, peripheral, Nicotinic antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: alcohol, antibiotics, sulfonamides
Pregnancy category: C

MECHLORETHAMINE

Synonyms: mustine; nitrogen mustard
Indications: Hodgkin's disease, mycosis fungoides
Class: Alkylating agent
Half-life: <1 minute
Clinically important, potentially hazardous interactions with: aldesleukin, vaccines
Pregnancy category: D

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%) [4]
Bullous dermatosis [3]
Dermatitis [28]
Herpes zoster (>10%)
Hypersensitivity (<10%)
Pigmentation [10]
Pruritus (itching) [3]
Squamous cell carcinoma [3]
Urticaria / hives [3]
Hair
Alopecia / hair loss (<10%)
Central Nervous System
Dysgeusia (taste perversion) (<10%)
Local
Injection-site extravasation (<10%)
Injection-site thrombophlebitis (<10%) [2]

MECLIZINE

Trade name: Antivert (Pfizer)
Indications: Motion sickness
Class: Antiemetic, Histamine H1 receptor antagonist
Half-life: 5–6 hours
Clinically important, potentially hazardous interactions with: alcohol, barbiturates, chloral hydrate, ethchlorvynol, paraldehyde, phenothiazines, zolpidem
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Somnolence (drowsiness) [3]

MECLOFENAMATE

Indications: Arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: methotrexate
Pregnancy category: C
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Erythema multiforme [3]
Exanthems (<9%) [4]
Exfoliative dermatitis [2]
Fixed eruption [3]
Photosensitivity [2]
Pruritus (itching) (<10%) [3]
Purpura [4]
Rash (3–9%)
Urticaria / hives [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]
Vesiculobullous eruption [2]
Mucosal
Stomatitis (oral mucositis) (1–3%)

MEDROXY-PROGESTERONE

Trade names: Depo-Provera (Pfizer), Lunelle (Pfizer), Premphase (Wyeth), Prempro (Wyeth), Provera (Pfizer)
Indications: Secondary amenorrhea, renal or endometrial carcinoma
Class: Progestogen
Half-life: 30 days
Clinically important, potentially hazardous interactions with: acitretin, dofetilide
Pregnancy category: X

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<5%)
Chloasma (<10%)
Diaphoresis (see also hyperhidrosis) (<31%)
Edema / fluid retention (see also peripheral edema) (>10%)
Flushing / rubefaction (12%)
Melasma (<10%)
Pruritus (itching) (<10%)
Rash (<5%)
Hair
Alopecia / hair loss (<5%)
Cardiovascular
Thrombophlebitis (<10%)
Endocrine/Metabolic
Amenorrhea [3]
Galactorrhea [2]
Mastodynia (<5%)
Weight gain [3]
Genitourinary
Vaginitis (includes vulvitis) (<5%)
Local
Injection-site pain (>10%)
Neuromuscular/Skeletal
Osteoporosis [2]

MEFENAMIC ACID

Trade name: Ponstel (First Horizon)
Indications: Pain, dysmenorrhea
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 3.5 hours
Clinically important, potentially hazardous interactions with: methotrexate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
Warning: CARDIOVASCULAR AND GASTROINTESTINAL RISK

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Erythema multiforme [2]
Exanthems [2]
Fixed eruption [12]
Pruritus (itching) (<10%)
Rash (>10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]

Cardiovascular
Myocardial infarction [2]

Central Nervous System
Seizures [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Ocular
Glaucoma (includes acute angle-closure glaucoma) [2]

Renal
Renal failure [2]

MEFLOQUINE

Trade name: Lariam (Roche)
Indications: Malaria
Class: Antimalarial, Antimicrobial, Antiprotozoal
Half-life: 21–22 days
Clinically important, potentially hazardous interactions with: acebutolol, artemether/lumefantrine, ethosuximide, halofantrine, ketoconazole, lacosamide, moxifloxacin, oxcarbazepine, quinine, tiagabine, typhoid vaccine, vigabatrin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: NEUROPSYCHIATRIC ADVERSE REACTIONS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Erythema [2]
Exanthems (30%)
Pruritus (itching) (4–10%) [2]
Psoriasis [2]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Cardiovascular
Palpitation [3]
Tachycardia [2]

Central Nervous System
Abnormal dreams [3]
Aggression (includes anger) [2]
Amnesia [2]
Anorexia [2]
Anxiety [5]
Chills (<10%)
Confusion [2]
Delusions [2]
Depression [7]
Fever (pyrexia) (includes hyperpyrexia) (<10%) [2]
Hallucinations [3]
Headache (<10%) [5]
Insomnia [3]
Mania [4]
Neurotoxicity [8]
Psychosis [8]
Seizures [6]
Sleep disturbances [2]
Suicidal ideation [2]
Vertigo / dizziness (<10%) [21]

Gastrointestinal/Hepatic
Abdominal pain [4]
Diarrhea [4]
Nausea [8]
Vomiting [15]

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue (<10%) [2]
Myalgia/Myopathy (<10%) [2]

Ocular
Maculopathy [2]

Otic
Tinnitus (<10%)

Other
Adverse effects / adverse reactions [2]
Death [3]

MELATONIN

Family: None
Scientific name: *N-acetyl-5-methoxytryptamine*
Indications: Jet lag, sleep disorders, Alzheimer's disease, free radical scavenger, chemotherapy adjunct, tinnitus, depression, migraine, cluster headache, hypertension, hyperpigmentation, osteoporosis, antioxidant. Skin protectant against sunburn
Class: Hormone
Half-life: N/A
Clinically important, potentially hazardous interactions with: acetaminophen, NSAIDs, setraline
Pregnancy category: N/A

Skin
Fixed eruption [2]

Central Nervous System
Somnolence (drowsiness) [2]

MELOXICAM

Trade name: Mobic (Boehringer Ingelheim)
Indications: Osteoarthritis
Class: COX-2 inhibitor, Non-steroidal anti-inflammatory (NSAID)
Half-life: 15–20 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, adrenergic neurone blockers, alcohol, aliskiren, alpha blockers, angiotensin II receptor antagonists, anticoagulants, antidepressants, antiplatelet agents, aspirin, baclofen, beta blockers, bile acid sequestrants, calcium channel blockers, cardiac glycosides, cholestyramine, clonidine, clopidogrel, collagenase, conivaptan, corticosteroids, coumarins, cyclosporine, dabigatran, dasatinib, desmopressin, diazoxide, digoxin, diuretics, drotrecogin alfa, eplerenone, erlotinib, glucosamine, haloperidol, heparins, hydralazine, ibritumomab, iloprost, ketorolac, lithium, methotrexate, methyldopa, mifamurtide, minoxidil, moxonidine, nitrates, nitroprusside, NSAIDs, pemetrexed, penicillamine, pentosan, pentoxifylline, phenindione, pralatrexate, prasugrel, probenecid, prostacyclin analogues, quinolones, ritonavir, serotonin/norepinephrine reuptake inhibitors, SSRIs, sulfonylureas, tacrolimus, thrombolytic agents, tositumomab & iodine^{131}, treprostinil, vancomycin, venlafaxine, vitamin K antagonists, voriconazole, zidovudine
Pregnancy category: C (category D from 30 weeks gestation)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
Warning: CARDIOVASCULAR AND GASTROINTESTINAL RISKS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%)
Angioedema (<2%) [3]
Bullous dermatosis (<2%)
Edema / fluid retention (see also peripheral edema) (2–5%)
Erythema [2]
Erythema multiforme (<2%)
Exanthems (<2%)
Facial edema (<2%)
Hematoma [3]
Hot flashes / hot flushes (<2%)
Hyperhidrosis (see also diaphoresis) (<2%)
Hypersensitivity [2]
Photosensitivity (<2%)
Pruritus (itching) (<2%) [3]
Purpura (<2%)
Rash (<3%) [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<2%)
Urticaria / hives (<2%) [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) (<2%)

Hair
Alopecia / hair loss (<2%)

Mucosal
Ulcerative stomatitis (<2%)
Xerostomia (dry mouth) (<2%)

Cardiovascular
Angina (<2%)
Arrhythmias (<2%)
Cardiac failure (<2%)
Hypertension (<2%)
Hypotension (<2%)
Myocardial infarction (<2%)
Palpitation (<2%)
Tachycardia (<2%)

Central Nervous System
Abnormal dreams (<2%)
Anxiety (<2%)
Confusion (<2%)
Depression (<2%)
Dysgeusia (taste perversion) (<2%)
Fever (pyrexia) (includes hyperpyrexia) (<2%)
Headache (2–6%) [2]
Insomnia (<4%)
Nervousness (<2%)
Pain (4%)
Paresthesias (<2%)
Seizures (<2%)
Somnolence (drowsiness) (<2%)
Syncope / fainting (<2%)
Tremor (<2%)
Vertigo / dizziness (<3%)

Endocrine/Metabolic
ALT increased (<2%)
Appetite increased (<2%)
AST increased (<2%)
Dehydration (<2%)
GGT increased (<2%)
Weight gain (<2%)
Weight loss (<2%)

Gastrointestinal/Hepatic
Abdominal pain (2–5%) [2]
Black stools / melena (<2%)
Colitis (<2%)
Constipation (<3%) [2]
Diarrhea (2–6%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (4–10%) [2]
Eructation (belching) (<2%)
Esophagitis (<2%)
Flatulence (<3%)
Gastritis / pangastritis / gastric irritation (<2%)
Gastroesophageal reflux (<2%)
Gastrointestinal bleeding [2]
Gastrointestinal perforation / perforated colon / gastric perforation (<2%) [2]
Gastrointestinal ulceration (<2%) [3]
Hematemesis (<2%)
Hepatitis (<2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea (3–7%) [4]
Pancreatitis / acute pancreatitis (<2%)
Vomiting (<3%)

Genitourinary
Albuminuria (<2%)
Hematuria (<2%)
Urinary frequency (<2%)
Urinary tract infection (<7%)

Hematologic
Anemia (<4%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<2%)

Neuromuscular/Skeletal
Arthralgia (<5%)
Asthenia / fatigue [2]
Back pain (<3%)
Bone or joint pain (2%)

Ocular
Abnormal vision (<2%)
Conjunctivitis (conjunctival inflammation) (<2%)

Otic
Tinnitus (<2%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure (<2%)

Respiratory
Asthma (<2%)
Bronchospasm (<2%)
Cough (<2%)
Dyspnea / shortness of breath (<2%)
Influenza- ('flu)-like syndrome (2–3%)
Upper respiratory tract infection (<8%)

Other
Adverse effects / adverse reactions (18%) [6]
Allergic reactions (<2%)

MELPHALAN

Trade names: Alkeran (GSK), Evomela (Spectrum)
Indications: Multiple myeloma, carcinomas
Class: Alkylating agent
Half-life: 90 minutes
Clinically important, potentially hazardous interactions with: aldesleukin, PEG-interferon, tasonermin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SEVERE BONE MARROW SUPPRESSION, HYPERSENSITIVITY, and LEUKEMOGENICITY

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema [2]
Cutaneous toxicity / skin toxicity [3]
Dermatitis [2]
Exanthems (4%) [4]
Hypersensitivity (<10%)
Pruritus (itching) (<10%)
Rash (<10%)
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) (<10%)
Vesiculation (<10%)

Hair
Alopecia / hair loss (<10%) [2]

Nails
Beau's lines (transverse nail bands) [4]

Mucosal
Mucositis [8]
Stomatitis (oral mucositis) (<10%) [6]

Cardiovascular
Atrial fibrillation [2]

Central Nervous System
Peripheral neuropathy [3]

Gastrointestinal/Hepatic
Diarrhea [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [2]

Hematologic
Anemia [2]
Febrile neutropenia [3]
Hemotoxicity [2]
Neutropenia (neutrophils decreased) [6]
Thrombocytopenia [6]

Neuromuscular/Skeletal
Rhabdomyolysis [2]

Ocular
Ocular adverse effect [2]

Other
Death [2]

MEMANTINE

Trade names: Ebixa (Lundbeck), Namenda (Forest)
Indications: Alzheimer's disease, vascular dementia
Class: Adamantane, NMDA receptor antagonist
Half-life: 60–80 hours
Clinically important, potentially hazardous interactions with: amantadine, bromocriptine, darifenacin, dextromethorphan, ketamine, levodopa, levomepromazine, oxybutynin, risperidone, rotigotine, tiotropium, trimethoprim, trospium, zuclopenthixol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Peripheral edema (see also edema) (>2%)

Central Nervous System
Agitation [2]
Confusion [3]
Depression (>2%)
Gait instability / postural instability [3]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache (6%) [3]
Somnolence (drowsiness) [3]
Vertigo / dizziness (7%) [7]

Gastrointestinal/Hepatic
Constipation [2]
Diarrhea [2]
Vomiting [2]

Genitourinary
Urinary tract infection [2]

Neuromuscular/Skeletal
Arthralgia (>2%)
Asthenia / fatigue (2%)
Back pain (3%)
Myoclonus [2]

Respiratory
Cough (4%)
Influenza- ('flu)-like syndrome (>2%)
Nasopharyngitis [2]

Other
Adverse effects / adverse reactions [3]

MENADIONE

Synonym: vitamin K_3
Trade names: Menadione (Sigma-Aldrich) (Lilly), Synkavite (Roche)
Indications: Hemorrhage or threatened hemorrhage during severe hypoprothrombinemia, coagulation disorders
Class: Vitamin K
Half-life: 23–29 minutes
Clinically important, potentially hazardous interactions with: warfarin
Pregnancy category: C

MENINGOCOCCAL GROUP B VACCINE

Trade names: Bexsero (Novartis), Trumenba (Wyeth)
Indications: Immunization to prevent invasive disease caused by *Neisseria meningitidis* serogroup B
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Central Nervous System
Chills (18–30%)
Fever (pyrexia) (includes hyperpyrexia) (2–8%) [4]
Headache (41–57%)
Gastrointestinal/Hepatic
Diarrhea (9–15%)
Vomiting (2–8%)
Local
Injection-site edema (18–22%)
Injection-site erythema (15–20%)
Injection-site pain (85–93%) [3]
Injection-site reaction [2]
Neuromuscular/Skeletal
Arthralgia (16–22%)
Asthenia / fatigue (44–65%)
Myalgia/Myopathy (35–41%)
Respiratory
Upper respiratory tract infection [2]

MENINGOCOCCAL GROUPS C & Y & HAEMOPHILUS B TETANUS TOXOID CONJUGATE VACCINE

Synonym: HibMenCY
Trade name: Menhibrix (GSK)
Indications: Immunization to prevent invasive disease caused by *Neisseria meningitidis* serogroups C and Y and *Haemophilus influenzae* Type B
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: immunosuppressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (11–26%)
Irritability (62–71%)
Sedation (49–63%)
Endocrine/Metabolic
Appetite decreased (30–34%)
Local
Injection-site edema (15–25%) [2]
Injection-site erythema (21–36%)
Injection-site pain (42–46%) [2]

MEPENZOLATE

Indications: Peptic ulcer
Class: Muscarinic antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: antacids, anticholinergics, arbutamine, digoxin, metoclopramide
Pregnancy category: B

MEPERIDINE

Synonym: pethidine
Trade name: Demerol (Sanofi-Aventis)
Indications: Pain
Class: Opiate agonist
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: acyclovir, alcohol, amphetamines, barbiturates, CNS depressants, darunavir, duloxetine, fluoxetine, furazolidone, general anesthetics, glycopyrrolate, glycopyrronium, indinavir, isocarboxazid, linezolid, lisdexamfetamine, lithium, MAO inhibitors, moclobemide, phenelzine, phenobarbital, phenothiazines, phenytoin, rasagiline, ritonavir, safinamide, selegiline, sibutramine, SSRIs, tipranavir, tranquilizers, tranylcypromine, tricyclic antidepressants, valacyclovir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Pruritus (itching) [3]
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Catatonia [2]
Delirium [2]
Seizures [2]
Serotonin syndrome [7]
Local
Injection-site erythema [2]
Injection-site pain (<10%)

MEPHENYTOIN

Trade name: Mesantoin (Novartis)
Indications: Partial seizures
Class: Anticonvulsant, Antiepileptic; hydantoin
Half-life: 7 hours (for the active metabolite: 95–144 hours)
Clinically important, potentially hazardous interactions with: chloramphenicol, cyclosporine, disulfiram, dopamine, imatinib, itraconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Erythema multiforme [3]
Exanthems (8–10%) [5]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [12]
Pigmentation [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Urticaria / hives [3]

MEPHOBARBITAL

Indications: Epilepsy, anxiety
Class: Barbiturate
Half-life: 34 hours
Clinically important, potentially hazardous interactions with: alcohol, anticoagulants, antihistamines, brompheniramine, buclizine, chlorpheniramine, dicumarol, ethanolamine, imatinib, warfarin
Pregnancy category: D

MEPOLIZUMAB

Trade name: Nucala (GSK)
Indications: Adjunctive treatment for severe eosinophilic asthma
Class: Interleukin-5 antagonist, Monoclonal antibody
Half-life: 16–22 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Insufficent evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Eczema / eczematous reaction / eczematous eruption (3%)
Pruritus (itching) (3%)
Rash (>3%)
Mucosal
Nasal congestion (>3%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (>3%)
Headache (19%) [6]
Vertigo / dizziness (>3%)
Gastrointestinal/Hepatic
Abdominal pain (3%)
Gastroenteritis (>3%)
Nausea (>3%) [3]
Vomiting (>3%)
Genitourinary
Cystitis (>3%)
Urinary tract infection (3%)
Local
Injection-site reaction (8%) [2]
Neuromuscular/Skeletal
Asthenia / fatigue (5%) [2]
Back pain (5%)
Bone or joint pain (>3%)
Muscle spasm (3%)
Otic
Ear infection (>3%)
Respiratory
Asthma [2]
Bronchitis (>3%) [3]
Dyspnea / shortness of breath (>3%)
Influenza (3%)
Nasopharyngitis (>3%) [3]
Pharyngitis (sore throat) (>3%)
Rhinitis (>3%)
Sinusitis [2]
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [3]
Infection (>3%) [2]
Toothache (odontalgia) (>3%)

MEPROBAMATE

Trade names: Equagesic (Women First), Miltown (MedPointe)
Indications: Anxiety, insomnia
Class: Anxiolytic, Central muscle relaxant
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: carisoprodol
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Angioedema [4]
Bullous dermatosis [2]
Erythema multiforme [2]
Exanthems (2%) [11]
Fixed eruption [6]
Pruritus (itching) [6]
Purpura [13]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives (2%) [10]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [8]
Other
Side effects (2%) [2]

MEPTAZINOL

Trade name: Meptid (Wyeth)
Indications: Pain
Class: Analgesic; opioid
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: antipsychotics, anxiolytics, cimetidine, ciprofloxacin, domperidone, hypnotics, MAO inhibitors, metoclopramide, ritonavir, tricyclic antidepressants

Central Nervous System
Dysphoria [2]
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Nausea [4]
Vomiting [2]
Respiratory
Respiratory depression [4]

MERCAPTOPURINE

Synonyms: 6-mercaptopurine; 6-MP
Trade name: Purinethol (Gate)
Indications: Leukemias
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: triphasic: 45 minutes; 2.5 hours; 10 hours
Clinically important, potentially hazardous interactions with: aldesleukin, allopurinol, balsalazide, febuxostat, influenza vaccine, mycophenolate, natalizumab, olsalazine, trimethoprim, typhoid vaccine, vaccines, yellow fever vaccine
Pregnancy category: D

Skin
Dermatitis (2%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [3]
Hypersensitivity [2]
Peripheral edema (see also edema) [2]
Photosensitivity [2]
Pigmentation (<10%)
Rash (<10%) [2]
Hair
Alopecia / hair loss [2]
Mucosal
Mucositis (<10%)
Oral lesions (<5%) [2]
Stomatitis (oral mucositis) (<10%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [3]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea [2]
Pancreatitis / acute pancreatitis [10]
Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Myelosuppression / bone marrow suppression / myelotoxicity [6]
Other
Death [2]
Neoplasms [2]

MEROPENEM

Trade name: Meronem (AstraZeneca)
Indications: Aerobic and anaerobic infections, febrile neutropenia
Class: Antibiotic, Antibiotic; carbapenem, Antimicrobial, Thienamycin
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: oral contraceptives, probenecid, valproic acid
Pregnancy category: B

Skin
AGEP [2]
Hypersensitivity [3]
Rash (2%) [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Central Nervous System
Encephalopathy (includes hepatic encephalopathy) [2]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (2%)
Seizures [7]
Endocrine/Metabolic
ALT increased [3]
AST increased [3]
Gastrointestinal/Hepatic
Diarrhea [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Nausea [4]
Vomiting [2]
Local
Injection-site pain [3]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Other
Adverse effects / adverse reactions [14]
Death [2]

MESALAMINE

Synonyms: 5-aminosalicylic acid; 5-ASA; fisalamine; mesalazine
Trade names: Asacol (Procter & Gamble), Canasa (Aptalis), Lialda (Shire), Pentasa (Shire), Rowasa (Solvay)
Indications: Ulcerative colitis
Class: Aminosalicylate
Half-life: 0.5–1.5 hours
Clinically important, potentially hazardous interactions with: azathioprine, NSAIDs, pantoprazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

Skin
Diaphoresis (see also hyperhidrosis) (3%)
DRESS syndrome [3]
Exanthems [3]
Hypersensitivity [7]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Lupus syndrome / drug-induced lupus (DIL) [2]
Photosensitivity [3]
Psoriasis [2]
Rash (3%) [6]
Hair
Alopecia / hair loss [6]
Cardiovascular
Bradycardia / sinus bradycardia [2]
Cardiotoxicity [4]
Kounis syndrome / allergic angina syndrome / allergic myocardial infarction [2]
Myocarditis [11]
Myopericarditis / perimyocarditis [8]
Pericarditis [10]
Pleuropericarditis [2]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<6%) [6]
Headache (2–25%) [5]
Pain (14%)
Vertigo / dizziness (2–8%)
Gastrointestinal/Hepatic
Abdominal pain (<18%) [6]
Colitis (ulcerative / exacerbation) [4]
Diarrhea (2–8%) [4]
Eructation (belching) (16%)
Flatulence (<6%) [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (3–13%) [3]
Pancreatitis / acute pancreatitis [23]
Peptic ulceration (includes duodenal ulcer, esophageal ulcer) [3]
Vomiting (<5%) [2]
Hematologic
Anemia [2]
Eosinophilia [3]

Neuromuscular/Skeletal
Myalgia/Myopathy (3%)
Otic
Tinnitus (<3%)
Renal
Nephritis / interstitial nephritis / tubulointerstitial nephritis [11]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [9]
Respiratory
Eosinophilic pneumonia [4]
Pharyngitis (sore throat) (11%)
Pneumonia [5]
Pneumonitis [2]
Pulmonary toxicity [10]
Other
Adverse effects / adverse reactions [12]
Allergic reactions [2]

MESNA

Trade name: Mesnex (Bristol-Myers Squibb)
Indications: Hemorrhagic cystitis induced by ifosfamide
Class: Prophylactic, urinary
Half-life: 24 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Because mesna is used in combination with ifosfamide or ifosfamide-containing chemotherapy regimens, it is difficult to distinguish the adverse reactions which may be due to mesna from those caused by the concomitantly administered cytotoxic agents.

Skin
Angioedema [2]
Exanthems [2]
Fixed eruption [2]
Hypersensitivity [3]
Urticaria / hives [3]
Mucosal
Oral lesions [2]
Central Nervous System
Dysgeusia (taste perversion) (>17%)
Other
Allergic reactions [3]

MESORIDAZINE

Trade name: Serentil (Boehringer Ingelheim)
Indications: Schizophrenia
Class: Antipsychotic, Phenothiazine
Half-life: 24–48 hours
Clinically important, potentially hazardous interactions with: antihistamines, arsenic, chlorpheniramine, dofetilide, lithium, piperazine, quinolones, sparfloxacin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Photosensitivity (<10%)
Rash (<10%)
Endocrine/Metabolic
Mastodynia (<10%)

METAMIZOLE

Synonym: dipyrone
Trade name: Analgin (BPG)
Indications: Analgesic, antipyretic, anti-inflammatory
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 2–10 hours
Clinically important, potentially hazardous interactions with: none known
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
Parenteral administration of Analgin is contraindicated in infants <1 year old.
Metamizole is banned in more than 30 countries, including Japan, Australia, and the USA.

Skin
AGEP [3]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [12]
Erythema [2]
Exanthems [3]
Fixed eruption [9]
Scrotal gangrene / Fournier's gangrene [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
Urticaria / hives [3]
Cardiovascular
Kounis syndrome / allergic angina syndrome / allergic myocardial infarction [3]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [3]
Somnolence (drowsiness) [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Vomiting [2]
Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [19]
Anemia [2]
Neutropenia (neutrophils decreased) [3]
Ocular
Rhinoconjunctivitis [2]
Other
Adverse effects / adverse reactions [4]
Death [15]

METAXALONE

Trade name: Skelaxin (Elan)
Indications: Muscle spasm
Class: Central muscle relaxant
Half-life: 4–14 hours
Clinically important, potentially hazardous interactions with: alcohol, barbiturates, conivaptan, droperidol, interferon alfa, levomepromazine, St John's wort, tricyclic antidepressants
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with known tendency to drug-induced, hemolytic, or other anemias, or significantly impaired renal or hepatic function.

Cardiovascular
Tachycardia [2]
Central Nervous System
Agitation [2]
Serotonin syndrome [3]
Somnolence (drowsiness) [3]
Vertigo / dizziness [3]
Gastrointestinal/Hepatic
Nausea [2]
Vomiting [2]

METFORMIN

Trade names: Avandamet (GSK), Fortamet (Andrx), Glucophage (Merck Serono), Glucovance (Merck Serono), Invokamet (Janssen), Janumet (Merck Sharpe & Dohme), Synjardy (Boehringer Ingelheim), Xigduo XR (AstraZeneca)
Indications: Diabetes
Class: Antidiabetic, Biguanide, Hypoglycemic (antihyperglycemic) agent
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, acetazolamide, alcohol, amiloride, anabolic steroids, beta blockers, bictegravir/emtricitabine/tenofovir alafenamide, calcium channel blockers, captopril, cephalexin, cilazapril, cimetidine, corticosteroids, diazoxide, dichlorphenamide, digoxin, disopyramide, diuretics, enalapril, estrogens, fosinopril, iodinated contrast agents, isoniazid, ketotifen, lanreotide, lisinopril, luteinizing hormone releasing hormone analogs, MAO inhibitors, morphine, nicotinic acid, octreotide, oral contraceptives, pegvisomant, phenothiazines, phenytoin, procainamide, progestogens, quinapril, quinidine, quinine, ramipril, ranitidine, risdiplam, somatropin, sotorasib, sympathomimetics, testosterone, thiazides, thyroid products, topiramate, trandolapril, triamterene, trilaciclib, trimethoprim, trospium, tucatinib, vancomycin, zonisamide
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Lactic acidosis is a rare, but serious, metabolic complication that can occur due to metformin accumulation.
Avandamet is metformin and rosiglitazone; Glucovance is metformin and glyburide; Invokamet is metformin and canagliflozin; Janumet is metformin and sitagliptin; Synjardy is metformin and empagliflozin; Xigduo XR is metformin and dapagliflozin.
Warning: LACTIC ACIDOSIS

Skin
Angioedema [2]
Bullous pemphigoid / pemphigoid [2]
Erythema (transient) [3]
Fixed eruption [3]
Flushing / rubefaction (<10%)
Leukocytoclastic vasculitis (angiitis) [2]
Lichenoid eruption / lichenoid reaction [2]
Peripheral edema (see also edema) [5]
Photosensitivity (<10%)

Rash (<10%) [4]
Urticaria / hives (<10%) [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Cardiovascular
Hypertension [3]
Palpitation (<10%)

Central Nervous System
Chills (<10%)
Dysgeusia (taste perversion) (3%)
Headache (6%) [10]
Vertigo / dizziness (<10%) [6]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [23]
Appetite decreased [5]
Hypoglycemia (see also insulin autoimmune syndrome) [16]
Vitamin B-12 deficiency [6]
Weight gain [2]
Weight loss [5]

Gastrointestinal/Hepatic
Abdominal pain (6%) [5]
Constipation [3]
Diarrhea (10–35%) [33]
Dyspepsia / functional dyspepsia / gastroparesis [5]
Flatulence [2]
Gastroenteritis [2]
Gastrointestinal adverse reaction [2]
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Nausea (7–26%) [25]
Pancreatitis / acute pancreatitis [5]
Vomiting (7–26%) [12]

Genitourinary
Genital mycotic infection [9]
Pollakiuria [3]
Urinary tract infection [12]

Hematologic
Anemia [2]

Neuromuscular/Skeletal
Arthralgia [5]
Asthenia / fatigue (9%) [2]
Back pain [5]
Myalgia/Myopathy (<10%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]

Respiratory
Bronchitis [3]
Dyspnea / shortness of breath (<10%)
Influenza [2]
Nasopharyngitis [6]
Respiratory tract infection (<10%)
Sinusitis [2]
Upper respiratory tract infection [6]

Other
Adverse effects / adverse reactions [24]
Death [2]

METHADONE

Trade names: Dolophine (Roxane), Methadose (Mallinckrodt)
Indications: Pain, narcotic addiction
Class: Opiate agonist
Half-life: 15–25 hours
Clinically important, potentially hazardous interactions with: abacavir, amprenavir, boceprevir, citalopram, darunavir, delavirdine, diazepam, efavirenz, erythromycin, fluconazole, fluvoxamine, interferon alfa, itraconazole, ketoconazole, linezolid, lofexidine, lopinavir, nelfinavir, nilotinib, paroxetine hydrochloride, PEG-interferon, quetiapine, ribociclib, rifapentine, rilpivirine, safinamide, selegiline, St John's wort, tipranavir, vandetanib, voriconazole, zidovudine, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Methadone is not licensed for use in children though it can be employed for the management of neonatal opiate withdrawal syndrome.

Skin
Diaphoresis (see also hyperhidrosis) (<48%) [4]
Pruritus (itching) [2]

Mucosal
Xerostomia (dry mouth) (<10%)

Cardiovascular
Arrhythmias [2]
QT interval prolonged / QT prolongation [37]
Torsades de pointes [27]
Ventricular arrhythmia [2]

Central Nervous System
Hallucinations [2]
Hyperalgesia [2]
Neurotoxicity [2]
Serotonin syndrome [2]
Somnolence (drowsiness) [2]
Syncope / fainting [2]

Genitourinary
Sexual dysfunction [2]

Local
Injection-site pain (<10%)

Neuromuscular/Skeletal
Rhabdomyolysis [4]

Respiratory
Respiratory depression [4]

Other
Adverse effects / adverse reactions [2]
Death [15]

METHAMPHETAMINE

Trade name: Desoxyn (Recordati)
Indications: Attention deficit disorder, obesity
Class: Amphetamine
Half-life: 4–5 hours
Clinically important, potentially hazardous interactions with: fluoxetine, fluvoxamine, MAO inhibitors, paroxetine hydrochloride, phenelzine, sertraline, tranylcypromine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: POTENTIAL FOR ABUSE

Skin
Diaphoresis (see also hyperhidrosis) (<10%)

Mucosal
Xerostomia (dry mouth) (<10%) [5]

Cardiovascular
Polyarteritis nodosa [2]

Central Nervous System
Depression [2]
Hallucinations [4]
Insomnia [2]
Neurotoxicity [6]
Paranoia [2]
Parkinsonism [2]
Psychosis [11]

Neuromuscular/Skeletal
Rhabdomyolysis (43%) [5]

Other
Bruxism (teeth grinding) [4]
Death [3]
Dental disease [2]
Tooth decay [2]

METHANTHELINE

Indications: Duodenal ulcer
Class: Muscarinic cholinergic agonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticholinergics, arbutamine

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Mucosal
Xerostomia (dry mouth) [4]

METHAZOLAMIDE

Indications: Glaucoma
Class: Carbonic anhydrase inhibitor, Diuretic
Half-life: ~14 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [7]

Central Nervous System
Depression [2]
Dysgeusia (taste perversion) (metallic taste) (>10%) [2]
Paresthesias [2]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [2]
Libido decreased [2]
Weight loss [2]

Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis [2]

Ocular
Glaucoma (includes acute angle-closure glaucoma) [2]
Myopia [3]

Renal
Nephrolithiasis (formation of a kidney stone) [2]

METHENAMINE

Trade name: Hiprex (Sanofi-Aventis)
Indications: Urinary tract infections
Class: Antibiotic, Antimicrobial
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: lisdexamfetamine
Pregnancy category: C

Skin
Exanthems [2]
Rash (4%)

METHICILLIN

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 30 minutes
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, imipenem/cilastatin, methotrexate, tetracycline

Skin
Exanthems (29%) [2]
Rash (<10%)

METHIMAZOLE

Synonym: thiamazole
Trade name: Tapazole (Paladin)
Indications: Hyperthyroidism
Class: Antithyroid, Antithyroid; hormone modifier
Half-life: 4–13 hours
Clinically important, potentially hazardous interactions with: anticoagulants, dicumarol, warfarin
Pregnancy category: D

Skin
Aplasia cutis congenita [4]
Exanthems (<15%) [5]
Hypersensitivity [2]
Jaundice [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (<10%) [13]
Pruritus (itching) (<5%) [4]
Rash (>10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives (>5%) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [6]

Central Nervous System
Ageusia (taste loss) / taste disorder (<10%)

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [2]
Insulin autoimmune syndrome / insulin autoimmune hypoglycemia / Hirata's disease [6]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [11]
Pancreatitis / acute pancreatitis [5]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [16]
Neutropenia (neutrophils decreased) [2]

Neuromuscular/Skeletal
Arthralgia [4]

Respiratory
Pulmonary toxicity [2]

Other
Side effects (in high dosages) (28%) [2]
Teratogenicity [2]

METHOCARBAMOL

Trade name: Robaxin (Baxter) (Elkins-Sinn)
Indications: Muscle spasm, tetanus
Class: Central muscle relaxant
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: ethanol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Flushing / rubefaction (<10%)

Other
Allergic reactions (<10%)

METHOTREXATE

Synonyms: amethopterin; MTX
Trade names: Rasuvo (Medac), Rheumatrex (Stada)
Indications: Carcinomas, leukemias, lymphomas, psoriasis, rheumatoid arthritis
Class: Antimetabolite, Antipsoriatic agent, Disease-modifying antirheumatic drug (DMARD), Folic acid antagonist
Half-life: 3–10 hours
Clinically important, potentially hazardous interactions with: acemetacin, acitretin, aldesleukin, aminoglycosides, amiodarone, amoxicillin, ampicillin, aspirin, bacampicillin, bismuth, carbenicillin, chloroquine, ciprofloxacin, cisplatin, cloxacillin, co-trimoxazole, cyclopenthiazide, dapsone, demeclocycline, dexamethasone, diclofenac, dicloxacillin, doxycycline, echinacea, etodolac, etoricoxib, etretinate, fenoprofen, flurbiprofen, folic acid antagonists, gadobenate, haloperidol, hydrocortisone, ibuprofen, indomethacin, infliximab, ketoprofen, ketorolac, leflunomide, magnesium trisalicylate, meclofenamate, mefenamic acid, meloxicam, methicillin, mezlocillin, minocycline, nabumetone, nafcillin, naproxen, natalizumab, NSAIDs, omeprazole, oxacillin, oxaprozin, oxtriphylline, oxytetracycline, pantoprazole, paromomycin, penicillin G, penicillin V, penicillins, phenylbutazone, piperacillin, piperacillin/tazobactam, piroxicam, polypeptide antibiotics, prednisolone, prednisone, pristinamycin, probenecid, procarbazine, rofecoxib, salicylates, salsalate, sapropterin, sulfadiazine, sulfamethoxazole, sulfapyridine, sulfasalazine, sulfisoxazole, sulindac, tafamidis meglumine, taxobactam, tenoxicam, tetracycline, ticarcillin, tolmetin, trimethoprim, vaccines
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SEVERE TOXIC REACTIONS, INCLUDING EMBRYOFETAL TOXICITY AND DEATH

Skin
Abscess (peritoneal) [2]
Acral erythema [14]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%) [9]
Bruise / bruising / contusion / ecchymosis (ecchymoses) [2]
Bullous acral erythema [2]
Bullous dermatosis [4]
Capillaritis [2]
Carcinoma [2]
Cutaneous toxicity / skin toxicity [9]
Dermatitis [2]
Edema / fluid retention (see also peripheral edema) [2]
Erosion of psoriatic plaques [8]
Erythema (>10%)
Erythema multiforme [4]
Erythroderma [2]
Exanthems (15%) [5]
Folliculitis [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [3]
Herpes simplex [2]
Herpes zoster [7]
Hypersensitivity [5]
Lymphoma [5]
Lymphoproliferative disease / lymphoproliferative disorder [16]
Malignant lymphoma [4]
Molluscum contagiosum [2]
Necrosis (skin necrosis) [7]
Nodular eruption [15]
Non-Hodgkin's lymphoma [2]
Photosensitivity (5%) [9]
Pigmentation (<10%)
Pruritus (itching) (<5%)
Pseudolymphoma [10]
Radiation recall dermatitis [8]
Rash (<3%) [13]
Squamous cell carcinoma [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [16]
Sunburn (reactivation) [6]
Ulceration of psoriatic plaques [4]
Ulcerations [12]
Urticaria / hives [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) (>10%) [9]

Hair
Alopecia / hair loss (<6%) [28]

Nails
Nail pigmentation [2]
Paronychia [2]

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [2]
Gingivitis (>10%)
Glossitis (inflammation of the tongue) (>10%)
Mucocutaneous reactions [3]
Mucositis [12]
Nasal septal perforation [2]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [11]
Stomatitis (oral mucositis) (3–10%) [29]

Cardiovascular
Cardiotoxicity [2]
Hypertension [2]
Pericardial effusion [2]
Pericarditis [5]

Central Nervous System
Encephalopathy (includes hepatic encephalopathy) [5]
Fever (pyrexia) (includes hyperpyrexia) [7]
Headache [18]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [64]
Migraine [2]

Myelopathy (see also necrotizing myelopathy / necrotic myelopathy / subacute necrotic myelopathy) [3]
Necrotizing myelopathy / necrotic myelopathy / subacute necrotic myelopathy [2]
Neurotoxicity [14]
Stroke / cerebral infarction [2]
Vertigo / dizziness [3]

Endocrine/Metabolic
ALT increased [7]
AST increased [3]
Diabetes mellitus [2]
Gynecomastia [8]
Hypertransaminasemia (transaminitis) / elevated transaminases [3]
Hypoalbuminemia / albumin decreased [2]
Weight gain [2]

Gastrointestinal/Hepatic
Abdominal pain [9]
Colitis [2]
Diarrhea [13]
Dyspepsia / functional dyspepsia / gastroparesis [3]
Gastroenteritis [2]
Hepatic failure [2]
Hepatic steatosis [2]
Hepatitis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [60]
Nausea [32]
Vomiting [14]

Genitourinary
Urinary tract infection [4]

Hematologic
Anemia [10]
Febrile neutropenia [3]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [11]
Myelosuppression / bone marrow suppression / myelotoxicity [12]
Neutropenia (neutrophils decreased) [12]
Pancytopenia (includes bicytopenia) [12]
Thrombocytopenia [10]

Local
Injection-site reaction [3]

Neuromuscular/Skeletal
Arthralgia [5]
Asthenia / fatigue [16]
Back pain [2]
Bone or joint pain [2]

Ocular
Cotton wool spots [2]
Optic neuropathy [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [30]
Renal failure [3]

Respiratory
Cough [3]
Nasopharyngitis [6]
Pharyngitis (sore throat) [2]
Pneumonia [8]
Pneumonitis [8]
Pulmonary toxicity [9]
Sinusitis [2]
Upper respiratory tract infection [9]

Other
Adverse effects / adverse reactions [43]
Death [18]
Hodgkin's disease (nodular sclerosing) [2]
Infection [25]
Malignancies [2]
Neoplasms [2]
Side effects [3]
Teratogenicity [3]

METHOXSALEN

Trade name: Oxsoralen (Valeant)
Indications: Psoriasis, vitiligo
Class: CYP1A2 inhibitor, Psoralen, Repigmenting agent
Half-life: 1.1 hours
Clinically important, potentially hazardous interactions with: caffeine, chloroquine, cyclosporine, fluoroquinolones, phenothiazines, sulfonamides
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Potential hazards of long-term therapy include the possibilities of carcinogenicity and cataractogenicity.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Basal cell carcinoma [3]
Bullous dermatosis (with UVA) [4]
Burning / skin burning sensation (<10%) [3]
Carcinoma [5]
Dermatitis [4]
Edema / fluid retention (see also peripheral edema) (<10%)
Ephelides (freckles) (<10%) [5]
Erythema (<10%)
Exanthems [2]
Herpes zoster [2]
Hypomelanosis (<10%)
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Photosensitivity [9]
Phototoxicity [7]
Pigmentation [3]
Porokeratosis (actinic) [3]
Pruritus (itching) (>10%)
Rash (<10%)
Squamous cell carcinoma [4]
Tumors [2]
Vitiligo [2]

Hair
Hypertrichosis [3]

Nails
Nail pigmentation [5]
Photo-onycholysis [5]

Mucosal
Cheilitis (inflammation of the lips) (<10%)

Central Nervous System
Pain [2]

Ocular
Ocular toxicity [2]

METHOXYFLURANE

Trade name: Penthrane (AbbVie) (Ger)
Indications: Anesthesia
Class: Anesthetic; inhalation
Half-life: N/A
Clinically important, potentially hazardous interactions with: cisatracurium, demeclocycline, doxacurium, doxycycline, gentamicin, kanamycin, minocycline, neomycin, oxytetracycline, pancuronium, rapacuronium, streptomycin, tetracycline

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

METHSUXIMIDE

Trade name: Celontin (Pfizer)
Indications: Absence (petit-mal) seizures
Class: Antiepileptic; succinimide
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: phenobarbital, phenytoin
Pregnancy category: C
Note: Methsuximide should not be used in patients with a history of hypersensitivity to succinimides. Blood dyscrasias, including some with fatal outcome, have been reported to be associated with the use of succinimides; therefore, periodic blood counts should be performed.

Skin
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (>10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (>10%)

METHYCLOTHIAZIDE

Indications: Hypertension
Class: Diuretic, thiazide
Half-life: N/A
Clinically important, potentially hazardous interactions with: digoxin, lithium
Pregnancy category: B
Note: Methyclothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

METHYL SALICYLATE

Synonym: Oil of Wintergreen
Trade name: Salonpas (Hisamitsu)
Indications: Pain
Class: Analgesic, Non-steroidal anti-inflammatory (NSAID), Salicylate
Half-life: N/A
Clinically important, potentially hazardous interactions with: alcohol, anticoagulants, aspirin, ibuprofen, naproxen, triamcinolone, warfarin
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients
Note: Do not use in the last 3 months of pregnancy as it may cause problems in the unborn child or complications during delivery.
Salonpas contains menthol.

Skin
Cutaneous toxicity / skin toxicity [4]

METHYLDOPA

Trade name: Aldoclor (Merck)
Indications: Hypertension
Class: Adrenergic alpha-receptor agonist
Half-life: 1.7 hours
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, bromocriptine, captopril, cilazapril, cyclopenthiazide, diclofenac, enalapril, ephedrine, fosinopril, irbesartan, levodopa, levomepromazine, linezolid, lisinopril, meloxicam, olmesartan, quinapril, ramipril, risperidone, rotigotine, trandolapril, triamcinolone, zuclopenthixol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Aldoril is methyldopa and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
- Eczema / eczematous reaction / eczematous eruption [3]
- Erythema multiforme [2]
- Exanthems (3%) [3]
- Lichen planus (includes hypertrophic lichen planus) [3]
- Lichenoid eruption / lichenoid reaction [9]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [14]
- Peripheral edema (see also edema) (>10%)
- Photosensitivity [2]
- Pigmentation [3]
- Seborrheic dermatitis [3]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
- Urticaria / hives [2]

Mucosal
- Oral lichenoid eruption [3]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [6]
- Xerostomia (dry mouth) (<10%)

Central Nervous System
- Anxiety (<10%)
- Depression (<10%)
- Dyskinesia [2]
- Fever (pyrexia) (includes hyperpyrexia) (<10%)
- Headache (<10%)
- Nightmares (<10%)
- Parkinsonism [2]

Endocrine/Metabolic
- Amenorrhea [2]
- Galactorrhea [4]

Gastrointestinal/Hepatic
- Hepatitis [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]

Hematologic
- Hemolytic anemia [2]

METHYLERGONOVINE

Trade name: Methergine (Novartis)
Indications: Routine management after delivery of placenta, postpartum atony and hemorrhage, subinvolution
Class: Ergot alkaloid
Half-life: 1.5–12.7 hours
Clinically important, potentially hazardous interactions with: alkaloid drugs, amprenavir, boceprevir, clarithromycin, CYP3A4 inhibitors, delavirdine, dihydroergotamine, ergotamine, erythromycin, indinavir, itraconazole, ketoconazole, lopinavir, nefazodone, nelfinavir, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, ritonavir, telaprevir, troleandomycin, voriconazole, zileuton
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Cardiovascular
- Chest pain [2]

Gastrointestinal/Hepatic
- Nausea [3]
- Vomiting [3]

Respiratory
- Respiratory depression [2]

METHYLNALTREXONE

Trade name: Relistor (Wyeth)
Indications: Treatment of opioid-induced constipation in patients with advanced illness and receiving palliative care
Class: Opioid antagonist, Opioid receptor antagonist
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: PEG-interferon
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with known or suspected mechanical gastrointestinal obstruction.

Skin
- Hyperhidrosis (see also diaphoresis) (7%)

Cardiovascular
- Circulatory collapse [3]

Central Nervous System
- Vertigo / dizziness (7%) [2]

Endocrine/Metabolic
- Dehydration [3]

Gastrointestinal/Hepatic
- Abdominal pain (29%) [11]
- Diarrhea (6%) [5]
- Flatulence (13%) [4]
- Nausea (12%) [9]
- Vomiting [2]

METHYLPHENIDATE

Trade names: Concerta (Janssen), Metadate CD (Celltech), Methylin (Mallinckrodt), Ritalin (Novartis)
Indications: Attention deficit disorder, narcolepsy
Class: Amphetamine, Anti-attention deficit hyperactivity disorder (anti-ADHD)
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: amitriptyline, benazepril, bupropion, captopril, citalopram, clevidipine, cyclosporine, enalapril, escitalopram, irbesartan, linezolid, lisinopril, lurasidone, MAO inhibitors, olmesartan, paliperidone, pantoprazole, paroxetine hydrochloride, phenylbutazone, pimozide, quinapril, safinamide, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Warning: ABUSE AND DEPENDENCE

Skin
- Angioedema [2]
- Exanthems [2]
- Exfoliative dermatitis [2]
- Hypersensitivity (<10%)
- Leukoderma [2]

Mucosal
- Xerostomia (dry mouth) [7]

Cardiovascular
- Cardiotoxicity [3]
- Palpitation [4]
- QT interval prolonged / QT prolongation [2]
- Tachycardia [5]

Central Nervous System
- Agitation [2]
- Anorexia [8]
- Anxiety [7]
- Compulsions / obsessive-compulsive symptoms [2]
- Depression [2]
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Hallucinations [6]
- Hallucinations, visual (see also Charles Bonnet syndrome) [6]
- Headache [14]
- Insomnia [17]
- Irritability [6]
- Mood changes [2]
- Nervousness [2]
- Neurotoxicity [3]
- Psychosis [3]
- Seizures [3]
- Somnolence (drowsiness) [3]
- Stuttering (dysphemia) / stammering [2]
- Suicidal ideation [2]
- Tic disorder [7]
- Tremor [2]
- Trichotillomania (hair-pulling disorder) [2]
- Vertigo / dizziness [5]

Endocrine/Metabolic
- Appetite decreased [17]
- Weight loss [9]

Gastrointestinal/Hepatic
- Abdominal pain [13]
- Nausea [7]
- Vomiting [5]

Genitourinary
- Enuresis (urinary incontinence) [2]

Menorrhagia [2]
Priapism [5]

Neuromuscular/Skeletal
Asthenia / fatigue [2]
Dystonia [2]

Respiratory
Cough [3]
Nasopharyngitis [4]
Upper respiratory tract infection [3]

Other
Adverse effects / adverse reactions [7]
Bruxism (teeth grinding) [2]

METHYL-PREDNISOLONE

Trade names: Advantan (Intendis), Medrol (Pharmacia), Solu-Medrol (Pharmacia)
Indications: Arthralgias, asthma, dermatoses, inflammatory ocular conditions, rhinitis
Class: Corticosteroid / Glucocorticoid, Corticosteroid, systemic, Covid-19 putative drug
Half-life: 12–36 hours; 2–4 hours (plasma)
Clinically important, potentially hazardous interactions with: aminophylline, aprepitant, aspirin, carbamazepine, clarithromycin, conivaptan, cyclosporine, daclizumab, darunavir, delavirdine, erythromycin, indinavir, itraconazole, ketoconazole, live vaccines, oral contraceptives, phenobarbital, phenytoin, rifampin, telaprevir, telithromycin, troleandomycin, voriconazole, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [15]
Bruise / bruising / contusion / ecchymosis (ecchymoses) [2]
Dermatitis [5]
Flushing / rubefaction [2]
Hypersensitivity [3]
Pruritus (itching) [2]
Rash [2]
Urticaria / hives [5]

Cardiovascular
Arrhythmias [2]
Bradycardia / sinus bradycardia [11]
Hypertension [6]
Myocardial infarction [2]
Myocardial toxicity [2]

Central Nervous System
Depression [5]
Dysgeusia (taste perversion) [4]
Headache [2]
Neurotoxicity [2]
Psychosis [3]
Seizures [3]
Vertigo / dizziness [2]

Endocrine/Metabolic
Diabetic ketoacidosis [2]
Hyperglycemia (includes glucose increased) [5]
Hypokalemia [2]

Gastrointestinal/Hepatic
Abdominal pain [3]
Gastrointestinal bleeding [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [10]
Pancreatitis / acute pancreatitis [3]

Neuromuscular/Skeletal
Arthralgia [2]
Myalgia/Myopathy [4]
Osteonecrosis / avascular necrosis [9]
Osteoporosis [2]
Tendinopathy/Tendon rupture [2]

Ocular
Cataract [3]
Glaucoma (includes acute angle-closure glaucoma) [2]

Respiratory
Dysphonia (includes voice disorders / voice changes) [2]

Other
Adverse effects / adverse reactions [7]
Allergic reactions [3]
Death [2]
Hiccups / singultus [3]
Infection [7]

METHYL-TESTOSTERONE

Trade names: Android (Valeant), Estratest (Solvay), Testred (Valeant)
Indications: Hypogonadism, impotence, metastatic breast cancer
Class: Androgen
Half-life: 2.5–3.5 hours
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>10%) [12]
Edema / fluid retention (see also peripheral edema) (>10%)
Flushing / rubefaction (<5%)

Hair
Alopecia / hair loss [2]
Hirsutism (in females) (<10%) [9]

Endocrine/Metabolic
Mastodynia (>10%)

Genitourinary
Priapism (>10%)

METHYSERGIDE

Trade name: Sansert (Novartis)
Indications: Vascular (migraine) headaches
Class: Hallucinogen, Psychotomimetic
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: acebutolol, almotriptan, amprenavir, azithromycin, chlortetracycline, clarithromycin, delavirdine, demeclocycline, doxycycline, efavirenz, eletriptan, erythromycin, frovatriptan, indinavir, itraconazole, lymecycline, minocycline, naratriptan, nelfinavir, oxytetracycline, ritonavir, rizatriptan, saquinavir, sibutramine, sumatriptan, telithromycin, tetracycline, tigecycline, troleandomycin, voriconazole, zolmitriptan
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Peripheral edema (see also edema) (<10%)
Rash (<10%)
Scleroderma (see also morphea / localized scleroderma) [4]

Hair
Alopecia / hair loss [4]

Cardiovascular
Valvulopathy [3]

METIPRANOLOL

Trade name: OptiPranolol (Bausch & Lomb)
Indications: Open angle glaucoma, ocular hypertension
Class: Adrenergic beta-receptor antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: beta blockers, calcium channel blockers, reserpine
Pregnancy category: C

Ocular
Uveitis / anterior uveitis / posterior uveitis / panuveitis [14]

METOCLOPRAMIDE

Trade name: Reglan (Wyeth)
Indications: Gastroesophageal reflux
Class: Antiemetic, Dopamine receptor antagonist
Half-life: 4–6 hours
Clinically important, potentially hazardous interactions with: acetaminophen, amitriptyline, atovaquone, atovaquone/proguanil, bromocriptine, citalopram, darifenacin, hydromorphone, levodopa, levodopa, levomepromazine, lurasidone, mepenzolate, meptazinol, naratriptan, olanzapine, oxybutynin, paliperidone, posaconazole, propyphenazone, risperidone, rotigotine, safinamide, sertraline, tetrabenazine, tiotropium, trospium, venlafaxine, ziprasidone, zuclopenthixol
Pregnancy category: B
Warning: TARDIVE DYSKINESIA

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema [2]
Exanthems [3]
Rash (<10%)
Urticaria / hives [2]

Mucosal
Xerostomia (dry mouth) (<10%)

Cardiovascular
QT interval prolonged / QT prolongation [2]
Torsades de pointes [3]

Central Nervous System
Akathisia [2]
Depression [2]
Encephalopathy (includes hepatic encephalopathy) [2]
Extrapyramidal symptoms [7]

Insomnia [2]
Neuroleptic malignant syndrome [7]
Parkinsonism [11]
Sedation [2]
Serotonin syndrome [2]
Somnolence (drowsiness) [2]
Tardive syndrome / tardive dyskinesia [12]

Endocrine/Metabolic
Galactorrhea [4]
Gynecomastia [2]
Mastodynia (<10%)
Porphyria [2]

Gastrointestinal/Hepatic
Diarrhea [2]

Hematologic
Sulfhemoglobinemia [2]

Neuromuscular/Skeletal
Dystonia [17]

Ocular
Oculogyric crisis [2]

Respiratory
Respiratory failure [2]

Other
Adverse effects / adverse reactions [3]
Side effects [2]

METOLAZONE

Trade name: Zaroxolyn (Celltech)
Indications: Hypertension, edema
Class: Diuretic, thiazide
Half-life: 6–20 hours
Clinically important, potentially hazardous interactions with: digoxin, lithium
Pregnancy category: B
Note: Metolazone is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%)
Edema / fluid retention (see also peripheral edema) (<2%)
Photosensitivity (<2%)
Pruritus (itching) (<2%)
Rash (<2%)
Urticaria / hives (<2%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Xerosis / xeroderma (see also dry skin) (<2%)

Mucosal
Xerostomia (dry mouth) (<2%)

Central Nervous System
Chills (<10%)
Dysgeusia (taste perversion) (<2%)
Paresthesias (<2%)

Ocular
Dyschromatopsia (<2%)

METOPROLOL

Trade names: Lopressor (Novartis), Toprol XL (AstraZeneca)
Indications: Hypertension, angina pectoris
Class: Adrenergic beta-receptor agonist, Antiarrhythmic class II
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: cinacalcet, clonidine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, dronedarone, epinephrine, mirabegron, paroxetine hydrochloride, propoxyphene, tadalafil, telithromycin, tipranavir, venlafaxine, verapamil, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients
Note: Cutaneous side effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy.

Skin
Eczema / eczematous reaction / eczematous eruption [2]
Erythroderma [2]
Lichenoid eruption / lichenoid reaction [4]
Pruritus (itching) (<5%)
Psoriasis (induction and aggravation of) [8]
Rash (<5%) [3]
Raynaud's phenomenon [3]

Cardiovascular
Arrhythmias [2]
Bradycardia / sinus bradycardia [8]
Hypotension [4]

Central Nervous System
Delirium [3]
Hallucinations [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [3]
Sleep disturbances [2]

Gastrointestinal/Hepatic
Gastrointestinal disorder / discomfort [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]

Genitourinary
Peyronie's disease [5]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

METRONIDAZOLE

Trade names: Flagyl (Pfizer), Metrocream (Galderma), MetroGel (Galderma), Metrolotion (Galderma), Noritate (Dermik), Vandazole (Upsher-Smith)
Indications: Various infections caused by susceptible organisms, rosacea
Class: Antibiotic, Antibiotic; nitroimidazole, Antimicrobial, Antiprotozoal
Half-life: 6–12 hours
Clinically important, potentially hazardous interactions with: alcohol, anisindione, anticoagulants, astemizole, barbiturates, busulfan, cimetidine, dicumarol, disulfiram, dronabinol, fluorouracil, lithium, lopinavir, mycophenolate, phenytoin, primidone, thalidomide, tipranavir, uracil/tegafur, warfarin
Pregnancy category: B (in patients with trichomoniasis, metronidazole is contra-indicated during the first trimester of pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
AGEP [3]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
Dermatitis [2]
Exanthems (<5%) [2]
Fixed eruption [15]
Flushing / rubefaction [2]
Pruritus (itching) (<10%) [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [8]
Urticaria / hives [4]

Mucosal
Glossitis (inflammation of the tongue) [2]
Tongue furry [2]
Xerostomia (dry mouth) [2]

Cardiovascular
Hypertension [2]
Torsades de pointes [2]

Central Nervous System
Cerebellar syndrome [7]
Dysgeusia (taste perversion) [8]
Encephalopathy (includes hepatic encephalopathy) [28]
Fever (pyrexia) (includes hyperpyrexia) [7]
Headache (7%) [7]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]
Neurotoxicity [15]
Paresthesias [2]
Peripheral neuropathy [4]
Psychosis [5]

Endocrine/Metabolic
ALT increased [3]
AST increased [3]

Gastrointestinal/Hepatic
Abdominal pain (5%) [8]
Diarrhea [15]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea [19]
Pancreatitis / acute pancreatitis [7]
Vomiting [14]

Genitourinary
Vulvovaginal candidiasis [2]

Hematologic
Anemia [2]
Bleeding [2]

Neuromuscular/Skeletal
Ataxia [2]

Ocular
Vision loss [2]

Otic
Hearing loss (hypoacusis) [2]

Other
Adverse effects / adverse reactions [12]
Death [3]
Infection (fungal) (12%)

MEXILETINE

Trade name: Mexitil (Boehringer Ingelheim)
Indications: Ventricular arrhythmias
Class: Antiarrhythmic class Ib
Half-life: 10–12 hours
Clinically important, potentially hazardous interactions with: caffeine, citalopram, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, oxtriphylline
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: MORTALITY

Skin
Edema / fluid retention (see also peripheral edema) (4%)
Exanthems [9]
Hypersensitivity [5]
Pruritus (itching) [2]
Rash (4%)
Urticaria / hives [2]

Mucosal
Xerostomia (dry mouth) (3%)

Central Nervous System
Paresthesias (4%)
Trembling (<10%)
Tremor (13%)

Other
Adverse effects / adverse reactions [2]

MEZLOCILLIN

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 0.8–1.0 hours
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, demeclocycline, doxycycline, imipenem/cilastatin, methotrexate, minocycline, oxytetracycline, tetracycline
Pregnancy category: B

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

MIANSERIN

Trade names: Athimil (Hormoquimica), Bolvidon (Schering-Plough) (GSK), Lantanon (Schering-Plough), Lerivon (Schering-Plough), Miaxan (Orion), Norval (Schering-Plough) (GSK), Tetramide (Daiichi Sankyo), Tolvon (Schering-Plough)
Indications: Depression
Class: Antidepressant; tetracyclic
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: codeine, diazepam, morphine, temazepam, zopiclone
Note: Not available in the US.

Cardiovascular
Ventricular tachycardia [2]

Central Nervous System
Restless legs syndrome [4]

MICAFUNGIN

Trade name: Mycamine (Astellas)
Indications: Invasive candidiasis, esophageal candidiasis
Class: Antifungal / antimycotic, Antimicrobial, Antimycobacterial; echinocandin
Half-life: 11–21 hours
Clinically important, potentially hazardous interactions with: amphotericin B, conivaptan, cyclosporine, itraconazole, nifedipine, sirolimus
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Peripheral edema (see also edema) (7%)
Pruritus (itching) (6%)
Rash (9%) [6]
Ulcerations (5%)

Mucosal
Epistaxis (nosebleed) (6%) [2]
Mucosal inflammation (14%)

Cardiovascular
Bradycardia / sinus bradycardia (3%)
Hypertension (7%) [2]
Hypotension (9%)
Phlebitis (6%)
Shock (see also anaphylactic shock) (8%)
Tachycardia (8%)

Central Nervous System
Anorexia (6%)
Anxiety (6%)
Fever (pyrexia) (includes hyperpyrexia) (20%) [6]
Headache (16%) [3]
Insomnia (10%)
Rigors (9%)

Endocrine/Metabolic
ALP increased (5%) [2]
ALT increased (5%) [6]
AST increased (6%) [4]
Hyperbilirubinemia [3]
Hyperglycemia (includes glucose increased) (6%)
Hyperkalemia (5%)
Hypernatremia (5%)
Hypocalcemia (7%)
Hypoglycemia (see also insulin autoimmune syndrome) (6%)
Hypokalemia (18%) [3]
Hypomagnesemia (13%)

Gastrointestinal/Hepatic
Abdominal pain (10%) [3]
Constipation (11%)
Diarrhea (23%) [8]
Dyspepsia / functional dyspepsia / gastroparesis (6%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [9]
Nausea (22%) [6]
Vomiting (22%) [5]

Hematologic
Anemia (10%) [3]
Febrile neutropenia (6%)
Hemolysis [3]
Neutropenia (neutrophils decreased) (14%)
Sepsis (5%)
Thrombocytopenia (15%) [2]

Local
Infusion-related reactions [2]

Neuromuscular/Skeletal
Asthenia / fatigue (6%)
Back pain (5%)

Respiratory
Cough (8%)
Dyspnea / shortness of breath (6%)
Pneumonia (2%)

Other
Adverse effects / adverse reactions [5]
Infection (40%)

MICONAZOLE

Trade names: Monistat (Janssen), Oravig (Dara)
Indications: Fungal infections, oropharyngeal candidiasis
Class: Antifungal / antimycotic, Antifungal; imidazole, Antimicrobial
Half-life: initial: 40 minutes; terminal: 24 hours
Clinically important, potentially hazardous interactions with: anisindione, anticoagulants, astemizole, clopidogrel, dicumarol, gliclazide, simvastatin, thioridazine, tolvaptan, vinblastine, vincristine, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Angioedema (2%)
Contact dermatitis [2]
Cutaneous toxicity / skin toxicity [2]
Dermatitis [11]
Exanthems (2–87%) [5]
Flushing / rubefaction (<2%) [2]
Pruritus (itching) (2–36%) [3]
Purpura (3–8%)
Rash (9%)
Urticaria / hives (2%)

Cardiovascular
Phlebitis (5–79%) [3]

Central Nervous System
Chills (>5%)

Gastrointestinal/Hepatic
Nausea [2]

Local
Injection-site pain (10%)

Other
Adverse effects / adverse reactions [2]

MIDAZOLAM

Trade name: Versed (Roche)
Indications: Preoperative sedation
Class: Benzodiazepine
Half-life: 1–4 hours
Clinically important, potentially hazardous interactions with: amprenavir, aprepitant, atazanavir, atorvastatin, boceprevir, carbamazepine, chlorpheniramine, cimetidine, clarithromycin, clorazepate, CNS depressants, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, conivaptan, darunavir, delavirdine, dexamethasone, efavirenz, enzalutamide, erythromycin, esomeprazole, fluconazole, fluoxetine, fosamprenavir, grapefruit juice, griseofulvin, imatinib, indinavir, itraconazole,

ivermectin, ketoconazole, letermovir, lonafarnib, lopinavir, nelfinavir, nevirapine, nilotinib, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, phenobarbital, phenytoin, posaconazole, primidone, ribociclib, rifabutin, rifampin, ritonavir, roxithromycin, saquinavir, selpercatinib, St John's wort, telaprevir, telithromycin, tibolone, tipranavir, tucatinib, viloxazine, voriconazole, voxelotor
Pregnancy category: D

Skin
Edema / fluid retention (see also peripheral edema) [2]
Pruritus (itching) [3]
Urticaria / hives [2]
Cardiovascular
Bradycardia / sinus bradycardia [3]
Hypotension [10]
Central Nervous System
Agitation [3]
Amnesia [39]
Dysphoria [2]
Extrapyramidal symptoms [2]
Hallucinations [2]
Sedation [2]
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Vomiting [4]
Local
Injection-site pain (>10%)
Injection-site reaction (>10%)
Respiratory
Apnea [2]
Hypoxia (see also hypoxemia) [2]
Respiratory depression [2]
Other
Adverse effects / adverse reactions [7]
Hiccups / singultus [4]

MIDODRINE

Trade name: Proamatine (Shire)
Indications: Orthostatic hypotension, urinary incontinence
Class: Adrenergic alpha-receptor agonist
Half-life: ~3–4 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Flushing / rubefaction (<10%)
Pruritus (itching) (13%) [3]
Rash (2%)
Xerosis / xeroderma (see also dry skin) (2%)
Hair
Pili torti [2]
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Chills (5%)
Dysgeusia (taste perversion) [2]
Pain (5%)
Paresthesias (13–18%) [3]

MIDOSTAURIN

Trade name: Rydapt (Novartis)
Indications: Aggressive systemic mastocytosis, systemic mastocytosis with associated hematological neoplasm, or mast cell leukemia, acute myeloid leukemia (FLT3 mutation-positive) in combination with cytarabine and daunorubicin induction and cytarabine consolidation
Class: Multikinase inhibitor
Half-life: 21 hours
Clinically important, potentially hazardous interactions with: boceprevir, carbamazepine, clarithromycin, cobicistat, conivaptan, danoprevir, diltiazem, elvitegravir, enzalutamide, grapefruit juice, idelalisib, indinavir, itraconazole, ketoconazole, lopinavir, mitotane, nefazodone, nelfinavir, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, phenytoin, posaconazole, rifampin, ritonavir, saquinavir, St John's wort, stong CYP3A inducers and inhibitors, tipranavir, troleandomycin, voriconazole
Pregnancy category: N/A (May cause fetal toxicity based on findings in animal studies)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Cellulitis (5%)
Desquamation [2]
Edema / fluid retention (see also peripheral edema) (40%)
Erysipelas (5%)
Hematoma (6%)
Herpes zoster (10%)
Hypersensitivity (4%)
Rash (14%) [4]
Sweet's syndrome [2]
Mucosal
Epistaxis (nosebleed) (12%)
Mucositis [2]
Oropharyngeal pain (4%)
Stomatitis (oral mucositis) [2]
Cardiovascular
Cardiac failure (6%)
Cardiotoxicity [2]
Hypotension (9%)
Myocardial infarction (4%)
Myocardial ischemia (4%)
Pulmonary edema / cardiogenic pulmonary edema (3%)
QT interval prolonged / QT prolongation (11%) [3]
Central Nervous System
Altered mental status (4%)
Chills (5%)
Fever (pyrexia) (includes hyperpyrexia) (27%) [2]
Headache (26%) [2]
Impaired concentration (7%)
Insomnia (11%)
Pain [2]
Tremor (6%)
Vertigo / dizziness (13%)
Endocrine/Metabolic
ALP increased (39%)
ALT increased (31%) [2]
AST increased (32%)
GGT increased (35%)
Hyperamylasemia (20%)
Hyperbilirubinemia (29%) [2]
Hyperglycemia (includes glucose increased) (80%) [3]
Hyperkalemia (23%)
Hyperlipasemia (37%)
Hyperuricemia (37%)
Hypoalbuminemia / albumin decreased (27%)
Hypocalcemia (39%)
Hypokalemia (25%) [4]
Hypomagnesemia (20%)
Hyponatremia (34%) [2]
Hypophosphatemia (22%)
Serum creatinine increased (25%)
Weight gain (6%)
Gastrointestinal/Hepatic
Abdominal pain (34%)
Constipation (29%) [3]
Diarrhea (54%) [8]
Dyspepsia / functional dyspepsia / gastroparesis (6%)
Gastritis / pangastritis / gastric irritation (3%)
Gastrointestinal bleeding (14%)
Nausea (82%) [13]
Vomiting (68%) [11]
Genitourinary
Urinary tract infection (16%)
Hematologic
Anemia (60%) [4]
Febrile neutropenia (8%) [4]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (61%) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (66%) [2]
Neutropenia (neutrophils decreased) (49%) [3]
Sepsis (9%)
Thrombocytopenia (50%) [3]
Neuromuscular/Skeletal
Arthralgia (19%)
Asthenia / fatigue (34%) [6]
Bone or joint pain (35%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (11%)
Respiratory
Bronchitis (6%)
Cough (18%) [2]
Dyspnea / shortness of breath (23%)
Pleural effusion (13%)
Pneumonia (10%) [2]
Pneumonitis (2%) [2]
Upper respiratory tract infection (30%)
Other
Infection [3]

MIFEPRISTONE

Trade names: Korlym (Corcept), Mifeprex (Danco)
Indications: Medical termination of intrauterine pregnancy (Mifeprex), Cushing's syndrome in patients with Type II diabetes (Korlym)
Class: Corticosteroid antagonist, CYP3A4 inhibitor, Progestogen antagonist
Half-life: 85 hours
Clinically important, potentially hazardous interactions with: amprenavir, aprepitant, atazanavir, boceprevir, bupropion, carbamazepine, ciclesonide, ciprofloxacin, clarithromycin, conivaptan, cyclosporine,

darunavir, dihydroergotamine, diltiazem, efavirenz, ergotamine, erythromycin, fentanyl, fluconazole, fluvastatin, fosamprenavir, grapefruit juice, imatinib, indinavir, itraconazole, lopinavir, lovastatin, mibefradil, nefazodone, nelfinavir, NSAIDs, oral contraceptives, phenobarbital, phenytoin, pimozide, posaconazole, quinidine, repaglinide, rifabutin, rifampin, rifapentine, ritonavir, ritonavir, saquinavir, simvastatin, sirolimus, St John's wort, tacrolimus, telaprevir, telithromycin, tenoxicam, triamcinolone, verapamil, voriconazole, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in pregnancy, with concurrent use of simvastatin or lovastatin and CYP3A substrates with narrow therapeutic range or long-term corticosteroid use, and in women with a history of unexplained vaginal bleeding or with endometrial hyperplasia with atypia or endometrial carcinoma.
Warning: TERMINATION OF PREGNANCY

Skin
Edema / fluid retention (see also peripheral edema) (5–10%)
Peripheral edema (see also edema) (26%)
Pruritus (itching) (4%)
Rash (4%)
Mucosal
Xerostomia (dry mouth) (18%)
Cardiovascular
Chest pain (5–10%)
Hypertension (24%)
Central Nervous System
Anorexia (10%)
Anxiety (10%)
Chills (3–38%)
Fever (pyrexia) (includes hyperpyrexia) (4%)
Headache (2–44%)
Insomnia (5–10%)
Pain (14%)
Somnolence (drowsiness) (10%)
Vertigo / dizziness (<22%)
Endocrine/Metabolic
Adrenal insufficiency (hypoadrenalism) (4%)
Appetite decreased (20%)
Hypoglycemia (see also insulin autoimmune syndrome) (5–10%)
Hypokalemia (44%) [2]
Menstrual irregularities [2]
Gastrointestinal/Hepatic
Abdominal pain (5–89%) [2]
Constipation (10%)
Diarrhea (12–20%)
Gastroesophageal reflux (5–10%)
Nausea (43–61%)
Vomiting (16–26%)
Genitourinary
Metrorrhagia (5–10%)
Uterine pain (83%)
Vaginal bleeding (5–10%)
Vaginitis (includes vulvitis) (3%)
Neuromuscular/Skeletal
Arthralgia (30%)
Asthenia / fatigue (<48%)
Back pain (9–16%)
Myalgia/Myopathy (14%)
Pain in extremities (12%)
Respiratory
Dyspnea / shortness of breath (16%)
Nasopharyngitis (12%)
Sinusitis (14%)
Other
Dipsia (thirst) / polydipsia (5–10%)
Infection [3]

MIGLITOL

Trade name: Glyset (Pfizer)
Indications: Non-insulin dependent diabetes Type II
Class: Alpha-glucosidase inhibitor, Antidiabetic, Hypoglycemic (antihyperglycemic) agent
Half-life: ~2 hours
Clinically important, potentially hazardous interactions with: pramlintide
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Rash (4%)
Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [2]
Gastrointestinal/Hepatic
Abdominal pain (12%) [5]
Diarrhea (29%) [3]
Flatulence (42%) [2]
Other
Adverse effects / adverse reactions [2]

MILK THISTLE

Family: Asteraceae; Compositae
Scientific names: *Carduus marainum, Silibum marianum*
Indications: Dyspepsia, liver protectant, hepatitis, loss of appetite, spleen diseases, supportive treatment for mushroom poisoning
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: simeprevir
Pregnancy category: N/A
Note: Seed as opposed to the "above-ground parts".

Other
Adverse effects / adverse reactions [3]

MILNACIPRAN

Trade name: Savella (Forest)
Indications: Fibromyalgia
Class: Antidepressant, Selective norepinepherine reuptake inhibitor
Half-life: 6–8 hours
Clinically important, potentially hazardous interactions with: alcohol, alpha / beta argonists, antipsychotics, aspirin, clomipramine, clonidine, CNS-active drugs, digoxin, droperidol, epinephrine, levomepromazine, lithium, MAO inhibitors, norepinephrine, NSAIDs, serotonergic drugs, sibutramine, St John's wort, tryptophan, vitamin K antagonists
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with uncontrolled narrow-angle glaucoma.
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Flushing / rubefaction (4%)
Hot flashes / hot flushes (12%)
Hyperhidrosis (see also diaphoresis) (9%) [6]
Pruritus (itching) (2%)
Rash (4%)
Mucosal
Xerostomia (dry mouth) (5%)
Cardiovascular
Chest pain (2%)
Hypertension (4%) [4]
Palpitation (7%)
Tachycardia (2%) [2]
Central Nervous System
Anxiety (3%)
Chills (2%)
Headache (17%) [7]
Hypoesthesia (numbness) (2%)
Insomnia (12%) [2]
Migraine (4%)
Paresthesias (3%)
Serotonin syndrome [2]
Tremor (2%)
Vertigo / dizziness (10%) [3]
Endocrine/Metabolic
Appetite decreased (2%)
Gastrointestinal/Hepatic
Abdominal pain (3%)
Constipation (15%) [6]
Nausea (39%) [17]
Vomiting (7%)
Genitourinary
Dysuria (>2%) [2]
Ejaculatory dysfunction (>2%) [2]
Ocular
Vision blurred (2%)
Respiratory
Dyspnea / shortness of breath (2%)
Upper respiratory tract infection (6%)
Other
Adverse effects / adverse reactions [3]

MILRINONE

Trade name: Primacor (Sanofi-Aventis)
Indications: Severe congestive heart failure unresponsive to conventional maintenance therapy, acute heart failure, including low output states following cardiac surgery
Class: Phosphodiesterase inhibitor
Half-life: 2.3 hours
Clinically important, potentially hazardous interactions with: anagrelide
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Cardiovascular
Arrhythmias [2]
Hypotension (<10%) [7]
Supraventricular arrhythmias (<10%)

Vasodilation [2]
Ventricular tachycardia (<10%)

Central Nervous System
Headache (<10%)

MILTEFOSINE

Trade name: Impavido (Paladin)
Indications: Leishmaniasis, skin cancer, breast cancer
Class: Membrane integrity antagonist
Half-life: ~6–8 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contraindicated in patients with Sjogren-Larsson-Syndrome.
Warning: EMBRYO-FETAL TOXICITY

Skin
Abscess (<2%)
Cellulitis (<2%)
Lymphadenopathy (<2%)
Pruritus (itching) (5–6%) [2]
Pyoderma (<2%)
Rash (<2%) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<2%)
Urticaria / hives (<2%)

Central Nervous System
Anorexia [2]
Fever (pyrexia) (includes hyperpyrexia) (6%) [2]
Headache (28%) [2]
Paresthesias (<2%)
Somnolence (drowsiness) (3%)
Vertigo / dizziness (5–13%)

Endocrine/Metabolic
ALT increased [2]
Appetite decreased (23%) [2]
AST increased [3]
Serum creatinine increased [4]

Gastrointestinal/Hepatic
Abdominal distension (<2%)
Abdominal pain (8–11%) [3]
Constipation (<2%)
Diarrhea (8–20%) [13]
Dysphagia (<2%)
Flatulence (<2%)
Nausea (36–42%) [6]
Vomiting (5–38%) [14]

Genitourinary
Testicular pain (<2%)

Hematologic
Anemia (<2%)

Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue (3–6%)
Myalgia/Myopathy [3]

Other
Adverse effects / adverse reactions [3]

MINOCYCLINE

Trade names: Dynacin (Medicis), Minocin (Wyeth), Solodyn (Medicis)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; tetracycline, Antimicrobial, Disease-modifying antirheumatic drug (DMARD)
Half-life: 11–23 hours
Clinically important, potentially hazardous interactions with: acitretin, aluminum, amoxicillin, ampicillin, antacids, bacampicillin, BCG vaccine, bismuth, carbenicillin, cloxacillin, coumarins, digoxin, ergotamine, estradiol, estrogens, isotretinoin, kaolin, magnesium salts, methotrexate, methoxyflurane, methysergide, mezlocillin, nafcillin, oral iron, oral typhoid vaccine, oxacillin, penicillin G, penicillin V, penicillins, phenindione, piperacillin, quinapril, retinoids, St John's wort, strontium ranelate, sucralfate, sulfonylureas, ticarcillin, tripotassium dicitratobismuthate, vitamin A, zinc
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Angioedema [2]
Candidiasis / candidosis [2]
Cellulitis [2]
DRESS syndrome [14]
Erythema multiforme [2]
Erythema nodosum [2]
Exanthems [5]
Exfoliative dermatitis [3]
Fixed eruption [8]
Folliculitis [2]
Hypersensitivity [25]
Livedo reticularis [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [50]
Lupus syndrome / drug-induced lupus (DIL) [2]
Photosensitivity (<10%) [9]
Pigmentation [126]
Pruritus (itching) [7]
Purpura [4]
Rash [9]
Raynaud's phenomenon [2]
Serum sickness [4]
Serum sickness-like reaction (3–5%) [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Sweet's syndrome [4]
Urticaria / hives [9]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [13]

Hair
Alopecia / hair loss [2]

Nails
Nail pigmentation (<5%) [20]
Photo-onycholysis [3]

Mucosal
Black tongue / black hairy tongue (lingua villosa nigra) [3]
Gingival pigmentation (8%) [2]
Oral pigmentation (7%) [23]

Cardiovascular
Polyarteritis nodosa [12]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [6]
Intracranial pressure increased (intracranial hypertension) (see also pseudotumor cerebri) [5]
Pseudotumor cerebri (see also intracranial hypertension) [15]
Vertigo / dizziness [8]

Endocrine/Metabolic
Black thyroid syndrome [5]
Galactorrhea (black) [2]
Thyroid dysfunction [2]

Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea [2]
Hepatitis [11]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [21]
Nausea [6]
Pancreatitis / acute pancreatitis [2]
Vomiting [3]

Neuromuscular/Skeletal
Arthralgia [6]
Asthenia / fatigue [4]
Black bone disease [10]
Myalgia/Myopathy [7]

Ocular
Conjunctival pigmentation [2]
Diplopia (double vision) [2]
Papilledema [3]
Scleral pigmentation [6]

Otic
Tinnitus [2]

Respiratory
Eosinophilic pneumonia [5]
Pneumonitis [2]

Other
Adverse effects / adverse reactions [6]
Tooth pigmentation / discoloration (primarily in children) (>10%) [23]

MINOXIDIL

Trade names: Loniten (Par), Rogaine (Pfizer) (topical)
Indications: Hypertension, androgenetic alopecia
Class: Vasodilator
Half-life: 4.2 hours
Clinically important, potentially hazardous interactions with: acebutolol, alcohol, alfuzosin, captopril, cilazapril, diclofenac, enalapril, fosinopril, guanethidine, levodopa, levomepromazine, lisinopril, meloxicam, olmesartan, quinapril, ramipril, trandolapril, triamcinolone, trifluoperazine
Pregnancy category: C
Note: Topical [T].

Skin
Bullous dermatosis [2]
Dermatitis [T] (7%) [18]
Eczema / eczematous reaction / eczematous eruption [2]
Edema / fluid retention (see also peripheral edema) [T] (>10%) [4]
Exanthems [4]
Irritation (skin) [2]

Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Peripheral edema (see also edema) (7%)
Pruritus (itching) [T] [10]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Xerosis / xeroderma (see also dry skin) [2]

Hair
Alopecia / hair loss [T] [2]
Hair pigmentation [2]
Hirsutism (in women) (100%) [4]
Hypertrichosis (80–100%) [27]

Cardiovascular
Palpitation [3]
Pericardial effusion [2]
Postural hypotension [2]

Central Nervous System
Headache [3]
Vertigo / dizziness [2]

Respiratory
Pleural effusion [2]

Other
Adverse effects / adverse reactions [2]

MIRABEGRON

Trade name: Myrbetriq (Astellas)
Indications: Overactive bladder
Class: Beta-3 adrenergic agonist
Half-life: 50 hours
Clinically important, potentially hazardous interactions with: antimuscarinics, desipramine, digoxin, flecainide, metoprolol, propafenone, thioridazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Mirabegron alone or in combination with solifenacin succinate 5 mg can increase blood pressure. Periodic blood pressure determinations are recommended, especially in hypertensive patients. Mirabegron is not recommended for use in severe uncontrolled hypertensive patients.

Mucosal
Xerostomia (dry mouth) (3%) [8]

Cardiovascular
Hypertension (8–11%) [9]
Tachycardia (<2%) [3]

Central Nervous System
Headache (2–4%) [5]
Vertigo / dizziness (3%) [2]

Gastrointestinal/Hepatic
Constipation (2–3%) [6]
Diarrhea (<2%)
Gastrointestinal disorder / discomfort [2]

Genitourinary
Cystitis (2%)
Dysuria [2]
Urinary tract infection (3–6%) [5]

Neuromuscular/Skeletal
Arthralgia (<2%)
Back pain (3%)

Respiratory
Influenza (3%)
Nasopharyngitis (4%) [4]
Sinusitis (<3%)
Upper respiratory tract infection (2%)

Other
Adverse effects / adverse reactions [4]

MIRTAZAPINE

Synonyms: Esmirtazapine [(S)-(+)-enantiomer of mirtazapine]
Trade name: Remeron (Organon)
Indications: Depression
Class: Adrenergic alpha-receptor agonist, Antidepressant; tetracyclic
Half-life: 20–40 hours
Clinically important, potentially hazardous interactions with: dacomitinib, linezolid, tapentadol, venlafaxine
Pregnancy category: C
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) [2]
Edema / fluid retention (see also peripheral edema) (<10%) [2]
Peripheral edema (see also edema) (<10%)
Pigmentation [2]
Rash (<10%)

Mucosal
Glossitis (inflammation of the tongue) (<10%)
Xerostomia (dry mouth) (25%) [3]

Central Nervous System
Abnormal dreams (4%)
Anorexia (<10%)
Cognitive impairment [2]
Dyskinesia [2]
Headache [2]
Mania [3]
Neurotoxicity [3]
Nightmares [3]
Restless legs syndrome [9]
Sedation [4]
Seizures [3]
Serotonin syndrome [7]
Sleep-related eating disorder (SRED) [2]
Somnolence (drowsiness) (54%) [11]
Tremor (<10%) [2]
Vertigo / dizziness (7%) [2]

Endocrine/Metabolic
ALT increased (2%)
Appetite increased (12%) [2]
Galactorrhea [2]
Gynecomastia [2]
Weight gain (12%) [11]

Gastrointestinal/Hepatic
Abdominal pain (<10%)
Constipation (<10%) [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Pancreatitis / acute pancreatitis [8]
Vomiting (<10%)

Neuromuscular/Skeletal
Arthralgia [4]
Asthenia / fatigue [7]
Myalgia/Myopathy (<10%)
Rhabdomyolysis [5]

Respiratory
Influenza- ('flu)-like syndrome (<10%)

Other
Adverse effects / adverse reactions [2]

MISOPROSTOL

Trade names: Arthrotec (Pfizer), Cytotec (Pfizer)
Indications: Prevention of NSAID-induced ulcer
Class: Corticosteroid antagonist, Progestogen antagonist
Half-life: 20–40 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Arthrotec is diclofenac and misoprostol.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]

Cardiovascular
Coronary vasospasm [3]

Central Nervous System
Chills [7]
Dysgeusia (taste perversion) [2]
Fever (pyrexia) (includes hyperpyrexia) [14]
Headache (2%)
Shivering (17%) [10]

Gastrointestinal/Hepatic
Abdominal pain (7%) [8]
Diarrhea (13%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Flatulence (3%)
Nausea (3%) [5]
Vomiting [6]

Genitourinary
Uterine hyperstimulation [3]

Neuromuscular/Skeletal
Cramps [2]

Other
Adverse effects / adverse reactions [6]

MISTLETOE

Family: Loranthacae; Viscaceae
Scientific names: *Phoradendron flavescens, Phoradendron leucarpum, Phoradendron macrophyllum, Phoradendron rubrum, Phoradendron serotinum, Phoradendron tomentosum, Viscum album*
Indications: Injected: adjuvant tumor therapy. **Oral:** abortifacient, arteriosclerosis, arthritis, asthma, colds, depression, headache, HIV infection, hypertension, hypotension, hysteria, labor pain, lumbago, metrorrhagia, muscle spasms, otitis, whooping cough, hemorrhoids, internal bleeding, gout, sleep disorders, amenorrhea, liver and gallbladder conditions
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: bepridil, clevidipine, corticosteroids, immunosuppressants, MAO inhibitors, squill
Pregnancy category: N/A
Note: Purified extracts injected intramuscularly, subcutaneously or by intravenous infusion. Unless otherwise indicated, side effects listed are from injected preparations. The FDA considers *Viscum album* unsafe.
The well-known mistletoe is an evergreen

parasitic plant, growing on the branches of some tree species. Shakespeare calls it "the baleful mistletoe," an illusion to the Scandinavian legend that Balder, the god of Peace, was slain with an arrow made of mistletoe.

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (28%) [3]
- Erythema [3]
- Pruritus (itching) [2]

Mucosal
- Gingivitis [2]

Cardiovascular
- Hypertension [2]

Central Nervous System
- Chills [4]
- Fever (pyrexia) (includes hyperpyrexia) [6]
- Headache [2]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea [2]

Local
- Injection-site edema [2]
- Injection-site inflammation [8]
- Injection-site reaction [5]

Respiratory
- Influenza- ('flu)-like syndrome [3]

Other
- Adverse effects / adverse reactions [8]
- Allergic reactions [4]
- Death (low incidence – accidental ingestion) [4]

MITOMYCIN

Synonyms: mitomycin-C; MTC
Trade name: Mutamycin (Bristol-Myers Squibb)
Indications: Carcinomas
Class: Alkylating agent, Antibiotic, Antibiotic; anthracycline, Antimicrobial
Half-life: 23–78 minutes
Clinically important, potentially hazardous interactions with: aldesleukin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Dermatitis [9]
- Erythema multiforme [2]
- Exanthems [2]
- Exfoliative dermatitis [2]
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) [2]
- Thrombocytopenic purpura [2]

Hair
- Alopecia / hair loss (<10%) [2]

Nails
- Nail pigmentation (purple) (<10%)

Mucosal
- Oral lesions (2–8%) [4]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (<10%)
- Stomatitis (oral mucositis) (>10%)

Cardiovascular
- Congestive heart failure (3–15%)
- Veno-occlusive disease [3]

Central Nervous System
- Anorexia (14%)
- Fever (pyrexia) (includes hyperpyrexia) (14%)
- Paresthesias (<10%)

Gastrointestinal/Hepatic
- Nausea (14%)
- Vomiting (14%)

Hematologic
- Anemia (19–24%)
- Hemolytic uremic syndrome [41]
- Neutropenia (neutrophils decreased) [2]

Local
- Injection-site cellulitis (>10%)
- Injection-site necrosis (>10%) [3]

Neuromuscular/Skeletal
- Asthenia / fatigue [2]

Ocular
- Epiphora [2]
- Keratitis [2]
- Limbal stem cell deficiency [3]
- Ocular toxicity [3]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
- Cough (7%)
- Pneumonitis [2]

Other
- Adverse effects / adverse reactions [2]

MITOTANE

Indications: Inoperable adrenocortical carcinoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 18–159 days
Clinically important, potentially hazardous interactions with: aldesleukin, betamethasone, copanlisib, doravirine, doravirine/lamiduvine/tenofovir disoproxil, fostemsavir, midostaurin, neratinib, spironolactone, triamcinolone
Pregnancy category: C

Skin
- Acral erythema [2]
- Erythema multiforme [2]
- Exanthems (9–16%) [2]
- Flushing / rubefaction (<10%)
- Pigmentation (16%) [2]
- Rash (15%)

Hair
- Alopecia / hair loss (16%) [2]

Central Nervous System
- Encephalopathy (includes hepatic encephalopathy) [3]
- Neurotoxicity [2]

Neuromuscular/Skeletal
- Myalgia/Myopathy (<10%)

Other
- Adverse effects / adverse reactions [2]
- Side effects (13–17%) [2]

MITOXANTRONE

Trade name: Novantrone (OSI)
Indications: Acute myelogenous leukemia, multiple sclerosis, prostate cancer
Class: Antibiotic, Antibiotic; anthracycline, Antimicrobial, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: median terminal: 75 hours
Clinically important, potentially hazardous interactions with: aldesleukin, safinamide
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (7%)
- Diaphoresis (see also hyperhidrosis) (<10%)
- Edema / fluid retention (see also peripheral edema) (>10%)
- Fungal dermatitis (>15%)
- Peripheral edema (see also edema) [2]
- Petechiae (>10%)
- Purpura (>10%)

Hair
- Alopecia / hair loss (20–60%) [7]

Cardiovascular
- Cardiac failure [2]
- Cardiotoxicity [4]
- Congestive heart failure [3]

Central Nervous System
- Chills (<10%)

Endocrine/Metabolic
- Amenorrhea [4]
- Menstrual irregularities [2]

Gastrointestinal/Hepatic
- Diarrhea [2]
- Nausea [6]
- Vomiting [3]

Genitourinary
- Urinary tract infection [2]

Hematologic
- Anemia [2]
- Febrile neutropenia [2]
- Leukemia [4]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
- Neutropenia (neutrophils decreased) [6]
- Thrombocytopenia [2]

Other
- Adverse effects / adverse reactions [2]
- Death [2]
- Infection (>66%) [4]

MIVACURIUM

Trade name: Mivacron (GSK)
Indications: Adjunct to general anesthesia
Class: Nicotinic antagonist
Half-life: 1.8–2 hours
Clinically important, potentially hazardous interactions with: acetazolamide, aminoglycosides, anticholinesterases, bambuterol, calcium channel blockers, chloroquine, chlorpromazine, clindamycin, d-penicillamine, ecothiophate iodide, enflurane, furosemide, halothane, hexomethonium, isoflurane, ketamine, lidocaine, lincomycin, lithium salts, magnesium salts, mannitol, MAO inhibitors,

organophosphates, pancuronium, phenytoin, polymyxins, procainamide, quinidine, sevoflurane, spectinomycin, tetracyclines
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Erythema [4]
Flushing / rubefaction (16%) [6]
Cardiovascular
Hypotension [5]
Central Nervous System
Paralysis / paraplegia [8]
Neuromuscular/Skeletal
Muscular paralysis [7]
Respiratory
Bronchospasm [3]

MIZOLASTINE

Trade name: Mizollen (Sanofi-Aventis)
Indications: Allergic rhinoconjunctivitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 13 hours
Clinically important, potentially hazardous interactions with: azithromycin, cimetidine, cyclosporine, erythromycin, itraconazole, ketoconazole, moxifloxacin, nifedipine, sotalol

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Mucosal
Xerostomia (dry mouth) [3]
Central Nervous System
Somnolence (drowsiness) [3]
Neuromuscular/Skeletal
Asthenia / fatigue [2]

MIZORIBINE

Trade name: Bredinin (Asahi Kasei Pharma)
Indications: Rheumatoid arthritis, systemic lupus erythematosus, prevention of rejection in renal transplantation, lupus nephritis, nephrotic syndrome
Class: Immunosuppressant
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Hair
Alopecia / hair loss [2]
Endocrine/Metabolic
Hyperuricemia [8]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Other
Infection [2]

MOCLOBEMIDE

Trade names: Aurorix (Roche), Manerix (Roche)
Indications: Depression, social anxiety
Class: Antidepressant
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: amitriptyline, benzodiazepines, cimetidine, citalopram, clomipramine, clopidogrel, clorazepate, dextromethorphan, duloxetine, fluoxetine, hydromorphone, levodopa, meperidine, paroxetine hydrochloride, pethidine, selegiline, tyramine, venlafaxine, zolmitriptan
Pregnancy category: N/A (not recommended in pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Central Nervous System
Insomnia [2]
Serotonin syndrome [5]
Vertigo / dizziness [2]

MODAFINIL

Trade name: Provigil (Cephalon)
Indications: Narcolepsy
Class: Analeptic, CNS stimulant, CYP1A2 inducer, CYP3A4 inducer
Half-life: ~15 hours
Clinically important, potentially hazardous interactions with: elbasvir & grazoprevir, enzalutamide, lemborexant, lumateperone, neratinib, olaparib, oral contraceptives, palbociclib, sonidegib, thalidomide, venetoclax
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Fixed eruption [2]
Mucosal
Xerostomia (dry mouth) (5%)
Cardiovascular
Hypertension [2]
Palpitation [2]
Central Nervous System
Agitation [2]
Chills (2%)
Hallucinations [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache (28%) [14]
Insomnia (5%) [6]
Nervousness [2]
Paresthesias (3%)
Psychosis [3]
Vertigo / dizziness (5%) [3]
Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea (6%) [3]
Nausea (11%) [7]
Neuromuscular/Skeletal
Back pain (6%)
Respiratory
Rhinitis (7%)
Other
Adverse effects / adverse reactions [3]

MOEXIPRIL

Trade names: Uniretic (Schwarz), Univasc (Schwarz)
Indications: Hypertension
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive
Half-life: 2–9 hours
Clinically important, potentially hazardous interactions with: aliskiren, amiloride, diuretics, spironolactone, triamterene
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Uniretic is moexipril and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Warning: FETAL TOXICITY

Skin
Exanthems (2%)
Flushing / rubefaction (2%)
Rash (2%)
Central Nervous System
Headache [2]
Vertigo / dizziness (4%)
Gastrointestinal/Hepatic
Diarrhea (3%)
Neuromuscular/Skeletal
Asthenia / fatigue (2%)
Respiratory
Cough (6%) [5]
Influenza- ('flu)-like syndrome (3%)
Pharyngitis (sore throat) (2%)
Rhinitis [2]

MOLINDONE

Trade name: Moban (Endo)
Indications: Schizophrenia
Class: Antipsychotic
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: paroxetine hydrochloride
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Mucosal
Xerostomia (dry mouth) (>10%)
Central Nervous System
Neuroleptic malignant syndrome [2]
Tardive syndrome / tardive dyskinesia [4]
Endocrine/Metabolic
Galactorrhea [2]
Gynecomastia (<10%)

MOMETASONE

Trade names: Asmanex (MSD), Dulera (Merck), Elocon (Merck), Nasonex (Merck)
Indications: Dermatoses, rhinitis, asthma
Class: Corticosteroid / Glucocorticoid, Corticosteroid, inhaled, Corticosteroid, topical
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: conivaptan, darunavir, delavirdine, indinavir, ketoconazole, live vaccines, telithromycin, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Dulera is mometasone and formoterol.

Skin
- Atrophy / Skin atrophy [2]
- Burning / skin burning sensation [4]
- Erythema [2]
- Pruritus (itching) [2]
- Stinging [2]
- Telangiectasia [2]

Mucosal
- Epistaxis (nosebleed) [2]
- Oral candidiasis [3]

Central Nervous System
- Headache [6]

Respiratory
- Pharyngitis (sore throat) [2]
- Rhinitis [2]
- Upper respiratory tract infection [2]

MONOSODIUM GLUTAMATE

Family: N/A
Scientific name: *Monosodium glutamate*
Indications: Food additive, flavor enhancer
Class: Food additive
Half-life: N/A
Clinically important, potentially hazardous interactions with: BCG vaccine, MAO inhibitors
Pregnancy category: N/A
Note: The US Food & Drug Administration has determined that MSG is a safe food ingredient if used in moderation. Only a very small subset of individuals is allergic to MSG.
The etiologic agent of Chinese Restaurant Syndrome.

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
- Angioedema [5]
- Atopic dermatitis [2]
- Churg-Strauss syndrome [2]
- Sensitivity [2]
- Urticaria / hives [5]

Central Nervous System
- Headache [6]
- Hypoesthesia (numbness) [2]
- Paresthesias [2]

MONTELUKAST

Trade name: Singulair (Merck)
Indications: Asthma
Class: Leukotriene receptor antagonist
Half-life: 2.7–5.5 hours
Clinically important, potentially hazardous interactions with: prednisone
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
- Angioedema [3]
- Churg-Strauss syndrome [27]
- Rash (2%) [2]
- Urticaria / hives (2%)

Central Nervous System
- Aggression (includes anger) [3]
- Anxiety [2]
- Depression [3]
- Hallucinations [2]
- Headache [4]
- Irritability [2]
- Neuropsychiatric / neuropsychological adverse effect [2]
- Neurotoxicity [5]
- Nightmares [2]
- Sleep disturbances [3]
- Suicidal ideation [2]

Gastrointestinal/Hepatic
- Abdominal pain [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]

Respiratory
- Cough [2]
- Influenza- ('flu)-like syndrome (<10%)

Other
- Adverse effects / adverse reactions [3]

MORICIZINE

Trade name: Ethmozine (Shire)
Indications: Ventricular arrhythmias
Class: Antiarrhythmic class Ic
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: diltiazem, oxtriphylline, warfarin
Pregnancy category: B

Skin
- Diaphoresis (see also hyperhidrosis) (2–5%)
- Pruritus (itching) (<2%)
- Urticaria / hives (<2%)
- Xerosis / xeroderma (see also dry skin) (<2%)

Mucosal
- Tongue edema (<2%)
- Xerostomia (dry mouth) (2–5%) [2]

Cardiovascular
- Arrhythmias [3]
- Tachycardia [3]
- Thrombophlebitis (<2%)

Central Nervous System
- Dysgeusia (taste perversion) (<2%)
- Hyperesthesia (2–5%)
- Paresthesias (2–5%)

Ocular
- Periorbital edema (see also eyelid edema) (<10%)

Other
- Death [3]

MORPHINE

Trade names: Avinza (Ligand), Duramorph (Baxter) (Elkins-Sinn), Infumorph (Baxter), Kadian (aaiPharma), Morphabond (Inspirion), MS Contin (Purdue), MSIR Oral (Purdue), Roxanol (aaiPharma)
Indications: Severe pain, acute myocardial infarction
Class: Opiate agonist
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: buprenorphine, cimetidine, furazolidone, MAO inhibitors, metformin, mianserin, pentazocine, rifapentine, trospium
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: ADDICTION, ABUSE, AND MISUSE; LIFE-THREATENING RESPIRATORY DEPRESSION; ACCIDENTAL INGESTION; NEONATAL OPIOID WITHDRAWAL SYNDROME; and INTERACTION WITH ALCOHOL

Skin
- AGEP [3]
- Edema / fluid retention (see also peripheral edema) [2]
- Pruritus (itching) (5–65%) [40]

Mucosal
- Xerostomia (dry mouth) (>10%) [8]

Cardiovascular
- Cardiotoxicity [3]
- Hypotension [5]

Central Nervous System
- Allodynia [4]
- Confusion [2]
- Hallucinations [4]
- Hyperalgesia [10]
- Sedation [2]
- Somnolence (drowsiness) [5]
- Trembling (<10%)
- Vertigo / dizziness [5]

Endocrine/Metabolic
- Adrenal insufficiency (hypoadrenalism) [2]
- Amenorrhea [2]

Gastrointestinal/Hepatic
- Constipation [7]
- Nausea [16]
- Vomiting [13]

Genitourinary
- Urinary retention [2]

Local
- Injection-site pain (>10%)

Neuromuscular/Skeletal
- Myoclonus [5]
- Rhabdomyolysis [2]

Respiratory
- Respiratory depression [6]

Other
- Adverse effects / adverse reactions [2]
- Death [3]
- Hiccups / singultus [3]

MOXIFLOXACIN

Trade names: Avelox (Bayer), Moxeza (Alcon)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; fluoroquinolone, Antimicrobial, Drug-resistant antituberculosis agent
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: alfuzosin, aminophylline, amiodarone, amitriptyline, antacids, arsenic, artemether/lumefantrine, asenapine, atomoxetine, BCG vaccine, benperidol, bepridil, bretylium, chloroquine, ciprofloxacin, corticosteroids, cyclosporine, degarelix, didanosine, disopyramide, dronedarone, droperidol, erythromycin, gadobutrol, haloperidol, hydroxychloroquine, insulin, lanthanum, levomepromazine, magnesium salts, mefloquine, mizolastine, mycophenolate, nilotinib, NSAIDs, oral iron, oral typhoid vaccine, pentamidine, phenothiazines, pimavanserin, pimozide, probenecid, procainamide, QT prolonging agents, quinapril, quinidine, quinine, ribociclib, sevelamer, sotalol, strontium ranelate, sucralfate, sulfonylureas, tetrabenazine, thioridazine, tricyclic antidepressants, vandetanib, vitamin K antagonists, warfarin, zinc, ziprasidone, zolmitriptan, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants.
Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis. Moxeza is for topical ophthalmic use only.
Warning: SERIOUS ADVERSE REACTIONS INCLUDING TENDINITIS, TENDON RUPTURE, PERIPHERAL NEUROPATHY, CENTRAL NERVOUS SYSTEM EFFECTS and EXACERBATION OF MYASTHENIA GRAVIS

Skin
- AGEP [2]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
- Bullous dermatosis [2]
- Hypersensitivity [6]
- Photosensitivity [5]
- Pruritus (itching) [3]
- Rash [4]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Thrombocytopenic purpura [2]
- Urticaria / hives [3]

Cardiovascular
- Phlebitis [2]
- QT interval prolonged / QT prolongation [15]
- Torsades de pointes [9]

Central Nervous System
- Delirium [2]
- Dysgeusia (taste perversion) [3]
- Hallucinations [3]
- Headache (4%) [5]
- Somnolence (drowsiness) [2]
- Vertigo / dizziness (3%) [7]

Endocrine/Metabolic
- Hyperglycemia (includes glucose increased) [2]

Gastrointestinal/Hepatic
- Abdominal pain [5]
- Diarrhea (6%) [6]
- Gastrointestinal disorder / discomfort [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea (7%) [10]
- Vomiting [6]

Hematologic
- Neutropenia (neutrophils decreased) [5]

Local
- Injection-site reaction [2]

Neuromuscular/Skeletal
- Asthenia / fatigue [2]
- Myasthenia gravis (exacerbation) [2]
- Tendinopathy/Tendon rupture [3]

Otic
- Tinnitus [2]

Other
- Adverse effects / adverse reactions [8]

MOXISYLYTE

Synonym: Thymoxamine (British Approved Name)
Trade name: Opilon (Concord)
Indications: Impotence, primary Raynaud's phenomenon
Class: Alpha-adrenergic channel blocker
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, captopril, cilazapril, enalapril, fosinopril, indoramin, irbesartan, lisinopril, olmesartan, quinapril, ramipril, trandolapril, tricyclic antidepressants

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]

MOXONIDINE

Trade name: Physiotens (Solvay)
Indications: Hypertension
Class: Antihypertensive
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, amitriptyline, antihypertensives, captopril, clobazam, diclofenac, enalapril, fosinopril, hypnotics, irbesartan, levodopa, levomepromazine, lisinopril, meloxicam, olmesartan, quinapril, ramipril, sedatives, trandolapril, triamcinolone, trifluoperazine

Mucosal
- Xerostomia (dry mouth) [3]

Central Nervous System
- Headache [2]
- Somnolence (drowsiness) [2]
- Vertigo / dizziness [2]

Other
- Death [3]

MUPIROCIN

Synonym: pseudomonic acid
Trade name: Bactroban (GSK)
Indications: Secondarily infected traumatic skin lesions due to susceptible strains of *Staphylococcus aureus* and *Streptococcus pyogenes*, impetigo
Class: Antibiotic, Antibiotic; topical, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Also known as *pseudomonic acid*, mupirocin is an antibacterial agent produced by fermentation using the organism *Pseudomonas fluorescens*.

Skin
- Pruritus (itching) (<2%)

Central Nervous System
- Dysgeusia (taste perversion) (intranasal) (3%)

Local
- Application-site burning (<4%)

Respiratory
- Cough (intranasal) (2%)

Other
- Allergic reactions [2]

MYCOPHENOLATE

Synonyms: mycophenolate mofetil, mycophenolate sodium, mycophenolic acid
Trade names: CellCept (Roche), Myfortic (Novartis)
Indications: Prophylaxis of organ rejection
Class: Immunosuppressant
Half-life: 18 hours
Clinically important, potentially hazardous interactions with: antacids, azathioprine, basiliximab, belatacept, cholestyramine, ciprofloxacin, corticosteroids, cyclophosphamide, cyclosporine, daclizumab, gemifloxacin, Hemophilus B vaccine, levofloxacin, mercaptopurine, metronidazole, moxifloxacin, norfloxacin, ofloxacin, pantoprazole, rifapentine, sevelamer, tacrolimus, vaccines
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: EMBRYOFETAL TOXICITY, MALIGNANCIES AND SERIOUS INFECTIONS

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (>10%) [4]
- Carcinoma (non-melanoma) (4%)
- Cutaneous toxicity / skin toxicity [2]
- Edema / fluid retention (see also peripheral edema) (12%)
- Herpes simplex [3]
- Herpes zoster [8]
- Peripheral edema (see also edema) (29%)
- Rash (8%) [2]
- Verrucae vulgaris / warts / verrucae [2]

Hair
- Alopecia / hair loss [4]

Nails
Onychomycosis [2]
Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [2]
Oral candidiasis (10%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [7]
Cardiovascular
Hypertension [4]
Thrombophlebitis (<10%)
Central Nervous System
Encephalopathy (includes hepatic encephalopathy) [2]
Fever (pyrexia) (includes hyperpyrexia) [3]
Headache (>20%) [5]
Insomnia [4]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [4]
Neurotoxicity [2]
Pain (>20%)
Primary central nervous system lymphoma (PCNSL) [3]
Tremor (11%)
Endocrine/Metabolic
ALT increased [3]
Dyslipidemia [2]
Hyperglycemia (includes glucose increased) [4]
Hyperlipidemia [3]
Gastrointestinal/Hepatic
Abdominal distension [2]
Abdominal pain [6]
Colitis [3]
Diarrhea [17]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea [6]
Vomiting [6]
Genitourinary
Urinary tract infection [3]
Hematologic
Anemia (>20%) [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [6]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [3]
Myelosuppression / bone marrow suppression / myelotoxicity [3]
Neutropenia (neutrophils decreased) [4]
Thrombocytopenia [4]
Neuromuscular/Skeletal
Arthralgia [4]
Asthenia / fatigue [6]
Back pain (6%)
Myalgia/Myopathy [4]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Respiratory
Bronchitis [2]
Cough [2]
Upper respiratory tract infection [3]
Other
Adverse effects / adverse reactions [22]
Death [2]
Infection (12–20%) [19]
Teratogenicity [4]

MYRRH

Family: Burseraceae
Scientific names: *Commiphora abyssinica, Commiphora erythraea, Commiphora habessinica, Commiphora kataf, Commiphora madagascariensis, Commiphora molmol, Commiphora myrrh*
Indications: Fascioliasis, schistosomiasis, ulcers, eczema, catarrh, amenorrhea, gum disease, aphthous stomatitis
Class: Anthelmintic, Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Dermatitis [5]
Gastrointestinal/Hepatic
Abdominal pain (2%)
Neuromuscular/Skeletal
Asthenia / fatigue (2%)

NABILONE

Trade name: Cesamet (Valeant)
Indications: Nausea and vomiting
Class: Antiemetic, Cannabinoid
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: CNS depressants
Pregnancy category: C

Mucosal
Xerostomia (dry mouth) [6]
Cardiovascular
Hypotension [8]
Central Nervous System
Dyskinesia [3]
Euphoria / elation [2]
Somnolence (drowsiness) [3]
Vertigo / dizziness [15]
Neuromuscular/Skeletal
Asthenia / fatigue [5]

NABUMETONE

Trade name: Relafen (GSK)
Indications: Arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 22.5–30 hours
Clinically important, potentially hazardous interactions with: methotrexate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
Warning: CARDIOVASCULAR AND GASTROINTESTINAL RISKS

Skin
Diaphoresis (see also hyperhidrosis) (<3%)
Edema / fluid retention (see also peripheral edema) (3–9%)
Erythema [2]
Hypersensitivity [3]
Photosensitivity [2]
Pruritus (itching) (3–9%) [2]
Rash (3–9%) [4]
Mucosal
Stomatitis (oral mucositis) (<3%)
Xerostomia (dry mouth) (<3%)
Central Nervous System
Headache (3–9%) [2]
Insomnia (3–9%)
Nervousness (3–9%)
Somnolence (drowsiness) (3–9%)
Vertigo / dizziness (3–9%)
Endocrine/Metabolic
Pseudoporphyria [8]
Gastrointestinal/Hepatic
Abdominal pain (12%) [5]
Constipation (3–9%)
Diarrhea (14%) [5]
Dyspepsia / functional dyspepsia / gastroparesis (13%) [4]
Flatulence (3–9%)
Gastrointestinal ulceration [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (3–9%) [2]
Vomiting (3–9%)
Otic
Tinnitus (<10%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Other
Adverse effects / adverse reactions [6]

NADOLOL

Trade name: Corzide (Monarch)
Indications: Hypertension, angina pectoris
Class: Adrenergic beta-receptor antagonist, Antiarrhythmic class II
Half-life: 10–24 hours
Clinically important, potentially hazardous interactions with: clonidine, epinephrine, verapamil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Corzide is nadolol and bendroflumethiazide. Cutaneous side effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy. Contra-indicated in patients with bronchial asthma, sinus bradycardia and greater than first degree conduction block, cardiogenic shock, and overt cardiac failure.

Skin
Edema / fluid retention (see also peripheral edema) (<5%)
Psoriasis [4]
Raynaud's phenomenon (2%) [2]
Cardiovascular
Bradycardia / sinus bradycardia (2%)
Central Nervous System
Hypoesthesia (numbness) (fingers and toes) (>5%)
Paresthesias (>5%)
Vertigo / dizziness (2%)
Neuromuscular/Skeletal
Asthenia / fatigue (2%)

Other
Adverse effects / adverse reactions [4]

NAFCILLIN

Trade name: Nafcil (Merz)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial, CYP1A2 inducer
Half-life: 0.5–1.5 hours
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, demeclocycline, doxycycline, elbasvir & grazoprevir, enzalutamide, imipenem/cilastatin, lumateperone, methotrexate, minocycline, olaparib, oxytetracycline, palbociclib, tetracycline, venetoclax, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Exanthems (10%)
Rash (<32%)
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Local
Injection-site necrosis [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]

NALBUPHINE

Trade name: Nubain (Endo)
Indications: Moderate to severe pain
Class: Opiate agonist
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: CNS depressants, diazepam, hydrocodone, hydromorphone, oliceridine, oxymorphone, pentobarbital, promethazine, tapentadol
Pregnancy category: B
Note: Nalbuphine contains sulfites.

Skin
Clammy skin (9%)
Diaphoresis (see also hyperhidrosis) (9%)
Mucosal
Xerostomia (dry mouth) (4%)
Central Nervous System
Vertigo / dizziness (5%)
Local
Injection-site pain [4]

NALDEMEDINE

Trade name: Symproic (Shionogi)
Indications: Opioid-induced constipation in adult patients with chronic non-cancer pain
Class: Opioid antagonist, Opioid receptor antagonist
Half-life: 11 hours
Clinically important, potentially hazardous interactions with: amiodarone, aprepitant, atazanavir, captopril, carbamazepine, clarithromycin, cyclosporine, diltiazem, erythromycin, fluconazole, itraconazole, ketoconazole, moderate or strong CYP3A inhibitors, other opioid antagonists, P-gp inhibitors, phenytoin, quercetin, quinidine, rifampin, ritonavir, saquinavir, St John's wort, strong CYP3A inducers, verapamil
Pregnancy category: N/A (Potential for opioid withdrawal in fetus)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with known or suspected gastrointestinal obstruction. Opioid withdrawal symptoms have occurred in patients treated with naldemedine.

Skin
Hypersensitivity (<2%)
Rash (<2%)
Gastrointestinal/Hepatic
Abdominal pain (8–11%) [4]
Diarrhea (7%) [10]
Gastroenteritis (2–3%)
Gastrointestinal disorder / discomfort [3]
Nausea (4–6%)
Vomiting (3%)
Respiratory
Bronchospasm (<2%)
Other
Adverse effects / adverse reactions [4]

NALIDIXIC ACID

Indications: Various urinary tract infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; quinolone, Antimicrobial
Half-life: 60–90 minutes
Clinically important, potentially hazardous interactions with: warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Bullous dermatosis [6]
Exanthems (>5%) [5]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Photosensitivity [25]
Phototoxic bullous eruption [13]
Pruritus (itching) [2]
Urticaria / hives [3]
Endocrine/Metabolic
Porphyria cutanea tarda [2]
Pseudoporphyria [2]

NALOXEGOL

Trade name: Movantik (AstraZeneca)
Indications: Opioid-induced constipation
Class: Opioid receptor antagonist
Half-life: 6–11 hours
Clinically important, potentially hazardous interactions with: diltiazem, erythromycin, grapefruit juice, verapamil, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with known or suspected gastrointestinal obstruction, patients at increased risk of recurrent gastrointestinal obstruction, and patients concomitantly using strong CYP3A4 inhibitors.

Skin
Hyperhidrosis (see also diaphoresis) (<3%)
Central Nervous System
Headache (4%) [3]
Gastrointestinal/Hepatic
Abdominal pain (12–21%) [5]
Diarrhea (6–9%) [5]
Flatulence (3–6%) [2]
Nausea (7–8%) [5]
Vomiting (3–5%)
Other
Adverse effects / adverse reactions [2]

NALOXONE

Trade names: Suboxone (Reckitt Benckiser), Talwin-NX (Sanofi-Aventis), Targiniq (Purdue)
Indications: Narcotic overdose
Class: Opioid antagonist
Half-life: <1.5 hours
Clinically important, potentially hazardous interactions with: cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, thioridazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Subuxone contains buprenorphine; Targiniq is naloxone and oxycodone.

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Pruritus (itching) [2]
Rash (<10%)
Mucosal
Xerostomia (dry mouth) [2]
Cardiovascular
Arrhythmias [2]
Bradycardia / sinus bradycardia [2]
Hypertension [8]
Hypotension [2]
Pulmonary edema / cardiogenic pulmonary edema [2]
Central Nervous System
Headache [4]
Seizures [5]
Somnolence (drowsiness) [3]
Gastrointestinal/Hepatic
Constipation [8]
Nausea [4]
Vomiting [2]
Neuromuscular/Skeletal
Asthenia / fatigue [3]
Myoclonus [2]
Respiratory
Non-cardiogenic pulmonary edema [3]
Other
Adverse effects / adverse reactions [5]
Death [2]

NALTREXONE

Trade names: Contrave (Takeda), Depade (Mallinckrodt), Nalorex (Bristol-Myers Squibb), Opizone (Genus), ReVia (Meda), Troxyca (Pfizer), Vivitrex (Alkermes), Vivitrol (Alkermes)
Indications: Substance abuse, opioid dependence, alcohol dependence
Class: Opioid antagonist
Half-life: 4 hours
Clinically important, potentially hazardous interactions with: bremelanotide, lofexidine, opioid analgesics, opioid containing medications
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Naltrexone has the capacity to cause hepatocellular injury when given in excessive doses.
Troxyca is naltrexone and oxycodone. Contra-indicated in acute hepatitis or liver failure; patients receiving opioid analgesics, with current physiologic opioid dependence, or in acute opioid withdrawal.

Skin
- Nicolau syndrome [2]
- Pruritus (itching) [2]
- Rash (<10%)

Cardiovascular
- Hypertension [4]

Central Nervous System
- Anxiety [2]
- Chills (<10%)
- Compulsions / obsessive-compulsive symptoms [2]
- Depression [2]
- Headache [5]
- Insomnia [5]
- Seizures [2]
- Somnolence (drowsiness) [2]
- Vertigo / dizziness [5]

Gastrointestinal/Hepatic
- Constipation [6]
- Diarrhea [3]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
- Nausea [10]
- Vomiting [6]

Local
- Injection-site pain [2]
- Injection-site reaction [5]

Neuromuscular/Skeletal
- Arthralgia (>10%)
- Asthenia / fatigue [4]

Respiratory
- Influenza [2]
- Nasopharyngitis [2]

Other
- Adverse effects / adverse reactions [3]

NANDROLONE

Trade name: Deca-Durabolin (Organon)
Indications: Anemia of renal insufficiency, control of metastatic breast cancer, osteoporosis in post-menopausal women
Class: Anabolic steroid
Half-life: 6–14 days
Clinically important, potentially hazardous interactions with: acenocoumarol, anisindione, anticoagulants, dabigatran, danaparoid, fondaparinux, heparin, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Deca Durabolin contains Arachis oil (peanut oil) and should not be taken / applied by patients known to be allergic to peanut.

Hair
- Hirsutism [3]

Other
- Adverse effects / adverse reactions [2]

NAPHAZOLINE

Trade name: Albalon (Allergan)
Indications: Ocular irritation and/or congestion, allergic, inflammatory ocular conditions
Class: Sympathomimetic
Half-life: N/A
Clinically important, potentially hazardous interactions with: MAO inhibitors, maprotiline, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in narrow angle glaucoma.

Skin
- Diaphoresis (see also hyperhidrosis) [2]

Cardiovascular
- Bradycardia / sinus bradycardia [2]
- Hypertension [2]
- Pulmonary edema / cardiogenic pulmonary edema [3]

NAPROXEN

Trade names: Aleve (Bayer), Naprosyn (Roche), Synflex (Roche)
Indications: Pain, arthritis
Class: Covid-19 putative drug, Non-steroidal anti-inflammatory (NSAID)
Half-life: 15 hours
Clinically important, potentially hazardous interactions with: methotrexate, methyl salicylate, prednisolone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
- Angioedema [5]
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (3–9%)
- Bullous dermatosis [5]
- Diaphoresis (see also hyperhidrosis) (<3%) [3]
- DRESS syndrome [4]
- Edema / fluid retention (see also peripheral edema) (<9%)
- Erythema multiforme [2]
- Exanthems (<14%) [9]
- Fixed eruption [26]
- Hypersensitivity [2]
- Lichen planus (includes hypertrophic lichen planus) [3]
- Lichenoid eruption / lichenoid reaction [3]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
- Photosensitivity [16]
- Pruritus (itching) (3–17%) [5]
- Purpura (<3%) [4]
- Pustules / pustular eruption [2]
- Rash (3–9%) [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
- Urticaria / hives (<5%) [6]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [9]

Hair
- Alopecia / hair loss [3]

Mucosal
- Stomatitis (oral mucositis) (<3%)
- Xerostomia (dry mouth) [2]

Cardiovascular
- Chest pain [2]
- Myocardial infarction [2]

Central Nervous System
- Somnolence (drowsiness) [2]
- Vertigo / dizziness [6]

Endocrine/Metabolic
- Pseudoporphyria [29]

Gastrointestinal/Hepatic
- Abdominal pain [4]
- Constipation [2]
- Diarrhea [3]
- Dyspepsia / functional dyspepsia / gastroparesis [10]
- Gastrointestinal disorder / discomfort [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
- Nausea [10]

Hematologic
- Thrombocytopenia [2]

Neuromuscular/Skeletal
- Leg cramps [2]

Otic
- Tinnitus [2]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

Respiratory
- Nasopharyngitis [2]

Other
- Adverse effects / adverse reactions [12]
- Death [2]
- Side effects (5–9%) [3]

NARATRIPTAN

Trade names: Amerge (GSK), Naramig (GSK)
Indications: Acute migraine attacks
Class: 5-HT1 agonist, Serotonin receptor antagonist, Triptan
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: 5-ht$_1$ agonists, dihydroergotamine, duloxetine, ergotamine, methysergide, metoclopramide, oral contraceptives, rizatriptan, selegiline, sibutramine, SNRIs, SSRIs, St John's wort, sumatriptan, triptans, venlafaxine, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with history, symptoms, or signs of ischemic cardiac, cerebrovascular, or peripheral vascular syndromes.

Central Nervous System
Neurotoxicity (4–7%) [2]
Pain (2–4%)
Paresthesias (<2%)
Somnolence (drowsiness) (<2%)
Vertigo / dizziness (<2%)
Gastrointestinal/Hepatic
Colitis [5]
Gastrointestinal disorder / discomfort (6–7%)
Nausea (4–5%) [3]
Neuromuscular/Skeletal
Asthenia / fatigue (<2%)
Other
Adverse effects / adverse reactions [6]

NATALIZUMAB

Synonym: antegren
Trade name: Tysabri (Biogen)
Indications: Multiple sclerosis, Crohn's disease
Class: Immunomodulator, Monoclonal antibody
Half-life: 11 days
Clinically important, potentially hazardous interactions with: abatacept, alefacept, azacitidine, azathioprine, betamethasone, cabazitaxel, certolizumab, cortocosteroids, cyclosporine, denileukin, docetaxel, fingolimod, gefitinib, leflunomide, lenalidomide, mercaptopurine, methotrexate, oxaliplatin, pazopanib, pemetrexed, pralatrexate, rilonacept, temsirolimus, triamcinolone, vedolizumab
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients who have or have had progressive multifocal leukoencephalopathy.
Warning: PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY

Skin
Dermatitis (6%)
Herpes simplex [2]
Hypersensitivity [6]
Pruritus (itching) (4%)
Rash (9%)
Central Nervous System
Depression (17%)
Headache (35%) [3]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [79]
Tremor (3%)
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Genitourinary
Vaginitis (includes vulvitis) (8%)
Local
Application-site reactions (22%)
Infusion-related reactions [3]
Infusion-site reactions [2]
Neuromuscular/Skeletal
Asthenia / fatigue (24%) [4]
Other
Adverse effects / adverse reactions [6]
Allergic reactions (7%) [4]
Death [7]
Infection (2%) [5]

NATEGLINIDE

Trade name: Starlix (Novartis)
Indications: Diabetes Type II
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Meglitinide
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Respiratory
Influenza- ('flu)-like syndrome (4%)

NEBIVOLOL

Trade names: Bystolic (Forest), Byvalson (Forest), Nebilet (Menarini)
Indications: Hypertension
Class: Adrenergic beta-receptor antagonist, Beta blocker
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: beta blockers, cinacalcet, clonidine, CYP2D6 inhibitors, delavirdine, digitalis glycosides, duloxetine, terbinafine, tipranavir, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Byvalson is nebivolol and valsartan.
Warning: Byvalson: FETAL TOXICITY

Cardiovascular
Bradycardia / sinus bradycardia [3]
Hypotension [2]
Central Nervous System
Headache (6–9%) [10]
Vertigo / dizziness (2–4%) [6]
Gastrointestinal/Hepatic
Diarrhea (<2%)
Nausea (<3%)
Neuromuscular/Skeletal
Asthenia / fatigue (2–5%) [4]
Respiratory
Nasopharyngitis [3]
Upper respiratory tract infection [3]
Other
Adverse effects / adverse reactions [3]

NECITUMUMAB

Trade name: Portrazza (Lilly)
Indications: Metastatic squamous non-small cell lung cancer (in combination with cisplatin and gemcitabine)
Class: Epidermal growth factor receptor (EGFR) inhibitor / antagonist, Monoclonal antibody
Half-life: 14 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: See separate entries for cisplatin and gemcitabine.
Warning: CARDIOPULMONARY ARREST and HYPOMAGNESEMIA

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (9–15%)
Cutaneous toxicity / skin toxicity (8%) [2]
Fissures (5%)
Hypersensitivity (2%)
Pruritus (itching) (7%) [2]
Rash (44%) [9]
Xerosis / xeroderma (see also dry skin) (7%) [2]
Mucosal
Stomatitis (oral mucositis) (11%)
Cardiovascular
Cardiac arrest (3%)
Phlebitis (2%)
Venous thromboembolism (9%) [4]
Central Nervous System
Headache (11%) [2]
Endocrine/Metabolic
Hypocalcemia (45%)
Hypokalemia (28%)
Hypomagnesemia (83%) [8]
Hypophosphatemia (31%)
Weight loss (13%)
Gastrointestinal/Hepatic
Diarrhea (16%) [2]
Dysphagia (3%)
Vomiting (29%)
Hematologic
Anemia [2]
Febrile neutropenia [2]
Neutropenia (neutrophils decreased) [4]
Thrombocytopenia [3]
Local
Infusion-related reactions (2%) [2]
Neuromuscular/Skeletal
Asthenia / fatigue [3]
Muscle spasm (2%)
Ocular
Conjunctivitis (conjunctival inflammation) (7%)
Respiratory
Hemoptysis (10%)
Pulmonary embolism (5%)

Pulmonary toxicity [2]

Other
Adverse effects / adverse reactions [2]
Death [2]

NEDOCROMIL

Trade names: Alocril (Allergan), Tilade (Monarch)
Indications: Bronchial asthma, pruritus of allergic conjunctivitis
Class: Mast cell stabilizer
Half-life: 3.3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Central Nervous System
Dysgeusia (taste perversion) (<12%) [4]

Gastrointestinal/Hepatic
Abdominal pain (2%)

Ocular
Ocular burning (<3%) [2]
Ocular stinging [2]

Respiratory
Cough (9%)
Rhinitis (7%)
Upper respiratory tract infection (7%)

NEFAZODONE

Trade name: Serzone (Bristol-Myers Squibb)
Indications: Depression
Class: Antidepressant, CYP3A4 inhibitor, Norepinephrine reuptake inhibitor
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: abiraterone, aprepitant, astemizole, atorvastatin, avanafil, buspirone, cabozantinib, calcifediol, ceritinib, copanlisib, crizotinib, darunavir, dasatinib, dronedarone, eletriptan, erlotinib, eszopiclone, fesoterodine, flibanserin, fluticasone propionate, indinavir, isocarboxazid, ivabradine, ixabepilone, lapatinib, lomitapide, lumateperone, MAO inhibitors, methylergonovine, midostaurin, mifepristone, neratinib, olaparib, osimertinib, paclitaxel, palbociclib, phenelzine, pimozide, ponatinib, rimonabant, romidepsin, ruxolitinib, selegiline, sibutramine, simvastatin, solifenacin, sonidegib, St John's wort, sumatriptan, sunitinib, temsirolimus, ticagrelor, tipranavir, tolvaptan, tramadol, tranylcypromine, trazodone, ulipristal, vemurafenib, vorapaxar
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: This drug has been withdrawn.
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS and HEPATOTOXICITY

Skin
Flushing / rubefaction (4%)
Peripheral edema (see also edema) (3%)
Pruritus (itching) (2%)
Rash (2%)

Mucosal
Xerostomia (dry mouth) (25%)

Central Nervous System
Dysgeusia (taste perversion) (2%)
Paresthesias (4%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]

Genitourinary
Vaginitis (includes vulvitis) (2%)

Neuromuscular/Skeletal
Asthenia / fatigue [2]
Rhabdomyolysis [3]

Respiratory
Influenza- ('flu)-like syndrome (<10%)

Other
Infection (8%)

NELARABINE

Trade name: Arranon (GSK)
Indications: T-cell acute lymphoblastic leukemia, T-cell lymphoblastic lymphoma
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Purine analog
Half-life: 0.5–3 hours
Clinically important, potentially hazardous interactions with: pentostatin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Nelarabine is a pro-drug of Ara-G.

Skin
Edema / fluid retention (see also peripheral edema) (11%)
Peripheral edema (see also edema) (15%)
Petechiae (12%)

Mucosal
Epistaxis (nosebleed) (8%)
Stomatitis (oral mucositis) (8%)

Cardiovascular
Chest pain (5%)
Hypotension (8%)
Tachycardia (8%)

Central Nervous System
Amnesia (3%)
Balance disorder (2%)
Confusion (8%)
Depression (6%)
Dysgeusia (taste perversion) (3%)
Fever (pyrexia) (includes hyperpyrexia) (23%)
Gait instability / postural instability (6%)
Headache (17%)
Hypoesthesia (numbness) (17%)
Insomnia (7%)
Myelopathy (see also necrotizing myelopathy / necrotic myelopathy / subacute necrotic myelopathy) [8]
Neurotoxicity [11]
Pain (11%)
Paralysis / paraplegia [2]
Paresthesias (4%) [2]
Peripheral neuropathy (21%) [5]
Rigors (8%)
Seizures (6%) [2]
Somnolence (drowsiness) (23%) [3]
Tremor (4%)
Vertigo / dizziness (21%)

Endocrine/Metabolic
AST increased (6%)
Dehydration (7%)
Hyperglycemia (includes glucose increased) (6%)

Gastrointestinal/Hepatic
Abdominal distension (6%)
Abdominal pain (9%)
Constipation (21%)
Diarrhea (22%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (41%)
Vomiting (22%)

Hematologic
Anemia (99%)
Febrile neutropenia (12%)
Hemotoxicity [2]
Myelosuppression / bone marrow suppression / myelotoxicity [3]
Neutropenia (neutrophils decreased) (81%) [2]
Thrombocytopenia (86%) [2]

Neuromuscular/Skeletal
Arthralgia (9%)
Asthenia / fatigue (17–50%)
Ataxia (9%)
Back pain (8%)
Myalgia/Myopathy (13%)
Pain in extremities (7%)

Ocular
Vision blurred (4%)

Respiratory
Cough (25%)
Dyspnea / shortness of breath (7–20%)
Pleural effusion (10%)
Pneumonia (8%)
Sinusitis (7%)
Wheezing (5%)

Other
Adverse effects / adverse reactions [5]
Death [2]
Infection (9%)

NELFINAVIR

Trade name: Viracept (ViiV)
Indications: HIV infection
Class: Antiretroviral, Covid-19 putative drug, CYP3A4 inhibitor, HIV-1 protease inhibitor
Half-life: 3.5–5 hours
Clinically important, potentially hazardous interactions with: abiraterone, afatinib, alfuzosin, amiodarone, amprenavir, aripiprazole, artemether/lumefantrine, atorvastatin, avanafil, barbiturates, benzodiazepines, brigatinib, cabazitaxel, cabozantinib, calcifediol, carbamazepine, chlordiazepoxide, ciclesonide, cisapride, clonazepam, clorazepate, copanlisib, crizotinib, cyclosporine, darifenacin, dasatinib, delavirdine, diazepam, dihydroergotamine, eletriptan, eplerenone, ergot alkaloids, ergotamine, erlotinib, estrogens, eszopiclone, etravirine, eucalyptus, everolimus, fentanyl, fesoterodine, flibanserin, flurazepam, fluticasone propionate, indinavir, ivabradine, ixabepilone, lapatinib, lomitapide, lopinavir, lorazepam, lovastatin, lumateperone, maraviroc, methadone, methylergonovine, methysergide, midazolam, midostaurin, mifepristone, neratinib, olaparib, omeprazole, oral contraceptives, oxazepam,

paclitaxel, palbociclib, pantoprazole, pazopanib, phenytoin, pimozide, ponatinib, primidone, progestogens, quazepam, quinidine, quinine, ranolazine, rifabutin, rifampin, rilpivirine, ritonavir, rivaroxaban, romidepsin, rosuvastatin, ruxolitinib, saquinavir, sildenafil, simeprevir, simvastatin, solifenacin, St John's wort, sunitinib, tacrolimus, tadalafil, telithromycin, temazepam, temsirolimus, ticagrelor, tolterodine, tolvaptan, triazolam, vardenafil, vemurafenib, vorapaxar
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Protease inhibitors cause dyslipidemia which includes elevated triglycerides and cholesterol and redistribution of body fat centrally to produce the so-called 'protease paunch', breast enlargement, facial atrophy, and 'buffalo hump'.

Skin
Rash (<10%) [4]
Gastrointestinal/Hepatic
Diarrhea [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Genitourinary
Urolithiasis [2]
Hematologic
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]

NEOMYCIN

Trade names: Maxitrol (Falcon), Neosporin (Monarch)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; aminoglycoside, Antimicrobial
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: acarbose, aldesleukin, aminoglycosides, atracurium, bacitracin, bumetanide, doxacurium, ethacrynic acid, furosemide, methoxyflurane, neostigmine, pancuronium, penicillin V, polypeptide antibiotics, rocuronium, sorafenib, succinylcholine, teicoplanin, torsemide, vecuronium
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Aminoglycosides may cause neurotoxicity and/or nephrotoxicity.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Contact dermatitis (<10%) [70]
Eczema / eczematous reaction / eczematous eruption [2]
Exanthems [2]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives (<10%)
Otic
Hearing loss (hypoacusis) [3]

NEOSTIGMINE

Trade name: Prostigmin (Valeant)
Indications: Myasthenia gravis
Class: Acetylcholinesterase inhibitor, Cholinesterase inhibitor, Parasympathomimetic
Half-life: 52 minutes
Clinically important, potentially hazardous interactions with: aminoglycosides, antiarrhythmics, anticholinergics, chloroquine, clindamycin, hydroxychloroquine, kanamycin, lithium, local and general anesthetics, neomycin, non-depolarising muscle relaxants, polymixins, propafenone, propranolol, streptomycin, succinylcholine
Pregnancy category: C (Anticholinesterase drugs may cause uterine irritability and induce premature labor when given intravenously to pregnant women near term)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Neostigmine bromide is given orally; neostigmine methylsulfate is given parenterally. Contra-indicated in patients with a previous history of reaction to bromides, or those with peritonitis or mechanical obstruction of the intestinal or urinary tract.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Cardiovascular
Atrioventricular block [3]
Bradycardia / sinus bradycardia [4]
Cardiac arrest [3]
Tachycardia [2]
Central Nervous System
Anxiety [2]
Sedation [2]
Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [2]
Nausea [14]
Vomiting [12]
Respiratory
Bronchospasm [3]

NERATINIB

Trade name: Nerlynx (Puma)
Indications: Early stage HER2-overexpressed/amplified breast cancer, to follow adjuvant trastuzumab-based therapy
Class: Epidermal growth factor receptor (EGFR) inhibitor / antagonist, Kinase inhibitor, Tyrosine kinase inhibitor
Half-life: 7–17 hours
Clinically important, potentially hazardous interactions with: aprepitant, boceprevir, bosentan, carbamazepine, cimetidine, ciprofloxacin, clarithromycin, clotrimazole, cobicistat, conivaptan, crizotinib, cyclosporine, dabigatran, digoxin, diltiazem, dronedarone, efavirenz, enzalutamide, erythromycin, etravirine, fexofenadine, fluconazole, fluvoxamine, grapefruit juice, H2-receptor antagonists, idelalisib, imatinib, indinavir, itraconazole, ketoconazole, lansoprazole, lopinavir, mitotane, modafinil, nefazodone, nelfinavir, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, phenytoin, posaconazole, rifampin, ritonavir, saquinavir, St John's wort, strong or moderate CYP3A4 inhibitors or inducers, tipranavir, tofisopam, troleandomycin, verapamil, voriconazole
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Fissures (2%)
Rash (18%)
Xerosis / xeroderma (see also dry skin) (6%)
Nails
Nail disorder (8%)
Mucosal
Epistaxis (nosebleed) (5%)
Stomatitis (oral mucositis) (14%) [2]
Xerostomia (dry mouth) (3%)
Cardiovascular
Cardiotoxicity [2]
Central Nervous System
Anorexia [5]
Peripheral neuropathy [2]
Endocrine/Metabolic
ALT increased (9%)
Appetite decreased (12%)
AST increased (7%)
Dehydration (4%)
Weight loss (5%)
Gastrointestinal/Hepatic
Abdominal distension (5%)
Abdominal pain (36%) [3]
Constipation [2]
Diarrhea (95%) [18]
Dyspepsia / functional dyspepsia / gastroparesis (10%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<2%)
Nausea (43%) [12]
Vomiting (26%) [8]
Genitourinary
Urinary tract infection (5%)
Hematologic
Anemia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [3]
Neuromuscular/Skeletal
Asthenia / fatigue (27%) [7]
Muscle spasm (11%)

NETARSUDIL

Trade name: Rhopressa (Aerie)
Indications: Reduction of elevated intraocular pressure in open angle glaucoma or ocular hypertension
Class: Rho kinase inhibitor
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No available data to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Local
Application-site erythema (5–10%)
Application-site pain (~20%)
Ocular
Conjunctival hemorrhage (~20%)
Conjunctival hyperemia / conjunctival injection (53%) [6]
Corneal deposits (~20%)
Corneal staining (5–10%)
Eyelid erythema (5–10%)
Lacrimation (5–10%)
Reduced visual acuity (5–10%)
Vision blurred (5–10%)

NETUPITANT & PALONOSETRON

Synonym: NEPA
Trade name: Akynzeo (Helsinn)
Indications: Acute and delayed nausea and vomiting associated with cancer chemotherapy
Class: Neurokinin 1 receptor antagonist (netupitant), Serotonin type 3 receptor antagonist (palonosetron)
Half-life: 40 hours
Clinically important, potentially hazardous interactions with: rifampin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Erythema (3%)
Central Nervous System
Headache (9%) [7]
Gastrointestinal/Hepatic
Constipation (3%) [7]
Dyspepsia / functional dyspepsia / gastroparesis (4%) [2]
Neuromuscular/Skeletal
Asthenia / fatigue (4–8%)
Other
Adverse effects / adverse reactions [2]
Hiccups / singultus [2]

NEVIRAPINE

Trade name: Viramune (Boehringer Ingelheim)
Indications: HIV infection
Class: Antiretroviral, CYP3A4 inducer, Non-nucleoside reverse transcriptase inhibitor
Half-life: 45 hours
Clinically important, potentially hazardous interactions with: amiodarone, amprenavir, atazanavir, carbamazepine, caspofungin, clarithromycin, clonazepam, cyclosporine, diltiazem, disopyramide, doravirine, efavirenz, ethosuximide, etravirine, fentanyl, fluconazole, fosamprenavir, indinavir, itraconazole, ketoconazole, levonorgestrel, lidocaine, lopinavir, midazolam, nifedipine, rifampin, rilpivirine, simeprevir, St John's wort, verapamil
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: LIFE-THREATENING (INCLUDING FATAL) HEPATOTOXICITY and SKIN REACTIONS

Skin
Angioedema [2]
Cutaneous toxicity / skin toxicity [3]
DRESS syndrome [12]
Exanthems [6]
Hypersensitivity [15]
Lipodystrophy [2]
Rash (<48%) [31]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [44]
Mucosal
Gingivitis (<3%)
Ulcerative stomatitis (4%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Paresthesias (2%)
Peripheral neuropathy [2]
Endocrine/Metabolic
Acidosis (includes lactic acidosis) [2]
Gastrointestinal/Hepatic
Hepatic failure [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [33]
Hematologic
Anemia [2]
Neutropenia (neutrophils decreased) [2]
Neuromuscular/Skeletal
Myalgia/Myopathy (<10%)
Other
Adverse effects / adverse reactions [7]
Death [3]

NIACIN

Synonyms: nicotinic acid; vitamin B_3
Trade names: Advicor (Kos), Niacor (Upsher-Smith), Niaspan (Merck), Simcor (AbbVie), Slo-Niacin (Upsher-Smith)
Indications: Hyperlipidemia
Class: Vitamin
Half-life: 45 minutes
Clinically important, potentially hazardous interactions with: antihypertensives, atorvastatin, bile acid sequestrants, insulin aspart, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, pitavastatin, rosuvastatin, selenium
Pregnancy category: C (Where niacin is co-administered with a statin, refer to the pregnancy category for the statin)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with active liver or peptic ulcer disease, or arterial bleeding. Simcor is niacin and simvastatin.

Skin
Acanthosis nigricans (8%) [14]
Exanthems (<3%)
Flushing / rubefaction (<30%) [31]
Pruritus (itching) (<5%) [9]
Rash [5]
Central Nervous System
Paresthesias (<10%) [2]
Endocrine/Metabolic
Hyperglycemia (includes glucose increased) [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Neuromuscular/Skeletal
Myalgia/Myopathy [5]
Ocular
Maculopathy [3]

NIACINAMIDE

Synonyms: nicotinamide; vitamin B_3
Indications: Prophylaxis and treatment of pellagra
Class: Vitamin
Half-life: 45 minutes
Clinically important, potentially hazardous interactions with: atorvastatin, primidone, rosuvastatin
Pregnancy category: A (the pregnancy category will be C if used in doses above the RDA)

Skin
Pruritus (itching) (<5%) [2]
Central Nervous System
Paresthesias (<10%)
Hematologic
Thrombocytopenia [2]

NICARDIPINE

Trade name: Cardene (Roche)
Indications: Angina, hypertension
Class: Calcium channel blocker
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: amprenavir, atazanavir, boceprevir, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, delavirdine, epirubicin, imatinib, indinavir, lopinavir, posaconazole, propranolol, telaprevir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients

Skin
Erythromelalgia / erythermalgia [4]
Flushing / rubefaction (6%) [2]
Peripheral edema (see also edema) (7%) [2]
Rash [3]
Urticaria / hives [3]
Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [2]
Cardiovascular
Pulmonary edema / cardiogenic pulmonary edema [5]
Endocrine/Metabolic
Gynecomastia [2]
Local
Injection-site phlebitis [2]
Other
Adverse effects / adverse reactions [2]
Side effects [2]

NICORANDIL

Trade names: Corflo (Wockhardt), Korandil (Sun Pharma), Nicoran (Torrent), Zynicor (Cadila Healthcare)
Indications: Angina pectoris
Class: Potassium channel activator
Half-life: N/A
Clinically important, potentially hazardous interactions with: amitriptyline, sildenafil, tadalafil, vardenafil
Pregnancy category: N/A

Skin
- Leg ulceration [2]
- Penile ulceration [2]
- Ulcerations [9]

Mucosal
- Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [7]
- Mucocutaneous reactions [2]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [26]
- Perianal ulcerations [16]
- Tongue ulceration [3]

Central Nervous System
- Headache [9]
- Vertigo / dizziness [2]

Gastrointestinal/Hepatic
- Gastrointestinal fistula [3]
- Gastrointestinal ulceration [2]

Hematologic
- Methemoglobinemia [2]

Ocular
- Corneal ulceration [2]

NICOTINE

Trade names: Habitrol Patch (Novartis), Nicoderm (GSK), Nicorette (GSK), Nicotrol (Pfizer)
Indications: Aid to smoking cessation
Class: Alkaloid
Half-life: varies with the delivery system
Clinically important, potentially hazardous interactions with: adenosine, bendamustine, heparin, horsetail
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Smoking cessation therapy has various delivery systems. These include: transdermal patches, chewing gum, nasal spray, inhaler, and oral forms.

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (3%)
- Diaphoresis (see also hyperhidrosis) (<3%)
- Erythema (>10%)
- Pigmentation [3]
- Pruritus (itching) (>10%)

Mucosal
- Sialorrhea (ptyalism; hypersalivation) (>10%)
- Stomatitis (oral mucositis) (>10%)
- Xerostomia (dry mouth) (<3%)

Central Nervous System
- Headache (18–26%)

Gastrointestinal/Hepatic
- Dyspepsia / functional dyspepsia / gastroparesis (18%)
- Flatulence (4%)
- Pancreatitis / acute pancreatitis [2]
- Throat irritation/pain (66%)

Neuromuscular/Skeletal
- Arthralgia (5%)
- Back pain (6%)
- Myalgia/Myopathy (<10%)

Respiratory
- Cough (32%) [2]
- Rhinitis (23%)

Other
- Death [2]
- Hiccups / singultus [2]

NIFEDIPINE

Trade names: Adalat (Bayer), Coracten (UCB), Procardia (Pfizer), Tenif (AstraZeneca), Tensipine MR (Genus), Valni XL (Winthrop)
Indications: Angina, hypertension
Class: Calcium channel blocker
Half-life: 2–5 hours (immediate release products)
Clinically important, potentially hazardous interactions with: acebutolol, amprenavir, atazanavir, beta blockers, boceprevir, carbamazepine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, cyclosporine, delavirdine, digoxin, diltiazem, dronedarone, efavirenz, epirubicin, fentanyl, fluoxetine, grapefruit juice, imatinib, indinavir, insulin, lopinavir, micafungin, mizolastine, nevirapine, oxcarbazepine, parenteral magnesium, phenytoin, posaconazole, propranolol, rifampin, ritonavir, St John's wort, tacrolimus, vardenafil, vincristine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Although not approved for this purpose, immediate-release nifedipine capsules have been used (orally and sublingually) for acute reduction of blood pressure. The literature reports several cases of profound hypotension, myocardial infarction, and death when immediate-release nifedipine was used in this way. Immediate-release nifedipine capsules should not be used for the acute reduction of blood pressure.
Tenif is atenolol and nifedipine.

Skin
- AGEP [3]
- Angioedema [2]
- Bullous dermatosis [2]
- Dermatitis (<2%)
- Diaphoresis (see also hyperhidrosis) (<2%) [2]
- Edema / fluid retention (see also peripheral edema) [3]
- Erysipelas [2]
- Erythema [2]
- Erythema multiforme [5]
- Erythema nodosum [2]
- Erythromelalgia / erythermalgia [6]
- Exanthems [9]
- Exfoliative dermatitis [5]
- Fixed eruption [2]
- Flushing / rubefaction (3–25%) [9]
- Lichenoid eruption / lichenoid reaction [3]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
- Peripheral edema (see also edema) [12]
- Photosensitivity [5]
- Pruritus (itching) (<2%) [3]
- Purpura (<2%) [3]
- Rash (<3%) [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
- Telangiectasia [2]
- Urticaria / hives [7]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Hair
- Alopecia / hair loss [4]

Mucosal
- Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth (6–10%) [76]
- Xerostomia (dry mouth) (<3%)

Cardiovascular
- Hypotension [10]
- Pulmonary edema / cardiogenic pulmonary edema [3]
- Tachycardia [4]

Central Nervous System
- Chills (2%)
- Headache (19%) [8]
- Paresthesias (<3%)
- Tremor (2–8%)
- Vertigo / dizziness [5]

Endocrine/Metabolic
- Gynecomastia [6]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea (2%) [2]

Neuromuscular/Skeletal
- Asthenia / fatigue (4%)

Other
- Adverse effects / adverse reactions [4]
- Side effects [3]

NILOTINIB

Trade name: Tasigna (Novartis)
Indications: Chronic myelogenous leukemia
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Tyrosine kinase inhibitor, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 17 hours
Clinically important, potentially hazardous interactions with: amiodarone, amitriptyline, amoxapine, arsenic, astemizole, bepridil, carbamazepine, chloroquine, cisapride, citalopram, clarithromycin, clozapine, conivaptan, darunavir, dasatinib, degarelix, delavirdine, digoxin, dihydroergotamine, disopyramide, dolasetron, efavirenz, ergotamine, grapefruit juice, halofantrine, haloperidol, indinavir, itraconazole, ketoconazole, lapatinib, levofloxacin, lopinavir, methadone, midazolam, moxifloxacin, oxcarbazepine, pazopanib, phenobarbital, phenytoin, pimozide, procainamide, quinidine, rifampin, rifapentine, ritonavir, sotalol, St John's wort, telavancin, telithromycin, terfenadine, voriconazole, vorinostat, ziprasidone
Pregnancy category: D

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with hypokalemia, hypomagnesemia, or long QT syndrome.
Warning: QT PROLONGATION AND SUDDEN DEATHS

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (<10%)
- Cutaneous toxicity / skin toxicity [8]
- Dermatitis (<10%)
- Eczema / eczematous reaction / eczematous eruption (<10%)
- Edema / fluid retention (see also peripheral edema) [3]
- Erythema (<10%) [2]
- Exanthems [2]
- Flushing / rubefaction (<10%)
- Folliculitis (<10%)
- Hematoma (<10%)
- Hyperhidrosis (see also diaphoresis) (<10%)
- Peripheral edema (see also edema) (<10%)
- Pruritus (itching) (<10%) [18]
- Rash (<10%) [19]
- Sweet's syndrome [3]
- Urticaria / hives (<10%)
- Xerosis / xeroderma (see also dry skin) [2]

Hair
- Alopecia / hair loss (<10%) [5]

Cardiovascular
- Angina (<10%)
- Arrhythmias (<10%) [2]
- Arterial occlusion [5]
- Atrial fibrillation (<10%) [2]
- Atrioventricular block (<10%)
- Bradycardia / sinus bradycardia (<10%)
- Cardiotoxicity [5]
- Chest pain (<10%)
- Extrasystoles (<10%)
- Hypertension (<10%)
- Myocardial infarction [3]
- Palpitation (<10%)
- QT interval prolonged / QT prolongation (<10%) [8]

Central Nervous System
- Anorexia (<10%) [2]
- Depression (<10%) [2]
- Fever (pyrexia) (includes hyperpyrexia) (<10%) [3]
- Headache (~10%) [16]
- Hypoesthesia (numbness) (<10%)
- Insomnia (<10%)
- Pain [2]
- Paresthesias (<10%)
- Stroke / cerebral infarction [2]
- Vertigo / dizziness (<10%) [2]

Endocrine/Metabolic
- ALP increased [2]
- ALT increased (4%) [7]
- AST increased (<3%) [4]
- Diabetes mellitus (<10%) [2]
- Hyperamylasemia [3]
- Hyperbilirubinemia [14]
- Hypercalcemia (<10%)
- Hypercholesterolemia (<10%) [2]
- Hyperglycemia (includes glucose increased) (6–12%) [6]
- Hyperkalemia (2–6%)
- Hyperlipasemia [5]
- Hyperlipidemia (<10%)
- Hypocalcemia (<10%)
- Hypokalemia (<10%) [2]
- Hypomagnesemia (<10%)
- Hyponatremia (<10%)
- Hypophosphatemia (5–17%) [4]
- Hypothyroidism [2]
- Weight gain (<10%)
- Weight loss (<10%)

Gastrointestinal/Hepatic
- Abdominal distension (<10%)
- Abdominal pain (<10%) [2]
- Constipation (~10%) [3]
- Diarrhea (~10%) [5]
- Dyspepsia / functional dyspepsia / gastroparesis (<10%)
- Flatulence (<10%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]
- Nausea (~10%) [8]
- Pancreatitis / acute pancreatitis (<10%) [4]
- Vomiting (~10%)

Genitourinary
- Pollakiuria (<10%)

Hematologic
- Anemia (4–27%) [10]
- Febrile neutropenia (<10%)
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased (<10%) [2]
- Neutropenia (neutrophils decreased) (12–42%) [9]
- Pancytopenia (includes bicytopenia) (<10%)
- Thrombocytopenia (10–42%) [14]

Neuromuscular/Skeletal
- Arthralgia (<10%) [3]
- Asthenia / fatigue (<10%) [10]
- Bone or joint pain (<10%)
- Muscle spasm [3]
- Myalgia/Myopathy (<10%) [5]
- Neck pain (<10%)

Ocular
- Conjunctivitis (conjunctival inflammation) (<10%)
- Ocular hemorrhage (<10%)
- Periorbital edema (see also eyelid edema) (<10%)
- Xerophthalmia (dry eyes) (<10%)

Respiratory
- Cough (<10%)
- Dysphonia (includes voice disorders / voice changes) (<10%)
- Dyspnea / shortness of breath (<10%) [2]
- Nasopharyngitis [2]
- Pleural effusion [2]
- Pulmonary hypertension [3]
- Upper respiratory tract infection [2]

Other
- Adverse effects / adverse reactions [3]
- Death [3]
- Side effects [3]

NILUTAMIDE

Trade names: Anandron (Sanofi-Aventis), Nilandron (Concordia)
Indications: Metastatic prostate cancer, androgen-independent prostate cancer
Class: Androgen antagonist, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: N/A
Clinically important, potentially hazardous interactions with: alcohol, aminophylline, aspirin, chlordiazepoxide, diazepam, lidocaine, phenytoin, propranolol, warfarin
Pregnancy category: C

Skin
- Diaphoresis (see also hyperhidrosis) (6%)
- Edema / fluid retention (see also peripheral edema) (2%)
- Hot flashes / hot flushes (28%)
- Peripheral edema (see also edema) (<2%)
- Pruritus (itching) (2%)
- Rash (5%)
- Xerosis / xeroderma (see also dry skin) (5%)

Mucosal
- Xerostomia (dry mouth) (2%)

Cardiovascular
- Angina (2%)
- Cardiac failure (3%)
- Chest pain (<10%)
- Hypertension (5%)

Central Nervous System
- Depression (9%)
- Fever (pyrexia) (includes hyperpyrexia) (<10%) [3]
- Headache (<3%)
- Hyperesthesia (5%)
- Pain (27%)
- Paresthesias (3%)
- Syncope / fainting (2%)
- Vertigo / dizziness (10%)

Endocrine/Metabolic
- Gynecomastia (10%)

Gastrointestinal/Hepatic
- Abdominal pain (10%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]

Genitourinary
- Impotence (11%)

Neuromuscular/Skeletal
- Arthralgia (2%)
- Asthenia / fatigue (19%)
- Bone or joint pain (6%)

Ocular
- Cataract (2%)
- Ocular toxicity [2]
- Photophobia (2%)
- Visual disturbances [11]

Respiratory
- Cough (2%) [3]
- Dyspnea / shortness of breath [3]
- Influenza- ('flu)-like syndrome (7%)
- Pneumonia [8]
- Upper respiratory tract infection (8%)

Other
- Death [3]

NIMESULIDE

Trade name: Sulide (Novartis)
Indications: Pain, arthopathies
Class: COX-2 inhibitor, Non-steroidal anti-inflammatory (NSAID), Sulfonamide
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Nimesulide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome. NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
- Angioedema [2]
- Fixed eruption [5]
- Purpura [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
- Urticaria / hives [6]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [36]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]

Respiratory
- Respiratory distress [2]

Other
- Adverse effects / adverse reactions [6]
- Death [4]

NIMODIPINE

Trade name: Nimotop (Bayer)
Indications: Subarachnoid hemorrhage
Class: Calcium channel blocker
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: amprenavir, delavirdine, epirubicin, imatinib
Pregnancy category: C

Skin
- Edema / fluid retention (see also peripheral edema) (2%)
- Exanthems (2%) [2]
- Flushing / rubefaction (2%)
- Rash (3%)

Cardiovascular
- Bradycardia / sinus bradycardia [2]
- Hypotension [3]

Hematologic
- Hypoxemia (see also hypoxia) [2]

NINTEDANIB

Trade name: Ofev (Boehringer Ingelheim)
Indications: Idiopathic pulmonary fibrosis
Class: Angiogenesis inhibitor / antiangiogenic agent, Tyrosine kinase inhibitor
Half-life: 9.5 hours
Clinically important, potentially hazardous interactions with: anticoagulants, carbamazepine, erythromycin, phenytoin, St John's wort
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) [2]
- Rash [4]

Hair
- Alopecia / hair loss [2]

Mucosal
- Epistaxis (nosebleed) [2]

Cardiovascular
- Cardiotoxicity [2]
- Hypertension (5%) [7]
- Myocardial infarction (2%)

Central Nervous System
- Anorexia [8]
- Headache (8%)
- Peripheral neuropathy [2]

Endocrine/Metabolic
- ALT increased [12]
- Appetite decreased (11%) [6]
- AST increased [10]
- Weight loss (10%) [5]

Gastrointestinal/Hepatic
- Abdominal pain (15%) [6]
- Diarrhea (62%) [49]
- Gastrointestinal disorder / discomfort [5]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (14%) [10]
- Nausea (24%) [30]
- Vomiting (12%) [22]

Hematologic
- Anemia [3]
- Bleeding (10%) [3]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
- Neutropenia (neutrophils decreased) [4]
- Thrombocytopenia [3]
- Thrombotic microangiopathy [2]

Neuromuscular/Skeletal
- Asthenia / fatigue [16]

Respiratory
- Bronchitis [3]
- Cough [3]
- Dyspnea / shortness of breath [4]
- Nasopharyngitis [3]
- Pneumonia [3]
- Upper respiratory tract infection [2]

Other
- Adverse effects / adverse reactions [8]
- Death [3]

NIRAPARIB

Trade name: Zejula (Tesaro)
Indications: Maintenance treatment of adult patients with recurrent epithelial ovarian, fallopian tube, or primary peritoneal cancer who are in a complete or partial response to platinum-based chemotherapy
Class: Poly (ADP-ribose) polymerase (PARP) inhibitor
Half-life: 36 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Peripheral edema (see also edema) (<10%)
- Rash (21%)

Mucosal
- Epistaxis (nosebleed) (<10%)
- Mucositis (20%)
- Stomatitis (oral mucositis) (20%)
- Xerostomia (dry mouth) (10%)

Cardiovascular
- Hypertension (20%) [3]
- Palpitation (10%)
- Tachycardia (<10%)

Central Nervous System
- Anxiety (11%)
- Depression (<10%)
- Dysgeusia (taste perversion) (10%)
- Headache (26%)
- Insomnia (27%)
- Vertigo / dizziness (18%)

Endocrine/Metabolic
- ALT increased (10%)
- Appetite decreased (25%) [3]
- AST increased (10%)
- Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<10%)
- GGT increased (<10%)
- Hypokalemia (<10%)
- Serum creatinine increased (<10%)
- Weight loss (<10%)

Gastrointestinal/Hepatic
- Abdominal distension (33%)
- Abdominal pain (33%)
- Constipation (40%)
- Diarrhea (20%)
- Dyspepsia / functional dyspepsia / gastroparesis (18%)
- Nausea (74%) [4]
- Vomiting (34%) [2]

Genitourinary
- Urinary tract infection (13%)

Hematologic
- Anemia (50%) [7]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (17%)
- Neutropenia (neutrophils decreased) (30%) [5]
- Platelets decreased [2]
- Thrombocytopenia (61%) [8]

Neuromuscular/Skeletal
- Arthralgia (13%)
- Asthenia / fatigue (57%) [2]
- Back pain (18%)
- Myalgia/Myopathy (19%)

Ocular
Conjunctivitis (conjunctival inflammation) (<10%)
Respiratory
Bronchitis (<10%)
Dyspnea / shortness of breath (20%)
Nasopharyngitis (23%)
Other
Adverse effects / adverse reactions [3]

NISOLDIPINE

Trade name: Sular (First Horizon)
Indications: Hypertension
Class: Calcium channel blocker
Half-life: 7–12 hours
Clinically important, potentially hazardous interactions with: amprenavir, conivaptan, cyclosporine, darunavir, delavirdine, efavirenz, epirubicin, grapefruit juice, imatinib, indinavir, itraconazole, ketoconazole, oxcarbazepine, propranolol, telaprevir, telithromycin, viloxazine, voriconazole
Pregnancy category: C

Skin
Peripheral edema (see also edema) (22%) [6]
Rash (2%)
Central Nervous System
Headache [4]
Endocrine/Metabolic
Gynecomastia [2]

NITAZOXANIDE

Trade name: Alinia (Romark)
Indications: Diarrhea caused by *Cryptosporidium parvum* or *Giardia lamblia* (in children)
Class: Antimicrobial, Antiprotozoal
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

Central Nervous System
Headache [2]
Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [2]
Other
Adverse effects / adverse reactions [2]

NITRAZEPAM

Trade name: Mogadon (Roche)
Indications: Insomnia
Class: Benzodiazepine, CNS depressant
Half-life: 14–48 hours
Clinically important, potentially hazardous interactions with: erythromycin

Mucosal
Sialorrhea (ptyalism; hypersalivation) [2]

NITROFURANTOIN

Trade names: Furadantin (First Horizon), Macrobid (Procter & Gamble), Macrodantin (Procter & Gamble)
Indications: Various urinary tract infections caused by susceptible organisms
Class: Antibiotic, Antimicrobial
Half-life: 1–2 minutes
Clinically important, potentially hazardous interactions with: norfloxacin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema [4]
Dermatitis [3]
DRESS syndrome [4]
Eczema / eczematous reaction / eczematous eruption [2]
Erythema multiforme [3]
Exanthems (<5%) [9]
Exfoliative dermatitis [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [8]
Purpura [2]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [7]
Urticaria / hives [8]
Hair
Alopecia / hair loss [5]
Central Nervous System
Neurotoxicity [2]
Paresthesias (<10%)
Gastrointestinal/Hepatic
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [14]
Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [3]
Hemolysis [2]
Hemolytic anemia [4]
Respiratory
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [2]
Pneumonitis [3]
Pulmonary toxicity [14]
Other
Adverse effects / adverse reactions [3]
Death [3]

NITROFURAZONE

Trade name: Furacin (Shire)
Indications: Second- and third-degree burns, skin grafting
Class: Antibiotic, Antibiotic; nitrofuran, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Dermatitis [15]
Other
Allergic reactions [2]

NITROGLYCERIN

Synonyms: glyceryl trinitrate; nitroglycerol; NTG
Trade names: Minitran (3M), Nitrodur (Schering) (Key), Nitrolingual (First Horizon), Nitrostat (Pfizer)
Indications: Acute angina
Class: Nitrate, Vasodilator
Half-life: 1–4 minutes
Clinically important, potentially hazardous interactions with: acetylcysteine, alteplase, heparin, sildenafil, tadalafil, vardenafil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis (to topical systems) [25]
Eczema / eczematous reaction / eczematous eruption [2]
Erythema (to transdermal delivery system) [2]
Exfoliative dermatitis (<10%)
Flushing / rubefaction (>10%)
Purpura [2]
Rash (<10%)
Urticaria / hives [2]
Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypotension [6]
Central Nervous System
Headache [15]
Migraine [2]

NITROPRUSSIDE

Trade names: Nipride (Exela), Nitropress (Hospira)
Indications: Hypertensive crises, congestive heart failure, erectile dysfunction, schizophrenia
Class: Vasodilator
Half-life: 1–2 minutes
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, captopril, cilazapril, clevidipine, diclofenac, enalapril, fosinopril, levomepromazine, lisinopril, meloxicam, olmesartan, quinapril, ramipril, riociguat, tadalafil, trandolapril, triamcinolone, trifluoperazine, vardenafil
Pregnancy category: N/A (May cause fetal harm)
Warning: Nipride: EXCESSIVE HYPOTENSION; CYANIDE TOXICITY

Skin
Cutaneous toxicity / skin toxicity (cyanide) [2]
Diaphoresis (see also hyperhidrosis) (<10%)
Cardiovascular
Hypertension [2]
Hypotension [3]
Central Nervous System
Headache (<10%)
Neuromuscular/Skeletal
Asthenia / fatigue (<10%)

Otic
Tinnitus (<10%)
Other
Death [2]

NIVOLUMAB

Trade name: Opdivo (Bristol-Myers Squibb)
Indications: Metastatic squamous non-small cell lung cancer with progression on or after platinum-based chemotherapy, unresectable or metastatic melanoma and disease progression following ipilimumab and, if BRAF V600 mutation positive, a BRAF inhibitor, advanced renal cell carcinoma with prior anti-angiogenic therapy, Hodgkin lymphoma that has relapsed or progressed after autologous hematopoietic stem cell transplantation and post-transplantation brentuximab vedotin, head and neck cancer, colon cancer, liver cancer
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, Immune checkpoint inhibitor, Monoclonal antibody, Programmed death receptor-1 (PD-1) inhibitor
Half-life: 27 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: In a review (May 2021) of the adverse reactions associated with nivolumab and ipilimumab, respectively, Health Canada concluded that there may be a link between nivolumab used alone or in combination with ipilimumab and the risks of autoimmune hemolytic anemia, aplastic anemia, cytokine release syndrome and tumor lysis syndrome. The Canadian product safety information (Canadian Product Monograph) for nivolumab has been updated to include a warning for the risk of autoimmune hemolytic anemia. Health Canada is working with the manufacturer of nivolumab to also include the risks of aplastic anemia, cytokine release syndrome, and tumor lysis syndrome in the Canadian Product Monograph (CPM).

Skin
Bullous pemphigoid / pemphigoid [10]
Contact dermatitis [2]
Cutaneous toxicity / skin toxicity [7]
Dermatitis [3]
Dermatomyositis [7]
DRESS syndrome [3]
Eczema / eczematous reaction / eczematous eruption [2]
Edema / fluid retention (see also peripheral edema) (17%) [4]
Eosinophilic fasciitis [5]
Erythema [5]
Erythema multiforme (<10%) [2]
Exanthems [3]
Exfoliative dermatitis (<10%)
Granuloma annulare [2]
Granulomatous reaction [2]
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis [2]
Hypersensitivity [3]
Lichen planus (includes hypertrophic lichen planus) [3]
Lichen planus pemphigoides [2]
Lichen sclerosus [4]
Lichenoid dermatitis [3]
Lichenoid eruption / lichenoid reaction [4]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
Lymphadenopathy [3]
Morphea / localized scleroderma (see also scleroderma) [4]
Pruritus (itching) (11–19%) [29]
Psoriasiform dermatitis [2]
Psoriasis (<10%) [9]
Rash (16–21%) [47]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [7]
Scleroderma (see also morphea / localized scleroderma) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [8]
Thrombocytopenic purpura [2]
Thrombotic thrombocytopenic purpura [3]
Transient acantholytic dermatosis (Grover's disease) [2]
Urticaria / hives [2]
Vitiligo (<10%) [15]

Hair
Alopecia areata [3]

Mucosal
Lichenoid stomatitis [2]
Stomatitis (oral mucositis) (<10%) [2]
Xerostomia (dry mouth) [3]

Cardiovascular
Aortitis / periaortitis [3]
Capillary leak syndrome [4]
Cardiac tamponade [2]
Cardiomyopathy [3]
Chest pain (13%)
Myocarditis [20]
Pericardial effusion [2]
Pericarditis [4]
Takotsubo syndrome [2]
Ventricular arrhythmia (<10%)
Ventricular tachycardia [2]

Central Nervous System
Antiphospholipid antibody syndrome [2]
Cytokine release syndrome / cytokine storm [6]
Encephalitis [8]
Encephalopathy (includes hepatic encephalopathy) [10]
Fever (pyrexia) (includes hyperpyrexia) (17%) [12]
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [7]
Headache [2]
Meningoencephalitis [3]
Myelitis / myeloradiculitis [2]
Neuromyelitis optica [3]
Neurotoxicity [7]
Pain (10%)
Peripheral neuropathy (<10%) [3]
Vertigo / dizziness (<10%)

Endocrine/Metabolic
Adrenal insufficiency (hypoadrenalism) [19]
Adrenocorticotropic hormone (corticotropin; ACTH) deficiency [4]
ALP increased (14–22%)
ALT increased (12–16%) [11]
Appetite decreased (35%) [10]
AST increased (16–28%) [9]
Autosplenectomy [2]
Diabetes insipidus [2]
Diabetes mellitus [24]
Diabetic ketoacidosis [7]
Hyperamylasemia [4]
Hypercalcemia (20%)
Hyperkalemia (15–18%)
Hyperlipasemia [8]
Hyperthyroidism [12]
Hypocalcemia (18%)
Hypokalemia (20%) [2]
Hypomagnesemia (20%)
Hyponatremia (25–38%)
Hypophosphatemia [2]
Hypophysitis [29]
Hypothyroidism [32]
Serum creatinine increased (22%) [2]
Thyroid dysfunction [16]
Thyroiditis [14]
Thyrotoxicosis [3]
Weight loss (13%)

Gastrointestinal/Hepatic
Abdominal pain (16%)
Cholangitis / sclerosing cholangitis [6]
Colitis [38]
Constipation (24%) [2]
Diarrhea (18%) [41]
Enteritis [3]
Enterocolitis [3]
Enteropathy [2]
Esophagitis [4]
Gastritis / pangastritis / gastric irritation [7]
Gastrointestinal perforation / perforated colon / gastric perforation [2]
Hepatitis [16]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [19]
Nausea (29%) [16]
Pancreatic insufficiency [2]
Pancreatitis / acute pancreatitis [7]
Vomiting (19%) [3]

Hematologic
Anemia (28%) [10]
Aplastic anemia [4]
Coagulopathy (includes disseminated intravascular coagulation / DIC) [2]
Cryoglobulinemia [2]
Cytopenia [2]
Eosinophilia [4]
Hemolytic anemia [8]
Hemophagocytic lymphohistiocytosis / hemophagocytic syndrome [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (47%) [4]
Neutropenia (neutrophils decreased) [12]
Pancytopenia (includes bicytopenia) [2]
Pure red cell aplasia [2]
Thrombocytopenia (14%) [13]

Local
Infusion-related reactions (<10%) [7]

Neuromuscular/Skeletal
Arthralgia (13%) [11]
Arthritis / polyarthritis [2]
Asthenia / fatigue (19–50%) [40]
Ataxia [2]
Bone or joint pain (36%)
Inflammatory arthritis [2]
Lambert-Eaton myasthenic syndrome [4]
Myalgia/Myopathy [23]
Myasthenia gravis [24]
Osteonecrosis / avascular necrosis [2]
Polymyalgia rheumatica [7]
Polymyositis [2]
Rhabdomyolysis [6]
Synovial effusions [3]

Ocular
Iridocyclitis (<10%)
Ocular adverse effect [2]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [6]
Renal
Glomerulonephritis (includes membranous nephropathy) [3]
Immunoglobulin A (IgA) nephropathy (Berger's disease) [2]
Nephritis / interstitial nephritis / tubulointerstitial nephritis [5]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [10]
Renal failure [5]
Renal tubular acidosis [2]
Tumor lysis syndrome (TLS) [3]
Respiratory
Bronchitis (<10%)
Cough (17–32%) [2]
Dyspnea / shortness of breath (38%) [3]
Eosinophilic pneumonia [3]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [4]
Pneumonia (10%) [5]
Pneumonitis [39]
Pulmonary granuloma [4]
Pulmonary toxicity [3]
Upper respiratory tract infection (11%)
Other
Adverse effects / adverse reactions [46]
Death [37]
Immune-related adverse effect [9]
Side effects [2]
Vogt-Koyanagi-Harada syndrome [8]

NIZATIDINE

Trade name: Axid (Reliant)
Indications: Duodenal ulcer, gastroesophageal reflux disease (GERD)
Class: Histamine H2 receptor antagonist
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: delavirdine, rilpivirine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) [2]
Pruritus (itching) (2%) [2]
Rash (2%)
Urticaria / hives [2]
Cardiovascular
Chest pain (2%)
Central Nervous System
Abnormal dreams (2%)
Anxiety (2%)
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache (17%)
Insomnia (3%)
Pain (4%)
Somnolence (drowsiness) (2%)
Vertigo / dizziness (5%)
Gastrointestinal/Hepatic
Abdominal pain (8%)
Constipation (3%)
Diarrhea (7%)
Dyspepsia / functional dyspepsia / gastroparesis (4%)
Flatulence (5%)
Nausea (5%)
Vomiting (4%)
Neuromuscular/Skeletal
Asthenia / fatigue (3%)
Back pain (2%)
Myalgia/Myopathy (2%)
Respiratory
Cough (2%)
Pharyngitis (sore throat) (3%)
Rhinitis (9%)
Sinusitis (2%)
Other
Infection (2%)

NORFLOXACIN

Trade names: Chibroxin (Merck), Noroxin (Merck)
Indications: Various urinary tract infections caused by susceptible organisms, conjunctivitis
Class: Antibiotic, Antibiotic; fluoroquinolone, Antimicrobial, CYP3A4 inhibitor
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: aminophylline, amiodarone, antacids, arsenic, artemether/lumefantrine, bepridil, bretylium, caffeine, ciprofibrate, clozapine, cyclosporine, dairy products, didanosine, disopyramide, erythromycin, glyburide, lanthanum, mycophenolate, nitrofurantoin, NSAIDs, oral iron, oral typhoid vaccine, oxtriphylline, phenothiazines, probenecid, procainamide, quinidine, ropinirole, sotalol, strontium ranelate, sucralfate, tacrine, tamoxifen, tizanidine, tricyclic antidepressants, warfarin, zinc, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants. Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis.

Skin
Erythema [2]
Exanthems [2]
Fixed eruption [3]
Phototoxicity [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Nails
Photo-onycholysis [2]
Neuromuscular/Skeletal
Rhabdomyolysis [2]
Tendinopathy/Tendon rupture [4]
Other
Adverse effects / adverse reactions [2]

NORTRIPTYLINE

Trade names: Aventyl (Ranbaxy), Pamelor (Mallinckrodt)
Indications: Depression
Class: Antidepressant; tricyclic
Half-life: 28–31 hours
Clinically important, potentially hazardous interactions with: amprenavir, arbutamine, clonidine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, epinephrine, fluoxetine, formoterol, guanethidine, isocarboxazid, linezolid, MAO inhibitors, phenelzine, quinolones, sparfloxacin, tranylcypromine, viloxazine
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Photosensitivity [2]
Mucosal
Xerostomia (dry mouth) (>10%) [9]
Central Nervous System
Dysgeusia (taste perversion) (>10%)
Parkinsonism (<10%)
Vertigo / dizziness [2]
Other
Adverse effects / adverse reactions [2]

NUSINERSEN

Trade name: Spinraza (Biogen)
Indications: Spinal muscular atrophy
Class: Survival motor neuron-2 (SMN2)-directed antisense oligonucleotide
Half-life: 63–87 days (in plasma)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [3]
Headache (50%) [4]
Gastrointestinal/Hepatic
Constipation (30%) [2]
Vomiting [2]
Neuromuscular/Skeletal
Back pain (41%) [3]
Scoliosis (5%)
Otic
Ear infection (5%)
Respiratory
Bronchitis (>5%)
Upper respiratory tract infection (39%) [3]
Other
Adverse effects / adverse reactions [3]

NYSTATIN

Trade names: Mycology-II (Bristol-Myers Squibb), Mycostatin (Bristol-Myers Squibb)
Indications: Candidiasis
Class: Antifungal / antimycotic, Antimicrobial
Half-life: ~2–3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
AGEP [5]
Dermatitis [12]
Eczema / eczematous reaction / eczematous eruption [2]
Fixed eruption [2]

OBETICHOLIC ACID

Trade name: Ocaliva (Intercept)
Indications: Primary biliary cholangitis
Class: Farnesoid X receptor (FXR) agonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: aminophylline, tizanidine, warfarin
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with complete biliary obstruction.

Skin
Eczema / eczematous reaction / eczematous eruption (3–6%)
Peripheral edema (see also edema) (3–7%)
Pruritus (itching) (56–70%) [9]
Rash (7–10%)
Urticaria / hives (<10%)

Mucosal
Oropharyngeal pain (7–8%)

Cardiovascular
Palpitation (3–7%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<7%)
Syncope / fainting (<7%)
Vertigo / dizziness (7%)

Endocrine/Metabolic
Thyroid dysfunction (4–6%)

Gastrointestinal/Hepatic
Abdominal pain (10–19%)
Constipation (7%)

Neuromuscular/Skeletal
Arthralgia (6–10%)
Asthenia / fatigue (19–25%)

OBINUTUZUMAB

Trade name: Gazyva (Genentech)
Indications: Chronic lymphocytic leukemia (in combination with chlorambucil), follicular lymphoma (firstly with bendamustine then as monotherapy)
Class: CD20-directed cytolytic monoclonal antibody, Monoclonal antibody
Half-life: 28 days
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: HEPATITIS B VIRUS REACTIVATION AND PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (10%) [5]
Headache [2]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [2]

Endocrine/Metabolic
ALP increased (16%)
AST increased (25%)
Hyperkalemia (31%)
Hypoalbuminemia / albumin decreased (22%)
Hypocalcemia (32%)
Hypokalemia (13%)

Gastrointestinal/Hepatic
Nausea [3]

Hematologic
Anemia (12%) [6]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (7%)
Neutropenia (neutrophils decreased) (40%) [18]
Thrombocytopenia (15%) [11]

Local
Infusion-related reactions (69%) [16]

Renal
Tumor lysis syndrome (TLS) [5]

Respiratory
Cough (10%) [2]

Other
Death [2]
Infection (38%) [8]

OCRELIZUMAB

Trade name: Ocrevus (Genentech)
Indications: Relapsing or primary progressive forms of multiple sclerosis
Class: CD20-directed cytolytic monoclonal antibody, Monoclonal antibody
Half-life: 26 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (May cause fetal toxicity based on findings in animal studies)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in active hepatitis B virus infection.

Central Nervous System
Depression (8%)

Hematologic
Neutropenia (neutrophils decreased) (13%) [6]

Local
Infusion-related reactions (34–40%) [9]

Neuromuscular/Skeletal
Back pain (6%)
Pain in extremities (5%)

Respiratory
Upper respiratory tract infection (40–49%) [2]

Other
Infection (58%) [6]

OCRIPLASMIN

Trade name: Jetrea (ThromboGenics)
Indications: Symptomatic vitreomacular adhesion
Class: Enzyme
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Ocular
Cataract (2–4%)
Conjunctival hemorrhage (5–20%)
Conjunctival hyperemia / conjunctival injection (2–4%)
Dyschromatopsia (2%)
Intraocular inflammation (7%)
Intraocular pressure increased (4%)
Iritis (2–4%)
Macular edema (2–4%)
Macular hole (5–20%)
Ocular adverse effect [3]
Ocular hemorrhage (2%)
Ocular pain (5–20%) [2]
Photophobia (2–4%)
Photopsia (5–20%) [4]
Reduced visual acuity (5–20%) [2]
Retinal edema (5–20%)
Vision blurred (5–20%)
Vision impaired (5–20%)
Vision loss [3]
Vitreous detachment (2–4%)
Vitreous floaters (5–20%) [4]
Xerophthalmia (dry eyes) (2–4%)

OCTREOTIDE

Trade name: Sandostatin (Novartis)
Indications: Diarrhea, sulfonylurea poisoning
Class: Somatostatin analog
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: bromocriptine, insulin aspart, insulin degludec, metformin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Cellulitis (<4%)

Diaphoresis (see also hyperhidrosis) (5–15%)
Edema / fluid retention (see also peripheral edema) (<10%)
Flushing / rubefaction (<4%)
Petechiae (<4%)
Pruritus (itching) (18%)
Purpura (<4%)
Rash (5–15%)
Raynaud's phenomenon (<4%)
Urticaria / hives (<4%)

Hair
Alopecia / hair loss (~13%) [4]

Cardiovascular
Arrhythmias (3–9%)
Bradycardia / sinus bradycardia (19–25%) [4]
Chest pain (20%)
Hypertension (13%) [3]
QT interval prolonged / QT prolongation [2]
Thrombophlebitis (<4%)

Central Nervous System
Anorexia (4–6%)
Headache [3]
Pain (4–6%)
Rigors (5–15%)
Vertigo / dizziness [2]

Endocrine/Metabolic
Galactorrhea (<4%)
Gynecomastia (<4%)
Hyperglycemia (includes glucose increased) [7]
Hypoglycemia (see also insulin autoimmune syndrome) [2]
Hypothyroidism (12%)

Gastrointestinal/Hepatic
Abdominal pain (5–61%) [5]
Diarrhea (34–58%) [5]
Flatulence (38%) [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Loose stools / soft feces [2]
Nausea (5–61%) [6]
Pancreatitis / acute pancreatitis [2]
Vomiting (4–21%)

Genitourinary
Vaginitis (includes vulvitis) (<4%)

Hematologic
Anemia (15%)
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [3]

Local
Injection-site granuloma [2]
Injection-site pain (8%) [2]

Neuromuscular/Skeletal
Arthralgia (5–15%)
Asthenia / fatigue [5]
Myalgia/Myopathy (5–15%) [2]

Otic
Ear pain (5–15%)

Respiratory
Cough (5–15%)
Pharyngitis (sore throat) (5–15%)
Rhinitis (5–15%)
Sinusitis (5–15%)

OFATUMUMAB

Trade name: Arzerra (Novartis)
Indications: Chronic lymphocytic leukemia
Class: CD20-directed cytolytic monoclonal antibody, Monoclonal antibody
Half-life: 14 days
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: N/A (May cause fetal B-cell depletion)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: HEPATITIS B VIRUS REACTIVATION AND PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY

Skin
Cutaneous toxicity / skin toxicity [3]
Herpes (6%)
Hyperhidrosis (see also diaphoresis) (5%)
Peripheral edema (see also edema) (9%)
Rash (14%) [2]
Urticaria / hives (8%)

Cardiovascular
Angina [2]
Hypertension (5%)
Hypotension (5%)
Tachycardia (5%)

Central Nervous System
Chills (8%)
Fever (pyrexia) (includes hyperpyrexia) (20%) [2]
Headache (6%)
Insomnia (7%)
Peripheral neuropathy [2]

Gastrointestinal/Hepatic
Diarrhea (18%) [2]
Nausea (11%) [3]

Hematologic
Anemia (16%) [4]
Hemolysis [2]
Hemolytic anemia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [3]
Neutropenia (neutrophils decreased) (>10%) [11]
Sepsis (8%)
Thrombocytopenia [5]

Local
Infusion-related reactions [10]
Infusion-site reactions [3]

Neuromuscular/Skeletal
Asthenia / fatigue (15%) [4]
Back pain (8%)

Respiratory
Bronchitis (11%)
Cough (19%)
Dyspnea / shortness of breath (14%)
Nasopharyngitis (8%)
Pneumonia (23%)
Pulmonary toxicity [3]
Upper respiratory tract infection (11%)

Other
Adverse effects / adverse reactions [2]
Infection (70%) [10]

OFLOXACIN

Trade names: Floxin (Ortho-McNeil), Ocuflox (Allergan), Taravid (Sanofi-Aventis)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; fluoroquinolone, Antibiotic; quinolone, Antimicrobial
Half-life: 4–8 hours
Clinically important, potentially hazardous interactions with: aminophylline, amiodarone, antacids, arsenic, artemether/lumefantrine, BCG vaccine, bendamustine, bepridil, bretylium, calcium salts, clozapine, corticosteroids, cyclosporine, CYP1A2 substrates, didanosine, disopyramide, erythromycin, insulin, lanthanum, magnesiuim salts, mycophenolate, NSAIDs, oral iron, oral typhoid vaccine, oxtriphylline, phenothiazines, probenecid, procainamide, quinapril, quinidine, sevelamer, sotalol, St John's wort, strontium ranelate, sucralfate, sulfonylureas, tricyclic antidepressants, vitamin K antagonists, warfarin, zinc, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants. Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis. Ofloxacin is a racemate. See Levofloxacin for the adverse reactions of the (S)-isomer.
Warning: SERIOUS ADVERSE REACTIONS INCLUDING TENDINITIS, TENDON RUPTURE, PERIPHERAL NEUROPATHY, CENTRIAL NERVOUS SYSTEM EFFECTS and EXACERBATION OF MYASTHENIA GRAVIS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Angioedema [3]
Exanthems [3]
Fixed eruption [5]
Hypersensitivity [2]
Photosensitivity [8]
Phototoxicity [3]
Pruritus (itching) (<3%) [5]
Pruritus ani et vulvae (<3%)
Rash (<10%) [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [8]
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Nails
Photo-onycholysis [3]

Mucosal
Oral mucosal eruption [3]
Xerostomia (dry mouth) (<3%)

Cardiovascular
QT interval prolonged / QT prolongation [3]

Central Nervous System
Dysgeusia (taste perversion) (<3%) [2]
Hallucinations [3]
Headache [3]
Insomnia [2]

Peripheral neuropathy [2]
Psychosis [2]
Seizures [2]
Vertigo / dizziness [3]

Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [2]
Nausea [4]
Pancreatitis / acute pancreatitis [2]
Vomiting [2]

Genitourinary
Vaginitis (includes vulvitis) (<10%)

Local
Injection-site pain (<10%)

Neuromuscular/Skeletal
Arthralgia [2]
Arthropathy [2]
Asthenia / fatigue [2]
Myalgia/Myopathy [2]
Rhabdomyolysis [2]
Tendinopathy/Tendon rupture [7]

Other
Adverse effects / adverse reactions [10]
Death [3]
Side effects [2]

OLANZAPINE

Trade names: Symbyax (Lilly), Zyprexa (Lilly), Zyprexa Relprevv (Lilly)
Indications: Schizophrenia, bipolar I disorder
Class: Antipsychotic, Muscarinic antagonist
Half-life: 21–54 hours
Clinically important, potentially hazardous interactions with: alcohol, antihypertensive agents, carbamazepine, ciprofloxacin, CNS acting drugs, diazepam, dopamine agonists, eszopiclone, fluoxetine, fluvoxamine, insulin degludec, insulin detemir, insulin glargine, levodopa, lithium, metoclopramide, tetrabenazine, valproic acid
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Can cause DRESS and other serious skin reactions.
Symbyax is olanzapine and fluoxetine; Zypraxa Relprevv is olanzapine pamoate.
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS
Zyprexa Relprevv: POST-INJECTION DELIRIUM/SEDATION SYNDROME

Skin
AGEP [2]
Angioedema [2]
Edema / fluid retention (see also peripheral edema) [3]
Hypersensitivity [2]
Peripheral edema (see also edema) (<10%) [5]
Psoriasis [3]
Purpura (<10%)
Rash (>2%) [2]
Vesiculobullous eruption (2%)
Xanthomas [2]

Hair
Alopecia / hair loss [3]

Mucosal
Black tongue / black hairy tongue (lingua villosa nigra) [2]
Epistaxis (nosebleed) (<10%)
Sialorrhea (ptyalism; hypersalivation) [4]
Xerostomia (dry mouth) (13%) [13]

Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypertension (<10%)
Hypotension (<10%) [5]
Myocarditis [2]
Orthostatic hypotension [3]
QT interval prolonged / QT prolongation [6]
Tachycardia (<10%)
Torsades de pointes [3]
Venous thromboembolism [4]

Central Nervous System
Akathisia (<10%) [9]
Amnesia [2]
Anxiety [3]
Compulsions / obsessive-compulsive symptoms [2]
Confusion [2]
Delirium [6]
Extrapyramidal symptoms [5]
Fever (pyrexia) (includes hyperpyrexia) [2]
Hallucinations [2]
Headache (17%) [7]
Insomnia (12%) [3]
Myokymia / twitching (2%)
Neuroleptic malignant syndrome [36]
Parkinsonism (<10%) [8]
Psychosis [2]
Restless legs syndrome [7]
Restlessness [2]
Sedation [20]
Seizures [8]
Serotonin syndrome [2]
Somnambulism (sleepwalking; noctambulism) [2]
Somnolence (drowsiness) (20–39%) [21]
Stuttering (dysphemia) / stammering [4]
Suicidal ideation [2]
Tardive syndrome / tardive dyskinesia [6]
Tremor (<10%) [5]
Vertigo / dizziness [8]

Endocrine/Metabolic
ALT increased [2]
Appetite increased [2]
AST increased [2]
Diabetes mellitus [7]
Diabetic ketoacidosis [2]
Dyslipidemia [5]
Galactorrhea [2]
Glucose dysregulation [3]
Gynecomastia [2]
Hypercholesterolemia [3]
Hyperglycemia (includes glucose increased) [7]
Hyperprolactinemia [3]
Hyponatremia [2]
Metabolic syndrome [12]
Weight gain (5–40%) [65]

Gastrointestinal/Hepatic
Abdominal pain (<10%)
Constipation (9–11%) [8]
Diarrhea (<10%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (7–11%)
Flatulence (<10%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]
Nausea (<10%) [2]
Pancreatitis / acute pancreatitis [8]
Vomiting (<10%)

Genitourinary
Enuresis (urinary incontinence) (<10%)
Priapism [19]
Sexual dysfunction [2]
Urinary tract infection (<10%)

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [2]
Eosinophilia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
Neutropenia (neutrophils decreased) [4]
Pancytopenia (includes bicytopenia) [2]
Thrombocytopenia [2]

Neuromuscular/Skeletal
Asthenia / fatigue (8–20%) [5]
Back pain (<10%)
Dystonia [7]
Myalgia/Myopathy [2]
Rhabdomyolysis [16]

Ocular
Amblyopia (<10%)
Oculogyric crisis [2]
Vision blurred [2]

Respiratory
Cough (<10%)
Nasopharyngitis [3]
Pharyngitis (sore throat) (<10%)
Pneumonia [2]
Pulmonary embolism [3]
Rhinitis (<10%)
Sinusitis (<10%)

Other
Adverse effects / adverse reactions [10]
Death [7]

OLAPARIB

Trade name: Lynparza (AstraZeneca)
Indications: BRCA-mutated ovarian cancer
Class: Poly (ADP-ribose) polymerase (PARP) inhibitor
Half-life: 7–17 hours
Clinically important, potentially hazardous interactions with: amprenavir, aprepitant, atazanavir, boceprevir, bosentan, carbamazepine, ciprofloxacin, clarithromycin, crizotinib, darunavir, diltiazem, efavirenz, erythromycin, etravirine, fluconazole, fosamprenavir, grapefruit juice, imatinib, indinavir, itraconazole, ketoconazole, lopinavir, modafinil, nafcillin, nefazodone, nelfinavir, phenytoin, posaconazole, rifampin, ritonavir, saquinavir, St John's wort, strong and moderate CYP3A inhibitors, telaprevir, telithromycin, verapamil, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Cutaneous toxicity / skin toxicity [2]
Eczema / eczematous reaction / eczematous eruption (<10%)
Hot flashes / hot flushes (<10%)
Peripheral edema (see also edema) (10–20%)
Pruritus (itching) (<10%)
Rash (25%) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Xerosis / xeroderma (see also dry skin) (<10%)

Hair
Alopecia / hair loss [2]

Mucosal
Stomatitis (oral mucositis) (<10%)

Cardiovascular
Hypertension (<10%) [2]
Venous thromboembolism (<10%)

Central Nervous System
Anxiety (<10%)
Depression (<10%)
Dysgeusia (taste perversion) (21%) [3]
Fever (pyrexia) (includes hyperpyrexia) (<10%)
Headache (25%) [4]
Insomnia (<10%)
Peripheral neuropathy (<10%) [2]

Endocrine/Metabolic
ALT increased [3]
Appetite decreased (22–25%) [4]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (26–30%)
Folic acid (folate) deficiency / vitamin B9 deficiency / hypofolatemia [2]
Hyperglycemia (includes glucose increased) (<10%)
Hypomagnesemia (<10%)

Gastrointestinal/Hepatic
Abdominal pain (43–47%) [3]
Constipation (10–20%) [2]
Diarrhea (28–31%) [10]
Dyspepsia / functional dyspepsia / gastroparesis (25%) [3]
Gastric obstruction [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (64–75%) [17]
Vomiting (32–43%) [12]

Genitourinary
Dysuria (<10%)
Enuresis (urinary incontinence) (<10%)
Urinary tract infection (10–20%)

Hematologic
Anemia (25–34%) [22]
Febrile neutropenia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<10%) [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (56%)
Myelodysplastic syndrome [2]
Myeloid leukemia [2]
Neutropenia (neutrophils decreased) (25–32%) [12]
Thrombocytopenia (26–30%) [8]

Neuromuscular/Skeletal
Arthralgia (21–32%)
Asthenia / fatigue (66–68%) [20]
Back pain (25%)
Myalgia/Myopathy (22–25%)

Respiratory
Cough (21%) [2]
Dyspnea / shortness of breath (10–20%)
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [2]
Nasopharyngitis (26–43%)
Pharyngitis (sore throat) (43%)
Pulmonary embolism (<10%)
Upper respiratory tract infection (26–43%)

Other
Adverse effects / adverse reactions [8]
Death [3]

OLARATUMAB

Trade name: Lartruvo (Lilly)
Indications: Treatment of adult patients with soft tissue sarcoma (with doxorubicin) with a histologic subtype for which an anthracycline-containing regimen is appropriate and which is not amenable to curative treatment with radiotherapy or surgery
Class: Monoclonal antibody, Platelet-derived growth factor receptor alpha blocking antibody
Half-life: ~11 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: See separate entry for doxorubicin.

Hair
Alopecia / hair loss (52%)

Mucosal
Mucositis (53%) [3]

Central Nervous System
Anxiety (11%)
Headache (20%)
Neurotoxicity (22%)

Endocrine/Metabolic
ALP increased (16%)
Appetite decreased (31%)
AST increased [2]
Hyperglycemia (includes glucose increased) (52%) [2]
Hypokalemia (21%)
Hypomagnesemia (16%)

Gastrointestinal/Hepatic
Abdominal pain (23%)
Diarrhea (34%) [4]
Nausea (73%) [3]
Vomiting (45%) [2]

Hematologic
Lymphopenia (lymphocytopenia) / lymphocytes decreased (77%)
Neutropenia (neutrophils decreased) (65%) [3]
Prothrombin time (INR) increased (33%)
Thrombocytopenia (63%)

Local
Infusion-related reactions (13%) [2]

Neuromuscular/Skeletal
Asthenia / fatigue (64%) [2]
Bone or joint pain (64%)

Ocular
Xerophthalmia (dry eyes) (11%)

Renal
Proteinuria [2]

OLMESARTAN

Trade names: Benicar (Sankyo), Olmetec (Daiichi Sankyo)
Indications: Hypertension
Class: Angiotensin receptor antagonist (blocker), Antihypertensive
Half-life: ~13 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, adrenergic neurone blockers, aldesleukin, aliskiren, alprostadil, amifostine, antihypertensives, antipsychotics, anxiolytics and hypnotics, baclofen, beta blockers, calcium channel blockers, clonidine, colesevelam, corticosteroids, cyclosporine, diazoxide, diuretics, eltrombopag, eplerenone, estrogens, general anesthetics, heparins, hydralazine, levodopa, lithium, MAO inhibitors, methyldopa, methylphenidate, minoxidil, moxisylyte, moxonidine, nitrates, nitroprusside, NSAIDs, pentoxifylline, phosphodiesterase 5 inhibitors, potassium salts, quinine, rituximab, tacrolimus, tizanidine, tolvaptan, trimethoprim
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with diabetes.
Warning: FETAL TOXICITY

Skin
Angioedema [3]
Edema / fluid retention (see also peripheral edema) [2]
Peripheral edema (see also edema) [2]

Cardiovascular
Hypotension [2]

Central Nervous System
Vertigo / dizziness (3%) [9]

Endocrine/Metabolic
Hyperkalemia [3]

Gastrointestinal/Hepatic
Diarrhea [4]
Enteropathy [26]
Gastrointestinal disorder / discomfort [6]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Respiratory
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [6]

OLODATEROL

Trade names: Stiolto Respimat (Boehringer Ingelheim), Striverdi Respimat (Boehringer Ingelheim)
Indications: Chronic obstructive pulmonary disease including chronic bronchitis and emphysema
Class: Beta-2 adrenergic agonist
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: adrenergics, beta blockers, diuretics, MAO inhibitors, QT interval prolonging agents, steroids, tricyclic antidepressants, xanthine derivatives
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Stiolto Respimat is olodaterol and tiotropium.
Warning: ASTHMA-RELATED DEATH

Skin
Rash (2%)
Cardiovascular
Extrasystoles [2]
Hypertension [3]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (>2%)
Headache [4]
Vertigo / dizziness (2%) [3]
Gastrointestinal/Hepatic
Constipation (>2%)
Diarrhea (3%) [3]
Nausea [2]
Genitourinary
Urinary tract infection (3%) [3]
Neuromuscular/Skeletal
Arthralgia (2%) [3]
Back pain (4%) [4]
Myalgia/Myopathy [2]
Respiratory
Bronchitis (5%) [4]
COPD [2]
Cough (4%) [4]
Dyspnea / shortness of breath [3]
Nasopharyngitis (11%) [5]
Pneumonia (>2%) [3]
Upper respiratory tract infection (8%) [4]
Other
Adverse effects / adverse reactions [2]

OLSALAZINE

Trade name: Dipentum (Celltech)
Indications: Ulcerative colitis
Class: Aminosalicylate
Half-life: 0.9 hours
Clinically important, potentially hazardous interactions with: azathioprine, mercaptopurine
Pregnancy category: C

Skin
Rash (2%) [2]
Urticaria / hives (4%)

OMALIZUMAB

Trade name: Xolair (Genentech)
Indications: Asthma
Class: IgE-targeting monoclonal antibody, Monoclonal antibody
Half-life: 26 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: ANAPHYLAXIS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [11]
Angioedema [3]
Churg-Strauss syndrome [14]
Dermatitis (2%)
Hypersensitivity [2]
Pruritus (itching) (2%)
Rash [2]
Serum sickness [2]
Serum sickness-like reaction [2]
Urticaria / hives (7%) [5]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (15%) [8]
Pain (7%)
Vertigo / dizziness (3%)
Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [3]
Nausea [3]
Local
Injection-site pain [2]
Injection-site reaction (45%) [8]
Neuromuscular/Skeletal
Arthralgia (8%) [3]
Asthenia / fatigue (3%) [3]
Myalgia/Myopathy [3]
Respiratory
Cough [2]
Nasopharyngitis [4]
Sinusitis (16%) [4]
Upper respiratory tract infection (20%) [5]
Other
Adverse effects / adverse reactions [8]
Infection [2]

OMBITASVIR/ PARITAPREVIR/ RITONAVIR

Trade names: Technivie (AbbVie), Viekira Pak (AbbVie), Viekirax (AbbVie)
Indications: Genotype 4 chronic hepatitis C virus infection in patients without cirrhosis (in combination with ribavirin)
Class: CYP3A4 inhibitor (ritonavir), Direct-acting antiviral, Hepatitis C virus NS3/4A protease inhibitor (paritaprevir), Hepatitis C virus NS5A inhibitor (ombitasvir)
Half-life: 21–25 hours (ombitasvir); 6 hours (paritaprevir); 4 hours (ritonavir)
Clinically important, potentially hazardous interactions with: atazanavir, carbamazepine, cisapride, colchicine, dihydroergotamine, dronedarone, efavirenz, ergotamine, ethinyl estradiol-containing medications, lopinavir, lovastatin, lurasidone, methylergonovine, midazolam, midostaurin, neratinib, phenobarbital, phenytoin, pimozide, ranolazine, rifampin, rilpivirine, salmeterol, sildenafil, simvastatin, St John's wort, triazolam, voriconazole
Pregnancy category: B (pregnancy category will be X when administered with ribavirin)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with moderate or severe hepatic impairment or with known hypersensitivity to ritonavir (see separate entry). See also separate entry for ribavirin. Viekira Pak is ombitasvir/paritaprevir/ritonavir co-packaged with dasabuvir. See also Ombitasvir/ Paritaprevir/Ritonavir and Dasabuvir (Viekira XR).

Skin
Dermatitis (<5%)
Eczema / eczematous reaction / eczematous eruption (<5%)
Erythema (<5%)
Exfoliative dermatitis (<5%)
Photosensitivity (<5%)
Pruritus (itching) (5%) [9]
Psoriasis (<5%)
Rash (<5%) [4]
Ulcerations (<5%)
Urticaria / hives (<5%)
Xerosis / xeroderma (see also dry skin) [2]
Central Nervous System
Headache [20]
Insomnia (5%) [13]
Irritability [3]
Vertigo / dizziness [2]
Endocrine/Metabolic
Acidosis (includes lactic acidosis) [2]
ALT increased [4]
AST increased [4]
Gastrointestinal/Hepatic
Diarrhea [12]
Nausea (9%) [15]
Vomiting [2]
Hematologic
Anemia [8]
Hemoglobin decreased [2]
Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue (7–25%) [20]
Myalgia/Myopathy [2]
Respiratory
Cough [3]
Dyspnea / shortness of breath [3]
Nasopharyngitis [2]
Other
Adverse effects / adverse reactions [4]
Death [2]

OMBITASVIR/PARITA-PREVIR/RITONAVIR AND DASABUVIR

Trade name: Viekira XR (AbbVie)
Indications: Genotype 1a chronic hepatitis C virus with or without cirrhosis, genotype 1b chronic hepatitis C virus with or without cirrhosis in combination with ribavirin
Class: CYP3A4 inhibitor (ritonavir), Direct-acting antiviral, Hepatitis C virus non-nucleoside NS5B palm polymerase inhibitor (dasabuvir), Hepatitis C virus NS3/4A protease inhibitor (paritaprevir), Hepatitis C virus NS5A inhibitor (ombitasvir)
Half-life: 6 hours (dasabuvir); 21–25 hours (ombitasvir); 6 hours (paritaprevir); 4 hours (ritonavir)
Clinically important, potentially hazardous interactions with: alfuzosin, carbamazepine, cisapride, copanlisib, dihydroergotamine, dronedarone, efavirenz, ergotamine, ethinyl estradiol-containing medications, gemfibrozil, lovastatin, lurasidone, methylergonovine, midazolam, midostaurin, neratinib, phenobarbital, phenytoin, pimozide, ranolazine, rifampin, sildenafil, simvastatin, St John's wort, triazolam
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk; contra-indicated in pregnancy when given with ribavirin)

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with moderate to severe hepatic impairment. Viekira XR is a combined ombitasvir, paritaprevir, ritonavir and dasabuvir extended release tablet. In May 2018, the FDA announced the discontinuation of Viekira XR with an estimated product availability through until January 1, 2019. See also separate entries for Ombitasvir/Paritaprevir/Ritonavir (co-packaged with Dasabuvir as Viekira Pak) and Ribavirin.

Skin
Pruritus (itching) (7%) [5]
Rash (7%)
Central Nervous System
Headache [3]
Insomnia (5%) [4]
Endocrine/Metabolic
ALT increased [3]
AST increased [2]
Hyperbilirubinemia (2%) [4]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (8%) [2]
Neuromuscular/Skeletal
Asthenia / fatigue (4%) [8]

OMEGA-3 FATTY ACIDS

Family: N/A
Scientific names: *docosahexaenoic acid (DHA), eicosapentaenoic acid (EPA), Lovaza (GSK), Omega-3 fatty acids, Omtryg*
Indications: Albuminuria, anorexia nervosa, hypertension, lupus erythematosus, macular degeneration, osteoarthritis, otitis media, psoriasis
Class: Anti-inflammatory, Lipid regulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: abciximab, clopidogrel
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: More than 25 mL or 3 g per day can increase the risk of bleeding. Fish oils contain a significant amount of vitamins A and D and high doses may be toxic.

Central Nervous System
Dysgeusia (taste perversion) (4%) [4]
Gastrointestinal/Hepatic
Diarrhea [4]
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Eructation (belching) (4%)
Nausea [2]
Other
Adverse effects / adverse reactions [3]

OMEPRAZOLE

Trade names: Prilosec (AstraZeneca), Yosprala (Aralez)
Indications: Duodenal ulcer, gastric ulcer, gastroesophageal reflux disease (GERD), erosive esophagitis
Class: CYP1A2 inducer, Proton pump inhibitor (PPI)
Half-life: 0.5–1 hour
Clinically important, potentially hazardous interactions with: amoxicillin, atazanavir, bendamustine, benzodiazepines, cilostazol, clarithromycin, clobazam, clopidogrel, clozapine, coumarins, cyclosporine, dasatinib, delavirdine, diazepam, digoxin, disulfiram, emtricitabine/rilpivirine/tenofovir alafenamide, enzalutamide, erlotinib, escitalopram, itraconazole, ketoconazole, lapatinib, letermovir, methotrexate, nelfinavir, phenytoin, posaconazole, prednisone, raltegravir, rilpivirine, saquinavir, selpercatinib, sofosbuvir & velpatasvir, sotorasib, St John's wort, tacrolimus, tipranavir, ulipristal, voriconazole, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Yosprala is omeprazole and aspirin.

Skin
AGEP [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [7]
Angioedema [5]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [3]
Bullous pemphigoid / pemphigoid [2]
Contact dermatitis [2]
Eczema / eczematous reaction / eczematous eruption [2]
Edema / fluid retention (see also peripheral edema) (<10%) [2]
Erythroderma [2]
Exfoliative dermatitis [3]
Hypersensitivity [2]
Lichen planus (includes hypertrophic lichen planus) [2]
Lichen spinulosus [2]
Lichenoid eruption / lichenoid reaction [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Pemphigus (exacerbation) [2]
Peripheral edema (see also edema) [2]
Pruritus (itching) (<10%) [8]
Rash (2%) [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
Urticaria / hives (<10%) [9]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Xerosis / xeroderma (see also dry skin) [2]
Hair
Alopecia / hair loss [2]
Mucosal
Oral candidiasis [3]
Xerostomia (dry mouth) (<10%) [2]
Central Nervous System
Anorexia [3]
Dysgeusia (taste perversion) (<10%) [4]
Headache (7%) [2]
Paresthesias [2]
Somnolence (drowsiness) [2]
Vertigo / dizziness (2%)
Endocrine/Metabolic
Galactorrhea [2]
Gynecomastia [11]
Hypocalcemia [2]
Hypomagnesemia [10]
Gastrointestinal/Hepatic
Abdominal distension [2]
Abdominal pain (5%) [4]
Constipation [3]
Diarrhea (4%) [9]
Flatulence (3%)
Hepatitis [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (4%) [7]
Pancreatitis / acute pancreatitis [2]
Vomiting (3%) [6]
Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [3]
Hemolytic anemia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
Neutropenia (neutrophils decreased) [3]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Myalgia/Myopathy (<10%)
Rhabdomyolysis [2]
Ocular
Visual disturbances [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [9]
Respiratory
Cough [2]
Upper respiratory tract infection (2%)
Other
Adverse effects / adverse reactions [9]

ONDANSETRON

Trade names: Zofran (GSK), Zuplenz (Par)
Indications: Nausea and vomiting
Class: 5-HT3 antagonist, Antiemetic, Serotonin type 3 receptor antagonist
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: amisulpride, apomorphine, carbamazepine, phenytoin, ribociclib, rifampin, tramadol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
Fixed eruption [2]
Flushing / rubefaction [2]
Pruritus (itching) (5%)
Mucosal
Sialopenia (<5%)
Xerostomia (dry mouth) (<10%) [3]
Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypotension [3]
Myocardial ischemia [2]

QT interval prolonged / QT prolongation [14]
Torsades de pointes [3]
Ventricular tachycardia [2]

Central Nervous System
Anxiety (6%)
Chills (5–10%)
Fever (pyrexia) (includes hyperpyrexia) (2–8%)
Headache (17–25%) [15]
Paresthesias (2%)
Seizures [3]
Somnolence (drowsiness) (8%) [5]
Vertigo / dizziness (4–7%) [9]

Endocrine/Metabolic
ALT increased [2]

Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation (6–11%) [7]
Diarrhea (8–16%) [3]

Local
Injection-site reaction (4%)

Neuromuscular/Skeletal
Asthenia / fatigue (9–13%)

Respiratory
Hypoxia (see also hypoxemia) (9%)

Other
Adverse effects / adverse reactions [3]
Death [2]
Hiccups / singultus [2]

ORAL CONTRACEPTIVES

Trade names: Alesse (Wyeth), Aviane (Barr), Brevicon (Watson), Demulen (Pfizer), Desogen (Organon), Estrostep (Pfizer), Evra (Johnson & Johnson), Levlen (Bayer), Levlite (Bayer), Levora (Watson), Lo/Ovral (Wyeth), Loestrin (Barr), Lunelle (Pfizer), Mircette (Organon), Modicon (Ortho), Necon (Watson), Nordette (Monarch), Norinyl (Watson), Ortho Tri-Cyclen (Ortho-McNeil), Ortho-Cept (Ortho-McNeil), Ortho-Cyclen (Ortho-McNeil), Ortho-Novum (Ortho-McNeil), Ovcon (Warner Chilcott), Ovral (Wyeth), Tri-Levlen (Bayer), Tri-Norinyl (Watson), Triphasil (Wyeth), Trivora (Watson), Yasmin (Bayer), Yaz (Bayer), Zovia (Watson)
Indications: Prevention of pregnancy
Class: Hormone
Half-life: N/A
Clinically important, potentially hazardous interactions with: aminophylline, amprenavir, anticonvulsants, aprepitant, atazanavir, atorvastatin, beclomethasone, bexarotene, bosentan, budesonide, cenobamate, cigarette smoking, danazol, doxycycline, efavirenz, eslicarbazepine, exenatide, flucloxacillin, flunisolide, fluticasone propionate, glecaprevir & pibrentasvir, hydrocortisone, insulin aspart, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, isotretinoin, lamotrigine, lomitapide, lymecycline, meropenem, metformin, methylprednisolone, mifepristone, modafinil, naratriptan, nelfinavir, oxcarbazepine, perampanel, prednisolone, prednisone, rifabutin, rifampin, ritonavir, roflumilast, selegiline, St John's wort, teriflunomide, ticarcillin, tigecycline, triamcinolone, troleandomycin, tuberculostatics, ursodiol, zolmitriptan

Warning: CIGARETTE SMOKING AND SERIOUS CARDIOVASCULAR EVENTS

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [17]
Angioedema [4]
Candidiasis / candidosis [9]
Chloasma [13]
Erythema multiforme [2]
Erythema nodosum [18]
Exanthems [2]
Herpes gestationis [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [29]
Melanoma [5]
Melasma [8]
Perioral dermatitis [8]
Photosensitivity [12]
Pigmentation [18]
Pruritus (itching) [5]
Purpura [3]
Seborrhea [3]
Spider angioma [2]
Sweet's syndrome [2]
Telangiectasia [6]
Urticaria / hives [2]

Hair
Alopecia / hair loss [19]
Alopecia areata [4]
Hirsutism [12]

Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [2]

Cardiovascular
Thrombophlebitis [2]
Venous thromboembolism [6]

Central Nervous System
Chorea [2]
Depression [2]
Headache [3]

Endocrine/Metabolic
Acute intermittent porphyria [5]
Galactorrhea [2]
Mastodynia [3]
Porphyria cutanea tarda [28]
Porphyria variegata [2]

Gastrointestinal/Hepatic
Colitis [3]
Nausea [5]

Genitourinary
Vaginal bleeding [4]

Local
Application-site reactions (92%) [2]

Other
Adverse effects / adverse reactions [3]

ORLISTAT

Trade names: Alli (GSK), Xenical (Roche)
Indications: Obesity, weight reduction
Class: Lipase inhibitor
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: acarbose, amiodarone, antiepileptics, coumarins, cyclosporine, ergocalciferol, ethosuximide, lacosamide, levothyroxine, oxcarbazepine, paricalcitol, phytonadione, tiagabine, vigabatrin, vitamin A, vitamin E, warfarin

Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in organ transplant recipients. Orlistat interferes with the medicines used to prevent transplant rejection.

Skin
Lichenoid eruption / lichenoid reaction [2]
Peripheral edema (see also edema) (3%)
Rash (4%)
Xerosis / xeroderma (see also dry skin) (2%)

Mucosal
Gingivitis (2–4%)

Central Nervous System
Anxiety (3–5%)
Depression (3%)
Headache (31%) [2]
Sleep-related disorder (4%)
Vertigo / dizziness (5%)

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) (in diabetic patients) [2]
Menstrual irregularities (10%)

Gastrointestinal/Hepatic
Abdominal pain (26%) [4]
Cholelithiasis (gallstones in the gallbladder) (3%)
Defecation (increased) (3–11%) [3]
Fecal incontinence (2–8%) [2]
Fecal urgency (3–23%) [3]
Flatulence (with discharge) (2–24%) [4]
Hepatic failure [2]
Hepatitis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (4–8%)
Pancreatitis / acute pancreatitis [5]
Vomiting (4%)

Genitourinary
Urinary tract infection (6–8%)
Vaginitis (includes vulvitis) (3–4%)

Neuromuscular/Skeletal
Arthralgia (5%)
Asthenia / fatigue (3–7%)
Back pain (14%)
Bone or joint pain (2%)
Myalgia/Myopathy (4%)
Tendinitis (2%)

Otic
Otitis media (3–4%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [11]
Renal failure [2]

Respiratory
Influenza (40%)
Upper respiratory tract infection (26–38%) [2]

Other
Adverse effects / adverse reactions [7]
Tooth disorder (3–4%)

ORPHENADRINE

Trade names: Banflex (Forest), Norflex (3M)
Indications: Painful musculoskeletal conditions
Class: Central muscle relaxant, Muscarinic antagonist
Half-life: 14 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly

Skin
Flushing / rubefaction (<10%)
Rash (<10%)
Cardiovascular
Tachycardia [2]

OSELTAMIVIR

Trade name: Tamiflu (Roche)
Indications: Influenza infection
Class: Antiviral, Covid-19 putative drug, Neuraminidase inhibitor
Half-life: 6–10 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Rash [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Central Nervous System
Delirium [5]
Hallucinations [3]
Headache [3]
Insomnia [2]
Mania [2]
Neuropsychiatric / neuropsychological adverse effect [4]
Neurotoxicity [5]
Seizures [2]
Suicidal ideation [2]
Gastrointestinal/Hepatic
Abdominal pain (2–5%) [2]
Diarrhea (<3%) [12]
Hemorrhagic colitis [6]
Nausea (4–10%) [17]
Vomiting (2–15%) [19]
Hematologic
Thrombocytopenia [2]
Respiratory
Respiratory failure [2]
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [7]

OSIMERTINIB

Synonyms: AZD9291; mereletinib
Trade name: Tagrisso (AstraZeneca)
Indications: Metastatic epidermal growth factor receptor T790M mutation-positive non-small cell lung cancer
Class: Epidermal growth factor receptor (EGFR) inhibitor / antagonist, Kinase inhibitor, Tyrosine kinase inhibitor
Half-life: 48 hours
Clinically important, potentially hazardous interactions with: carbamazepine, cyclosporine, ergot alkaloids, fentanyl, itraconazole, nefazodone, phenytoin, quinidine, rifampin, ritonavir, St John's wort, strong CYP3A inhibitors or inducers, telithromycin
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Cutaneous toxicity / skin toxicity [2]
Dry skin (see also xerosis) [3]
Rash (41%) [14]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Xerosis / xeroderma (see also dry skin) (31%) [4]
Nails
Nail toxicity (25%) [3]
Paronychia [8]
Mucosal
Stomatitis (oral mucositis) (12%) [4]
Cardiovascular
Cardiomyopathy [2]
Cardiotoxicity [4]
Congestive heart failure [2]
Hypertension [2]
QT interval prolonged / QT prolongation (3%) [3]
Torsades de pointes [2]
Venous thromboembolism (7%)
Central Nervous System
Cerebrovascular accident (3%)
Headache (10%)
Endocrine/Metabolic
Appetite decreased (16%) [4]
Hypermagnesemia (20%)
Hyponatremia (26%)
Gastrointestinal/Hepatic
Constipation (15%)
Diarrhea (42%) [17]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (17%) [3]
Hematologic
Anemia (44%) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (63%)
Neutropenia (neutrophils decreased) (33%)
Thrombocytopenia (54%) [2]
Neuromuscular/Skeletal
Asthenia / fatigue (14%) [5]
Back pain (13%)
Ocular
Ocular adverse effect (18%)
Respiratory
Alveolar hemorrhage (pulmonary) [2]
Cough (14%)
Dyspnea / shortness of breath [3]
Eosinophilic pneumonia [2]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [8]
Pneumonia (4%)
Pneumonitis (3%) [5]
Pulmonary toxicity [6]
Other
Adverse effects / adverse reactions [4]
Death [3]

OSPEMIFENE

Trade name: Osphena (Shionogi)
Indications: Dyspareunia due to menopausal vulvar and vaginal atrophy
Class: Estrogen agonist, Estrogen antagonist, Selective estrogen receptor modulator (SERM)
Half-life: 26 hours
Clinically important, potentially hazardous interactions with: fluconazole, ketoconazole, other estrogen agonists or antagonists, rifampin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with undiagnosed abnormal genital bleeding, known or suspected estrogen-dependent neoplasia, active DVT or pulmonary embolism, or active arterial thromboembolic disease.
Warning: ENDOMETRIAL CANCER AND CARDIOVASCULAR DISORDERS

Skin
Hot flashes / hot flushes (8%) [8]
Hyperhidrosis (see also diaphoresis) (2%)
Genitourinary
Urinary tract infection [3]
Vaginal discharge (4%)
Neuromuscular/Skeletal
Muscle spasm (3%)

OXACILLIN

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 23–60 minutes
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, demeclocycline, doxycycline, imipenem/cilastatin, methotrexate, minocycline, oxytetracycline, tetracycline
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Exanthems [2]
Leukocytoclastic vasculitis (angiitis) [2]
Rash (<22%)
Other
Adverse effects / adverse reactions [2]

OXALIPLATIN

Trade name: Eloxatin (Sanofi-Aventis)
Indications: Metastatic carcinoma of the colon or rectum (in combination with fluorouracil/leucovorin (FOLFOX, mFOLFOX6)). Advanced pancreatic cancer (in combination with irinotecan/fluorouracil/leucovorin (FOLFIRINOX or FOLFOXIRI))
Class: Alkylating agent, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Platinum-based antineoplastic
Half-life: 391 hours
Clinically important, potentially hazardous interactions with: aminoglycosides, BCG vaccine, capreomycin, cardiac glycosides, clozapine, denosumab, diuretics, leflunomide, natalizumab, pimecrolimus, polymyxins, sipuleucel-T, tacrolimus, taxanes, topotecan, trastuzumab, vaccines, vitamin K antagonists
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: ANAPHYLACTIC REACTIONS

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [11]
- Cutaneous toxicity / skin toxicity [3]
- Diaphoresis (see also hyperhidrosis) (5%) [2]
- Edema / fluid retention (see also peripheral edema) (13–15%) [2]
- Erythema [4]
- Exanthems (2–5%)
- Flushing / rubefaction (2–7%) [3]
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) (7–13%) [14]
- Hot flashes / hot flushes (2–5%)
- Hypersensitivity (12%) [30]
- Peripheral edema (see also edema) (11%)
- Pruritus (itching) (6%) [6]
- Purpura (2–5%)
- Radiation recall dermatitis [3]
- Rash (5–11%) [11]
- Thrombocytopenic purpura [2]
- Urticaria / hives [3]
- Xerosis / xeroderma (see also dry skin) (6%)

Hair
- Alopecia / hair loss (3–38%) [4]

Mucosal
- Epistaxis (nosebleed) (<16%)
- Gingivitis (2–5%)
- Mucositis (10%) [6]
- Stomatitis (oral mucositis) (32–42%) [6]
- Xerostomia (dry mouth) (5%)

Cardiovascular
- Chest pain (4%) [2]
- Extravasation [2]
- Hypertension [6]
- Hypotension (5%) [2]
- Tachycardia [3]
- Thromboembolism (4%)
- Vascular trauma [2]

Central Nervous System
- Anorexia (13–35%) [7]
- Anxiety (5%)
- Chills [3]
- Depression (9%)
- Dysesthesia (often cold-induced or cold-exacerbated) (38%) [7]
- Dysgeusia (taste perversion) (<14%)
- Dysphasia (5%)
- Fever (pyrexia) (includes hyperpyrexia) (16–27%) [9]
- Headache (7–13%)
- Hyperalgesia [2]
- Hypoesthesia (numbness) [2]
- Insomnia (4–13%)
- Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [4]
- Neurotoxicity (48%) [37]
- Pain (5–9%) [2]
- Paresthesias (77%) [7]
- Peripheral neuropathy (92%) [56]
- Rigors (8%)
- Sensory disturbances (8%)
- Vertigo / dizziness (7–8%)

Endocrine/Metabolic
- ALP increased (42%)
- ALT increased (57%)
- AST increased [2]
- Dehydration (9%)
- Hyperammonemia [2]
- Hyperglycemia (includes glucose increased) (14%)
- Hypoalbuminemia / albumin decreased (8%)
- Hypocalcemia (7%)
- Hypokalemia (11%)
- Hyponatremia (8%) [2]
- Serum creatinine increased (4%) [2]
- Weight gain (10%)
- Weight loss (11%)

Gastrointestinal/Hepatic
- Abdominal pain (18–31%) [4]
- Constipation (22–32%) [2]
- Diarrhea (44–56%) [47]
- Dyspepsia / functional dyspepsia / gastroparesis (8–12%)
- Flatulence (6–9%)
- Gastroesophageal reflux (3%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
- Nausea (59–74%) [28]
- Sinusoidal obstruction syndrome [2]
- Vomiting (27–47%) [21]

Genitourinary
- Urinary frequency (5%)

Hematologic
- Anemia (27–76%) [26]
- Evans' syndrome [2]
- Febrile neutropenia (<4%) [12]
- Hemolytic anemia [4]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (34–85%) [16]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased (6%)
- Myelosuppression / bone marrow suppression / myelotoxicity [4]
- Neutropenia (neutrophils decreased) (25–81%) [64]
- Thrombocytopenia (20–77%) [42]
- Thrombosis (6%)

Local
- Injection-site reaction (5–11%) [2]

Neuromuscular/Skeletal
- Arthralgia (5–10%)
- Asthenia / fatigue (44–70%) [24]
- Ataxia [2]
- Back pain (11–16%)
- Myalgia/Myopathy (14%)

Ocular
- Abnormal vision (5%)
- Conjunctivitis (conjunctival inflammation) (9%)
- Epiphora [3]
- Lacrimation (4–9%)
- Transient vision loss (amaurosis fugax) [3]
- Vision blurred [2]

Otic
- Hearing loss (hypoacusis) [4]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
- Proteinuria [2]

Respiratory
- Cough (9–35%)
- Dyspnea / shortness of breath (5–18%) [2]
- Pharyngitis (sore throat) (10%)
- Pneumonia [2]
- Pulmonary embolism [2]
- Pulmonary fibrosis [2]
- Pulmonary toxicity [2]
- Rhinitis (4–10%)
- Upper respiratory tract infection (4%)

Other
- Adverse effects / adverse reactions [4]
- Allergic reactions (3%) [4]
- Death [4]
- Hiccups / singultus (5%)
- Infection (8–25%) [3]

OXAPROZIN

Trade name: Daypro (Pfizer)
Indications: Arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 42–50 hours
Clinically important, potentially hazardous interactions with: methotrexate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
- Pruritus (itching) (<10%)
- Rash (>10%) [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]

Endocrine/Metabolic
- Pseudoporphyria [3]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
- Adverse effects / adverse reactions [3]

OXAZEPAM

Trade name: Serax (Mayne Pharma)
Indications: Anxiety, depression
Class: Benzodiazepine
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: amprenavir, chlorpheniramine, clarithromycin, efavirenz, esomeprazole, imatinib, nelfinavir
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
- Dermatitis (<10%)
- Diaphoresis (see also hyperhidrosis) (>10%)
- Rash (>10%)

Mucosal
- Sialopenia (>10%)
- Sialorrhea (ptyalism; hypersalivation) (<10%)
- Xerostomia (dry mouth) (>10%)

OXCARBAZEPINE

Trade names: Oxtellar XR (Supernus), Trileptal (Novartis)
Indications: Partial epileptic seizures
Class: Anticonvulsant, CYP3A4 inducer, Mood stabilizer
Half-life: 1–2.5 hours
Clinically important, potentially hazardous interactions with: alcohol, antipsychotics, bictegravir/emtricitabine/tenofovir alafenamide, carbamazepine, chloroquine, clopidogrel, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, cyclosporine, CYP3A4 substrates, doravirine, doravirine/lamiduvine/tenofovir disoproxil, dronedarone, emtricitabine/rilpivirine/tenofovir alafenamide, eslicarbazepine, everolimus, exemestane, guanfacine, hydroxychloroquine, imatinib, ixabepilone, ledipasvir & sofosbuvir, levomepromazine, levonorgestrel, MAO inhibitors, maraviroc, mefloquine, nifedipine, nilotinib, nisoldipine, oral contraceptives, orlistat, pazopanib, perampanel, phenobarbital, phenytoin, praziquantel, ranolazine, rilpivirine, risperidone, romidepsin, saxagliptin, selegiline, simeprevir, sofosbuvir, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, sorafenib, SSRIs, St John's wort, tadalafil, tenofovir alafenamide, thiazide diuretics, tolvaptan, tricyclic antidepressants, ulipristal, valproic acid, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (<2%)
- Angioedema [2]
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (4%)
- Diaphoresis (see also hyperhidrosis) (3%)
- DRESS syndrome [7]
- Edema / fluid retention (see also peripheral edema) (<2%)
- Exanthems [4]
- Hot flashes / hot flushes (<2%)
- Hyperhidrosis (see also diaphoresis) (3%)
- Hypersensitivity [6]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
- Lymphadenopathy (2%)
- Purpura (2%)
- Rash (<6%) [12]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [14]

Mucosal
- Epistaxis (nosebleed) (4%)
- Rectal hemorrhage / rectal bleeding (2%)
- Xerostomia (dry mouth) (3%)

Cardiovascular
- Chest pain (2%)
- Hypotension (<3%)

Central Nervous System
- Agitation (<2%)
- Amnesia (4%)
- Anorexia (3–5%)
- Anxiety (5–7%)
- Coma [2]
- Confusion (<7%)
- Dysgeusia (taste perversion) (5%)
- Emotional lability (2–3%)
- Fever (pyrexia) (includes hyperpyrexia) (3%)
- Gait instability / postural instability (5–17%)
- Headache (13–32%) [8]
- Hyperesthesia (3%)
- Hypoesthesia (numbness) (<3%)
- Incoordination (<4%)
- Insomnia (2–6%)
- Nervousness (2–4%)
- Seizures (2–5%) [5]
- Somnolence (drowsiness) (5–36%) [5]
- Speech disorder (<3%)
- Tremor (3–16%) [2]
- Vertigo / dizziness (3–49%) [12]

Endocrine/Metabolic
- Hyponatremia (<5%) [19]
- SIADH [3]
- Weight gain (<2%)

Gastrointestinal/Hepatic
- Abdominal pain (3–13%)
- Constipation (2–6%)
- Diarrhea (5–7%)
- Dyspepsia / functional dyspepsia / gastroparesis (5–6%)
- Gastritis / pangastritis / gastric irritation (<2%)
- Nausea (15–29%) [8]
- Vomiting (13–36%) [4]

Genitourinary
- Ejaculatory dysfunction [3]
- Urinary frequency (<2%)
- Urinary tract infection (<5%)
- Vaginitis (includes vulvitis) (2%)

Hematologic
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
- Thrombocytopenia [2]

Neuromuscular/Skeletal
- Asthenia / fatigue (3–15%) [5]
- Ataxia (<31%) [2]
- Back pain (4%)
- Myoclonus [3]
- Osteoporosis [2]

Ocular
- Abnormal vision (2–14%)
- Accommodation disorder (<3%)
- Diplopia (double vision) (<40%) [10]
- Nystagmus (2–26%)

Otic
- Ear pain (<2%)

Respiratory
- Cough (5%)
- Pharyngitis (sore throat) (3%)
- Pneumonia (2%)
- Rhinitis (2–5%)
- Sinusitis (4%)
- Upper respiratory tract infection (5–10%)

Other
- Adverse effects / adverse reactions [8]
- Allergic reactions (2%) [3]
- Dipsia (thirst) / polydipsia (2%)
- Infection (2–7%)
- Teratogenicity [3]
- Toothache (odontalgia) (2%)

OXERUTINS

Trade name: Paroven (Novartis)
Indications: Edema associated with chronic venous insufficiency
Class: Benzypyrone
Half-life: 10–25 hours
Clinically important, potentially hazardous interactions with: none known

OXPRENOLOL

Trade name: Trasicor (Amdipharm)
Indications: Angina pectoris, hypertension, disturbances of cardiac rhythm
Class: Antihypertensive
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: alcohol, amiodarone, beta blockers, cimetidine, clonidine, digoxin, diltiazem, disopyramide, ephedrine, epinephrine, ergot alkaloids, guanethidine, halothane, isoprenaline, lidocaine, noradrenaline, NSAIDs, phenylephrine, quinidine, reserpine, verapamil
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
- Dermatitis [3]
- Psoriasis [3]
- Rash [3]

Mucosal
- Xerostomia (dry mouth) (10%)

Cardiovascular
- Bradycardia / sinus bradycardia (<10%)
- Cardiac failure (<10%)
- Hypotension (<10%)

Central Nervous System
- Depression (<10%)
- Headache (<10%)
- Paresthesias (<10%)
- Vertigo / dizziness (<10%)

Gastrointestinal/Hepatic
- Constipation (<10%)
- Nausea (<10%)

Neuromuscular/Skeletal
- Asthenia / fatigue (<10%)

Respiratory
- Dyspnea / shortness of breath (<10%)

Other
- Death [4]

OXTRIPHYLLINE

Trade names: Choledyl (Pfizer), Choledyl SA (Warner Chilcott)
Indications: Asthma, chronic bronchitis, emphysema, bronchospastic disorders
Class: Bronchodilator
Half-life: 1–9 hours in pediatric patients; 3–15 hours in non-smoking adults; 4–5 hours in cigarette smokers
Clinically important, potentially hazardous interactions with: aminoglutethimide, carbamazepine, cimetidine, ciprofloxacin, clarithromycin, disulfiram, enoxacin, erythromycin, estradiol, estrogens, febuxostat, fluvoxamine, isoproterenol, methotrexate, mexiletine, moricizine, norfloxacin, ofloxacin, phenobarbital, phenytoin, propranolol, rifampin, sucralfate, tacrine, ticlopidine, verapamil
Pregnancy category: C

Other
Adverse effects / adverse reactions [2]

OXYBUTYNIN

Trade names: Cystrin (Sanofi-Aventis), Ditropan (Ortho-McNeil), Lyrinel (Janssen-Cilag)
Indications: Neurogenic bladder, urinary incontinence, palmar and axillary hyperhidrosis
Class: Anticholinergic, Muscarinic antagonist
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: alcohol, anticholinergics, antihistamines, arbutamine, cannabinoids, clozapine, conivaptan, diphenoxylate, disopyramide, domperidone, haloperidol, ketoconazole, levodopa, MAO inhibitors, memantine, metoclopramide, nefopam, nitrates, parasympathomimetics, pramlintide, secretin, tricyclic antidepressants
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contra-indicated in patients with urinary retention, gastric retention and other severe decreased gastrointestinal motility conditions, uncontrolled narrow-angle glaucoma and in patients who are at risk for these conditions.

Skin
Hot flashes / hot flushes (<10%)
Pruritus (itching) [2]
Rash (<10%)
Mucosal
Sialopenia [2]
Xerostomia (dry mouth) (71%) [31]
Central Nervous System
Cognitive impairment [4]
Headache (8%) [2]
Insomnia (6%)
Nervousness (7%)
Somnolence (drowsiness) (14%)
Vertigo / dizziness (17%) [2]
Gastrointestinal/Hepatic
Constipation (15%) [4]
Dyspepsia / functional dyspepsia / gastroparesis (6%)
Nausea [3]
Genitourinary
Urinary retention (6%)
Urinary tract infection (7%)
Ocular
Vision blurred (10%)
Other
Adverse effects / adverse reactions [4]
Allergic reactions [2]

OXYCODONE

Trade names: OxyContin (Purdue), OxyIR (Purdue), Percocet (Endo), Roxicodone (aaiPharma), Targiniq (Purdue), Troxyca (Pfizer), Tylox (Ortho-McNeil), Xtampza ER (Collegium)
Indications: Pain
Class: Opiate agonist
Half-life: 4.6 hours
Clinically important, potentially hazardous interactions with: cimetidine, clonazepam, telithromycin, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Oxycodone is often combined with acetaminophen (Percocet, Roxicet, Tylox) or aspirin (Percodan, Roxiprin); Targiniq is oxycodone and naloxone; Troxyca is oxycodone and naltrexone. Contra-indicated in patients with significant respiratory depression, acute or severe bronchial asthma, or with known or suspected gastrointestinal obstruction, including paralytic ileus.
Warning: ADDICTION, ABUSE and MISUSE; LIFE-THREATENING RESPIRATORY DEPRESSION; ACCIDENTAL INGESTION; NEONATAL OPIOID WITHDRAWAL SYNDROME; and CYTOCHROME P450 3A4 INTERACTION

Skin
Pruritus (itching) [8]
Mucosal
Xerostomia (dry mouth) [2]
Cardiovascular
Bradycardia / sinus bradycardia [2]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache [6]
Insomnia [3]
Neurotoxicity [2]
Sedation [2]
Serotonin syndrome [2]
Somnolence (drowsiness) [15]
Vertigo / dizziness [9]
Gastrointestinal/Hepatic
Abdominal pain [3]
Constipation [16]
Diarrhea [2]
Ileus [2]
Nausea [26]
Vomiting [20]
Genitourinary
Urinary retention [2]
Local
Injection-site pain (<10%)
Neuromuscular/Skeletal
Asthenia / fatigue [9]
Other
Adverse effects / adverse reactions [11]
Death [3]
Tooth disorder [2]

OXYMORPHONE

Trade name: Opana (Endo)
Indications: Pain (moderate to severe)
Class: Analgesic, Opiate agonist
Half-life: 7–9 hours
Clinically important, potentially hazardous interactions with: anticholinergics, buprenorphine, butorphanol, cimetidine, CNS depressants, MAO inhibitors, nalbuphine, pentazocine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with a known hypersensitivity to morphine analogs such as codeine; in patients with respiratory depression, except in monitored settings and in the presence of resuscitative equipment; in patients with acute or severe bronchial asthma or hypercarbia; in any patient who has or is suspected of having paralytic ileus; and in patients with moderate or severe hepatic impairment.

Skin
Hyperhidrosis (see also diaphoresis) (<10%)
Pruritus (itching) (8%) [2]
Mucosal
Xerostomia (dry mouth) (<10%)
Cardiovascular
Hypotension (<10%)
Tachycardia (<10%)
Central Nervous System
Anxiety (<10%)
Confusion (3%)
Fever (pyrexia) (includes hyperpyrexia) (14%)
Headache (7%)
Sedation (<10%)
Somnolence (drowsiness) (9%) [2]
Vertigo / dizziness (7%)
Gastrointestinal/Hepatic
Abdominal distension (<10%)
Constipation (4%) [3]
Flatulence (<10%)
Nausea (19%) [4]
Vomiting (9%) [2]
Local
Injection-site reaction (<10%)
Respiratory
Hypoxia (see also hypoxemia) (<10%)

OXYTETRACYCLINE

Trade name: Terramycin (Pfizer)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; tetracycline, Antimicrobial
Half-life: 6–10 hours
Clinically important, potentially hazardous interactions with: acitretin, amoxicillin, ampicillin, antacids, bacampicillin, calcium salts, carbenicillin, cloxacillin, coumarins, dairy products, digoxin, ergotamine, kaolin, methotrexate, methoxyflurane, methysergide, mezlocillin, nafcillin, oral iron, oral typhoid

vaccine, oxacillin, penicillins, phenindione, piperacillin, quinapril, retinoids, strontium ranelate, sucralfate, sulfonylureas, ticarcillin, tripotassium dicitratobismuthate, zinc
Pregnancy category: D

Skin
Dermatitis [3]
Fixed eruption [5]
Photosensitivity (<10%) [4]
Other
Tooth pigmentation / discoloration (in children) (>10%)

OXYTOCIN

Trade name: Pitocin (Par)
Indications: Induction of labor
Class: Oxytocic
Half-life: N/A
Clinically important, potentially hazardous interactions with: cyclopropane, gemeprost, halothane, prostaglandins
Pregnancy category: X

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [7]
Mucosal
Xerostomia (dry mouth) [3]
Cardiovascular
Bradycardia / sinus bradycardia [2]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Shivering [2]
Genitourinary
Urinary frequency [3]
Uterine hyperstimulation [3]
Respiratory
Hypoxia (see also hypoxemia) [2]

PACLITAXEL

Trade name: Taxol (Bristol-Myers Squibb)
Indications: Breast cancer and metastatic carcinoma of the ovary
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Taxane
Half-life: 5–17 hours
Clinically important, potentially hazardous interactions with: atazanavir, bexarotene, buspirone, carbamazepine, cisplatin, clarithromycin, delavirdine, doxorubicin, efavirenz, eletriptan, felodipine, gadobenate, gemfibrozil, indinavir, itraconazole, ketoconazole, lapatinib, lovastatin, nefazodone, nelfinavir, repaglinide, rifampin, ritonavir, rosiglitazone, saquinavir, sildenafil, simvastatin, telithromycin, teriflunomide, thalidomide, trastuzumab, triazolam
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Nab-paclitaxel is nanoparticle albumin–bound paclitaxel. Studies have shown that elderly patients have an increased risk of severe myelosuppression, severe neuropathy and a higher incidence of cardiovascular events.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [6]
Acral erythema [4]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Cutaneous toxicity / skin toxicity [10]
Dermatitis [2]
Desquamation (7%)
Edema / fluid retention (see also peripheral edema) (21%) [2]
Erythema [6]
Exanthems [2]
Fixed eruption [2]
Flushing / rubefaction (28%) [3]
Folliculitis [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [20]
Hypersensitivity (31–45%) [26]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Photosensitivity [4]
Pigmentation [3]
Pruritus (itching) [6]
Pustules / pustular eruption [2]
Radiation recall dermatitis [11]
Rash (12%) [19]
Recall reaction [2]
Scleroderma (see also morphea / localized scleroderma) [7]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives (2–4%) [4]
Hair
Alopecia / hair loss (87–100%) [52]
Nails
Leukonychia striata (Mees' lines) [2]
Nail changes (2%) [6]
Nail pigmentation (2%) [4]
Onycholysis [11]
Onychomadesis [2]
Pyogenic granuloma [2]
Mucosal
Epistaxis (nosebleed) [2]
Mucosal inflammation [3]
Mucositis (17–35%) [15]
Oral lesions (3–8%)
Stomatitis (oral mucositis) (2–39%) [11]
Cardiovascular
Atrial fibrillation [2]
Bradycardia / sinus bradycardia (3%)
Capillary leak syndrome [2]
Cardiotoxicity [3]
Congestive heart failure [3]
Hypertension [17]
Hypotension (4–12%)
Kounis syndrome / allergic angina syndrome / allergic myocardial infarction [2]
Myocardial infarction [2]
Tachycardia (2%)
Central Nervous System
Anorexia [8]
Dysgeusia (taste perversion) [3]
Fever (pyrexia) (includes hyperpyrexia) [4]
Headache [2]
Insomnia [2]
Neurotoxicity [42]
Pain [9]
Paresthesias (>10%) [5]
Peripheral neuropathy (42–70%) [52]
Seizures [2]
Vertigo / dizziness [7]
Endocrine/Metabolic
ALP increased [2]
ALT increased [11]
Appetite decreased [5]
AST increased [8]
Hyperbilirubinemia [2]
Hyperglycemia (includes glucose increased) [4]
SIADH [3]
Gastrointestinal/Hepatic
Abdominal pain (>10%) [2]
Constipation [8]
Diarrhea (38%) [42]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Gastrointestinal bleeding [2]
Gastrointestinal disorder / discomfort [2]
Gastrointestinal fistula [2]
Gastrointestinal perforation / perforated colon / gastric perforation [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea (52%) [36]
Pancreatitis / acute pancreatitis [4]
Vomiting [28]
Hematologic
Anemia (47%) [44]
Bleeding [3]
Febrile neutropenia [28]
Hematological adverse effect [2]
Hemotoxicity [11]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (90%) [39]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Myelosuppression / bone marrow suppression / myelotoxicity [8]
Neutropenia (neutrophils decreased) (78–98%) [111]
Thrombocytopenia (4–20%) [32]
Local
Injection-site cellulitis (>10%)
Injection-site extravasation (>10%) [4]
Injection-site pain (>10%)
Injection-site reaction (13%) [2]
Neuromuscular/Skeletal
Arthralgia (60%) [16]
Asthenia / fatigue (17%) [61]
Bone or joint pain [3]
Myalgia/Myopathy (19–60%) [24]
Ocular
Macular edema [12]
Maculopathy [2]
Renal
Proteinuria [6]
Tumor lysis syndrome (TLS) [2]
Respiratory
Cough [3]
Dyspnea / shortness of breath (2%) [4]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [5]
Pneumonia [5]
Pneumonitis [5]
Pulmonary toxicity [6]
Other
Adverse effects / adverse reactions [10]
Allergic reactions (15%) [8]
Death [16]
Infection (3–22%) [16]

PALBOCICLIB

Trade name: Ibrance (Pfizer)
Indications: Treatment of postmenopausal women with estrogen receptor (ER)-positive, human epidermal growth factor receptor 2 (HER2)-negative advanced breast cancer (in combination with letrozole)
Class: Cyclin-dependent kinase (CDK) 4/6 inhibitor
Half-life: 29 hours
Clinically important, potentially hazardous interactions with: bosentan, carbamazepine, clarithromycin, efavirenz, etravirine, grapefruit juice, indinavir, itraconazole, ketoconazole, lopinavir, modafinil, nafcillin, nefazodone, nelfinavir, phenytoin, posaconazole, rifampin, ritonavir, saquinavir, St John's wort, telaprevir, telithromycin, verapamil, voriconazole
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Peripheral edema (see also edema) [2]
- Rash [5]
- Vitiligo [2]

Hair
- Alopecia / hair loss (22%) [2]

Mucosal
- Epistaxis (nosebleed) (11%) [2]
- Stomatitis (oral mucositis) (25%) [5]

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Headache [2]
- Peripheral neuropathy (13%)

Endocrine/Metabolic
- Appetite decreased (16%)

Gastrointestinal/Hepatic
- Constipation [2]
- Diarrhea (21%) [8]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea (25%) [9]
- Vomiting (15%) [4]

Hematologic
- Anemia (35%) [12]
- Febrile neutropenia [11]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (43%) [16]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
- Neutropenia (neutrophils decreased) (75%) [38]
- Thrombocytopenia (17%) [10]

Neuromuscular/Skeletal
- Asthenia / fatigue (13–41%) [13]

Respiratory
- Dyspnea / shortness of breath [2]
- Pneumonitis [4]
- Upper respiratory tract infection (31%)

Other
- Adverse effects / adverse reactions [3]
- Death [3]
- Infection [4]

PALIFERMIN

Trade name: Kepivance (Amgen)
Indications: Severe oral mucositis in cancer patients
Class: Keratinocyte growth factor
Half-life: 4.5 hours
Clinically important, potentially hazardous interactions with: heparin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
- Acanthosis nigricans [2]
- Edema / fluid retention (see also peripheral edema) (28%) [2]
- Erythema (32%) [3]
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) [3]
- Pruritus (itching) (35%) [3]
- Rash (62%) [7]

Mucosal
- Tongue edema (17%) [3]
- Tongue pigmentation (17%)

Cardiovascular
- Hypertension (~12%)

Central Nervous System
- Dysesthesia (12%)
- Dysgeusia (taste perversion) (16%) [4]
- Fever (pyrexia) (includes hyperpyrexia) (39%)
- Pain (16%)
- Paresthesias (12%)

Neuromuscular/Skeletal
- Arthralgia (10%)

PALIPERIDONE

Trade name: Invega (Janssen)
Indications: Schizophrenia
Class: Antipsychotic
Half-life: ~23 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, alcohol, alpha blockers, amphetamines, angiotensin II receptor antagonists, carbamazepine, CNS depressants, dopamine agonists, droperidol, general anesthetics, itraconazole, levodopa, levomepromazine, lithium, methylphenidate, metoclopramide, myleosuppressives, P-glycoprotein inhibitors or inducers, quinagolide, risperidone, tetrabenazine, valproic acid
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Invega is not recommended for patients with creatinine clearance below 10 mL/min. Paliperidone is the active metabolite of risperidone (see separate entry).
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%)
- Angioedema [3]
- Edema / fluid retention (see also peripheral edema) (<2%)
- Peripheral edema (see also edema) [4]
- Pruritic rash [2]
- Pruritus (itching) (<2%)
- Rash (<2%)

Mucosal
- Nasal congestion (<2%)
- Sialorrhea (ptyalism; hypersalivation) (<6%) [2]
- Tongue edema (3%)
- Xerostomia (dry mouth) (<4%)

Cardiovascular
- Arrhythmias (<2%)
- Atrioventricular block (<2%)
- Bradycardia / sinus bradycardia (<2%)
- Bundle branch block (<3%)
- Hypertension (<2%)
- Palpitation (<2%) [2]
- Tachycardia (<14%) [6]

Central Nervous System
- Agitation (<2%) [6]
- Akathisia (3–17%) [25]
- Anxiety (2–9%) [9]
- Depression [2]
- Dysarthria (<4%) [2]
- Extrapyramidal symptoms (4–23%) [17]
- Headache (4–14%) [18]
- Insomnia (<2%) [24]
- Neuroleptic malignant syndrome [6]
- Nightmares (<2%)
- Parkinsonism [6]
- Psychosis [3]
- Restlessness [2]
- Schizophrenia [7]
- Sleep-related disorder (2–3%)
- Somnolence (drowsiness) (6–26%) [13]
- Tardive syndrome / tardive dyskinesia [3]
- Tremor [7]
- Vertigo / dizziness (2–6%) [3]

Endocrine/Metabolic
- ALT increased (<2%)
- Amenorrhea (6%) [3]
- Appetite decreased (<2%)
- Appetite increased (2–3%)
- AST increased (<2%)
- Galactorrhea (4%) [5]
- Gynecomastia (3%)
- Hyperprolactinemia [12]
- Hyponatremia [2]
- Menstrual irregularities (<2%)
- Weight gain (2–7%) [21]

Gastrointestinal/Hepatic
- Abdominal pain (<3%)
- Constipation (4–5%) [4]
- Diarrhea [2]
- Dyspepsia / functional dyspepsia / gastroparesis (5–6%)
- Flatulence (<2%)
- Nausea [3]
- Vomiting (3–11%)

Genitourinary
- Ejaculatory dysfunction (<2%)
- Erectile dysfunction [2]
- Sexual dysfunction [3]
- Urinary tract infection (<2%)

Hematologic
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
- Neutropenia (neutrophils decreased) [3]

Local
- Injection-site pain [11]

Neuromuscular/Skeletal
- Asthenia / fatigue (<4%) [4]

Bone or joint pain [2]
Dystonia [7]
Hyperkinesia [2]
Rhabdomyolysis [5]

Ocular
Vision blurred (3%)

Respiratory
Cough (<3%)
Nasopharyngitis (2–5%) [6]
Pharyngolaryngeal pain (<2%)
Pulmonary embolism [2]
Rhinitis (<3%)
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [8]
Death [4]

PALONOSETRON

Trade name: Aloxi (MGI)
Indications: Antiemetic (for cancer chemotherapy)
Class: 5-HT3 antagonist, Antiemetic, Serotonin type 3 receptor antagonist
Half-life: 40 hours
Clinically important, potentially hazardous interactions with: apomorphine
Pregnancy category: B
Note: See also the fixed drug combination Netupitant & Palonosetron (separate entry).

Skin
Hot flashes / hot flushes (<15)
Pruritus (itching) (8–22%)
Rash (6%)

Central Nervous System
Anorexia [2]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (9%) [14]
Vertigo / dizziness [4]

Endocrine/Metabolic
AST increased [2]

Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [11]
Diarrhea [4]

Neuromuscular/Skeletal
Asthenia / fatigue [4]
Osteonecrosis / avascular necrosis (jaw) [13]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

Other
Hiccups / singultus [4]

PAMIDRONATE

Trade name: Aredia (Novartis)
Indications: Hypercalcemia, Paget's disease, osteogenesis imperfecta
Class: Bisphosphonate
Half-life: 1.6 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Candidiasis / candidosis (6%)

Cardiovascular
Atrial fibrillation (6%)
Hypertension (6%)
Tachycardia (6%)

Central Nervous System
Anorexia (26%)
Fever (pyrexia) (includes hyperpyrexia) (18–39%) [8]
Headache (26%)
Insomnia (22%)
Somnolence (drowsiness) (6%)

Endocrine/Metabolic
Hypocalcemia [10]
Hypophosphatemia [2]
Hypothyroidism (6%)

Gastrointestinal/Hepatic
Abdominal pain (23%)
Constipation (6%)
Dyspepsia / functional dyspepsia / gastroparesis (23%)
Nausea (54%)
Vomiting (36%) [2]

Genitourinary
Azotemia (prerenal) (4%)
Urinary tract infection (19%)

Hematologic
Anemia (43%)
Granulocytopenia (20%)

Local
Injection-site reaction (18%)

Neuromuscular/Skeletal
Arthralgia (14%) [2]
Asthenia / fatigue (37%) [2]
Bone or joint pain [3]
Fractures [3]
Myalgia/Myopathy [3]
Osteonecrosis / avascular necrosis [20]

Ocular
Conjunctivitis (conjunctival inflammation) [5]
Episcleritis [2]
Orbital inflammation (see also orbital (ocular) myositis) [2]
Scleritis [4]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [12]
Vision blurred [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [11]

Respiratory
Cough (26%)
Influenza- ('flu)-like syndrome [3]
Rhinitis (6%)
Sinusitis (16%)

PANCREATIN

Trade name: Creon 1000 (Solvay)
Indications: Pancreatic exocrine insufficiency
Class: Pancreatic digestive enzyme supplement
Half-life: N/A
Clinically important, potentially hazardous interactions with: acarbose, ferrous sulfate

Gastrointestinal/Hepatic
Fibrosing colonopathy [4]

PANCRELIPASE

Trade names: Cotazym (Janssen), Creon (AbbVie), Ultrasa (Aptalis), Viokace (Aptalis), Zenpep (Aptalis)
Indications: Pancreatic insufficiency, steatorrhea
Class: Enzyme
Half-life: N/A
Clinically important, potentially hazardous interactions with: ferrous sulfate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Lymphadenopathy (11%)
Peripheral edema (see also edema) (3%)
Pruritus ani et vulvae (7%)
Rash (3%)

Mucosal
Epistaxis (nosebleed) (7%)
Nasal congestion (14%)

Central Nervous System
Headache (3–15%)
Vertigo / dizziness (4%)

Endocrine/Metabolic
Hyperglycemia (includes glucose increased) (8%)
Hypoglycemia (see also insulin autoimmune syndrome) (4%)
Weight loss (6%)

Gastrointestinal/Hepatic
Abdominal pain (3–18%)
Ascites (3%)
Flatulence (3–6%)
Vomiting (6%)

Hematologic
Anemia (3%)

Neuromuscular/Skeletal
Neck pain (14%)

Otic
Ear pain (11%)

Renal
Nephrolithiasis (formation of a kidney stone) (7%)

Respiratory
Cough (4–6%)
Nasopharyngitis (4%)
Pharyngolaryngeal pain (7%)

Other
Adverse effects / adverse reactions [2]
Infection (3%)

PANCURONIUM

Indications: Anesthesia adjunct, neuromuscular blockade, muscle relaxant
Class: Non-depolarizing neuromuscular blocker
Half-life: 89–161 minutes
Clinically important, potentially hazardous interactions with: aminoglycosides, cortisone, cyclopropane, deflazacort, enflurane, gentamicin, halothane, hydrocortisone, isoflurane, kanamycin, methoxyflurane, mivacurium, neomycin, piperacillin, prednisolone, prednisone, streptomycin, tobramycin, triamcinolone, trospium
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [9]
Neuromuscular/Skeletal
Myalgia/Myopathy [3]

PANDEMIC INFLUENZA VACCINE (H1N1)

Trade names: Celvapan (Baxter), Focetria (Novartis), Pandemrix (GSK), Tamiflu (Roche)
Indications: Pandemic influenza vaccine (H1N1)
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Note: This is the vaccine for swine flu.

Skin
Lymphadenopathy (<10%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [4]
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [2]
Headache (>10%)
Seizures [2]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Other
Adverse effects / adverse reactions [4]

PANITUMUMAB

Trade name: Vectibix (Amgen)
Indications: Metastatic colorectal carcinoma progression
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, Epidermal growth factor receptor (EGFR) inhibitor / antagonist, Monoclonal antibody
Half-life: ~7.5 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: DERMATOLOGIC TOXICITY and INFUSION REACTIONS

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (57%) [18]
Cutaneous toxicity / skin toxicity (90%) [26]
Desquamation [3]
Eczema / eczematous reaction / eczematous eruption [2]
Erythema (65%) [5]
Exfoliative dermatitis (25%) [2]
Fissures (20%) [5]
Folliculitis [3]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [3]
Papulopustular eruption [4]
Peripheral edema (see also edema) (12%)
Pruritus (itching) (57%) [10]
Rash (22%) [33]
Xerosis / xeroderma (see also dry skin) (10%) [12]
Hair
Alopecia / hair loss [3]
Hair changes (9%) [2]
Nails
Nail changes (9–29%) [2]
Paronychia (25%) [14]
Mucosal
Mucosal inflammation (6%)
Mucositis [4]
Stomatitis (oral mucositis) (7%) [4]
Cardiovascular
Arrhythmias [2]
Central Nervous System
Anorexia [4]
Fever (pyrexia) (includes hyperpyrexia) [2]
Neurotoxicity [2]
Endocrine/Metabolic
Dehydration [3]
Hypocalcemia [4]
Hypokalemia [6]
Hypomagnesemia [21]
Gastrointestinal/Hepatic
Abdominal pain (25%) [3]
Constipation (21%) [4]
Diarrhea (21%) [21]
Nausea (23%) [9]
Vomiting (19%) [9]
Hematologic
Anemia [2]
Febrile neutropenia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [7]
Thrombocytopenia [4]
Local
Infusion-related reactions (3%) [5]
Injection-site reaction (4%)
Neuromuscular/Skeletal
Asthenia / fatigue (26%) [18]
Ocular
Conjunctivitis (conjunctival inflammation) (4%) [2]
Corneal perforation [2]
Eyelashes – hypertrichosis (6%)
Lacrimation (2%)
Ocular toxicity (15%) [2]
Trichomegaly [3]
Respiratory
Cough (14%)
Dyspnea / shortness of breath [3]
Pulmonary embolism [3]
Pulmonary fibrosis [3]
Pulmonary toxicity [7]
Other
Adverse effects / adverse reactions [5]
Death [2]
Infection [3]

PANOBINOSTAT

Trade name: Farydak (Novartis)
Indications: Multiple myeloma (in combination with bortezomib and dexamethasone)
Class: Histone deacetylase (HDAC) inhibitor
Half-life: 37 hours
Clinically important, potentially hazardous interactions with: antiarrhythmics, QT prolonging agents, sensitive CYP2D6 substrates, strong CYP3A4 inducers
Pregnancy category: N/A (can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients
Warning: FATAL AND SERIOUS TOXICITIES: SEVERE DIARRHEA AND CARDIAC TOXICITIES

Skin
Edema / fluid retention (see also peripheral edema) (<10%)
Erythema (<10%)
Lesions (<10%)
Peripheral edema (see also edema) (29%) [3]
Rash (<10%) [5]
Mucosal
Cheilitis (inflammation of the lips) (<10%)
Xerostomia (dry mouth) (<10%)
Cardiovascular
Arrhythmias (12%)
Hypertension (<10%)
Hypotension (<10%) [2]
Orthostatic hypotension (<10%)
Palpitation (<10%)
QT interval prolonged / QT prolongation [7]
Central Nervous System
Anorexia [5]
Chills (<10%)
Dysgeusia (taste perversion) (<10%) [3]
Fever (pyrexia) (includes hyperpyrexia) (26%) [3]
Headache (<10%) [3]
Insomnia (<10%)
Peripheral neuropathy [9]
Syncope / fainting (<10%) [2]
Tremor (<10%)
Vertigo / dizziness (<10%) [2]
Endocrine/Metabolic
ALP increased (<10%)
Appetite decreased (28%) [4]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (41%) [4]
Dehydration (<10%) [3]
Hyperbilirubinemia (21%) [3]
Hyperglycemia (includes glucose increased) (<10%)
Hypermagnesemia (27%)
Hyperphosphatemia (29%)
Hyperuricemia (<10%)
Hypoalbuminemia / albumin decreased (63%)
Hypocalcemia (67%) [2]
Hypokalemia (52%) [7]
Hypomagnesemia (<10%)
Hyponatremia (49%) [2]
Hypophosphatemia (63%) [4]
Hypothyroidism (<10%)
Weight loss (12%) [3]
Gastrointestinal/Hepatic
Abdominal distension (<10%)
Abdominal pain (<10%) [4]
Colitis (<10%)
Constipation [5]
Diarrhea (68%) [29]
Dyspepsia / functional dyspepsia / gastroparesis (<10%) [2]
Flatulence (<10%)
Gastritis / pangastritis / gastric irritation (<10%)
Nausea (36%) [18]
Vomiting (26%) [12]
Genitourinary
Enuresis (urinary incontinence) (<10%)

Hematologic
Anemia (62%) [14]
Febrile neutropenia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (81%) [5]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (82%) [8]
Myelosuppression / bone marrow suppression / myelotoxicity [5]
Neutropenia (neutrophils decreased) (75%) [21]
Sepsis [2]
Thrombocytopenia (97%) [36]

Neuromuscular/Skeletal
Asthenia / fatigue (60%) [31]
Back pain [2]
Joint disorder (<10%)

Renal
Renal failure (<10%)

Respiratory
Cough (<10%)
Dyspnea / shortness of breath (<10%) [5]
Pneumonia [5]
Respiratory failure (<10%)
Wheezing (<10%)

Other
Adverse effects / adverse reactions [2]
Death (8%)

PANTOPRAZOLE

Trade names: Protium (Nycomed), Protonix (Wyeth)
Indications: Esophagitis associated with gastroesophageal reflux disease (GERD), Zollinger-Ellison syndrome, erosive esophagitis
Class: Proton pump inhibitor (PPI)
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: alcohol, allopurinol, atazanavir, cefditoren, clopidogrel, conivaptan, CYP2C19 inducers and substrates, dabigatran, dasatinib, delavirdine, dexmethylphenidate, digoxin, emtricitabine/rilpivirine/tenofovir alafenamide, erlotinib, eucalyptus, fluconazole, indinavir, iron salts, itraconazole, ketoconazole, lapatinib, letermovir, mesalamine, methotrexate, methylphenidate, mycophenolate, nelfinavir, PEG-interferon, posaconazole, raltegravir, rilpivirine, saquinavir, tipranavir, topotecan, ulipristal, voriconazole, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [13]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
Edema / fluid retention (see also peripheral edema) (<2%)
Facial edema (<4%)
Hypersensitivity [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (discoid) [3]
Peripheral edema (see also edema) [2]
Photosensitivity (<2%)
Pruritus (itching) (<2%)
Rash (<2%) [3]
Urticaria / hives (<4%) [2]

Mucosal
Xerostomia (dry mouth) (<2%)

Cardiovascular
Kounis syndrome / allergic angina syndrome / allergic myocardial infarction [2]

Central Nervous System
Depression (<2%)
Fever (pyrexia) (includes hyperpyrexia) (>4%) [3]
Headache (12%) [3]
Vertigo / dizziness (3%)

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)
Hypomagnesemia [5]

Gastrointestinal/Hepatic
Abdominal pain (6%)
Constipation (<4%) [2]
Diarrhea (9%)
Flatulence (<4%)
Hepatitis (<2%) [5]
Nausea (7%) [2]
Vomiting (4%)

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<2%)
Thrombocytopenia (<2%) [7]

Neuromuscular/Skeletal
Arthralgia (<4%)
Myalgia/Myopathy (<4%)

Ocular
Vision blurred (<2%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

Respiratory
Influenza- ('flu)-like syndrome (<10%)
Upper respiratory tract infection (>4%)

Other
Adverse effects / adverse reactions [2]
Allergic reactions (<4%)
Infection (<10%)

PAPAVERINE

Indications: Peripheral and cerebral ischemia
Class: Opium alkaloid, Vasodilator, peripheral
Half-life: 0.5–2 hours
Clinically important, potentially hazardous interactions with: levodopa, reboxetine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Cardiovascular
Hypotension [2]

Genitourinary
Priapism (11%) [16]

PARICALCITOL

Trade name: Zemplar (AbbVie)
Indications: Secondary hyperparathyroidism associated with renal failure
Class: Vitamin D receptor agonist
Half-life: 4–7 hours
Clinically important, potentially hazardous interactions with: bile acid sequestrants, cardiac glycosides, conivaptan, danazol, darunavir, delavirdine, digitalis (with overdose of paricalcitol), digoxin, ergocalciferol, indinavir, ketoconazole, orlistat, orlistat, strong CYP3A4 inhibitors, sucralfate, telithromycin, thiazide diuretics, tocilizumab, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contra-indicated in patients with evidence of vitamin D toxicity or hypercalcemia.

Skin
Burning / skin burning sensation (<2%)
Edema / fluid retention (see also peripheral edema) (7%)
Hyperhidrosis (see also diaphoresis) (<2%)
Lymphadenopathy (<2%)
Peripheral edema (see also edema) (<2%)
Pruritus (itching) (<2%)

Hair
Alopecia / hair loss (<2%)
Hirsutism (<2%)

Mucosal
Rectal hemorrhage / rectal bleeding (<2%)
Xerostomia (dry mouth) (3%)

Cardiovascular
Arrhythmias (<2%)
Atrial flutter (<2%)
Cardiac arrest (<2%)
Hypertension (<2%)
Hypotension (<2%)
Palpitation (3%)
Pulmonary edema / cardiogenic pulmonary edema (<2%)

Central Nervous System
Agitation (<2%)
Cerebrovascular accident (<2%)
Chills (5%)
Confusion (<2%)
Delirium (<2%)
Dysgeusia (taste perversion) (<2%)
Fever (pyrexia) (includes hyperpyrexia) (5%)
Gait instability / postural instability (<2%)
Headache (<2%)
Hypoesthesia (numbness) (<2%)
Insomnia (<2%)
Nervousness (<2%)
Pain (<2%)
Paresthesias (<2%)
Restlessness (<2%)
Syncope / fainting (<2%)
Vertigo / dizziness (<2%)

Endocrine/Metabolic
Appetite decreased (<2%)
AST increased (<2%)
Hypercalcemia (<2%) [5]
Hyperkalemia (<2%)
Hyperparathyroidism (<2%)
Hyperphosphatemia (<2%)
Hypocalcemia (<2%)
Hypoparathyroidism (<2%)
Mastodynia (<2%)
Weight loss (<2%)

Gastrointestinal/Hepatic
Abdominal pain (<2%)
Constipation (<2%)
Diarrhea (<2%)
Dysphagia (<2%)
Gastritis / pangastritis / gastric irritation (<2%)
Gastrointestinal bleeding (5%)

Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<2%)
Nausea (13%) [2]
Vomiting (8%) [2]

Genitourinary
Erectile dysfunction (<2%)

Hematologic
Anemia (<2%)
Prothrombin time (INR) increased (<2%)
Sepsis (5%)

Local
Injection-site extravasation (<2%)
Injection-site pain (<2%)

Neuromuscular/Skeletal
Arthralgia (5%)
Asthenia / fatigue (3%)
Myalgia/Myopathy (<2%)

Ocular
Conjunctivitis (conjunctival inflammation) (<2%)
Glaucoma (includes acute angle-closure glaucoma) (<2%)
Ocular hyperemia (<2%)

Respiratory
Cough (<2%)
Dyspnea / shortness of breath (<2%)
Influenza (5%)
Nasopharyngitis (<2%)
Pneumonia (5%)
Upper respiratory tract infection (<2%)
Wheezing (<2%)

Other
Cancer (breast) (<2%)
Dipsia (thirst) / polydipsia (<2%)

PAROMOMYCIN

Trade name: Humatin (Pfizer)
Indications: Intestinal amebiasis
Class: Antibiotic, Antibiotic; aminoglycoside, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: methotrexate, succinylcholine
Pregnancy category: C

Skin
Pruritus (itching) [2]

Central Nervous System
Pain [2]

Gastrointestinal/Hepatic
Abdominal pain [2]

Local
Injection-site pain [3]

PAROXETINE HYDROCHLORIDE

Trade names: Paxil (GSK), Paxil CR (GSK), Seroxat (GSK)
Indications: Depression, obsessive-compulsive disorder, panic disorder, social and generalized anxiety disorders, post-traumatic stress disorder
Class: Antidepressant, Selective serotonin reuptake inhibitor (SSRI)
Half-life: 21 hours
Clinically important, potentially hazardous interactions with: alcohol, amitriptyline, amphetamines, antiepileptics, aprepitant, aripiprazole, artemether/lumefantrine, asenapine, aspirin, astemizole, atomoxetine, barbiturates, clarithromycin, clozapine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, coumarins, cyproheptadine, darifenacin, darunavir, deutetrabenazine, dexibuprofen, dextroamphetamine, diethylpropion, digitalis, digoxin, duloxetine, eluxadoline, entacapone, erythromycin, galantamine, iloperidone, isocarboxazid, linezolid, lithium, MAO inhibitors, mazindol, methadone, methamphetamine, methylene blue, methylphenidate, metoprolol, moclobemide, molindone, NSAIDs, oliceridine, perphenazine, phendimetrazine, phenelzine, phenobarbital, phentermine, phenylpropanolamine, phenytoin, pimozide, primidone, procyclidine, propafenone, propranolol, pseudoephedrine, ranolazine, rasagiline, risperidone, ritonavir, selegiline, sibutramine, St John's wort, sumatriptan, sympathomimetics, tamoxifen, tamsulosin, tetrabenazine, thioridazine, tramadol, tranylcypromine, trazodone, tricyclic antidepressants, troleandomycin, tryptophan, valbenazine, vortioxetine
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: For menopausal indications see separate entry for paroxetine mesylate.
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) [2]
Diaphoresis (see also hyperhidrosis) (11%) [10]
Exanthems [2]
Hyperhidrosis (see also diaphoresis) [2]
Photosensitivity [3]
Pruritus (itching) [3]
Rash (2%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Mucosal
Xerostomia (dry mouth) (18%) [17]

Cardiovascular
QT interval prolonged / QT prolongation [2]
Venous thromboembolism [2]

Central Nervous System
Abnormal dreams (3–4%)
Agitation (3–6%)
Akathisia [3]
Anxiety (5%) [2]
Chills (2%) [2]
Delirium [3]
Depression [3]
Dysarthria [2]
Dysgeusia (taste perversion) (2%)
Extrapyramidal symptoms [2]
Hallucinations, auditory [5]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache (17–28%) [12]
Insomnia (11–24%) [5]
Irritability [2]
Mania [2]
Nervousness (4–9%)
Neuroleptic malignant syndrome [4]
Paresthesias (4%)
Parkinsonism [3]
Restless legs syndrome [7]
Serotonin syndrome [20]
Sleep disturbances [2]
Somnolence (drowsiness) (15–24%) [5]
Suicidal ideation [4]
Tic disorder [3]
Tremor (4–11%) [5]
Vertigo / dizziness (6–14%) [7]
Yawning (2–4%)

Endocrine/Metabolic
Galactorrhea [4]
Gynecomastia [2]
Libido decreased (3–15%)
SIADH [18]
Weight gain [9]

Gastrointestinal/Hepatic
Abdominal pain (4%) [2]
Constipation (5–18%) [2]
Diarrhea (9–12%) [3]
Nausea (26%) [8]
Vomiting [3]

Genitourinary
Ejaculatory dysfunction (13–28%)
Erectile dysfunction [2]
Priapism [4]
Sexual dysfunction [8]

Neuromuscular/Skeletal
Asthenia / fatigue [4]
Myalgia/Myopathy (<10%)

Ocular
Glaucoma (includes acute angle-closure glaucoma) [2]
Vision impaired [2]

Respiratory
Pharyngitis (sore throat) (4%)
Rhinitis (3%)
Sinusitis (4%)

Other
Adverse effects / adverse reactions [4]
Bruxism (teeth grinding) [4]
Congenital malformations [2]
Death [2]
Infection (5–6%)

PAROXETINE MESYLATE

Trade name: Brisdelle (Noven)
Indications: Vasomotor symptoms associated with the menopause
Class: Selective serotonin reuptake inhibitor (SSRI)
Half-life: N/A
Clinically important, potentially hazardous interactions with: eluxadoline, linezolid, MAO inhibitors, methylene blue, pimozide, tamoxifen, thioridazine
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Brisdelle contains a low dose of paroxetine and is not indicated for psychiatric conditions. Paroxetine mesylate is also available as Pexeva. For psychiatric indications see separate entry for paroxetine hydrochloride.
Warning: SUICIDAL THOUGHTS AND BEHAVIORS

Central Nervous System
Headache (6%)
Gastrointestinal/Hepatic
Nausea (4%) [2]
Vomiting (4%)
Neuromuscular/Skeletal
Asthenia / fatigue (5%)
Other
Adverse effects / adverse reactions [2]

PASIREOTIDE

Trade name: Signifor (Novartis)
Indications: Cushing's disease
Class: Somatostatin analog
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: antiarrhythmics, bromocriptine, cyclosporine, drugs prolonging the QT interval
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Peripheral edema (see also edema) (10%)
Pruritus (itching) (8%)
Xerosis / xeroderma (see also dry skin) (6%)
Hair
Alopecia / hair loss (12%)
Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypertension (10%)
Hypotension (7%)
QT interval prolonged / QT prolongation (6%)
Central Nervous System
Anorexia [2]
Anxiety (9%)
Headache (28%) [4]
Insomnia (9%)
Vertigo / dizziness (6–9%) [2]
Endocrine/Metabolic
ALT increased (10%)
Appetite decreased (10%)
AST increased (6%)
Diabetes mellitus (18%) [6]
GGT increased (10%)
Hypercholesterolemia (10%)
Hyperglycemia (includes glucose increased) (40%) [33]
Hypoglycemia (see also insulin autoimmune syndrome) (9%) [2]
Hypokalemia (6%)
Weight loss [2]
Gastrointestinal/Hepatic
Abdominal distension (6%)
Abdominal pain (10–24%) [6]
Cholelithiasis (gallstones in the gallbladder) (30%) [7]
Constipation (7%)
Diarrhea (58%) [17]
Gastrointestinal disorder / discomfort [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (52%) [12]
Vomiting (7%)
Hematologic
Anemia (4%)
Prothrombin time (INR) increased (2%)
Local
Injection-site reaction (17%) [3]
Neuromuscular/Skeletal
Arthralgia (8%)
Asthenia / fatigue (11–19%) [3]
Back pain (6%)
Myalgia/Myopathy (9%)
Pain in extremities (6%)
Respiratory
Influenza (9%)
Nasopharyngitis (13%) [2]
Other
Adverse effects / adverse reactions [7]

PATIROMER

Trade name: Veltassa (Relypsa)
Indications: Hyperkalemia
Class: Potassium binder
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Not expected to cause fetal risk)
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Warning: BINDING TO OTHER ORAL MEDICATIONS

Endocrine/Metabolic
Hypokalemia (5%) [6]
Hypomagnesemia (5–9%) [7]
Gastrointestinal/Hepatic
Abdominal pain (2%)
Constipation (7%) [14]
Diarrhea (5%) [7]
Flatulence (2%) [3]
Nausea (2%) [2]
Vomiting (<2%) [3]

PAZOPANIB

Trade name: Votrient (Novartis)
Indications: Advanced renal cell carcinoma
Class: Angiogenesis inhibitor / antiangiogenic agent, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Tyrosine kinase inhibitor, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 31 hours
Clinically important, potentially hazardous interactions with: alfuzosin, artemether/lumefantrine, atazanavir, BCG vaccine, boceprevir, cardiac glycosides, chloroquine, ciprofloxacin, clarithromycin, clozapine, conivaptan, CYP3A4 inducers or inhibitors, cyproterone, darunavir, deferasirox, delavirdine, denosumab, dronedarone, efavirenz, gadobutrol, grapefruit juice, indacaterol, indinavir, itraconazole, ketoconazole, lapatinib, leflunomide, natalizumab, nelfinavir, nilotinib, oxcarbazepine, P-glycoprotein inhibitors, pimecrolimus, pimozide, QT prolonging agents, quetiapine, quinine, rifampin, rifapentine, ritonavir, roflumilast, saquinavir, simvastatin, sipuleucel-T, St John's wort, tacrolimus, telithromycin, tetrabenazine, thioridazine, tocilizumab, toremifene, trastuzumab, vaccines, vandetanib, vemurafenib, vitamin K antagonists, voriconazole, ziprasidone
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: HEPATOTOXICITY

Skin
Cutaneous toxicity / skin toxicity [5]
Depigmentation (3%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (6%) [12]
Pigmentation [7]
Pruritus (itching) [3]
Rash (8%) [6]
Hair
Alopecia / hair loss (8%) [2]
Hair changes (38%)
Hair pigmentation [9]
Mucosal
Epistaxis (nosebleed) [2]
Stomatitis (oral mucositis) [5]
Cardiovascular
Cardiac failure [2]
Chest pain (5%)
Hypertension (47%) [33]
Myocardial infarction [2]
QT interval prolonged / QT prolongation (<2%)
Thromboembolism [2]
Central Nervous System
Anorexia (22%) [6]
Dysgeusia (taste perversion) [3]
Headache (10%) [3]
Endocrine/Metabolic
ALT increased (53%) [9]
Appetite decreased [3]
AST increased (53%) [10]
Hypothyroidism (7%) [5]
Weight loss (9%) [2]
Gastrointestinal/Hepatic
Abdominal pain (11%) [2]
Diarrhea (52%) [29]

Dyspepsia / functional dyspepsia / gastroparesis (5%) [2]
Gastrointestinal disorder / discomfort [2]
Gastrointestinal perforation / perforated colon / gastric perforation [2]
Hepatic (liver) disorder / hepatobiliary disorder / hepatic (liver) dysfunction [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [18]
Nausea (26%) [17]
Pancreatitis / acute pancreatitis [6]
Vomiting (21%) [10]

Hematologic
Anemia [5]
Hemorrhage [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (37%) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (31%)
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) (34%) [7]
Thrombocytopenia (32%) [10]

Neuromuscular/Skeletal
Asthenia / fatigue (14%) [27]

Renal
Proteinuria (9%) [5]

Respiratory
Hemoptysis (2%)
Pneumothorax [4]
Pulmonary embolism [2]

Other
Adverse effects / adverse reactions [13]
Death [6]

PEG-INTERFERON

Trade names: PegIntron (Schering), Sylatron (Schering)
Indications: Chronic hepatitis C, melanoma
Class: Immunomodulator, Interferon
Half-life: ~40 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, acetaminophen, aldesleukin, bupivacaine, cilostazol, cinacalcet, CYP2C9 substrates, CYP2D6 substrates, delavirdine, duloxetine, estradiol, fesoterodine, fingolimod, fluoxetine, indinavir, melphalan, methadone, methylnaltrexone, pantoprazole, pegloticase, ribavirin, sildenafil, tapentadol, telbivudine, theophylline, theophylline derivatives, tiotropium, trimethoprim, voriconazole, warfarin, zidovudine
Pregnancy category: C (pregnancy category will be X when used in combination with ribavirin)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: PEG-interferon is commonly administered with ribavirin and many of the reactions listed below are in combination therapy with this drug. Contra-indicated in patients with known hypersensitivity reactions, such as urticaria, angioedema, bronchoconstriction, anaphylaxis, Stevens-Johnson syndrome, and toxic epidermal necrolysis to interferon alpha or any other product component; or with autoimmune hepatitis.

Warning: RISK OF SERIOUS DISORDERS AND RIBAVIRIN-ASSOCIATED EFFECTS and DEPRESSION AND OTHER NEUROPSYCHIATRIC DISORDERS

Skin
Cutaneous toxicity / skin toxicity [3]
Dermatitis (7%)
Diaphoresis (see also hyperhidrosis) (6%)
DRESS syndrome [2]
Eczema / eczematous reaction / eczematous eruption [2]
Exanthems [5]
Fixed eruption [2]
Flushing / rubefaction (6%)
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Nummular eczema [2]
Photosensitivity [4]
Pruritus (itching) (12%) [11]
Psoriasis [4]
Rash (6%) [24]
Rosacea fulminans [2]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [9]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Vitiligo [3]
Xerosis / xeroderma (see also dry skin) (11%) [2]

Hair
Alopecia / hair loss (22%) [5]
Alopecia areata [2]

Central Nervous System
Anorexia (17%) [2]
Chills [2]
Cognitive impairment [2]
Depression (16–29%) [10]
Dysgeusia (taste perversion) (<10%) [5]
Fever (pyrexia) (includes hyperpyrexia) (37%) [8]
Headache (54%) [16]
Insomnia (19%) [4]
Irritability [2]
Neurotoxicity [2]
Pain (12%)
Parkinsonism [2]
Psychosis [2]
Vertigo / dizziness (16%) [3]

Endocrine/Metabolic
ALT increased [3]
Appetite decreased [2]
AST increased [3]
Diabetes mellitus [2]
Thyroid dysfunction [2]
Weight loss (16%) [3]

Gastrointestinal/Hepatic
Abdominal pain (15%)
Diarrhea (16%) [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (24%) [12]
Pancreatitis / acute pancreatitis [4]
Vomiting (24%) [2]

Genitourinary
Urinary tract infection [2]

Hematologic
Anemia (14%) [44]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [6]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (14%) [3]
Neutropenia (neutrophils decreased) (21%) [20]
Sepsis [2]
Thrombocytopenia (5%) [15]

Local
Injection-site pain (2%)
Injection-site reaction (22%) [4]

Neuromuscular/Skeletal
Arthralgia (28%) [2]
Asthenia / fatigue (56%) [24]
Back pain (9%)
Myalgia/Myopathy (38–42%) [4]

Ocular
Retinopathy [7]
Vision blurred (4%)

Otic
Hearing loss (hypoacusis) [2]
Tinnitus [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

Respiratory
Cough (6%)
Dyspnea / shortness of breath (13%) [2]
Influenza- ('flu)-like syndrome (46%) [11]
Pneumonitis [2]

Other
Adverse effects / adverse reactions [27]
Death [2]
Infection (3%) [4]

PEGAPTANIB

Trade name: Macugen (Valeant)
Indications: Neovascular (wet) age-related macular degeneration
Class: Angiogenesis inhibitor / antiangiogenic agent, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 6–14 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with ocular or periocular infections.

Skin
Dermatitis (<5%)

Cardiovascular
Arterial occlusion (carotid) (<5%)
Chest pain (<5%)
Hypertension (10–40%)
Myocardial ischemia (transient) (<5%)

Central Nervous System
Cerebrovascular accident (<5%)
Headache (6–10%)
Ischemic injury (transient) (<5%)
Vertigo / dizziness (<10%)

Endocrine/Metabolic
Diabetes mellitus (<5%)

Gastrointestinal/Hepatic
Diarrhea (6–10%)
Nausea (6–10%)
Vomiting (<5%)

Genitourinary
Urinary retention (<5%)

Urinary tract infection (6–10%)

Neuromuscular/Skeletal
Arthralgia (<5%)

Ocular
Blepharitis (6–10%)
Cataract (10–40%) [2]
Conjunctival edema (<5%)
Conjunctival hemorrhage (10–40%)
Conjunctivitis (conjunctival inflammation) (<10%)
Corneal abnormalities (<5%)
Corneal deposits (<5%)
Corneal edema (10–40%)
Endophthalmitis (<5%) [4]
Eyelid irritation (<5%)
Intraocular pressure increased (10–40%)
Meibomianitis (<5%)
Mydriasis (<5%)
Ocular edema (eye edema) (<5%)
Ocular hypertension (10–40%)
Ocular inflammation (<5%) [2]
Ocular pain (10–40%)
Ocular stinging (10–40%)
Ophthalmitis (<5%)
Periorbital hematoma (<5%)
Photopsia (6–10%)
Punctate keratitis (10–40%)
Reduced visual acuity (10–40%)
Retinal detachment (<10%) [5]
Retinal edema (<5%)
Vision blurred (10–40%)
Visual disturbances (10–40%)
Vitreous floaters (10–40%)

Otic
Hearing loss (hypoacusis) (<5%)
Otitis media (<5%)

Respiratory
Bronchitis (6–10%)
Pleural effusion (<5%)

PEGASPARGASE

Trade name: Oncaspar (Enzon)
Indications: Acute lymphoblastic leukemia
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 5.7 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<5%) [2]
Angioedema (<5%)
Edema / fluid retention (see also peripheral edema) (>5%)
Rash (<5%)
Urticaria / hives (<5%)

Cardiovascular
Hypotension (>5%)
Tachycardia (>5%)
Venous thromboembolism [2]

Central Nervous System
Chills (<5%)
Fever (pyrexia) (includes hyperpyrexia) (>5%)
Headache (<5%)
Paresthesias (<5%)
Seizures (<5%) [2]

Endocrine/Metabolic
Hyperglycemia (includes glucose increased) [2]
Hypertriglyceridemia (includes triglycerides increased) [2]

Gastrointestinal/Hepatic
Abdominal pain (<5%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Pancreatitis / acute pancreatitis [4]

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [2]
Prothrombin time (INR) increased [2]
Thrombocytopenia [2]

Neuromuscular/Skeletal
Arthralgia (<5%)
Myalgia/Myopathy (<5%)

Other
Allergic reactions (>5%) [7]

PEGINESATIDE

Trade name: Omontys (Affymax)
Indications: Anemia due to chronic kidney disease in adult patients on dialysis
Class: Erythropoiesis-stimulating agent (ESA)
Half-life: 17–33 hours (following intravenous administration)
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with uncontrolled hypertension.
This drug has been recalled.
Warning: ERYTHROPOIESIS-STIMULATING AGENTS (ESAs) INCREASE THE RISK OF DEATH, MYOCARDIAL INFARCTION, STROKE, VENOUS THROMBOEMBOLISM, THROMBOSIS OF VASCULAR ACCESS AND TUMOR PROGRESSION OR RECURRENCE

Cardiovascular
Hypertension (13%) [3]
Hypotension (14%) [2]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (12%)
Headache (15%) [3]
Vertigo / dizziness [3]

Endocrine/Metabolic
Hyperkalemia (11%)

Gastrointestinal/Hepatic
Constipation [2]
Diarrhea (18%) [2]
Nausea (17%) [3]
Vomiting (15%) [2]

Local
Infusion-site reactions (11–16%)

Neuromuscular/Skeletal
Arthralgia (11%) [2]
Back pain (11%)
Muscle spasm (15%)
Pain in extremities (11%)

Respiratory
Cough (16%) [2]
Dyspnea / shortness of breath (18%)
Upper respiratory tract infection (11%) [2]

Other
Adverse effects / adverse reactions [3]

PEGVISOMANT

Trade name: Somavert (Pfizer)
Indications: Acromegaly
Class: Growth hormone analog
Half-life: 6 days
Clinically important, potentially hazardous interactions with: acarbose, exenatide, hydromorphone, insulin, latex, metformin, opioids, oral hypoglycemics, pioglitazone, saxagliptin, tapentadol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Lipohypertrophy (<5%) [2]
Peripheral edema (see also edema) (4–8%)

Cardiovascular
Chest pain (4–8%)
Hypertension (8%)

Central Nervous System
Pain (4–14%)
Paresthesias (7%)
Vertigo / dizziness (4–8%)

Gastrointestinal/Hepatic
Diarrhea (4–14%)
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea (8–14%)

Local
Injection-site reaction (8–11%) [4]

Neuromuscular/Skeletal
Back pain (4–8%)

Respiratory
Influenza- ('flu)-like syndrome (4–12%)
Sinusitis (4–8%)

Other
Adverse effects / adverse reactions [3]
Infection (23%)

PEMBROLIZUMAB

Synonym: Lambrolizumab
Trade name: Keytruda (Merck Sharpe & Dohme)
Indications: Unresectable or metastatic melanoma and disease progression following ipilimumab and, if BRAF V600 mutation positive, a BRAF inhibitor
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Immune checkpoint inhibitor, Monoclonal antibody, Programmed death receptor-1 (PD-1) inhibitor
Half-life: 26 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Bullous pemphigoid / pemphigoid [17]
Cutaneous toxicity / skin toxicity [7]

Dermatitis [6]
Dermatomyositis [5]
Edema / fluid retention (see also peripheral edema) [2]
Eosinophilic fasciitis [4]
Erythema [3]
Exanthems [4]
Granuloma annulare [2]
Lichen planus (includes hypertrophic lichen planus) [5]
Lichenoid dermatitis [4]
Lichenoid eruption / lichenoid reaction [7]
Morphea / localized scleroderma (see also scleroderma) [4]
Panniculitis [2]
Peripheral edema (see also edema) (17%)
Pruritus (itching) (30%) [21]
Psoriasiform dermatitis [2]
Psoriasis [7]
Rash (29%) [26]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [9]
Scleroderma (see also morphea / localized scleroderma) [3]
Sjögren's syndrome [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [13]
Transient acantholytic dermatosis (Grover's disease) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]
Vitiligo (11%) [14]

Hair
Alopecia / hair loss [2]
Alopecia areata [3]
Lichen planopilaris [2]

Mucosal
Mucositis [2]
Stomatitis (oral mucositis) [4]
Xerostomia (dry mouth) [2]

Cardiovascular
Atrioventricular block [2]
Cardiotoxicity [4]
Hypertension [4]
Myocarditis [15]
Pericardial effusion [3]

Central Nervous System
Antiphospholipid antibody syndrome [3]
Aseptic meningitis [4]
Chills (14%)
Cranial neuropathy [2]
Cytokine release syndrome / cytokine storm [5]
Encephalitis [3]
Encephalopathy (includes hepatic encephalopathy) [3]
Fever (pyrexia) (includes hyperpyrexia) (11%) [6]
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [3]
Headache (16%) [3]
Insomnia (14%)
Meningoencephalitis [2]
Myelitis / myeloradiculitis [3]
Neuromyelitis optica [2]
Neurotoxicity [3]
Pain [2]
Peripheral neuropathy [4]
Vertigo / dizziness (11%)

Endocrine/Metabolic
Adrenal insufficiency (hypoadrenalism) [9]
Adrenocorticotropic hormone (corticotropin; ACTH) deficiency [4]
ALT increased [10]
Appetite decreased (26%) [11]
AST increased (24%) [7]
Diabetes mellitus [12]
Diabetic ketoacidosis [6]
Hyperlipasemia [2]
Hyperthyroidism [9]
Hypertriglyceridemia (includes triglycerides increased) (25%)
Hypoalbuminemia / albumin decreased (34%)
Hypocalcemia (24%)
Hyponatremia (35%) [5]
Hypophysitis [12]
Hypothyroidism (8%) [26]
Thyroid dysfunction [5]
Thyroiditis [10]
Thyrotoxicosis [2]

Gastrointestinal/Hepatic
Abdominal pain (12%) [2]
Cholangiopathy [2]
Cholangitis / sclerosing cholangitis [4]
Colitis [23]
Constipation (21%)
Diarrhea (20%) [24]
Enteritis [2]
Gastritis / pangastritis / gastric irritation [7]
Gastrointestinal perforation / perforated colon / gastric perforation [2]
Hepatitis [18]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea (30%) [14]
Pancreatic insufficiency [3]
Pancreatitis / acute pancreatitis [13]
Vomiting (16%) [3]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [2]
Anemia (14–55%) [8]
Aplastic anemia [2]
Eosinophilia [2]
Hemolytic anemia [5]
Hemophagocytic lymphohistiocytosis / hemophagocytic syndrome [6]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [3]
Neutropenia (neutrophils decreased) [10]
Pancytopenia (includes bicytopenia) [3]
Pure red cell aplasia [4]
Sepsis (<10%) [2]
Thrombocytopenia [8]

Local
Infusion-related reactions [3]

Neuromuscular/Skeletal
Arthralgia (20%) [12]
Asthenia / fatigue (47%) [34]
Back pain (12%)
Lambert-Eaton myasthenic syndrome [2]
Myalgia/Myopathy (14%) [19]
Myasthenia gravis [20]
Necrotizing myopathy / immune-mediated necrotizing myopathy [2]
Pain in extremities (18%)
Psoriatic arthralgia / psoriatic arthritis [2]

Ocular
Eyelid ptosis / blepharoptosis [2]
Hypotony [2]
Iridocyclitis [2]
Ocular adverse effect [2]
Ocular myasthenia gravis [8]
Orbital (ocular) myositis [2]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [7]

Renal
Glomerulonephritis (includes membranous nephropathy) [3]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [7]
Renal failure [3]

Respiratory
Cough (30%) [6]
Dyspnea / shortness of breath (18%) [4]
Interstitial lung disease / interstitial pneumonitis / interstitial pneumonia / drug-induced interstitial lung disease [2]
Pneumonia [6]
Pneumonitis (3%) [30]
Pulmonary fibrosis [2]
Pulmonary sarcoidosis [3]
Upper respiratory tract infection (11%)

Other
Adverse effects / adverse reactions [33]
Death [24]
Immune-related adverse effect [2]
Infection [2]
Remitting seronegative symmetrical synovitis with pitting edema syndrome [2]
Side effects [3]
Vogt-Koyanagi-Harada syndrome [3]

PEMETREXED

Trade name: Alimta (Lilly)
Indications: Non-squamous non-small cell lung cancer, mesothelioma (in combination with cisplatin)
Class: Antimetabolite, Folic acid antagonist
Half-life: 3.5 hours
Clinically important, potentially hazardous interactions with: clozapine, digoxin, leflunomide, meloxicam, natalizumab, nephrotoxic drugs, NSAIDs, phenytoin, pimecrolimus, probenecid, pyrimethamine, sipuleucel-T, tacrolimus, trastuzumab, vaccines
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
AGEP [4]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Cellulitis [3]
Cutaneous toxicity / skin toxicity [2]
Desquamation (10–14%)
Edema / fluid retention (see also peripheral edema) (<5%)
Erythema multiforme (<5%)
Hypersensitivity (<5%)
Peripheral edema (see also edema) [4]
Pruritus (itching) (<7%)
Radiation recall dermatitis [7]
Rash (10–14%) [22]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Hair
Alopecia / hair loss (<6%) [5]

Mucosal
Epistaxis (nosebleed) [2]
Mucositis (7%) [6]
Stomatitis (oral mucositis) (7–15%) [6]

Cardiovascular
Hypertension [8]
Venous thromboembolism [2]

Central Nervous System
Anorexia (19–22%) [9]
Depression (14%)
Dysgeusia (taste perversion) [2]
Fever (pyrexia) (includes hyperpyrexia) (<8%) [2]
Headache [4]
Insomnia [2]
Neurotoxicity (<9%)
Peripheral neuropathy [3]

Endocrine/Metabolic
ALT increased (8–10%) [4]
Appetite decreased [6]
AST increased (7–8%) [4]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<5%) [3]
Hyperglycemia (includes glucose increased) [2]
Hyperkalemia [2]
Hypokalemia [2]
Hypomagnesemia [3]
Hyponatremia [3]

Gastrointestinal/Hepatic
Abdominal pain (<5%)
Constipation (<6%) [5]
Diarrhea (5–13%) [13]
Gastrointestinal disorder / discomfort [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]
Nausea (19–31%) [20]
Vomiting (9–16%) [10]

Hematologic
Anemia (15–19%) [26]
Febrile neutropenia (<5%) [12]
Hemotoxicity [4]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (6–12%) [15]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [3]
Myelosuppression / bone marrow suppression / myelotoxicity [4]
Neutropenia (neutrophils decreased) (6–11%) [27]
Sepsis [2]
Thrombocytopenia (<8%) [18]
Thrombotic complications [2]

Neuromuscular/Skeletal
Asthenia / fatigue (25–34%) [34]

Ocular
Conjunctivitis (conjunctival inflammation) (<5%)
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) [3]
Lacrimation (<5%)

Renal
Nephrogenic diabetes insipidus [2]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]
Proteinuria [2]
Renal failure [2]

Respiratory
Cough [2]
Dysphonia (includes voice disorders / voice changes) [2]
Dyspnea / shortness of breath [4]
Hemoptysis [2]
Pharyngitis (sore throat) (15%)
Pneumonia [2]
Pneumonitis [2]
Pulmonary toxicity [2]

Other
Adverse effects / adverse reactions (53%) [16]
Allergic reactions (<5%)
Death [5]
Hiccups / singultus [2]
Infection (<5%) [7]

PEMIROLAST

Trade name: Alamast (Johnson & Johnson)
Indications: Pruritus of allergic conjunctivitis
Class: Mast cell stabilizer
Half-life: 4.5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Neuromuscular/Skeletal
Back pain (<5%)

Ocular
Ocular stinging (<5%)

Respiratory
Influenza- ('flu)-like syndrome (10–25%)

PEMOLINE

Trade name: Cylert (AbbVie)
Indications: Attention deficit disorder, narcolepsy
Class: Amphetamine
Half-life: 9–14 hours
Clinically important, potentially hazardous interactions with: pimozide
Pregnancy category: B
Note: This drug has been withdrawn.

Skin
Rash (>10%)

Central Nervous System
Choreoathetosis [7]
Tic disorder [2]
Tourette's syndrome [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [18]

PENBUTOLOL

Trade name: Levatol (Schwarz)
Indications: Hypertension
Class: Adrenergic beta-receptor antagonist
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: clonidine, epinephrine, verapamil
Pregnancy category: C
Note: Cutaneous side effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy.

Skin
Diaphoresis (see also hyperhidrosis) (2%)
Exanthems (<5%)
Flushing / rubefaction (<5%)

Other
Allergic reactions (<5%)

PENCICLOVIR

Trade name: Denavir (Novartis)
Indications: Herpes simplex (recurrent)
Class: Antiviral
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

Central Nervous System
Headache (5%)

PENICILLAMINE

Trade name: Depen (MedPointe)
Indications: Wilson's disease, rheumatoid arthritis
Class: Antidote, Chelator, Disease-modifying antirheumatic drug (DMARD)
Half-life: 1.7–3.2 hours
Clinically important, potentially hazardous interactions with: aluminum, antacids, ascorbic acid, bone marrow suppressants, chloroquine, clozapine, cytotoxic agents, diclofenac, ferrous sulfate, food, gold & gold compounds, hydroxychloroquine, iron, magnesium, meloxicam, primaquine, probenecid, sodium picosulfate
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: In the treatment of Wilson's disease, it is sometimes difficult to differentiate side effects due to the drug from those due to the effects of the disease.

Skin
Bullous dermatosis [3]
Bullous pemphigoid / pemphigoid [6]
Cicatricial pemphigoid [2]
Cutis laxa / elastolysis [14]
Dermatitis [4]
Dermatomyositis [14]
Edema of lip (<10%)
Ehlers–Danlos syndrome [2]
Elastosis perforans serpiginosa [45]
Epidermolysis bullosa [4]
Epidermolysis bullosa acquisita [2]
Erythema multiforme (<5%)
Exanthems [8]
Fragility [2]
Hypersensitivity [3]
Lichen planus (includes hypertrophic lichen planus) [4]
Lichenoid eruption / lichenoid reaction [7]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [44]
Morphea / localized scleroderma (see also scleroderma) [2]
Pemphigus [76]
Pemphigus erythematodes (pemphigus erythematosus) (Senear-Usher syndrome) (Senear–Usher) [10]

Pemphigus foliaceus [16]
Pemphigus herpetiformis [3]
Pemphigus vulgaris [2]
Penicillamine-induced degenerative dermopathy [3]
Peripheral edema (see also edema) (<10%)
Pruritus (itching) (44–50%) [2]
Pseudoxanthoma elasticum [16]
Psoriasis [4]
Purpura [5]
Rash (44–50%) [6]
Scleroderma (see also morphea / localized scleroderma) [7]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives (44–50%) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [7]

Hair
Alopecia / hair loss [3]
Hirsutism [2]

Nails
Nail pigmentation [4]

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [2]
Mucosal lesions (pemphigus-like) [2]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [5]
Stomatitis (oral mucositis) [6]

Central Nervous System
Ageusia (taste loss) / taste disorder (12%) [2]
Dysgeusia (taste perversion) (metallic taste) [8]
Hypogeusia (25–33%) [2]

Endocrine/Metabolic
Gynecomastia [5]

Hematologic
Hemotoxicity [2]

Neuromuscular/Skeletal
Dystonia [3]
Myasthenia gravis [73]
Polymyositis [8]

Ocular
Ocular myasthenia gravis [2]

Renal
Glomerulonephritis (includes membranous nephropathy) [3]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]
Proteinuria [2]

Respiratory
Pulmonary toxicity [2]

Other
Adverse effects / adverse reactions [2]

PENICILLIN G

Trade name: Crystapen (Britannia)
Indications: Anthrax, cellulitis, endocarditis, infections, otitis media, rheumatic fever, respiratory infections, septicemia
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 4 hours
Clinically important, potentially hazardous interactions with: estrogens, imipenem/cilastatin, imipenem/cilastatin, methotrexate, minocycline, phenindione, probenecid, sulfinpyrazone, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
Dermatitis [2]
Hypersensitivity [4]
Jarisch–Herxheimer reaction [21]
Nicolau syndrome [2]
Rash [4]
Serum sickness-like reaction [2]

Central Nervous System
Seizures [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Genitourinary
Cystitis [4]

Hematologic
Thrombosis [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Hoigne's syndrome [16]

PENICILLIN V

Trade name: V-cillin K (Lilly)
Indications: Cellulitis, endocarditis, erysipelas, oral infections, otitis media, rheumatic fever, scarlet fever, tonsillitis
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 4 hours
Clinically important, potentially hazardous interactions with: estrogens, imipenem/cilastatin, methotrexate, minocycline, neomycin, phenindione, probenecid, sulfinpyrazone, warfarin
Pregnancy category: B

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
DRESS syndrome [2]
Hypersensitivity [3]
Serum sickness [2]
Serum sickness-like reaction [2]
Urticaria / hives [3]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [3]

Gastrointestinal/Hepatic
Diarrhea [2]

Neuromuscular/Skeletal
Arthralgia [2]

PENTAMIDINE

Trade names: NebuPent (Astellas), Pentacarinat (Sanofi-Aventis), Pentam 300 (Astellas)
Indications: *Pneumocystis jiroveci* infection, trypanosomiasis, leishmaniasis
Class: Antimicrobial, Antiprotozoal
Half-life: 9.1–13.2 hours (intramuscular); 6.5 hours (intravenous)
Clinically important, potentially hazardous interactions with: adefovir, aminoglycosides, amiodarone, amisulpride, amitriptyline, amphotericin B, cisplatin, droperidol, erythromycin, foscarnet, insulin aspart, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, ivabradine, levomepromazine, moxifloxacin, phenothiazines, saquinavir, sparfloxacin, sulpiride, tricyclic antidepressants, trifluoperazine, vancomycin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: The rate of adverse side effects is increased in patients with AIDS.

Skin
Exanthems (<15%) [10]
Pruritus (itching) [2]
Rash (<47%) [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives [3]

Cardiovascular
QT interval prolonged / QT prolongation [8]
Torsades de pointes [4]

Central Nervous System
Dysgeusia (taste perversion) (metallic taste) (2%)
Paresthesias [2]
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Pancreatitis / acute pancreatitis [6]

Local
Injection-site irritation [2]
Injection-site pain [2]
Injection-site reaction (>10%)

Neuromuscular/Skeletal
Myalgia/Myopathy (<5%)
Rhabdomyolysis [4]

Other
Adverse effects / adverse reactions [6]

PENTAZOCINE

Trade name: Talwin (Hospira)
Indications: Pain
Class: Opiate agonist
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: cimetidine, hydrocodone, hydromorphone, morphine, oliceridine, oxymorphone, tapentadol
Pregnancy category: C

Skin
Rash (<10%)
Scleroderma (see also morphea / localized scleroderma) [2]
Sclerosis [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Ulcerations [9]

Mucosal
Xerostomia (dry mouth) (<10%)

Central Nervous System
Hallucinations [2]

Local
Injection-site calcification [2]
Injection-site granuloma [3]
Injection-site induration [8]

Neuromuscular/Skeletal
Fibromyalgia [2]

PENTOBARBITAL

Indications: Insomnia, sedation
Class: Barbiturate
Half-life: 15–50 hours
Clinically important, potentially hazardous interactions with: alcohol, anticoagulants, antihistamines, brompheniramine, buclizine, chlorpheniramine, dicumarol, ethanolamine, imatinib, nalbuphine, pizotifen, warfarin
Pregnancy category: D

Skin
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Local
Injection-site pain (<10%)

PENTOSAN

Synonym: PPS
Trade name: Elmiron (Ortho-McNeil)
Indications: Bladder pain, interstitial cystitis
Class: Analgesic; urinary
Half-life: 4.8 hours
Clinically important, potentially hazardous interactions with: abciximab, argatroban, cilostazol, clopidogrel, dabigatran, meloxicam, tinzaparin
Pregnancy category: B

Skin
Rash (<10%)
Hair
Alopecia / hair loss (<10%)
Ocular
Maculopathy [3]

PENTOSTATIN

Synonym: deoxycoformycin
Trade name: Nipent (SuperGen)
Indications: Hairy-cell leukemia
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 5–15 hours
Clinically important, potentially hazardous interactions with: aldesleukin, clofazimine, cyclophosphamide, fludarabine, nelarabine
Pregnancy category: D

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<3%)
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<3%)
Bruise / bruising / contusion / ecchymosis (ecchymoses) (3–10%)
Bullous dermatosis (3–10%)
Candidiasis / candidosis (<3%)
Cutaneous toxicity / skin toxicity [2]
Diaphoresis (see also hyperhidrosis) (3–10%)
Eczema / eczematous reaction / eczematous eruption (3–10%)
Exanthems (3–10%) [2]
Exfoliative dermatitis (<3%)
Facial edema (<3%)
Flushing / rubefaction (<3%)
Herpes simplex (3–10%)
Herpes zoster (3–10%) [3]
Peripheral edema (see also edema) (3–10%)
Petechiae (3–10%)
Photosensitivity (<3%)
Pigmentation (3–10%)
Pruritus (itching) (3–10%)
Psoriasis (<3%)
Purpura (<3%)
Rash (26%) [2]
Recall reaction [2]
Seborrhea (3–10%)
Xerosis / xeroderma (see also dry skin) (3–10%)
Hair
Alopecia / hair loss (<3%)
Mucosal
Gingivitis (<3%)
Leukoplakia (<3%)
Stomatitis (oral mucositis) (<10%)
Cardiovascular
Thrombophlebitis (3–10%)
Central Nervous System
Dysgeusia (taste perversion) (<3%)
Fever (pyrexia) (includes hyperpyrexia) [5]
Paresthesias (3–10%)
Endocrine/Metabolic
Gynecomastia (<3%)
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Genitourinary
Vaginitis (includes vulvitis) (<3%)
Hematologic
Hemolytic uremic syndrome [2]
Local
Injection-site bleeding (<3%)
Injection-site inflammation (<3%)
Neuromuscular/Skeletal
Myalgia/Myopathy (>10%)
Other
Adverse effects / adverse reactions (17%)
Allergic reactions (>10%)
Infection [6]

PENTOXIFYLLINE

Trade names: Pentoxil (Upsher-Smith), Trental (Sanofi-Aventis)
Indications: Peripheral vascular disease, intermittent claudication
Class: Vasodilator, peripheral, Xanthine alkaloid
Half-life: 0.4–0.8 hours
Clinically important, potentially hazardous interactions with: abciximab, benazepril, captopril, ceftobiprole, cilostazol, ciprofloxacin, citalopram, clevidipine, clopidogrel, diclofenac, enalapril, eptifibatide, fosinopril, insulin degludec, insulin glargine, insulin glulisine, irbesartan, lisinopril, meloxicam, olmesartan, quinapril, ramipril, tinzaparin
Pregnancy category: C

Skin
Flushing / rubefaction (2%) [2]
Mucosal
Xerostomia (dry mouth) [2]

PEPPERMINT

Family: Labiatae
Scientific name: *Mentha piperita*
Indications: Dyspepsia, regress pancreatic, mammary, and liver tumors, irritable bowel syndrome, colonic spasm, colic, nausea, vomiting, biliary disorders, common cold, dysmenorrhoea, anxiolytic. **Topical:** pain, itching, inflammations, headaches, toothache, pruritus, urticaria, mosquito repellant. **Vapor:** bronchial catarrh, fever, influenza. Flavoring, cosmetics, toothpaste, mouthwash
Class: Analgesic, Antiemetic, Carminative, Vasodilator, peripheral
Half-life: N/A
Clinically important, potentially hazardous interactions with: cisapride
Pregnancy category: N/A

Skin
Burning / skin burning sensation (anal) [3]
Contact dermatitis [5]
Dermatitis [5]
Hypersensitivity [2]
Sensitivity [2]
Mucosal
Cheilitis (inflammation of the lips) [3]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]
Stomatitis (oral mucositis) [2]
Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [2]
Vomiting [2]
Other
Adverse effects / adverse reactions [6]
Allergic reactions [2]
Side effects [3]

PERAMIVIR

Trade name: Rapivab (BioCryst)
Indications: Influenza
Class: Antiviral, Neuraminidase inhibitor
Half-life: ~20 hours
Clinically important, potentially hazardous interactions with: live attenuated influenza vaccine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Rash [2]
Cardiovascular
Hypertension (2%)
Central Nervous System
Behavioral disturbances / personality changes [2]
Insomnia (3%)
Endocrine/Metabolic
ALT increased (3%)
AST increased (3%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (4%)

Hyperglycemia (includes glucose increased) (5%)

Gastrointestinal/Hepatic
Constipation (4%)
Diarrhea (8%) [6]
Nausea [4]
Vomiting [4]

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) (8%) [4]
Thrombocytopenia [2]

PERAMPANEL

Trade name: Fycompa (Eisai)
Indications: Partial-onset seizures, primary generalized tonic-clonic seizures
Class: AMPA glutamate receptor antagonist, Anticonvulsant, Antiepileptic
Half-life: ~105 hours
Clinically important, potentially hazardous interactions with: alcohol, carbamazepine, oral contraceptives, oxcarbazepine, phenobarbital, phenytoin, primidone, rifampin, St John's wort
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SERIOUS PSYCHIATRIC AND BEHAVIORAL REACTIONS

Skin
Peripheral edema (see also edema) (<2%)
Rash [2]

Mucosal
Oropharyngeal pain (2%)

Central Nervous System
Aggression (includes anger) (<3%) [15]
Anxiety (2–4%) [2]
Balance disorder (<5%) [2]
Behavioral disturbances / personality changes [8]
Cognitive impairment [2]
Confusion (<2%) [2]
Depression [3]
Dysarthria (<4%)
Euphoria / elation (<2%)
Fall [3]
Gait instability / postural instability (<4%) [14]
Headache (11–13%) [21]
Hypersomnia (<3%)
Hypoesthesia (numbness) (<3%)
Incoordination (<2%)
Irritability (4–12%) [28]
Memory loss/memory impaired (<2%)
Mood changes (<2%)
Neurotoxicity [2]
Paresthesias (<2%)
Psychiatric adverse effect [2]
Sedation [3]
Seizures [3]
Somnolence (drowsiness) (9–18%) [50]
Suicidal ideation [3]
Vertigo / dizziness (16–43%) [59]

Endocrine/Metabolic
Hyponatremia (<2%)
Weight gain (4%) [12]

Gastrointestinal/Hepatic
Constipation (2–3%)
Nausea (3–8%) [8]
Vomiting (2–4%) [2]

Neuromuscular/Skeletal
Arthralgia (<3%)
Asthenia / fatigue (<12%) [25]
Ataxia (<8%) [9]
Back pain (2–5%)
Bone or joint pain (<2%)
Myalgia/Myopathy (<3%)
Pain in extremities (<3%)

Ocular
Diplopia (double vision) (<3%)
Vision blurred (<4%)

Respiratory
Cough (<4%)
Nasopharyngitis [7]
Upper respiratory tract infection (3–4%) [2]

Other
Adverse effects / adverse reactions [13]

PERFLUTREN

Trade names: Definity (DuPont), Optison (Amersham)
Indications: Echocardiogram imaging
Class: Radiographic contrast medium
Half-life: 1.3 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C (Definity is pregnancy category B)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SERIOUS CARDIOPULMONARY REACTIONS

Skin
Flushing / rubefaction (<4%)

Central Nervous System
Dysgeusia (taste perversion) (2%)
Headache (3–5%)
Vertigo / dizziness (<3%)

Gastrointestinal/Hepatic
Nausea (<4%)
Vomiting (4%)

PERGOLIDE

Trade name: Permax (Lilly)
Indications: Parkinsonism
Class: Dopamine receptor agonist, Ergot alkaloid
Half-life: 27 hours
Clinically important, potentially hazardous interactions with: levomepromazine, risperidone, zuclopenthixol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: This drug has been withdrawn in Canada and the USA.
Warning: CARDIAC VALVULOPATHY and FIBROTIC COMPLICATIONS

Skin
Diaphoresis (see also hyperhidrosis) (2%)
Edema / fluid retention (see also peripheral edema) (2%)
Erythromelalgia / erythermalgia [2]
Fibrosis [2]
Peripheral edema (see also edema) (<10%)
Rash (3%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Mucosal
Xerostomia (dry mouth) (<10%)

Cardiovascular
Hypotension [2]
Myocardial toxicity [10]
Valvulopathy [9]

Central Nervous System
Chills (<10%)
Dysgeusia (taste perversion) (2%)
Hallucinations [3]
Impulse control disorder [2]
Paresthesias (2%)
Tremor (<10%)

Respiratory
Influenza- ('flu)-like syndrome (<10%)

PERICYAZINE

Trade name: Neulactil (Winthrop)
Indications: Schizophrenia, anxiety, psychomotor agitation, violent/impulsive behaviour
Class: Neuroleptic
Half-life: 12.4 hours
Clinically important, potentially hazardous interactions with: adrenaline, alcohol, alpha adrenoceptor blocking agents, amfetamines, antiarrhythmics, anticholinergic drugs, antidepressants, antipsychotics, barbiturates, clonidine, deferoxamine, guanethidine, levodopa, lithium, prochlorperazine
Note: Not available in the USA.

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (30%)

PERINDOPRIL

Trade names: Aceon (Solvay), Prestalia (Symplmed)
Indications: Hypertension, coronary disease
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive
Half-life: 1.5–3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Prestalia is perindopril and amlodipine.
Warning: FETAL TOXICITY

Skin
Angioedema [6]
Edema / fluid retention (see also peripheral edema) (4%)
Peripheral edema (see also edema) [4]
Pruritus (itching) (<10%)
Rash (<10%)

Mucosal
Tongue edema [2]

Central Nervous System
Paresthesias (2%)

Vertigo / dizziness [4]

Neuromuscular/Skeletal
Back pain (6%)

Respiratory
Cough (12%) [18]

Other
Adverse effects / adverse reactions [2]

PERMETHRIN

Indications: Scabies
Class: Parasiticide
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

PERPHENAZINE

Trade names: Decentan (Merck), Fentazin (Goldshield), Trilafon (Schering)
Indications: Psychotic disorders, nausea and vomiting
Class: Antiemetic, Antipsychotic, Phenothiazine
Half-life: 9 hours
Clinically important, potentially hazardous interactions with: cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, paroxetine hydrochloride, sparfloxacin, viloxazine
Pregnancy category: C
Note: Perphenazine is also used in combination with amitriptyline.

Skin
Exanthems [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
Rash (<10%)

Central Nervous System
Tardive syndrome / tardive dyskinesia [2]

Endocrine/Metabolic
Mastodynia (<10%)

Genitourinary
Priapism [2]

Neuromuscular/Skeletal
Rhabdomyolysis [2]

PERTUZUMAB

Trade name: Perjeta (Genentech)
Indications: HER2-positive metastatic breast cancer (in combination with trastuzumab and docetaxel)
Class: HER2/neu receptor antagonist (HER2 receptor antagonist), Monoclonal antibody
Half-life: 18 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: EMBRYO-FETAL TOXICITY

Skin
Hypersensitivity (10%)
Peripheral edema (see also edema) (23%)
Pruritus (itching) (14%)
Rash (34%) [9]
Xerosis / xeroderma (see also dry skin) (11%)

Hair
Alopecia / hair loss (61%)

Nails
Nail disorder (23%)
Paronychia (7%)

Mucosal
Mucosal inflammation (28%)
Stomatitis (oral mucositis) (19%)

Cardiovascular
Cardiotoxicity (left ventricular dysfunction) (4%) [2]

Central Nervous System
Dysgeusia (taste perversion) (18%)
Fever (pyrexia) (includes hyperpyrexia) (19%)
Headache (21%)
Insomnia (13%)
Peripheral neuropathy (32%) [3]
Vertigo / dizziness (13%)

Endocrine/Metabolic
ALT increased [3]
Appetite decreased (29%)
AST increased [2]

Gastrointestinal/Hepatic
Constipation (15%)
Diarrhea (67%) [19]
Nausea (42%) [5]
Vomiting (24%)

Hematologic
Anemia (23%) [2]
Febrile neutropenia (14%) [7]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (18%) [2]
Neutropenia (neutrophils decreased) (53%) [12]
Thrombocytopenia [3]

Neuromuscular/Skeletal
Arthralgia (16%)
Asthenia / fatigue (26–38%) [6]
Myalgia/Myopathy (23%)

Ocular
Lacrimation (14%)

Respiratory
Nasopharyngitis (12%)
Pleural effusion (5%)
Upper respiratory tract infection (17%) [2]

Other
Adverse effects / adverse reactions [5]
Allergic reactions [2]

PHELLODENDRON

Family: Rutaceae
Scientific names: *Phellodendron amurense, Phellodendron chinense, Phellodendron wilsonii*
Indications: Anti-inflammatory, muscle and joint pain, gastroenteritis, abdominal pain, diarrhea, gastric ulcers, thrush, cholera, night sweats, fever, nocturnal emissions, dysentery, jaundice, leukorrhea, weakness and edema of legs, consumptive fever. **Topical:** sores, skin infection with local redness and swelling, eczema with itching, periodontal disease (in dentifrice)
Class: COX-2 selective inhibitor, Immunosuppressant
Half-life: N/A
Clinically important, potentially hazardous interactions with: aspirin, NSAIDs
Pregnancy category: N/A
Note: Contra-indicated in patients with impaired renal function, impaired heart function, or hypertension.

PHENACEMIDE

Trade name: Phenurone (AbbVie)
Indications: Epilepsy
Class: Anticonvulsant
Half-life: 22–25 hours
Clinically important, potentially hazardous interactions with: ethotoin

PHENAZOPYRIDINE

Trade name: Pyridium (Warner Chilcott)
Indications: Urinary urgency, dysuria
Class: Analgesic; urinary
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Pigmentation [2]

Hematologic
Methemoglobinemia [10]
Sulfhemoglobinemia [4]

PHENDIMETRAZINE

Trade name: Bontril (Amarin)
Indications: Obesity
Class: Amphetamine
Half-life: 5–12.5 hours
Clinically important, potentially hazardous interactions with: cyclobenzaprine, fluoxetine, fluvoxamine, MAO inhibitors, paroxetine hydrochloride, phenelzine, sertraline, tranylcypromine
Pregnancy category: C
Note: Phendimetrazine has been withdrawn in the European Union and some other countries.

Mucosal
Xerostomia (dry mouth) [2]

Central Nervous System
Headache [2]
Insomnia [2]

Gastrointestinal/Hepatic
Constipation [2]

PHENELZINE

Trade name: Nardil (Pfizer)
Indications: Depression
Class: Antidepressant, Monoamine oxidase (MAO) inhibitor, Muscarinic antagonist
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: amitriptyline, amoxapine, amphetamines, bupropion, citalopram, clomipramine, cyproheptadine, desipramine, dextroamphetamine, dextromethorphan, diethylpropion, dopamine, doxepin, entacapone, ephedra, ephedrine, epinephrine, fluoxetine, fluvoxamine, ginseng, imipramine, isoetharine, levodopa, mazindol, meperidine, methamphetamine, nefazodone, nortriptyline, opicapone, ozanimod, paroxetine hydrochloride, phendimetrazine, phentermine, phenylephrine, pizotifen, propoxyphene, protriptyline, pseudoephedrine, rizatriptan, sertraline, sibutramine, sumatriptan, sympathomimetics, tramadol, tricyclic antidepressants, trimipramine, tryptophan, valbenazine, venlafaxine, viloxazine, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Peripheral edema (see also edema) [2]
Photosensitivity [2]
Pruritus (itching) (13%)
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Hallucinations [2]
Mania [2]
Psychosis [3]
Serotonin syndrome [3]

PHENOBARBITAL

Synonyms: phenobarbitone; phenylethylmalonylurea
Trade name: Luminal (Sanofi-Aventis)
Indications: Insomnia, seizures
Class: Anticonvulsant, Barbiturate, CYP3A4 inducer
Half-life: 2–6 days
Clinically important, potentially hazardous interactions with: abacavir, abiraterone, afatinib, alcohol, amprenavir, anticoagulants, antihistamines, apremilast, aprepitant, betamethasone, bictegravir/emtricitabine/tenofovir alafenamide, boceprevir, brompheniramine, buclizine, buprenorphine, cabazitaxel, cabozantinib, caffeine, calcifediol, cenobamate, chlorpheniramine, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, crizotinib, darunavir, dasatinib, deferasirox, delavirdine, dexamethasone, dicumarol, doravirine, doravirine/lamiduvine/tenofovir disoproxil, doxercalciferol, dronedarone, eliglustat, emtricitabine/rilpivirine/tenofovir alafenamide, enzalutamide, erlotinib, estradiol, ethanolamine, ethosuximide, etravirine, fesoterodine, flibanserin, fluconazole, flunisolide, fosamprenavir, gefitinib, hydrocortisone, imatinib, indinavir, influenza vaccine, itraconazole, ixabepilone, lacosamide, lapatinib, ledipasvir & sofosbuvir, lisdexamfetamine, lopinavir, meperidine, methsuximide, methylprednisolone, midazolam, mifepristone, nilotinib, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, osilodrostat, osilodrostat, oxcarbazepine, oxtriphylline, paroxetine hydrochloride, perampanel, piracetam, pizotifen, prednisolone, prednisone, propranolol, ranolazine, regorafenib, rilpivirine, riociguat, rivaroxaban, roflumilast, romidepsin, rufinamide, simeprevir, sodium oxybate, sofosbuvir, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, solifenacin, sonidegib, sorafenib, sunitinib, telaprevir, telithromycin, temsirolimus, teniposide, tenofovir alafenamide, tezacaftor/ivacaftor, tiagabine, ticagrelor, tipranavir, trabectedin, triamcinolone, ulipristal, vandetanib, vemurafenib, voriconazole, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Aromatic antiepileptic drugs, phenytoin, phenobarbital, carbamazepine and primidone, are a frequent cause of severe cutaneous adverse reactions. A strong genetic association between HLA-B*1502 and phenobarbital-induced Stevens-Johnson syndrome and toxic epidermal necrolysis has been shown in Han Chinese patients.

Skin
Bullous dermatosis [5]
DRESS syndrome [24]
Erythema multiforme [7]
Erythroderma [2]
Exanthems [13]
Exfoliative dermatitis [6]
Fixed eruption [9]
Hypersensitivity [12]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Purpura [2]
Rash [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [40]
Nails
Nail hypoplasia [2]
Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [4]
Central Nervous System
Behavioral disturbances / personality changes [3]
Somnolence (drowsiness) [2]
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Local
Injection-site pain (>10%)
Injection-site thrombophlebitis (>10%)
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Hypoplasia of phalanges [2]
Other
Allergic reactions [2]
Death [2]
Side effects [2]
Teratogenicity [5]

PHENOLPHTHALEIN

Trade name: Ex-Lax (Novartis)
Indications: Constipation
Class: Stimulant laxative
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Erythema multiforme [2]
Exanthems [2]
Fixed eruption [17]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [9]

PHENOXY-BENZAMINE

Trade name: Dibenzyline (Wellspring)
Indications: Pheochromocytoma
Class: Adrenergic alpha-receptor antagonist
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: epinephrine
Pregnancy category: C

Skin
Dermatitis [2]
Mucosal
Xerostomia (dry mouth) (<10%)
Cardiovascular
Hypotension [3]
Central Nervous System
Vertigo / dizziness [2]
Genitourinary
Impotence [2]

PHENSUXIMIDE

Indications: Petit mal seizures
Class: Anticonvulsant
Half-life: 5–12 hours
Clinically important, potentially hazardous interactions with: none known

PHENTERMINE

Trade names: Adipex-P (Teva), Ionamin (Celltech), Lomaira (Avanthi), Qsymia (Vivus)
Indications: Obesity
Class: Amphetamine
Half-life: 19–24 hours
Clinically important, potentially hazardous interactions with: fluoxetine, fluvoxamine, MAO inhibitors, paroxetine hydrochloride, phenelzine, sertraline, tranylcypromine
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Qsymia is phentermine and topiramate.

Mucosal
Xerostomia (dry mouth) [8]

Cardiovascular
Cardiotoxicity [3]
Hypertension [11]
Palpitation [3]
Tachycardia [5]
Valvulopathy [17]
Central Nervous System
Anxiety [2]
Cognitive impairment [4]
Depression [3]
Dysgeusia (taste perversion) [6]
Headache [2]
Insomnia [8]
Irritability [2]
Paresthesias [8]
Vertigo / dizziness [6]
Endocrine/Metabolic
Acidosis (includes lactic acidosis) [3]
Gastrointestinal/Hepatic
Constipation [7]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Other
Death [4]
Teratogenicity [2]

PHENTOLAMINE

Trade name: Regitine (Novartis)
Indications: Hypertensive episodes in pheochromocytoma
Class: Adrenergic alpha-receptor antagonist
Half-life: 19 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Flushing / rubefaction (<10%) [2]
Central Nervous System
Headache [2]
Genitourinary
Priapism [4]

PHENYLBUTAZONE

Indications: Ankylosing spondylitis, gouty arthritis, osteoarthritis, rheumatoid arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 54–99 hours
Clinically important, potentially hazardous interactions with: anticoagulants, antidiabetics, barbiturates, chlorpheniramine, corticosteroids, digoxin, gliclazide, lithium, methotrexate, methylphenidate, phenytoin, rifampin, sulfonamides
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Angioedema [3]
Contact dermatitis [6]
DRESS syndrome [2]
Erythema multiforme [4]
Exfoliative dermatitis [2]
Fixed eruption [4]
Hypersensitivity [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [11]
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Mucosal
Sialadenitis [3]

PHENYLEPHRINE

Trade names: Rynatan (MedPointe), Tussi-12D (MedPointe)
Indications: Nasal congestion, glaucoma, hypotension
Class: Adrenergic alpha-receptor agonist, Sympathomimetic
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: epinephrine, furazolidone, iobenguane, MAO inhibitors, oxprenolol, phenelzine, tranylcypromine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis [16]
Hypersensitivity [2]
Stinging (from nasal or ophthalmic preparations) (<10%)
Cardiovascular
Bradycardia / sinus bradycardia [3]
Hypertension [2]
Ocular
Blepharoconjunctivitis [4]
Periorbital dermatitis [4]
Other
Adverse effects / adverse reactions [2]

PHENYL-PROPANOLAMINE

Synonym: PPA
Trade name: St. Joseph Aspirin-Free Cold Tablets (McNeil)
Indications: Nasal decongestion, anorexiant
Class: Adrenergic alpha-receptor agonist
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: caffeine, ephedrine, fluoxetine, fluvoxamine, furazolidone, iobenguane, paroxetine hydrochloride, sertraline, tranylcypromine
Pregnancy category: C

Neuromuscular/Skeletal
Rhabdomyolysis [4]
Other
Death [2]

PHENYTOIN

Synonyms: diphenylhydantoin; DPH; phenytoin sodium
Trade name: Dilantin (Pfizer)
Indications: Grand mal seizures
Class: Antiarrhythmic class Ib, Anticonvulsant, Antiepileptic; hydantoin, CYP3A4 inducer
Half-life: 7–42 hours (dose dependent)
Clinically important, potentially hazardous interactions with: abacavir, abiraterone, acitretin, afatinib, amiodarone, amitriptyline, amlodipine, amprenavir, apixaban, apremilast, aprepitant, artemether/lumefantrine, beclomethasone, bictegravir/emtricitabine/tenofovir alafenamide, boceprevir, brigatinib, brivaracetam, buprenorphine, cabazitaxel, cabozantinib, caffeine, calcium, capecitabine, caspofungin, cefazolin, cenobamate, ceritinib, chloramphenicol, cimetidine, ciprofloxacin, citalopram, clobazam, clorazepate, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, cobimetinib, colesevelam, copanlisib, crizotinib, cyclosporine, cyproterone, dabigatran, daclatasvir, darunavir, dasatinib, deferasirox, deflazacort, delavirdine, dexamethasone, diazoxide, disulfiram, dopamine, doravirine, doravirine/lamiduvine/tenofovir disoproxil, doxycycline, dronedarone, efavirenz, elbasvir & grazoprevir, eliglustat, emtricitabine/rilpivirine/tenofovir alafenamide, enzalutamide, erlotinib, eslicarbazepine, ethosuximide, etravirine, everolimus, ezogabine, fesoterodine, flibanserin, floxuridine, fluconazole, flunisolide, fluoxetine, fosamprenavir, fostemsavir, gefitinib, gold & gold compounds, hydrocortisone, ibrexafungerp, ibrexafungerp, ibrutinib, idelalisib, imatinib, indinavir, influenza vaccine, isoniazid, isotretinoin, isradipine, itraconazole, ivabradine, ixabepilone, ixazomib, lacosamide, lapatinib, ledipasvir & sofosbuvir, leflunomide, letermovir, levodopa, levomepromazine, levonorgestrel, lisdexamfetamine, lomustine, lopinavir, lumateperone, meperidine, metformin, methsuximide, methylprednisolone, metronidazole, midazolam, midostaurin, mifepristone, mivacurium, naldemedine, nelfinavir, neratinib, nifedipine, nilotinib, nilutamide, nintedanib, olaparib, oliceridine, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, omeprazole, ondansetron, osimertinib, oxcarbazepine, oxtriphylline, palbociclib, paroxetine hydrochloride, pemetrexed, perampanel, phenylbutazone, pimavanserin, piracetam, ponatinib, ponesimod, ponesimod, posaconazole, prednisolone, prednisone, propranolol, regorafenib, rifapentine, rilpivirine, riociguat, risperidone, ritonavir, rivaroxaban, roflumilast, romidepsin, saquinavir, simeprevir, sofosbuvir, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, solifenacin, sonidegib, sorafenib, St John's wort, sucralfate, sunitinib, tegafur/gimeracil/oteracil, telaprevir, telithromycin, temsirolimus, teniposide, tenofovir alafenamide, tezacaftor/ivacaftor, thalidomide, tiagabine, ticagrelor, ticlopidine, tinidazole, tipranavir, tizanidine, tolvaptan, triamcinolone, trimethoprim, ubrogepant, ulipristal, uracil/tegafur, valbenazine, vandetanib, vemurafenib, venetoclax, vigabatrin, vorapaxar, voriconazole, vortioxetine, zidovudine, zuclopenthixol
Pregnancy category: D

Note: Aromatic antiepileptic drugs, phenytoin, phenobarbital, carbamazepine and primidone, are a frequent cause of severe cutaneous adverse reactions. A strong genetic association between HLA-B*1502 and phenytoin-induced Stevens-Johnson syndrome and toxic epidermal necrolysis has been shown in Han Chinese patients. Children whose mothers receive phenytoin during pregnancy are born with fetal hydantoin syndrome. The main features of this syndrome are mental and growth retardation, unusual facies, digital and nail hypoplasia, and coarse scalp hair. Occasionally neonatal acne will be present.

Skin
- Acne keloid [2]
- Acneiform eruption / acneiform dermatitis / acneiform rash [8]
- AGEP [5]
- Angioedema [2]
- Coarse facies [4]
- Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR)) [5]
- Dermatomyositis [2]
- DRESS syndrome [46]
- Erythema multiforme [11]
- Erythroderma [9]
- Exanthems (6–71%) [22]
- Exfoliative dermatitis [15]
- Fixed eruption [5]
- Hypersensitivity [47]
- Kaposi's varicelliform eruption [2]
- Linear IgA bullous dermatosis [8]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [19]
- Lymphoma [6]
- Mycosis fungoides [7]
- Pemphigus [2]
- Pigmentation [4]
- Pruritus (itching) [5]
- Pseudolymphoma [31]
- Purple glove syndrome [10]
- Purpura [4]
- Pustules / pustular eruption [3]
- Rash (<10%) [13]
- Reticular hyperplasia [2]
- Serum sickness-like reaction [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (14%) [103]
- Urticaria / hives [5]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) (2%) [11]

Hair
- Alopecia / hair loss [3]
- Hirsutism [8]

Nails
- Nail changes [2]
- Nail hypoplasia [3]

Mucosal
- Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth (>10%) [60]
- Mucocutaneous eruption (includes fixed eruption) [2]

Cardiovascular
- Bradycardia / sinus bradycardia [4]
- Hypotension [3]
- Polyarteritis nodosa [2]

Central Nervous System
- Ageusia (taste loss) / taste disorder [2]
- Chorea [2]
- Dyskinesia [2]
- Fetal hydantoin syndrome [8]
- Hallucinations [2]
- Hallucinations, visual (see also Charles Bonnet syndrome) [2]
- Hypothermia [2]
- Neurotoxicity [2]
- Paresthesias [2]
- Restless legs syndrome [2]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [10]

Local
- Injection-site extravasation [2]
- Injection-site necrosis [2]

Neuromuscular/Skeletal
- Ataxia [3]
- Digital malformations [4]
- Dystonia [2]
- Myalgia/Myopathy [2]
- Myasthenia gravis [2]
- Osteoporosis [2]
- Rhabdomyolysis [6]

Respiratory
- Cough [2]

Other
- Adverse effects / adverse reactions [4]
- Death [4]
- Hiccups / singultus [2]
- Teratogenicity [3]

PHYSOSTIGMINE

Synonym: eserine
Indications: Miotic in glaucoma treatment, reverses toxic CNS effects caused by anticholinergic drugs
Class: Cholinesterase inhibitor
Half-life: 15–40 minutes
Clinically important, potentially hazardous interactions with: bethanechol, corticosteroids, galantamine, methacholine, succinylcholine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Antilirium is a derivative of the Calabar bean, and its active moiety, physostigmine, is also known as eserine. Physostigmine is used to reverse the effect upon the nervous system caused by clinical or toxic dosages of drugs and herbs capable of producing the anticholinergic syndrome. Some of the drugs responsible are: amitriptyline, amoxapine, atropine, benztropine, biperiden, clidinium, cyclobenzaprine, desipramine, doxepin, hyoscyamine, imipramine, lorazepam, maprotiline, nortriptyline, protriptyline, propantheline, scopolamine, trimipramine. Some herbals that can elicit the anticholinergic syndrome are black henbane, deadly nightshade, Devil's apple, Jimson weed, Loco seeds or weeds, Matrimony vine, night blooming jessamine, stinkweed.

Skin
- Diaphoresis (see also hyperhidrosis) (>10%)
- Erythema (<10%)

Mucosal
- Sialorrhea (ptyalism; hypersalivation) (>10%)

Cardiovascular
- Atrial fibrillation [2]
- Bradycardia / sinus bradycardia [3]

Central Nervous System
- Myokymia / twitching (<10%)
- Seizures (<10%) [4]

Gastrointestinal/Hepatic
- Nausea [4]
- Vomiting [3]

Ocular
- Epiphora (>10%)
- Ocular burning (<10%)
- Ocular stinging (>10%)

PHYTONADIONE

Synonym: vitamin K_1
Trade names: Mephyton (Valeant), Vitamin K (AbbVie)
Indications: Coagulation disorders
Class: Vitamin
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: cholestyramine, orlistat, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
- Dermatitis [9]
- Eczema / eczematous reaction / eczematous eruption [2]
- Nicolau syndrome [2]
- Scleroderma (see also morphea / localized scleroderma) [12]
- Urticaria / hives [4]

Local
- Injection-site eczematous eruption [10]
- Injection-site erythema [2]
- Injection-site induration [15]

Other
- Allergic reactions [2]

PILOCARPINE

Trade names: Ocusert Pilo (Akorn), Pilopine (Alcon), Salagen (MGI)
Indications: Glaucoma, miosis induction, xerostomia
Class: Miotic, Muscarinic cholinergic agonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: acebutolol, galantamine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Burning / skin burning sensation (<10%)
- Dermatitis [4]
- Diaphoresis (see also hyperhidrosis) [6]
- Edema / fluid retention (see also peripheral edema) (4%)
- Hyperhidrosis (see also diaphoresis) [2]
- Hypersensitivity (<10%)
- Stinging (<10%)

Central Nervous System
- Dysgeusia (taste perversion) (2%)
- Headache [2]

Ocular
Cataract [2]

PIMAVANSERIN

Trade name: Nuplazid (Acadia)
Indications: Hallucinations and delusions associated with Parkinson's disease psychosis
Class: Antipsychotic
Half-life: 57 hours
Clinically important, potentially hazardous interactions with: amiodarone, carbamazepine, chlorpromazine, clarithromycin, disopyramide, drugs known to prolong the QT interval, gatifloxacin, indinavir, itraconazole, ketoconazole, moxifloxacin, phenytoin, procainamide, quinidine, rifampin, sotalol, St John's wort, strong CYP3A4 inhibitors and inducers, thioridazine, ziprasidone
Pregnancy category: N/A (No available data to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Peripheral edema (see also edema) (7%) [5]
Cardiovascular
QT interval prolonged / QT prolongation [3]
Central Nervous System
Confusion (6%) [4]
Gait instability / postural instability (2%) [6]
Hallucinations (5%) [4]
Headache [2]
Gastrointestinal/Hepatic
Constipation (4%)
Nausea (7%) [2]
Genitourinary
Urinary tract infection [6]

PIMECROLIMUS

Trade name: Elidel (Valeant)
Indications: Second-line therapy for the short-term and non-continuous chronic treatment of mild to moderate atopic dermatitis
Class: Immunomodulator, Macrolactam
Half-life: N/A
Clinically important, potentially hazardous interactions with: abatacept, alcohol, alefacept, aprepitant, azacitidine, betamethasone, cabazitaxel, calcium channel blockers, cimetidine, conivaptan, CYP3A4 inhibitors, darunavir, delavirdine, denileukin, docetaxel, efavirenz, erythromycin, fingolimod, fluconazole, gefitinib, immunosuppressants, indinavir, itraconazole, ketoconazole, lapatinib, leflunomide, lenalidomide, oxaliplatin, pazopanib, pemetrexed, pralatrexate, telithromycin, temsirolimus, triamcinolone, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: LONG-TERM SAFETY OF TOPICAL CALCINEURIN INHIBITORS HAS NOT BEEN ESTABLISHED.

Skin
Burning / skin burning sensation [5]
Dermatitis [2]
Peripheral edema (see also edema) [3]
Pruritus (itching) [2]
Rosacea [5]
Tinea [3]
Cardiovascular
Cardiac arrest [2]
Local
Application-site burning (8–26%)
Application-site reactions (2%)
Respiratory
Upper respiratory tract infection (19%)
Other
Infection (5%) [2]

PIMOZIDE

Trade name: Orap (Teva)
Indications: Tourette's syndrome, schizophrenia
Class: Antipsychotic
Half-life: 50 hours
Clinically important, potentially hazardous interactions with: amitriptyline, amoxapine, amphetamines, amprenavir, aprepitant, arsenic, artemether/lumefantrine, astemizole, atazanavir, azithromycin, azole antifungals, boceprevir, ceritinib, citalopram, clarithromycin, crizotinib, darunavir, dasatinib, degarelix, delavirdine, dirithromycin, dolasetron, droperidol, efavirenz, eluxadoline, enzalutamide, erythromycin, fluoxetine, fosamprenavir, grapefruit juice, imatinib, indinavir, itraconazole, ketoconazole, lapatinib, letermovir, levofloxacin, levomepromazine, lopinavir, lurasidone, methylphenidate, mifepristone, moxifloxacin, nefazodone, nelfinavir, nilotinib, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, paroxetine hydrochloride, paroxetine mesylate, paroxetine mesylate, pazopanib, pemoline, phenothiazines, posaconazole, protease inhibitors, quinidine, quinine, ribociclib, ritonavir, saquinavir, sertraline, sotalol, sparfloxacin, sulpiride, telaprevir, telavancin, telithromycin, thioridazine, tipranavir, tricyclic antidepressants, trifluoperazine, troleandomycin, vandetanib, voriconazole, vorinostat, zileuton, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Facial edema (<10%)
Rash (8%)
Mucosal
Sialorrhea (ptyalism; hypersalivation) (14%)
Xerostomia (dry mouth) (>10%) [3]
Cardiovascular
QT interval prolonged / QT prolongation [4]
Endocrine/Metabolic
Gynecomastia (>10%)
Neuromuscular/Skeletal
Myalgia/Myopathy (3%)

PINDOLOL

Trade name: Visken (Novartis)
Indications: Hypertension
Class: Adrenergic beta-receptor antagonist
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: clonidine, epinephrine, verapamil
Pregnancy category: B
Note: Cutaneous side effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy.

Skin
Diaphoresis (see also hyperhidrosis) (2%)
Edema / fluid retention (see also peripheral edema) (6%)
Lichenoid eruption / lichenoid reaction [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Pruritus (itching) (<5%)
Psoriasis [5]
Rash (<10%)
Raynaud's phenomenon [2]
Central Nervous System
Paresthesias (3%)

PIOGLITAZONE

Trade name: Actos (Takeda)
Indications: Type II diabetes
Class: Antidiabetic, CYP3A4 inducer, Hypoglycemic (antihyperglycemic) agent, Thiazolidinedione
Half-life: 3–7 hours
Clinically important, potentially hazardous interactions with: alcohol, conivaptan, corticosteroids, CYP2C8 inhibitors and inducers, dapagliflozin, deferasirox, gemfibrozil, insulin, lumateperone, lumateperone, pegvisomant, pregabalin, rifampin, saxagliptin, somatropin, teriflunomide, trimethoprim
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: National regulators in Australia and the United Kingdom (UK) have issued safety advisories on the association between pioglitazone use and bladder cancer. The Australian advisory noted that males were at higher risk of bladder cancer than females, while the UK advisory highlighted a new recommendation, suggest careful consideration in the elderly due to increasing risk with age. In an updated review in 2016, the U.S. Food and Drug Administration (FDA) concluded that use of pioglitazone may be linked to an increased risk of bladder cancer. The FDA advised that pioglitazone should not be used in patients with active bladder cancer, and should carefully consider the benefits and risks before using pioglitazone in patients with a history of bladder cancer.
Contra-indicated in patients with established NYHA Class III or IV heart failure.
Warning: CONGESTIVE HEART FAILURE

Skin
Edema / fluid retention (see also peripheral edema) (4–11%) [30]
Peripheral edema (see also edema) [12]
Cardiovascular
Cardiac failure (<10%) [14]
Cardiomyopathy [3]
Cardiotoxicity [2]
Myocardial infarction [3]
Central Nervous System
Headache (9%) [4]
Stroke / cerebral infarction [2]
Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [10]
Weight gain [20]
Gastrointestinal/Hepatic
Diarrhea [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Nausea [3]
Vomiting [2]
Genitourinary
Bladder cancer [8]
Hematologic
Anemia (<2%) [2]
Pancytopenia (includes bicytopenia) [2]
Neuromuscular/Skeletal
Asthenia / fatigue (4%)
Bone loss [4]
Fractures [10]
Myalgia/Myopathy (5%)
Ocular
Macular edema [2]
Respiratory
Nasopharyngitis [3]
Pharyngitis (sore throat) (5%)
Sinusitis (6%)
Upper respiratory tract infection (13%)
Other
Adverse effects / adverse reactions [4]
Death [3]
Tooth disorder (5%)

PIPECURONIUM

Trade name: Arduan (Organon)
Indications: Adjunct to general anesthesia
Class: Non-depolarizing neuromuscular blocker
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: anesthetics (inhalational), antibiotics, gentamicin, magnesium salts, quinidine, succinylcholine
Pregnancy category: C

PIPERACILLIN

Trade names: Pipracil (Wyeth), Zosyn (Wyeth)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 0.6–1.2 hours
Clinically important, potentially hazardous interactions with: anisindione, anticoagulants, atracurium, cisatracurium, demeclocycline, dicumarol, doxacurium, doxycycline, imipenem/cilastatin, methotrexate, minocycline, non-depolarizing muscle relaxants, oxytetracycline, pancuronium, rapacuronium, reteplase, tetracycline, warfarin
Pregnancy category: B
Note: Zosyn is piperacillin and tazobactam - see separate profile.

Skin
AGEP [3]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Exanthems (56%) [5]
Hypersensitivity [4]
Urticaria / hives [4]
Central Nervous System
Seizures [3]
Hematologic
Hemolytic anemia [4]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Thrombocytopenia [4]
Local
Injection-site pain (2%)
Injection-site phlebitis (2%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Other
Allergic reactions (2–4%) [2]

PIPERACILLIN/ TAZOBACTAM

Trade name: Zosyn (Wyeth)
Indications: Moderate to severe infections
Class: Antibiotic, Antimicrobial
Half-life: 0.7–1.2 hours
Clinically important, potentially hazardous interactions with: heparin, methotrexate
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
AGEP [2]
DRESS syndrome [5]
Hypersensitivity [2]
Linear IgA bullous dermatosis [3]
Rash [5]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [5]
Neurotoxicity [2]
Endocrine/Metabolic
Hypokalemia [3]
Gastrointestinal/Hepatic
Diarrhea [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [2]
Vomiting [2]
Hematologic
Hemolytic anemia [4]
Hemotoxicity [2]
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [7]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]
Other
Adverse effects / adverse reactions [5]

PIRACETAM

Trade name: Nootropil (UCB)
Indications: Psycho-organic syndromes or cognitive decline and cortical myclonus
Class: Nootropics
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: carbamazepine, clonazepam, phenobarbital, phenytoin, sodium valproate

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Central Nervous System
Depression [2]
Nervousness (<10%)
Vertigo / dizziness [2]
Endocrine/Metabolic
Weight gain (<10%)
Neuromuscular/Skeletal
Hyperkinesia (<10%)

PIRBUTEROL

Trade name: Maxair (3M)
Indications: Asthma, bronchospasm
Class: Beta-2 adrenergic agonist, Bronchodilator
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Central Nervous System
Dysgeusia (taste perversion) (<10%)
Trembling (>10%)

PIRFENIDONE

Trade name: Esbriet (Intermune)
Indications: Idiopathic pulmonary fibrosis
Class: Immunosuppressant, Pyridone
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: ciprofloxacin, fluvoxamine, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Lichenoid eruption / lichenoid reaction [2]
Photosensitivity (9%) [27]
Phototoxicity [2]
Pruritus (itching) (8%) [3]
Rash (30%) [15]
Cardiovascular
Chest pain (5%) [3]
Central Nervous System
Anorexia (13%) [11]
Dysgeusia (taste perversion) (6%)
Headache (22%) [4]
Insomnia (10%)
Sedation [2]
Vertigo / dizziness (18%) [7]
Endocrine/Metabolic
ALT increased [5]
Appetite decreased (8%) [5]
AST increased [5]
Hyponatremia [3]
Weight loss (10%) [4]

Gastrointestinal/Hepatic
Abdominal pain (24%) [7]
Diarrhea (26%) [14]
Dyspepsia / functional dyspepsia / gastroparesis (19%) [10]
Gastroesophageal reflux (11%) [6]
Gastrointestinal adverse reaction [2]
Gastrointestinal disorder / discomfort [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (36%) [24]
Vomiting (13%) [7]
Neuromuscular/Skeletal
Arthralgia (10%)
Asthenia / fatigue (6–26%) [12]
Respiratory
Bronchitis [2]
Cough [4]
Dyspnea / shortness of breath [4]
Nasopharyngitis [2]
Sinusitis (11%)
Upper respiratory tract infection (27%) [4]
Other
Adverse effects / adverse reactions [10]

PIROXICAM

Trade name: Feldene (Pfizer)
Indications: Arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 50 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, aspirin, furosemide, lithium, methotrexate, ritonavir, warfarin
Pregnancy category: D (pregnancy category C prior to 30 weeks gestation; category D starting at 30 weeks gestation)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
Elderly patients are at greater risk for serious gastrointestinal events.
Warning: CARDIOVASCULAR AND GASTROINTESTINAL RISKS

Skin
AGEP [2]
Angioedema [3]
Dermatitis [5]
Erythema multiforme [12]
Erythroderma [2]
Exanthems (>5%) [8]
Fixed eruption [15]
Lichenoid eruption / lichenoid reaction [5]
Linear IgA bullous dermatosis [3]
Pemphigus [3]
Photosensitivity [40]
Pruritus (itching) (<10%) [6]
Purpura [2]
Rash (>10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [13]
Urticaria / hives [7]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]
Vesiculation [2]
Hair
Alopecia / hair loss [3]
Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [4]
Central Nervous System
Anorexia (<10%)
Vertigo / dizziness (<10%)
Gastrointestinal/Hepatic
Abdominal pain (<10%)
Constipation (<10%)
Diarrhea (<10%)
Dyspepsia / functional dyspepsia / gastroparesis (<10%)
Flatulence (<10%)
Gastrointestinal ulceration (<10%)
Nausea (<10%)
Vomiting (<10%)
Otic
Hearing loss (hypoacusis) [2]
Tinnitus [2]
Renal
Renal function abnormal / renal dysfunction (<10%)
Other
Adverse effects / adverse reactions [2]
Side effects (47%)

PITAVASTATIN

Trade name: Livalo (Kowa)
Indications: Primary hyperlipidemia, mixed dyslipidemia
Class: HMG-CoA reductase inhibitor / statin
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: alcohol, cyclosporine, erythromycin, gemfibrozil, letermovir, lopinavir, niacin, rifampin, ritonavir, sofosbuvir/velpatasvir/voxilaprevir
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with active liver disease.

Skin
Hypersensitivity (<2%)
Rash (<2%)
Urticaria / hives (<2%)
Central Nervous System
Headache (<2%)
Endocrine/Metabolic
ALT increased [2]
AST increased [2]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Gastrointestinal/Hepatic
Constipation (2–4%)
Diarrhea (2–3%)
Neuromuscular/Skeletal
Arthralgia (<2%)
Back pain (2–4%)
Myalgia/Myopathy (2–3%) [6]
Pain in extremities (<2%)
Respiratory
Influenza (<2%)
Nasopharyngitis (<2%) [2]
Other
Adverse effects / adverse reactions [5]

PIZOTIFEN

Trade name: Sanomigran (Novartis)
Indications: Recurrent vascular headaches, including classical migraine, common migraine and cluster headaches
Class: 5-Hydroxytryptamine antagonist
Half-life: 23 hours
Clinically important, potentially hazardous interactions with: adrenergic neurone blockers, alcohol, antihistamines, butalbital, hypnotics, isocarboxazid, pentobarbital, phenelzine, phenobarbital, primidone, sedatives, tranylcypromine, zolpidem
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Somnolence (drowsiness) (<10%) [4]
Vertigo / dizziness (<10%)
Endocrine/Metabolic
Appetite increased (<10%)
Weight gain (>10%) [8]
Gastrointestinal/Hepatic
Nausea (<10%)
Neuromuscular/Skeletal
Asthenia / fatigue (<10%)

PLECANATIDE

Trade name: Trulance (Synergy)
Indications: Chronic idiopathic constipation
Class: Guanylate cyclase-C agonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Insufficient data to inform drug-associated risks)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: RISK OF SERIOUS DEHYDRATION IN PEDIATRIC PATIENTS

Endocrine/Metabolic
ALT increased (<2%)
AST increased (<2%)
Gastrointestinal/Hepatic
Abdominal distension (<2%)
Abdominal pain [2]
Diarrhea (5%) [9]
Flatulence (<2%)
Nausea [3]
Vomiting [2]
Respiratory
Sinusitis (<2%)
Upper respiratory tract infection (<2%)

PLICAMYCIN

Synonym: Mithramycin
Indications: Paget's disease, malignant testicular tumors
Class: Antibiotic, Antimicrobial
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: aldesleukin, ceftobiprole
Pregnancy category: X

Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Flushing / rubefaction (<35%) [3]
Petechiae (<10%)
Purpura (10%)
Mucosal
Oral lesions (<15%) [2]
Stomatitis (oral mucositis) (>10%)
Gastrointestinal/Hepatic
Vomiting [2]
Local
Injection-site cellulitis (<10%)
Injection-site erythema (<10%)
Injection-site pain (<10%)

PNEUMOCOCCAL VACCINE

Trade names: PCV (Lederle), PncOMP (Merck), Pneumovax II (Sanofi-Aventis), Pnu-Immune (Lederle), PPV (Lederle), Prevnar (Wyeth)
Indications: Prevention of bacteremia, meningitis, pneumonia, respiratory tract infections, otitis media, sinusitis
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Rash [2]
Serum sickness [2]
Sweet's syndrome [2]
Urticaria / hives [5]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [21]
Headache [4]
Irritability [3]
Seizures [4]
Sleep disturbances [2]
Endocrine/Metabolic
Appetite decreased [3]
Local
Injection-site edema [8]
Injection-site erythema [10]
Injection-site induration [3]
Injection-site pain [10]
Injection-site reaction [10]
Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue [7]
Myalgia/Myopathy [4]
Respiratory
Respiratory tract infection [2]
Other
Adverse effects / adverse reactions [3]

PODOPHYLLOTOXIN

Trade name: Warticon (GSK)
Indications: Topical treatment of condylomata acuminata
Class: Antiviral
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (not recommended in pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Burning / skin burning sensation [3]
Erythema [3]
Pruritus (itching) [3]
Central Nervous System
Pain [3]

POLIDOCANOL

Trade names: Asclera (Chemische Fabrik Kreussler), Varithena (BTG)
Indications: Uncomplicated spider veins and uncomplicated reticular veins in the lower extremity
Class: Sclerosant, local
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Severe allergic reactions have been reported following polidocanol use, including anaphylactic reactions, some of them fatal. Severe reactions are more frequent with use of larger volumes (>3 mL).
Contra-indicated in patients with acute thromboembolic diseases.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Pigmentation [2]
Urticaria / hives [2]
Cardiovascular
Cardiac arrest [2]
Phlebitis [2]
Central Nervous System
Migraine [2]
Hematologic
Thrombosis [2]
Local
Injection-site hematoma (42%)
Injection-site irritation (41%)
Injection-site pain (24%)
Injection-site pigmentation / injection-site discoloration (38%)
Injection-site pruritus (19%)
Injection-site reaction [3]
Injection-site thrombosis (6%)
Neuromuscular/Skeletal
Leg pain [2]

POLYPODIUM LEUCOTOMOS

Family: Polypodiaceae
Scientific names: *Anapsos, Calagualine, Calagula, Difur, Fernblock, Heliocare, Polypodium leucotomos*
Indications: Oral and topical photoprotection, vitiligo, psoriasis, dermatitis, arthritis
Class: Anti-inflammatory, Antioxidant
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Note: It is the first oral agent effective in reducing side effects of PUVA treatment.

POLYTHIAZIDE

Trade names: Minizide (Pfizer), Renese (Pfizer)
Indications: Hypertension, edema
Class: Adrenergic alpha-receptor agonist, Diuretic, thiazide
Half-life: N/A
Clinically important, potentially hazardous interactions with: digoxin, lithium
Pregnancy category: C
Note: Polythiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Minizide is polythiazide and prazosin.

POMALIDOMIDE

Trade name: Pomalyst (Celgene)
Indications: Multiple myeloma in patients who have received at least two prior therapies including lenalidomide and bortezomib
Class: Immunomodulator, Thalidomide analog
Half-life: 7.5–9.5 hours
Clinically important, potentially hazardous interactions with: ketoconazole, P-glycoprotein, rifampin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: EMBRYO-FETAL TOXICITY and VENOUS AND ARTERIAL THROMBOEMBOLISM

Skin
Edema / fluid retention (see also peripheral edema) [4]
Hyperhidrosis (see also diaphoresis) (6%)
Peripheral edema (see also edema) (23%)
Pruritus (itching) (15%)
Rash (22%) [2]
Xerosis / xeroderma (see also dry skin) (9%)
Mucosal
Epistaxis (nosebleed) (15%)
Cardiovascular
Chest pain (22%)
Venous thromboembolism [8]
Central Nervous System
Anorexia [2]
Anxiety (11%)
Chills (9%)
Confusion (10%)
Fever (pyrexia) (includes hyperpyrexia) (19%) [3]

Headache (13%)
Insomnia (7%)
Neurotoxicity (18%) [3]
Pain (6%)
Peripheral neuropathy (10%) [3]
Tremor (9%) [2]
Vertigo / dizziness (20%)

Endocrine/Metabolic
Appetite decreased (22%)
Dehydration [2]
Hypercalcemia (21%)
Hyperglycemia (includes glucose increased) (12%) [2]
Hypocalcemia (6%)
Hypokalemia (10%)
Hyponatremia (10%)
Hypothyroidism [2]
Serum creatinine increased (15%)
Weight loss (14%)

Gastrointestinal/Hepatic
Constipation (36%) [2]
Diarrhea (34%) [2]
Nausea (36%)
Vomiting (14%)

Genitourinary
Urinary tract infection (8%)

Hematologic
Anemia (38%) [18]
Febrile neutropenia [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (11%) [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (4%) [2]
Myelosuppression / bone marrow suppression / myelotoxicity [4]
Neutropenia (neutrophils decreased) (52%) [29]
Sepsis [2]
Thrombocytopenia (25%) [18]

Neuromuscular/Skeletal
Arthralgia (16%)
Asthenia / fatigue (12–55%) [12]
Back pain (32%) [3]
Bone or joint pain (11–12%) [2]
Muscle spasm (19%)
Myalgia/Myopathy [2]
Pain in extremities (5%)

Renal
Renal failure (15%)

Respiratory
Cough (14%)
Dyspnea / shortness of breath (34%) [5]
Pneumonia (23%) [7]
Pulmonary toxicity [4]
Upper respiratory tract infection (32%)

Other
Death [3]
Infection [12]

PONATINIB

Trade name: Iclusig (Ariad)
Indications: Chronic myeloid leukemia or Philadelphia chromosome positive acute lymphoblastic leukemia that is resistant or intolerant to prior tyrosine kinase inhibitor therapy
Class: Angiogenesis inhibitor / antiangiogenic agent, Tyrosine kinase inhibitor
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: antacids, boceprevir, carbamazepine, clarithromycin, conivaptan, grapefruit juice, histamine H_2 antagonists, indinavir, itraconazole, ketoconazole, lopinavir, nefazodone, nelfinavir, phenytoin, posaconazole, proton pump inhibitors, rifampin, ritonavir, saquinavir, St John's wort, strong CYP3A inhibitors or inducers, telaprevir, telithromycin, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: VASCULAR OCCLUSION, HEART FAILURE, and HEPATOTOXICITY

Skin
Cellulitis (<11%)
Edema / fluid retention (see also peripheral edema) (23%) [2]
Ichthyosis [2]
Peripheral edema (see also edema) (13–22%)
Pityriasis rubra pilaris [2]
Rash (34–54%) [10]
Xerosis / xeroderma (see also dry skin) (24–39%) [6]

Mucosal
Stomatitis (oral mucositis) (9–23%)

Cardiovascular
Atrial fibrillation [2]
Cardiac failure (6–15%)
Cardiotoxicity [3]
Congestive heart failure (4%)
Hypertension (53–71%) [6]
Myocardial infarction (5%)
Pericardial effusion (<3%)
Supraventricular arrhythmias (5%)

Central Nervous System
Cerebral hemorrhage (2%)
Chills (7–13%)
Fever (pyrexia) (includes hyperpyrexia) (23–32%)
Headache (25–39%) [4]
Insomnia (7–12%)
Pain (6–16%)
Peripheral neuropathy (6–13%)
Vertigo / dizziness (3–11%)

Endocrine/Metabolic
ALT increased (56%)
Appetite decreased (8–31%)
AST increased (56%)
Hyperlipasemia [2]
Weight loss (5–13%)

Gastrointestinal/Hepatic
Abdominal pain (34–49%) [6]
Constipation (24–47%) [3]
Diarrhea (13–26%)
Gastrointestinal bleeding (2–11%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (22–32%) [2]
Pancreatitis / acute pancreatitis (6%) [6]

Genitourinary
Urinary tract infection (<12%)

Hematologic
Anemia (9–55%) [2]
Bleeding (24%)
Febrile neutropenia (<25%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (14–63%) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (10–37%)
Myelosuppression / bone marrow suppression / myelotoxicity (48%) [4]
Neutropenia (neutrophils decreased) (24–63%) [4]
Sepsis (<22%)
Thrombocytopenia (36–57%) [7]
Thrombosis [5]

Neuromuscular/Skeletal
Arthralgia (13–31%) [2]
Asthenia / fatigue (31–39%) [2]
Back pain (11–16%)
Bone or joint pain (9–12%)
Muscle spasm (5–13%)
Myalgia/Myopathy (6–22%) [2]
Pain in extremities (9–17%)

Ocular
Vision blurred (6%)

Respiratory
Cough (6–18%)
Nasopharyngitis (3–12%)
Pleural effusion (3–19%)
Upper respiratory tract infection (<11%)

Other
Adverse effects / adverse reactions [2]

POSACONAZOLE

Trade name: Noxafil (Schering)
Indications: *Aspergillus* and *Candida* infection prophylaxis in immunocompromised patients
Class: Antifungal / antimycotic, Antifungal; triazole, Antimicrobial
Half-life: 35 hours
Clinically important, potentially hazardous interactions with: alprazolam, atazanavir, atorvastatin, boceprevir, brigatinib, cabozantinib, calcium channel blockers, cimetidine, copanlisib, cyclosporine, digoxin, dihydroergotamine, diltiazem, dronedarone, efavirenz, ergotamine, esomeprazole, everolimus, felodipine, flibanserin, fosamprenavir, HMG-CoA reductase inhibitors, ibrutinib, lapatinib, lomitapide, lovastatin, metoclopramide, midazolam, midostaurin, mifepristone, neratinib, nicardipine, nifedipine, olaparib, omeprazole, palbociclib, pantoprazole, phenytoin, pimozide, ponatinib, quinidine, regorafenib, rifabutin, rilpivirine, ritonavir, rivaroxaban, ruxolitinib, simeprevir, simvastatin, sirolimus, sonidegib, tacrolimus, telaprevir, temsirolimus, tezacaftor/ivacaftor, triazolam, venetoclax, verapamil, vinblastine, vincristine, vorapaxar
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Edema / fluid retention (see also peripheral edema) (9%)
Herpes (14%)
Herpes simplex (3–15%)
Hyperhidrosis (see also diaphoresis) (2–10%)
Jaundice (<5%)
Peripheral edema (see also edema) (15%)
Petechiae (11%)
Pruritus (itching) (11%)
Rash (3–19%) [3]
Thrombocytopenic purpura (<5%)

Mucosal
Epistaxis (nosebleed) (14%)
Mucositis (17%)
Oral candidiasis (<12%)

Cardiovascular
Hypertension (18%)
Hypotension (14%)
QT interval prolonged / QT prolongation [3]
Tachycardia (12%)
Torsades de pointes (<5%)

Central Nervous System
Anorexia (2–19%)
Anxiety (9%)
Dysgeusia (taste perversion) (~2%)
Fever (pyrexia) (includes hyperpyrexia) (6–45%)
Headache (8–28%) [6]
Insomnia (<17%)
Neurotoxicity [2]
Paresthesias (<5%)
Rigors (<20%)
Tremor (~2%)
Vertigo / dizziness (11%) [4]

Endocrine/Metabolic
Adrenal insufficiency (hypoadrenalism) (<5%)
ALP increased (3–13%)
ALT increased (3–11%) [2]
Apparent mineralocorticoid excess [3]
AST increased (6–17%) [2]
Dehydration (<11%)
Hyperbilirubinemia [2]
Hyperglycemia (includes glucose increased) (11%)
Hypocalcemia (9%)
Hypokalemia (30%)
Hypomagnesemia (18%)
Weight loss (<14%)

Gastrointestinal/Hepatic
Abdominal pain (5–27%) [3]
Constipation (21%)
Diarrhea (10–42%) [6]
Dyspepsia / functional dyspepsia / gastroparesis (10%)
Flatulence [2]
Hepatitis (<5%)
Hepatomegaly (<5%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<5%) [7]
Nausea (9–38%) [14]
Vomiting (7–29%) [7]

Genitourinary
Vaginal bleeding (10%)

Hematologic
Anemia (2–25%)
Febrile neutropenia (20%)
Hemolytic uremic syndrome (<5%)
Neutropenia (neutrophils decreased) (4–23%) [2]
Thrombocytopenia (29%) [2]

Neuromuscular/Skeletal
Arthralgia (11%)
Asthenia / fatigue (3–17%) [3]
Back pain (10%)
Bone or joint pain (16%)
Myalgia/Myopathy (16%)

Ocular
Vision blurred (~2%)

Renal
Renal failure (<5%)

Respiratory
Cough (3–25%)
Dyspnea / shortness of breath (<20%)
Pharyngitis (sore throat) (12%)
Pneumonia (3–10%)
Pulmonary embolism (<5%)
Upper respiratory tract infection (7%)

Other
Adverse effects / adverse reactions [11]
Allergic reactions (<5%)
Infection (18%)

POTASSIUM IODIDE

Synonyms: KI; Lugol's solution
Trade name: SSKI (Upsher-Smith)
Indications: Hyperthyroidism, erythema nodosum, sporotrichosis
Class: Antihyperthyroid, Antimycobacterial (including antitubercular)
Half-life: N/A
Clinically important, potentially hazardous interactions with: ACE inhibitors, potassium-sparing diuretics, spironolactone, triamterene
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<10%) [3]
Angioedema (<10%)
Bullous pemphigoid / pemphigoid [2]
Dermatitis herpetiformis [2]
Iododerma [17]
Psoriasis [2]
Urticaria / hives (<10%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Central Nervous System
Dysgeusia (taste perversion) (<10%) [2]

Endocrine/Metabolic
Hypothyroidism [2]

Gastrointestinal/Hepatic
Gastrointestinal disorder / discomfort [2]

PRALATREXATE

Trade name: Folotyn (Allos)
Indications: Relapsed or refractory peripheral T-cell lymphoma
Class: Folate analogue metabolic inhibitor
Half-life: 12–18 hours
Clinically important, potentially hazardous interactions with: BCG vaccine, cardiac glycosides, denosumab, echinacea, leflunomide, meloxicam, natalizumab, NSAIDs, pimecrolimus, probenecid, roflumilast, salicylates, sapropterin, sipuleucel-T, sulfamethoxazole, tacrolimus, trastuzumab, trimethoprim, vaccines, vitamin K antagonists
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Edema / fluid retention (see also peripheral edema) (30%)
Pruritus (itching) (14%)
Rash (15%)

Mucosal
Epistaxis (nosebleed) (26%)
Mucositis (70%) [6]

Cardiovascular
Tachycardia (10%)

Central Nervous System
Anorexia (15%)
Fever (pyrexia) (includes hyperpyrexia) (32%)

Endocrine/Metabolic
ALT increased (13%)
AST increased (13%)
Hypokalemia (15%)

Gastrointestinal/Hepatic
Abdominal pain (12%)
Constipation (33%)
Diarrhea (21%)
Nausea (40%)
Vomiting (25%)

Hematologic
Anemia (34%) [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (11%)
Neutropenia (neutrophils decreased) (24%) [3]
Thrombocytopenia (41%) [3]

Neuromuscular/Skeletal
Asthenia / fatigue (10–36%) [2]
Back pain (11%)

Respiratory
Cough (28%)
Dyspnea / shortness of breath (19%)
Upper respiratory tract infection (10%)

PRALIDOXIME

Trade name: Protopam (Baxter)
Indications: Muscle weakness and respiratory depression caused by organophosphate drugs which have anticholinesterase activity, antidote to overdose of anticholinesterase drugs
Class: Antidote
Half-life: 2.4–5.3 hours
Clinically important, potentially hazardous interactions with: succinylcholine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Pralidoxime is not effective in the treatment of poisoning due to phosphorus, inorganic phosphates, or organophosphates not having anticholinesterase activity. Pralidoxime is not indicated as an antidote for intoxication by pesticides of the carbamate class since it may increase the toxicity of carbaryl. In therapy it has been difficult to differentiate side effects due to the drug from those due to the effects of the poison.

PRAMIPEXOLE

Trade name: Mirapex (Boehringer Ingelheim)
Indications: Parkinsonism, restless legs syndrome
Class: Dopamine receptor agonist
Half-life: ~8 hours
Clinically important, potentially hazardous interactions with: levomepromazine, risperidone, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Edema / fluid retention (see also peripheral edema) (5%)
- Peripheral edema (see also edema) (5%) [4]

Mucosal
- Xerostomia (dry mouth) (7%) [3]

Cardiovascular
- Chest pain (3%)
- Hypotension (~53%) [2]
- Orthostatic hypotension [2]

Central Nervous System
- Abnormal dreams (11%)
- Akathisia (2–3%)
- Amnesia (4–6%)
- Anorexia (<5%)
- Compulsions / obsessive-compulsive symptoms [6]
- Confusion [2]
- Depression (2%)
- Dyskinesia (17–47%) [4]
- Hallucinations (5–17%) [6]
- Headache (4–7%) [3]
- Hyperesthesia (3%)
- Hypersexuality [2]
- Impulse control disorder [11]
- Insomnia (4–27%) [2]
- Myokymia / twitching (2%)
- Restless legs syndrome [2]
- Somnolence (drowsiness) (9–36%) [10]
- Tremor (4%)
- Vertigo / dizziness (2–26%) [7]

Gastrointestinal/Hepatic
- Constipation [5]
- Nausea [10]
- Vomiting (4%) [3]

Genitourinary
- Urinary frequency (6%)
- Urinary tract infection (4%)

Neuromuscular/Skeletal
- Antecollis (cervical dystonia) [2]
- Arthralgia (4%)
- Asthenia / fatigue (<14%) [2]

Respiratory
- Cough (3%)
- Dyspnea / shortness of breath (4%)
- Rhinitis (3%)

Other
- Adverse effects / adverse reactions (2%) [5]

PRAMLINTIDE

Trade name: Symlin (Amylin)
Indications: Diabetes, adjunct to insulin treatment
Class: Amylinomimetic, Antidiabetic, Protein analog
Half-life: 48 minutes
Clinically important, potentially hazardous interactions with: acarbose, acetaminophen, alcohol, amitriptyline, anticholinergics, atropine, cyclobenzaprine, fesoterodine, insulin aspart, insulin degludec, insulin glargine, insulin glulisine, miglitol, oxybutynin, tiotropium, trospium
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a confirmed diagnosis of gastroparesis; or with hypoglycemia unawareness.

Central Nervous System
- Anorexia (9–17%) [4]
- Headache (5–13%)
- Vertigo / dizziness (2–6%)

Endocrine/Metabolic
- Hypoglycemia (see also insulin autoimmune syndrome) [6]
- Weight loss [3]

Gastrointestinal/Hepatic
- Abdominal pain (2–8%)
- Nausea (28–48%) [11]
- Vomiting (7–11%) [3]

Neuromuscular/Skeletal
- Arthralgia (2–7%)
- Asthenia / fatigue (3–7%)

Respiratory
- Cough (2–6%)
- Pharyngitis (sore throat) (3–5%)

Other
- Allergic reactions (6%)

PRANLUKAST

Trade names: Azlaire (Schering-Plough), Onon (Ono Pharmaceuticals)
Indications: Bronchial asthma and allergic rhinitis
Class: Leukotriene receptor antagonist
Half-life: 1.5 hours
Clinically important, potentially hazardous interactions with: none known

Skin
- Churg-Strauss syndrome [8]

PRASUGREL

Trade name: Effient (Lilly)
Indications: Acute coronary syndrome in patients who are to be managed with percutaneous coronary intervention
Class: Antiplatelet; thienopyridine
Half-life: 2–15 hours
Clinically important, potentially hazardous interactions with: cangrelor, clopidogrel, conivaptan, coumarins, darunavir, delavirdine, diclofenac, indinavir, inotersen, meloxicam, NSAIDs, phenindione, telithromycin, voriconazole, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with active pathological bleeding, prior transient ischemic attack or stroke.
Warning: BLEEDING RISK

Skin
- Hypersensitivity [2]
- Peripheral edema (see also edema) (3%)
- Rash (3%) [4]

Mucosal
- Epistaxis (nosebleed) (6%)

Cardiovascular
- Atrial fibrillation (3%)
- Bradycardia / sinus bradycardia (3%)
- Chest pain (3%)
- Hypertension (8%)
- Hypotension (4%)

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) (3%)
- Headache (6%)
- Vertigo / dizziness (4%)

Endocrine/Metabolic
- Hypercholesterolemia (7%)
- Hyperlipidemia (7%)

Gastrointestinal/Hepatic
- Diarrhea (3%)
- Gastrointestinal bleeding (2%)
- Nausea (5%)

Hematologic
- Anemia (2%)
- Bleeding (<14%) [27]
- Hemorrhage [2]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (3%)

Neuromuscular/Skeletal
- Asthenia / fatigue (4%)
- Back pain (5%)
- Pain in extremities (3%)

Respiratory
- Cough (4%)
- Dyspnea / shortness of breath (5%)
- Respiratory distress [2]

Other
- Adverse effects / adverse reactions [2]
- Malignant neoplasms (2%)

PRAVASTATIN

Trade names: Lipostat (Bristol-Myers Squibb), Pravachol (Bristol-Myers Squibb)
Indications: Hypercholesterolemia
Class: HMG-CoA reductase inhibitor / statin
Half-life: ~2–3 hours
Clinically important, potentially hazardous interactions with: azithromycin, bempedoic acid, ciprofibrate, clarithromycin, colchicine, cyclosporine, darunavir, efavirenz, erythromycin, gemfibrozil, imatinib, letermovir, red rice yeast, telithromycin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
- Dermatomyositis [2]
- Eczema / eczematous reaction / eczematous eruption (generalized) [2]

Edema / fluid retention (see also peripheral edema) (3%)
Lichenoid eruption / lichenoid reaction [2]
Pruritus (itching) [2]
Rash (5–7%) [7]

Cardiovascular
Angina (5%)
Chest pain (3–10%)

Central Nervous System
Anxiety (5%)
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache (6%)
Nervousness (5%)
Paresthesias (3%)
Sleep disturbances (3%)
Vertigo / dizziness (4–7%)

Endocrine/Metabolic
ALT increased (3%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (4%) [3]
GGT increased (2%)
Weight gain (4%)
Weight loss (3%)

Gastrointestinal/Hepatic
Abdominal distension (2%)
Diarrhea (7%)
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Flatulence (3%)
Nausea (7%)
Pancreatitis / acute pancreatitis [4]
Vomiting (7%)

Genitourinary
Urinary tract infection (3%)

Neuromuscular/Skeletal
Asthenia / fatigue (3–8%)
Bone or joint pain (25%)
Cramps (5%)
Myalgia/Myopathy (2–3%) [10]
Rhabdomyolysis [24]

Ocular
Diplopia (double vision) (3%)
Vision blurred (3%)

Renal
Renal failure [2]

Respiratory
Bronchitis (3%)
Cough (3–8%)
Influenza (9%)
Pharyngitis (sore throat) (2%)
Pulmonary toxicity (4%)
Rhinitis (4%)
Upper respiratory tract infection (6–21%)

Other
Adverse effects / adverse reactions [2]
Infection (3%)

PRAZIQUANTEL

Synonym: Arpraziquantel
Trade name: Biltricide (Bayer)
Indications: Helmintic infections
Class: Anthelmintic
Half-life: 0.8–1.5 hours
Clinically important, potentially hazardous interactions with: dexamethasone, efavirenz, oxcarbazepine, rifampin, rifapentine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Arpraziquantel is the (R)-form.

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Edema / fluid retention (see also peripheral edema) [2]
Pruritus (itching) [3]
Rash [2]
Urticaria / hives [5]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [9]
Seizures [2]
Somnolence (drowsiness) [3]
Vertigo / dizziness [7]

Gastrointestinal/Hepatic
Abdominal pain [13]
Diarrhea [7]
Nausea [6]
Vomiting [9]

Neuromuscular/Skeletal
Asthenia / fatigue [3]

Other
Adverse effects / adverse reactions [3]
Allergic reactions [2]

PRAZOSIN

Trade names: Minipress (Pfizer), Minizide (Pfizer)
Indications: Hypertension
Class: Adrenergic alpha-receptor antagonist
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: acebutolol, epinephrine
Pregnancy category: C
Note: Minizide is prazosin and polythiazide.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Diaphoresis (see also hyperhidrosis) [2]
Edema / fluid retention (see also peripheral edema) (<4%)
Exanthems (<5%)
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Rash (<4%) [2]

Mucosal
Xerostomia (dry mouth) (<4%) [3]

Central Nervous System
Vertigo / dizziness [2]

Genitourinary
Priapism [8]

PREDNISOLONE

Trade names: Blephamide (Allergan), Delta-Cortef (Pharmacia), Hydeltrasol (Merck), Inflamase (Novartis), Pediapred (UCB), Prelone (Teva)
Indications: Arthralgias, asthma, dermatoses, inflammatory ocular conditions
Class: Corticosteroid / Glucocorticoid, Corticosteroid, systemic
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: aluminum, aminophylline, carbamazepine, carbimazole, cyclosporine, daclizumab, diuretics, etoposide, etretinate, grapefruit juice, indomethacin, isoniazid, itraconazole, ketoconazole, live vaccines, methotrexate, naproxen, oral contraceptives, pancuronium, phenobarbital, phenytoin, rifampin, troleandomycin
Pregnancy category: C

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [4]
AGEP [2]
Candidiasis / candidosis [2]
Cushingoid features [2]
Cutaneous toxicity / skin toxicity [3]
Dermatitis [3]
Edema / fluid retention (see also peripheral edema) [7]
Erythema [2]
Erythema multiforme [2]
Exanthems [3]
Flushing / rubefaction [2]
Kaposi's sarcoma [3]
Pruritus (itching) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]

Hair
Alopecia / hair loss [3]

Cardiovascular
Atrial fibrillation [2]
Cardiotoxicity [4]
Hypertension [14]
Tachycardia [2]

Central Nervous System
Behavioral disturbances / personality changes [2]
Depression [4]
Psychosis [3]

Endocrine/Metabolic
ALT increased [2]
Cushing's syndrome [4]
Diabetes mellitus [5]
Hyperglycemia (includes glucose increased) [4]
Hypokalemia [7]
Weight gain [2]

Gastrointestinal/Hepatic
Constipation [3]
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea [2]
Pancreatitis / acute pancreatitis [3]

Hematologic
Anemia [3]
Febrile neutropenia [3]
Neutropenia (neutrophils decreased) [4]
Thrombocytopenia [2]

Neuromuscular/Skeletal
Arthralgia [4]
Asthenia / fatigue [5]
Back pain [4]
Bone or joint pain [5]
Myalgia/Myopathy [2]
Osteonecrosis / avascular necrosis [5]
Osteoporosis [33]

Ocular
Cataract [5]
Chorioretinopathy [2]
Glaucoma (includes acute angle-closure glaucoma) [2]
Intraocular pressure increased [4]

Respiratory
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [12]

Allergic reactions [2]
Death [2]
Infection [18]
Side effects [4]

PREDNISONE

Trade names: Deltasone (Pharmacia), Meticorten (Schering)
Indications: Arthralgias, asthma, dermatoses, inflammatory ocular conditions
Class: Corticosteroid / Glucocorticoid, Corticosteroid, systemic
Half-life: N/A
Clinically important, potentially hazardous interactions with: aluminum, aminophylline, aspirin, chlorambucil, cimetidine, clarithromycin, cyclophosphamide, cyclosporine, dicumarol, diuretics, docetaxel, estrogens, grapefruit juice, indomethacin, influenza vaccine, itraconazole, ketoconazole, lansoprazole, live vaccines, lumateperone, lumateperone, methotrexate, montelukast, omeprazole, oral contraceptives, pancuronium, phenobarbital, phenytoin, ranitidine, rifampin, timolol, tolbutamide, vitamin A, yellow fever vaccine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) [3]
Cutaneous toxicity / skin toxicity [2]
Dermatitis [4]
Erythema [3]
Hot flashes / hot flushes [2]
Kaposi's sarcoma [7]
Squamous cell carcinoma [2]
Thinning [2]

Hair
Alopecia / hair loss [2]

Mucosal
Stomatitis (oral mucositis) [2]

Cardiovascular
Cardiotoxicity [3]
Hypertension [9]

Central Nervous System
Headache [3]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [3]
Mania [4]
Peripheral neuropathy [4]
Psychosis [2]

Endocrine/Metabolic
ALT increased [3]
Diabetes mellitus [3]
Hyperglycemia (includes glucose increased) [4]
Hypokalemia [3]
Weight gain [4]

Gastrointestinal/Hepatic
Constipation [3]
Diarrhea [4]
Nausea [4]
Vomiting [2]

Hematologic
Anemia [5]
Febrile neutropenia [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [3]
Neutropenia (neutrophils decreased) [15]
Thrombocytopenia [10]

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [7]
Back pain [2]
Bone or joint pain [2]
Fractures [3]
Myalgia/Myopathy [4]
Osteonecrosis / avascular necrosis [3]
Osteoporosis [23]

Ocular
Cataract [3]

Respiratory
Cough [2]
Nasopharyngitis [2]
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [10]
Death [3]
Infection [12]
Side effects [3]

PREGABALIN

Trade name: Lyrica (Pfizer)
Indications: Neuropathy, post-herpetic neuralgia, partial epilepsy, fibromyalgia
Class: Anticonvulsant, GABA analog, Gabapentinoid
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: lacosamide, pioglitazone
Pregnancy category: C (Pregabalin may slightly increase the risk of major congenital malformations if used in pregnancy. Patients should continue to use effective contraception during treatment and avoid use in pregnancy unless clearly necessary.)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Pregabalin (Lyrica) and risk of abuse and dependence: new scheduling requirements from 1 April 2019 (UK) As of 1 April 2019 in the UK, pregabalin is controlled under the Misuse of Drugs Act 1971 as a Class C substance and scheduled under the Misuse of Drugs Regulations 2001 as Schedule 3. Patients should be evaluated carefully for a history of drug abuse before prescribing pregabalin and patients should be observed for development of signs of abuse and dependence. .

Skin
Edema / fluid retention (see also peripheral edema) (2%) [9]
Peripheral edema (see also edema) (9%) [16]

Mucosal
Xerostomia (dry mouth) (5%) [11]

Cardiovascular
Cardiac failure [4]
Chest pain (2%)

Central Nervous System
Anorgasmia [3]
Confusion [2]
Depression [2]
Gait instability / postural instability [4]
Hallucinations [3]
Headache (7%) [9]
Impaired concentration [2]
Insomnia [3]
Memory loss/memory impaired [2]
Neurotoxicity [4]
Pain (5%)
Sedation [6]
Somnolence (drowsiness) [48]
Suicidal ideation [4]
Tremor [2]
Vertigo / dizziness (4%) [62]

Endocrine/Metabolic
Appetite increased [2]
Hypoglycemia (see also insulin autoimmune syndrome) [3]
Weight gain [23]

Gastrointestinal/Hepatic
Constipation [7]
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [9]
Vomiting [3]

Genitourinary
Erectile dysfunction [3]
Priapism [2]
Sexual dysfunction [4]

Neuromuscular/Skeletal
Asthenia / fatigue (5%) [10]
Ataxia [8]
Back pain (2%)
Muscle spasm [2]
Myalgia/Myopathy [2]
Myoclonus [4]
Rhabdomyolysis [4]

Ocular
Diplopia (double vision) (9%) [2]
Ocular edema (eye edema) [2]
Vision blurred (6%) [8]

Respiratory
Respiratory depression [2]
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [7]
Dipsia (thirst) / polydipsia [2]
Infection (7%)
Side effects [2]

PRENYLAMINE

Trade name: Segontin (Sanofi-Aventis)
Indications: Angina pectoris
Class: Amphetamine, Calcium channel blocker, Vasodilator
Half-life: 14.1 hours
Clinically important, potentially hazardous interactions with: none known
Note: Not available in Canada, UK or USA.

Cardiovascular
Torsades de pointes [2]

Central Nervous System
Syncope / fainting [3]

PRILOCAINE

Trade name: Citanest (AstraZeneca)
Indications: Local anesthetic
Class: Membrane integrity antagonist, Potassium channel antagonist, Sodium channel antagonist
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: adenosine, amide-type anesthetics, antimalarials, co-trimoxazole, dronedarone, nitric compounds, sulfonamides
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Angioedema [3]
- Contact dermatitis [3]
- Hypersensitivity [2]
- Petechiae [3]
- Purpura [3]

Central Nervous System
- Coma [4]
- Paresthesias [3]
- Seizures [2]

Hematologic
- Methemoglobinemia [12]

Other
- Adverse effects / adverse reactions [2]

PRIMAQUINE

Trade name: Primaquine (Sanofi-Aventis)
Indications: Malaria
Class: Antimalarial, Antimicrobial, Antiprotozoal
Half-life: 4–10 hours
Clinically important, potentially hazardous interactions with: penicillamine
Pregnancy category: C

Skin
- Exanthems (5%)

PRIMIDONE

Trade name: Mysoline (Xcel)
Indications: Seizures
Class: Anticonvulsant, Barbiturate
Half-life: 10–12 hours
Clinically important, potentially hazardous interactions with: alcohol, amitriptyline, amlodipine, anticoagulants, antihistamines, betamethasone, brompheniramine, buclizine, chlorpheniramine, dexamethasone, dichlorphenamide, dicumarol, doxycycline, ethanolamine, ethosuximide, imatinib, levomepromazine, lopinavir, metronidazole, midazolam, nelfinavir, niacinamide, paroxetine hydrochloride, perampanel, pizotifen, risperidone, rufinamide, telithromycin, triamcinolone, warfarin, zafirlukast, zuclopenthixol
Pregnancy category: D
Note: Aromatic antiepileptic drugs, phenytoin, phenobarbital, carbamazepine and primidone, are a frequent cause of severe cutaneous adverse reactions. A strong genetic association between HLA-B*1502 and primidone-induced Stevens-Johnson syndrome and toxic epidermal necrolysis has been shown in Han Chinese patients.

Skin
- Erythema multiforme [2]
- Exanthems (<5%)
- Hypersensitivity [2]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [7]
- Rash [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]

PRISTINAMYCIN

Trade name: Pyostacine (Sanofi-Aventis)
Indications: Staphylococcal and streptococcal infections
Class: Antibiotic, Antibiotic; streptogramin, Antimicrobial
Half-life: 4.03±2.77 hours
Clinically important, potentially hazardous interactions with: calcium channel blockers, cyclosporine, methotrexate, quinidine, trimetrexate
Pregnancy category: B

Skin
- AGEP [8]
- Exanthems [2]
- Pruritus (itching) (2%)
- Rash (3%) [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]

Central Nervous System
- Headache (2%)
- Pain (2%)

Local
- Injection-site edema (17%)
- Injection-site inflammation (40%)
- Injection-site pain (42%)

Neuromuscular/Skeletal
- Arthralgia (~47%)
- Myalgia/Myopathy (~47%)

PROBENECID

Indications: Gouty arthritis
Class: Uricosuric
Half-life: 6–12 hours (dose-dependent)
Clinically important, potentially hazardous interactions with: acemetacin, acetaminophen, amphotericin B, ampicillin/sulbactam, benzodiazepines, captopril, cefazolin, cefditoren, cefixime, ceftaroline fosamil, ceftazidime & avibactam, ceftriaxone, ciprofloxacin, deferiprone, doripenem, ertapenem, flucloxacillin, furosemide, gemifloxacin, glibenclamide, ketoprofen, ketorolac, levodopa, levofloxacin, lumateperone, meloxicam, meropenem, meropenem & vaborbactam, methotrexate, moxifloxacin, norfloxacin, NSAIDs, ofloxacin, pemetrexed, penicillamine, penicillin G, penicillin V, pralatrexate, salicylates, sulfamethoxazole, sulfonamides, ticarcillin, torsemide, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Flushing / rubefaction (<10%)
- Pruritus (itching) (<10%)
- Rash (<10%)
- Urticaria / hives (<5%)

Mucosal
- Gingivitis (<10%)

Hematologic
- Thrombocytopenia [2]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

PROCAINAMIDE

Trade names: Procan (Pfizer), Procanbid (Pfizer)
Indications: Ventricular arrhythmias
Class: Antiarrhythmic, Antiarrhythmic class Ia
Half-life: 2.5–4.5 hours
Clinically important, potentially hazardous interactions with: abarelix, amiodarone, amisulpride, arsenic, artemether/lumefantrine, asenapine, astemizole, ciprofloxacin, enoxacin, ethoxzolamide, gatifloxacin, glycopyrrolate, glycopyrronium, imidapril, lomefloxacin, lurasidone, metformin, mivacurium, moxifloxacin, nilotinib, norfloxacin, ofloxacin, pimavanserin, ponesimod, quinine, quinolones, ribociclib, rocuronium, sotalol, sparfloxacin, tetrabenazine, trimethoprim, trospium, vandetanib, zofenopril
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Dermatitis (6%)
- Exanthems (<8%) [5]
- Hypersensitivity [2]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (>10%) [176]
- Purpura [3]
- Urticaria / hives (<5%)
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [5]

Mucosal
- Oral mucosal eruption (2%)

Cardiovascular
- Hypotension [2]
- QT interval prolonged / QT prolongation [5]
- Torsades de pointes [3]

Central Nervous System
- Dysgeusia (taste perversion) (3–4%)
- Psychosis [2]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea [3]

Hematologic
- Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [4]
- Neutropenia (neutrophils decreased) [3]
- Pancytopenia (includes bicytopenia) [2]
- Pure red cell aplasia [3]

Neuromuscular/Skeletal
- Myalgia/Myopathy [2]
- Myasthenia gravis [3]

Respiratory
- Pulmonary toxicity [2]

PROCARBAZINE

Trade name: Matulane (Sigma-Tau)
Indications: Hodgkin's disease, lymphomas
Class: Alkylating agent
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: aldesleukin, methotrexate
Pregnancy category: D

Skin
- Exanthems (4–9%) [5]
- Flushing / rubefaction [2]
- Hypersensitivity (2%) [2]
- Pigmentation (<10%)
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
- Urticaria / hives (9%) [3]

Hair
- Alopecia / hair loss (<10%) [2]

Mucosal
- Oral lesions (<5%) [2]
- Stomatitis (oral mucositis) (>10%)

Central Nervous System
- Neurotoxicity [2]
- Paresthesias (>10%)

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Hematologic
- Neutropenia (neutrophils decreased) [2]
- Thrombocytopenia [3]

PROCHLORPERAZINE

Trade name: Compazine (GSK)
Indications: Psychotic disorders, control of severe nausea and vomiting
Class: Antiemetic, Antipsychotic, Muscarinic antagonist, Phenothiazine
Half-life: 23 hours
Clinically important, potentially hazardous interactions with: antihistamines, arsenic, chlorpheniramine, dofetilide, pericyazine, piperazine, quinine, quinolones, sparfloxacin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%)
- Fixed eruption [3]
- Photosensitivity (<10%) [3]
- Pruritus (itching) (<10%)
- Rash (<10%)
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]

Mucosal
- Xerostomia (dry mouth) (>10%)

Central Nervous System
- Akathisia [15]
- Extrapyramidal symptoms [3]
- Neuroleptic malignant syndrome [3]
- Parkinsonism [4]
- Somnolence (drowsiness) [2]

Endocrine/Metabolic
- Gynecomastia (<10%)

Neuromuscular/Skeletal
- Dystonia [7]

PROCYCLIDINE

Trade name: Kemadrin (Monarch)
Indications: Parkinsonism
Class: Muscarinic antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticholinergics, arbutamine, paroxetine hydrochloride
Pregnancy category: C

Skin
- Photosensitivity (<10%)
- Xerosis / xeroderma (see also dry skin) (>10%)

Mucosal
- Xerostomia (dry mouth) (>10%)

PROGESTINS

Trade names: Aygestin (Barr), Megace (Bristol-Myers Squibb), Micronor (Ortho), Ovrette (Wyeth), Provera (Pfizer)
Indications: Prevention of pregnancy
Class: Progestogen
Half-life: N/A
Clinically important, potentially hazardous interactions with: acitretin, aprepitant, dofetilide, rosuvastatin, voriconazole

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash [3]
- Dermatitis [4]
- Diaphoresis (see also hyperhidrosis) (31%)
- Erythema multiforme [2]
- Flushing / rubefaction (12%)
- Urticaria / hives [2]

Endocrine/Metabolic
- Amenorrhea [2]

PROMAZINE

Indications: Psychotic disorders, schizophrenia
Class: Antipsychotic, Phenothiazine
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: sparfloxacin

Skin
- Exanthems [2]
- Photosensitivity (<10%)
- Phototoxicity [3]
- Rash (<10%)

Cardiovascular
- Hypotension [2]

Endocrine/Metabolic
- Mastodynia (<10%)

PROMETHAZINE

Trade name: Phenergan (Wyeth)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: 10–14 hours
Clinically important, potentially hazardous interactions with: antihistamines, arsenic, chlorpheniramine, dofetilide, nalbuphine, piperazine, quinolones, sparfloxacin, zaleplon
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Not for intra-arterial or subcutaneous injection and contra-indicated in comatose states.
Warning: RESPIRATORY DEPRESSION and SEVERE TISSUE INJURY, INCLUDING GANGRENE

Skin
- Dermatitis [3]
- Erythema multiforme [2]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
- Photosensitivity [12]
- Purpura [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
- Urticaria / hives [3]

Mucosal
- Xerostomia (dry mouth) (<10%) [2]

Cardiovascular
- QT interval prolonged / QT prolongation [2]

Central Nervous System
- Delirium [2]
- Neuroleptic malignant syndrome [2]
- Seizures [2]
- Somnolence (drowsiness) [3]

PROPAFENONE

Trade name: Rythmol (Reliant)
Indications: Ventricular arrhythmias
Class: Antiarrhythmic, Antiarrhythmic class Ic
Half-life: 10–32 hours
Clinically important, potentially hazardous interactions with: amitriptyline, boceprevir, carvedilol, clozapine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, delavirdine, digoxin, efavirenz, fosamprenavir, grapefruit juice, mirabegron, neostigmine, paroxetine hydrochloride, propranolol, pyridostigmine, rifapentine, ritonavir, telaprevir, tipranavir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
- Psoriasis [2]
- Rash (<3%)

Mucosal
- Oral lesions (>5%)
- Xerostomia (dry mouth) (2%)

Cardiovascular
- Bradycardia / sinus bradycardia [3]
- Brugada syndrome [7]
- Cardiotoxicity [3]
- Congestive heart failure [2]
- Hypotension [3]

Central Nervous System
- Dysgeusia (taste perversion) (3–23%)
- Seizures [3]
- Syncope / fainting [2]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]

Local
Injection-site pain (28–90%) [4]

PROPANTHELINE

Indications: Peptic ulcer
Class: Muscarinic antagonist
Half-life: 1.6 hours
Clinically important, potentially hazardous interactions with: anticholinergics, arbutamine, digoxin
Pregnancy category: C

Skin
Dermatitis [6]
Diaphoresis (see also hyperhidrosis) (>10%)
Xerosis / xeroderma (see also dry skin) (>10%)
Mucosal
Xerostomia (dry mouth) (>10%) [2]

PROPOFOL

Trade name: Diprivan (AstraZeneca)
Indications: Induction and maintenance of anesthesia
Class: Anesthetic; general
Half-life: initial: 40 minutes; terminal: 3 days
Clinically important, potentially hazardous interactions with: zinc
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%) [9]
Angioedema [2]
Exanthems (6%) [2]
Rash (5%)
Urticaria / hives [2]
Hair
Hair pigmentation [3]
Cardiovascular
Bradycardia / sinus bradycardia [15]
Brugada syndrome [2]
Cardiac failure [2]
Hypotension [22]
Tachycardia [2]
Central Nervous System
Amnesia [10]
Hallucinations [3]
Myokymia / twitching (<10%)
Sedation [2]
Seizures [8]
Shivering [2]
Endocrine/Metabolic
Acidosis (includes lactic acidosis) [3]
Hypertriglyceridemia (includes triglycerides increased) [3]
Gastrointestinal/Hepatic
Nausea [4]
Pancreatitis / acute pancreatitis [9]
Vomiting [5]
Hematologic
Hypoxemia (see also hypoxia) [2]
Local
Infusion-related reactions [3]
Injection-site pain (>10%) [36]
Neuromuscular/Skeletal
Ataxia [2]
Myoclonus [2]
Rhabdomyolysis [10]
Renal
Green urine [8]
Respiratory
Apnea [4]
Cough [2]
Hypoxia (see also hypoxemia) [7]
Respiratory depression [4]
Other
Adverse effects / adverse reactions [6]
Death [9]
Hiccups / singultus [3]

PROPOLIS

Family: None
Scientific name: *Propolis*
Indications: Tuberculosis, bacterial, fungal and protozoal infections, nasopharyngeal carcinoma, duodenal ulcer, *Helicobacter pylori* infection, cold, wound cleansing, mouth rinse, genital herpes. Ingredient in cosmetics
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known

Skin
Contact dermatitis [3]
Dermatitis [39]
Hypersensitivity [4]
Sensitivity [4]
Mucosal
Cheilitis (inflammation of the lips) [2]
Other
Allergic reactions [8]

PROPOXYPHENE

Trade names: Darvocet-N (Xanodyne), Darvon (Xanodyne), Darvon Compound (Xanodyne)
Indications: Pain
Class: Opiate agonist
Half-life: 8–24 hours
Clinically important, potentially hazardous interactions with: alcohol, alprazolam, amitriptyline, carbamazepine, insulin aspart, insulin degludec, insulin glargine, insulin glulisine, linezolid, lisdexamfetamine, metoprolol, phenelzine, ritonavir, safinamide, selegiline, warfarin
Pregnancy category: C (category D with prolonged use)
Note: Darvocet is propoxyphene and acetaminophen; Darvon Compound is propoxyphene and aspirin.
This drug has been withdrawn from the European market. Xanodyne has voluntarily removed its products from the US market. The FDA is advising healthcare professionals to stop prescribing propoxyphene to their patients.

Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Vertigo / dizziness [2]
Local
Injection-site pain (<10%)

PROPRANOLOL

Trade names: Hemangeol (Pierre Fabre), Inderal (Wyeth)
Indications: Hypertension, angina pectoris, atrial fibrillation, myocardial infarction, migraine, tremor, infantile hemangioma
Class: Antiarrhythmic, Antiarrhythmic class II, Beta adrenergic blocker, Beta blocker
Half-life: 2–6 hours
Clinically important, potentially hazardous interactions with: alcohol, aluminum hydroxide, aminophylline, amiodarone, barbiturates, bupivacaine, chlorpromazine, cholestyramine, cimetidine, ciprofloxacin, clonidine, colestipol, delavirdine, diazepam, dronedarone, epinephrine, ethanol, fluconazole, fluoxetine, fluvoxamine, haloperidol, imipramine, insulin, insulin detemir, insulin glargine, insulin glulisine, isoniazid, levothyroxine, lidocaine, neostigmine, nicardipine, nifedipine, nilutamide, nisoldipine, oxtriphylline, paroxetine hydrochloride, phenobarbital, phenytoin, propafenone, pyridostigmine, quinidine, rifampin, ritonavir, rizatriptan, sodium iodide I-131, teniposide, terbutaline, tolbutamide, verapamil, warfarin, zileuton, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Cutaneous side effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Angioedema [2]
Cold extremities [7]
Dermatitis [2]
Eczema / eczematous reaction / eczematous eruption [2]
Exanthems [4]
Flushing / rubefaction [2]
Lichenoid eruption / lichenoid reaction [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Necrosis (skin necrosis) [3]
Pemphigus [2]
Psoriasis [21]
Rash (<10%) [3]
Raynaud's phenomenon [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives [3]
Hair
Alopecia / hair loss [6]
Nails
Nail thickening [2]
Cardiovascular
Bradycardia / sinus bradycardia [22]
Cardiac arrest [2]
Hypertension [2]
Hypotension [22]
Central Nervous System
Agitation [2]
Amnesia [2]
Confusion [2]
Delirium [3]
Hallucinations [5]

Hallucinations, visual (see also Charles Bonnet syndrome) [4]
Headache [2]
Insomnia [2]
Irritability [2]
Nightmares [2]
Psychosis [3]
Sleep disturbances [10]
Sleep-related disorder [2]
Somnambulism (sleepwalking; noctambulism) [2]
Somnolence (drowsiness) [4]
Vertigo / dizziness [4]

Endocrine/Metabolic
Hyperkalemia [4]
Hypoglycemia (see also insulin autoimmune syndrome) [17]
Weight gain [2]

Gastrointestinal/Hepatic
Constipation [2]
Diarrhea [6]
Gastroesophageal reflux [2]
Nausea [2]

Genitourinary
Peyronie's disease [6]

Neuromuscular/Skeletal
Asthenia / fatigue [6]
Myalgia/Myopathy [3]

Respiratory
Bronchospasm [4]
Upper respiratory tract infection [2]
Wheezing [3]

Other
Adverse effects / adverse reactions [11]
Death [3]
Side effects [2]
Tooth decay [2]

PROPYLTHIOURACIL

Trade name: Propyl-Thyracil (Paladin)
Indications: Hyperthyroidism
Class: Antithyroid, Antithyroid; hormone modifier
Half-life: <5 hours
Clinically important, potentially hazardous interactions with: anticoagulants, dicumarol, warfarin
Pregnancy category: D
Warning: SEVERE LIVER INJURY and ACUTE LIVER FAILURE

Skin
Angioedema [3]
Anti-neutrophil cytoplasmic antibody (ANCA) vasculitis (angiitis) (see also allergic granulomatous angiitis / Eosinophilic Granulomatosis with Polyangiitis (EGPA) / Churg-Strauss syndrome [4]
DRESS syndrome [5]
Erythema nodosum [2]
Exanthems (3–5%) [6]
Hypersensitivity [4]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (<20%) [16]
Lupus syndrome / drug-induced lupus (DIL) [3]
Pruritus (itching) [2]
Purpura [2]
Pyoderma gangrenosum [6]
Rash (>10%)
Sweet's syndrome [3]
Ulcerations [2]
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [54]
Vesiculation (in newborn) [2]

Hair
Alopecia / hair loss [3]

Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [3]

Central Nervous System
Ageusia (taste loss) / taste disorder (1–10%)
Dysgeusia (taste perversion) (metallic taste) (<10%) [2]
Fever (pyrexia) (includes hyperpyrexia) [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [6]

Otic
Otitis media [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [6]

Respiratory
Cough [2]
Pneumonia [4]

Other
Death [4]

PROPYPHENAZONE

Trade names: Migradon (Trenka), Saridon (Bayer)
Indications: Pain and fever
Class: Analgesic, Antipyretic
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: alcohol, anticoagulants, antiepileptics, chloramphenicol, ergotamine, metoclopramide, rifampin, sedatives

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]

PROTRIPTYLINE

Trade name: Vivactil (Odyssey)
Indications: Depression
Class: Antidepressant; tricyclic
Half-life: 54–92 hours
Clinically important, potentially hazardous interactions with: amprenavir, arbutamine, clonidine, epinephrine, formoterol, guanethidine, isocarboxazid, linezolid, MAO inhibitors, phenelzine, quinolones, sparfloxacin, tranylcypromine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Dermatitis (3%)
Diaphoresis (see also hyperhidrosis) (<10%)
Pruritus (itching) (<5%)

Mucosal
Xerostomia (dry mouth) (>10%)

Central Nervous System
Dysgeusia (taste perversion) (>10%)
Parkinsonism (<10%)

PSEUDOEPHEDRINE

Trade names: Allegra-D (Sanofi-Aventis), Benadryl (Pfizer), Bromfed (Muro), Entex (Andrx), Robitussin-CF (Wyeth), Sudafed (Pfizer), Trinalin (Schering)
Indications: Nasal congestion
Class: Adrenergic alpha-receptor agonist
Half-life: 9–16 hours
Clinically important, potentially hazardous interactions with: bromocriptine, fluoxetine, fluvoxamine, furazolidone, iobenguane, MAO inhibitors, paroxetine hydrochloride, phenelzine, rasagiline, sertraline, tranylcypromine
Pregnancy category: C
Note: (February 2023) The European Medicines Agency has started a review of medicines containing pseudoephedrine following concerns about the risk of posterior reversible encephalopathy syndrome (PRES) and reversible cerebral vasoconstriction syndrome (RCVS) from the use of over-the-counter decongestants containing pseudoephedrine.

Skin
AGEP [3]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
Dermatitis [3]
Diaphoresis (see also hyperhidrosis) (<10%)
Erythroderma [2]
Exanthems [4]
Fixed eruption [14]

Cardiovascular
Myocardial infarction [2]
Palpitation [2]

Central Nervous System
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [3]
Somnolence (drowsiness) [2]

PSORALENS

Trade names: Oxsoralen (Valeant), Trisoralen (Valeant)
Indications: Psoriasis, eczema, vitiligo, cutaneous T-cell lymphoma
Class: Psoralen
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Basal cell carcinoma [3]
Bullous pemphigoid / pemphigoid (with UVA) [14]
Burning / skin burning sensation (<10%) [3]
Dermatitis [11]
Eczema / eczematous reaction / eczematous eruption [2]

Edema / fluid retention (see also peripheral edema) (<10%)
Ephelides (freckles) (<10%) [5]
Erythema [2]
Herpes simplex [2]
Herpes zoster [2]
Hypomelanosis (<10%)
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Melanoma [3]
Photosensitivity [14]
Phototoxicity [15]
Pigmentation [9]
Porokeratosis (actinic) [3]
Pruritus (itching) (>10%) [4]
Rash (<10%)
Squamous cell carcinoma [4]
Tumors (for the most part malignant) [18]
Vesiculation [2]
Vitiligo [2]

Hair
Hypertrichosis [4]

Nails
Nail pigmentation [4]
Photo-onycholysis [4]

Mucosal
Cheilitis (inflammation of the lips) (<10%)

Central Nervous System
Pain [3]

PYRAZINAMIDE

Trade names: Pyrazinamide (Clonmel), Rifater (Sanofi-Aventis)
Indications: Tuberculosis
Class: Antibiotic, Antimicrobial, Antimycobacterial (including antitubercular)
Half-life: 9–10 hours
Clinically important, potentially hazardous interactions with: rifampin
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
DRESS syndrome [4]
Rash [5]

Endocrine/Metabolic
Hyperuricemia [4]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [21]

Neuromuscular/Skeletal
Myalgia/Myopathy (<10%) [3]

Other
Adverse effects / adverse reactions [4]
Death [7]

PYRIDOSTIGMINE

Trade names: Mestinon (Valeant), Regonol (Novartis)
Indications: Myasthenia gravis
Class: Acetylcholinesterase inhibitor
Half-life: ~2 hours
Clinically important, potentially hazardous interactions with: aminoglycosides, bacitracin, clindamycin, colistin, edrophonium, polymyxin B, propafenone, propranolol, quinidine, tetracyclines
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Cardiovascular
Myocardial infarction [2]

Central Nervous System
Neurotoxicity [3]
Parkinsonism [2]

Gastrointestinal/Hepatic
Abdominal pain [5]
Diarrhea [2]
Nausea [3]

Other
Adverse effects / adverse reactions [2]
Side effects [2]

PYRIDOXINE

Synonym: vitamin B_6
Indications: Pyridoxine deficiency
Class: Vitamin
Half-life: 15–20 days
Clinically important, potentially hazardous interactions with: levodopa
Pregnancy category: A (the pregnancy category will be C if used in doses above the RDA)

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
Dermatitis [4]
Photosensitivity [4]

PYRIMETHAMINE

Trade names: Daraprim (GSK), Fansidar (Roche)
Indications: Malaria
Class: Antimalarial, Antimicrobial, Antiprotozoal
Half-life: 80–95 hours
Clinically important, potentially hazardous interactions with: dapsone, pemetrexed, trimethoprim, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Fansidar is pyrimethamine and sulfadoxine. Sulfadoxine is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Angioedema [2]
Bullous dermatosis [2]
DRESS syndrome [2]
Erythema multiforme [4]
Exanthems [3]
Exfoliative dermatitis [2]
Fixed eruption [3]
Hypersensitivity (>10%)
Lichenoid eruption / lichenoid reaction [2]
Photosensitivity (>10%) [3]
Pigmentation [5]
Pruritus (itching) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<10%) [33]

Central Nervous System
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Diarrhea [2]
Nausea [2]
Vomiting [2]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Other
Adverse effects / adverse reactions [2]
Death [4]

QUAZEPAM

Trade name: Doral (MedPointe)
Indications: Insomnia
Class: Benzodiazepine
Half-life: 25–41 hours
Clinically important, potentially hazardous interactions with: amprenavir, chlorpheniramine, clarithromycin, efavirenz, esomeprazole, imatinib, indinavir, nelfinavir, ritonavir
Pregnancy category: X

Skin
Dermatitis (<10%)
Diaphoresis (see also hyperhidrosis) (>10%)
Rash (>10%)

Mucosal
Sialopenia (>10%)
Sialorrhea (ptyalism; hypersalivation) (<10%)
Xerostomia (dry mouth) (<5%)

QUETIAPINE

Trade name: Seroquel (AstraZeneca)
Indications: Schizophrenia, bipolar I disorder
Class: Antipsychotic, Mood stabilizer
Half-life: ~6 hours
Clinically important, potentially hazardous interactions with: alcohol, amoxapine, antihypertensive agents, arsenic, atazanavir, azithromycin, CNS acting drugs, darunavir, dolasetron, dopamine, drugs known to cause electrolyte imbalance or increase QT interval, erythromycin, fluconazole, hepatic enzyme inducers, itraconazole, ketoconazole, levodopa, methadone, P4503A inhibitors, pazopanib, telavancin, tipranavir, tricyclic antidepressants, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS and SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
DRESS syndrome [2]
Edema / fluid retention (see also peripheral edema) [2]
Hyperhidrosis (see also diaphoresis) (2%)
Peripheral edema (see also edema) [6]
Rash (4%)
Thrombocytopenic purpura [2]

Mucosal
Sialorrhea (ptyalism; hypersalivation) [3]
Xerostomia (dry mouth) (9%) [22]

Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypertension (41%)
Hypotension [6]
Myocarditis [2]
Postural hypotension [2]
QT interval prolonged / QT prolongation [7]
Tachycardia (6%) [3]

Central Nervous System
Abnormal dreams (2–3%)
Agitation (20%) [3]
Akathisia (8%) [6]
Anxiety (2–4%)
Compulsions / obsessive-compulsive symptoms [3]
Confusion [2]
Delirium [3]
Depression (3%) [3]
Extrapyramidal symptoms [4]
Headache (21%) [6]
Hypoesthesia (numbness) (2%)
Hypomania [3]
Impulse control disorder [2]
Insomnia (9%) [2]
Mania [3]
Neuroleptic malignant syndrome [16]
Pain (7%)
Paresthesias (3%)
Parkinsonism (4%) [5]
Psychosis [2]
Restless legs syndrome [7]
Sedation [15]
Seizures [7]
Serotonin syndrome [2]
Sleep-related disorder [2]
Somnambulism (sleepwalking; noctambulism) [2]
Somnolence (drowsiness) (18%) [23]
Suicidal ideation [3]
Tardive syndrome / tardive dyskinesia (5%) [3]
Tic disorder [3]
Tremor [3]
Vertigo / dizziness (11%) [14]

Endocrine/Metabolic
ALT increased (5%)
Appetite increased [3]
Diabetes mellitus [2]
Hyperglycemia (includes glucose increased) [3]
Hypertriglyceridemia (includes triglycerides increased) [4]
Hyponatremia [3]
Libido decreased (2%)
Metabolic syndrome [2]
SIADH [5]
Weight gain (5%) [23]

Gastrointestinal/Hepatic
Abdominal pain (4–7%)
Colitis [3]
Constipation (8%) [6]
Dyspepsia / functional dyspepsia / gastroparesis (5%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (7%)
Pancreatitis / acute pancreatitis [5]
Vomiting (6%)

Genitourinary
Priapism [14]
Sexual dysfunction [2]
Urinary retention [2]

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [3]

Neuromuscular/Skeletal
Asthenia / fatigue (5%) [5]
Ataxia (2%)
Dystonia [2]
Pisa syndrome (pleurothotonus) [2]
Rhabdomyolysis [6]

Ocular
Amblyopia (2–3%)
Vision blurred (<4%)

Renal
Renal failure [2]

Respiratory
Pneumonia [2]

Other
Adverse effects / adverse reactions [11]
Death [9]
Toothache (odontalgia) (2–3%)

QUINACRINE

Synonym: mepacrine
Trade name: Atabrine (Winthrop)
Indications: Various infections caused by susceptible helminths
Class: Antibiotic, Antimalarial, Antimicrobial
Half-life: 4–10 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Exanthems [3]
Exfoliative dermatitis (8%) [3]
Fixed eruption [3]
Lichenoid eruption / lichenoid reaction (12%) [6]
Ochronosis [2]
Pigmentation [9]
Squamous cell carcinoma [2]

Hair
Alopecia / hair loss (80%) [2]

Nails
Nail pigmentation (ala nasi) (blue-gray) [2]

Mucosal
Oral pigmentation [4]

Central Nervous System
Psychiatric adverse effect [4]
Psychosis [9]

Gastrointestinal/Hepatic
Nausea [2]
Vomiting [2]

QUINAGOLIDE

Trade name: Norprolac (Ferring)
Indications: Hyperprolactinemia
Class: Antiprolactin, Dopamine receptor agonist
Half-life: 11.5 hours
Clinically important, potentially hazardous interactions with: alcohol, lurasidone, paliperidone, ziprasidone

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Skin
Edema / fluid retention (see also peripheral edema) (<10%)
Flushing / rubefaction (<10%)

Mucosal
Nasal congestion (>10%)

Central Nervous System
Anorexia (<10%)
Headache (>10%)
Insomnia (<10%)
Vertigo / dizziness (>10%)

Gastrointestinal/Hepatic
Abdominal pain (<10%)
Constipation (<10%)
Diarrhea (<10%)
Nausea (>10%)
Vomiting (>10%)

Neuromuscular/Skeletal
Asthenia / fatigue (>10%)

QUINAPRIL

Trade names: Accupril (Pfizer), Accupro (Pfizer), Accuretic (Pfizer)
Indications: Hypertension, heart failure
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive, Vasodilator
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, allopurinol, alpha blockers, alprostadil, amifostine, amiloride, angiotensin II receptor antagonists, antacids, antidiabetics, antihypertensives, antipsychotics, anxiolytics and hypnotics, aprotinin, azathioprine, baclofen, beta blockers, calcium channel blockers, chlortetracycline, ciprofloxacin, clonidine, corticosteroids, cyclosporine, demeclocycline, diazoxide, diuretics, doxycycline, eplerenone, estrogens, everolimus, gemifloxacin, general anesthetics, gold & gold compounds, heparins, hydralazine, insulin, levodopa, lithium, lymecycline, MAO inhibitors, metformin, methyldopa, methylphenidate, minocycline, minoxidil, moxifloxacin, moxisylyte, moxonidine, nitrates, nitroprusside, NSAIDs, ofloxacin, oxytetracycline, pentoxifylline, phosphodiesterase 5 inhibitors, potassium salts, prostacyclin analogues, quinine, quinolones, rituximab, salicylates, sirolimus, spironolactone, sulfonylureas, temsirolimus, tetracycline, tetracyclines, tigecycline, tizanidine, tolvaptan, triamterene, trimethoprim
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a history of angioedema related to previous treatment with an ACE inhibitor.
Warning: FETAL TOXICITY
WHEN USED IN PREGNANCY DURING THE SECOND AND THIRD TRIMESTERS, ACE INHIBITORS CAN CAUSE INJURY AND EVEN DEATH TO THE DEVELOPING FETUS. WHEN PREGNANCY IS DETECTED, QUINAPRIL SHOULD BE DISCONTINUED AS SOON AS POSSIBLE.
See full prescribing information for complete boxed warning.

Skin
Angioedema [10]
Diaphoresis (see also hyperhidrosis) [3]

Edema / fluid retention (see also peripheral edema) [4]
Peripheral edema (see also edema) [3]
Photosensitivity [2]
Pruritus (itching) [7]
Rash [5]

Central Nervous System
Dysgeusia (taste perversion) [3]

Neuromuscular/Skeletal
Myalgia/Myopathy (2%)

Respiratory
Cough [9]

Other
Adverse effects / adverse reactions [2]

QUINETHAZONE

Indications: Hypertension, edema
Class: Diuretic, thiazide
Half-life: N/A
Clinically important, potentially hazardous interactions with: digoxin, lithium
Note: Quinethazone is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Photosensitivity [2]

QUINIDINE

Indications: Tachycardia, atrial fibrillation
Class: Antiarrhythmic, Antiarrhythmic class Ia, Antimalarial, Antimicrobial, Antiprotozoal
Half-life: 6–8 hours
Clinically important, potentially hazardous interactions with: abarelix, afatinib, amiloride, amiodarone, amisulpride, amitriptyline, amprenavir, anisindione, anticoagulants, aripiprazole, arsenic, artemether/lumefantrine, asenapine, astemizole, atazanavir, boceprevir, celiprolol, ceritinib, ciprofloxacin, clevidipine, clozapine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, crizotinib, dabigatran, darunavir, dasatinib, degarelix, delavirdine, deutetrabenazine, dicumarol, digoxin, duloxetine, eluxadoline, enoxacin, enzalutamide, ethoxzolamide, fosamprenavir, gatifloxacin, glycopyrrolate, glycopyrronium, indinavir, itraconazole, ketoconazole, letermovir, lomefloxacin, lopinavir, lurasidone, metformin, mifepristone, mivacurium, moxifloxacin, naldemedine, nelfinavir, nilotinib, norfloxacin, ofloxacin, oliceridine, osimertinib, oxprenolol, pimavanserin, pimozide, pipecuronium, ponesimod, posaconazole, pristinamycin, propranolol, pyridostigmine, quinine, quinolones, ranolazine, ribociclib, rifapentine, ritonavir, rocuronium, sertindole, sotalol, sparfloxacin, sulpiride, telaprevir, telithromycin, tetrabenazine, tipranavir, tramadol, valbenazine, vecuronium, venetoclax, verapamil, voriconazole, vortioxetine, warfarin, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
AGEP [2]
Dermatitis [4]
Exanthems [6]
Exfoliative dermatitis [5]
Fixed eruption [2]
Flushing / rubefaction [2]
Lichen planus (includes hypertrophic lichen planus) [7]
Lichenoid eruption / lichenoid reaction [6]
Livedo reticularis [6]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [35]
Photosensitivity [21]
Pigmentation [3]
Pruritus (itching) [3]
Psoriasis [5]
Purpura [13]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [5]

Mucosal
Oral mucosal eruption [2]

Cardiovascular
Congestive heart failure [2]
QT interval prolonged / QT prolongation [9]
Torsades de pointes [13]

Central Nervous System
Dysgeusia (taste perversion) (>10%)
Headache (<10%) [2]
Syncope / fainting [2]
Tremor (2%)
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Diarrhea (>10%) [7]

Genitourinary
Urinary tract infection [2]

Hematologic
Thrombocytopenia [2]

QUININE

Trade name: Qualaquin (URL Pharma)
Indications: Malaria
Class: Antimalarial, Antimicrobial, Antiprotozoal
Half-life: 8–14 hours
Clinically important, potentially hazardous interactions with: amantadine, amiodarone, amitriptyline, amoxapine, anisindione, anticoagulants, arsenic, artemether/lumefantrine, astemizole, atazanavir, atorvastatin, cimetidine, cisapride, citalopram, class Ia or III antiarrhythmics, clevidipine, CYP3A4 and CYP2D6 substrates, CYP3A4 inducers or inhibitors, darunavir, dasatinib, degarelix, dicumarol, digoxin, disopyramide, dofetilide, dolasetron, droperidol, enalapril, flecainide, fosamprenavir, halofantrine, haloperidol, histamine, indinavir, lapatinib, levofloxacin, mefloquine, metformin, moxifloxacin, nelfinavir, neuromuscular blocking agents, olmesartan, oral typhoid vaccine, pazopanib, pimozide, procainamide, prochlorperazine, quinapril, quinidine, ramipril, rifampin, ritonavir, saquinavir, sotalol, succinylcholine, telavancin, telithromycin, terfenadine, tipranavir, voriconazole, vorinostat, warfarin, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Qualaquin (quinine sulfate) is not indicated for the prevention or treatment of nocturnal leg cramps.
Contra-indicated in patients with prolongation of QT interval, G6PD deficiency, myasthenia gravis, or optic neuritis.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Acral necrosis [2]
Dermatitis [6]
Erythema multiforme [2]
Exanthems (<5%) [3]
Exfoliative dermatitis [2]
Fixed eruption [12]
Lichen planus (includes hypertrophic lichen planus) [3]
Lichenoid eruption / lichenoid reaction [3]
Livedo reticularis (photosensitive) [3]
Photosensitivity [19]
Pigmentation [6]
Purpura [13]
Raynaud's phenomenon [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
Thrombocytopenic purpura [8]
Urticaria / hives [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [5]

Cardiovascular
Cardiotoxicity [2]

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [3]

Hematologic
Hemolytic anemia [2]
Hemolytic uremic syndrome [16]
Thrombocytopenia [11]
Thrombotic microangiopathy [2]

Neuromuscular/Skeletal
Leg cramps [2]
Rhabdomyolysis [2]

Ocular
Amblyopia [8]

Otic
Hearing loss (hypoacusis) [4]
Ototoxicity [2]
Tinnitus [9]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Adverse effects / adverse reactions [3]
Death [2]

RABEPRAZOLE

Trade name: Aciphex (Eisai) (Janssen)
Indications: Gastroesophageal reflux disease (GERD), duodenal ulcers, Zollinger-Ellison syndrome
Class: Proton pump inhibitor (PPI)
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: atazanavir, capmatinib, clopidogrel, cyclosporine, digoxin, emtricitabine/rilpivirine/tenofovir alafenamide, ketoconazole, rilpivirine, simvastatin, warfarin

Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Pruritus (itching) [2]
Rash [3]
Central Nervous System
Dysgeusia (taste perversion) [2]
Headache (2–5%) [4]
Pain (3%)
Vertigo / dizziness [4]
Endocrine/Metabolic
Hypomagnesemia [2]
Gastrointestinal/Hepatic
Abdominal pain [6]
Constipation (2%)
Diarrhea (3%) [8]
Dyspepsia / functional dyspepsia / gastroparesis [3]
Flatulence [2]
Gastrointestinal bleeding [2]
Nausea [5]
Vomiting [5]
Neuromuscular/Skeletal
Asthenia / fatigue [3]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Cough [3]
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [4]

RADIUM-223 DICHLORIDE

Synonym: Ra-223 dichloride
Trade name: Xofigo (Bayer)
Indications: Castration-resistant prostate cancer
Class: Radiopharmaceutical, alpha-emitting
Half-life: 11.4 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Peripheral edema (see also edema) (13%) [3]
Central Nervous System
Anorexia [2]
Endocrine/Metabolic
Dehydration (3%)
Gastrointestinal/Hepatic
Diarrhea (25%) [6]
Nausea (36%) [5]
Vomiting (19%) [4]
Hematologic
Anemia (93%) [7]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (35%) [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (72%) [3]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) (18%) [6]
Pancytopenia (includes bicytopenia) (2%)
Thrombocytopenia (31%) [6]
Neuromuscular/Skeletal
Bone or joint pain [3]
Renal
Renal failure (3%)
Renal function abnormal / renal dysfunction (<3%)
Other
Adverse effects / adverse reactions [2]

RALOXIFENE

Trade name: Evista (Lilly)
Indications: Osteoporosis, reduction in risk of invasive breast cancer in postmenopausal women with osteoporosis or at high risk for invasive breast cancer
Class: Selective estrogen receptor modulator (SERM)
Half-life: 27.7 hours
Clinically important, potentially hazardous interactions with: cholestyramine, levothyroxine
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: INCREASED RISK OF VENOUS THROMBOEMBOLISM AND DEATH FROM STROKE

Skin
Diaphoresis (see also hyperhidrosis) (3%)
Hot flashes / hot flushes (8–29%) [14]
Peripheral edema (see also edema) (3–5%) [4]
Rash (6%)
Cardiovascular
Chest pain (3%)
Venous thromboembolism [5]
Central Nervous System
Insomnia (6%)
Stroke / cerebral infarction [4]
Endocrine/Metabolic
Mastodynia (4%) [2]
Weight gain (9%)
Gastrointestinal/Hepatic
Abdominal pain (7%)
Vomiting (5%)
Genitourinary
Vaginal bleeding (6%)
Vaginitis (includes vulvitis) (4%)
Hematologic
Thrombosis [2]
Neuromuscular/Skeletal
Arthralgia (11–16%)
Leg cramps (6–12%) [5]
Myalgia/Myopathy (8%)
Respiratory
Bronchitis (10%)
Influenza- ('flu)-like syndrome (~2%)
Pharyngitis (sore throat) (8%)
Pneumonia (3%)
Sinusitis (10%)
Other
Adverse effects / adverse reactions [2]
Infection (11%)

RALTEGRAVIR

Trade name: Isentress (Merck)
Indications: HIV-1 infection
Class: Antiretroviral, Integrase strand transfer inhibitor
Half-life: 9 hours
Clinically important, potentially hazardous interactions with: atazanavir, efavirenz, histamine H_2 antagonists, omeprazole, pantoprazole, proton pump inhibitors, rifampin, St John's wort, strong UGT inducers, tipranavir
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
DRESS syndrome [4]
Herpes zoster (<2%)
Hypersensitivity (<2%) [7]
Pruritus (itching) (4%)
Rash [9]
Central Nervous System
Depression (<2%) [2]
Headache (2%) [10]
Insomnia (4%) [4]
Neurotoxicity [2]
Vertigo / dizziness (<2%) [2]
Endocrine/Metabolic
ALT increased [3]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Serum creatinine increased [2]
Gastrointestinal/Hepatic
Abdominal pain (<2%) [2]
Diarrhea [8]
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Gastritis / pangastritis / gastric irritation (<2%)
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (<2%) [3]
Nausea (<2%) [9]
Vomiting (<2%) [2]
Neuromuscular/Skeletal
Asthenia / fatigue (<2%) [4]
Myalgia/Myopathy [3]
Rhabdomyolysis [8]
Renal
Nephrolithiasis (formation of a kidney stone) (<2%)
Renal failure (<2%)
Other
Adverse effects / adverse reactions [6]

RALTITREXED

Trade name: Tomudex (AstraZeneca)
Indications: Colorectal neoplasms (advanced)
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Folate analogue
Half-life: terminal: up to 198 hours
Clinically important, potentially hazardous interactions with: folic acid, L-methylfolate
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Cellulitis (<10%)
Diaphoresis (see also hyperhidrosis) (<10%)
Edema / fluid retention (see also peripheral edema) (9–10%)
Exfoliative dermatitis (<10%)
Pruritus (itching) (14%)
Rash (14%)
Hair
Alopecia / hair loss (<10%)
Mucosal
Mucositis (12–48%)
Stomatitis (oral mucositis) (12–48%)
Xerostomia (dry mouth) (<10%)
Cardiovascular
Arrhythmias (3%)
Congestive heart failure (2%)
Central Nervous System
Anorexia (27%)
Chills (<10%)
Depression (<10%)
Dysgeusia (taste perversion) (<10%)
Fever (pyrexia) (includes hyperpyrexia) (2–23%)
Headache (<10%)
Insomnia (<10%)
Pain (<10%)
Endocrine/Metabolic
Weight loss (<10%)
Gastrointestinal/Hepatic
Abdominal pain (18%)
Flatulence (<10%)
Genitourinary
Urinary tract infection (<10%)
Hematologic
Neutropenia (neutrophils decreased) [2]
Sepsis (<10%)
Thrombocytopenia [2]
Neuromuscular/Skeletal
Arthralgia (<10%)
Asthenia / fatigue (47%)
Myalgia/Myopathy (<10%)
Ocular
Conjunctivitis (conjunctival inflammation) (<10%)
Respiratory
Cough (<10%)
Dyspnea / shortness of breath (<10%)
Influenza- ('flu)-like syndrome (6–8%)
Pharyngitis (sore throat) (<10%)
Other
Infection (<10%)

RAMELTEON

Trade name: Rozerem (Takeda)
Indications: Insomnia
Class: Hypnotic, Melatonin receptor agonist
Half-life: 1–2.6 hours
Clinically important, potentially hazardous interactions with: alcohol, antifungals, CNS depressants, conivaptan, CYP1A2 inhibitors, donepezil, doxepin, droperidol, fluconazole, fluvoxamine, food, ketoconazole, levomepromazine, rifampin, rifapentine, St John's wort, viloxazine, voriconazole, zolpidem
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Central Nervous System
Depression (2%)
Dysgeusia (taste perversion) (2%)
Headache (7%) [8]
Insomnia (exacerbation) (3%)
Somnolence (drowsiness) (3%) [9]
Vertigo / dizziness (4%) [6]
Gastrointestinal/Hepatic
Nausea (3%) [3]
Genitourinary
Urinary tract infection [2]
Neuromuscular/Skeletal
Arthralgia (2%)
Asthenia / fatigue (3%) [4]
Myalgia/Myopathy (2%)
Respiratory
Upper respiratory tract infection (3%)
Other
Adverse effects / adverse reactions [7]

RAMIPRIL

Trade names: Altace (Monarch), Tritace (Sanofi-Aventis)
Indications: Hypertension
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive, Vasodilator
Half-life: 2–17 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, allopurinol, alpha blockers, alprostadil, amifostine, amiloride, angiotensin II receptor antagonists, antacids, antihypertensives, antipsychotics, azathioprine, baclofen, beta blockers, calcium channel blockers, clonidine, corticosteroids, cyclosporine, diazoxide, diuretics, eplerenone, estrogens, everolimus, general anesthetics, gold & gold compounds, heparins, hydralazine, hypotensives, insulin, levodopa, lithium, MAO inhibitors, metformin, methyldopa, minoxidil, moxisylyte, moxonidine, nitrates, nitroprusside, NSAIDs, pentoxifylline, phosphodiasterase 5 inhibitors, potassium salts, prostacyclin analogues, quinine, rituximab, sirolimus, spironolactone, sulfonylureas, telmisartan, temsirolimus, tizanidine, tolvaptan, triamterene, trimethoprim
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a history of angioedema related to previous treatment with an ACE inhibitor, or a history of hereditary or idiopathic angioedema.
Warning: FETAL TOXICITY

Skin
Angioedema [13]
Diaphoresis (see also hyperhidrosis) [2]
Flushing / rubefaction [2]
Lichen planus pemphigoides [3]
Photosensitivity [2]
Pruritus (itching) [3]
Rash [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Hair
Alopecia / hair loss (<10%)
Cardiovascular
Angina (3%)
Hypotension (11%) [3]
Postural hypotension (2%)
Central Nervous System
Headache (5%) [2]
Syncope / fainting (2%)
Vertigo / dizziness (2–4%) [4]
Endocrine/Metabolic
Hyperkalemia [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea (2%)
Pancreatitis / acute pancreatitis [2]
Vomiting (2%)
Neuromuscular/Skeletal
Asthenia / fatigue (2%)
Respiratory
Cough (8–12%) [22]
Other
Adverse effects / adverse reactions [4]

RAMUCIRUMAB

Trade name: Cyramza (Lilly)
Indications: Gastric cancer
Class: Angiogenesis inhibitor / antiangiogenic agent, Monoclonal antibody
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: HEMORRHAGE, GASTROINSTINAL PERFORATION, AND IMPAIRED WOUND HEALING

Skin
Peripheral edema (see also edema) [3]
Rash (4%)
Mucosal
Epistaxis (nosebleed) (5%) [2]
Stomatitis (oral mucositis) [5]
Cardiovascular
Hypertension (16%) [32]
Thromboembolism (2%) [2]
Venous thromboembolism [2]
Central Nervous System
Anorexia [3]
Headache (9%) [3]
Endocrine/Metabolic
Appetite decreased [7]
AST increased [3]
Dehydration [2]
Hyperbilirubinemia [2]
Hyponatremia (6%)
Gastrointestinal/Hepatic
Abdominal pain [2]
Ascites [3]
Constipation [3]
Diarrhea (14%) [11]
Gastric obstruction (2%)
Gastrointestinal perforation / perforated colon / gastric perforation [6]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [5]
Vomiting [4]

Hematologic
Anemia [10]
Bleeding [6]
Febrile neutropenia [14]
Hemorrhage [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [10]
Neutropenia (neutrophils decreased) (5%) [23]
Thrombocytopenia [6]

Local
Infusion-related reactions [4]

Neuromuscular/Skeletal
Asthenia / fatigue [17]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Proteinuria [16]

Respiratory
Dyspnea / shortness of breath [3]

Other
Adverse effects / adverse reactions [2]
Death [4]

RANIBIZUMAB

Trade name: Lucentis (Genentech)
Indications: Neovascular (wet) age-related macular degeneration, macular edema (following retinal vein occlusion)
Class: Angiogenesis inhibitor / antiangiogenic agent, Monoclonal antibody, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 9 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with ocular or periocular infections.

Cardiovascular
Atrial fibrillation (<5%)
Hypertension [4]
Myocardial infarction [2]
Thromboembolism [3]

Central Nervous System
Anxiety (<4%)
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache (3–12%)
Insomnia (<5%)
Stroke / cerebral infarction [3]

Endocrine/Metabolic
Hypercholesterolemia (<5%)

Gastrointestinal/Hepatic
Gastroenteritis (<4%)
Nausea (<9%)

Genitourinary
Urinary tract infection (<9%)

Hematologic
Anemia (<8%)

Local
Injection-site bleeding (<6%)

Neuromuscular/Skeletal
Arthralgia (2–11%)
Pain in extremities (<5%)

Ocular
Blepharitis (<13%)
Cataract (2–17%) [4]
Conjunctival hemorrhage (48–74%) [4]
Conjunctival hyperemia / conjunctival injection (<8%)
Endophthalmitis [9]
Intraocular inflammation (<18%) [5]
Intraocular pressure increased (7–24%) [8]
Iridocyclitis [3]
Lacrimation (increased) (2–14%)
Maculopathy (6–11%)
Ocular adverse effect [6]
Ocular hemorrhage [6]
Ocular hyperemia (5–11%)
Ocular itching / ocular pruritus (<12%)
Ocular pain (17–35%) [4]
Ocular stinging (7–15%)
Posterior capsule opacification (<8%)
Retinal atrophy [2]
Retinal detachment [2]
Retinal vein occlusion [2]
Vision blurred (5–18%)
Visual disturbances (5–18%)
Vitreous detachment (4–21%)
Vitreous floaters (7–27%) [2]
Xerophthalmia (dry eyes) (3–12%)

Respiratory
Bronchitis (<12%)
COPD (<7%)
Cough (2–9%)
Dyspnea / shortness of breath (<5%)
Influenza (3–7%)
Nasopharyngitis (5–16%) [2]
Sinusitis (3–8%)
Upper respiratory tract infection (2–9%)

Other
Adverse effects / adverse reactions [6]
Systemic reactions [2]

RANITIDINE

Trade name: Zantac (Concordia)
Indications: Duodenal ulcer
Class: Histamine H2 receptor antagonist
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: acalabrutinib, alfentanil, delavirdine, fentanyl, gefitinib, lemborexant, metformin, prednisone, rilpivirine, risperidone
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

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Skin
AGEP [2]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [18]
Dermatitis [6]
Eczema / eczematous reaction / eczematous eruption [2]
Exanthems [5]
Hypersensitivity [2]
Photosensitivity [2]
Pseudolymphoma [2]
Purpura [2]
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives [4]

Central Nervous System
Confusion [2]
Somnolence (drowsiness) [2]

Endocrine/Metabolic
Gynecomastia [3]
Porphyria [3]

Hematologic
Thrombocytopenia [2]

Respiratory
Pneumonia [2]

Other
Adverse effects / adverse reactions [3]

RANOLAZINE

Trade name: Ranexa (CV Therapeutics)
Indications: Angina
Class: Anti-ischemic, Fatty acid oxidation inhibitor
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: aprepitant, atazanavir, clarithromycin, conivaptan, cyclosporine, CYP3A inducers, CYP3A inhibitors, darunavir, delavirdine, diltiazem, dofetilide, efavirenz, erythromycin, grapefruit juice, indinavir, itraconazole, ketoconazole, lopinavir, nelfinavir, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, oxcarbazepine, paroxetine hydrochloride, phenobarbital, quinidine, rifampin, rifapentine, ritonavir, simvastatin, sotalol, telithromycin, thioridazine, tipranavir, venetoclax, verapamil, voriconazole, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contra-indicated in patients with existing QT prolongation, and in patients with liver disease.

Mucosal
Xerostomia (dry mouth) (<2%)

Cardiovascular
Palpitation (<2%)
QT interval prolonged / QT prolongation [7]
Torsades de pointes [2]

Central Nervous System
Headache (3%) [4]
Vertigo / dizziness [10]

Gastrointestinal/Hepatic
Abdominal pain (<2%)
Constipation [8]
Nausea [9]
Vomiting [2]

Neuromuscular/Skeletal
Asthenia / fatigue [3]
Myalgia/Myopathy [4]

Otic
Tinnitus (<2%)

RASAGILINE

Trade name: Azilect (Teva)
Indications: Parkinsonism
Class: Monoamine oxidase B inhibitor
Half-life: 0.6–2.0 hours
Clinically important, potentially hazardous interactions with: aminophylline, amitriptyline, ciprofloxacin, citalopram, dextromethorphan, entacapone, fluoxetine, fluvoxamine, MAO inhibitors, meperidine, paroxetine hydrochloride, pethidine, pseudoephedrine, SSRIs, viloxazine
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (2%)
Mucosal
Xerostomia (dry mouth) (3%)
Cardiovascular
Hypotension (5%)
Central Nervous System
Depression (5%) [2]
Dyskinesia (>10%) [3]
Fever (pyrexia) (includes hyperpyrexia) (3%)
Gait instability / postural instability (5%)
Headache (14%) [2]
Paresthesias (2%)
Somnolence (drowsiness) [3]
Vertigo / dizziness (2%) [3]
Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis (7%)
Gastroenteritis (3%)
Nausea [2]
Neuromuscular/Skeletal
Arthralgia (7%) [2]
Asthenia / fatigue (2%)
Dystonia (2%)
Neck pain (2%)
Ocular
Conjunctivitis (conjunctival inflammation) (3%)
Respiratory
Influenza- ('flu)-like syndrome (5%)
Nasopharyngitis [2]
Rhinitis (3%)

RASBURICASE

Trade name: Elitek (Sanofi-Aventis)
Indications: Hyperuricemia (associated with tumor lysis syndrome)
Class: Antimetabolite, Urate oxidase
Half-life: 18 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: ANAPHYLAXIS, HEMOLYSIS, METHEMOGLOBINEMIA, AND INTERFERENCE WITH URIC ACID MEASUREMENTS

Skin
Hypersensitivity [7]
Rash (13%) [6]
Mucosal
Mucositis (2–15%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (46%)
Gastrointestinal/Hepatic
Abdominal pain (20%)
Hematologic
Anemia [2]
Hemolysis [6]
Hemolytic anemia [5]
Methemoglobinemia [14]
Other
Death [2]

RASPBERRY LEAF

Family: Rosaceae
Scientific name: *Rubus idaeus*
Indications: Astringent, stimulant, gargle for sore throat, mouth ulcers, bleeding gums, diarrhea, morning sickness, to shorten labor, menstrual complaints, respiratory tract infections, fever, dysmenorrhea, menorrhagia, rash
Class: Food supplement
Half-life: N/A
Clinically important, potentially hazardous interactions with: aminophylline, atropine
Pregnancy category: N/A

REBOXETINE

Trade name: Edronax (Pfizer)
Indications: Clinical depression, panic disorder
Class: Antidepressant, Noradrenaline reuptake inhibitor
Half-life: 13 hours
Clinically important, potentially hazardous interactions with: azithromycin, bosentan, itraconazole, ketoconazole, MAO inhibitors, papaverine, voriconazole
Pregnancy category: N/A (not recommended in pregnancy)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) [8]
Mucosal
Xerostomia (dry mouth) [12]
Central Nervous System
Headache [5]
Insomnia [9]
Somnolence (drowsiness) [2]
Genitourinary
Ejaculatory dysfunction [2]

RED CLOVER

Family: Leguminosae
Scientific name: *Trifolium pratense*
Indications: Menopausal symptoms, hot flashes, muscle spasms, hypercholesterolemia, breast pain, osteoporosis, diuretic, expectorant, mild antispasmodic, sedative, blood purifier, bladder infections, liver disorders. Ointment for acne, eczema, psoriasis and other rashes
Class: Phytoestrogen
Half-life: N/A
Clinically important, potentially hazardous interactions with: conjugated estrogens
Pregnancy category: N/A
Note: Red clover contains phytoestrogens that bind to estrogen and progesterone receptors, potentially adversely affecting breast tissue.

RED RICE YEAST

Family: Monascaceae
Scientific name: *Monascus purpureus*
Indications: Hypercholesterolemia, indigestion, diarrhea, improved circulation. In foodstuff
Class: HMG-CoA reductase inhibitor / statin
Half-life: N/A
Clinically important, potentially hazardous interactions with: atorvastatin, cerivastatin, fluvastatin, grapefruit juice, levothyroxine, lovastatin, pravastatin, simvastatin, St John's wort
Pregnancy category: N/A
Note: Red yeast rice is derived from the fermentation of rice with the yeast Monascus purpureus, yielding a series of cholesterol-lowering monacolins. The monacolin in highest concentration in red yeast rice is monacolin K, also known as lovastatin, the first FDA-approved HMG-CoA reductase inhibitor. Red yeast that is not fermented correctly may contain the nephrotoxin, citrinin. .

Gastrointestinal/Hepatic
Hepatitis [2]
Neuromuscular/Skeletal
Myalgia/Myopathy [5]
Rhabdomyolysis [3]

REGADENOSON

Trade name: Lexiscan (Astellas)
Indications: Radionuclide myocardial perfusion imaging
Class: Adenosine A2A receptor agonist, Diagnostic aid
Half-life: immediate: 30 minutes; terminal: 2 hours
Clinically important, potentially hazardous interactions with: caffeine, dipyridamole, theophylline
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with second- or third-degree AV block or sinus node dysfunction.

Skin
Flushing / rubefaction (16%) [7]
Hot flashes / hot flushes (5%)
Mucosal
Xerostomia (dry mouth) [3]
Cardiovascular
Angina (12%)
Atrioventricular block [2]
Chest pain (7–13%) [9]
Hypotension (7%)
Myocardial infarction [2]
Premature atrial contractions (7%)
Tachycardia (66%)
Central Nervous System
Dysgeusia (taste perversion) (5%)
Fever (pyrexia) (includes hyperpyrexia) (5%)
Headache (26%) [13]
Syncope / fainting [2]
Vertigo / dizziness (8%) [8]
Gastrointestinal/Hepatic
Abdominal pain (5%) [2]
Diarrhea [3]

Nausea (6%) [3]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Respiratory
Dyspnea / shortness of breath (11–28%) [14]
Wheezing (3%)

Other
Adverse effects / adverse reactions [9]

REGORAFENIB

Trade name: Stivarga (Bayer)
Indications: Metastatic colorectal cancer, gastrointestinal stomal tumors
Class: Angiogenesis inhibitor / antiangiogenic agent, Tyrosine kinase inhibitor, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 28 hours
Clinically important, potentially hazardous interactions with: carbamazepine, clarithromycin, CYP3A4 inducers and inhibitors, grapefruit juice, itraconazole, ketoconazole, phenobarbital, phenytoin, posaconazole, rifampin, St John's wort, telithromycin, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: HEPATOTOXICITY

Skin
Cutaneous toxicity / skin toxicity [5]
Desquamation [4]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (45%) [62]
Nevi [2]
Rash (26%) [16]

Hair
Alopecia / hair loss (8%)

Mucosal
Mucositis (33%) [11]
Stomatitis (oral mucositis) [5]
Xerostomia (dry mouth) (5%)

Cardiovascular
Cardiac failure [2]
Chest pain [2]
Hypertension (30%) [54]
Myocardial infarction [2]

Central Nervous System
Anorexia [13]
Fever (pyrexia) (includes hyperpyrexia) (28%) [3]
Headache (10%)
Pain (29%) [2]
Tremor (2%)

Endocrine/Metabolic
ALT increased (45%) [6]
Appetite decreased (47%)
AST increased (65%) [6]
Hyperammonemia [2]
Hyperbilirubinemia [7]
Hyperlipasemia [2]
Hypertransaminasemia (transaminitis) / elevated transaminases [2]
Hypocalcemia (59%)
Hypokalemia (26%)
Hyponatremia (30%)
Hypophosphatemia (57%) [8]
Hypothyroidism (4%) [7]
Weight loss (32%) [7]

Gastrointestinal/Hepatic
Abdominal pain [4]
Diarrhea (43%) [36]
Gastrointestinal perforation / perforated colon / gastric perforation [3]
Hepatic (liver) disorder / hepatobiliary disorder / hepatic (liver) dysfunction [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [15]
Nausea [5]
Vomiting [2]

Hematologic
Anemia (79%) [8]
Hemorrhage (21%) [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (54%)
Neutropenia (neutrophils decreased) (3%) [4]
Thrombocytopenia (41%) [9]

Neuromuscular/Skeletal
Asthenia / fatigue [49]

Renal
Proteinuria (60%) [3]

Respiratory
Dysphonia (includes voice disorders / voice changes) (30%) [6]
Hoarseness [2]

Other
Adverse effects / adverse reactions [11]
Death [4]
Infection (31%)

REMIFENTANIL

Trade name: Ultiva (GSK)
Indications: Induction and maintenance of general anesthesia for inpatient and outpatient procedures
Class: Analgesic
Half-life: 3–6 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Pruritus (itching) (18%)

Cardiovascular
Asystole [2]
Bradycardia / sinus bradycardia (4%) [6]
Cardiac arrest [2]
Hypotension (4%) [5]

Central Nervous System
Headache (18%)
Hyperalgesia [11]
Shivering (5%) [2]
Vertigo / dizziness (5%)

Gastrointestinal/Hepatic
Nausea (44%) [3]
Vomiting (22%) [2]

Hematologic
Hypoxemia (see also hypoxia) [2]

Respiratory
Apnea [2]
Bronchospasm [2]
Cough [2]
Laryngospasm (laryngeal dystonia / spasmodic dysphonia) [3]
Respiratory depression (3%) [4]
Respiratory distress [2]

Other
Adverse effects / adverse reactions [2]

REPAGLINIDE

Trade name: Prandin (Novo Nordisk)
Indications: Non-insulin dependent diabetes Type II
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Meglitinide
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: clarithromycin, co-trimoxazole, deferasirox, erythromycin, gemfibrozil, grapefruit juice, itraconazole, lanreotide, lapatinib, letermovir, mifepristone, paclitaxel, rifapentine, selpercatinib, telithromycin, teriflunomide, trimethoprim, tucatinib, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Central Nervous System
Headache [2]
Paresthesias (3%)

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]

Other
Allergic reactions (2%)

RESERPINE

Trade names: Ser-Ap-Es (Novartis), Serpasil (Novartis)
Indications: Hypertension
Class: Rauwolfia alkaloid
Half-life: 50–100 hours
Clinically important, potentially hazardous interactions with: atenolol, bisoprolol, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, iobenguane, linezolid, metipranolol, oxprenolol, sotalol, St John's wort, tetrabenazine
Pregnancy category: C
Note: Ser-Ap-Es is reserpine, hydralazine and hydrochlorothiazide.

Skin
Peripheral edema (see also edema) (<10%)

Mucosal
Xerostomia (dry mouth) (>10%)

Cardiovascular
Bradycardia / sinus bradycardia [2]

Central Nervous System
Parkinsonism [2]

RESLIZUMAB

Trade name: Cinqair (Teva)
Indications: Adjunctive treatment for severe eosinophilic asthma
Class: Interleukin-5 antagonist, Monoclonal antibody
Half-life: 24 days
Clinically important, potentially hazardous interactions with: none known

Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: ANAPHYLAXIS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Mucosal
Oropharyngeal pain (3%)
Central Nervous System
Headache [5]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (14%)
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Respiratory
Asthma (exacerbation) [5]
Bronchitis [2]
Cough [2]
Nasopharyngitis [8]
Sinusitis [2]
Upper respiratory tract infection [6]

RESVERATROL

Family: N/A
Scientific names: *3,4',5-trihydroxystilbene, trans-resveratrol-3-O-glucuronide, trans-resveratrol-3-sulfate*
Indications: Cancers, dermal wound healing, atherosclerosis, herpes simplex, cholesterol-lowering, heart disease, skin cancers
Class: Immunomodulator, Phytoestrogen
Half-life: N/A
Clinically important, potentially hazardous interactions with: aspirin, warfarin
Note: Resveratrol is extracted from: *Vitis vinifera* "grape seed and skin", *Polygonium cuspidatum*, and nuts. Red wine is associated with the so-called French paradox – low incidence of heart disease among French people who drink moderate quantities of red wine. A glass of red wine contains approximately 640 micrograms of resveratrol.

RETAPAMULIN

Trade names: Altabax (GSK), Altargo (GSK)
Indications: Impetigo, bacterial skin infections
Class: Antibiotic, Antibiotic; topical, Antimicrobial, Pleuromutilin antibacterial
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis (contact) [2]
Pruritus (itching) (in children) (2%)
Central Nervous System
Headache (2%)
Local
Application-site irritation (2%)
Application-site pruritus (in children) (2%)
Other
Adverse effects / adverse reactions [3]

RETEPLASE

Trade name: Retavase (Centocor)
Indications: Acute myocardial infarction
Class: Fibrinolytic
Half-life: 13–16 minutes
Clinically important, potentially hazardous interactions with: abciximab, aspirin, bivalirudin, dipyridamole, piperacillin, salicylates
Pregnancy category: C

Local
Injection-site bleeding (<10%)

RIBAVIRIN

Trade names: Copegus (Roche), Rebetol (Schering-Plough), Rebetron (Schering), Virazole (Valeant)
Indications: Respiratory syncytial viral infections
Class: Antiviral; nucleoside analog
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: abacavir, azathioprine, didanosine, emtricitabine, interferon alfa, PEG-interferon, stavudine, zidovudine
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: [INH] = Inhalation; [O] = Oral. Rebetron is ribavirin and interferon.
Warning: RISK OF SERIOUS DISORDERS AND RIBAVIRIN-ASSOCIATED EFFECTS

Skin
Cutaneous toxicity / skin toxicity [2]
Dermatitis [O] (16%)
DRESS syndrome [2]
Eczema / eczematous reaction / eczematous eruption [O] (4–5%) [3]
Exanthems [5]
Flushing / rubefaction [O] (4%)
Lichenoid eruption / lichenoid reaction [2]
Nummular eczema [2]
Peripheral edema (see also edema) [2]
Photosensitivity [7]
Pruritus (itching) [O] (13–29%) [28]
Psoriasis [2]
Rash [O] (5–28%) [39]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [16]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Vitiligo [2]
Xerosis / xeroderma (see also dry skin) [O] (10–24%) [2]
Hair
Alopecia / hair loss [O] (27–36%) [5]
Alopecia areata [2]
Central Nervous System
Depression [O] (20–36%) [10]
Dysgeusia (taste perversion) [O] (4–9%) [4]
Fever (pyrexia) (includes hyperpyrexia) [O] (32–55%) [8]
Headache [INH] (<10%) [O] (43–66%) [58]
Insomnia [O] (25–41%) [30]
Irritability [10]
Neurotoxicity [2]
Pain [O] (10%)
Rigors [O] (25–48%)
Suicidal ideation [O] (2%) [2]
Vertigo / dizziness [O] (14–26%) [7]
Endocrine/Metabolic
ALT increased [6]
Appetite decreased [2]
AST increased [5]
Diabetes mellitus [2]
Hyperbilirubinemia [4]
Hyperuricemia [O] (33–38%)
Thyroid dysfunction [2]
Weight loss [O] (10–29%) [2]
Gastrointestinal/Hepatic
Diarrhea [17]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea [INH] (<10%) [40]
Pancreatitis / acute pancreatitis [5]
Vomiting [O] (9–25%) [3]
Genitourinary
Erectile dysfunction [2]
Hematologic
Anemia [INH] (<10%) [82]
Hemoglobin decreased [4]
Hemolytic anemia [2]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [O] (6–45%) [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [O] (12–14%) [2]
Neutropenia (neutrophils decreased) [O] (8–42%) [18]
Thrombocytopenia [INH] (<15%) [10]
Local
Injection-site reaction [2]
Neuromuscular/Skeletal
Arthralgia [INH] (22–34%) [7]
Asthenia / fatigue [65]
Muscle spasm [3]
Myalgia/Myopathy [INH] (40–64%) [5]
Ocular
Retinopathy [6]
Otic
Hearing loss (hypoacusis) [2]
Tinnitus [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]
Respiratory
Cough [O] (7–23%) [9]
Dyspnea / shortness of breath [O] (13–26%) [7]
Influenza- ('flu)-like syndrome [O] (13–18%) [9]
Nasopharyngitis [3]
Pneumonitis [2]
Rhinitis [O] (8%)
Upper respiratory tract infection [3]
Other
Adverse effects / adverse reactions [27]
Death [4]
Infection [INH] [4]
Vogt-Koyanagi-Harada syndrome [6]

RIBOCICLIB

Trade name: Kisqali (Novartis)
Indications: Treatment of postmenopausal women with hormone receptor (HR)-positive, human epidermal growth factor receptor 2 (HER2)-negative advanced or metastatic breast cancer (in combination with an aromatase inhibitor)
Class: Cyclin-dependent kinase (CDK) 4/6 inhibitor
Half-life: 30–55 hours
Clinically important, potentially hazardous interactions with: alfentanil, amiodarone, bepridil, boceprevir, chloroquine, clarithromycin, conivaptan, cyclosporine, CYP3A4 substrates, dihydroergotamine, disopyramide, ergotamine, everolimus, fentanyl, grapefruit juice, halofantrine, haloperidol, indinavir, itraconazole, ketoconazole, lopinavir, methadone, midazolam, moxifloxacin, ondansetron, pimozide, procainamide, QT prolonging drugs, quinidine, rifampin, ritonavir, saquinavir, sirolimus, sotalol, strong CYP3A4 inducers and inhibitors, tacrolimus, voriconazole
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Peripheral edema (see also edema) (12%)
- Pruritus (itching) (14%)
- Rash (17%) [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
- Vitiligo [3]

Hair
- Alopecia / hair loss (33%) [3]

Mucosal
- Stomatitis (oral mucositis) (12%)

Cardiovascular
- Hypertension [2]

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) (13%)
- Headache (22%) [2]
- Insomnia (12%)

Endocrine/Metabolic
- ALT increased (46%) [4]
- Appetite decreased (19%)
- AST increased (44%) [5]
- Hyperbilirubinemia (18%)
- Serum creatinine increased (20%)

Gastrointestinal/Hepatic
- Abdominal pain (11%)
- Constipation (25%) [2]
- Diarrhea (35%) [3]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Nausea (52%) [9]
- Vomiting (29%) [5]

Genitourinary
- Urinary tract infection (11%)

Hematologic
- Anemia (18%) [3]
- Febrile neutropenia [2]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (33%) [9]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased (11%) [3]
- Neutropenia (neutrophils decreased) (75%) [14]
- Thrombocytopenia [3]

Neuromuscular/Skeletal
- Arthralgia [2]
- Asthenia / fatigue (37%) [7]
- Back pain (20%) [2]

Respiratory
- Dyspnea / shortness of breath (12%)

Other
- Infection [2]

RIFABUTIN

Trade name: Mycobutin (Pfizer)
Indications: Disseminated *Mycobacterium avium* infection
Class: Antibiotic, Antibiotic; rifamycin, Antimicrobial, CYP3A4 inducer
Half-life: 45 hours
Clinically important, potentially hazardous interactions with: abiraterone, amiodarone, amprenavir, anisindione, anticoagulants, atazanavir, atovaquone, atovaquone/proguanil, azithromycin, bedaquiline, bictegravir/emtricitabine/tenofovir alafenamide, boceprevir, cabazitaxel, cabozantinib, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, corticosteroids, crizotinib, cyclosporine, dapsone, darunavir, delavirdine, dicumarol, doravirine, doravirine/lamiduvine/tenofovir disoproxil, efavirenz, enzalutamide, erlotinib, etravirine, flibanserin, fosamprenavir, indinavir, itraconazole, ixabepilone, lapatinib, ledipasvir & sofosbuvir, levonorgestrel, lopinavir, midazolam, mifepristone, nelfinavir, oral contraceptives, posaconazole, rilpivirine, ritonavir, romidepsin, simeprevir, sofosbuvir, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, solifenacin, sonidegib, sorafenib, sunitinib, tacrolimus, temsirolimus, tenofovir alafenamide, tezacaftor/ivacaftor, thalidomide, tipranavir, tolvaptan, vandetanib, vemurafenib, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
- Pigmentation [2]
- Rash (11%) [2]

Central Nervous System
- Anorexia (2%)
- Dysgeusia (taste perversion) (3%)
- Fever (pyrexia) (includes hyperpyrexia) (2%)
- Headache (3%)

Gastrointestinal/Hepatic
- Abdominal pain (4%)
- Diarrhea (3%) [2]
- Dyspepsia / functional dyspepsia / gastroparesis (3%)
- Eructation (belching) (3%)
- Flatulence (2%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
- Nausea (6%)

Neuromuscular/Skeletal
- Arthralgia [6]
- Myalgia/Myopathy (2%)

Ocular
- Intraocular inflammation [2]
- Ocular toxicity [2]
- Uveitis / anterior uveitis / posterior uveitis / panuveitis [31]
- Visual disturbances [2]

RIFAMPIN

Synonym: rifampicin
Trade names: Rifadin (Sanofi-Aventis), Rimactane (Novartis)
Indications: Tuberculosis
Class: Antibiotic, Antibiotic; rifamycin, Antimicrobial, Antimycobacterial (including antitubercular), CYP1A2 inducer, CYP3A4 inducer
Half-life: 3–5 hours
Clinically important, potentially hazardous interactions with: abacavir, abiraterone, acalabrutinib, afatinib, amiodarone, amprenavir, anisindione, antacids, anticoagulants, apixaban, apremilast, aprepitant, artemether/lumefantrine, atazanavir, atorvastatin, atovaquone, atovaquone/proguanil, axitinib, beclomethasone, bedaquiline, berotralstat, betamethasone, bictegravir/emtricitabine/tenofovir alafenamide, bisoprolol, boceprevir, bosentan, brentuximab vedotin, brigatinib, brivaracetam, buprenorphine, cabazitaxel, cabozantinib, canagliflozin, capmatinib, caspofungin, ceritinib, clobazam, clozapine, cobimetinib, copanlisib, corticosteroids, cortisone, crizotinib, cyclosporine, cyproterone, dabigatran, daclatasvir, dapsone, darunavir, dasatinib, deferasirox, deflazacort, delavirdine, dexamethasone, diclofenac, dicumarol, digoxin, doravirine, doravirine/lamiduvine/tenofovir disoproxil, doxycycline, dronedarone, edoxaban, efavirenz, elbasvir & grazoprevir, eliglustat, eluxadoline, emtricitabine/rilpivirine/tenofovir alafenamide, enzalutamide, erlotinib, esomeprazole, estradiol, eszopiclone, etoricoxib, etravirine, everolimus, fesoterodine, flibanserin, fludrocortisone, flunisolide, fosamprenavir, fostemsavir, gadoxetate, gefitinib, gestrinone, glecaprevir & pibrentasvir, halothane, hydrocortisone, ibrexafungerp, ibrutinib, idelalisib, imatinib, indinavir, infigratinib, isavuconazonium sulfate, isoniazid, itraconazole, ivabradine, ivacaftor, ixabepilone, ixazomib, ketoconazole, lapatinib, ledipasvir & sofosbuvir, leflunomide, lemborexant, lesinurad, letermovir, levodopa, levonorgestrel, linagliptin, linezolid, lopinavir, lorcainide, lorlatinib, losartan, lumacaftor/ivacaftor, lumateperone, lurasidone, macitentan, maraviroc, methylprednisolone, midazolam, midostaurin, mifepristone, naldemedine, nelfinavir, neratinib, netupitant & palonosetron, nevirapine, nifedipine, nilotinib, olaparib, oliceridine, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, ondansetron, oral contraceptives, osilodrostat, osimertinib, ospemifene, oxtriphylline, ozanimod, paclitaxel, palbociclib, pazopanib, pemigatinib, perampanel, phenylbutazone, pimavanserin, pioglitazone, pitavastatin, pomalidomide, ponatinib, ponesimod, pralsetinib, praziquantel, prednisolone, prednisone, propranolol, propyphenazone, protease inhibitors, pyrazinamide, quinine, raltegravir, ramelteon, ranolazine, regorafenib, relugolix, ribociclib,

rilpivirine, rimegepant, riociguat, ritonavir, rivaroxaban, roflumilast, romidepsin, rosiglitazone, saquinavir, selpercatinib, simeprevir, simvastatin, sofosbuvir, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, solifenacin, sonidegib, sorafenib, sotorasib, sunitinib, tacrolimus, tadalafil, tasimelteon, telaprevir, telithromycin, temsirolimus, tenofovir alafenamide, terbinafine, tezacaftor/ivacaftor, thalidomide, ticagrelor, tipranavir, tofacitinib, tolvaptan, trabectedin, treprostinil, triamcinolone, triazolam, trimethoprim, troleandomycin, tucatinib, ubrogepant, ulipristal, upadacitinib hemihydrate, valbenazine, vandetanib, vemurafenib, venetoclax, vorapaxar, voriconazole, vortioxetine, warfarin, zaleplon, zidovudine, zolpidem
Pregnancy category: C

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash [3]
- AGEP [2]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [8]
- Dermatitis [3]
- Diaphoresis (see also hyperhidrosis) (<10%)
- DRESS syndrome [5]
- Erythema multiforme [4]
- Exanthems (<5%) [6]
- Fixed eruption [6]
- Flushing / rubefaction (7%) [8]
- Hypersensitivity [5]
- Lichenoid eruption / lichenoid reaction [3]
- Linear IgA bullous dermatosis [3]
- Pemphigus [9]
- Pruritus (itching) (<62%) [9]
- Purpura [6]
- Rash (<5%) [6]
- Red man syndrome [7]
- Serum sickness-like reaction [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [9]
- Thrombocytopenic purpura [2]
- Urticaria / hives [8]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [5]

Cardiovascular
- Shock (see also anaphylactic shock) [2]

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Seizures [3]
- Vertigo / dizziness [2]

Endocrine/Metabolic
- Amenorrhea [2]
- Porphyria [2]

Gastrointestinal/Hepatic
- Abdominal pain [3]
- Diarrhea [2]
- Hepatitis [3]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [19]
- Nausea [4]
- Vomiting [2]

Hematologic
- Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [2]
- Anemia [3]
- Thrombocytopenia [11]

Neuromuscular/Skeletal
- Asthenia / fatigue [3]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [11]
- Renal failure [2]

Respiratory
- Pneumonitis [2]

Other
- Adverse effects / adverse reactions [13]
- Death [7]
- Side effects (5%)

RIFAPENTINE

Trade name: Priftin (Sanofi-Aventis)
Indications: Tuberculosis (in combination with one or more antituberculosis drugs)
Class: Antibiotic, Antibiotic; rifamycin, Antimicrobial, Antimycobacterial (including antitubercular)
Half-life: 14–17 hours
Clinically important, potentially hazardous interactions with: abiraterone, alfentanil, amiodarone, angiotensin II receptor blockers, anisindione, antiarrhythmics, anticoagulants, antifungals, aprepitant, atovaquone, barbiturates, bedaquiline, benzodiazepines, beta blockers, bictegravir/emtricitabine/tenofovir alafenamide, buspirone, cabozantinib, calcium channel blockers, clopidogrel, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, corticosteroids, cyclosporine, CYP2C8 substrates, CYP2C9 substrates, CYP3A4 substrates, dapsone, delavirdine, dicumarol, disopyramide, doravirine, doravirine/lamiduvine/tenofovir disoproxil, dronedarone, emtricitabine/rilpivirine/tenofovir alafenamide, enzalutamide, erlotinib, etravirine, everolimus, exemestane, fentanyl, flibanserin, fluconazole, food, gefitinib, guanfacine, hormonal contraceptives, imatinib, indinavir, isoniazid, ixabepilone, ledipasvir & sofosbuvir, maraviroc, methadone, mifepristone, morphine, mycophenolate, mycophenolate, nilotinib, pazopanib, phenytoin, praziquantel, propafenone, protease inhibitors, quinidine, ramelteon, ranolazine, repaglinide, reverse transcriptase inhibitors, rilpivirine, ritonavir, romidepsin, saxagliptin, simeprevir, sofosbuvir, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, solifenacin, sorafenib, sunitinib, tacrolimus, tadalafil, tamoxifen, temsirolimus, tenofovir alafenamide, terbinafine, tolvaptan, treprostinil, ulipristal, vandetanib, vemurafenib, vitamin K antagonists, voriconazole, warfarin, zaleplon, zidovudine, zolpidem
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (3%)
- Hyperhidrosis (see also diaphoresis) (6%)
- Pruritus (itching) (4%)
- Rash (6%)

Cardiovascular
- Chest pain (6%)
- Hypertension (2%)

Central Nervous System
- Anorexia (6%)
- Headache (4%)
- Pain (6%)
- Vertigo / dizziness (2%)

Endocrine/Metabolic
- ALT increased (7%)
- AST increased (6%)
- Hyperglycemia (includes glucose increased) (4%)
- Hyperkalemia (9%)
- Hyperuricemia (with pyrazinamide) (32%)
- Hypoglycemia (see also insulin autoimmune syndrome) (10%)

Gastrointestinal/Hepatic
- Abdominal pain (2%)
- Constipation (2%)
- Diarrhea (2%)
- Dyspepsia / functional dyspepsia / gastroparesis (3%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
- Nausea (3%)
- Vomiting (2%)

Genitourinary
- Cystitis (2%)
- Hematuria (18%)
- Pyuria (22%)
- Urinary casts (8%)
- Urinary tract infection (13%)

Hematologic
- Anemia (12%)
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (7%)
- Leukocytosis (elevated white blood cell (WBC) count) (3%)
- Lymphopenia (lymphocytopenia) / lymphocytes decreased (12%)
- Neutropenia (neutrophils decreased) (13%)
- Polycythemia / erythrocytosis (2%)
- Thrombocytopenia (3%)

Neuromuscular/Skeletal
- Arthralgia (4%)
- Back pain (7%)

Ocular
- Conjunctivitis (conjunctival inflammation) (3%)

Renal
- Proteinuria (13%)

Respiratory
- Bronchitis (3%)
- Cough (8%)
- Hemoptysis (8%)
- Influenza (8%)
- Influenza- ('flu)-like syndrome [2]
- Pharyngitis (sore throat) (2%)
- Upper respiratory tract infection (5%)

Other
- Adverse effects / adverse reactions [4]

RIFAXIMIN

Trade names: Xifaxan (Salix), Xifaxanta (Norgine)
Indications: Diarrhea in travelers (caused by non-invasive strains of *E. coli*), reduction in risk of overt hepatic encephalopathy recurrence (in adults)
Class: Antibiotic, Antibiotic; rifamycin, Antimicrobial
Half-life: 2–5 hours
Clinically important, potentially hazardous interactions with: BCG vaccine
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Cellulitis (2–5%)
- Clammy skin (<2%)
- Diaphoresis (see also hyperhidrosis) (<2%)
- Edema / fluid retention (see also peripheral edema) (2–5%)
- Hot flashes / hot flushes (<2%)
- Hyperhidrosis (see also diaphoresis) (<2%)
- Peripheral edema (see also edema) (15%) [2]
- Pruritus (itching) (9%)
- Rash (<5%)
- Sunburn (<2%)

Mucosal
- Epistaxis (nosebleed) (2–5%)
- Gingival lesions (<2%)
- Rhinorrhea (<2%)
- Xerostomia (dry mouth) (2–5%)

Cardiovascular
- Chest pain (<5%) [2]
- Hypotension (2–5%)

Central Nervous System
- Abnormal dreams (<2%)
- Ageusia (taste loss) / taste disorder (<2%)
- Amnesia (2–5%)
- Anorexia (<5%)
- Confusion (2–5%)
- Depression (7%)
- Dysgeusia (taste perversion) (<2%) [2]
- Fever (pyrexia) (includes hyperpyrexia) (3–6%)
- Headache (10%) [8]
- Hypoesthesia (numbness) (2–5%)
- Impaired concentration (2–5%)
- Insomnia (<7%)
- Migraine (<2%)
- Pain (<5%)
- Syncope / fainting (<2%)
- Tremor (2–5%)
- Vertigo / dizziness (<13%) [3]

Endocrine/Metabolic
- AST increased (<2%)
- Dehydration (<5%)
- Hyperglycemia (includes glucose increased) (2–5%)
- Hyperkalemia (2–5%)
- Hypoglycemia (see also insulin autoimmune syndrome) (2–5%)
- Hyponatremia (2–5%)
- Weight gain (2–5%)

Gastrointestinal/Hepatic
- Abdominal distension (<8%)
- Abdominal pain (2–9%) [10]
- Ascites (11%)
- Black stools / melena (<2%)
- Constipation (4–6%)
- Diarrhea (<2%) [6]
- Fecal urgency (6%)
- Flatulence (11%) [2]
- Hernia (<2%)
- Nausea (5–14%) [8]
- Tenesmus (7%)
- Vomiting (2%) [3]

Genitourinary
- Dysuria (<2%)
- Hematuria (<2%)
- Polyuria (<2%)
- Urinary frequency (<2%)

Hematologic
- Anemia (8%)
- Lymphocytosis / lymphocytes increased (<2%)
- Monocytosis (<2%)
- Neutropenia (neutrophils decreased) (<2%)

Neuromuscular/Skeletal
- Arthralgia (<6%)
- Asthenia / fatigue (<12%) [3]
- Back pain (6%)
- Muscle spasm (<9%)
- Myalgia/Myopathy (<5%)
- Neck pain (<2%)
- Pain in extremities (2–5%)

Otic
- Ear pain (<2%)
- Tinnitus (<2%)

Renal
- Proteinuria (<2%)

Respiratory
- Cough (7%)
- Dyspnea / shortness of breath (<6%)
- Influenza- ('flu)-like syndrome (2–5%)
- Nasopharyngitis (<7%) [4]
- Pharyngitis (sore throat) (<2%)
- Pharyngolaryngeal pain (<2%)
- Pneumonia (2–5%)
- Rhinitis (<5%)
- Sinusitis [2]
- Upper respiratory tract infection (2–5%) [6]

Other
- Adverse effects / adverse reactions [2]
- Breast cancer [2]

RILONACEPT

Trade name: Arcalyst (Regeneron)
Indications: Cryopyrin-associated periodic syndromes (CAPS) including familial cold autoinflammatory syndrome (FCAS), Muckle-Wells syndrome (MWS)
Class: Fusion protein, Interleukin-1 inhibitor
Half-life: N/A
Clinically important, potentially hazardous interactions with: anti-TNF agents, lenalidomide, live vaccines, natalizumab
Pregnancy category: C
Note: Cryopyrin-associated periodic syndromes (CAPS) are characterized by life-long, recurrent symptoms of rash, fever/chills, joint pain, eye redness/pain, and fatigue. Intermittent, disruptive exacerbations or flares can be triggered at any time by exposure to cooling temperatures, stress, exercise, or other unknown stimuli.

Central Nervous System
- Hyperesthesia (9%)

Local
- Injection-site reaction (48%) [3]

Respiratory
- Cough (9%)
- Sinusitis (9%)
- Upper respiratory tract infection (26%)

RILPIVIRINE

Trade names: Complera (Gilead), Edurant (Centocor), Juluca (ViiV)
Indications: HIV-1 infection
Class: Antiretroviral, Non-nucleoside reverse transcriptase inhibitor
Half-life: 50 hours
Clinically important, potentially hazardous interactions with: antacids, atazanavir, carbamazepine, cimetidine, clarithromycin, darunavir, delavirdine, dexamethasone, efavirenz, erythromycin, esomeprazole, etravirine, famotidine, fluconazole, fosamprenavir, indinavir, itraconazole, ketoconazole, lansoprazole, lopinavir, methadone, nelfinavir, nevirapine, nizatidine, ombitasvir/paritaprevir/ritonavir, omeprazole, oxcarbazepine, pantoprazole, phenobarbital, phenytoin, posaconazole, QT prolonging agents, rabeprazole, ranitidine, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, tipranavir, troleandomycin, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Complera is rilpivirine, emtricitabine and tenofovir; Juluca is rilpivirine and dolutegravir.

Skin
- Rash (3%) [10]

Central Nervous System
- Abnormal dreams [2]
- Depression [4]
- Headache (3%) [3]
- Insomnia (3%) [2]
- Neurotoxicity [3]
- Nightmares [2]
- Sleep-related disorder [2]
- Vertigo / dizziness [5]

Endocrine/Metabolic
- Serum creatinine increased [2]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]

Local
- Injection-site reaction [2]

Other
- Adverse effects / adverse reactions [2]

RILUZOLE

Trade name: Rilutek (Sanofi-Aventis)
Indications: Amyotrophic lateral sclerosis
Class: Neuromuscular blocker (in ALS)
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (May cause fetal toxicity based on findings in animal studies)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Eczema / eczematous reaction / eczematous eruption (2%)
- Peripheral edema (see also edema) (3%)

Mucosal
- Xerostomia (dry mouth) (4%)

Central Nervous System
Paresthesias (circumoral) [3]
Vertigo / dizziness [5]
Gastrointestinal/Hepatic
Abdominal pain (2%) [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Pancreatitis / acute pancreatitis [6]
Neuromuscular/Skeletal
Asthenia / fatigue (5%) [12]
Other
Adverse effects / adverse reactions [2]

RIMONABANT

Trade name: Acomplia (Sanofi-Aventis)
Indications: Obesity
Class: CB1 Cannabinoid receptor antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: clarithromycin, itraconazole, ketoconazole, nefazodone, ritonavir, telithromycin
Pregnancy category: N/A
Note: This drug has been withdrawn.

Central Nervous System
Anxiety [5]
Depression [7]
Mood changes [2]
Neurotoxicity [2]
Vertigo / dizziness [4]
Gastrointestinal/Hepatic
Nausea [2]
Other
Adverse effects / adverse reactions [3]

RIOCIGUAT

Trade name: Adempas (Bayer)
Indications: Pulmonary hypertension
Class: Soluble guanylate cyclase (sGC) stimulator
Half-life: 7–12 hours
Clinically important, potentially hazardous interactions with: antacids, carbamazepine, dipyridamole, nitrates or nitric oxide donors, nitroprusside, phenobarbital, phenytoin, rifampin, sildenafil, St John's wort, tadalafil, theophylline, vardenafil
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: EMBRYO-FETAL TOXICITY

Skin
Peripheral edema (see also edema) [5]
Cardiovascular
Cardiac failure [2]
Hypotension (10%) [7]
Central Nervous System
Headache (27%) [4]
Syncope / fainting [3]
Vertigo / dizziness (20%) [4]
Gastrointestinal/Hepatic
Constipation (5%)
Diarrhea (12%)
Dyspepsia / functional dyspepsia / gastroparesis (21%) [3]
Gastroesophageal reflux (5%)
Nausea (14%)
Vomiting (10%)
Hematologic
Anemia (7%)
Bleeding (2%) [2]
Respiratory
Pneumonia [2]
Other
Adverse effects / adverse reactions [6]

RISEDRONATE

Trade names: Actonel (Procter & Gamble), Atelvia (Warner Chilcott)
Indications: Paget's disease of bone, osteoporosis
Class: Bisphosphonate
Half-life: terminal: 220 hours
Clinically important, potentially hazardous interactions with: antacids, calcium supplements, iron preparations, laxatives, magnesium-based supplements
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (4%)
Peripheral edema (see also edema) (8%)
Pruritus (itching) (3%)
Rash (8%)
Cardiovascular
Chest pain (5%)
Hypertension (11%)
Central Nervous System
Depression (7%)
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (10%) [3]
Insomnia (5%)
Pain (14%)
Paresthesias (2%)
Vertigo / dizziness (7%)
Gastrointestinal/Hepatic
Abdominal pain (12%) [3]
Constipation (13%) [3]
Diarrhea (11%) [4]
Dyspepsia / functional dyspepsia / gastroparesis (11%) [2]
Esophagitis [2]
Gastrointestinal disorder / discomfort [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea (11%) [2]
Genitourinary
Urinary tract infection (11%)
Neuromuscular/Skeletal
Arthralgia (10–24%) [7]
Asthenia / fatigue (5%)
Back pain (28%) [5]
Bone or joint pain (7%) [5]
Fractures (9%) [9]
Myalgia/Myopathy (7%) [3]
Neck pain (5%) [3]
Osteonecrosis / avascular necrosis [6]
Tendinopathy/Tendon rupture (3%)
Ocular
Cataract (7%)
Ocular adverse effect [3]
Scleritis [2]
Respiratory
Bronchitis (10%)
Cough (6%)
Influenza [3]
Influenza- ('flu)-like syndrome (11%) [2]
Nasopharyngitis [3]
Pharyngitis (sore throat) (6%)
Rhinitis (6%)
Sinusitis (9%)
Other
Adverse effects / adverse reactions [6]
Allergic reactions (4%)
Infection (31%) [3]
Tooth disorder (2%)

RISPERIDONE

Trade names: Risperdal (Ortho-McNeil) (Janssen), Risperdal Consta (Ortho-McNeil) (Janssen)
Indications: Schizophrenia, bipolar mania, irritability associated with autistic disorder
Class: Antipsychotic, Mood stabilizer
Half-life: 3–30 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, alcohol, alpha blockers, amantadine, angiotensin II receptor antagonists, anxiolytics and hypnotics, apomorphine, artemether/lumefantrine, barbiturates, bromocriptine, cabergoline, calcium channel blockers, carbamazepine, cimetidine, citalopram, clozapine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, ethosuximide, fluoxetine, general anesthetics, histamine, levodopa, memantine, methyldopa, metoclopramide, opioid analgesics, oxcarbazepine, paliperidone, paroxetine hydrochloride, pergolide, phenytoin, pramipexole, primidone, ranitidine, ritonavir, ropinirole, rotigotine, sodium oxybate, sympathomimetics, tetrabenazine, tramadol, tricyclics, valproic acid, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Safety and effectiveness have not been established for pediatric patients with schizophrenia <13 years of age, for bipolar mania <10 years of age, and for autistic disorder <5 years of age. [C] = in children.
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Angioedema [6]
Edema / fluid retention (see also peripheral edema) [3]
Peripheral edema (see also edema) (16%) [4]
Photosensitivity (<10%) [2]
Rash [C] (11%) (2–4%) [2]
Seborrhea (2%)
Urticaria / hives [2]
Xerosis / xeroderma (see also dry skin) (2%)
Hair
Alopecia / hair loss [2]
Mucosal
Sialopenia (5%)

Sialorrhea (ptyalism; hypersalivation) [C] (22%) (<3%) [11]
Xerostomia (dry mouth) [C] (13%) (4%) [7]

Cardiovascular
Bradycardia / sinus bradycardia [2]
Cardiotoxicity [2]
Hypotension [3]
QT interval prolonged / QT prolongation [4]
Tachycardia [C] (7%) (<5%)
Venous thromboembolism [6]
Ventricular arrhythmia [2]

Central Nervous System
Agitation [2]
Akathisia [C] (16%) (5–9%) [19]
Anorexia [C] (8%) (2%)
Anxiety [C] (16%) (2–16%) [5]
Catatonia [2]
Compulsions / obsessive-compulsive symptoms [3]
Depression (14%) [7]
Extrapyramidal symptoms [18]
Fever (pyrexia) (includes hyperpyrexia) [C] (20%) (<2%)
Headache [11]
Hypothermia [2]
Insomnia [9]
Neuroleptic malignant syndrome [26]
Neurotoxicity [2]
Parkinsonism [C] (2–16%) (12–20%) [9]
Psychosis [3]
Rabbit syndrome [3]
Restless legs syndrome [2]
Schizophrenia [2]
Sedation [4]
Seizures [3]
Serotonin syndrome [3]
Somnolence (drowsiness) [C] (12–67%) (5–14%) [16]
Stuttering (dysphemia) / stammering [2]
Suicidal ideation [3]
Tardive syndrome / tardive dyskinesia [6]
Tic disorder [2]
Tremor [C] (10–12%) (6%) [6]
Vertigo / dizziness [C] (7–16%) (4–10%) [5]

Endocrine/Metabolic
Amenorrhea [6]
Appetite decreased [2]
Appetite increased [C] (49%) [3]
Diabetes mellitus [2]
Galactorrhea (<10%) [14]
Gynecomastia (<10%) [6]
Hyperprolactinemia [27]
Metabolic syndrome [5]
Weight gain [C] (5%) [35]

Gastrointestinal/Hepatic
Abdominal pain [C] (15–18%) (3–4%)
Constipation [C] (21%) (8–9%) [5]
Diarrhea [C] (7%) (73%)
Dyspepsia / functional dyspepsia / gastroparesis [C] (5–16%) (4–10%)
Dysphagia [2]
Nausea [C] (8–16%) (4–9%) [4]
Pancreatitis / acute pancreatitis [2]
Vomiting [C] (10–25%)

Genitourinary
Enuresis (urinary incontinence) [C] (5–22%) (2%) [4]
Priapism (<10%) [29]
Sexual dysfunction [6]
Urinary retention [2]
Urinary tract infection (3%)

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [3]

Local
Injection-site pain [3]

Neuromuscular/Skeletal
Arthralgia (2–3%)
Asthenia / fatigue [C] (18–42%) (<3%) [5]
Back pain (2–3%)
Dystonia [C] (9–18%) (5–11%) [5]
Pisa syndrome (pleurothotonus) [3]
Rhabdomyolysis [7]

Ocular
Abnormal vision [C] (4–7%) (<3%)
Periorbital edema (see also eyelid edema) [2]
Vision blurred [3]

Respiratory
Cough [C] (34%) (3%)
Dyspnea / shortness of breath [C] (2–5%) (2%)
Laryngospasm (laryngeal dystonia / spasmodic dysphonia) [2]
Pneumonia [2]
Pulmonary embolism [3]
Rhinitis [C] (13–36%) (7–11%)
Upper respiratory tract infection [C] (34%) (2–3%)

Other
Adverse effects / adverse reactions [11]
Death [3]
Tooth disorder (<3%)

RITONAVIR

Trade names: Kaletra (AbbVie), Norvir (AbbVie)
Indications: HIV infection
Class: Antiretroviral, CYP3A4 inhibitor, HIV-1 protease inhibitor
Half-life: 3–5 hours
Clinically important, potentially hazardous interactions with: abiraterone, afatinib, alfentanil, alfuzosin, alprazolam, amiodarone, amitriptyline, amprenavir, aprepitant, astemizole, atazanavir, atorvastatin, atovaquone, atovaquone/proguanil, avanafil, azithromycin, bepridil, boceprevir, bosentan, brigatinib, buprenorphine, bupropion, buspirone, cabazitaxel, cabozantinib, calcifediol, carbamazepine, ceritinib, chlordiazepoxide, ciclesonide, citalopram, clozapine, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, conivaptan, copanlisib, crizotinib, cyclosporine, cyproterone, darifenacin, dasatinib, deferasirox, delavirdine, diazepam, diclofenac, dihydroergotamine, docetaxel, dronedarone, dutasteride, efavirenz, eletriptan, eluxadoline, ergot alkaloids, ergotamine, erlotinib, estazolam, estradiol, eszopiclone, etravirine, everolimus, ezetimibe, fentanyl, fesoterodine, flecainide, flibanserin, flurazepam, fluticasone propionate, fosamprenavir, glecaprevir & pibrentasvir, halazepam, indacaterol, isavuconazonium sulfate, itraconazole, ivabradine, ixabepilone, ketoconazole, lapatinib, ledipasvir & sofosbuvir, levomepromazine, levothyroxine, lomitapide, lumateperone, macitentan, maraviroc, meloxicam, meperidine, meptazinol, methylergonovine, methysergide, midazolam, midostaurin, mifepristone, naldemedine, nelfinavir, neratinib, nifedipine, nilotinib, olaparib, oliceridine, oral contraceptives, osimertinib, paclitaxel, palbociclib, paroxetine hydrochloride, pazopanib, phenytoin, pimozide, piroxicam, pitavastatin, ponatinib, posaconazole, propafenone, propoxyphene, propranolol, quazepam, quinidine, quinine, ranolazine, ribociclib, rifabutin, rifampin, rifapentine, rilpivirine, rimonabant, risperidone, rivaroxaban, romidepsin, rosuvastatin, ruxolitinib, saquinavir, sildenafil, silodosin, simeprevir, simvastatin, sofosbuvir, sofosbuvir/velpatasvir/voxilaprevir, solifenacin, St John's wort, sunitinib, tadalafil, telaprevir, telithromycin, temsirolimus, tenofovir disoproxil, ticagrelor, tolvaptan, trabectedin, triazolam, ulipristal, vardenafil, vemurafenib, venetoclax, vorapaxar, voriconazole, zolpidem, zuclopenthixol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Protease inhibitors cause dyslipidemia which includes elevated triglycerides and cholesterol and redistribution of body fat centrally to produce the so-called 'protease paunch', breast enlargement, facial atrophy, and 'buffalo hump'. Kaletra is ritonavir and lopinavir. See also separate entry for ombitasvir/paritaprevir/ritonavir.
Warning: DRUG-DRUG INTERACTIONS LEADING TO POTENTIALLY SERIOUS AND/OR LIFE-THREATENING REACTIONS

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (4%)
Bruise / bruising / contusion / ecchymosis (ecchymoses) (<2%)
Bullous dermatosis (<2%)
Cutaneous toxicity / skin toxicity [2]
Dermatitis (<2%)
Diaphoresis (see also hyperhidrosis) (<10%)
Eczema / eczematous reaction / eczematous eruption (<2%)
Edema / fluid retention (see also peripheral edema) (6%)
Exanthems (<2%) [2]
Facial edema (8%)
Flushing / rubefaction (13%)
Folliculitis (<2%)
Hypersensitivity (8%)
Jaundice [3]
Lipodystrophy [4]
Peripheral edema (see also edema) (6%)
Photosensitivity (<2%)
Pruritus (itching) (12%)
Psoriasis (<2%)
Rash (27%) [12]
Seborrhea (<2%)
Urticaria / hives (8%)
Xanthomas [2]
Xerosis / xeroderma (see also dry skin) (<2%)

Hair
Alopecia / hair loss [2]

Mucosal
Cheilitis (inflammation of the lips) (<2%)
Gingivitis (<2%)
Oral candidiasis (<2%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (<2%)
Oropharyngeal pain (16%)
Xerostomia (dry mouth) (<2%)

Cardiovascular
Bradycardia / sinus bradycardia [3]

Cardiotoxicity [2]
Hypertension (3%)
Hypotension (2%)
Orthostatic hypotension (2%)

Central Nervous System
Ageusia (taste loss) / taste disorder (<2%)
Confusion (3%)
Dysgeusia (taste perversion) (16%)
Headache [8]
Hyperesthesia (<2%)
Impaired concentration (3%)
Insomnia [2]
Neurotoxicity [2]
Paresthesias (51%)
Parosmia (<2%)
Peripheral neuropathy (10%)
Syncope / fainting (3%)
Vertigo / dizziness (16%) [2]

Endocrine/Metabolic
ALT increased [3]
Cushing's syndrome [7]
Gynecomastia [2]
Hyperbilirubinemia [6]
Hypercholesterolemia (3%) [2]
Hyperlipidemia [2]
Hypertriglyceridemia (includes triglycerides increased) (9%) [3]

Gastrointestinal/Hepatic
Abdominal pain (26%) [2]
Diarrhea (68%) [14]
Dyspepsia / functional dyspepsia / gastroparesis (12%)
Flatulence (8%)
Gastrointestinal bleeding (2%)
Gastrointestinal disorder / discomfort [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (9%) [6]
Nausea (57%) [13]
Vomiting (32%) [7]

Genitourinary
Urinary frequency (4%)

Neuromuscular/Skeletal
Arthralgia (19%)
Asthenia / fatigue (46%) [3]
Back pain (19%)
Myalgia/Myopathy (4–9%)
Rhabdomyolysis [2]

Ocular
Vision blurred (6%)

Renal
Fanconi syndrome [4]
Nephrolithiasis (formation of a kidney stone) [3]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Renal failure [2]

Respiratory
Cough (22%)
Nasopharyngitis [2]
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [10]
Allergic reactions (<2%)

RITUXIMAB

Trade names: MabThera (Roche), Rituxan (Genentech)
Indications: Non-Hodgkin's lymphoma, chronic lymphocytic leukemia, rhematoid arthritis (in combination with methotrexate), granulomatosis with polyangiitis and mycroscopic polyangiitis (in combination with glucocorticoids)
Class: Biologic, Biologic disease-modifying antirheumatic drug (bDMARD), CD20-directed cytolytic monoclonal antibody, Disease-modifying antirheumatic drug (DMARD), Immunosuppressant, Monoclonal antibody
Half-life: 60 hours (after first infusion)
Clinically important, potentially hazardous interactions with: benazepril, captopril, certolizumab, cisplatin, clevidipine, enalapril, fosinopril, irbesartan, lisinopril, olmesartan, quinapril, ramipril
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: FATAL INFUSION REACTIONS, SEVERE MUCOCUTANEOUS REACTIONS, HEPATITIS B VIRUS REACTIVATION and PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [7]
Angioedema (11%) [4]
Cutaneous toxicity / skin toxicity [3]
Dermatitis [2]
Diaphoresis (see also hyperhidrosis) (15%) [2]
Erythema [2]
Flushing / rubefaction (5%)
Herpes simplex [2]
Herpes zoster [7]
Hypersensitivity [6]
Kaposi's sarcoma [3]
Palmoplantar pustulosis [4]
Paraneoplastic pemphigus [2]
Peripheral edema (see also edema) (8%)
Pruritus (itching) (14%) [8]
Psoriasis [4]
Pyoderma gangrenosum [6]
Rash (15%) [13]
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis) [3]
Serum sickness [24]
Serum sickness-like reaction [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Urticaria / hives (8%) [5]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [5]

Mucosal
Mucocutaneous reactions [2]
Stomatitis (oral mucositis) [2]

Cardiovascular
Atrial fibrillation [2]
Cardiotoxicity [5]
Hypertension (6%) [3]
Hypotension (10%) [10]
Myocardial infarction [2]

Central Nervous System
Anxiety (5%)
Chills (33%) [15]
Encephalitis [3]
Encephalopathy (includes hepatic encephalopathy) [2]
Fever (pyrexia) (includes hyperpyrexia) (53%) [23]
Headache (19%) [4]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [27]
Neurotoxicity [4]
Pain (12%)
Peripheral neuropathy [6]
Rigors [4]
Vertigo / dizziness (10%)

Endocrine/Metabolic
ALT increased [3]
AST increased [3]
Hyperglycemia (includes glucose increased) (9%)
Hypokalemia [2]
Hyponatremia [2]

Gastrointestinal/Hepatic
Abdominal pain (14%)
Colitis [4]
Constipation [2]
Diarrhea (10%) [11]
Hepatitis [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]
Nausea (23%) [14]
Pancreatitis / acute pancreatitis [3]
Vomiting (10%) [8]

Genitourinary
Urinary tract infection [9]

Hematologic
Anemia (8%) [15]
Cytopenia [4]
Febrile neutropenia [18]
Hemotoxicity [3]
Hypogammaglobulinemia [11]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (14%) [15]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (48%) [14]
Myelosuppression / bone marrow suppression / myelotoxicity [7]
Neutropenia (neutrophils decreased) (14%) [61]
Sepsis [4]
Thrombocytopenia (12%) [44]
Thrombosis [2]

Local
Application-site reactions [4]
Infusion-related reactions [37]
Infusion-site reactions [13]
Injection-site pain [2]
Injection-site reaction [5]

Neuromuscular/Skeletal
Arthralgia (10%) [3]
Asthenia / fatigue (26%) [18]
Back pain (10%)
Myalgia/Myopathy (10%) [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Tumor lysis syndrome (TLS) [4]

Respiratory
Acute respiratory distress syndrome [3]
Bronchospasm (8%) [6]
Cough (increased) (13%) [6]
Dyspnea / shortness of breath (7%) [7]
Influenza- ('flu)-like syndrome [3]
Nasopharyngitis [3]
Pneumonia [23]
Pneumonitis [2]

Pulmonary toxicity [15]
Rhinitis (12%) [2]
Sinusitis (6%) [5]
Upper respiratory tract infection [10]

Other
Adverse effects / adverse reactions [38]
Allergic reactions [4]
Death [31]
Infection (31%) [64]

RIVAROXABAN

Trade name: Xarelto (Janssen)
Indications: Prevention of venous thromboembolism in patients undergoing knee or hip replacement surgery, treatment of deep vein thrombosis and pulmonary embolism
Class: Anticoagulant, Direct factor Xa inhibitor
Half-life: 5–9 hours
Clinically important, potentially hazardous interactions with: anticoagulants, aspirin, atazanavir, atorvastatin, carbamazepine, clarithromycin, clopidogrel, combined P-glycoprotein and strong CYP3A4 inhibitors and inducers, conivaptan, dabigatran, darunavir, delavirdine, diclofenac, efavirenz, enoxaparin, erythromycin, fosamprenavir, HIV protease inhibitors, indinavir, itraconazole, ketoconazole, ketorolac, lapatinib, lopinavir, nelfinavir, phenobarbital, phenytoin, posaconazole, rifampin, ritonavir, saquinavir, St John's wort, telithromycin, tipranavir, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with active pathological bleeding.
Warning: PREMATURE DISCONTINUATION OF XARELTO INCREASES THE RISK OF THROMBOTIC EVENTS and SPINAL/EPIDURAL HEMATOMA

Skin
Hematoma [3]
Hypersensitivity [3]
Pruritus (itching) (2%)
Rash [3]

Mucosal
Epistaxis (nosebleed) [7]
Gingival bleeding [2]

Cardiovascular
Cardiac tamponade [2]
Congestive heart failure [2]
Hypertension [2]
Myocardial infarction [2]

Central Nervous System
Stroke / cerebral infarction [2]

Gastrointestinal/Hepatic
Abdominal pain [2]
Black stools / melena [2]
Diarrhea [2]
Gastrointestinal bleeding [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]

Genitourinary
Hematuria [5]

Hematologic
Anemia (3%)
Bleeding [15]
Hemorrhage [5]

Renal
Nephritis / interstitial nephritis / tubulointerstitial nephritis [2]

Other
Adverse effects / adverse reactions [4]

RIVASTIGMINE

Trade name: Exelon (Novartis)
Indications: Alzheimer's disease and dementia
Class: Acetylcholinesterase inhibitor, Cholinesterase inhibitor
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: galantamine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis [2]
Diaphoresis (see also hyperhidrosis) (10%)
Exanthems [2]
Hyperhidrosis (see also diaphoresis) (4%)
Peripheral edema (see also edema) (>2%)
Rash (>2%) [2]

Cardiovascular
Bradycardia / sinus bradycardia [5]
Chest pain (>2%)
Hypertension (3%) [2]
QT interval prolonged / QT prolongation [2]
Thrombophlebitis (<2%)

Central Nervous System
Aggression (includes anger) (3%)
Agitation (>2%)
Anorexia (6–17%) [4]
Anxiety (4–5%)
Confusion (8%) [2]
Delusions of parasitosis (>2%)
Depression (6%)
Hallucinations (4%)
Headache (4–17%) [3]
Insomnia (3–9%)
Nervousness (>2%)
Pain (>2%)
Parkinsonism (2%)
Restlessness [2]
Somnolence (drowsiness) (3–5%)
Syncope / fainting (3%) [4]
Tremor (4–10%) [3]
Vertigo / dizziness (6–21%) [6]

Endocrine/Metabolic
Dehydration (2%)
Weight loss (3%) [3]

Gastrointestinal/Hepatic
Abdominal pain (4–13%) [2]
Constipation (5%) [2]
Diarrhea (7–19%) [8]
Dyspepsia / functional dyspepsia / gastroparesis (9%)
Eructation (belching) (2%)
Flatulence (4%)
Nausea (29–47%) [15]
Vomiting (17–31%) [15]

Genitourinary
Enuresis (urinary incontinence) (>2%)
Urinary tract infection (7%)

Local
Application-site erythema [2]
Application-site pruritus [3]
Application-site reactions [3]

Neuromuscular/Skeletal
Arthralgia (>2%)
Asthenia / fatigue (2–9%)
Back pain (>2%)
Dystonia [2]
Fractures (>2%)
Myalgia/Myopathy (20%)
Pisa syndrome (pleurothotonus) [3]

Respiratory
Bronchitis (>2%)
Cough (>2%)
Influenza- ('flu)-like syndrome (3%)
Pharyngitis (sore throat) (>2%)
Rhinitis (4%)

Other
Adverse effects / adverse reactions [6]
Death [2]
Infection (>2%)

RIZATRIPTAN

Trade name: Maxalt (Merck)
Indications: Migraine
Class: 5-HT1 agonist, Serotonin receptor agonist, Triptan
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: dihydroergotamine, ergot-containing drugs, isocarboxazid, MAO inhibitors, methysergide, naratriptan, phenelzine, propranolol, sibutramine, SSRIs, St John's wort, sumatriptan, tranylcypromine, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Mucosal
Xerostomia (dry mouth) (3%)

Cardiovascular
Chest pain (<3%) [2]

Central Nervous System
Headache (<2%)
Neurotoxicity [2]
Pain (3%)
Paresthesias (3–4%)
Somnolence (drowsiness) (4–6%)
Vertigo / dizziness (4–9%) [10]

Gastrointestinal/Hepatic
Nausea (4–6%)

Neuromuscular/Skeletal
Asthenia / fatigue (4–7%) [9]
Jaw pain (<2%)
Neck pain (<2%)

Other
Adverse effects / adverse reactions [4]

ROCURONIUM

Trade name: Zemuron (Organon)
Indications: Adjunct to general anesthesia
Class: Non-depolarizing neuromuscular blocker
Half-life: 1–2 minutes
Clinically important, potentially hazardous interactions with: aminoglycosides, bacitracin, cisatracurium, cisatracurium, clindamycin, gentamicin, kanamycin, lithium, neomycin, neomycin, procainamide, quinidine, streptomycin, streptomycin, tetracycline, tobramycin, tobramycin, vancomycin
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [46]
Local
Injection-site pain [15]

ROFECOXIB

Trade name: Vioxx (Merck)
Indications: Osteoarthritis, acute pain
Class: COX-2 inhibitor, Non-steroidal anti-inflammatory (NSAID)
Half-life: 17 hours
Clinically important, potentially hazardous interactions with: anisindione, anticoagulants, dicumarol, lithium, methotrexate, tizanidine, warfarin
Pregnancy category: C
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
This drug has been withdrawn.
Warning: CARDIOVASCULAR AND GASTROINTESTINAL RISKS

Skin
Abrasion (<2%)
Angioedema [5]
Atopic dermatitis (<2%)
Basal cell carcinoma (<2%)
Bullous dermatosis (<2%)
Cellulitis (<2%)
Dermatitis (<2%)
Diaphoresis (see also hyperhidrosis) (<2%)
Edema / fluid retention (see also peripheral edema) (4%) [3]
Erythema (<2%)
Fixed eruption [2]
Flushing / rubefaction (<2%)
Fungal dermatitis (<2%)
Herpes simplex (<2%)
Herpes zoster (<2%)
Peripheral edema (see also edema) (6%) [3]
Pruritus (itching) (<2%)
Psoriasis [2]
Rash (<2%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
Urticaria / hives (<2%) [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Xerosis / xeroderma (see also dry skin) (<2%)
Hair
Alopecia / hair loss (<2%)
Nails
Nail changes (<2%)
Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (<2%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (<2%)
Xerostomia (dry mouth) (<2%)
Cardiovascular
Cardiotoxicity [3]
Hypertension [4]
Myocardial infarction [11]
Central Nervous System
Hyperesthesia (<2%)
Paresthesias (<2%)
Vertigo / dizziness (2%) [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Gastrointestinal bleeding [3]
Nausea [3]
Hematologic
Thrombosis [2]
Neuromuscular/Skeletal
Myalgia/Myopathy (<2%)
Tendinopathy/Tendon rupture (<2%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]
Respiratory
Influenza- ('flu)-like syndrome (3%)
Other
Allergic reactions (<2%)
Death [3]

ROFLUMILAST

Trade names: Daliresp (Takeda), Daxas (Takeda)
Indications: To reduce the risk of COPD exacerbations in patients with severe COPD associated with chronic bronchitis and a history of exacerbations
Class: Anti-inflammatory, Phosphodiesterase inhibitor, Phosphodiesterase type 4 (PDE4) inhibitor
Half-life: 17 hours
Clinically important, potentially hazardous interactions with: aminophylline, carbamazepine, cimetidine, denileukin, efavirenz, enoxacin, erythromycin, fingolimod, fluvoxamine, ketoconazole, oral contraceptives, pazopanib, phenobarbital, phenytoin, pralatrexate, rifampin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with moderate to severe liver impairment (Child-Pugh B or C class).

Cardiovascular
Cardiotoxicity [2]
Hypertension [3]
Central Nervous System
Anorexia [3]
Anxiety (<2%) [2]
Depression (<2%)
Headache (4%) [22]
Insomnia (2%) [7]
Neurotoxicity [3]
Suicidal ideation [2]
Tremor (<2%)
Vertigo / dizziness [4]
Endocrine/Metabolic
Appetite decreased (2%) [7]
Weight loss (8%) [27]
Gastrointestinal/Hepatic
Abdominal pain (<2%) [3]
Diarrhea (10%) [26]
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Gastritis / pangastritis / gastric irritation (<2%) [2]
Nausea (5%) [26]
Vomiting (<2%) [2]
Genitourinary
Urinary tract infection (<2%)
Neuromuscular/Skeletal
Back pain (3%) [4]
Muscle spasm (<2%)
Respiratory
Bronchitis [3]
COPD [4]
Dyspnea / shortness of breath [3]
Influenza (3%) [3]
Nasopharyngitis [4]
Pneumonia [3]
Rhinitis (<2%)
Sinusitis (<2%)
Upper respiratory tract infection [5]
Other
Adverse effects / adverse reactions [6]

ROLAPITANT

Trade name: Varubi (Tesaro)
Indications: Delayed nausea and vomiting from chemotherapy, in combination with dexamethasone and a 5HT3-receptor antagonist
Class: Antiemetic, Neurokinin 1 receptor antagonist
Half-life: ~7 days
Clinically important, potentially hazardous interactions with: thioridazine
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Based on its teratogenic properties in developed chick embryos, it is recommended that rolapitant should be taken only when a valid diagnosis has been established and only at the recommended dose, not at a larger dose or for an extended period of time. Drug usage in pregnant women should be conducted after necessary studies and approvals from regulatory agencies. (Cureus, 2022 Aug 17;14(8):e28097, doi: 10.7759/cureus.28097).

Mucosal
Stomatitis (oral mucositis) (4%)
Central Nervous System
Headache [6]
Vertigo / dizziness (6%) [2]
Endocrine/Metabolic
Appetite decreased (9%)
Gastrointestinal/Hepatic
Abdominal pain (3%)
Constipation [6]
Dyspepsia / functional dyspepsia / gastroparesis (4%) [3]
Genitourinary
Urinary tract infection (4%)
Hematologic
Anemia (3%)
Neutropenia (neutrophils decreased) (7–9%) [2]
Neuromuscular/Skeletal
Asthenia / fatigue [5]
Other
Hiccups / singultus (5%) [3]

ROMIDEPSIN

Trade name: Istodax (Celgene)
Indications: Cutaneous T-cell lymphoma (CTCL)
Class: Histone deacetylase (HDAC) inhibitor
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: atazanavir, carbamazepine, clarithromycin, conivaptan, coumadin derivatives, CYP3A4 inhibitors and inducers, darunavir, delavirdine, dexamethasone, efavirenz, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, telithromycin, voriconazole, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Dermatitis (4–27%)
- Edema / fluid retention (see also peripheral edema) (>2%)
- Exfoliative dermatitis (4–27%)
- Peripheral edema (see also edema) (6–10%)
- Pruritus (itching) (7–31%)

Mucosal
- Stomatitis (oral mucositis) (6–10%)

Cardiovascular
- Hypotension (7–23%)
- Supraventricular arrhythmias (>2%)
- Tachycardia (10%)
- Ventricular arrhythmia (>2%)

Central Nervous System
- Anorexia (23–54%) [5]
- Chills (11–17%)
- Dysgeusia (taste perversion) (15–40%)
- Fever (pyrexia) (includes hyperpyrexia) (20–47%)
- Headache (15–34%)

Endocrine/Metabolic
- ALT increased (3–22%)
- AST increased (3–28%)
- Hyperglycemia (includes glucose increased) (2–51%)
- Hypermagnesemia (27%)
- Hyperuricemia (33%)
- Hypoalbuminemia / albumin decreased (3–48%)
- Hypocalcemia (4–52%)
- Hypokalemia (6–20%)
- Hypomagnesemia (22–28%)
- Hyponatremia (<20%)
- Hypophosphatemia (27%)
- Weight loss (10–15%)

Gastrointestinal/Hepatic
- Abdominal pain (13–14%)
- Constipation (12–40%)
- Diarrhea (20–36%)
- Nausea (56–86%) [9]
- Vomiting (34–52%) [5]

Hematologic
- Anemia (19–72%) [3]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (4–55%) [2]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased (4–57%) [2]
- Neutropenia (neutrophils decreased) (11–66%) [5]
- Sepsis (>2%)
- Thrombocytopenia (17–72%) [8]

Neuromuscular/Skeletal
- Asthenia / fatigue (53–77%) [10]

Respiratory
- Cough (18–21%)
- Dyspnea / shortness of breath (13–21%)

Other
- Adverse effects / adverse reactions [2]
- Infection (46–54%) [2]

ROMIPLOSTIM

Trade name: Nplate (Amgen)
Indications: Thrombocytopenic purpura, myelodysplastic syndromes
Class: Recombinant thrombopoeitin
Half-life: 3.5 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Bruise / bruising / contusion / ecchymosis (ecchymoses) [3]

Mucosal
- Epistaxis (nosebleed) [4]

Central Nervous System
- Headache (35%) [15]
- Insomnia (16%)
- Paresthesias (6%)
- Vertigo / dizziness (17%)

Gastrointestinal/Hepatic
- Abdominal pain (11%)
- Dyspepsia / functional dyspepsia / gastroparesis (7%)
- Nausea [2]

Hematologic
- Thrombocytopenia [3]
- Thrombosis [4]

Neuromuscular/Skeletal
- Arthralgia (26%) [4]
- Asthenia / fatigue [6]
- Bone or joint pain (8%)
- Myalgia/Myopathy (14%)
- Pain in extremities (13%)

Respiratory
- Nasopharyngitis [3]

Other
- Adverse effects / adverse reactions [9]

ROPINIROLE

Trade name: Requip (GSK)
Indications: Parkinsonism
Class: Dopamine receptor agonist
Half-life: ~6 hours
Clinically important, potentially hazardous interactions with: ciprofloxacin, estradiol, levomepromazine, norfloxacin, risperidone, warfarin, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Diaphoresis (see also hyperhidrosis) (3–6%)
- Flushing / rubefaction (3%)
- Herpes simplex (5%)
- Hyperhidrosis (see also diaphoresis) (3%)
- Peripheral edema (see also edema) (2–7%) [2]
- Rash [2]

Mucosal
- Xerostomia (dry mouth) (5%)

Cardiovascular
- Cardiotoxicity [2]
- Chest pain (4%)
- Hypotension [2]
- Orthostatic hypotension [4]

Central Nervous System
- Amnesia (3%)
- Dyskinesia [9]
- Hallucinations (<5%) [7]
- Headache (6%) [6]
- Hyperesthesia (4%)
- Impulse control disorder [3]
- Insomnia [2]
- Pain (3–8%)
- Paresthesias (5%)
- Psychosis [5]
- Sleep-related disorder [2]
- Somnolence (drowsiness) (11–40%) [13]
- Syncope / fainting (<12%) [3]
- Tremor (6%)
- Vertigo / dizziness (6–40%) [17]
- Yawning (3%)

Gastrointestinal/Hepatic
- Abdominal pain (3–7%) [2]
- Constipation [2]
- Diarrhea (5%)
- Dyspepsia / functional dyspepsia / gastroparesis (4–10%) [3]
- Nausea (40–60%) [20]
- Vomiting (11%) [5]

Genitourinary
- Impotence (3%)
- Urinary tract infection (5%)

Neuromuscular/Skeletal
- Arthralgia (4%)
- Asthenia / fatigue (8–11%) [4]
- Back pain [2]
- Myalgia/Myopathy (3%)

Ocular
- Abnormal vision (6%)
- Xerophthalmia (dry eyes) (2%)

Respiratory
- Cough (3%)
- Dyspnea / shortness of breath (3%)
- Influenza- ('flu)-like syndrome (3%)
- Pharyngitis (sore throat) (6–9%)
- Rhinitis (4%)
- Sinusitis (4%)

Other
- Adverse effects / adverse reactions [5]
- Infection (viral) (11%)

ROPIVACAINE

Trade name: Naropin (AstraZeneca)
Indications: Surgical anesthesia, acute pain management
Class: Anesthetic; local
Half-life: 1.1–2.5 hours after intravascular administration; 3.2–5.2 hours after epidural administration
Clinically important, potentially hazardous interactions with: adenosine, aminophylline, amiodarone, ciprofloxacin, dronedarone,

fluvoxamine, imipramine, ketoconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Pruritus (itching) (5%) [2]
Cardiovascular
Bradycardia / sinus bradycardia (9%)
Cardiac arrest [8]
Hypotension (37%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (9%)
Headache (5%)
Neurotoxicity [2]
Pain (8%)
Paresthesias (6%)
Seizures [4]
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Nausea (25%) [3]
Vomiting (12%) [3]
Hematologic
Anemia (6%)
Neuromuscular/Skeletal
Back pain (5%)

ROSEMARY

Family: Lamiaceae; Labiatae
Scientific name: *Rosmarinus officinalis*
Indications: Oral: dyspepsia, flatulence, gout, cough, headache, loss of appetite, high blood pressure. **Topical:** alopecia areata, circulatory disturbances, toothache, eczema, musculoskeletal pain. Culinary spice, fragrance component, insect repellent
Class: Antibacterial, Antifungal / antimycotic, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Oils from rosemary, thyme, lavender and cedarwood, used to treat alopecia areata, improved hair growth by 44% in 7 months (1998 *Arch Dermatol* 134:1349).

Skin
Dermatitis [5]

ROSIGLITAZONE

Trade names: Avandamet (GSK), Avandaryl (GSK), Avandia (GSK)
Indications: Type II diabetes
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Thiazolidinedione
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: CYP2C8 inhibitors and inducers, gemfibrozil, grapefruit juice, letermovir, paclitaxel, rifampin, teriflunomide
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Thiazolidinediones, including rosiglitazone, cause or exacerbate congestive heart failure in some patients.
Contra-indicated in patients with established NYHA Class III or IV heart failure. Avandaryl is rosiglitazone and glimepiride; Avandamet is rosiglitazone and metformin.
Warning: CONGESTIVE HEART FAILURE

Skin
Edema / fluid retention (see also peripheral edema) (5%) [12]
Peripheral edema (see also edema) [11]
Cardiovascular
Cardiac failure [13]
Congestive heart failure [2]
Myocardial infarction [9]
Myocardial ischemia [3]
Central Nervous System
Headache (6%)
Stroke / cerebral infarction [2]
Endocrine/Metabolic
Weight gain [4]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [9]
Nausea [2]
Genitourinary
Bladder disorder [2]
Hematologic
Anemia [2]
Neuromuscular/Skeletal
Arthralgia (5%)
Back pain (4%)
Fractures [5]
Ocular
Macular edema [8]
Proptosis (see also exophthalmos) [2]
Respiratory
Dyspnea / shortness of breath [2]
Nasopharyngitis (6%)
Respiratory tract infection (10%)
Other
Adverse effects / adverse reactions [3]
Death [6]

ROSUVASTATIN

Trade name: Crestor (AstraZeneca)
Indications: Hypercholesterolemia, mixed dyslipidemia
Class: HMG-CoA reductase inhibitor / statin
Half-life: ~19 hours
Clinically important, potentially hazardous interactions with: alcohol, amiodarone, antacids, atazanavir, ciprofibrate, colchicine, conivaptan, coumarins, cyclosporine, daptomycin, darunavir, dronedarone, elbasvir & grazoprevir, eltrombopag, eluxadoline, erythromycin, ethinylestradiol, fenofibrate, fibrates, fosamprenavir, fusidic acid, gemfibrozil, indinavir, ledipasvir & sofosbuvir, letermovir, lopinavir, nelfinavir, niacin, niacinamide, phenindione, progestins, protease inhibitors, ritonavir, safinamide, saquinavir, sofosbuvir/velpatasvir/voxilaprevir, tafamidis meglumine, tipranavir, trabectedin, vitamin K antagonists, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Peripheral edema (see also edema) (>2%)
Rash (>2%)
Central Nervous System
Depression (>2%)
Headache (6%)
Insomnia [2]
Pain (>2%)
Paresthesias (>2%)
Vertigo / dizziness (4%) [4]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Diabetes mellitus [3]
Gastrointestinal/Hepatic
Abdominal pain (>2%)
Constipation (2%)
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (3%)
Pancreatitis / acute pancreatitis [2]
Neuromuscular/Skeletal
Arthralgia (>2%)
Asthenia / fatigue (3%) [2]
Back pain (3%)
Myalgia/Myopathy (3%) [19]
Rhabdomyolysis [25]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [6]
Renal failure [3]
Respiratory
Cough (>2%)
Influenza- ('flu)-like syndrome (2%)
Rhinitis (2%)
Sinusitis (2%)
Other
Adverse effects / adverse reactions [8]

ROTIGOTINE

Trade name: Neupro (Schwarz)
Indications: Parkinsonism, restless legs syndrome
Class: Dopamine receptor agonist
Half-life: 5–7 hours
Clinically important, potentially hazardous interactions with: antipsychotics, levomepromazine, memantine, methyldopa, metoclopramide, risperidone, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Neupro contains sodium metabisulfite which is capable of causing anaphylactoid reactions in patients with sulfite allergy.

Skin
Diaphoresis (see also hyperhidrosis) (4%)
Erythema (2%)
Peripheral edema (see also edema) (7%) [3]
Rash (2%) [3]
Mucosal
Xerostomia (dry mouth) (3%) [3]
Cardiovascular
Chest pain (>2%)
Hypertension (3%)
Hypotension [2]
Central Nervous System
Abnormal dreams (3%)
Anorexia (3%)
Anxiety (>2%)

Depression (>2%)
Dyskinesia [4]
Gait instability / postural instability [2]
Hallucinations (2%) [3]
Hallucinations, visual (see also Charles Bonnet syndrome) (2%) [2]
Headache (14%) [8]
Impulse control disorder [4]
Insomnia (10%) [3]
Somnolence (drowsiness) (25%) [16]
Tremor (>2%) [2]
Vertigo / dizziness (3–18%) [7]

Gastrointestinal/Hepatic
Abdominal pain (>2%)
Constipation (5%)
Diarrhea (>2%)
Dyspepsia / functional dyspepsia / gastroparesis (4%)
Gastrointestinal disorder / discomfort [2]
Nausea (38%) [24]
Vomiting (13%) [6]

Genitourinary
Urinary frequency (>2%)
Urinary tract infection (3%)

Local
Application-site erythema [4]
Application-site pruritus [4]
Application-site reactions (37%) [31]

Neuromuscular/Skeletal
Arthralgia (4%)
Asthenia / fatigue (8%) [10]
Back pain (6%)
Myalgia/Myopathy (2%)

Ocular
Abnormal vision (3%)
Visual disturbances (3%)

Respiratory
Cough (>2%)
Influenza- ('flu)-like syndrome (>2%)
Rhinitis (>2%)
Sinusitis (3%)
Upper respiratory tract infection (>2%)

Other
Adverse effects / adverse reactions [6]

ROXATIDINE

Trade name: Roxit (Noristan)
Indications: Gastric and duodenal ulcers
Class: Histamine H2 receptor antagonist
Half-life: 5–6 hours
Clinically important, potentially hazardous interactions with: none known
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Lichenoid eruption / lichenoid reaction [2]
Rash [2]

Central Nervous System
Headache (27%)
Vertigo / dizziness (27%)

ROXITHROMYCIN

Trade names: Biaxsig (Aventis), Romicin (Pacific), Rulid (Roussel-Uclaf)
Indications: Respiratory tract, urinary and soft tissue infections
Class: Antibiotic, Antibiotic; macrolide, Antimicrobial
Half-life: 8–15 hours
Clinically important, potentially hazardous interactions with: aminophylline, digoxin, disopyramide, ergot alkaloids, gemfibrozil, midazolam, simvastatin, terfenadine, warfarin
Pregnancy category: N/A

Skin
Rash [2]
Urticaria / hives [2]

Cardiovascular
QT interval prolonged / QT prolongation [2]

Gastrointestinal/Hepatic
Abdominal pain [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Other
Adverse effects / adverse reactions [7]

RUCAPARIB

Trade name: Rubraca (Clovis)
Indications: Advanced BRCA-mutated ovarian cancer
Class: Poly (ADP-ribose) polymerase (PARP) inhibitor
Half-life: 17 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis (13%)
Erythema (13%)
Exanthems (13%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (2%)
Photosensitivity (10%)
Pruritus (itching) (9%)
Rash (13%)

Central Nervous System
Dysgeusia (taste perversion) (39%) [3]
Fever (pyrexia) (includes hyperpyrexia) (11%)
Headache [2]
Vertigo / dizziness (17%)

Endocrine/Metabolic
ALT increased (74%) [4]
Appetite decreased (39%) [2]
AST increased (73%) [5]
Hypercholesterolemia (40%)
Serum creatinine increased (92%)

Gastrointestinal/Hepatic
Abdominal pain (32%) [3]
Constipation (40%) [3]
Diarrhea (34%) [3]
Nausea (77%) [8]
Vomiting (46%) [6]

Hematologic
Anemia (44%) [10]
Hemoglobin decreased [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (45%)
Neutropenia (neutrophils decreased) (15%) [3]
Thrombocytopenia (21%) [3]

Neuromuscular/Skeletal
Asthenia / fatigue (77%) [8]

Respiratory
Dyspnea / shortness of breath (21%) [2]

Other
Adverse effects / adverse reactions [2]

RUE

Family: Rutaceae
Scientific names: *Ruta chalepensis, Ruta corsica, Ruta graveolens, Ruta montana*
Indications: Hysteria, coughs, croup, colic, flatulence, mild stomachic, insomnia, abdominal cramps, nervous headache, giddiness, hysteria, palpitation, abortifacient, cysticide, vermifuge, insecticide. **Topical:** irritant, rubefacient for eczemas, psoriasis and rheumatic pain, sciatica, headache, chronic bronchitis. Flavoring in alcoholic beverages, salads, meats and cheeses
Class: Antispasmodic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Skin
Bullous dermatosis [2]
Erythema [2]
Photosensitivity [11]
Vesiculation [2]

RUFINAMIDE

Trade names: Banzel (Eisai), Inovelon (Eisai)
Indications: Epilepsy, Lennox-Gastaut syndrome
Class: Anticonvulsant, Antiepileptic
Half-life: 6–10 hours
Clinically important, potentially hazardous interactions with: carbamazepine, lamotrigine, phenobarbital, primidone, topiramate, valproic acid, vigabatrin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Contra-indicated in patients with familial short QT syndrome.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<10%)
Pruritus (itching) (3%)
Rash (4%)

Mucosal
Epistaxis (nosebleed) (<10%)

Cardiovascular
QT interval shortening [2]

Central Nervous System
Aggression (includes anger) (3%)
Anxiety (3%)
Fever (pyrexia) (includes hyperpyrexia) [2]
Gait instability / postural instability (3%)

Headache (16–27%) [8]
Impaired concentration (3%)
Irritability [2]
Seizures (aggravation) [2]
Somnolence (drowsiness) (11–17%) [19]
Status epilepticus (<10%)
Tremor (6%)
Vertigo / dizziness (3–19%) [10]

Endocrine/Metabolic
Appetite decreased (5%) [7]
Oligomenorrhea (<10%)
Weight loss [2]

Gastrointestinal/Hepatic
Abdominal pain (3%)
Constipation (3%)
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Nausea (7–12%) [8]
Vomiting (5–17%) [16]

Neuromuscular/Skeletal
Asthenia / fatigue (9–16%) [15]
Ataxia (4%) [2]
Back pain (3%)
Psychomotor hyperactivity (<10%)

Ocular
Diplopia (double vision) (4–9%) [6]
Nystagmus (6%)
Vision blurred (5%)

Otic
Ear infection (3%)

Respiratory
Bronchitis (3%)
Influenza (5%)
Nasopharyngitis (5%)
Pneumonia (<10%)
Rhinitis (<10%)
Sinusitis (3%)

Other
Adverse effects / adverse reactions [8]

RUPATADINE

Trade name: Rupafin (GSK)
Indications: Allergic rhinitis and chronic idiopathic urticaria
Class: Histamine H1 receptor antagonist
Half-life: 5.9 hours
Clinically important, potentially hazardous interactions with: alcohol, CNS depressants, erythromycin, grapefruit juice, ketoconazole, statins

Mucosal
Xerostomia (dry mouth) (<10%)

Cardiovascular
Torsades de pointes [2]

Central Nervous System
Headache (<10%) [4]
Somnolence (drowsiness) (<10%) [9]
Vertigo / dizziness (<10%)

Gastrointestinal/Hepatic
Diarrhea [2]

Neuromuscular/Skeletal
Asthenia / fatigue (<10%)

RUXOLITINIB

Trade name: Jakafi (Incyte)
Indications: Intermediate or high-risk myelofibrosis, polycythemia vera
Class: Janus kinase (JAK) inhibitor
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: boceprevir, clarithromycin, conivaptan, fluconazole, grapefruit juice, indinavir, itraconazole, ketoconazole, lopinavir, mibefradil, nefazodone, nelfinavir, posaconazole, ritonavir, ritonavir, saquinavir, strong CYP3A4 inhibitors, telaprevir, telithromycin, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: BOXED WARNING (ADDED MARCH 2023) (FOR THE TOPICAL FORMULATION OF RUXOLITINIB APPROVED FOR THE TREATMENT OF MILD TO MODERATE ATOPIC DERMATITIS AND NONSEGMENTAL VITILIGO).
WARNING: SERIOUS INFECTIONS, MORTALITY, MALIGNANCY, MAJOR ADVERSE CARDIOVASCULAR EVENTS (MACE), AND THROMBOSIS SEE FULL PRESCRIBING INFORMATION FOR COMPLETE BOXED WARNING.
SERIOUS INFECTIONS LEADING TO HOSPITALIZATION OR DEATH, INCLUDING TUBERCULOSIS AND BACTERIAL, INVASIVE FUNGAL, VIRAL, AND OTHER OPPORTUNISTIC INFECTIONS, HAVE OCCURRED IN PATIENTS RECEIVING JANUS KINASE INHIBITORS FOR INFLAMMATORY CONDITIONS.
HIGHER RATE OF ALL-CAUSE MORTALITY, INCLUDING SUDDEN CARDIOVASCULAR DEATH HAVE BEEN OBSERVED IN PATIENTS TREATED WITH JANUS KINASE INHIBITORS FOR INFLAMMATORY CONDITIONS.
LYMPHOMA AND OTHER MALIGNANCIES HAVE BEEN OBSERVED IN PATIENTS TREATED WITH JANUS KINASE INHIBITORS FOR INFLAMMATORY CONDITIONS.
HIGHER RATE OF MACE (INCLUDING CARDIOVASCULAR DEATH, MYOCARDIAL INFARCTION, AND STROKE) HAS BEEN OBSERVED IN PATIENTS TREATED WITH JANUS KINASE INHIBITORS FOR INFLAMMATORY CONDITIONS.
THROMBOSIS, INCLUDING DEEP VENOUS THROMBOSIS, PULMONARY EMBOLISM, AND ARTERIAL THROMBOSIS, SOME FATAL, HAVE OCCURRED IN PATIENTS TREATED WITH JANUS KINASE INHIBITORS FOR INFLAMMATORY CONDITIONS.

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (23%)
Hematoma (23%)
Herpes zoster (2%)
Petechiae (23%)
Purpura (23%)

Cardiovascular
Hypertension [2]

Central Nervous System
Balance disorder (18%)
Headache [3]
Vertigo / dizziness (18%) [2]

Endocrine/Metabolic
ALT increased (25%)
AST increased (17%)
Weight gain (7%)

Gastrointestinal/Hepatic
Diarrhea [4]
Hepatitis (reactivation) [2]

Genitourinary
Cystitis (9%)
Pyuria (9%)
Urinary tract infection (9%)
Urosepsis (9%)

Hematologic
Anemia (96%) [22]
Cytopenia [2]
Hemotoxicity [2]
Neutropenia (neutrophils decreased) (19%) [3]
Thrombocytopenia (70%) [26]

Local
Injection-site hematoma (23%)

Neuromuscular/Skeletal
Asthenia / fatigue [3]

Ocular
Periorbital hematoma (23%)

Other
Adverse effects / adverse reactions [3]
Death [2]
Infection [8]

SACUBITRIL/VALSARTAN

Trade name: Entresto (Novartis)
Indications: To reduce risk of cardiovascular death and hospitalization for heart failure in chronic heart failure
Class: Angiotensin receptor neprilysin inhibitor (ARNI)
Half-life: <12 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, aliskiren, lithium, NSAIDs, potassium-sparing diuretics
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a history of angioedema related to previous therapy with angiotensin-converting enzyme inhibitor or angiotensin II receptor blocker. See also separate profile for valsartan.
Warning: FETAL TOXICITY

Skin
Angioedema (<2%) [2]
Peripheral edema (see also edema) [2]

Cardiovascular
Hypotension (18%) [6]
Orthostatic hypotension (2%)

Central Nervous System
Gait instability / postural instability (2%)
Vertigo / dizziness (6%) [2]

Endocrine/Metabolic
Hyperkalemia (12%) [5]
Hyponatremia [2]
Serum creatinine increased [2]

Gastrointestinal/Hepatic
Constipation [2]

Neuromuscular/Skeletal
Arthralgia [2]
Rhabdomyolysis [3]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Renal failure (5%)
Renal function abnormal / renal dysfunction [2]
Respiratory
Cough (9%) [4]
Nasopharyngitis [2]
Other
Adverse effects / adverse reactions [3]

SAFINAMIDE

Trade name: Xadago (Newron)
Indications: Adjunctive treatment to levodopa/carbidopa in patients with Parkinson's disease experiencing 'off' episodes
Class: Monoamine oxidase B inhibitor
Half-life: 20–26 hours
Clinically important, potentially hazardous interactions with: cyclobenzaprine, dextromethorphan, dopaminergic antagonists, imatinib, irinotecan, isoniazid, lapatinib, linezolid, meperidine, methadone, methylphenidate, metoclopramide, mitoxantrone, other MAO inhibitors, propoxyphene, rosuvastatin, serotonergic drugs, St John's wort, sulfasalazine, sympathomimetics, topotecan, tramadol, tricyclic or tetracyclic antidepressants, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Peripheral edema (see also edema) [2]
Cardiovascular
Hypertension [4]
Orthostatic hypotension (2%)
Central Nervous System
Anxiety (2%)
Dyskinesia (17–21%) [8]
Fever (pyrexia) (includes hyperpyrexia) [3]
Gait instability / postural instability (4–6%) [2]
Headache [3]
Insomnia (<4%) [2]
Parkinsonism (exacerbation) [2]
Tremor [2]
Vertigo / dizziness [2]
Endocrine/Metabolic
ALT increased (3–7%)
AST increased (6–7%)
Weight loss [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [2]
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Nausea (3–6%) [3]
Vomiting [2]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Back pain [3]
Ocular
Cataract [3]
Vision blurred [2]
Respiratory
Cough (2%) [2]
Nasopharyngitis [3]

SALMETEROL

Trade names: Advair (GSK), Serevent (GSK)
Indications: Asthma
Class: Beta-2 adrenergic agonist, Bronchodilator
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: alpha blockers, aprepitant, atazanavir, beta blockers, betahistine, boceprevir, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, conivaptan, CYP3A4 inhibitors, darunavir, delavirdine, efavirenz, indinavir, iobenguane, lapatinib, loop diuretics, lopinavir, ombitasvir/paritaprevir/ritonavir, sympathomimetics, telaprevir, telithromycin, tipranavir, tricyclic antidepressants, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Advair is salmeterol and fluticasone.
Warning: ASTHMA-RELATED DEATH

Skin
Rash (<3%) [2]
Urticaria / hives (<3%)
Mucosal
Nasal congestion (4–9%)
Oropharyngeal pain [2]
Xerostomia (dry mouth) (<3%)
Cardiovascular
Hypertension (4%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (13–16%) [6]
Pain (<12%)
Tremor (<10%) [2]
Vertigo / dizziness (4%)
Gastrointestinal/Hepatic
Throat irritation/pain (7%)
Genitourinary
Urinary tract infection [2]
Neuromuscular/Skeletal
Back pain [4]
Myalgia/Myopathy (<3%)
Respiratory
Asthma [3]
COPD (exacerbation) [3]
Cough (5%) [3]
Influenza- ('flu)-like syndrome (5%)
Nasopharyngitis [5]
Pharyngitis (sore throat) (6%)
Pneumonia [5]
Rhinitis (4%)
Sinusitis (4–5%)
Upper respiratory tract infection (5%) [4]
Other
Adverse effects / adverse reactions [3]
Death [8]
Infection (2–12%)

SALSALATE

Trade name: Mono-Gesic (Schwarz)
Indications: Arthritis
Class: Non-steroidal anti-inflammatory (NSAID), Salicylate
Half-life: 7–8 hours
Clinically important, potentially hazardous interactions with: dichlorphenamide, methotrexate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<10%)
Rash (<10%)

SAQUINAVIR

Trade name: Invirase (Roche)
Indications: Advanced HIV infection
Class: Antiretroviral, CYP3A4 inhibitor, HIV-1 protease inhibitor
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: abiraterone, afatinib, alprazolam, amitriptyline, amprenavir, astemizole, atazanavir, atorvastatin, avanafil, brigatinib, cabazitaxel, cabozantinib, calcifediol, clindamycin, clozapine, copanlisib, crizotinib, darifenacin, darunavir, dasatinib, delavirdine, dihydroergotamine, dronedarone, efavirenz, elbasvir & grazoprevir, eluxadoline, eplerenone, ergot derivatives, erlotinib, everolimus, fentanyl, fesoterodine, flibanserin, fluticasone propionate, itraconazole, ixabepilone, ketoconazole, lapatinib, levomepromazine, lomitapide, lopinavir, maraviroc, methysergide, midazolam, midostaurin, mifepristone, naldemedine, nelfinavir, neratinib, olaparib, omeprazole, paclitaxel, palbociclib, pantoprazole, pazopanib, pentamidine, phenytoin, pimozide, ponatinib, quinine, ribociclib, rifampin, rilpivirine, ritonavir, rivaroxaban, romidepsin, rosuvastatin, ruxolitinib, sildenafil, simeprevir, simvastatin, solifenacin, sonidegib, St John's wort, sunitinib, tadalafil, telithromycin, temsirolimus, ticagrelor, tipranavir, tolvaptan, vardenafil, vemurafenib, viloxazine, vorapaxar, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Protease inhibitors cause dyslipidemia which includes elevated triglycerides and cholesterol and redistribution of body fat centrally to produce the so-called 'protease paunch', breast enlargement, facial atrophy, and 'buffalo hump'.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<2%)
Candidiasis / candidosis (<2%)
Dermatitis (<2%)
Diaphoresis (see also hyperhidrosis) (<2%)

Eczema / eczematous reaction / eczematous eruption (<2%)
Erythema (<2%)
Exanthems (<2%)
Folliculitis (<2%)
Herpes simplex (<2%)
Herpes zoster (<2%)
Photosensitivity (<2%)
Pigmentation (<2%)
Seborrheic dermatitis (<2%)
Ulcerations (<2%)
Urticaria / hives (<2%)
Verrucae vulgaris / warts / verrucae (<2%)
Xerosis / xeroderma (see also dry skin) (<2%)

Hair
Hair changes (<2%)

Mucosal
Cheilitis (inflammation of the lips) (<2%)
Gingivitis (<2%)
Glossitis (inflammation of the tongue) (<2%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (2%)
Stomatitis (oral mucositis) (<2%)
Xerostomia (dry mouth) (<2%)

Cardiovascular
QT interval prolonged / QT prolongation [3]

Central Nervous System
Dysesthesia (<2%)
Dysgeusia (taste perversion) (<2%)
Hyperesthesia (<2%)
Paresthesias (3%)

Endocrine/Metabolic
Gynecomastia [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

SARILUMAB

Trade name: Kevzara (Sanofi)
Indications: Rheumatoid arthritis
Class: Anti-interleukin-6 receptor monoclonal antibody, Covid-19 putative drug, Monoclonal antibody
Half-life: 8–10 days (concentration-dependent)
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: N/A (Based on animal data, may cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: RISK OF SERIOUS INFECTIONS

Endocrine/Metabolic
ALT increased (5%) [4]
AST increased (38–43%)
Hypercholesterolemia [2]
Hypertriglyceridemia (includes triglycerides increased) (<3%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]

Genitourinary
Urinary tract infection (3%) [2]

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<2%)
Neutropenia (neutrophils decreased) (7–10%) [15]

Local
Injection-site erythema (4–5%) [4]
Injection-site pruritus (2%)
Injection-site reaction (6–7%) [2]

Respiratory
Nasopharyngitis (>3%) [3]
Upper respiratory tract infection (3–4%) [3]

Other
Adverse effects / adverse reactions [3]
Infection [9]

SARSAPARILLA

Family: Smilacaceae
Scientific names: *Smilax aristolochiaefolia, Smilax febrifuga, Smilax glabra, Smilax japicanga, Smilax officinalis, Smilax ornata, Smilax regelii, Smilax rotundifolia*
Indications: Blood purifier, general tonic, gout, syphilis, gonorrhea, rheumatism, wounds, arthritis, fever, cough, scrofula, hypertension, digestive disorders, psoriasis, skin diseases, cancer
Class: Anti-inflammatory, Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Sarsaparilla vine should not be confused with sasparilla and sassafras (the root and bark of which were once used to flavor root beer). Sarsaparilla is only used in root beer and other beverages for its foaming properties.

SAW PALMETTO

Family: Arecaceae; Palmae
Scientific names: *Sabal serrulata, Serenoa repens, Serenoa serrulata*
Indications: Benign prostatic hyperplasia, diuretic, sedative, prostate cancer (with other herbs), aphrodisiac, hair growth, colds, coughs, sore throat, asthma, chronic bronchitis, migraine
Class: 5-alpha reductase inhibitor, Anti-inflammatory, Hormone modulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Central Nervous System
Headache [2]

Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [3]
Pancreatitis / acute pancreatitis [2]
Vomiting [2]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Respiratory
Rhinitis [2]

Other
Adverse effects / adverse reactions [10]

SAXAGLIPTIN

Trade names: Onglyza (Bristol-Myers Squibb), Qtern (AstraZeneca)
Indications: Type II diabetes mellitus
Class: Antidiabetic, Dipeptidyl peptidase-4 (DPP-4) (gliptin) inhibitor
Half-life: 2.5–3.1 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, alcohol, aprepitant, beta blockers, bexarotene, colchicine, conivaptan, corticosteroids, CYP3A4 inducers, darunavir, dasatinib, delavirdine, diazoxide, diuretics, efavirenz, estradiol, estrogens, hypoglycemic agents, indinavir, ketoconazole, lapatinib, MAO inhibitors, oxcarbazepine, P-glycoprotein inhibitors and inducers, pegvisomant, pioglitazone, rifapentine, somatropin, strong CYP3A4/5 inhibitors, telithromycin, terbinafine, testosterone, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Qtern is saxagliptin and dapagliflozin.

Skin
Hypersensitivity (<2%)
Peripheral edema (see also edema) (2–3%)

Cardiovascular
Cardiac disorder / cardiac dysfunction [2]
Cardiac failure [2]
Myocardial infarction [2]

Central Nervous System
Headache (7%) [7]
Stroke / cerebral infarction [2]

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [10]

Gastrointestinal/Hepatic
Abdominal pain (2%)
Diarrhea [5]
Gastroenteritis (2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Vomiting (2%)

Genitourinary
Urinary tract infection (7%) [7]

Respiratory
Nasopharyngitis [4]
Sinusitis (3%) [2]
Upper respiratory tract infection (8%) [8]

Other
Adverse effects / adverse reactions [7]
Death [2]
Infection [2]

SCOPOLAMINE

Synonym: hyoscine
Trade names: Kwells (Bayer), Scopoderm-TTS (Novartis), Transderm-Scop Patch (Novartis)
Indications: Nausea and vomiting, excess salivation
Class: Anticholinergic, Antiemetic, Muscarinic antagonist
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: anticholinergics, arbutamine
Pregnancy category: C

Note: Systemic adverse effects have been reported following ophthalmic administration.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Dermatitis (transdermal patch and ophthalmic) [8]
Erythema multiforme [2]
Photosensitivity (<10%)
Rash [2]
Xerosis / xeroderma (see also dry skin) (>10%)

Mucosal
Xerostomia (dry mouth) (>60%) [9]

Cardiovascular
Bradycardia / sinus bradycardia [2]

Central Nervous System
Agitation [2]
Amnesia [4]
Hallucinations [5]
Hallucinations, visual (see also Charles Bonnet syndrome) [4]
Psychosis [5]

Genitourinary
Urinary retention [2]

Local
Injection-site irritation (>10%)

Ocular
Dilated pupils [3]
Mydriasis [2]
Vision blurred [2]

Other
Death [2]

SECOBARBITAL

Trade name: Seconal (Ranbaxy)
Indications: Insomnia
Class: Barbiturate
Half-life: 15–40 hours
Clinically important, potentially hazardous interactions with: alcohol, anticoagulants, antihistamines, brompheniramine, buclizine, chlorpheniramine, dicumarol, ethanolamine, imatinib, warfarin
Pregnancy category: D

Local
Injection-site pain (>10%)

SECRETIN

Trade name: Secretin-Ferring (Ferring)
Indications: Diagnosis of gastrinoma (Zollinger–Ellison syndrome)
Class: Hormone, polypeptide
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticholinergics, fesoterodine, oxybutynin, tiotropium, trospium
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: SecreFlo is porcine-derived; ChiRhoStim is human-derived.

SECUKINUMAB

Trade name: Cosentyx (Novartis)
Indications: Moderate-to-severe plaque psoriasis, psoriatic arthritis, ankylosing spondylitis
Class: Antipsoriatic agent, Biologic, Interleukin-17A (IL-17A) antagonist / interleukin-17 inhibitor, Monoclonal antibody
Half-life: 22–31 days
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Use with caution in patients with inflammatory bowel disease.

Skin
Candidiasis / candidosis [8]
Eczema / eczematous reaction / eczematous eruption [2]
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Pompholyx / dyshidrotic eczema [2]
Pruritus (itching) [4]
Psoriasis (exacerbation) [2]
Pyoderma gangrenosum [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Mucosal
Behçet's disease / Behçet's syndrome [4]
Oral candidiasis [2]

Cardiovascular
Cardiac disorder / cardiac dysfunction [2]
Hypertension [3]

Central Nervous System
Headache [15]

Gastrointestinal/Hepatic
Colitis [3]
Crohn's disease [4]
Diarrhea (3–4%) [7]
Inflammatory bowel disease [2]

Hematologic
Neutropenia (neutrophils decreased) [6]

Local
Injection-site reaction [3]

Neuromuscular/Skeletal
Arthralgia [4]
Asthenia / fatigue [2]
Back pain [2]

Respiratory
Nasopharyngitis (11–12%) [23]
Upper respiratory tract infection (3%) [15]

Other
Adverse effects / adverse reactions [9]
Infection (29%) [15]
Malignancies [2]
Neoplasms [2]

SELEGILINE

Synonyms: deprenyl; L-deprenyl
Trade names: Eldepryl (Somerset), Emsam (Mylan Specialty), Zelapar (Valeant)
Indications: Parkinsonism
Class: Antidepressant, Monoamine oxidase B inhibitor
Half-life: 9 minutes
Clinically important, potentially hazardous interactions with: amitriptyline, carbidopa, citalopram, doxepin, ephedra, ephedrine, escitalopram, fluoxetine, fluvoxamine, levodopa, meperidine, methadone, moclobemide, naratriptan, nefazodone, oral contraceptives, oxcarbazepine, ozanimod, paroxetine hydrochloride, propoxyphene, sertraline, tramadol, valbenazine, venlafaxine, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SUICIDALITY IN CHILDREN AND ADOLESCENTS

Mucosal
Xerostomia (dry mouth) (>10%) [2]

Cardiovascular
Hypertension [2]

Central Nervous System
Hallucinations [2]
Headache [2]
Serotonin syndrome [2]

Gastrointestinal/Hepatic
Nausea [2]

Local
Application-site reactions [5]

Other
Bruxism (teeth grinding) (<10%)

SELENIUM

Trade names: Bio-Active Selenium (Solaray), Head & Shoulders Shampoo (Procter & Gamble), SelenoMax (Source Naturals), Selsun Blue (Chattem), Selsun Shampoo (Chattem)
Indications: Anticancer (stomach, colorectal, lung, prostate), arthritis, asthma, heart disease, HIV inhibitor, treatment of dandruff, fungal infections (tinea versicolor), and seborrhea
Class: Antioxidant, Trace element
Half-life: 12–41 hours; selenomethionine: 252 days, selenite: 102 days
Clinically important, potentially hazardous interactions with: baloxavir marboxil, cholesterol-lowering drugs, cisplatin, clozapine, dimercaprol, eltrombopag, niacin, oral corticosteroids, simvastatin
Pregnancy category: C
Note: Selenium is an essential component of glutathione peroxidase. Inadequate concentrations of dietary selenium account, in part, for Keshan disease (a fatal cardiomyopathy). Paradise nuts (Lecythis ollaria) are a natural selenium source.

Skin
Carcinoma [5]
Cutaneous toxicity / skin toxicity [3]
Dermatitis [2]

Hair
Alopecia / hair loss [6]
Hair changes [2]
Nails
Brittle nails [5]
Nail pigmentation [2]
Central Nervous System
Amyotrophic lateral sclerosis [4]
Gastrointestinal/Hepatic
Nausea [3]
Vomiting [2]
Other
Adverse effects / adverse reactions [3]

SELEXIPAG

Trade name: Uptravi (Actelion)
Indications: Pulmonary arterial hypertension
Class: Prostacyclin receptor agonist
Half-life: <3 hours
Clinically important, potentially hazardous interactions with: gemfibrozil, strong CYP2C8 inhibitors
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Flushing / rubefaction (12%)
Rash (11%)
Central Nervous System
Headache (65%) [8]
Endocrine/Metabolic
Appetite decreased (6%)
Gastrointestinal/Hepatic
Diarrhea (42%) [4]
Nausea (33%) [6]
Vomiting (18%)
Hematologic
Anemia (8%)
Neuromuscular/Skeletal
Arthralgia (11%)
Jaw pain (26%) [6]
Myalgia/Myopathy (16%) [2]
Pain in extremities (17%)

SENNA

Family: Caesalpiniaceae; Fabaceae
Scientific names: *Cassia acutifolia, Cassia angustifolia, Cassia obtusifloia, Cassia senna, Cassia tora, Senna alexandrina, Senna obtusifolia, Senna tora*
Indications: Laxative, cathartic, cholagogue, purgative
Class: Stimulant laxative
Half-life: N/A
Clinically important, potentially hazardous interactions with: squill
Note: Part used: Leaves and/or seed pods. Prolonged or excessive laxative use can lead to electrolyte and fluid disturbances, development of carthartic colon, and possible increased risk of colorectal cancer. Treatment should be limited to 8 to 10 days.

Skin
AGEP [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Neuromuscular/Skeletal
Arthralgia (from abuse) [2]
Finger clubbing (from abuse) (reversible) [3]
Other
Adverse effects / adverse reactions [4]

SERMORELIN

Trade name: Geref (Merck)
Class: Growth hormone-releasing hormone analog
Half-life: ~12 minutes
Clinically important, potentially hazardous interactions with: aspirin, drugs affecting pituitary secretion of somatotropin, glucocorticoids, indomethacin, insulin
Pregnancy category: C

SERTINDOLE

Trade name: Serdolect (Lundbeck)
Indications: Schizophrenia
Class: Antipsychotic
Half-life: 2–4 days
Clinically important, potentially hazardous interactions with: antiarrhythmics, antidepressants, antihistamines, astemizole, cimetidine, CYP3A inhibitors, macrolides, quinidine, quinolones, sotalol, terfenadine
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Contra-indicated in patients with a history of clinically significant cardiovascular disease, congestive heart failure, cardiac hypertrophy, arrhythmia, or bradycardia.
Not available in the USA.

Mucosal
Nasal congestion [2]
Xerostomia (dry mouth) [2]
Cardiovascular
Arrhythmias [2]
Cardiac disorder / cardiac dysfunction [3]
QT interval prolonged / QT prolongation [21]
Central Nervous System
Extrapyramidal symptoms [3]
Headache [2]
Endocrine/Metabolic
Weight gain [7]
Genitourinary
Ejaculatory dysfunction [4]
Sexual dysfunction [3]
Respiratory
Rhinitis [4]
Other
Adverse effects / adverse reactions [5]

SERTRALINE

Trade name: Zoloft (Pfizer)
Indications: Depression, panic disorders, obsessive compulsive disorders
Class: Antidepressant, Selective serotonin reuptake inhibitor (SSRI)
Half-life: 24–26 hours
Clinically important, potentially hazardous interactions with: amphetamines, astemizole, clarithromycin, clozapine, darunavir, dextroamphetamine, diethylpropion, droperidol, efavirenz, erythromycin, gilteritinib, isocarboxazid, linezolid, MAO inhibitors, mazindol, methamphetamine, metoclopramide, phendimetrazine, phenelzine, phentermine, phenylpropanolamine, pimozide, pseudoephedrine, selegiline, sibutramine, St John's wort, sumatriptan, sympathomimetics, tranylcypromine, trazodone, troleandomycin, zolmitriptan
Pregnancy category: C

Skin
Angioedema [3]
Diaphoresis (see also hyperhidrosis) (8%) [6]
Flushing / rubefaction (2%)
Rash (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Hair
Alopecia / hair loss [3]
Mucosal
Xerostomia (dry mouth) (16%) [7]
Cardiovascular
Chest pain (<10%)
Palpitation (<10%)
QT interval prolonged / QT prolongation [3]
Torsades de pointes [2]
Central Nervous System
Akathisia [6]
Anxiety (<10%)
Coma [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [3]
Headache (>10%)
Hypoesthesia (numbness) (5%)
Insomnia (>10%)
Mania [4]
Pain (<10%)
Paresthesias (<10%)
Restless legs syndrome [3]
Seizures [2]
Serotonin syndrome [10]
Somnolence (drowsiness) (>10%)
Tremor (<10%) [3]
Vertigo / dizziness (>10%) [3]
Yawning (<10%)
Endocrine/Metabolic
Galactorrhea [4]
Gynecomastia [2]
Hyponatremia [4]
Libido decreased (>10%)
SIADH [14]
Weight gain (<10%)
Gastrointestinal/Hepatic
Constipation (<10%)
Diarrhea (>10%) [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (10%) [3]

Vomiting (>10%)

Genitourinary
Impotence (<10%)
Priapism [5]
Sexual dysfunction (10%) [5]
Urinary retention [2]

Neuromuscular/Skeletal
Asthenia / fatigue (>10%)
Back pain (<10%)
Rhabdomyolysis [3]
Trismus [2]

Ocular
Abnormal vision (<10%)

Otic
Tinnitus (<10%)

Respiratory
Eosinophilic pneumonia [4]
Rhinitis (<10%)

Other
Adverse effects / adverse reactions [5]
Allergic reactions [2]
Bruxism (teeth grinding) [3]
Death [5]

SEVELAMER

Trade names: Renagel (Genzyme), Renvela (Genzyme)
Indications: Hyperphosphatemia
Class: Phosphate binding agent
Half-life: N/A
Clinically important, potentially hazardous interactions with: ciprofloxacin, cyclosporine, gemifloxacin, levothryroxine, moxifloxacin, mycophenolate, ofloxacin, tacrolimus
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Contra-indicated in patients with bowel obstruction.

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [8]

Gastrointestinal/Hepatic
Abdominal pain (9%)
Colitis [4]
Constipation (8%) [9]
Diarrhea [4]
Dyspepsia / functional dyspepsia / gastroparesis (16%) [3]
Flatulence (8%)
Gastrointestinal ulceration [2]
Intestinal bleeding [2]
Nausea (20%) [4]
Vomiting (22%) [3]

Other
Adverse effects / adverse reactions [2]

SEVOFLURANE

Trade name: Ultane (AbbVie)
Indications: Induction and maintenance of general anesthesia
Class: Anesthetic; inhalation
Half-life: 15–23 hours
Clinically important, potentially hazardous interactions with: mivacurium
Pregnancy category: B

Mucosal
Sialorrhea (ptyalism; hypersalivation) (4%)

Cardiovascular
Arrhythmias [2]
Bradycardia / sinus bradycardia [2]
QT interval prolonged / QT prolongation [7]
Torsades de pointes [2]

Central Nervous System
Agitation [3]
Hyperthermia (see also pyrexia / hyperpyrexia) [4]
Malignant hyperthermia [8]
Seizures [8]
Shivering (6%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea [2]
Vomiting [2]

Local
Application-site burning [2]
Application-site erythema [3]

Neuromuscular/Skeletal
Rhabdomyolysis [2]

Respiratory
Alveolar hemorrhage (pulmonary) [2]
Cough (5%)
Laryngospasm (laryngeal dystonia / spasmodic dysphonia) [2]

SIBERIAN GINSENG

Family: Araliaceae
Scientific names: *Acanthopanax senticosus, Eleutherococcus senticosus*
Indications: Alzheimer's disease, anaphylaxis, arthritis, colds, depression, fatigue, flu, impotence, infertility, menopause, multiple sclerosis, osteoporosis, perimenopause, PMS, stress
Class: Immunomodulator
Half-life: N/A
Clinically important, potentially hazardous interactions with: antihypertensives
Pregnancy category: N/A
Note: Eleutherococcus may prevent biotransformation of some drugs to less toxic compounds.

SIBUTRAMINE

Trade name: Meridia (AbbVie)
Indications: Obesity
Class: Norepinephrine antagonist, Serotonin antagonist
Half-life: 1.1 hours
Clinically important, potentially hazardous interactions with: amitriptyline, citalopram, desvenlafaxine, dextromethorphan, dihydroergotamine, duloxetine, ephedra, ergot, fluoxetine, fluvoxamine, isocarboxazid, linezolid, lithium, MAO inhibitors, meperidine, methysergide, milnacipran, naratriptan, nefazodone, paroxetine hydrochloride, phenelzine, rizatriptan, sertraline, sumatriptan, tapentadol, tranylcypromine, tryptophan, venlafaxine, verapamil, zolmitriptan, zuclopenthixol
Pregnancy category: C
Note: Due to an increased risk of heart attack and stroke in patients with cardiovascular disease, sibutramine should not be used in patients with a history of coronary artery disease, congestive heart failure, arrhythmias, or stroke. Sibutramine has been withdrawn in the USA and the European Union due to risk of serious cardiovascular events.

Skin
Diaphoresis (see also hyperhidrosis) (2%)
Edema / fluid retention (see also peripheral edema) (2%)
Rash (4%)

Mucosal
Xerostomia (dry mouth) (17%) [8]

Cardiovascular
Arrhythmias [2]
Cardiac arrest [2]
Cardiotoxicity [2]
Hypertension [4]
Myocardial infarction [3]
Palpitation [2]
QT interval prolonged / QT prolongation [5]
Tachycardia [4]

Central Nervous System
Amnesia [2]
Dysgeusia (taste perversion) (2%)
Headache [6]
Paresthesias (2%)
Stroke / cerebral infarction [2]
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Constipation [2]

Neuromuscular/Skeletal
Asthenia / fatigue [2]
Myalgia/Myopathy (2%)

Respiratory
Influenza- ('flu)-like syndrome (<10%)

Other
Allergic reactions (2%)

SILDENAFIL

Trade names: Revatio (Pfizer), Viagra (Pfizer)
Indications: Erectile dysfunction, hypertension
Class: Covid-19 putative drug, Phosphodiesterase type 5 (PDE5) inhibitor
Half-life: 4 hours
Clinically important, potentially hazardous interactions with: alfuzosin, alpha blockers, amlodipine, amprenavir, amyl nitrite, antifungals, antihypertensives, atazanavir, boceprevir, bosentan, cimetidine, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, conivaptan, CYP3A4 inhibitors and inducers, darunavir, dasatinib, deferasirox, delavirdine, disopyramide, erythromycin, etravirine, fosamprenavir, grapefruit juice, high-fat foods, HMG-CoA reductase inhibitors, indinavir, isosorbide, isosorbide dinitrate, isosorbide mononitrate, itraconazole, ketoconazole, lopinavir, macrolide antibiotics, nelfinavir, nicorandil, nitrates, nitroglycerin, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, other phosphodiesterase 5 inhibitors, paclitaxel, PEG-interferon, riociguat, ritonavir, sapropterin, saquinavir, St John's wort, telaprevir, telithromycin, tipranavir, vericiguat
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Dermatitis (<2%)
- Diaphoresis (see also hyperhidrosis) (<2%)
- Edema / fluid retention (see also peripheral edema) (<2%)
- Erythema (6%)
- Exfoliative dermatitis (<2%)
- Facial edema (<2%)
- Flushing / rubefaction (10–25%) [34]
- Genital edema (<2%)
- Herpes simplex (<2%)
- Lichenoid eruption / lichenoid reaction [2]
- Peripheral edema (see also edema) (<2%)
- Photosensitivity (<2%)
- Pruritus (itching) (<2%)
- Rash (2%)
- Ulcerations (<2%)
- Urticaria / hives (<2%)

Mucosal
- Epistaxis (nosebleed) (9–13%) [2]
- Gingivitis (<2%)
- Glossitis (inflammation of the tongue) (<2%)
- Nasal congestion [7]
- Rectal hemorrhage / rectal bleeding (<2%)
- Stomatitis (oral mucositis) (<2%)
- Xerostomia (dry mouth) (<2%)

Cardiovascular
- Angina (<2%)
- Atrial fibrillation [2]
- Atrioventricular block (<2%)
- Cardiac arrest (<2%) [2]
- Cardiac failure (<2%)
- Cardiomyopathy (<2%)
- Chest pain (<2%) [2]
- Congestive heart failure [2]
- Hypotension (<2%) [5]
- Myocardial infarction [4]
- Myocardial ischemia (<2%)
- Palpitation (<2%)
- Postural hypotension (<2%)
- Tachycardia (<2%)
- Vasodilation [3]
- Ventricular arrhythmia [2]

Central Nervous System
- Abnormal dreams (<2%)
- Amnesia [3]
- Anorgasmia (<2%)
- Chills (<2%)
- Depression (<2%)
- Fever (pyrexia) (includes hyperpyrexia) (6%)
- Headache (16–46%) [41]
- Hyperesthesia (<2%)
- Insomnia (7%)
- Migraine (<2%)
- Neurotoxicity (<2%)
- Pain (<2%)
- Paresthesias (3%)
- Seizures [3]
- Somnolence (drowsiness) (<2%)
- Stroke / cerebral infarction [2]
- Subarachnoid hemorrhage [2]
- Syncope / fainting (<2%)
- Tremor (<2%)
- Vertigo / dizziness (2%) [7]

Endocrine/Metabolic
- Gynecomastia (<2%)
- Hyperglycemia (includes glucose increased) (<2%)
- Hypernatremia (<2%)
- Hyperuricemia (<2%)

Gastrointestinal/Hepatic
- Abdominal pain (<2%) [3]
- Colitis (<2%)
- Diarrhea (3–9%) [4]
- Dyspepsia / functional dyspepsia / gastroparesis (7–17%) [15]
- Dysphagia (<2%)
- Esophagitis (<2%)
- Gastritis / pangastritis / gastric irritation (<2%)
- Gastroenteritis (<2%)
- Gastrointestinal disorder / discomfort [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
- Nausea [4]
- Vomiting (<2%)

Genitourinary
- Cystitis (<2%)
- Ejaculatory dysfunction (<2%)
- Enuresis (urinary incontinence) (<2%)
- Nocturia (<2%)
- Priapism [6]
- Urinary frequency (<2%)
- Urinary tract infection (3%)

Hematologic
- Anemia (<2%)
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<2%)

Neuromuscular/Skeletal
- Arthralgia (<2%)
- Asthenia / fatigue (<2%) [2]
- Ataxia (<2%)
- Back pain [3]
- Bone or joint pain (<2%)
- Gouty tophi (<2%)
- Hypertonia (<2%)
- Myalgia/Myopathy (7%) [4]
- Tendinopathy/Tendon rupture (<2%)

Ocular
- Abnormal vision [3]
- Cataract (<2%)
- Conjunctivitis (conjunctival inflammation) (<2%)
- Dyschromatopsia (blue-green vision) (3–11%) [5]
- Mydriasis (<2%)
- Ocular hemorrhage (<2%)
- Ocular pain (<2%)
- Ocular pigmentation (<2%)
- Optic neuropathy [18]
- Photophobia (<2%)
- Retinal vein occlusion [2]
- Vision blurred [4]
- Visual disturbances [5]
- Xerophthalmia (dry eyes) (<2%)

Otic
- Ear pain (<2%)
- Hearing loss (hypoacusis) (<2%) [4]
- Tinnitus (<2%) [2]

Respiratory
- Asthma (<2%)
- Bronchitis (<2%)
- Cough (<2%)
- Dyspnea / shortness of breath (7%) [4]
- Hemoptysis [2]
- Hypoxia (see also hypoxemia) [3]
- Laryngitis (<2%)
- Pharyngitis (sore throat) (<2%)
- Pneumonia [2]
- Respiratory failure [3]
- Rhinitis (4%) [6]
- Sinusitis (<2%)
- Stridor [2]
- Upper respiratory tract infection [2]

Other
- Adverse effects / adverse reactions [7]
- Allergic reactions (<2%)
- Death [3]
- Dipsia (thirst) / polydipsia (<2%)

SILODOSIN

Trade names: Rapaflo (Watson), Urief (Kissei)
Indications: Benign prostatic hyperplasia
Class: Adrenergic alpha-receptor antagonist
Half-life: 4.7–6 hours
Clinically important, potentially hazardous interactions with: alpha blockers, antihypertensives, atorvastatin, clarithromycin, conivaptan, cyclosporine, darunavir, delavirdine, diltiazem, erythromycin, indinavir, itraconazole, ketoconazole, lapatinib, ritonavir, stong CYP3A4 inhibitors, telithromycin, vasodilators, verapamil, voriconazole
Pregnancy category: B (Not indicated for use in women)
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Note: Contra-indicated in patients with severe hepatic or renal impairment.

Mucosal
- Nasal congestion (2%) [3]
- Rhinorrhea (<2%)

Cardiovascular
- Orthostatic hypotension (3%) [9]
- Postural hypotension [2]

Central Nervous System
- Headache (2%) [3]
- Insomnia (<2%)
- Vertigo / dizziness (3%) [8]

Gastrointestinal/Hepatic
- Abdominal pain (<2%)
- Diarrhea (3%) [2]

Genitourinary
- Ejaculatory dysfunction (25%) [29]
- Retrograde ejaculation (28%) [5]

Neuromuscular/Skeletal
- Asthenia / fatigue (<2%)

Ocular
- Floppy iris syndrome [2]

Respiratory
- Nasopharyngitis (2%)
- Sinusitis (<2%)

Other
- Adverse effects / adverse reactions [2]
- Dipsia (thirst) / polydipsia (7%) [2]

SILTUXIMAB

Trade name: Sylvant (Janssen Biotech)
Indications: Multicentric Castleman's disease in patients who are HIV negative and human herpesvirus-8 (HHV-8) negative
Class: Anti-interleukin-6 receptor monoclonal antibody, Monoclonal antibody
Half-life: 14–30 days
Clinically important, potentially hazardous interactions with: live vaccines
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Eczema / eczematous reaction / eczematous eruption (4%)

Edema / fluid retention (see also peripheral edema) (26%) [2]
Peripheral edema (see also edema) (16%)
Pigmentation (4%)
Pruritus (itching) (28%) [3]
Psoriasis (4%)
Rash (28%) [4]
Xerosis / xeroderma (see also dry skin) (4%)

Mucosal
Oropharyngeal pain (8%)

Cardiovascular
Hypertension [3]
Hypotension (4–6%) [3]

Central Nervous System
Headache (8%) [2]
Pain [2]

Endocrine/Metabolic
Appetite decreased (4%)
Dehydration (4%)
Hypercholesterolemia (4%) [3]
Hypertriglyceridemia (includes triglycerides increased) (8%) [3]
Hyperuricemia (11%) [3]
Weight gain (19%) [2]

Gastrointestinal/Hepatic
Abdominal distension (12%)
Abdominal pain (12%)
Constipation (8%) [3]
Diarrhea (32%) [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [4]
Vomiting [3]

Hematologic
Anemia [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [5]
Neutropenia (neutrophils decreased) [8]
Thrombocytopenia (9%) [8]

Local
Infusion-related reactions (5%)

Neuromuscular/Skeletal
Arthralgia (21%)
Asthenia / fatigue (21%) [6]
Pain in extremities (21%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (8%) [2]

Respiratory
Dyspnea / shortness of breath [3]
Pneumonia [2]
Upper respiratory tract infection (26–63%) [4]

Other
Adverse effects / adverse reactions [3]
Infection (8%) [4]

SIMEPREVIR

Trade name: Olysio (Janssen)
Indications: Hepatitis C
Class: Direct-acting antiviral, Hepatitis C virus NS3/4A protease inhibitor
Half-life: 10–13 hours
Clinically important, potentially hazardous interactions with: atazanavir, carbamazepine, cisapride, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, darunavir, delavirdine, dexamethasone, efavirenz, erythromycin, etravirine, fluconazole, fosamprenavir, indinavir, itraconazole, ketoconazole, ledipasvir & sofosbuvir, lopinavir, milk thistle, nelfinavir, nevirapine, oxcarbazepine, phenobarbital, phenytoin, posaconazole, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, telithromycin, tipranavir, voriconazole
Pregnancy category: X (simeprevir is pregnancy category C but must not be used in monotherapy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Must be used in combination with PEG-interferon and ribavirin (see separate entries).
Warning: RISK OF HEPATITIS B VIRUS REACTIVATION IN PATIENTS COINFECTED WITH HCV AND HBV

Skin
Photosensitivity (28%) [5]
Pruritus (itching) (22%) [8]
Rash (28%) [10]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [13]
Insomnia [3]

Endocrine/Metabolic
Hyperbilirubinemia [9]

Gastrointestinal/Hepatic
Nausea (22%) [9]
Vomiting [2]

Hematologic
Anemia [11]
Neutropenia (neutrophils decreased) [3]

Neuromuscular/Skeletal
Asthenia / fatigue [10]
Myalgia/Myopathy (16%)

Respiratory
Dyspnea / shortness of breath (12%)
Influenza- ('flu)-like syndrome [3]

Other
Adverse effects / adverse reactions [7]

SIMVASTATIN

Trade names: Inegy (MSD), Simcor (AbbVie), Vytorin (MSD), Zocor (Merck)
Indications: Hypercholesterolemia
Class: HMG-CoA reductase inhibitor / statin
Half-life: 1.9 hours
Clinically important, potentially hazardous interactions with: alitretinoin, amiodarone, amlodipine, amprenavir, atazanavir, azithromycin, bempedoic acid, boceprevir, bosentan, carbamazepine, ciprofibrate, clarithromycin, clopidogrel, colchicine, conivaptan, coumarins, cyclosporine, danazol, darunavir, dasatinib, delavirdine, diltiazem, dronedarone, efavirenz, elbasvir & grazoprevir, erythromycin, fosamprenavir, fusidic acid, gemfibrozil, glecaprevir & pibrentasvir, grapefruit juice, HIV protease inhibitors, imatinib, imidazoles, indinavir, itraconazole, ketoconazole, letermovir, lomitapide, lonafarnib, lopinavir, miconazole, mifepristone, nefazodone, nelfinavir, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, paclitaxel, pazopanib, posaconazole, rabeprazole, ranolazine, red rice yeast, rifampin, ritonavir, roxithromycin, saquinavir, selenium, St John's wort, tacrolimus, telaprevir, telithromycin, ticagrelor, tipranavir, triazoles, verapamil, viloxazine, voriconazole, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Simcor is simvastatin and niacin; Vytorin is simvastatin and ezetimibe.

Skin
Dermatomyositis [5]
Eczema / eczematous reaction / eczematous eruption (5%) [4]
Edema / fluid retention (see also peripheral edema) (3%) [2]
Eosinophilic fasciitis [2]
Erythema multiforme [2]
Lichen planus pemphigoides [2]
Lichenoid eruption / lichenoid reaction [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Peripheral edema (see also edema) [2]
Photosensitivity [7]
Pruritus (itching) [3]
Purpura [3]
Rash (<10%) [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Mucosal
Stomatitis (oral mucositis) [2]

Cardiovascular
Atrial fibrillation (6%)

Central Nervous System
Cognitive impairment [3]
Headache (3–7%)
Memory loss/memory impaired [2]
Vertigo / dizziness (5%)

Endocrine/Metabolic
ALT increased [2]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [3]
Diabetes mellitus [4]

Gastrointestinal/Hepatic
Abdominal pain (7%)
Constipation (2–7%)
Diarrhea [6]
Gastritis / pangastritis / gastric irritation (5%)
Hepatitis [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Nausea (5%)
Pancreatitis / acute pancreatitis [7]

Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]

Neuromuscular/Skeletal
Asthenia / fatigue (9%) [3]
Compartment syndrome [2]
Myalgia/Myopathy (<10%) [37]
Rhabdomyolysis [90]
Tendinopathy/Tendon rupture [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Renal failure [9]

Respiratory
Bronchitis (7%)
Cough [2]
Upper respiratory tract infection (9%)

Other
Adverse effects / adverse reactions [9]
Death [5]

SIPULEUCEL-T

Trade name: Provenge (Dendreon)
Indications: Treatment of asymptomatic or minimally symptomatic metastatic castrate resistant (hormone refractory) prostate cancer
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: abatacept, alefacept, azacitidine, betamethasone, cabazitaxel, denileukin, docetaxel, fingolimod, gefitinib, lenalidomide, oxaliplatin, pazopanib, pemetrexed, pralatrexate, triamcinolone
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (5%)
Hot flashes / hot flushes (8%)
Hyperhidrosis (see also diaphoresis) [2]
Peripheral edema (see also edema) (8%)
Rash (5%)
Mucosal
Oral numbness (12%)
Cardiovascular
Hypertension (8%)
Central Nervous System
Anorexia (7%)
Chills (53%) [9]
Fever (pyrexia) (includes hyperpyrexia) (31%) [11]
Headache (18%) [5]
Insomnia (6%)
Pain (12%)
Paresthesias (14%)
Tremor (5%) [2]
Vertigo / dizziness (12%)
Endocrine/Metabolic
Weight loss (6%)
Gastrointestinal/Hepatic
Constipation (12%)
Diarrhea (10%)
Nausea (22%) [2]
Vomiting (13%)
Genitourinary
Hematuria (8%)
Urinary tract infection (6%)
Hematologic
Anemia (13%)
Neuromuscular/Skeletal
Asthenia / fatigue (41%) [4]
Back pain (30%) [2]
Bone or joint pain (6–20%)
Muscle spasm (8%)
Myalgia/Myopathy (12%) [4]
Neck pain (6%)
Pain in extremities (12%)
Respiratory
Cough (6%)
Dyspnea / shortness of breath (9%)
Influenza (10%) [2]
Influenza- ('flu)-like syndrome [2]
Upper respiratory tract infection (6%)

SIROLIMUS

Synonym: rapamycin
Trade name: Rapamune (Wyeth)
Indications: Prophylaxis of organ rejection in renal transplants, lymphangioleiomyomatosis
Class: Immunosuppressant, Macrolactam, Non-calcineurin inhibitor
Half-life: 62 hours
Clinically important, potentially hazardous interactions with: atazanavir, benazepril, boceprevir, captopril, ceritinib, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, crizotinib, cyclosporine, darunavir, dasatinib, delavirdine, dronedarone, efavirenz, eluxadoline, enalapril, enzalutamide, fosinopril, Hemophilus B vaccine, indinavir, itraconazole, letermovir, lisinopril, lopinavir, micafungin, mifepristone, posaconazole, quinapril, ramipril, ribociclib, St John's wort, tacrolimus, telaprevir, telithromycin, tipranavir, venetoclax, viloxazine, voriconazole, zotarolimus
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: IMMUNOSUPPRESSION, USE IS NOT RECOMMENDED IN LIVER OR LUNG TRANSPLANT PATIENTS

Skin
Abscess (3–20%)
Acne vulgaris ('acne') [2]
Acneiform eruption / acneiform dermatitis / acneiform rash (20–31%) [10]
Angioedema [6]
Bruise / bruising / contusion / ecchymosis (ecchymoses) (3–20%)
Cellulitis (3–20%)
Contact dermatitis [3]
Cutaneous toxicity / skin toxicity [3]
Dermatitis [3]
Diaphoresis (see also hyperhidrosis) (3–20%)
Edema / fluid retention (see also peripheral edema) (16–24%) [6]
Facial edema (3–20%) [2]
Folliculitis [3]
Fungal dermatitis (3–20%)
Hypertrophy (3–20%)
Lymphedema [2]
Maculopapular rash / morbilliform rash [2]
Peripheral edema (see also edema) (54–64%) [3]
Pruritus (itching) (3–20%) [2]
Purpura (3–20%)
Rash (10–20%) [5]
Ulcerations (3–20%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Hair
Hirsutism (3–20%)
Nails
Onychopathy [2]
Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (9%) [8]
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth (3–20%) [2]
Gingivitis (3–20%)
Mucositis [2]
Oral candidiasis (3–20%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (3–20%) [10]
Stomatitis (oral mucositis) (3–20%) [11]
Cardiovascular
Thrombophlebitis (3–20%)
Central Nervous System
Chills (3–20%)
Depression (3–20%)
Fever (pyrexia) (includes hyperpyrexia) [2]
Hyperesthesia (3–20%)
Paresthesias (3–20%)
Tremor (21–31%)
Endocrine/Metabolic
Dyslipidemia [5]
Hypercholesterolemia [5]
Hyperlipidemia [3]
Hypertriglyceridemia (includes triglycerides increased) [4]
Gastrointestinal/Hepatic
Diarrhea [5]
Hepatitis [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Hematologic
Anemia [5]
Hemolytic uremic syndrome [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
Neutropenia (neutrophils decreased) [3]
Thrombocytopenia [3]
Thrombosis [3]
Local
Application-site pruritus [2]
Neuromuscular/Skeletal
Arthralgia (25–31%) [3]
Asthenia / fatigue [4]
Myalgia/Myopathy [2]
Ocular
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) (40%) [2]
Otic
Tinnitus (3–20%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Proteinuria [5]
Respiratory
Cough [2]
Influenza- ('flu)-like syndrome (3–20%)
Pneumonitis [7]
Pulmonary toxicity [3]
Upper respiratory tract infection (20–26%) [3]
Other
Adverse effects / adverse reactions [6]
Death [4]
Infection [5]

SITAGLIPTIN

Trade names: Janumet (Merck Sharpe & Dohme), Januvia (Merck Sharpe & Dohme)
Indications: Type II diabetes mellitus
Class: Antidiabetic, Dipeptidyl peptidase-4 (DPP-4) (gliptin) inhibitor
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: alcohol, anabolic steroids, beta blockers, corticosteroids, diazoxide, digoxin,

estrogens, loop diuretics, MAO inhibitors, progestogens, testosterone, thiazides
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Janumet is sitagliptin and metformin.

Skin
Angioedema [3]
Bullous pemphigoid / pemphigoid [3]
Edema / fluid retention (see also peripheral edema) [3]
Rash [2]
Central Nervous System
Headache [6]
Stroke / cerebral infarction [2]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Hypoglycemia (see also insulin autoimmune syndrome) [14]
Weight gain [4]
Weight loss [2]
Gastrointestinal/Hepatic
Abdominal pain (2%)
Constipation [3]
Diarrhea [9]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [11]
Pancreatitis / acute pancreatitis [10]
Vomiting [6]
Neuromuscular/Skeletal
Arthralgia [2]
Bone or joint pain [2]
Rhabdomyolysis [4]
Renal
Renal failure [2]
Respiratory
Nasopharyngitis [5]
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [8]
Cancer [3]
Death [2]

SITAXENTAN

Synonym: sitaxsentan
Trade name: Thelin (Pfizer)
Indications: Pulmonary arterial hypertension
Class: Endothelin receptor (ETR) antagonist
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: warfarin
Pregnancy category: N/A
Note: This drug has been withdrawn.

Skin
Peripheral edema (see also edema) (9%) [2]
Central Nervous System
Headache (15%) [2]
Vertigo / dizziness (>2%)
Gastrointestinal/Hepatic
Abdominal pain (>2%)
Hepatitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Neuromuscular/Skeletal
Myalgia/Myopathy (>2%)
Other
Death [2]

SMALLPOX VACCINE

Trade name: Dryvax (Wyeth)
Indications: Prevention of smallpox (variola)
Class: Vaccine
Half-life: ~5 years
Clinically important, potentially hazardous interactions with: corticosteroids
Pregnancy category: C

Skin
Basal cell carcinoma [4]
Bullous dermatosis [2]
Carcinoma [2]
Dermatitis [2]
Eczema vaccinatum [13]
Erythema multiforme [8]
Exanthems [7]
Folliculitis [2]
Herpes simplex [2]
Herpes zoster [2]
Melanoma [2]
Papulovesicular eruption [2]
Photosensitivity [2]
Purpura [11]
Rash [3]
Scar [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [8]
Tumors [3]
Urticaria / hives [5]
Vaccinia [25]
Vaccinia gangrenosum [3]
Vaccinia necrosum [6]
Central Nervous System
Headache [2]
Other
Allergic reactions [2]
Death [8]

SODIUM OXYBATE

Synonym: GHB
Trade name: Xyrem (Jazz)
Indications: Cataplexy (in patients with narcolepsy)
Class: Anesthetic; general
Half-life: 0.3–1 hour
Clinically important, potentially hazardous interactions with: alcohol, amitriptyline, antipsychotics, benzodiazepines, clobazam, hydromorphone, hypnotics, levomepromazine, phenobarbital, risperidone, sedatives, tricyclic depressants, zuclopenthixol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Sodium oxybate is a class of drugs that are also known as: designer drugs, party drugs, club drugs, recreational drugs, rave drugs, fantasy drugs, date rape drugs or abuse drugs.
Warning: Central nervous system depressant with abuse potential. Should not be used with alcohol or other CNS depressants.

Skin
Diaphoresis (see also hyperhidrosis) [3]
Hyperhidrosis (see also diaphoresis) (3–6%)
Cardiovascular
Hypertension (6%)
Central Nervous System
Agitation [2]
Anxiety [2]
Cataplexy (9%)
Confusion (3–6%)
Depression (6%)
Disorientation (3–9%)
Headache (22%) [5]
Hypoesthesia (numbness) (6%)
Impaired concentration (<9%)
Nightmares (3–6%)
Pain (3–6%)
Psychosis [3]
Seizures [10]
Sleep-related disorder (3–14%) [2]
Somnolence (drowsiness) (6%) [2]
Tremor [6]
Vertigo / dizziness (17%) [9]
Gastrointestinal/Hepatic
Abdominal pain (3–11%)
Dyspepsia / functional dyspepsia / gastroparesis (3–9%)
Gastroenteritis (6%)
Nausea (21%) [10]
Vomiting (8%) [4]
Genitourinary
Enuresis (urinary incontinence) (7%) [4]
Neuromuscular/Skeletal
Asthenia / fatigue (3–6%) [2]
Back pain (6%)
Ocular
Vision blurred (6%)
Otic
Tinnitus (6%)
Respiratory
Nasopharyngitis (8%)
Pharyngolaryngeal pain (3–9%)
Upper respiratory tract infection (3–6%)
Other
Death [9]

SODIUM PICOSULFATE

Trade names: Pico-Salax (Ferring), Prepopik (Ferring)
Indications: Laxative for colon cleansing prior to colonoscopy
Class: Stimulant laxative
Half-life: ~7 hours
Clinically important, potentially hazardous interactions with: antibiotics, antipsychotics, carbamazepine, cardiac glycosides, chlorpromazine, corticosteroids, digoxin, diuretics, NSAIDs, oral iron, penicillamine, SSRIs, tetracycline, tricyclic antidepressants
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Prepopik is a combination of sodium picosulfate and magnesium citrate. Contra-indicated in patients with severely reduced renal function, gastrointestinal obstruction or ileus, bowel perforation, toxic colitis or toxic megacolon, or gastric retention.

Central Nervous System
Headache [6]

Gastrointestinal/Hepatic
Abdominal pain [2]
Nausea (3%) [6]
Vomiting [4]
Other
Adverse effects / adverse reactions [3]

SOFOSBUVIR

Trade name: Sovaldi (Gilead)
Indications: Hepatitis C
Class: Direct-acting antiviral, Hepatitis C virus nucleotide analog NS5B polymerase inhibitor
Half-life: <27 hours
Clinically important, potentially hazardous interactions with: carbamazepine, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, ritonavir, St John's wort, tipranavir
Pregnancy category: N/A (May cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Used in combination with daclatasvir, ledipasvir, ribavirin, velpatasvir or with PEG-interferon and ribavirin (see separate entries).

Skin
Pruritus (itching) (11–27%) [14]
Rash (8–18%) [10]
Cardiovascular
Bradyarrhythmia [2]
Bradycardia / sinus bradycardia [2]
Chest pain [2]
Central Nervous System
Chills (2–18%) [2]
Fever (pyrexia) (includes hyperpyrexia) (4–18%) [3]
Headache (24–44%) [56]
Insomnia (15–29%) [22]
Irritability (10–16%) [7]
Vertigo / dizziness [4]
Endocrine/Metabolic
Appetite decreased (6–18%)
Hyperbilirubinemia [3]
Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea (9–17%) [8]
Dyspepsia / functional dyspepsia / gastroparesis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (13–34%) [43]
Vomiting [5]
Hematologic
Anemia (6–21%) [40]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Neutropenia (neutrophils decreased) (<17%) [5]
Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue (30–59%) [56]
Back pain [2]
Myalgia/Myopathy (6–16%) [5]
Renal
Renal failure [2]
Respiratory
Cough [4]
Dyspnea / shortness of breath [3]
Influenza- ('flu)-like syndrome (3–18%) [4]
Nasopharyngitis [2]
Upper respiratory tract infection [4]
Other
Adverse effects / adverse reactions [10]
Infection [2]

SOFOSBUVIR & VELPATASVIR

Trade name: Epclusa (Gilead)
Indications: Hepatitis C
Class: Direct-acting antiviral, Hepatitis C virus NS5A inhibitor (velpatasvir), Hepatitis C virus nucleotide analog NS5B polymerase inhibitor (sofosbuvir)
Half-life: <27 hours (sofosbuvir); 15 hours (velpatasvir)
Clinically important, potentially hazardous interactions with: amiodarone, carbamazepine, doravirine/lamiduvine/tenofovir disoproxil, efavirenz, omeprazole, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, St John's wort, topotecan
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk; contra-indicated in pregnancy when given with ribavirin)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: See also separate entry for sofosbuvir.

Skin
Pruritus (itching) [2]
Rash (2%) [2]
Central Nervous System
Headache (22%) [17]
Insomnia (5%) [8]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)
Gastrointestinal/Hepatic
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (2–6%)
Nausea (9%) [12]
Hematologic
Anemia [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
Thrombocytopenia [2]
Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue (5–15%) [17]
Respiratory
Nasopharyngitis [5]
Other
Adverse effects / adverse reactions [2]

SOFOSBUVIR/ VELPATASVIR/ VOXILAPREVIR

Trade name: Vosevi (Gilead)
Indications: Chronic HCV infection
Class: Direct-acting antiviral, Hepatitis C virus NS3/4A protease inhibitor (voxilaprevir), Hepatitis C virus NS5A inhibitor (velpatasvir), Hepatitis C virus nucleotide analog NS5B polymerase inhibitor (sofosbuvir)
Half-life: <29 hours (sofosbuvir); 17 hours (velpatasvir); 33 hours (voxilaprevir)
Clinically important, potentially hazardous interactions with: amiodarone, atazanavir, carbamazepine, cyclosporine, efavirenz, lopinavir, oxcarbazepine, phenobarbital, phenytoin, pitavastatin, rifabutin, rifampin, rifapentine, ritonavir, rosuvastatin, St John's wort, tipranavir
Pregnancy category: N/A (Insufficient evidence to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: See also separate entries for sofosbuvir and sofosbuvir & velpatasvir.
Warning: RISK OF HEPATITIS B VIRUS REACTIVATION IN PATIENTS COINFECTED WITH HCV AND HBV

Skin
Rash (<2%)
Central Nervous System
Headache (21–23%) [9]
Insomnia (3–6%)
Endocrine/Metabolic
Hyperbilirubinemia (4–13%)
Hyperlipasemia (2–3%)
Gastrointestinal/Hepatic
Diarrhea (13–14%) [9]
Nausea (10–13%) [9]
Hematologic
Anemia [2]
Neuromuscular/Skeletal
Asthenia / fatigue (6–19%) [11]

SOLIFENACIN

Trade name: Vesicare (Astellas)
Indications: Overactive bladder
Class: Muscarinic antagonist
Half-life: 45–68 hours
Clinically important, potentially hazardous interactions with: atazanavir, carbamazepine, clarithromycin, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, troleandomycin, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Mucosal
Xerostomia (dry mouth) (11–27%) [24]
Cardiovascular
QT interval prolonged / QT prolongation [3]

Central Nervous System
Vertigo / dizziness (2%) [3]
Gastrointestinal/Hepatic
Abdominal pain (2%)
Constipation [14]
Neuromuscular/Skeletal
Asthenia / fatigue (<2%)
Ocular
Vision blurred (4–5%) [6]
Xerophthalmia (dry eyes) (2%)
Other
Adverse effects / adverse reactions [5]

SOMATROPIN

Synonym: somatostatin
Trade names: Genotropin (Pfizer), Humatrope (Lilly), Norditropin (Novo Nordisk), Norditropin SimpleXx (Novo Nordisk), Nutropin (Genentech), NutropinAq (Ipsen), Saizen (Merck Serono), Scitropin A (Teva), Serostim (Merck Serono), Tev-Tropin (Teva), Zomacton (Ferring), Zorbtive (Merck Serono)
Indications: Growth failure, growth hormone deficiency, short stature (in Turner's syndrome), muscle wasting (in HIV positive patients)
Class: Growth hormone analog
Half-life: 0.4 hours (intravenous); 3 hours (subcutaneous); 5 hours (intramuscular)
Clinically important, potentially hazardous interactions with: acarbose, corticosteroids, estradiol, estrogens, exenatide, glucocorticoids, insulin aspart, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, metformin, pioglitazone, saxagliptin, triamcinolone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Contra-indicated in patients with acute critical illness; children with Prader-Willi syndrome who are severely obese or have severe respiratory impairment; active malignancy; active proliferative or severe non-proliferative diabetic retinopathy; or children with closed epiphyses.

Skin
Edema / fluid retention (see also peripheral edema) (11%)
Peripheral edema (see also edema) (18%)
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (7%) [2]
Pain (14%)
Paresthesias (14%)
Gastrointestinal/Hepatic
Abdominal pain [2]
Neuromuscular/Skeletal
Arthralgia (14%) [3]
Back pain (9%)
Myalgia/Myopathy (9%)
Pain in extremities [2]
Respiratory
Influenza- ('flu)-like syndrome (7%)
Rhinitis (11%)
Other
Adverse effects / adverse reactions [4]
Death [3]

SONIDEGIB

Trade name: Odomzo (Novartis)
Indications: Basal cell carcinoma
Class: Hedgehog (Hh) signaling pathway inhibitor
Half-life: 28 days
Clinically important, potentially hazardous interactions with: atazanavir, carbamazepine, diltiazem, efavirenz, fluconazole, itraconazole, ketoconazole, modafinil, nefazodone, phenobarbital, phenytoin, posaconazole, rifabutin, rifampin, saquinavir, St John's wort, telithromycin, voriconazole
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Patients should not donate blood or blood products while receiving sonidegib and for at least 20 months after the last dose.
Warning: EMBRYO-FETAL TOXICITY

Skin
Pruritus (itching) (10%)
Hair
Alopecia / hair loss (53%) [7]
Central Nervous System
Anorexia [2]
Dysgeusia (taste perversion) (46%) [7]
Headache (15%)
Pain (14%)
Vertigo / dizziness [2]
Endocrine/Metabolic
ALT increased (19%)
Appetite decreased (30%) [2]
AST increased (19%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (61%) [10]
Hyperbilirubinemia [2]
Hyperglycemia (includes glucose increased) (51%)
Weight loss (30%) [4]
Gastrointestinal/Hepatic
Abdominal pain (18%)
Diarrhea (32%) [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (39%) [5]
Vomiting (11%) [3]
Hematologic
Anemia (32%)
Lymphopenia (lymphocytopenia) / lymphocytes decreased (28%)
Neuromuscular/Skeletal
Asthenia / fatigue (41%) [6]
Bone or joint pain (32%)
Muscle spasm (54%) [8]
Myalgia/Myopathy (19%) [6]
Other
Adverse effects / adverse reactions [2]

SORAFENIB

Trade name: Nexavar (Bayer)
Indications: Advanced renal cell carcinoma
Class: Angiogenesis inhibitor / antiangiogenic agent, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Tyrosine kinase inhibitor, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 25–48 hours
Clinically important, potentially hazardous interactions with: bevacizumab, carbamazepine, clozapine, conivaptan, coumarins, CYP3A4 inducers, darunavir, delavirdine, dexamethasone, digoxin, docetaxel, doxorubicin, efavirenz, indinavir, irinotecan, neomycin, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, St John's wort, telithromycin, voriconazole, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: In combination with carboplatin and paclitaxel, Nexavar is contra-indicated in patients with squamous cell lung cancer.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<10%) [7]
Actinic keratoses [4]
AGEP [2]
Cutaneous toxicity / skin toxicity [20]
Desquamation (19–40%) [10]
Eczema / eczematous reaction / eczematous eruption [2]
Edema / fluid retention (see also peripheral edema) [3]
Erythema (>10%) [4]
Erythema multiforme [11]
Exanthems [3]
Exfoliative dermatitis (<10%)
Facial erythema [3]
Flushing / rubefaction (<10%)
Folliculitis [3]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (21–30%) [133]
Hidradenitis suppurativa (acne inversa) [3]
Hyperkeratosis [4]
Hypersensitivity [2]
Keratoacanthoma (Grzybowski syndrome) [5]
Keratosis pilaris [2]
Milia [2]
Nevi [3]
Nodulocystic lesions [2]
Palmar–plantar toxicity [2]
Pigmentation [2]
Pruritus (itching) (14–19%) [10]
Psoriasis [3]
Radiation recall dermatitis [3]
Rash (19–40%) [56]
Recall reaction [2]
Seborrheic dermatitis [2]
Squamous cell carcinoma [8]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Xerosis / xeroderma (see also dry skin) (10–11%) [6]
Hair
Alopecia / hair loss (14–27%) [31]
Hair pigmentation [2]

Nails
Splinter hemorrhage [4]
Subungual hematoma / subungual hemorrhage [2]
Mucosal
Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis) (<10%)
Epistaxis (nosebleed) [2]
Mucositis (<10%) [14]
Stomatitis (oral mucositis) (<10%) [14]
Xerostomia (dry mouth) (<10%)
Cardiovascular
Cardiac failure [2]
Cardiotoxicity (3%) [3]
Congestive heart failure (<10%)
Hypertension (9–17%) [63]
Myocardial infarction (<10%)
Central Nervous System
Anorexia (16–29%) [18]
Depression (<10%)
Dysgeusia (taste perversion) [2]
Encephalopathy (includes hepatic encephalopathy) [3]
Fever (pyrexia) (includes hyperpyrexia) (<10%) [8]
Headache (10%) [5]
Neurotoxicity (2–40%) [4]
Pain (>10%) [4]
Endocrine/Metabolic
ALT increased [12]
Appetite decreased (<10%) [9]
AST increased [10]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Hyperbilirubinemia [6]
Hyperlipasemia [2]
Hypoalbuminemia / albumin decreased (56%)
Hypocalcemia [2]
Hypokalemia [2]
Hyponatremia [5]
Hypophosphatemia (35–45%) [10]
Hypothyroidism [8]
Thyroid dysfunction [4]
Thyroiditis [4]
Weight loss (10–30%) [15]
Gastrointestinal/Hepatic
Abdominal pain (11–31%) [10]
Acute-on-chronic liver failure [2]
Ascites [3]
Constipation (14–15%) [4]
Diarrhea (43–55%) [77]
Dyspepsia / functional dyspepsia / gastroparesis (<10%)
Dysphagia (<10%)
Gastrointestinal bleeding [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (11%) [27]
Nausea (23–24%) [15]
Pancreatitis / acute pancreatitis [8]
Pneumatosis intestinalis / pneumatosis cystoides intestinalis [2]
Vomiting (15–16%) [9]
Genitourinary
Erectile dysfunction (<10%)
Hematologic
Anemia (44%) [10]
Bleeding [3]
Cytopenia [2]
Hemorrhage (15–18%) [4]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (>10%) [4]
Lymphopenia (lymphocytopenia) / lymphocytes decreased (23–47%) [5]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) (<10%) [8]
Thrombocytopenia (12–46%) [20]
Thrombosis [2]
Neuromuscular/Skeletal
Arthralgia (<10%)
Asthenia / fatigue (37–46%) [61]
Back pain [3]
Bone or joint pain (>10%) [3]
Myalgia/Myopathy (<10%) [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Proteinuria [5]
Renal failure (<10%) [3]
Respiratory
Cough (13%) [2]
Dysphonia (includes voice disorders / voice changes) [6]
Dyspnea / shortness of breath (14%) [4]
Hoarseness (<10%) [2]
Influenza- ('flu)-like syndrome (<10%)
Pulmonary toxicity [2]
Other
Adverse effects / adverse reactions [18]
Death [9]
Infection [2]
Side effects (71%) [4]

SOTALOL

Trade name: Betapace (Bayer)
Indications: Ventricular arrhythmias
Class: Antiarrhythmic, Antiarrhythmic class II, Antiarrhythmic class III, Beta adrenergic blocker, Beta blocker
Half-life: 7–18 hours
Clinically important, potentially hazardous interactions with: abarelix, amiodarone, amisulpride, amitriptyline, arsenic, artemether/lumefantrine, asenapine, astemizole, atomoxetine, bepridil, ciprofloxacin, class I and class III antiarrhythmics, clonidine, degarelix, disopyramide, dronedarone, droperidol, enoxacin, gatifloxacin, guanethidine, haloperidol, insulin, isoprenaline, ivabradine, levomepromazine, lomefloxacin, loop diuretics, mizolastine, moxifloxacin, nilotinib, norfloxacin, ofloxacin, oral macrolides, phenothiazines, pimavanserin, pimozide, ponesimod, procainamide, quinidine, quinine, quinolones, ranolazine, reserpine, ribociclib, salbutamol, sertindole, sparfloxacin, sulpiride, terbutaline, tetrabenazine, thiazides and related diruetics, tolterodine, tricyclic antidepressants, trifluoperazine, vandetanib, zuclopenthixol
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with bronchial asthma, sinus bradycardia, second and third degree AV block, unless a functioning pacemaker is present, congenital or acquired long QT syndromes, cardiogenic shock, or uncontrolled congestive heart failure.

Skin
Edema / fluid retention (see also peripheral edema) (5%)
Pruritus (itching) (<10%)
Psoriasis [3]
Rash (3%)
Scleroderma (see also morphea / localized scleroderma) [3]
Cardiovascular
Arrhythmias [2]
Atrioventricular block [2]
Bradycardia / sinus bradycardia [11]
Cardiac failure [2]
Cardiogenic shock [2]
Cardiotoxicity [3]
Hypotension [4]
QT interval prolonged / QT prolongation [19]
Torsades de pointes [25]
Central Nervous System
Depression [2]
Paresthesias (3%)
Neuromuscular/Skeletal
Asthenia / fatigue (6%) [2]
Other
Adverse effects / adverse reactions [2]

SPARFLOXACIN

Trade name: Zagam (LGM Pharma)
Indications: Community-acquired pneumonia
Class: Antibiotic, Antibiotic; fluoroquinolone, Antimicrobial
Half-life: 16–30 hours
Clinically important, potentially hazardous interactions with: amiodarone, amisulpride, amitriptyline, amoxapine, arsenic, bepridil, bretylium, calcium, chlorpromazine, clomipramine, desipramine, disopyramide, doxepin, erythromycin, fluphenazine, imipramine, iron salts, magnesium, mesoridazine, nortriptyline, pentamidine, perphenazine, phenothiazines, pimozide, procainamide, prochlorperazine, promazine, promethazine, protriptyline, quinidine, sotalol, sucralfate, thioridazine, tricyclic antidepressants, trifluoperazine, trimipramine, zinc salts
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Fluoroquinolones are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants.
Fluoroquinolones may exacerbate muscle weakness in persons with myasthenia gravis.

Skin
Photosensitivity (4%) [9]
Phototoxicity (8%) [5]
Pruritus (itching) (3%)
Nails
Photo-onycholysis [2]
Cardiovascular
QT interval prolonged / QT prolongation [3]
Torsades de pointes [3]

Genitourinary
Vulvovaginal candidiasis (3%)

SPECTINOMYCIN

Trade name: Trobicin (Pfizer)
Indications: Gonorrhea
Class: Antibiotic, Antimicrobial
Half-life: 1–3 hours
Clinically important, potentially hazardous interactions with: mivacurium
Pregnancy category: B

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Dermatitis [2]
Central Nervous System
Perioral paresthesias [3]
Vertigo / dizziness [3]
Local
Injection-site pain [3]

SPIRONOLACTONE

Trade names: Aldactazide (Pfizer), Aldactone (Pfizer)
Indications: Hyperaldosteronism, hirsutism, hypertension, edema for patients with congestive heart failure, cirrhosis of the liver or nephrotic syndrome
Class: Aldosterone antagonist / mineralocorticoid receptor antagonist (MRA), Diuretic
Half-life: 78–84 minutes
Clinically important, potentially hazardous interactions with: ACE inhibitors, alcohol, amiloride, barbiturates, benazepril, captopril, cyclosporine, enalapril, fosinopril, lisinopril, mitotane, moexipril, narcotics, NSAIDs, potassium chloride, potassium iodide, quinapril, ramipril, trandolapril, triamterene, zofenopril
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Aldactazide is spironolactone and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Warning: Spironolactone has been shown to be a tumorigen in chronic toxicity studies in rats

Skin
Bullous pemphigoid / pemphigoid [2]
Dermatitis [6]
Eczema / eczematous reaction / eczematous eruption [2]
Exanthems (<5%) [6]
Lichenoid eruption / lichenoid reaction [3]
Melasma [2]
Pigmentation [3]
Pruritus (itching) [3]
Rash (<10%) [2]
Urticaria / hives [2]
Xerosis / xeroderma (see also dry skin) (40%) [2]
Hair
Alopecia / hair loss [2]
Endocrine/Metabolic
Amenorrhea [2]
Gynecomastia [31]
Hyperkalemia [9]
Renal
Renal function abnormal / renal dysfunction [2]
Other
Adverse effects / adverse reactions [3]

SQUILL

Family: Liliaceae
Scientific names: *Drimia indica, Drimia maritima, Scilla indica, Scilla maritima, Urginea indica, Urginea maritima, Urginea scilla*
Indications: Arrhythmias, asthma, edema, bronchitis, whooping cough, abortifacient. Also used as a rodenticide
Class: Diuretic
Half-life: N/A
Clinically important, potentially hazardous interactions with: ginger, ginseng, hawthorn (fruit, leaf, flower extract), licorice, mistletoe, senna
Pregnancy category: N/A
Note: Squill is unsafe for self-medication.

ST JOHN'S WORT

Family: Hypericaceae
Scientific names: *Hypericum perforatum, Kira (Lichtwer), Quanterra Emotional Balance (Warner Lambert)*
Indications: Depression, dysthymic disorder, fatigue, insomnia, loss of appetite, anxiety, obsessive-compulsive disorders, mood disturbances, migraine headaches, neuralgia, fibrositis, sciatica, palpitations, exhaustion, headache, muscle pain, vitiligo, diuretic, bruises, abrasions, first-degree burns, hemorrhoids
Class: Anxyolytic, CYP3A4 inducer
Half-life: 24–48 hours
Clinically important, potentially hazardous interactions with: acetaminophen, acitretin, afatinib, alfuzosin, alitretinoin, alprazolam, ambrisentan, aminophylline, amiodarone, amitriptyline, amlodipine, amprenavir, apixaban, aprepitant, artemether/lumefantrine, atazanavir, atorvastatin, berotralstat, bexarotene, bictegravir/emtricitabine/tenofovir alafenamide, boceprevir, bosentan, brigatinib, buspirone, cabazitaxel, cabozantinib, carbamazepine, ceritinib, cilostazol, ciprofloxacin, citalopram, cobimetinib, conivaptan, copanlisib, crizotinib, cyclosporine, cyproterone, dabigatran, daclatasvir, darunavir, dasatinib, delavirdine, demeclocycline, desipramine, digoxin, docetaxel, doravirine, doravirine/lamiduvine/tenofovir disoproxil, doxycycline, dronedarone, duloxetine, efavirenz, eliglustat, emtricitabine/rilpivirine/tenofovir alafenamide, enzalutamide, eplerenone, erlotinib, escitalopram, esomeprazole, estradiol, eszopiclone, ethosuximide, etoposide, etravirine, everolimus, fenfluramine, fesoterodine, fexofenadine, flibanserin, fluoxetine, fluvoxamine, fosamprenavir, fostemsavir, gefitinib, gemifloxacin, ginkgo biloba, glecaprevir & pibrentasvir, hydromorphone, ibrexafungerp, ibrutinib, idelalisib, imatinib, indinavir, irinotecan, isavuconazonium sulfate, isotretinoin, ivabradine, ivacaftor, ixabepilone, ixazomib, lacosamide, lapatinib, ledipasvir & sofosbuvir, lemborexant, levonorgestrel, loperamide, lopinavir, lorcaserin, lumacaftor/ivacaftor, lumateperone, maraviroc, metaxalone, methadone, midazolam, midostaurin, mifepristone, milnacipran, minocycline, naldemedine, naratriptan, nefazodone, nelfinavir, neratinib, nevirapine, nifedipine, nilotinib, nintedanib, ofloxacin, olaparib, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, omeprazole, oral contraceptives, osimertinib, oxcarbazepine, palbociclib, paroxetine hydrochloride, pazopanib, perampanel, phenobarbitone, phenprocoumon, phenytoin, pimavanserin, ponatinib, quinolones, raltegravir, ramelteon, red rice yeast, regorafenib, reserpine, rilpivirine, riociguat, ritonavir, rivaroxaban, rizatriptan, romidepsin, safinamide, saquinavir, sertraline, sildenafil, simeprevir, simvastatin, sirolimus, sofosbuvir, sofosbuvir & velpatasvir, sofosbuvir/velpatasvir/voxilaprevir, solifenacin, sonidegib, sorafenib, SSRIs, sumatriptan, sunitinib, tacrolimus, tadalafil, tapentadol, telaprevir, telithromycin, temsirolimus, tenofovir alafenamide, tetracyclines, tezacaftor/ivacaftor, thalidomide, tiagabine, tibolone, tipranavir, tolvaptan, trabectedin, tricyclic antidepressants, ubrogepant, ulipristal, valbenazine, vandetanib, venetoclax, venlafaxine, vigabatrin, vorapaxar, voriconazole, warfarin, ziprasidone, zolmitriptan
Pregnancy category: N/A
Note: St John's wort is a natural source of flavoring in Europe. Although not indigenous to Australia, and long considered a weed, St John's wort is now grown there as a cash crop and produces 20% of the world's supply.

Skin
Hyperhidrosis (see also diaphoresis) [2]
Photosensitivity [11]
Pruritus (itching) [2]
Rash [2]
Mucosal
Xerostomia (dry mouth) [5]
Cardiovascular
Hypertension [3]
Central Nervous System
Headache [5]
Insomnia [3]
Irritability [2]
Mania [2]
Neurotoxicity [2]
Psychosis [2]
Restlessness [4]
Serotonin syndrome [8]
Sleep disturbances [3]
Somnolence (drowsiness) [3]
Vertigo / dizziness [4]
Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [2]
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea [4]
Neuromuscular/Skeletal
Asthenia / fatigue [6]
Other
Adverse effects / adverse reactions [20]
Allergic reactions [2]

STANOZOLOL

Trade name: Winstrol (Ovation)
Indications: Hereditary angioedema
Class: Anabolic steroid
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticoagulants, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>10%) [2]
Pigmentation (<10%)
Hair
Hirsutism (in women) [3]
Cardiovascular
Cardiomyopathy [2]
Hypertension [2]
Myocardial infarction [2]
Myocardial ischemia [2]
Central Nervous System
Chills (<10%)
Endocrine/Metabolic
Gynecomastia (>10%)
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Genitourinary
Priapism (>10%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Other
Death [3]

STAR ANISE (CHINESE)

Family: Illiciaceae
Scientific name: *Illicium verum*
Indications: Bronchitis, colic, cough, flatulence, menstrual complaints, respiratory tract inflammation. Culinary spice, fragrance component in cosmetics
Class: Antimycobacterial (including antitubercular), Insecticide
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Star anise preparations are sometimes contaminated with highly poisonous Japanese star anise (*Illicium anisatum*). Star anise contains a compound used in the manufacture of Tamiflu.

Central Nervous System
Seizures [2]

STAVUDINE

Synonym: D4T
Trade name: Zerit (Bristol-Myers Squibb)
Indications: HIV infection
Class: Antiretroviral, Nucleoside analog reverse transcriptase inhibitor
Half-life: 1.44 hours
Clinically important, potentially hazardous interactions with: doxorubicin, ribavirin, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Warning: LACTIC ACIDOSIS and HEPATOMEGALY with STEATOSIS; PANCREATITIS

Skin
Cutaneous toxicity / skin toxicity [2]
Diaphoresis (see also hyperhidrosis) (19%)
Lipoatrophy [7]
Lipodystrophy [9]
Rash (40%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Central Nervous System
Chills (50%)
Neurotoxicity [4]
Peripheral neuropathy (52%) [11]
Endocrine/Metabolic
Acidosis (includes lactic acidosis) [11]
Diabetes mellitus [2]
Fat distribution abnormality [4]
Gynecomastia [4]
Gastrointestinal/Hepatic
Diarrhea (50%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (39%)
Pancreatitis / acute pancreatitis [6]
Vomiting (39%)
Neuromuscular/Skeletal
Myalgia/Myopathy (32%) [2]
Renal
Fanconi syndrome [2]
Other
Adverse effects / adverse reactions [3]
Allergic reactions (9%)

STREPTOKINASE

Trade names: Kabikinase (Pfizer), Streptase (AstraZeneca)
Indications: Pulmonary embolism, acute myocardial infarction
Class: Fibrinolytic
Half-life: 83 minutes
Clinically important, potentially hazardous interactions with: bivalirudin, lepirudin
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Angioedema (>10%) [2]
Diaphoresis (see also hyperhidrosis) (<10%)
Exanthems (<5%) [2]
Pruritus (itching) (<10%)
Purpura [2]
Rash (<10%)
Serum sickness [4]
Serum sickness-like reaction [3]
Urticaria / hives (<5%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [7]
Neuromuscular/Skeletal
Rhabdomyolysis [2]
Ocular
Periorbital edema (see also eyelid edema) (>10%)
Other
Allergic reactions (4%) [4]

STREPTOMYCIN

Trade name: Streptomycin (Pfizer)
Indications: Tuberculosis
Class: Antibiotic, Antibiotic; aminoglycoside, Antimicrobial, Drug-resistant antituberculosis agent
Half-life: 2–5 hours
Clinically important, potentially hazardous interactions with: aldesleukin, aminoglycosides, atracurium, bacitracin, bumetanide, doxacurium, ethacrynic acid, furosemide, methoxyflurane, neostigmine, non-depolarizing muscle relaxants, pancuronium, polypeptide antibiotics, rocuronium, succinylcholine, teicoplanin, torsemide, vecuronium
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Aminoglycosides may cause neurotoxicity and/or nephrotoxicity.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Dermatitis [2]
DRESS syndrome [3]
Erythema multiforme [4]
Exanthems (>5%) [8]
Exfoliative dermatitis [11]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [5]
Nicolau syndrome [2]
Photosensitivity [2]
Pruritus (itching) [2]
Purpura [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [12]
Urticaria / hives [3]
Mucosal
Cheilitis (inflammation of the lips) (2%)
Glossitis (inflammation of the tongue) (2%)
Oral mucosal eruption [2]
Stomatitis (oral mucositis) [2]
Ocular
Optic neuropathy [2]
Otic
Ototoxicity [6]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Other
Adverse effects / adverse reactions [2]
Allergic reactions [2]

STREPTOZOCIN

Trade name: Zanosar (Gensia)
Indications: Carcinoma of the pancreas, carcinoid tumor, Hodgkin's disease
Class: Alkylating agent, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 35 minutes
Clinically important, potentially hazardous interactions with: aldesleukin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Gastrointestinal/Hepatic
Abdominal pain [2]
Nausea [2]
Vomiting [2]
Hematologic
Neutropenia (neutrophils decreased) [2]
Local
Injection-site pain (<10%)
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

STRONTIUM RANELATE

Trade name: Protelos (Servier)
Indications: Postmenopausal osteoporosis
Class: Bone formation stimulant, Bone resorption inhibitor
Half-life: 60 hours
Clinically important, potentially hazardous interactions with: antacids, calcium products, chlortetracycline, ciprofloxacin, demeclocycline, doxycycline, levofloxacin, lymecycline, minocycline, moxifloxacin, norfloxacin, ofloxacin, oxytetracycline, quinolone antibiotics, tetracycline, tigecycline
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Dermatitis (2%) [2]
DRESS syndrome [12]
Eczema / eczematous reaction / eczematous eruption (2%)
Hypersensitivity [4]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Hair
Alopecia / hair loss [2]
Cardiovascular
Venous thromboembolism (3%) [4]
Central Nervous System
Headache (3%) [5]
Memory loss/memory impaired (2%)
Gastrointestinal/Hepatic
Diarrhea (7%) [8]
Gastritis / pangastritis / gastric irritation [3]
Nausea (7%) [6]
Other
Adverse effects / adverse reactions [6]
Death [2]

SUCCIMER

Synonym: DMSA
Trade name: Chemet (Sanofi-Aventis)
Indications: Heavy metal poisoning
Class: Chelator
Half-life: 2 days
Clinically important, potentially hazardous interactions with: other chelating agents
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Candidiasis / candidosis (16%)
Exanthems (11%)
Pruritus (itching) (11%)
Rash (<11%) [2]
Mucosal
Mucocutaneous eruption (includes fixed eruption) (11%)
Central Nervous System
Chills (16%)
Dysgeusia (taste perversion) (metallic) (21%)
Fever (pyrexia) (includes hyperpyrexia) (16%)
Headache (16%)
Pain (3%)
Paresthesias (13%)
Gastrointestinal/Hepatic
Abdominal pain (16%)
Neuromuscular/Skeletal
Back pain (16%)
Respiratory
Influenza- ('flu)-like syndrome (16%)

SUCCINYLCHOLINE

Synonym: suxamethonium
Trade name: Anectine (Sabex)
Indications: Skeletal muscle relaxation during general anesthesia
Class: Cholinesterase inhibitor, Depolarizing muscle relaxant
Half-life: N/A
Clinically important, potentially hazardous interactions with: amikacin, aminoglycosides, donepezil, galantamine, gentamicin, hydromorphone, kanamycin, levomepromazine, neomycin, neostigmine, paromomycin, physostigmine, pipecuronium, pralidoxime, quinine, streptomycin, tapentadol, thalidomide, tobramycin, vancomycin, vecuronium
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Warning: RISK OF CARDIAC ARREST FROM HYPERKALEMIC RHABDOMYOLYSIS

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [13]
Mucosal
Sialorrhea (ptyalism; hypersalivation) (<10%)
Cardiovascular
Bradycardia / sinus bradycardia [2]
Central Nervous System
Malignant hyperthermia [7]
Myokymia / twitching [5]
Paralysis / paraplegia [3]
Endocrine/Metabolic
Hyperkalemia [8]
Neuromuscular/Skeletal
Myalgia/Myopathy [11]
Rhabdomyolysis [27]
Other
Death [3]

SUCRALFATE

Trade name: Carafate (Aptalis)
Indications: Duodenal ulcer
Class: Chelator
Half-life: N/A
Clinically important, potentially hazardous interactions with: anagrelide, chlortetracycline, ciprofloxacin, clorazepate, demeclocycline, doxycycline, gemifloxacin, ketoconazole, lansoprazole, levofloxacin, lomefloxacin, lymecycline, minocycline, moxifloxacin, norfloxacin, ofloxacin, oxtriphylline, oxytetracycline, paricalcitol, phenytoin, sparfloxacin, tetracycline, tigecycline, voriconazole
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Sucralfate use can lead to symptoms of aluminum toxicity.

Mucosal
Xerostomia (dry mouth) [2]
Gastrointestinal/Hepatic
Constipation (2%)

SUCRALOSE

Trade name: Splenda (McNeil)
Indications: Weight reduction
Class: Sweetening agent
Half-life: 2–5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A

Central Nervous System
Migraine [3]

SUFENTANIL

Trade name: Sufenta (Akorn)
Indications: Epidural and general anesthesia
Class: Anesthetic; general, Opiate agonist
Half-life: 152 minutes
Clinically important, potentially hazardous interactions with: cimetidine
Pregnancy category: C

Skin
Pruritus (itching) [10]
Cardiovascular
Bradycardia / sinus bradycardia [2]
Hypotension [2]
Gastrointestinal/Hepatic
Nausea [3]

Vomiting [4]

Respiratory
Cough [3]
Respiratory depression [2]

SUGAMMADEX

Trade name: Bridion (Organon)
Indications: Reversal of neuromuscular blockade induced by rocuronium bromide and vecuronium bromide in adults undergoing surgery
Class: Cyclodextrin, Selective relaxant binding agent
Half-life: ~2 hours
Clinically important, potentially hazardous interactions with: toremifene
Pregnancy category: N/A (No data available)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [16]
Erythema (<2%)
Hypersensitivity [7]
Pruritus (itching) (2–3%)

Mucosal
Oropharyngeal pain (3–5%)
Xerostomia (dry mouth) (<2%) [2]

Cardiovascular
Atrioventricular block [2]
Bradycardia / sinus bradycardia (<5%) [9]
Cardiac arrest [3]
Hypotension [3]
QT interval prolonged / QT prolongation (<6%) [2]
Tachycardia (2–5%)

Central Nervous System
Anxiety (<3%)
Chills (3–7%)
Depression (<2%)
Dysgeusia (taste perversion) [3]
Fever (pyrexia) (includes hyperpyrexia) (5–9%)
Headache (5–10%) [2]
Hypoesthesia (numbness) (<3%)
Insomnia (2–5%)
Pain (36–52%)
Restlessness (<2%)
Somnolence (drowsiness) [2]
Vertigo / dizziness (3–6%)

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)
Hypocalcemia (<2%)

Gastrointestinal/Hepatic
Abdominal pain (4–6%)
Diarrhea [2]
Flatulence (<3%)
Nausea (23–26%) [3]
Vomiting (11–15%) [2]

Hematologic
Anemia (<2%)

Local
Injection-site pain (4–6%)

Neuromuscular/Skeletal
Bone or joint pain (<2%)
Myalgia/Myopathy (<2%)
Pain in extremities (<6%)

Respiratory
Bronchospasm [3]
Cough (<8%)

Other
Adverse effects / adverse reactions [2]
Allergic reactions [2]

SULFACETAMIDE

Trade names: Blephamide (Allergan), Klaron (Dermik), Ovace (Healthpoint), Plexion (Medicis), Rosula (Doak), Sulfacet Sodium (Dermik), Sulfacet-R (Dermik), Vasocidin (Novartis), Vasosulf (Novartis)
Indications: Infectious conjunctivitis, acne vulgaris, seborrheic dermatitis
Class: Antibiotic, Antibiotic; sulfonamide, Antimicrobial
Half-life: 7–13 hours
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, silver salts
Pregnancy category: C
Note: Sulfacetamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Exfoliative dermatitis (<10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<10%) [2]

SULFADIAZINE

Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; sulfonamide, Antimicrobial
Half-life: 17 hours
Clinically important, potentially hazardous interactions with: anticoagulants, BCG vaccine, cyclosporine, methotrexate
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Sulfadiazine is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
DRESS syndrome [2]
Fixed eruption (12%) [2]
Hypersensitivity [4]
Photosensitivity (>10%)
Pruritus (itching) (>10%)
Rash (>10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<10%) [4]

Genitourinary
Crystalluria [4]

Renal
Nephrolithiasis (formation of a kidney stone) [3]
Renal failure [7]

SULFADOXINE

Trade name: Fansidar (Roche)
Indications: Malaria
Class: Antibiotic, Antibiotic; sulfonamide, Antimalarial, Antimicrobial
Half-life: 5–8 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Sulfadoxine is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Fansidar is sulfadoxine and pyrimethamine (this combination is almost always prescribed).

Skin
Erythema multiforme [3]
Exfoliative dermatitis [3]
Fixed eruption [2]
Hypersensitivity (>10%)
Photosensitivity (>10%) [2]
Pruritus (itching) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<10%) [37]

Mucosal
Glossitis (inflammation of the tongue) (>10%)

Central Nervous System
Tremor (>10%)
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Diarrhea [2]

Neuromuscular/Skeletal
Asthenia / fatigue [2]

Other
Death [7]

SULFAMETHOXAZOLE

Trade names: Bactrim (Women First), Septra (Monarch)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; sulfonamide, Antimicrobial, Folic acid antagonist
Half-life: 7–12 hours
Clinically important, potentially hazardous interactions with: anticoagulants, azathioprine, cyclosporine, methotrexate, pralatrexate, probenecid, warfarin
Pregnancy category: C
Note: Sulfamethoxazole is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Sulfamethoxazole is commonly used in conjunction with trimethoprim (see separate entry for co-trimoxazole).

Skin
AGEP [3]

Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Angioedema (<5%)
Dermatitis [4]
DRESS syndrome [4]
Erythema multiforme [15]
Erythema nodosum [2]
Exanthems (<5%) [30]
Exfoliative dermatitis [3]
Fixed eruption [29]
Hypersensitivity [6]
Linear IgA bullous dermatosis [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [3]
Photosensitivity (>10%) [3]
Pruritus (itching) (10%) [7]
Purpura [3]
Pustules / pustular eruption [6]
Radiation recall dermatitis [3]
Rash (>10%) [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<10%) [47]
Sweet's syndrome [3]
Urticaria / hives [9]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [6]

Mucosal
Oral mucosal eruption [2]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]

Hematologic
Thrombocytopenia [2]

Neuromuscular/Skeletal
Rhabdomyolysis [4]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Allergic reactions [2]
Side effects (2%) [2]

SULFASALAZINE

Synonyms: salicylazosulfapyridine; salazopyrin
Trade name: Azulfidine (Pfizer)
Indications: Inflammatory bowel disease, ulcerative colitis, rheumatoid arthritis
Class: Aminosalicylate, Disease-modifying antirheumatic drug (DMARD), Sulfonamide
Half-life: 5–10 hours
Clinically important, potentially hazardous interactions with: cholestyramine, methotrexate, safinamide
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Sulfasalazine is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Contra-indicated in patients with intestinal or urinary obstruction, or with porphyria.

Skin
AGEP [3]
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Angioedema [3]
Bullous pemphigoid / pemphigoid [3]
Cyanosis / acrocyanosis (<10%)
Dermatitis [2]
DRESS syndrome [40]
Erythema multiforme [8]
Erythema nodosum [3]
Exanthems (2–23%) [23]
Exfoliative dermatitis [5]
Fixed eruption [7]
Flushing / rubefaction [2]
Hypersensitivity (<5%) [23]
Lichen planus (includes hypertrophic lichen planus) [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [34]
Photosensitivity (10%) [4]
Pigmentation [3]
Pruritus (itching) (10%) [8]
Pseudolymphoma [2]
Pustules / pustular eruption [2]
Rash (>10%) [19]
Raynaud's phenomenon [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [20]
Sweet's syndrome [2]
Urticaria / hives (<5%) [11]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [4]

Hair
Alopecia / hair loss [6]

Mucosal
Mucocutaneous reactions (6%) [2]
Oral mucosal eruption [4]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [3]
Stomatitis (oral mucositis) (<10%)

Central Nervous System
Anorexia (10%)
Aseptic meningitis [3]
Fever (pyrexia) (includes hyperpyrexia) [4]
Headache (10%) [7]
Vertigo / dizziness (<10%)

Gastrointestinal/Hepatic
Abdominal pain (<10%)
Dyspepsia / functional dyspepsia / gastroparesis (10%) [3]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [14]
Nausea (10%) [7]
Pancreatitis / acute pancreatitis [6]
Vomiting (10%) [2]

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [6]
Anemia (<10%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<10%) [4]
Neutropenia (neutrophils decreased) [3]
Thrombocytopenia (<10%)

Neuromuscular/Skeletal
Arthralgia [2]
Asthenia / fatigue [5]

Ocular
Conjunctival pigmentation [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]
Renal failure [2]

Respiratory
Pulmonary toxicity [3]
Upper respiratory tract infection [3]

Other
Adverse effects / adverse reactions [9]
Death [4]
Side effects (5%)

SULFINPYRAZONE

Trade name: Anturane (Novartis)
Indications: Gouty arthritis
Class: Sulfonamide, Uricosuric
Half-life: 2–7 hours
Clinically important, potentially hazardous interactions with: anisindione, anticoagulants, ceftobiprole, dabigatran, dicumarol, enoxaparin, penicillin G, penicillin V, tinzaparin, warfarin
Pregnancy category: D (category C in first and second trimester; category D in third trimester)
Note: Sulfinpyrazone is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Dermatitis (<10%)
Exanthems (<3%)
Rash (<10%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [15]

SULFISOXAZOLE

Trade name: Gantrisin (Roche)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; sulfonamide, Antimicrobial
Half-life: 3–7 hours
Clinically important, potentially hazardous interactions with: anticoagulants, cyclosporine, methotrexate, warfarin
Pregnancy category: C
Note: Sulfisoxazole is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Erythema multiforme [7]
Exanthems (<5%) [9]
Exfoliative dermatitis [2]
Fixed eruption [6]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Photosensitivity (>10%) [4]
Pruritus (itching) (<10%) [4]
Purpura [4]
Rash (>10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<10%) [8]
Urticaria / hives [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Mucosal
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]

Other
Allergic reactions (3%)
Side effects (2%)

SULFITES

Family: N/A
Scientific names: *Ammonium bisulfite [AB], potassium bisulfite [PB], potassium metabisulfite [PM], sodium bisulfite [SB], sodium metabisulfite [SM], sodium sulfite [SS], sulfur dioxide [SD]*
Indications: Food additive, drug additive, sanitary agent
Class: Trace element
Half-life: N/A
Clinically important, potentially hazardous interactions with: aspirin, NSAIDs

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [11]
Angioedema [2]
Dermatitis [15]
Edema / fluid retention (see also peripheral edema) [2]
Hypersensitivity [6]
Rash [2]
Sensitivity [4]
Urticaria / hives [6]

Respiratory
Pulmonary toxicity [2]
Rhinitis [3]

Other
Adverse effects / adverse reactions [5]
Allergic reactions [6]
Death [2]

SULINDAC

Trade name: Clinoril (Merck)
Indications: Arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 7.8–16.4 hours
Clinically important, potentially hazardous interactions with: methotrexate, warfarin
Pregnancy category: C (category C in first and second trimesters; category D in third trimester)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Erythema multiforme [8]
Exanthems (<5%) [9]
Fixed eruption [5]
Photosensitivity [2]
Pruritus (itching) (<10%) [5]
Purpura [2]
Rash (>10%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [16]
Urticaria / hives [4]

Mucosal
Oral mucosal eruption (3%) [2]
Stomatitis (oral mucositis) [2]
Xerostomia (dry mouth) [2]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Pancreatitis / acute pancreatitis [3]

SULPIRIDE

Synonym: Levosulpiride
Trade name: Dolmatil (Sanofi-Aventis)
Indications: Acute and chronic schizophrenia
Class: Dopamine receptor antagonist
Half-life: 8 hours
Clinically important, potentially hazardous interactions with: alcohol, amiodarone, amphotericin B, cisapride, clonidine, digitalis, diltiazem, disopyramide, droperidol, erythromycin, glucocorticoids, halofantrine, haloperidol, hypokalemic diruretics, levodopa, lithium, pentamidine, pimozide, quinidine, sotalol, stimulant laxatives, tetracosactides, thioridazine
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Levosulpiride is the (S)-isomer.

Skin
Jaundice [2]
Ulcerations [2]

Cardiovascular
QT interval prolonged / QT prolongation [3]
Torsades de pointes [3]

Central Nervous System
Akathisia [2]
Movement disorder [3]
Neuroleptic malignant syndrome [3]
Parkinsonism [5]
Rabbit syndrome [2]
Tardive syndrome / tardive dyskinesia [7]
Tremor [3]

Endocrine/Metabolic
Amenorrhea [5]
Galactorrhea [5]
Hyperprolactinemia [4]

Gastrointestinal/Hepatic
Constipation [2]

Neuromuscular/Skeletal
Dystonia [3]

SUMATRIPTAN

Trade names: Alsuma (King), Imigran (GSK), Imitrex (GSK), Onzetra Xsail (Avanir), Sumavel DosePro (Endo), Zecuity (Teva)
Indications: Migraine attacks, cluster headaches
Class: 5-HT1 agonist, Serotonin receptor agonist, Triptan
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: citalopram, dihydroergotamine, ergot-containing drugs, escitalopram, fluoxetine, fluvoxamine, isocarboxazid, MAO inhibitors, methysergide, naratriptan, nefazodone, paroxetine hydrochloride, phenelzine, rizatriptan, sertraline, sibutramine, SNRIs, SSRIs, St John's wort, tranylcypromine, venlafaxine, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with Wolff-Parkinson-White syndrome, peripheral vascular disease, ischemic bowel disease, uncontrolled hypertension, severe hepatic impairment or a history of coronary artery disease, coronary vasospasm, stroke, transient ischemic attack, or hemiplegic or basilar migraine; or with recent (within 24 hours) use of another 5-HT1 agonist (e.g. another triptan) or an ergotamine-containing medication, or current or recent (past 2 weeks) use of a monoamine oxidase-A inhibitor.

Skin
Burning / skin burning sensation (<10%)
Diaphoresis (see also hyperhidrosis) (2%)
Flushing / rubefaction (7%) [4]
Hot flashes / hot flushes (>10%)
Hypersensitivity [2]

Mucosal
Nasal discomfort [3]
Rhinorrhea [2]
Xerostomia (dry mouth) [2]

Cardiovascular
Chest pain (<2%) [7]
Hypertension [2]
Myocardial infarction [5]

Central Nervous System
Dysgeusia (taste perversion) [11]
Headache [2]
Neurotoxicity [3]
Pain (<2%) [4]
Paresthesias (3–5%) [11]
Somnolence (drowsiness) [3]
Stroke / cerebral infarction [2]
Vertigo / dizziness (<2%) [10]
Warm feeling (includes feeling hot) (2–3%)

Gastrointestinal/Hepatic
Colitis [2]
Nausea [13]

Local
Application-site erythema [2]
Injection-site edema [2]
Injection-site reaction (10–58%) [2]

Neuromuscular/Skeletal
Asthenia / fatigue (2–3%) [5]
Jaw pain (<3%)
Muscle spasm [2]
Myalgia/Myopathy (2%) [2]
Neck pain (<3%)

Respiratory
Nasopharyngitis [2]
Rhinitis [2]
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [10]

SUNITINIB

Trade name: Sutent (Pfizer)
Indications: Gastrointestinal stromal tumor, advanced renal cell carcinoma, advanced pancreatic neuroendocrine tumor
Class: Angiogenesis inhibitor / antiangiogenic agent, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Tyrosine kinase inhibitor, Vascular endothelial growth factor (VEGF) inhibitor / antagonist
Half-life: 40–60 hours
Clinically important, potentially hazardous interactions with: atazanavir, bevacizumab, carbamazepine, clarithromycin, clozapine, dexamethasone, digoxin, efavirenz, grapefruit juice, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, telithromycin, temsirolimus, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: [G] = treated for gastrointestinal tumor; [R] = treated for renal cell carcinoma; [P] treated for pancreatic neuroendocrine tumor.
Warning: HEPATOTOXICITY

Skin
- Acral erythema [2]
- Cutaneous toxicity / skin toxicity [24]
- Edema / fluid retention (see also peripheral edema) [6]
- Erythema [6]
- Facial edema [3]
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) (12–14%) [78]
- Lesions [2]
- Nevi [2]
- Peripheral edema (see also edema) [R] (17%)
- Pigmentation [15]
- Pruritus (itching) [R] [3]
- Pyoderma gangrenosum [10]
- Rash (14–38%) [17]
- Thrombocytopenic purpura [4]
- Xerosis / xeroderma (see also dry skin) (17%) [3]

Hair
- Alopecia / hair loss (5–12%) [6]
- Hair pigmentation [G] [8]

Nails
- Splinter hemorrhage [2]
- Subungual hematoma / subungual hemorrhage [4]

Mucosal
- Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis) [R] [P] (15%)
- Epistaxis (nosebleed) [2]
- Mucosal inflammation [4]
- Mucositis (29–53%) [19]
- Stomatitis (oral mucositis) [21]
- Xerostomia (dry mouth) [R] [P] [2]

Cardiovascular
- Aortic dissection [3]
- Cardiac failure [2]
- Cardiomyopathy [2]
- Cardiotoxicity [8]
- Congestive heart failure [2]
- Hypertension [64]
- QT interval prolonged / QT prolongation [2]
- Ventricular arrhythmia [2]

Central Nervous System
- Anorexia [8]
- Dysgeusia (taste perversion) (21–43%) [6]
- Fever (pyrexia) (includes hyperpyrexia) [R] (15–18%) [2]
- Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy [3]
- Headache (13–25%) [4]
- Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [8]
- Neurotoxicity [R] (10%)
- Pain [R] (18%)
- Vertigo / dizziness [R] (16%)

Endocrine/Metabolic
- ALT increased [4]
- Appetite decreased [2]
- AST increased [2]
- Hyperlipasemia [2]
- Hypothyroidism [R] [30]
- Serum creatinine increased [2]
- Thyroid dysfunction [8]

Gastrointestinal/Hepatic
- Abdominal pain (20–33%) [3]
- Constipation [3]
- Diarrhea [42]
- Dyspepsia / functional dyspepsia / gastroparesis [R] [P] [3]
- Esophagitis [2]
- Gastrointestinal bleeding [4]
- Gastrointestinal disorder / discomfort [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [9]
- Nausea [18]
- Pneumatosis intestinalis / pneumatosis cystoides intestinalis [6]
- Vomiting [16]

Hematologic
- Anemia [22]
- Bleeding [5]
- Cytopenia [2]
- Hemorrhage [2]
- Hemotoxicity [3]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [21]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [10]
- Myelosuppression / bone marrow suppression / myelotoxicity [6]
- Neutropenia (neutrophils decreased) [50]
- Platelets decreased [2]
- Thrombocytopenia [45]
- Thrombotic microangiopathy [2]

Neuromuscular/Skeletal
- Arthralgia [R] (12–28%)
- Asthenia / fatigue (22%) [76]
- Back pain [R] (11–17%)
- Myalgia/Myopathy [G] (14–17%) [2]
- Osteonecrosis / avascular necrosis [4]

Ocular
- Epiphora [R] (6%)
- Periorbital edema (see also eyelid edema) [R] (7%)

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]
- Proteinuria [6]
- Renal function abnormal / renal dysfunction [2]

Respiratory
- Cough [R] (8–17%) [2]
- Dyspnea / shortness of breath [5]
- Pulmonary toxicity [3]
- Radiation recall pneumonitis [2]

Other
- Adverse effects / adverse reactions [17]
- Death [9]
- Side effects [3]

TACRINE

Trade name: Cognex (First Horizon)
Indications: Dementia of Alzheimer's disease
Class: Cholinesterase inhibitor
Half-life: 1.5–4 hours
Clinically important, potentially hazardous interactions with: fluvoxamine, galantamine, ibuprofen, norfloxacin, oxtriphylline
Pregnancy category: C

Skin
- Exanthems (7%)
- Flushing / rubefaction (3%)
- Pruritus (itching) (7%)
- Purpura (2%)
- Rash (7%)
- Urticaria / hives (7%)

Cardiovascular
- Bradycardia / sinus bradycardia [2]

Central Nervous System
- Parkinsonism [2]
- Tremor (<10%)

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [12]

Neuromuscular/Skeletal
- Myalgia/Myopathy (9%)

TACROLIMUS

Trade names: Envarsus XR (Veloxis), Prograf (Astellas), Protopic (Astellas)
Indications: Prophylaxis of organ rejection, atopic dermatitis (topical)
Class: Calcineurin inhibitor, Immunosuppressant, Macrolactam
Half-life: ~8.7 hours
Clinically important, potentially hazardous interactions with: abatacept, afatinib, alefacept, amiodarone, amprenavir, atazanavir, azacitidine, beta blockers, betamethasone, boceprevir, bosentan, cabazitaxel, caspofungin, ceritinib, cinacalcet, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, crizotinib, cyclosporine, CYP3A4 inhibitors and inducers, dabigatran, dairy products, danazol, darunavir, dasatinib, delavirdine, denileukin, dexlansoprazole, diclofenac, docetaxel, dronedarone, efavirenz, elbasvir & grazoprevir, eluxadoline, enzalutamide, erythromycin, etoricoxib, fingolimod, gefitinib, grapefruit juice, Hemophilus B vaccine, HMG-CoA reductase inhibitors, ibuprofen, immunosuppressants, indinavir, irbesartan, itraconazole, ketoconazole, leflunomide, lenalidomide, letermovir, lopinavir, lovastatin, meloxicam, mifepristone, mycophenolate, nelfinavir, nifedipine, olmesartan, omeprazole, oxaliplatin, pazopanib, pemetrexed, posaconazole, potassium, potassium-sparing diuretics, pralatrexate, ribociclib, rifabutin,

rifampin, rifapentine, sevelamer, simvastatin, sirolimus, St John's wort, telaprevir, telithromycin, temsirolimus, tinidazole, tipranavir, tofacitinib, triamcinolone, vaccines, viloxazine, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Between 25% and 31% of patients who receive tacrolimus are reported to experience some form of neurotoxic adverse events.
Warning: MALIGNANCIES AND SERIOUS INFECTIONS

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (>3%)
- Burning / skin burning sensation (46%) [13]
- Cutaneous toxicity / skin toxicity [3]
- Dermatitis [2]
- Diaphoresis (see also hyperhidrosis) (>3%)
- Edema / fluid retention (see also peripheral edema) (>10%)
- Erythema (12%) [3]
- Exanthems (4%) [2]
- Flushing / rubefaction [4]
- Folliculitis (10%) [2]
- Graft-versus-host reaction [2]
- Herpes simplex (13%) [4]
- Herpes zoster [3]
- Kaposi's sarcoma [2]
- Kaposi's varicelliform eruption [2]
- Lymphoma [2]
- Peripheral edema (see also edema) (26%)
- Photosensitivity (>3%)
- Pigmentation [2]
- Pruritus (itching) (25–36%) [13]
- Pustules / pustular eruption (6%)
- Rash (24%) [2]
- Rosacea [5]
- Thrombocytopenic purpura [2]

Hair
- Alopecia / hair loss (>3%) [7]
- Hypertrichosis [2]

Mucosal
- Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [6]
- Oral candidiasis (>3%)
- Oral pigmentation [2]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) [2]

Cardiovascular
- Cardiomyopathy [3]
- Hypertension (49%) [10]
- QT interval prolonged / QT prolongation [2]

Central Nervous System
- Akinetic mutism / mutism [3]
- Bradykinesia [2]
- Catatonia [2]
- Central pontine myelinolysis [3]
- Dysarthria [2]
- Encephalopathy (includes hepatic encephalopathy) [11]
- Fever (pyrexia) (includes hyperpyrexia) (>10%) [2]
- Headache [10]
- Insomnia [2]
- Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [19]
- Neurotoxicity [13]
- Pain [3]
- Paresthesias (40%) [5]
- Parkinsonism [5]
- Psychosis [3]
- Reversible cerebral vasoconstriction syndrome (RCVS) [2]
- Seizures (<10%) [6]
- Tremor (>10%) [12]
- Vertigo / dizziness [3]

Endocrine/Metabolic
- Diabetes mellitus [8]
- Diabetic ketoacidosis [8]
- Dyslipidemia [3]
- Gynecomastia [3]
- Hyperglycemia (includes glucose increased) [12]
- Hyperkalemia [5]
- Hyperlipidemia [2]
- Hypomagnesemia (>10%) [2]
- Hypophosphatemia (>10%)
- Serum creatinine increased [4]
- SIADH [2]
- Weight loss [2]

Gastrointestinal/Hepatic
- Abdominal pain [3]
- Constipation (>10%)
- Diarrhea (>10%) [7]
- Dyspepsia / functional dyspepsia / gastroparesis (>10%)
- Dysphagia (>3%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [12]
- Nausea (>10%) [3]
- Pancreatitis / acute pancreatitis [4]
- Vomiting (>10%)

Genitourinary
- Urinary tract infection [3]

Hematologic
- Anemia (>10%) [2]
- Angiopathy [4]
- Hemolytic anemia [2]
- Hemolytic uremic syndrome [18]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (>10%) [5]
- Myelosuppression / bone marrow suppression / myelotoxicity [2]
- Neutropenia (neutrophils decreased) [4]
- Pure red cell aplasia [3]
- Thrombocytopenia [2]
- Thrombotic microangiopathy [8]

Local
- Application-site burning [7]
- Application-site erythema [3]
- Application-site infection [2]
- Application-site irritation [2]
- Application-site pain [2]
- Application-site pruritus [9]

Neuromuscular/Skeletal
- Arthralgia (>10%) [2]
- Asthenia / fatigue (>10%) [4]
- Back pain (>10%)
- Bone or joint pain [2]
- Myalgia/Myopathy (>3%)

Ocular
- Diplopia (double vision) [2]
- Ocular burning [3]
- Optic neuropathy [4]
- Vision blurred [2]
- Vision loss [4]

Otic
- Tinnitus [2]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [49]
- Renal failure [2]
- Renal function abnormal / renal dysfunction [5]

Respiratory
- Cough (>10%)
- Dyspnea / shortness of breath (>10%)
- Influenza [2]
- Pneumonia [3]
- Pulmonary toxicity [2]

Other
- Adverse effects / adverse reactions [22]
- Cancer [2]
- Cytomegalovirus infection [2]
- Death [2]
- Infection (>10%) [17]
- Neoplasms [2]

TADALAFIL

Trade names: Adcirca (Lilly), Cialis (Lilly)
Indications: Erectile dysfunction, pulmonary arterial hypertension
Class: Phosphodiesterase type 5 (PDE5) inhibitor
Half-life: 15–18 hours
Clinically important, potentially hazardous interactions with: alcohol, alfuzosin, alpha blockers, amlodipine, amyl nitrite, angiotensin II receptor blockers, antifungals, antihypertensives, atazanavir, bendroflumethiazide, boceprevir, bosentan, clarithromycin, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, conivaptan, CYP3A4 inhibitors or inducers, darunavir, dasatinib, delavirdine, disopyramide, doxazosin, efavirenz, enalapril, erythromycin, etravirine, fosamprenavir, grapefruit juice, indinavir, itraconazole, ketoconazole, lopinavir, macrolide antibiotics, metoprolol, nelfinavir, nicorandil, nitrates, nitroglycerin, nitroprusside, oxcarbazepine, phosphodiesterase 5 inhibitors, rifampin, rifapentine, riociguat, ritonavir, sapropterin, saquinavir, St John's wort, tamsulosin, telaprevir, telithromycin, voriconazole
Pregnancy category: B (Cialis is not indicated for use in women)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
- Diaphoresis (see also hyperhidrosis) (<2%)
- Facial edema (<2%)
- Fixed eruption [6]
- Flushing / rubefaction (2–3%) [16]
- Peripheral edema (see also edema) [2]
- Pruritus (itching) (<2%)
- Rash (<2%)

Mucosal
- Epistaxis (nosebleed) (<2%) [2]
- Nasal congestion [4]
- Rectal hemorrhage / rectal bleeding (<2%)
- Xerostomia (dry mouth) (<2%)

Cardiovascular
- Angina (<2%)
- Chest pain (<2%)
- Hypotension (<2%)
- Myocardial infarction (<2%)
- Palpitation (<2%)
- Postural hypotension (<2%)

Tachycardia (<2%)

Central Nervous System
Amnesia [3]
Headache (4–15%) [38]
Hyperesthesia (<2%)
Hypoesthesia (numbness) (<2%)
Insomnia (<2%)
Pain (<3%)
Paresthesias (<2%)
Somnolence (drowsiness) (<2%)
Syncope / fainting (<2%)
Vertigo / dizziness (<2%) [8]

Endocrine/Metabolic
GGT increased (<2%)

Gastrointestinal/Hepatic
Diarrhea [2]
Dyspepsia / functional dyspepsia / gastroparesis [8]
Dysphagia (<2%)
Esophagitis (<2%)
Gastritis / pangastritis / gastric irritation (<2%)
Gastroesophageal reflux (<2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Loose stools / soft feces (<2%)
Nausea (<2%) [3]
Vomiting (<2%)

Genitourinary
Erection (<2%)
Priapism (spontaneous) (<2%) [2]

Hematologic
Anemia [2]
Platelets decreased [2]

Neuromuscular/Skeletal
Arthralgia (<2%)
Asthenia / fatigue (<2%)
Back pain (2–6%) [22]
Myalgia/Myopathy (<4%) [15]
Neck pain (<2%)

Ocular
Chorioretinopathy [2]
Conjunctival hyperemia / conjunctival injection (<2%)
Conjunctivitis (conjunctival inflammation) (<2%)
Dyschromatopsia (<2%)
Eyelid edema / palpebral edema / blepharedema (see also periorbital edema) (<2%)
Eyelid pain (<2%)
Lacrimation (<2%)
Optic neuropathy [7]
Vision blurred (<2%)

Otic
Hearing loss (hypoacusis) (<2%) [4]
Tinnitus (<2%)

Respiratory
Dyspnea / shortness of breath (<2%)
Nasopharyngitis [2]
Pharyngitis (sore throat) (<2%)

Other
Adverse effects / adverse reactions [6]

TAFLUPROST

Trade names: Saflutan (Merck Sharpe & Dohme), Zioptan (Merck Sharpe & Dohme)
Indications: Reduction of elevated intraocular pressure in open angle glaucoma or ocular hypertension
Class: Antiglaucoma, Prostaglandin analog
Half-life: 0.5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Central Nervous System
Headache (6%)

Genitourinary
Urinary tract infection (2%)

Ocular
Cataract (3%)
Conjunctival hyperemia / conjunctival injection (4–20%) [10]
Conjunctivitis (conjunctival inflammation) (5%)
Deepening of upper lid sulcus [4]
Eyelashes – hypertrichosis (2%)
Eyelashes – pigmentation (2%) [2]
Eyelid erythema (<10%)
Eyelid pigmentation [3]
Keratoconjunctivitis (<10%)
Lacrimation (<10%)
Ocular burning [3]
Ocular hyperemia [2]
Ocular itching / ocular pruritus [7]
Ocular pain (3%)
Ocular pigmentation (<10%)
Ocular stinging (7%) [4]
Photophobia (<10%)
Vision blurred (2%)
Visual disturbances (<10%)
Xerophthalmia (dry eyes) (3%)

Respiratory
Cough (3%)

Other
Adverse effects / adverse reactions [5]

TALIMOGENE LAHERPAREPVEC

Synonym: T-VEC
Trade name: Imlygic (Amgen)
Indications: Unresectable cutaneous, subcutaneous, and nodal lesions in patients with melanoma recurrent after initial surgery
Class: Oncolytic virus immunotherapy
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Contraception advised to prevent pregnancy during treatment)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Cellulitis (<5%) [3]
Herpes (oral) (<5%)
Vitiligo (<5%)

Mucosal
Oropharyngeal pain (6%)

Central Nervous System
Chills (49%) [6]
Fever (pyrexia) (includes hyperpyrexia) (43%) [5]
Headache (19%)
Vertigo / dizziness (10%)

Endocrine/Metabolic
Weight loss (6%)

Gastrointestinal/Hepatic
Abdominal pain (9%)
Constipation (12%)
Diarrhea (19%)
Nausea (36%) [2]
Vomiting (21%)

Local
Injection-site pain (28%)

Neuromuscular/Skeletal
Arthralgia (17%)
Asthenia / fatigue (50%) [4]
Myalgia/Myopathy (18%)
Pain in extremities (16%)

Renal
Glomerulonephritis (includes membranous nephropathy) (<5%)

Respiratory
Influenza- ('flu)-like syndrome (31%) [2]

TAMOXIFEN

Trade name: Nolvadex (AstraZeneca)
Indications: Advanced breast cancer
Class: Selective estrogen receptor modulator (SERM)
Half-life: 5–7 days
Clinically important, potentially hazardous interactions with: anastrozole, bexarotene, cinacalcet, delavirdine, droperidol, duloxetine, gadobenate, ginseng, norfloxacin, norfloxacin, paroxetine hydrochloride, rifapentine, terbinafine, tipranavir
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Carcinosarcoma [2]
Cutaneous toxicity / skin toxicity [3]
Diaphoresis (see also hyperhidrosis) [4]
Edema / fluid retention (see also peripheral edema) (2–6%) [3]
Exanthems (3%) [3]
Flushing / rubefaction (>10%) [9]
Hot flashes / hot flushes [18]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Pruritus ani et vulvae [2]
Radiation recall dermatitis [6]
Rash (<10%) [2]
Sarcoma [9]
Tumors [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [6]
Xerosis / xeroderma (see also dry skin) (7%)

Hair
Alopecia / hair loss [7]
Hirsutism [2]

Mucosal
Stomatitis (oral mucositis) [2]

Xerostomia (dry mouth) (7%) [2]

Cardiovascular
Myocardial ischemia [2]
QT interval prolonged / QT prolongation [3]
Thromboembolism [6]
Thrombophlebitis [3]
Venous thromboembolism [6]

Central Nervous System
Depression [5]
Headache [3]
Insomnia [4]
Mood changes [3]
Parkinsonism [2]
Stroke / cerebral infarction [4]
Vertigo / dizziness [3]

Endocrine/Metabolic
ALP increased [2]
Amenorrhea [8]
Galactorrhea (<10%)
Hypercholesterolemia [2]
Hypertriglyceridemia (includes triglycerides increased) [7]
Libido decreased [4]
Weight gain [4]

Gastrointestinal/Hepatic
Hepatic steatosis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [11]
Nausea [5]
Pancreatitis / acute pancreatitis [4]
Vomiting [4]

Genitourinary
Dyspareunia [4]
Endometrial cancer [5]
Ovarian cyst [2]
Ovarian hyperstimulation syndrome [2]
Sexual dysfunction [2]
Vaginal bleeding [4]
Vaginal discharge [5]
Vaginal dryness [5]

Hematologic
Hemolytic uremic syndrome [2]
Thrombosis [9]

Neuromuscular/Skeletal
Asthenia / fatigue [5]
Bone or joint pain [4]
Fractures [3]
Leg cramps [2]
Myalgia/Myopathy [4]
Osteoporosis [2]

Ocular
Cataract [9]
Keratopathy (see also cornea verticillata) [4]
Macular edema [2]
Maculopathy [5]
Ocular adverse effect [6]
Ocular toxicity [6]
Retinopathy [5]
Vision impaired [3]

Respiratory
Pulmonary embolism [7]

Other
Death [3]

TAMSULOSIN

Trade names: Flomax (Boehringer Ingelheim), Jalyn (GSK)
Indications: Benign prostatic hypertrophy
Class: Adrenergic alpha-receptor antagonist
Half-life: 9–13 hours
Clinically important, potentially hazardous interactions with: alpha adrenergic blockers, cimetidine, conivaptan, darunavir, delavirdine, erythromycin, indinavir, ketoconazole, paroxetine hydrochloride, phosphodiesterase 5 inhibitors, tadalafil, telithromycin, terbinafine, vardenafil, voriconazole, warfarin
Pregnancy category: B (not indicated for use in women; Jalyn is pregnancy category X)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Jalyn is tamsulosin and dutasteride.

Mucosal
Xerostomia (dry mouth) [5]

Cardiovascular
Chest pain (4%)
Hypotension (6–19%) [4]
Orthostatic hypotension [3]
Postural hypotension [3]

Central Nervous System
Headache (19–21%) [9]
Insomnia (<2%)
Somnolence (drowsiness) (3–4%)
Vertigo / dizziness (15–17%) [19]

Endocrine/Metabolic
Libido decreased (<2%)

Gastrointestinal/Hepatic
Constipation [3]
Diarrhea (4–6%)
Dyspepsia / functional dyspepsia / gastroparesis [2]
Nausea (3–4%)

Genitourinary
Ejaculatory dysfunction (8–18%) [9]
Enuresis (urinary incontinence) [2]
Erectile dysfunction [2]
Priapism [8]
Retrograde ejaculation [2]
Urinary retention [3]

Neuromuscular/Skeletal
Asthenia / fatigue (8–9%) [3]
Back pain (7–8%) [2]

Ocular
Floppy iris syndrome [35]
Vision blurred (<2%)

Respiratory
Cough (3–5%)
Pharyngitis (sore throat) (5–6%)
Rhinitis (13–18%) [2]
Sinusitis (2–4%)

Other
Adverse effects / adverse reactions [4]
Infection (9–11%)
Tooth disorder (<2%)

TAPENTADOL

Trade names: Nucynta (Janssen), Nucynta ER (Janssen), Palexia (Grunenthal)
Indications: Immediate release formulation: moderate to severe acute pain, extended release formulation: moderate to severe chronic pain and neuropathic pain associated with diabetic peripheral neuropathy when a continuous analgesic is needed for an extended period of time
Class: Analgesic; opioid
Half-life: 5 hours
Clinically important, potentially hazardous interactions with: alcohol, alvimopan, amphetamines, anesthetics, anitemetics, anticholinergics, buprenorphine, butorphanol, CNS depressants, desmopressin, droperidol, hypnotics, linezolid, MAO inhibitors, mirtazapine, nalbuphine, PEG-interferon, pegvisomant, pentazocine, phenothiazines, sedatives, sibutramine, SNRIs, SSRIs, St John's wort, succinylcholine, thiazide diuretics, tramadol, tranquilizers, trazodone, tricyclic antidepressants, triptans
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with impaired pulmonary function or paralytic ileus. Should not be used in patients currently using or within 14 days of using a monoamine oxidase inhibitor.
Warning: For extended release oral tablets: ABUSE POTENTIAL, LIFE-THREATENING RESPIRATORY DEPRESSION, ACCIDENTAL EXPOSURE, and INTERACTION WITH ALCOHOL

Mucosal
Xerostomia (dry mouth) [4]

Central Nervous System
Headache [5]
Neurotoxicity [2]
Somnolence (drowsiness) [9]
Vertigo / dizziness (4%) [10]

Gastrointestinal/Hepatic
Constipation [15]
Diarrhea [2]
Gastrointestinal disorder / discomfort [2]
Nausea (4%) [23]
Vomiting (3%) [15]

Neuromuscular/Skeletal
Asthenia / fatigue [3]

Other
Adverse effects / adverse reactions [5]

TARTRAZINE

Class: Food additive
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Note: Tartrazine intolerance has been estimated to affect between 0.01% and 0.1% of the population. Adverse reactions are most common in people who are sensitive to aspirin.
Banned in Austria and Norway.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [8]
Angioedema [11]
Atopic dermatitis [2]
Hypersensitivity [9]
Pruritus (itching) [2]
Purpura [5]
Urticaria / hives (often related to aspirin intolerance) [33]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Other
Adverse effects / adverse reactions [3]
Allergic reactions [9]

TASIMELTEON

Trade name: Hetlioz (Vanda)
Indications: Non-24-hour sleep-wake disorder
Class: Melatonin receptor agonist
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: fluvoxamine, ketoconazole, rifampin, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Central Nervous System
Abnormal dreams (10%) [3]
Headache (17%) [3]
Nightmares (10%) [3]

Endocrine/Metabolic
ALT increased (10%) [2]

Genitourinary
Urinary tract infection (7%) [3]

Respiratory
Upper respiratory tract infection (7%) [2]

TASONERMIN

Trade name: Beromun (Boehringer Ingelheim)
Indications: As an adjunct to surgery for subsequent removal of various tumors
Class: Immune stimulant, TNF alpha agonist
Half-life: 0.37 hours
Clinically important, potentially hazardous interactions with: anthracyclines, interferon gamma, melphalan

Skin
Edema / fluid retention (see also peripheral edema) (10%)
Hypersensitivity (<10%)
Necrosis (skin necrosis) (<10%)

Nails
Onycholysis (<10%)

Cardiovascular
Arrhythmias (10%)
Cardiac failure (<10%)
Hypotension (<10%)
Shock (see also anaphylactic shock) (<10%)

Central Nervous System
Chills (10%)
Fever (pyrexia) (includes hyperpyrexia) (10%)
Headache (<10%)
Neurotoxicity (<10%)

Gastrointestinal/Hepatic
Diarrhea (<10%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (10%)
Nausea (10%)
Vomiting (10%)

Hematologic
Sepsis (<10%)
Thrombosis (<10%)

Neuromuscular/Skeletal
Asthenia / fatigue (10%)
Myalgia/Myopathy (<10%)
Rhabdomyolysis (<10%)

Renal
Proteinuria (10%)

Respiratory
Acute respiratory distress syndrome (<10%)

TAZAROTENE

Trade names: Avage (Allergan), Fabior (GSK), Tazorac (Allergan), Zorac (Allergan)
Indications: Acne vulgaris, mild to moderate plaque psoriasis involving up to 10% body surface area
Half-life: 18 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Burning / skin burning sensation (10–20%) [5]
Contact dermatitis (5–10%)
Desquamation (5–10%)
Erythema (10–20%) [5]
Pruritus (itching) (10–25%) [12]
Psoriasis (5–10%)
Rash (5–10%)
Scaling [2]
Stinging (<3%) [2]
Xerosis / xeroderma (see also dry skin) (<3%) [5]

Local
Application-site reactions [2]

Other
Adverse effects / adverse reactions [2]
Side effects [2]

TEA TREE

Family: Myrtaceae
Scientific names: *Melaleuca alternifolia, Melaleuca cajeputi, Melaleuca dissitifolia, Melaleuca linafolia*
Indications: Gram-negative and Gram-positive bacteria, acne, vaginal infection, burns, onychomycosis, tinea pedis, bruises, insect bites, skin infections, mouthwash, genital herpes, antiperspirant, gingivitis, disinfectant, scabies
Class: Antiseptic
Half-life: N/A
Clinically important, potentially hazardous interactions with: colophony, turpentine
Pregnancy category: N/A
Note: Tea tree oil in bottles may undergo photooxidation, and degradation products are moderate to strong sensitizers.
The plant was discovered and named by Captain James Cook of the Royal Navy in 1770, who found groves of trees with sticky, aromatic leaves that, when boiled, made a spicy tea.

Skin
Burning / skin burning sensation [2]
Dermatitis [22]
Hypersensitivity [3]
Pruritus (itching) [2]

Endocrine/Metabolic
Gynecomastia [3]

Other
Adverse effects / adverse reactions [4]
Allergic reactions [8]

TEGAFUR/GIMERACIL/OTERACIL

Synonyms: TS-1; S-1
Trade name: Teysuno (Taiho Pharma)
Indications: Gastric, colorectal, head and neck cancers, non-small cell lung cancer, inoperable or recurrent breast cancer, pancreatic cancer
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: N/A
Clinically important, potentially hazardous interactions with: capecitabine, flucytosine, fluorouracil, other fluoropyrimidine-group antineoplastics, phenytoin, uracil/tegafur, warfarin
Pregnancy category: N/A (Contra-indicated in pregnancy)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with severe bone marrow depression, hepatic or renal impairment.
Not available in the USA.

Skin
Dermatitis (<5%)
Desquamation (<5%)
Edema / fluid retention (see also peripheral edema) (<5%) [3]
Erythema (<5%)
Flushing / rubefaction (<5%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) (<5%) [13]
Herpes simplex (<5%)
Jaundice (<5%)
Pigmentation (21%) [10]
Pruritus (itching) (<5%)
Rash (12%) [6]
Raynaud's phenomenon (<5%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Ulcerations (<5%)
Xerosis / xeroderma (see also dry skin) (<5%) [2]

Hair
Alopecia / hair loss (<5%) [4]

Nails
Nail disorder (<5%)
Paronychia (<5%) [2]

Mucosal
Mucositis [7]

Stomatitis (oral mucositis) (17%) [12]

Cardiovascular
Hypertension (<5%) [2]
Hypotension (<5%)

Central Nervous System
Anorexia (34%) [29]
Fever (pyrexia) (includes hyperpyrexia) (<5%) [2]
Headache (<5%)
Neurotoxicity [4]
Paresthesias (<5%)
Peripheral neuropathy [4]
Vertigo / dizziness (<5%)
Warm feeling (includes feeling hot) (<5%)

Endocrine/Metabolic
ALT increased (12%) [6]
Appetite decreased [6]
AST increased (12%) [5]
Hyperbilirubinemia [4]
Hypoalbuminemia / albumin decreased [2]
Hyponatremia [5]
Weight loss (<5%)

Gastrointestinal/Hepatic
Diarrhea (19%) [43]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea (23%) [25]
Vomiting (8%) [14]

Genitourinary
Glycosuria (<5%)
Hematuria (<5%)

Hematologic
Anemia [31]
Bleeding (<5%)
Febrile neutropenia [13]
Hemotoxicity [5]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (87%) [28]
Myelosuppression / bone marrow suppression / myelotoxicity [8]
Neutropenia (neutrophils decreased) (44%) [55]
Platelets decreased [2]
Thrombocytopenia (11%) [23]

Neuromuscular/Skeletal
Arthralgia (<5%)
Asthenia / fatigue (22%) [20]
Myalgia/Myopathy (<5%)

Ocular
Conjunctivitis (conjunctival inflammation) (<5%)
Keratitis (<5%)
Lacrimation (<5%) [3]
Ocular pain (<5%)
Reduced visual acuity (<5%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Proteinuria (<5%)

Respiratory
Pharyngitis (sore throat) (<5%)
Pneumonitis [5]
Rhinitis (<5%)

Other
Adverse effects / adverse reactions [23]
Death [4]
Infection [2]

TEGASEROD

Trade name: Zelnorm (Novartis)
Indications: Irritable bowel syndrome
Class: 5-HT4 agonist, Serotonin type 4 receptor agonist
Half-life: 11±5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with severe renal impairment, moderate or severe hepatic impairment, a history of bowel obstruction, symptomatic gallbladder disease, suspected sphincter of Oddi dysfunction, or abdominal adhesions.

Cardiovascular
Cardiotoxicity [2]
Myocardial infarction [3]

Central Nervous System
Headache (15%) [8]
Insomnia (<2%)
Migraine (2%)
Vertigo / dizziness (<4%)

Gastrointestinal/Hepatic
Abdominal distension (3–4%)
Abdominal pain (5–12%) [6]
Diarrhea (4–9%) [2]
Flatulence (6%)
Nausea (5–8%)

Genitourinary
Dysmenorrhea (<2%)
Urinary tract infection (<2%)

Neuromuscular/Skeletal
Arthralgia (2%)
Back pain (2–5%)

Respiratory
Sinusitis (3%)
Upper respiratory tract infection (3–4%)

TEICOPLANIN

Trade name: Targocid (Sanofi-Aventis)
Indications: Staphylococcal infections
Class: Antibiotic, Antibiotic; glycopeptide, Antimicrobial
Half-life: 150 hours
Clinically important, potentially hazardous interactions with: amikacin, cephaloridine, colistin, gentamicin, kanamycin, neomycin, streptomycin, tobramycin, vancomycin
Pregnancy category: N/A (Not recommended in pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
DRESS syndrome [3]
Erythema (<10%)
Exanthems [2]
Hypersensitivity [4]
Pruritus (itching) (<10%)
Rash (<10%) [4]
Red man syndrome [3]
Urticaria / hives [2]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<10%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (2%) [2]

Hematologic
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [2]

Otic
Ototoxicity [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Adverse effects / adverse reactions [2]

TELAPREVIR

Trade name: Incivek (Vertex)
Indications: Hepatitis C (must only be used in combination with PEG-interferon alfa and ribavirin)
Class: CYP3A4 inhibitor, Direct-acting antiviral, Hepatitis C virus NS3/4A protease inhibitor
Half-life: 4–11 hours
Clinically important, potentially hazardous interactions with: alfuzosin, alprazolam, amiodarone, amlodipine, atazanavir, atorvastatin, bepridil, bosentan, budesonide, carbamazepine, cisapride, dabigatran, darunavir, desipramine, dexamethasone, digoxin, dihydroergotamine, diltiazem, efavirenz, ergotamine, escitalopram, estradiol, felodipine, flecainide, flibanserin, fluticasone propionate, fosamprenavir, itraconazole, ketoconazole, lidocaine, lomitapide, lovastatin, methylergonovine, methylprednisolone, midazolam, mifepristone, nicardipine, nisoldipine, olaparib, palbociclib, phenobarbital, phenytoin, pimozide, ponatinib, posaconazole, propafenone, quinidine, rifampin, ritonavir, ruxolitinib, salmeterol, sildenafil, simvastatin, sirolimus, St John's wort, tacrolimus, tadalafil, telithromycin, tenofovir disoproxil, trazodone, triazolam, vardenafil, venetoclax, verapamil, vorapaxar, voriconazole, warfarin, zolpidem
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Must be used in combination with PEG-interferon alfa and ribavirin (see separate entries).
Warning: SERIOUS SKIN REACTIONS

Skin
Cutaneous toxicity / skin toxicity [2]
Dermatitis [2]
DRESS syndrome [7]
Exanthems [6]
Pruritus (itching) (including anal pruritus) (53%) [14]
Rash (56%) [38]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]

Central Nervous System
Dysgeusia (taste perversion) (10%)

Gastrointestinal/Hepatic
Anorectal discomfort (11%)
Diarrhea (26%) [2]

Hemorrhoids (12%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (39%) [4]
Vomiting (13%)

Hematologic
Anemia [36]
Neutropenia (neutrophils decreased) [6]
Thrombocytopenia [6]

Neuromuscular/Skeletal
Asthenia / fatigue (56%) [4]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]

Other
Adverse effects / adverse reactions [19]
Infection [4]

TELAVANCIN

Trade name: Vibativ (Astellas)
Indications: Complicated skin and skin structure infections (cSSSI)
Class: Antibiotic, Antibiotic; lipoglycopeptide, Antimicrobial
Half-life: 7–10 hours
Clinically important, potentially hazardous interactions with: alfuzosin, artemether/lumefantrine, BCG vaccine, chloroquine, ciprofloxacin, dronedarone, gadobutrol, indacaterol, nilotinib, pimozide, QT prolonging agents, quetiapine, quinine, tetrabenazine, thioridazine, toremifene, typhoid vaccine, vandetanib, vemurafenib, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with known hypersensitivity to vancomycin.
Warning: FETAL RISK

Skin
Pruritus (itching) (6%) [3]
Rash (4%) [3]

Cardiovascular
Hypotension [2]
QT interval prolonged / QT prolongation [2]

Central Nervous System
Dysgeusia (taste perversion) (33%) [10]
Headache [5]
Insomnia [5]
Rigors (4%)
Vertigo / dizziness (6%)

Endocrine/Metabolic
Appetite decreased (3%)
Hypokalemia [5]
Serum creatinine increased [6]

Gastrointestinal/Hepatic
Abdominal pain (2%)
Constipation [4]
Diarrhea (7%) [3]
Nausea (27%) [13]
Vomiting (14%) [10]

Genitourinary
Hematuria [2]

Hematologic
Anemia [4]

Local
Infusion-related reactions [2]
Infusion-site erythema (3%)
Infusion-site pain (4%)

Renal
Foamy urine (13%) [4]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [9]
Renal failure [4]
Renal function abnormal / renal dysfunction [2]

Other
Adverse effects / adverse reactions [6]

TELBIVUDINE

Trade names: Sebvio (Novartis), Tyzeka (Novartis)
Indications: Hepatitis B (chronic)
Class: Nucleoside analog reverse transcriptase inhibitor
Half-life: ~15 hours
Clinically important, potentially hazardous interactions with: interferon alfa, PEG-interferon
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Skin
Pruritus (itching) (2%)
Rash (4%)

Cardiovascular
Arrhythmias [2]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (4%)
Headache (11%)
Insomnia (3%)
Neurotoxicity [2]
Peripheral neuropathy [2]
Vertigo / dizziness (4%)

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [2]
ALT increased (3%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [5]

Gastrointestinal/Hepatic
Abdominal distension (3%)
Abdominal pain (12%)
Diarrhea [2]
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Hepatitis (exacerbation) (2%)

Hematologic
Neutropenia (neutrophils decreased) (2%)

Neuromuscular/Skeletal
Arthralgia (4%)
Asthenia / fatigue (>5%) [2]
Back pain (4%)
Myalgia/Myopathy (3%) [9]

Respiratory
Cough (7%)
Influenza- ('flu)-like syndrome (7%)
Pharyngolaryngeal pain (5%)
Upper respiratory tract infection (>5%)

TELITHROMYCIN

Trade name: Ketek (Sanofi-Aventis)
Indications: Community-acquired pneumonia, chronic bronchitis
Class: Antibiotic, Antibiotic; macrolide, Antimicrobial, CYP3A4 inhibitor
Half-life: 10–13 hours
Clinically important, potentially hazardous interactions with: abiraterone, alfentanil, alfuzosin, almotriptan, alosetron, antifungals, antineoplastics, aprepitant, artemether/lumefantrine, atazanavir, atorvastatin, avanafil, BCG vaccine, benzodiazepines, bortezomib, brinzolamide, buspirone, cabazitaxel, cabozantinib, calcifediol, calcium channel blockers, carbamazepine, cardiac glycosides, ceritinib, chloroquine, ciclesonide, cilostazol, ciprofloxacin, cisapride, clopidogrel, clozapine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, conivaptan, corticosteroids, crizotinib, cyclosporine, CYP3A4 inhibitors or inducers, CYP3A4 substrates, deferasirox, dienogest, digoxin, dihydroergotamine, disopyramide, dronedarone, dutasteride, eletriptan, eplerenone, ergot derivatives, ergotamine, eszopiclone, etravirine, everolimus, fentanyl, fesoterodine, flibanserin, fluticasone propionate, fosamprenavir, gadobutrol, guanfacine, halofantrine, hexobarbital, HMG-CoA reductase inhibitors, ibrutinib, indinavir, itraconazole, ivabradine, ixabepilone, ketoconazole, lapatinib, lomitapide, lopinavir, lovastatin, maraviroc, methylprednisolone, methysergide, metoprolol, midazolam, mifepristone, mometasone, nelfinavir, nilotinib, nisoldipine, olaparib, oral typhoid vaccines, osimertinib, oxycodone, paclitaxel, palbociclib, paricalcitol, pazopanib, phenobarbital, phenytoin, phosphodiesterase 5 inhibitors, pimecrolimus, pimozide, ponatinib, prasugrel, pravastatin, primidone, QT prolonging agents, quinidine, quinine, ranolazine, regorafenib, repaglinide, rifampin, rifamycin derivatives, rimonabant, ritonavir, rivaroxaban, romidepsin, ruxolitinib, salmeterol, saquinavir, saxagliptin, sildenafil, silodosin, simeprevir, simvastatin, sirolimus, sonidegib, sorafenib, SSRIs, St John's wort, sunitinib, tacrolimus, tadalafil, tamsulosin, telaprevir, temsirolimus, tetrabenazine, tezacaftor/ivacaftor, thioridazine, ticagrelor, tipranavir, tolvaptan, triazolam, ulipristal, vemurafenib, verapamil, vitamin K antagonists, vorapaxar, warfarin, ziprasidone
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: CONTRA-INDICATION IN MYASTHENIA GRAVIS

Skin
Candidiasis / candidosis (<2%)
Hypersensitivity (<2%)
Jaundice [2]
Rash (<2%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) (<2%)

Mucosal
Glossitis (inflammation of the tongue) (<2%)
Oral candidiasis (<2%)

Stomatitis (oral mucositis) (<2%)
Xerostomia (dry mouth) (<2%)

Cardiovascular
QT interval prolonged / QT prolongation [2]

Central Nervous System
Anorexia (<2%)
Dysgeusia (taste perversion) (2%)
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (6%) [3]
Insomnia (<2%)
Somnolence (drowsiness) (<2%)
Tremor (<2%)
Vertigo / dizziness (2–6%) [2]

Endocrine/Metabolic
ALT increased (<2%)
AST increased (<2%)

Gastrointestinal/Hepatic
Abdominal distension (<2%)
Abdominal pain (<2%) [2]
Ascites [2]
Constipation (<2%)
Diarrhea (11%)
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Flatulence (<2%)
Gastritis / pangastritis / gastric irritation (<2%)
Gastroenteritis (<2%)
Hepatitis (<2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [12]
Loose stools / soft feces (2%)
Nausea (7%)
Vomiting (3%)

Genitourinary
Vaginitis (includes vulvitis) (<2%)
Vulvovaginal candidiasis (<2%)

Hematologic
Platelets increased (<2%)

Neuromuscular/Skeletal
Asthenia / fatigue (<2%)
Myasthenia gravis (exacerbation) [7]

Ocular
Accommodation disorder [3]
Diplopia (double vision) (<2%) [2]
Vision blurred (<2%)
Visual disturbances (<2%) [2]

Other
Adverse effects / adverse reactions [2]
Death [4]
Tooth pigmentation / discoloration (<2%)

TELMISARTAN

Trade name: Micardis (Boehringer Ingelheim)
Indications: Hypertension
Class: Angiotensin receptor antagonist (blocker), Antihypertensive
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: ramipril
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: FETAL TOXICITY

Skin
Angioedema [5]
Peripheral edema (see also edema) [2]

Cardiovascular
Hypotension [2]

Central Nervous System
Headache [6]
Vertigo / dizziness [6]

Endocrine/Metabolic
Hyperkalemia [2]

Gastrointestinal/Hepatic
Enteropathy [3]

Neuromuscular/Skeletal
Asthenia / fatigue [4]

Respiratory
Cough [9]

TEMAZEPAM

Trade name: Restoril (Mallinckrodt)
Indications: Insomnia, anxiety
Class: Benzodiazepine
Half-life: 8–15 hours
Clinically important, potentially hazardous interactions with: amprenavir, chlorpheniramine, clarithromycin, efavirenz, esomeprazole, imatinib, mianserin, nelfinavir
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Dermatitis (<10%)
Diaphoresis (see also hyperhidrosis) (>10%)
Rash (>10%)

Mucosal
Sialopenia (>10%)
Sialorrhea (ptyalism; hypersalivation) (<10%)
Xerostomia (dry mouth) (2%)

Other
Adverse effects / adverse reactions [2]

TEMOZOLOMIDE

Trade name: Temodar (MSD)
Indications: Anaplastic astrocytoma, newly diagnosed glioblastoma multiforme concomitantly with radiotherapy and then as maintenance treatment
Class: Alkylating agent, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 1.8 hours
Clinically important, potentially hazardous interactions with: clozapine, digoxin, valproic acid
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Cutaneous toxicity / skin toxicity [3]
Peripheral edema (see also edema) (11%)
Pruritus (itching) (8%)
Rash (8%) [8]

Hair
Alopecia / hair loss [3]

Mucosal
Mucositis [2]

Cardiovascular
Thromboembolism [2]
Venous thromboembolism [2]

Central Nervous System
Anorexia [3]
Cerebral hemorrhage [2]
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache [3]
Paresthesias (9%)

Endocrine/Metabolic
Mastodynia (6%)

Gastrointestinal/Hepatic
Constipation [2]
Diarrhea [8]
Gastrointestinal perforation / perforated colon / gastric perforation [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [6]
Nausea [11]
Vomiting [4]

Hematologic
Anemia [3]
Aplastic anemia [11]
Febrile neutropenia [2]
Hemotoxicity [6]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [6]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [8]
Myelosuppression / bone marrow suppression / myelotoxicity [3]
Neutropenia (neutrophils decreased) [12]
Thrombocytopenia [13]

Neuromuscular/Skeletal
Asthenia / fatigue [15]
Myalgia/Myopathy (5%)

Other
Adverse effects / adverse reactions [2]
Death [8]
Infection [5]

TEMSIROLIMUS

Trade name: Torisel (Wyeth)
Indications: Renal cell carcinoma, other cancers
Class: Analog of sirolimus, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), mTOR inhibitor
Half-life: 17 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, atazanavir, BCG vaccine, benazepril, captopril, carbamazepine, clarithromycin, clozapine, conivaptan, cyclosporine, darunavir, dasatinib, denosumab, dexamethasone, digoxin, enalapril, fluconazole, fosinopril, grapefruit juice, hypoglycemic agents, indinavir, itraconazole, ketoconazole, leflunomide, lisinopril, live and inactive vaccines, macolide antibiotics, natalizumab, nefazodone, nelfinavir, P-glycoprotein inhibitors, phenobarbital, phenytoin, pimecrolimus, posaconazole, protease inhibitors, quinapril, ramipril, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, St John's wort, sunitinib, tacrolimus, telithromycin, tipranavir, trastuzumab, voriconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with bilirubin >1.5xULN.

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (10%) [4]
Cutaneous toxicity / skin toxicity [4]
Edema / fluid retention (see also peripheral edema) [2]
Exanthems [3]
Hypersensitivity (9%) [3]
Pruritus (itching) (19%) [3]
Rash (47%) [14]
Xerosis / xeroderma (see also dry skin) (11%)

Nails
Nail disorder (14%)
Paronychia [2]

Mucosal
Mucositis (30%) [12]
Stomatitis (oral mucositis) [19]

Cardiovascular
Chest pain (16%)
Hypertension (7%) [3]

Central Nervous System
Anorexia (30%) [4]
Chills (8%)
Depression (4%)
Dysgeusia (taste perversion) (20%) [2]
Fever (pyrexia) (includes hyperpyrexia) (24%)
Headache (15%)
Insomnia (12%) [2]
Neurotoxicity [2]
Pain (28%)

Endocrine/Metabolic
ALT increased [4]
AST increased [2]
Dehydration [2]
Hypercholesterolemia [4]
Hyperglycemia (includes glucose increased) [14]
Hyperlipidemia [2]
Hypertriglyceridemia (includes triglycerides increased) [5]
Hypokalemia [3]
Hypophosphatemia [4]
Serum creatinine increased [2]

Gastrointestinal/Hepatic
Abdominal pain (21%)
Diarrhea [7]
Nausea [8]
Vomiting [3]

Genitourinary
Urinary tract infection (15%)

Hematologic
Anemia [10]
Febrile neutropenia [3]
Hemorrhage [2]
Hemotoxicity [3]
Immunosupression [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [5]
Neutropenia (neutrophils decreased) [5]
Thrombocytopenia [17]

Neuromuscular/Skeletal
Arthralgia (18%)
Asthenia / fatigue (30%) [22]
Back pain (20%)
Myalgia/Myopathy (8%)

Ocular
Conjunctivitis (conjunctival inflammation) (7%)

Respiratory
Cough (26%) [3]
Dyspnea / shortness of breath [7]
Pharyngitis (sore throat) (12%)
Pneumonia [2]
Pneumonitis (36%) [11]
Rhinitis (10%)
Upper respiratory tract infection (7%)

Other
Adverse effects / adverse reactions [10]
Death [2]
Infection (20%) [5]

TENIPOSIDE

Trade name: Vumon (Bristol-Myers Squibb)
Indications: Acute lymphocytic leukemia, non-Hodgkin's lymphoma, small cell lung cancer
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Topoisomerase 2 inhibitor
Half-life: 45 minutes
Clinically important, potentially hazardous interactions with: phenobarbital, phenytoin, propranolol
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [3]
Hypersensitivity (2–11%) [4]

Hair
Alopecia / hair loss (31%) [6]

Mucosal
Stomatitis (oral mucositis) (3%)

Cardiovascular
Hypertension [2]
Hypotension [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (2%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (2%)

Other
Allergic reactions (5–15%) [2]
Death [3]

TENOFOVIR ALAFENAMIDE

Trade names: Descovy (Gilead), Vemlidy (Gilead)
Indications: Hepatitis B
Class: Antiviral, Hepatitis B virus necleoside analog reverse transcriptase inhibitor
Half-life: <1 hour
Clinically important, potentially hazardous interactions with: carbamazepine, oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, St John's wort
Pregnancy category: N/A (No available data to inform drug-associated risk)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Descovy is tenofovir alafenamide and emtricitabine. See also separate profile for tenofovir alafenamide in combination with cobicistat, elvitegravir and emtricitabine.
Warning: LACTIC ACIDOSIS/SEVERE HEPATOMEGALY WITH STEATOSIS and POST TREATMENT SEVERE ACUTE EXACERBATION OF HEPATITIS B

Central Nervous System
Headache (9%) [5]

Endocrine/Metabolic
ALT increased (8%) [2]
AST increased (3%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (3%)
Hyperamylasemia (3%)
Hypercholesterolemia (4%)

Gastrointestinal/Hepatic
Abdominal pain (7%)
Nausea (5%)

Genitourinary
Glycosuria (5%)

Neuromuscular/Skeletal
Asthenia / fatigue (6%)
Back pain (5%)

Respiratory
Cough (6%)
Nasopharyngitis [4]
Upper respiratory tract infection [4]

Other
Adverse effects / adverse reactions [3]

TENOFOVIR DISOPROXIL

Trade names: Atripla (Gilead), Complera (Gilead), Truvada (Gilead), Viread (Gilead)
Indications: HIV infection in combination with at least two other antiretroviral agents
Class: Antiretroviral, Covid-19 putative drug, Nucleoside analog reverse transcriptase inhibitor
Half-life: 12–18 hours
Clinically important, potentially hazardous interactions with: acyclovir, adefovir, atazanavir, cidofovir, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, darunavir, didanosine, ganciclovir, high-fat foods, indinavir, ledipasvir & sofosbuvir, lopinavir, protease inhibitors, ritonavir, telaprevir, tipranavir, trospium, valacyclovir, valganciclovir
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Atripla is tenofovir disoproxil, efavirenz and emtricitabine; Complera is tenofovir disoproxil, emtricitabine and rilpivirine; Truvada is tenofovir disoproxil and emtricitabine. See also separate profile for tenofovir disoproxil in combination with cobicistat, elvitegravir and emtricitabine.
Warning: LACTIC ACIDOSIS/SEVERE HEPATOMEGALY WITH STEATOSIS and POST TREATMENT EXACERBATION OF HEPATITIS

Skin
Diaphoresis (see also hyperhidrosis) (3%)

DRESS syndrome [2]
Lichenoid eruption / lichenoid reaction [2]
Rash (5–18%) [5]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]

Cardiovascular
Chest pain (3%)

Central Nervous System
Abnormal dreams [3]
Anorexia (3%)
Anxiety (6%) [2]
Depression (4–11%)
Fever (pyrexia) (includes hyperpyrexia) (2–8%)
Headache (5–14%) [11]
Insomnia (3–5%) [2]
Neurotoxicity (3%) [6]
Pain (7–13%)
Peripheral neuropathy (<3%)
Somnolence (drowsiness) [2]
Vertigo / dizziness (<3%) [4]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [3]
ALT increased [3]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [3]
Hypokalemia [2]
Hypophosphatemia [4]
Weight loss (2%)

Gastrointestinal/Hepatic
Abdominal pain (4–7%) [2]
Diarrhea (11%) [7]
Dyspepsia / functional dyspepsia / gastroparesis (3–4%)
Flatulence (3%)
Hepatic failure [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea (8%) [10]
Pancreatitis / acute pancreatitis [5]
Vomiting (4–5%) [6]

Neuromuscular/Skeletal
Arthralgia (5%)
Asthenia / fatigue (6–7%) [6]
Back pain (3–9%)
Bone or joint pain [5]
Fractures [2]
Myalgia/Myopathy (3%) [2]
Osteomalacia [6]

Renal
Fanconi syndrome [28]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [42]
Proteinuria [4]
Renal failure [10]
Renal tubular acidosis [2]
Renal tubular necrosis [2]

Respiratory
Nasopharyngitis [3]
Pneumonia (2–5%)
Upper respiratory tract infection [2]

Other
Adverse effects / adverse reactions [11]

TENOXICAM

Trade name: Mobiflex (Roche)
Indications: Osteoarthritis, rheumatoid arthritis, ankylosing spondylitits and hyperuricemia
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 72 hours
Clinically important, potentially hazardous interactions with: cyclosporine, lithium, methotrexate, mifepristone, NSAIDs, quinolones, salicylates
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]

TERAZOSIN

Trade name: Hytrin (AbbVie)
Indications: Hypertension, benign prostatic hypertrophy
Class: Adrenergic alpha-receptor antagonist
Half-life: 12 hours
Clinically important, potentially hazardous interactions with: vardenafil
Pregnancy category: C

Skin
Edema / fluid retention (see also peripheral edema) (<10%)
Lichenoid eruption / lichenoid reaction [2]
Peripheral edema (see also edema) (6%)

Mucosal
Xerostomia (dry mouth) (<10%)

Cardiovascular
Postural hypotension [2]

Central Nervous System
Paresthesias (3%)
Vertigo / dizziness [3]

Genitourinary
Priapism [2]

Ocular
Floppy iris syndrome [2]

TERBINAFINE

Trade name: Lamisil (Novartis)
Indications: Fungal infections of the skin and nails
Class: Antifungal / antimycotic, Antimicrobial
Half-life: ~36 hours
Clinically important, potentially hazardous interactions with: amitriptyline, amphotericin B, atomoxetine, caffeine, carbamazepine, cimetidine, codeine, conivaptan, cyclosporine, CYP2D6 substrates, desipramine, estrogens, fesoterodine, fluconazole, nebivolol, progestogens, rifampin, rifapentine, saxagliptin, tamoxifen, tamsulosin, tetrabenazine, thioridazine, tramadol, tricyclic antidepressants
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
AGEP [28]
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
Dermatitis (<10%)
Eczema / eczematous reaction / eczematous eruption [2]
Erythema multiforme [9]
Erythroderma [2]
Exanthems [5]
Fixed eruption [3]
Hypersensitivity [3]
Lichenoid eruption / lichenoid reaction [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [30]
Pityriasis rosea [3]
Pruritus (itching) (3%) [6]
Psoriasis [15]
Pustules / pustular eruption [3]
Rash (6%) [3]
Rowell syndrome / Rowell's syndrome [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [7]
Urticaria / hives [7]

Hair
Alopecia / hair loss (<10%)

Nails
Onychocryptosis (ingrowing toe nail) [2]

Central Nervous System
Ageusia (taste loss) / taste disorder [17]
Dysgeusia (taste perversion) (3%) [8]
Headache (13%)

Gastrointestinal/Hepatic
Abdominal pain (2%)
Diarrhea (6%)
Dyspepsia / functional dyspepsia / gastroparesis (4%)
Flatulence (2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [13]
Nausea (3%)

Other
Adverse effects / adverse reactions [3]
Allergic reactions (<10%)
Side effects (3%)

TERBUTALINE

Trade names: Brethine (aaiPharma), Bricanyl (AstraZeneca)
Indications: Bronchospasm
Class: Beta-2 adrenergic agonist, Bronchodilator, Tocolytic
Half-life: 11–16 hours
Clinically important, potentially hazardous interactions with: alpha blockers, atomoxetine, beta blockers, betahistine, cannabinoids, epinephrine, insulin aspart, insulin degludec, insulin detemir, insulin glargine, insulin glulisine, iobenguane, loop diuretics, MAO inhibitors, propranolol, sotalol, sympathomimetics, tricyclic antidepressants, yohimbine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: PROLONGED TOCOLYSIS

Skin
Diaphoresis (see also hyperhidrosis) (<10%)

Mucosal
Xerostomia (dry mouth) (<10%)

Cardiovascular
Arrhythmias [2]
Central Nervous System
Dysgeusia (taste perversion) (<10%)
Tremor [2]
Gastrointestinal/Hepatic
Nausea [2]
Other
Side effects [2]

TERCONAZOLE

Trade name: Terazol (Ortho-McNeil)
Indications: Vulvovaginal candidiasis
Class: Antifungal / antimycotic, Antifungal; triazole, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Pruritus (itching) (2%)
Central Nervous System
Chills [2]
Genitourinary
Vulvovaginal burning (<10%)
Hematologic
Leukocytosis (elevated white blood cell (WBC) count) [2]
Respiratory
Influenza- ('flu)-like syndrome [2]

TERFENADINE

Class: Histamine H1 receptor antagonist
Half-life: 16–22 hours
Clinically important, potentially hazardous interactions with: amisulpride, aprepitant, artemether/lumefantrine, astemizole, darunavir, dasatinib, delavirdine, devil's claw, erythromycin, grapefruit juice, itraconazole, nilotinib, quinine, roxithromycin, sertindole, troglitazone, troleandomycin
Pregnancy category: C
Note: This drug has been withdrawn.

Skin
Photosensitivity [3]
Psoriasis (exacerbation) [2]
Hair
Alopecia / hair loss [3]
Mucosal
Xerostomia (dry mouth) (<10%)
Cardiovascular
QT interval prolonged / QT prolongation [3]
Torsades de pointes [4]

TERIFLUNOMIDE

Trade name: Aubagio (Sanofi-Aventis)
Indications: Relapsing forms of multiple sclerosis
Class: Pyrimidine synthesis inhibitor
Half-life: N/A
Clinically important, potentially hazardous interactions with: alosetron, caffeine, duloxetine, ethinylestradiol, leflunomide, live vaccines, oral contraceptives, paclitaxel, pioglitazone, repaglinide, rosiglitazone, theophylline, tizanidine, warfarin
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: HEPATOTOXICITY and RISK OF TERATOGENICITY

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<3%)
Burning / skin burning sensation (2–3%)
Herpes (oral) (2–4%)
Pruritus (itching) (3–4%)
Hair
Alopecia / hair loss (10–13%) [17]
Nails
Nail loss [2]
Cardiovascular
Hypertension (4%) [3]
Palpitation (2–3%)
Central Nervous System
Anxiety (3–4%)
Carpal tunnel syndrome (<3%)
Headache (19–22%) [4]
Paresthesias (9–10%) [3]
Peripheral neuropathy (<2%) [2]
Endocrine/Metabolic
ALT increased (12–14%) [12]
AST increased (2–3%)
GGT increased (3–5%)
Hypophosphatemia (mild) (18%)
Weight loss (2–3%)
Gastrointestinal/Hepatic
Abdominal distension (<2%)
Abdominal pain (5–6%)
Diarrhea (15–18%) [11]
Gastroenteritis (2–4%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (9–14%) [9]
Genitourinary
Cystitis (2–4%)
Hematologic
Immunosupression (10–15%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<2%) [2]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [3]
Neutropenia (neutrophils decreased) (2–4%) [5]
Neuromuscular/Skeletal
Asthenia / fatigue [2]
Back pain (<3%) [2]
Bone or joint pain (4–5%)
Myalgia/Myopathy (3–4%)
Ocular
Conjunctivitis (conjunctival inflammation) (<3%)
Vision blurred (3%)
Renal
Renal failure [2]
Respiratory
Bronchitis (5–8%)
Influenza (9–12%) [2]
Nasopharyngitis [2]
Sinusitis (4–6%)
Upper respiratory tract infection (9%)
Other
Adverse effects / adverse reactions [4]
Allergic reactions (2–3%)
Infection [5]
Side effects [2]
Toothache (odontalgia) (4%)

TERIPARATIDE

Trade name: Forteo (Lilly)
Indications: Osteoporosis in postmenopausal women and men at increased risk of fractures
Class: Parathyroid hormone analog
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: alcohol, digoxin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: POTENTIAL RISK OF OSTEOSARCOMA

Skin
Diaphoresis (see also hyperhidrosis) (2%)
Herpes zoster (3%)
Rash (5%)
Cardiovascular
Angina (3%)
Hypertension (7%)
Central Nervous System
Anxiety (4%)
Depression (4%)
Dysgeusia (taste perversion) (<2%)
Headache (8%) [10]
Insomnia (4–5%)
Pain (21%)
Paresthesias (<2%)
Syncope / fainting (3%)
Vertigo / dizziness (4–8%) [7]
Endocrine/Metabolic
Hypercalcemia [6]
Gastrointestinal/Hepatic
Constipation (5%)
Diarrhea (5%)
Dyspepsia / functional dyspepsia / gastroparesis (5%)
Gastritis / pangastritis / gastric irritation (2–7%)
Nausea (9–14%) [10]
Vomiting (3%) [3]
Local
Injection-site pain (<2%)
Neuromuscular/Skeletal
Arthralgia (10%) [3]
Asthenia / fatigue (9%)
Bone tumor [2]
Leg cramps (3%) [4]
Myalgia/Myopathy [2]
Neck pain (3%)
Pain in extremities [3]
Respiratory
Cough (6%)
Dyspnea / shortness of breath (4–6%)
Pharyngitis (sore throat) (6%)
Pneumonia (4–6%)
Rhinitis (10%)
Other
Adverse effects / adverse reactions [5]
Tooth disorder (2%)

TERLIPRESSIN

Trade names: Glypressin (IS Pharma), Terlipressin (Ferring) (Bissendorf Peptide)
Indications: Esophageal variceal hemorrhage
Class: Vasopressin agonist
Half-life: 50–70 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Contra-indicated in pregnancy)

Skin
Gangrene [2]
Necrosis (skin necrosis) [15]
Cardiovascular
Hypertension [2]
Myocardial infarction [3]
Peripheral ischemia [3]
QT interval prolonged / QT prolongation [2]
Torsades de pointes [2]
Central Nervous System
Seizures [3]
Endocrine/Metabolic
Hyponatremia [9]
Neuromuscular/Skeletal
Rhabdomyolysis [3]
Other
Adverse effects / adverse reactions [2]

TESTOSTERONE

Trade names: Androderm (Actavis), AndroGel (AbbVie), Delatestryl (Endo), Fortesta (Endo), Natesto (Endo), Testim (Auxilium)
Indications: Androgen replacement, hypogonadism, postpartum breast pain
Class: Androgen
Half-life: 10–100 minutes
Clinically important, potentially hazardous interactions with: acarbose, anisindione, anticoagulants, cyclosporine, dicumarol, metformin, saxagliptin, sitagliptin, warfarin
Pregnancy category: N/A (Contra-indicated in pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in men with carcinoma of the breast or known or suspected carcinoma of the prostate.
Warning: SECONDARY EXPOSURE TO TESTOSTERONE

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (>10%) [20]
Carcinoma [2]
Dermatitis (4%) [2]
Edema / fluid retention (see also peripheral edema) (<10%)
Flushing / rubefaction (<10%)
Rash (2%)
Hair
Alopecia / hair loss [3]
Hirsutism (<10%) [12]
Cardiovascular
Cardiotoxicity [2]
Myocardial infarction [3]
Endocrine/Metabolic
Gynecomastia [2]
Mastodynia (>10%)
Genitourinary
Priapism (>10%) [10]
Hematologic
Thrombosis [4]
Local
Application-site bullae (12%)
Application-site burning (3%)
Application-site erythema (7%)
Application-site induration (3%)
Application-site pruritus (37%)
Application-site vesicles (6%)
Injection-site pain [2]
Other
Adverse effects / adverse reactions [3]

TETRABENAZINE

Trade names: Nitoman (aaiPharma), Xenazine (Alliance)
Indications: Hyperkinetic movement disorders: Huntington's chorea, hemiballismus, senile chorea, Tourette syndrome, and tardive dyskinesia
Class: Vesicular monoamine transporter 2 inhibitor
Half-life: 2–8 hours
Clinically important, potentially hazardous interactions with: alcohol, amantadine, amiodarone, amitriptyline, amoxapine, antiarrhythmics, antibiotics, antipsychotics, arsenic, chlorpromazine, cinacalcet, citalopram, cyclic antidepressants, dasatinib, degarelix, delavirdine, deutetrabenazine, dolasetron, haloperidol, lapatinib, levodopa, levofloxacin, levomepromazine, linezolid, lithium, lurasidone, MAO inhibitors, metoclopramide, moxifloxacin, olanzapine, paliperidone, paroxetine hydrochloride, pazopanib, procainamide, QT prolonging drugs, quinidine, reserpine, risperidone, sotalol, telavancin, telithromycin, terbinafine, thioridazine, tipranavir, voriconazole, vorinostat, ziprasidone, zuclopenthixol
Pregnancy category: N/A (Based on animal data, may cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: DEPRESSION AND SUICIDALITY

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (6%)
Central Nervous System
Akathisia (19%) [9]
Anxiety (15%) [7]
Balance disorder (9%)
Bradykinesia (9%)
Compulsions / obsessive-compulsive symptoms (4%)
Confusion (2%)
Depression (19%) [16]
Dysarthria (4%)
Extrapyramidal symptoms (15%)
Gait instability / postural instability (4%)
Headache (4%)
Insomnia (11%) [5]
Irritability (9%)
Memory loss/memory impaired (2%)
Nervousness (10%) [2]
Neuroleptic malignant syndrome [5]
Parkinsonism (9%) [21]
Sedation (31%) [3]
Somnolence (drowsiness) (31%) [14]
Suicidal ideation [4]
Tremor (3%)
Vertigo / dizziness (4%)
Endocrine/Metabolic
Appetite decreased (4%)
Hyperprolactinemia [2]
Gastrointestinal/Hepatic
Nausea (13%) [2]
Vomiting (6%)
Genitourinary
Dysuria (4%)
Neuromuscular/Skeletal
Asthenia / fatigue (22%) [3]
Dystonia (3%)
Respiratory
Bronchitis (4%)
Dyspnea / shortness of breath (4%)
Upper respiratory tract infection (11%)

TETRACYCLINE

Trade names: Helidac (Prometheus), Sumycin (Par)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; tetracycline, Antimicrobial
Half-life: 6–11 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, acitretin, aluminum, amoxicillin, ampicillin, antacids, atovaquone, atovaquone/proguanil, bacampicillin, betamethasone, bismuth, bromelain, calcium salts, carbenicillin, cholestyramine, cloxacillin, colestipol, corticosteroids, coumarins, dairy products, dicloxacillin, didanosine, digoxin, ergotamine, food, gliclazide, isotretinoin, kaolin, methicillin, methotrexate, methoxyflurane, methysergide, mezlocillin, nafcillin, oral iron, oral typhoid vaccine, oxacillin, penicillins, phenindione, piperacillin, quinapril, retinoids, rocuronium, sodium picosulfate, strontium ranelate, sucralfate, sulfonylureas, ticarcillin, tripotassium dicitratobismuthate, vitamin A, zinc
Pregnancy category: D

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [2]
Angioedema [2]
Candidiasis / candidosis [2]
Erythema multiforme [7]
Exanthems [3]
Exfoliative dermatitis [2]
Fixed eruption (15%) [43]
Hypersensitivity [2]
Jarisch–Herxheimer reaction [3]
Lichenoid eruption / lichenoid reaction [3]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [6]
Photosensitivity (<10%) [12]
Phototoxicity [4]
Pigmentation [4]
Psoriasis (exacerbation) [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [15]
Urticaria / hives [5]
Nails
Onycholysis [5]
Photo-onycholysis [10]

Central Nervous System
Pseudotumor cerebri (see also intracranial hypertension) [6]
Gastrointestinal/Hepatic
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Pancreatitis / acute pancreatitis [3]
Genitourinary
Vaginitis (includes vulvitis) [3]
Other
Adverse effects / adverse reactions [4]
Tooth pigmentation / discoloration (>10%) [14]

TETRAZEPAM

Indications: Alcohol withdrawal, anxiety disorders, convulsive disorders
Class: Anticonvulsant, Anxiolytic, Benzodiazepine, Hypnotic, Skeletal muscle relaxant
Half-life: 18–26 hours
Clinically important, potentially hazardous interactions with: cisipride, clozapine
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Contact dermatitis [4]
Dermatitis [4]
Erythema multiforme [2]
Exanthems [2]
Phototoxicity [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
Other
Adverse effects / adverse reactions [2]

THALIDOMIDE

Trade name: Thalomid (Celgene)
Indications: Graft-versus-host reactions, recalcitrant aphthous stomatitis
Class: Covid-19 putative drug, Immunosuppressant, TNF modulator
Half-life: 5–7 hours
Clinically important, potentially hazardous interactions with: alcohol, amiodarone, antihistamines, antipsychotics, bortezomib, calcium channel blockers, carbamazepine, cimetidine, cisplatin, CNS depressants, digoxin, disulfiram, docetaxel, famotidine, griseofulvin, lithium, metronidazole, modafinil, opioids, paclitaxel, penicillins, phenytoin, rifabutin, rifampin, St John's wort, succinylcholine, vincristine
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Thalidomide is a potent teratogen, an agent that causes congenital malformations and developmental abnormalities if introduced during gestation. Some of these teratogenic side effects of thalidomide include fetal limb growth retardation (arms, legs, hands, feet), ingrown genitalia, absence of lung, partial/total loss of hearing or sight, malformed digestive tract, heart, kidney, and stillborn infant.

Warning: FETAL RISK AND VENOUS THROMBOEMBOLIC EVENTS

Skin
Bullous dermatosis (5%)
Dermatitis [2]
Diaphoresis (see also hyperhidrosis) (13%)
Edema / fluid retention (see also peripheral edema) (57%) [11]
Erythema [2]
Erythema nodosum [2]
Erythroderma [2]
Exanthems [2]
Exfoliative dermatitis [4]
Facial erythema (<5%) [2]
Hypersensitivity [3]
Peripheral edema (see also edema) (3–8%) [4]
Pruritus (itching) (3–8%) [3]
Psoriasis [2]
Purpura [2]
Rash (11–50%) [28]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [7]
Urticaria / hives (3%) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Xerosis / xeroderma (see also dry skin) (21%) [5]
Mucosal
Oral candidiasis (4–11%)
Xerostomia (dry mouth) (8%) [10]
Cardiovascular
Bradycardia / sinus bradycardia [5]
Cardiotoxicity [2]
Hypotension (16%)
Thromboembolism [2]
Venous thromboembolism [5]
Central Nervous System
Agitation (9–26%)
Fever (pyrexia) (includes hyperpyrexia) (19–23%) [2]
Headache [2]
Hyperesthesia [2]
Insomnia (9%)
Neurotoxicity (22%) [24]
Paresthesias (6–16%) [9]
Parkinsonism [2]
Peripheral neuropathy [31]
Somnolence (drowsiness) (36%) [16]
Tremor (4–26%) [6]
Vertigo / dizziness (4–20%) [18]
Endocrine/Metabolic
Amenorrhea [6]
Gynecomastia [2]
Weight gain (22%)
Weight loss (23%)
Gastrointestinal/Hepatic
Abdominal pain (3%)
Constipation [16]
Diarrhea (4–19%)
Flatulence (8%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Pancreatitis / acute pancreatitis [2]
Genitourinary
Erectile dysfunction [2]
Impotence (38%)
Leukorrhea (17–35%)
Hematologic
Anemia (6–13%) [5]
Neutropenia (neutrophils decreased) (31%) [9]
Thrombocytopenia [6]
Thrombosis [13]
Neuromuscular/Skeletal
Arthralgia (13%)
Asthenia / fatigue (79%) [18]
Myalgia/Myopathy (7%)
Respiratory
Dyspnea / shortness of breath (42%)
Pharyngitis (sore throat) (4–8%)
Pneumonia [2]
Rhinitis (4%)
Sinusitis (3–8%)
Other
Adverse effects / adverse reactions [9]
Death [2]
Infection (6–8%) [6]
Teratogenicity [6]
Toothache (odontalgia) (4%)

THALLIUM

Indications: For diagnostic use in myocardial perfusion imaging
Class: Radioactive element
Half-life: 73.1 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Hair
Alopecia / hair loss [11]
Nails
Leukonychia striata (Mees' lines) [2]
Cardiovascular
Tachycardia [3]
Central Nervous System
Encephalopathy (includes hepatic encephalopathy) [5]
Peripheral neuropathy [5]
Gastrointestinal/Hepatic
Abdominal pain [5]
Other
Death [2]

THIABENDAZOLE

Synonym: tiabendazole
Indications: Various infections caused by susceptible helminths
Class: Anthelmintic, Antifungal / antimycotic, Antifungal; imidazole, Antimicrobial
Half-life: 1.2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Dermatitis [3]
Erythema multiforme [3]
Exanthems (>5%) [4]
Fixed eruption [2]
Rash (<10%)
Sjögren's syndrome [3]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives (<5%)
Central Nervous System
Vertigo / dizziness [3]
Gastrointestinal/Hepatic
Abdominal pain [2]
Nausea [2]

THIAMINE

Synonym: vitamin B_1
Indications: Thiamine deficiency
Class: Vitamin
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: A (the pregnancy category will be C if used in doses above the RDA)

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [4]
Dermatitis [2]
Purpura [2]

THIMEROSAL

Indications: Antiseptic, bacteriostatic, fungistatic
Class: Antiseptic
Half-life: N/A
Clinically important, potentially hazardous interactions with: latanoprost

Skin
Atopic dermatitis [2]
Dermatitis [43]
Eczema / eczematous reaction / eczematous eruption [2]
Hypersensitivity (local) [12]
Photoallergic reaction [3]
Urticaria / hives [2]
Local
Injection-site pain [2]
Ocular
Conjunctivitis (conjunctival inflammation) (allergic contact) [4]
Other
Allergic reactions [8]

THIOGUANINE

Indications: Leukemias, inflammatory bowel disease
Class: Antimetabolite, Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 11 hours
Clinically important, potentially hazardous interactions with: aldesleukin, vaccines
Pregnancy category: D

Skin
Rash (<10%)
Hair
Alopecia / hair loss [2]
Mucosal
Stomatitis (oral mucositis) (<10%)
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nodular regenerative hyperplasia [2]

THIOPENTAL

Trade name: Thiopental (Baxter)
Indications: Induction of anesthesia
Class: Barbiturate
Half-life: 3–12 hours
Clinically important, potentially hazardous interactions with: droperidol, ethanol, ethanolamine
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [9]
Angioedema [4]
Bullous dermatosis [2]
Erythema multiforme [2]
Exanthems (3%) [3]
Fixed eruption [3]
Purpura [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Urticaria / hives [4]
Central Nervous System
Shivering (27%)
Endocrine/Metabolic
Porphyria [4]
Local
Injection-site pain (>10%)
Injection-site phlebitis (6%)

THIORIDAZINE

Trade name: Mellaril (Novartis)
Indications: Psychotic disorders
Class: Antipsychotic, Phenothiazine
Half-life: 21–25 hours
Clinically important, potentially hazardous interactions with: abiraterone, amisulpride, amitriptyline, amoxapine, antihistamines, arsenic, asenapine, chlorpheniramine, cinacalcet, citalopram, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, darifenacin, dasatinib, degarelix, delavirdine, dofetilide, dolasetron, duloxetine, epinephrine, lapatinib, levofloxacin, miconazole, mirabegron, moxifloxacin, naloxone, paroxetine hydrochloride, paroxetine mesylate, pazopanib, pimavanserin, pimozide, piperazine, quinolones, ranolazine, rolapitant, sparfloxacin, sulpiride, telavancin, telithromycin, terbinafine, tetrabenazine, tipranavir, voriconazole, vorinostat, zaleplon, ziprasidone, zuclopenthixol
Pregnancy category: C
Note: This drug has been withdrawn.

Skin
Photosensitivity (<10%) [2]
Phototoxicity [2]
Pigmentation (blue-gray) [3]
Rash (<10%) [3]
Cardiovascular
QT interval prolonged / QT prolongation [8]
Torsades de pointes [2]
Central Nervous System
Neuroleptic malignant syndrome [2]
Parkinsonism (>10%)
Tardive syndrome / tardive dyskinesia [2]
Tic disorder [2]
Endocrine/Metabolic
Mastodynia (<10%)
SIADH [2]
Genitourinary
Priapism [4]
Ocular
Retinopathy [3]
Other
Death [2]

THIOTEPA

Trade name: Thioplex (Amgen)
Indications: Breast, ovarian and bladder carcinomas
Class: Alkylating agent
Half-life: 109 minutes
Clinically important, potentially hazardous interactions with: aldesleukin
Pregnancy category: D

Skin
Angioedema [5]
Leukoderma [4]
Pigmentation (<10%) [4]
Pruritus (itching) (<10%) [5]
Rash (<10%)
Urticaria / hives (3%) [6]
Hair
Alopecia / hair loss (<10%) [2]
Central Nervous System
Neurotoxicity [2]
Endocrine/Metabolic
SIADH [2]
Hematologic
Febrile neutropenia [2]
Local
Injection-site pain (>10%)
Other
Allergic reactions (<10%)

THIOTHIXENE

Trade name: Navane (Pfizer)
Indications: Psychotic disorders
Class: Antipsychotic
Half-life: >24 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C

Skin
Diaphoresis (see also hyperhidrosis) (14%)
Exanthems (14%)
Photosensitivity (<10%) [2]
Rash (<10%)
Seborrheic dermatitis [2]
Mucosal
Xerostomia (dry mouth) [2]
Central Nervous System
Parkinsonism (>10%)
Tardive syndrome / tardive dyskinesia [2]
Endocrine/Metabolic
Mastodynia (<10%)

TIAGABINE

Trade name: Gabitril (Cephalon)
Indications: Partial seizures
Class: Anticonvulsant, Mood stabilizer
Half-life: 7–9 hours
Clinically important, potentially hazardous interactions with: alcohol, antipsychotics, carbamazepine, chloroquine, conivaptan, CYP3A4 inhibitors and inducers, dasatinib, deferasirox, droperidol, hydroxychloroquine, ketorolac, levomepromazine, MAO inhibitors, mefloquine, orlistat, phenobarbital, phenytoin, SSRIs, St John's wort, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (<6%)
Pruritus (itching) (2%)
Rash (5%) [2]
Cardiovascular
Vasodilation (2%)
Central Nervous System
Confusion (5%)
Depression (<7%) [4]
Emotional lability (3%)
Gait instability / postural instability (3–5%)
Headache [8]
Hostility (2–5%)
Impaired concentration (6–14%) [2]
Insomnia (5–6%)
Nervousness (10–14%) [10]
Pain (2–7%)
Paresthesias (4%)
Seizures [4]
Somnolence (drowsiness) (18–21%) [9]
Speech disorder (4%)
Status epilepticus (non-convulsive) [17]
Syncope / fainting [2]
Tremor (9–21%) [7]
Vertigo / dizziness (27–31%) [22]
Endocrine/Metabolic
Appetite increased (2%)
Gastrointestinal/Hepatic
Abdominal pain (5–7%)
Diarrhea (2–10%)
Nausea (11%) [7]
Vomiting (7%)
Genitourinary
Urinary tract infection (<5%)
Neuromuscular/Skeletal
Asthenia / fatigue (18–23%) [16]
Ataxia (5–9%)
Dystonia [5]
Myalgia/Myopathy (2–5%)
Ocular
Amblyopia (4–9%)
Nystagmus (2%)
Respiratory
Cough (4%)
Influenza- ('flu)-like syndrome (6–9%)
Pharyngitis (sore throat) (7–8%)
Other
Adverse effects / adverse reactions [6]
Infection (10–19%) [3]

TIANEPTINE

Trade name: Stablon (Servier)
Indications: Depression
Class: Antidepressant, Serotonin agonist
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: tramadol
Pregnancy category: N/A (Not recommended in pregnancy)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Immediate postpartum period is a high-risk time for depression, especially in women who have had prior depressive episodes, so tianeptine may need to be reinstituted late in the third trimester or shortly after childbirth to prevent a recurrence during the postpartum period.
Not available in USA or UK.

Mucosal
Xerostomia (dry mouth) [2]
Central Nervous System
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [4]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea [3]
Other
Adverse effects / adverse reactions [2]

TIBOLONE

Trade name: Livial (Organon)
Indications: Estrogen deficiency, prevention of osteoporosis
Class: Androgen agonist, Derivative of norethynodel, Estrogen agonist, Progesterone agonist, Selective estrogen receptor modulator (SERM)
Half-life: 1–4 hours
Clinically important, potentially hazardous interactions with: cyp3q4 inducers, midazolam, St John's wort, warfarin
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Hair
Hypertrichosis (<10%)
Central Nervous System
Stroke / cerebral infarction [3]
Endocrine/Metabolic
Mastodynia [2]
Weight gain (<10%)
Gastrointestinal/Hepatic
Abdominal pain (<10%)
Genitourinary
Candidal vaginitis (<10%)
Endometrial cancer [5]
Vaginal discharge (<10%)
Other
Breast cancer [8]

TICAGRELOR

Trade name: Brilinta (AstraZeneca)
Indications: Thrombotic cardiovascular events
Class: Antiplatelet, Antiplatelet; cyclopentyl triazolo-pyrimidine (CPTP)
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: atazanavir, carbamazepine, clarithromycin, dexamethasone, digoxin, efavirenz, indinavir, inotersen, itraconazole, ketoconazole, lovastatin, nefazodone, nelfinavir, phenobarbital, phenytoin, rifampin, ritonavir, saquinavir, simvastatin, telithromycin, venetoclax, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Maintenance doses of aspirin above 100 mg reduce the effectiveness of ticagrelor and should be avoided. Contra-indicated in patients with a history of intracranial hemorrhage, or active pathological bleeding, and in patients with severe hepatic impairment.
Warning: BLEEDING RISK

Skin
Angioedema [3]
Cardiovascular
Atrial fibrillation (4%)
Bradycardia / sinus bradycardia [2]
Chest pain (3–4%)
Hypertension (4%)
Hypotension (3%)
Ventricular arrhythmia [7]
Central Nervous System
Headache (7%)
Vertigo / dizziness (5%)
Gastrointestinal/Hepatic
Diarrhea (4%)
Nausea (4%)
Hematologic
Bleeding (12%) [21]
Neuromuscular/Skeletal
Asthenia / fatigue (3%)
Back pain (4%)
Rhabdomyolysis [4]
Respiratory
Cough (5%)
Dyspnea / shortness of breath (14%) [21]
Pneumonitis [2]
Other
Adverse effects / adverse reactions [2]
Death [2]

TICARCILLIN

Trade names: Ticar (GSK), Timentin (GSK)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; beta-lactam, Antibiotic; penicillin, Antimicrobial
Half-life: 1.0–1.2 hours
Clinically important, potentially hazardous interactions with: anticoagulants, ceftobiprole, cyclosporine, demeclocycline, doxycycline, imipenem/cilastatin, methotrexate, minocycline, oral contraceptives, oxytetracycline, probenecid, tetracycline
Pregnancy category: B

Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Timentin is ticarcillin and clavulanic acid.

Local
Injection-site pain [2]
Injection-site phlebitis [3]

TICLOPIDINE

Trade name: Ticlid (Roche)
Indications: To reduce risk of thrombotic stroke
Class: Antiplatelet; thienopyridine, CYP1A2 inhibitor
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: alteplase, clobazam, dabigatran, fondaparinux, inotersen, lepirudin, oxtriphylline, phenytoin, tinzaparin
Pregnancy category: B

Skin
Diaphoresis (see also hyperhidrosis) (<2%)
Exanthems (<12%) [5]
Fixed eruption [3]
Hematoma (2%)
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (positive ANA) [4]
Petechiae (2%)
Pruritus (itching) [3]
Purpura (<5%) [26]
Rash (5%) [5]
Thrombocytopenic purpura [2]
Urticaria / hives (<5%) [4]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [4]
Neutropenia (neutrophils decreased) [3]
Other
Side effects (8%)

TIGECYCLINE

Trade name: Tygacil (Wyeth)
Indications: Complicated skin or intra-abdominal infections, community-acquired bacterial pneumonia
Class: Antibiotic, Antibiotic, Antibiotic; glycylcycline, Antibiotic; tetracycline, Antimicrobial
Half-life: 36 hours
Clinically important, potentially hazardous interactions with: acitretin, antacids, coumarins, dairy products, ergotamine, kaolin, methysergide, oral contraceptives, oral iron, phenindione, quinapril, retinoids, strontium ranelate, sucralfate, sulfonylureas, tripotassium dicitratobismuthate, typhoid vaccine, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: ALL-CAUSE MORTALITY

Skin
Abscess (2%)
Jaundice (<2%) [2]
Pruritus (itching) (<2%)
Rash (3%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [2]
Wound complications (3%)
Mucosal
Xerostomia (dry mouth) (<2%)
Cardiovascular
Bradycardia / sinus bradycardia (<2%)
Phlebitis (3%)
Tachycardia (<2%)
Central Nervous System
Anorexia (<2%)
Chills (<2%)
Dysgeusia (taste perversion) (<2%)
Fever (pyrexia) (includes hyperpyrexia) [3]
Headache (6%) [4]
Vertigo / dizziness (3%)
Endocrine/Metabolic
ALP increased (3%) [2]
ALT increased [2]
AST increased [2]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)
Hypocalcemia (<2%)
Hypoglycemia (see also insulin autoimmune syndrome) (<2%) [3]
Hyponatremia (2%)
Hypoproteinemia (5%)
Gastrointestinal/Hepatic
Abdominal pain (6%) [2]
Cholestasis [2]
Diarrhea (12%) [8]
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (26%) [35]
Pancreatitis / acute pancreatitis [16]
Vomiting (18%) [32]
Genitourinary
Leukorrhea (<2%)
Vaginitis (includes vulvitis) (<2%)
Vulvovaginal candidiasis (<2%)
Hematologic
Anemia (5%)
Coagulopathy (includes disseminated intravascular coagulation / DIC) [6]
Eosinophilia (<2%)
Hypofibrinogenemia [14]
Prothrombin time (INR) increased (<2%) [2]
Thrombocytopenia (<2%)
Local
Injection-site edema (<2%)
Injection-site inflammation (<2%)
Injection-site pain (<2%)
Injection-site phlebitis (<2%)
Injection-site reaction (<2%)
Neuromuscular/Skeletal
Asthenia / fatigue (3%)
Respiratory
Pneumonia (2%)
Other
Adverse effects / adverse reactions [9]
Allergic reactions (<2%)
Death [3]
Infection (7%) [2]

TILUDRONATE

Trade name: Skelid (Sanofi-Aventis)
Indications: Paget's disease of the bone
Class: Bisphosphonate
Half-life: 150 hours
Clinically important, potentially hazardous interactions with: indomethacin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Edema / fluid retention (see also peripheral edema) (3%)
Peripheral edema (see also edema) (3%)
Rash (3%)
Cardiovascular
Chest pain (3%)
Central Nervous System
Headache (7%)
Pain (21%)
Paresthesias (4%)
Vertigo / dizziness (4%)
Endocrine/Metabolic
Hyperparathyroidism (3%)
Gastrointestinal/Hepatic
Diarrhea (9%)
Dyspepsia / functional dyspepsia / gastroparesis (5%)
Flatulence (3%)
Nausea [2]
Vomiting (4%) [2]
Neuromuscular/Skeletal
Arthralgia (3%)
Back pain (8%)
Ocular
Cataract (3%)
Conjunctivitis (conjunctival inflammation) (3%)
Glaucoma (includes acute angle-closure glaucoma) (3%)
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Cough (3%)
Pharyngitis (sore throat) (3%)
Rhinitis (5%)
Sinusitis (5%)
Upper respiratory tract infection (5%)
Other
Infection (3%)
Tooth disorder (3%)

TIMOLOL

Trade names: Blocadren (Merck), Cosopt (Merck), Timolide (Merck), Timoptic (Merck) (ophthalmic)
Indications: Hypertension
Class: Adrenergic beta-receptor antagonist
Half-life: 2–2.7 hours
Clinically important, potentially hazardous interactions with: clonidine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, epinephrine, ergot, prednisone, verapamil
Pregnancy category: C

Note: Cosopt is timolol and dorzolamide; Timolide is timolol and hydrochlorothiazide. Dorzolamide and hydrochlorothiazide are sulfonamides and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Cutaneous side-effects of beta-receptor blockers are clinically polymorphous. They apparently appear after several months of continuous therapy.

Skin
Dermatitis (eyedrops) [7]
Eczema / eczematous reaction / eczematous eruption [2]
Erythroderma [2]
Lichenoid eruption / lichenoid reaction [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Pruritus (itching) (<5%)
Psoriasis [5]
Rash (<10%) [3]
Raynaud's phenomenon [3]

Hair
Alopecia / hair loss (<10%)

Mucosal
Xerostomia (dry mouth) (19%) [3]

Cardiovascular
Arrhythmias [3]
Bradycardia / sinus bradycardia [8]
Chest pain [4]
Hypotension [2]

Central Nervous System
Dysgeusia (taste perversion) [6]
Headache [5]
Syncope / fainting [3]
Vertigo / dizziness [2]

Gastrointestinal/Hepatic
Nausea [3]

Ocular
Blepharitis [2]
Choroidal detachment [3]
Conjunctival hyperemia / conjunctival injection [18]
Conjunctivitis (conjunctival inflammation) [3]
Eyelid dermatitis [3]
Foreign body sensation [4]
Keratitis [2]
Lacrimation [2]
Ocular adverse effect [5]
Ocular allergy [2]
Ocular burning [8]
Ocular hyperemia [6]
Ocular itching / ocular pruritus [15]
Ocular pain [5]
Ocular stinging [11]
Punctate keratitis [6]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [2]
Vision blurred [11]

Respiratory
Asthma [2]
Dyspnea / shortness of breath [2]

Other
Adverse effects / adverse reactions [6]

TINIDAZOLE

Trade names: Fasigyn (Pfizer), Tindamax (Mission)
Indications: Amebiasis, giardiasis, trichomoniasis
Class: Antibiotic, Antibiotic; nitroimidazole, Antimicrobial
Half-life: 12–14 hours
Clinically important, potentially hazardous interactions with: alcohol, anticoagulants, cyclosporine, CYP3A4 inducers or inhibitors, fluorouracil, fosphenytoin, lithium, phenytoin, tacrolimus, typhoid vaccine, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: POTENTIAL RISK FOR CARCINOGENICITY

Skin
Fixed eruption [5]

Central Nervous System
Anorexia (2–3%)
Dysgeusia (taste perversion) (4–6%) [2]
Headache [3]

Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation (<2%)
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Nausea (3–5%)
Vomiting (<2%)

Neuromuscular/Skeletal
Asthenia / fatigue (2%)

TINZAPARIN

Trade name: Innohep (Leo Pharma)
Indications: Acute symptomatic deep vein thrombosis
Class: Anticoagulant, Heparin, low molecular weight
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: aliskiren, angiotensin II recepton antagonists, aspirin, butabarbital, clopidogrel, collagenase, dasatinib, dextran, diclofenac, dipyridamole, drotrecogin alfa, glyceryl trinitrate, ibritumomab, iloprost, ketorolac, NSAIDs, oral anticoagulants, pentosan, pentoxifylline, platelet inhibitors, prostacyclin analogues, salicylates, sulfinpyrazone, thrombolytics, ticlopidine, tositumomab & iodine[131]
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SPINAL / EPIDURAL HEMATOMAS

Skin
Bullous dermatosis (<10%)
Pruritus (itching) (<10%)

Mucosal
Epistaxis (nosebleed) (2%)

Cardiovascular
Chest pain (2%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache (2%)
Pain (2%)

Endocrine/Metabolic
ALT increased (13%)
AST increased (9%)

Genitourinary
Urinary tract infection (4%)

Hematologic
Bleeding [4]
Hemorrhage (2%)

Local
Injection-site hematoma (16%)

Neuromuscular/Skeletal
Back pain (2%)

Respiratory
Pulmonary embolism (2%)

TIOPRONIN

Trade name: Thiola (Mission)
Indications: Cystinuria
Class: Antiurilithic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Angioedema (14%)
Erythema [2]
Exanthems (14%) [2]
Lichenoid eruption / lichenoid reaction [3]
Pemphigus (5%) [7]
Pityriasis rosea (5%) [2]

Mucosal
Oral lesions (4%) [2]
Stomatitis (oral mucositis) [2]

Neuromuscular/Skeletal
Myasthenia gravis [5]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Side effects (27%)

TIOTROPIUM

Trade names: Spiriva (Boehringer Ingelheim), Stiolto Respimat (Boehringer Ingelheim)
Indications: Bronchospasm (associated with COPD)
Class: Anticholinergic, Muscarinic antagonist
Half-life: 5–6 days
Clinically important, potentially hazardous interactions with: acetylcholinesterase inhibitors, anticholinergics, antihistamines, botulinum toxin (A & B), cannabinoids, conivaptan, disopyramide, domperidone, haloperidol, ketoconazole, levodopa, MAO inhibitors, memantine, metoclopramide, nefopam, parasympathomimetics, PEG-interferon, phenothiazines, potassium chloride, pramlintide, secretin, sublingual nitrates, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Stiolto Respimat is tiotropium and olodaterol.

Skin
Candidiasis / candidosis (4%)
Edema / fluid retention (see also peripheral edema) (5%)
Herpes zoster (<3%)
Rash (4%)

Mucosal
Epistaxis (nosebleed) (4%)
Oral candidiasis [2]
Stomatitis (oral mucositis) (<3%)
Xerostomia (dry mouth) (10–16%) [22]

Cardiovascular
Angina (<3%)
Cardiotoxicity [2]
Chest pain (7%) [2]
Hypertension [2]

Central Nervous System
Depression (<3%)
Headache [6]
Paresthesias (<3%)
Vertigo / dizziness [2]

Endocrine/Metabolic
Hypercholesterolemia (<3%)
Hyperglycemia (includes glucose increased) (<3%)

Gastrointestinal/Hepatic
Abdominal pain (5%)
Constipation (4%) [2]
Diarrhea [3]
Dyspepsia / functional dyspepsia / gastroparesis (6%)
Gastroesophageal reflux (<3%)
Vomiting (4%)

Genitourinary
Urinary tract infection (7%)

Neuromuscular/Skeletal
Arthralgia (>3%)
Back pain [4]
Bone or joint pain (<3%)
Leg pain (<3%)
Myalgia/Myopathy (4%)

Ocular
Cataract (<3%)

Respiratory
Asthma [4]
Bronchitis [4]
COPD (exacerbation) [5]
Cough (>3%) [8]
Dysphonia (includes voice disorders / voice changes) (<3%)
Dyspnea / shortness of breath [4]
Influenza [3]
Influenza- ('flu)-like syndrome (>3%)
Laryngitis (<3%)
Nasopharyngitis [11]
Pharyngitis (sore throat) (9%)
Pneumonia [3]
Rhinitis (6%) [3]
Sinusitis (11%)
Upper respiratory tract infection (41%) [4]

Other
Adverse effects / adverse reactions [13]
Allergic reactions (<3%)
Death [7]
Infection (4%)

TIPRANAVIR

Trade name: Aptivus (Boehringer Ingelheim)
Indications: Antiretroviral treatment of HIV-1
Class: HIV-1 protease inhibitor, Sulfonamide
Half-life: 4.8–6.0 hours
Clinically important, potentially hazardous interactions with: abacavir, alcohol, alfuzosin, alprazolam, amiodarone, antacids, antifungals, apixaban, artemether/lumefantrine, atazanavir, atomoxetine, atorvastatin, bepridil, bosentan, buprenorphine, calcium channel blockers, carbamazepine, cisapride, clarithromycin, codeine, conivaptan, copanlisib, corticosteroids, cyclosporine, CYP2D6 substrates, CYP3A4 inducers, dabigatran, darifenacin, deferasirox, delavirdine, didanosine, digoxin, dihydroergotamine, disulfiram, efavirenz, elbasvir & grazoprevir, eluxadoline, enfuvirtide, eplerenone, ergotamine, esomeprazole, estradiol, estrogens, etravirine, fesoterodine, flecainide, fluconazole, fosamprenavir, fusidic acid, garlic, HMG-CoA reductase inhibitors, lopinavir, lovastatin, meperidine, methadone, metoprolol, metronidazole, midazolam, midostaurin, nebivolol, nefazodone, neratinib, omeprazole, P-glycoprotein substrates, pantoprazole, phenobarbital, phenytoin, pimozide, propafenone, protease inhibitors, proton pump inhibitors, quetiapine, quinidine, quinine, raltegravir, ranolazine, rifabutin, rifampin, rilpivirine, rivaroxaban, rosuvastatin, salmeterol, saquinavir, sildenafil, simeprevir, simvastatin, sirolimus, sofosbuvir, sofosbuvir/velpatasvir/voxilaprevir, St John's wort, tacrolimus, tamoxifen, telithromycin, temsirolimus, tenofovir disoproxil, tetrabenazine, theophylline, thioridazine, tramadol, trazodone, triazolam, tricyclic antidepressants, valproic acid, vardenafil, viloxazine, vitamin E, zidovudine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Tipranavir is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
Tipranavir is co-administered with ritonavir. Contra-indicated in patients with moderate or severe (Child-Pugh Class B or C) hepatic impairment.
Warning: HEPATOTOXICITY and INTRACRANIAL HEMORRHAGE

Skin
Exanthems (<2%)
Herpes simplex (<2%)
Herpes zoster (<2%)
Hypersensitivity (<2%)
Lipoatrophy (<2%)
Lipodystrophy (<2%)
Lipohypertrophy (<2%)
Pruritus (itching) (<2%)
Rash (3%) [2]

Central Nervous System
Anorexia (<2%)
Depression (2%)
Fever (pyrexia) (includes hyperpyrexia) (14%)
Headache (5%)
Insomnia (2%)
Intracranial hemorrhage (<2%) [3]
Neurotoxicity (<2%)
Peripheral neuropathy (2%)
Sleep-related disorder (<2%)
Somnolence (drowsiness) (<2%)
Vertigo / dizziness (<2%)

Endocrine/Metabolic
ALT increased (2%) [2]
Appetite decreased (<2%)
Dehydration (2%)
Diabetes mellitus (<2%)
GGT increased (2%)
Hyperamylasemia (<2%)
Hypercholesterolemia (<2%)
Hyperglycemia (includes glucose increased) (<2%)
Hyperlipidemia (3%)
Hypertriglyceridemia (includes triglycerides increased) (4%) [2]
Weight loss (3%)

Gastrointestinal/Hepatic
Abdominal distension (<2%)
Abdominal pain (6%)
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Flatulence (<2%)
Gastroesophageal reflux (<2%)
Hepatic failure (<2%)
Hepatitis (<2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (9%)
Pancreatitis / acute pancreatitis (<2%)
Vomiting (6%)

Hematologic
Anemia (3%)
Neutropenia (neutrophils decreased) (2%)
Thrombocytopenia (<2%)

Neuromuscular/Skeletal
Asthenia / fatigue (2%)
Cramps (<2%)
Myalgia/Myopathy (2%)

Respiratory
Dyspnea / shortness of breath (2%)
Influenza- ('flu)-like syndrome (<2%)

Other
Adverse effects / adverse reactions [3]

TIROFIBAN

Trade name: Aggrastat (Merck)
Indications: Acute coronary syndrome
Class: Antiplatelet, Glycoprotein IIb/IIIa inhibitor
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: aspirin, fondaparinux, heparin, iloprost, lepirudin, NSAIDs
Pregnancy category: B

Skin
Diaphoresis (see also hyperhidrosis) (2%)
Edema / fluid retention (see also peripheral edema) (2%)

Cardiovascular
Myocardial ischemia [2]

Hematologic
Thrombocytopenia [24]
Thrombotic microangiopathy [2]

TIXOCORTOL

Trade name: Pivalone (Pfizer)
Indications: Infections, ulcerative colitis
Class: Corticosteroid / Glucocorticoid
Half-life: N/A
Clinically important, potentially hazardous interactions with: live vaccines
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Not available in the USA.

Skin
- Dermatitis [6]
- Hypersensitivity [8]
- Sensitivity [2]

Other
- Allergic reactions [14]

TIZANIDINE

Trade name: Zanaflex (Acorda)
Indications: Muscle spasticity, multiple sclerosis
Class: Adrenergic alpha2-receptor agonist
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: acebutolol, alfuzosin, benazepril, captopril, cilazapril, ciprofloxacin, enalapril, fluvoxamine, fosinopril, irbesartan, lisinopril, norfloxacin, obeticholic acid, olmesartan, phenytoin, quinapril, ramipril, rofecoxib, teriflunomide, trandolapril, viloxazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients

Skin
- Pallor [2]
- Pruritus (itching) (<10%)
- Rash (<10%)

Mucosal
- Xerostomia (dry mouth) (49–88%) [14]

Cardiovascular
- Bradycardia / sinus bradycardia (<10%) [5]
- Hypotension (16–33%) [4]

Central Nervous System
- Dyskinesia (3%)
- Nervousness (3%)
- Somnolence (drowsiness) (48–92%) [4]
- Speech disorder (3%)
- Tremor (<10%)
- Vertigo / dizziness (41–45%) [3]

Gastrointestinal/Hepatic
- Constipation (4%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) (6%) [4]
- Vomiting (3%)

Genitourinary
- Urinary frequency (3%)
- Urinary tract infection (10%)

Neuromuscular/Skeletal
- Asthenia / fatigue (41–78%) [5]

Ocular
- Amblyopia (3%)

Respiratory
- Influenza- ('flu)-like syndrome (3%)
- Pharyngitis (sore throat) (3%)
- Rhinitis (3%)

Other
- Infection (6%)

TOBRAMYCIN

Trade names: TOBI (Chiron), TobraDex (Alcon)
Indications: Various serious infections caused by susceptible organisms, superficial ocular infections
Class: Antibiotic, Antibiotic; aminoglycoside, Antimicrobial
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: adefovir, aldesleukin, aminoglycosides, atracurium, bumetanide, daptomycin, doxacurium, ethacrynic acid, furosemide, neuromuscular blockers, pancuronium, polypeptide antibiotics, rocuronium, succinylcholine, teicoplanin, torsemide, vecuronium
Pregnancy category: D (Category D for injection and inhalation; category B for ophthalmic use)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Aminoglycosides may cause neurotoxicity and/or nephrotoxicity.
TobraDex is tobramycin and dexamethasone.

Skin
- Exanthems [4]
- Hypersensitivity [3]
- Rash [2]

Central Nervous System
- Dysgeusia (taste perversion) [2]
- Fever (pyrexia) (includes hyperpyrexia) [2]

Ocular
- Conjunctivitis (conjunctival inflammation) [2]
- Eyelid dermatitis [2]
- Intraocular pressure increased [2]

Renal
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [6]

Respiratory
- Cough [3]

TOCILIZUMAB

Trade names: Actemra (Roche), RoActemra (Roche)
Indications: Rheumatoid arthritis, juvenile idiopathic arthritis, Castleman's disease
Class: Anti-interleukin-6 receptor monoclonal antibody, Biologic, Biologic disease-modifying antirheumatic drug (bDMARD), Covid-19 putative drug, Disease-modifying antirheumatic drug (DMARD), Monoclonal antibody
Half-life: 8–14 days
Clinically important, potentially hazardous interactions with: dolasetron, efavirenz, fesoterodine, fingolimod, infliximab, lurasidone, paricalcitol, pazopanib, typhoid vaccine, yellow fever vaccine
Pregnancy category: N/A (Based on animal data, may cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: RISK OF SERIOUS INFECTIONS

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [5]
- Cellulitis [9]
- Herpes zoster [8]
- Hypersensitivity [6]
- Peripheral edema (see also edema) (<2%)
- Psoriasis [4]
- Rash (2%) [9]
- Urticaria / hives [2]

Mucosal
- Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [2]
- Mucosal ulceration [2]
- Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (2%) [2]
- Stomatitis (oral mucositis) (<2%)

Cardiovascular
- Cardiotoxicity [3]
- Hypertension (6%) [4]

Central Nervous System
- Headache (7%) [7]
- Neurotoxicity [2]
- Vertigo / dizziness (3%)

Endocrine/Metabolic
- ALT increased (6%) [10]
- AST increased [4]
- Hypercholesterolemia [8]
- Hyperlipidemia [6]
- Hypertransaminasemia (transaminitis) / elevated transaminases [5]
- Hypertriglyceridemia (includes triglycerides increased) [3]
- Hypothyroidism (<2%)
- Weight gain (<2%)

Gastrointestinal/Hepatic
- Abdominal pain (2%)
- Diarrhea [2]
- Gastroenteritis [6]
- Gastrointestinal bleeding [3]
- Gastrointestinal perforation / perforated colon / gastric perforation [10]
- Gastrointestinal ulceration (<2%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [17]
- Nausea [4]
- Pancreatitis / acute pancreatitis [2]

Genitourinary
- Urinary tract infection [3]

Hematologic
- Hemotoxicity [2]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<2%) [7]
- Lymphopenia (lymphocytopenia) / lymphocytes decreased [2]
- Neutropenia (neutrophils decreased) [23]
- Sepsis [2]

Local
- Infusion-related reactions [3]
- Infusion-site reactions [2]

Neuromuscular/Skeletal
- Arthralgia [4]
- Fractures [2]

Ocular
- Conjunctivitis (conjunctival inflammation) (<2%)

Renal
- Nephrolithiasis (formation of a kidney stone) (<2%)
- Pyelonephritis [3]

Respiratory
- Bronchitis (3%) [6]

Cough (<2%)
Dyspnea / shortness of breath (<2%)
Influenza [3]
Nasopharyngitis (7%) [7]
Pharyngitis (sore throat) [4]
Pneumonia [13]
Pneumothorax [2]
Pulmonary toxicity [5]
Upper respiratory tract infection (7%) [12]

Other
Adverse effects / adverse reactions [16]
Death [6]
Infection [42]
Malignancies [2]

TOFACITINIB

Trade name: Xeljanz (Pfizer)
Indications: Rheumatoid arthritis
Class: Disease-modifying antirheumatic drug (DMARD), Janus kinase (JAK) inhibitor
Half-life: ~3 hours
Clinically important, potentially hazardous interactions with: azathioprine, biologic disease-modifying antirheumatics, cyclosporine, CYP3A4 inhibitors, fluconazole, ketoconazole, live vaccines, potent immunosuppressives, rifampin, strong CYP inducers, strong CYP2C19 inhibitors, tacrolimus
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: WARNING: SERIOUS INFECTIONS, MORTALITY, MALIGNANCY, MAJOR ADVERSE CARDIOVASCULAR EVENTS (MACE), AND THROMBOSIS (amended December 2021)
• INCREASED RISK OF SERIOUS BACTERIAL, FUNGAL, VIRAL, AND OPPORTUNISTIC INFECTIONS LEADING TO HOSPITALIZATION OR DEATH, INCLUDING TUBERCULOSIS (TB). INTERRUPT TREATMENT WITH TOFACITINIB ORAL SOLUTION IF SERIOUS INFECTION OCCURS UNTIL THE INFECTION IS CONTROLLED. TEST FOR LATENT TB BEFORE AND DURING THERAPY; TREAT LATENT TB PRIOR TO USE. MONITOR ALL PATIENTS FOR ACTIVE TB DURING TREATMENT, EVEN PATIENTS WITH INITIAL NEGATIVE LATENT TB TEST.
• HIGHER RATE OF ALL-CAUSE MORTALITY, INCLUDING SUDDEN CARDIOVASCULAR DEATH WITH TOFACITINIB VS. TNF BLOCKERS IN RHEUMATOID ARTHRITIS (RA) PATIENTS.
• MALIGNANCIES HAVE OCCURRED IN PATIENTS TREATED WITH TOFACITINIB. HIGHER RATE OF LYMPHOMAS AND LUNG CANCERS WITH TOFACITINIB VS. TNF BLOCKERS IN RA PATIENTS.
• HIGHER RATE OF MACE (DEFINED AS CARDIOVASCULAR DEATH, MYOCARDIAL INFARCTION, AND STROKE) WITH TOFACITINIB VS. TNF BLOCKERS IN RA PATIENTS.
• THROMBOSIS HAS OCCURRED IN PATIENTS TREATED WITH TOFACITINIB. INCREASED INCIDENCE OF PULMONARY EMBOLISM, VENOUS AND ARTERIAL THROMBOSIS WITH XELJANZ VS. TNF BLOCKERS IN RA PATIENTS.

Skin
Erythema (<2%)
Herpes zoster [17]
Peripheral edema (see also edema) (<2%)
Pruritus (itching) (<2%)
Psoriasis [2]
Rash (<2%) [3]

Mucosal
Nasal congestion (<2%)

Cardiovascular
Cardiotoxicity [3]
Hypertension (2%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<2%)
Headache (3–4%) [11]
Insomnia (<2%)
Paresthesias (<2%)

Endocrine/Metabolic
ALT increased [3]
AST increased [3]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Dehydration (<2%)
Hypercholesterolemia [2]
Hyperlipidemia [3]

Gastrointestinal/Hepatic
Abdominal pain (<2%) [2]
Diarrhea (3–4%) [9]
Dyspepsia / functional dyspepsia / gastroparesis (<2%) [2]
Gastritis / pangastritis / gastric irritation (<2%)
Nausea (<2%) [4]
Vomiting (<2%)

Genitourinary
Urinary tract infection (2%) [5]

Hematologic
Anemia (<2%)
Neutropenia (neutrophils decreased) [3]

Neuromuscular/Skeletal
Arthralgia (<2%)
Bone or joint pain (<2%)
Tendinitis (<2%)

Respiratory
Bronchitis [4]
Cough (<2%)
Dyspnea / shortness of breath (<2%)
Influenza [3]
Nasopharyngitis (3–4%) [11]
Tuberculosis [4]
Upper respiratory tract infection (4–5%) [12]

Other
Adverse effects / adverse reactions [13]
Death [2]
Infection (20–22%) [17]
Malignant neoplasms [2]

TOLAZAMIDE

Trade name: Tolinase (Pfizer)
Indications: Non-insulin dependent diabetes Type II
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Sulfonylurea
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: phenylbutazones
Pregnancy category: C
Note: Tolazamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Lichenoid eruption / lichenoid reaction [2]
Photosensitivity (<10%)
Rash (<10%)
Urticaria / hives (<10%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]

TOLAZOLINE

Trade name: Priscoline (Novartis)
Indications: Pulmonary hypertension in the newborn
Class: Sulfonylurea
Half-life: 3–10 hours (neonates)
Clinically important, potentially hazardous interactions with: cimetidine
Pregnancy category: C
Note: Tolazoline is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Flushing / rubefaction (66%)

Local
Injection-site burning (>10%)

TOLBUTAMIDE

Trade name: Orinase (Pfizer)
Indications: Non-insulin dependent diabetes Type II
Class: Antidiabetic, Hypoglycemic (antihyperglycemic) agent, Sulfonylurea
Half-life: 4–25 hours
Clinically important, potentially hazardous interactions with: aprepitant, leflunomide, phenylbutazones, prednisone, propranolol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Tolbutamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Exanthems (<5%) [3]
Flushing / rubefaction [3]
Photosensitivity (<10%) [2]
Purpura [2]
Rash (<10%)
Urticaria / hives (<10%)

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [6]

Other
Side effects [3]

TOLMETIN

Trade name: Tolectin (Ortho-McNeil)
Indications: Rheumatoid arthritis, osteoarthritis, juvenile rheumatoid arthritis
Class: Non-steroidal anti-inflammatory (NSAID)
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, aspirin, furosemide, lithium, methotrexate, thiazide diuretics, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [7]
- Angioedema [2]
- Edema / fluid retention (see also peripheral edema) (3–9%)
- Exanthems (9%) [4]
- Pruritus (itching) (<10%) [3]
- Rash (>10%)
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
- Urticaria / hives (<5%) [5]

TOLTERODINE

Trade name: Detrol (Pharmacia & Upjohn)
Indications: Urinary incontinence
Class: Muscarinic antagonist
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: itraconazole, ketoconazole, lopinavir, nelfinavir, sotalol, viloxazine, voriconazole, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Erythema (2%)
- Rash (2%)

Mucosal
- Xerostomia (dry mouth) (35%) [39]

Cardiovascular
- Chest pain (2%)

Central Nervous System
- Headache (7%) [5]
- Somnolence (drowsiness) (3%)
- Vertigo / dizziness (5%) [4]

Gastrointestinal/Hepatic
- Abdominal pain (5%) [2]
- Constipation (7%) [13]
- Diarrhea (4%)
- Dyspepsia / functional dyspepsia / gastroparesis (4%)

Genitourinary
- Dysuria (2%)

Neuromuscular/Skeletal
- Arthralgia (2%)
- Asthenia / fatigue (4%)

Ocular
- Vision blurred [3]
- Xerophthalmia (dry eyes) (3%) [2]

Respiratory
- Influenza- ('flu)-like syndrome (3%)
- Upper respiratory tract infection (6%)

Other
- Adverse effects / adverse reactions [6]

TOLVAPTAN

Trade name: Samsca (Otsuka)
Indications: Chronic heart failure, hyponatremia, polycystic kidneys
Class: Vasopressin receptor antagonist
Half-life: 6–8 hours
Clinically important, potentially hazardous interactions with: aprepitant, barbiturates, benazepril, captopril, carbamazepine, clarithromycin, conivaptan, cyclosporine, darunavir, delavirdine, digoxin, efavirenz, enalapril, fosinopril, grapefruit juice, indinavir, irbesartan, itraconazole, ketoconazole, lapatinib, lisinopril, lovastatin, miconazole, nefazodone, nelfinavir, olmesartan, oxcarbazepine, P-gp inhibitors, phenytoin, quinapril, ramipril, rifabutin, rifampin, rifapentin, rifapentine, ritonavir, saquinavir, St John's wort, strong CYP3A inhibitors, telithromycin, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: INITIATE AND RE-INITIATE IN A HOSPITAL AND MONITOR SERUM SODIUM

Mucosal
- Xerostomia (dry mouth) (13%) [13]

Cardiovascular
- Intracardiac thrombus (<2%)
- Ventricular fibrillation (<2%)

Central Nervous System
- Anorexia (4%)
- Fever (pyrexia) (includes hyperpyrexia) (4%)
- Vertigo / dizziness [2]

Endocrine/Metabolic
- ALT increased (4%) [2]
- Appetite decreased (4%)
- Dehydration [3]
- Hyperglycemia (includes glucose increased) (6%)
- Hypernatremia [5]

Gastrointestinal/Hepatic
- Abdominal distension [2]
- Constipation (7%) [3]
- Diarrhea [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]
- Vomiting [2]

Genitourinary
- Nocturia [2]
- Pollakiuria (11%) [4]
- Polyuria (11%) [8]

Hematologic
- Hemorrhage (<2%)
- Thrombosis (<2%)

Neuromuscular/Skeletal
- Asthenia / fatigue (9%) [2]
- Rhabdomyolysis (<2%)

Renal
- Aquaresis [2]
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
- Pulmonary embolism (<2%)

Other
- Adverse effects / adverse reactions [2]
- Dipsia (thirst) / polydipsia (16%) [21]

TOPIRAMATE

Trade names: Qsymia (Vivus), Qudexy (Upsher-Smith), Topamax (Janssen), Trokendi XR (Supernus)
Indications: Partial onset seizures, migraine
Class: Anticonvulsant, Mood stabilizer
Half-life: 21 hours
Clinically important, potentially hazardous interactions with: eslicarbazepine, levonorgestrel, metformin, rufinamide, ulipristal, valproic acid
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Qsymia is topiramate and phentermine.

Skin
- Anhidrosis [2]
- Bromhidrosis (2%)
- Diaphoresis (see also hyperhidrosis) (2%)
- Edema / fluid retention (see also peripheral edema) (2%)
- Fixed eruption [2]
- Flushing / rubefaction (>5%)
- Hot flashes / hot flushes (<10%)
- Hypohidrosis [2]
- Palmar erythema [2]
- Pruritus (itching) (2%) [3]
- Rash (4%) [3]

Hair
- Alopecia / hair loss [2]

Mucosal
- Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [2]
- Gingivitis (2%)
- Xerostomia (dry mouth) (3%) [7]

Cardiovascular
- Tachycardia [4]

Central Nervous System
- Anorexia (>5%) [4]
- Anxiety [3]
- Cognitive impairment (>5%) [17]
- Confusion (>5%)
- Depression [11]
- Dysgeusia (taste perversion) (>5%) [11]
- Encephalopathy (includes hepatic encephalopathy) [4]
- Fever (pyrexia) (includes hyperpyrexia) (>5%)
- Headache [2]
- Hyperthermia (see also pyrexia / hyperpyrexia) [3]
- Impaired concentration [4]
- Insomnia [8]
- Irritability [3]
- Nervousness (>5%)
- Neurotoxicity [6]
- Palinopsia / visual perseveration [3]
- Paresthesias (>5%) [38]
- Peripheral neuropathy [2]
- Psychosis [3]

Seizures [3]
Somnambulism (sleepwalking; noctambulism) [2]
Somnolence (drowsiness) (>5%) [7]
Stuttering (dysphemia) / stammering [2]
Suicidal ideation [2]
Tremor (>10%)
Vertigo / dizziness (>5%) [15]

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [4]
Appetite decreased [5]
Gynecomastia (8%)
Hyperammonemia [3]
Mastodynia (3–9%)
Weight gain [2]
Weight loss (>5%) [17]

Gastrointestinal/Hepatic
Constipation [7]
Diarrhea [3]
Nausea [5]

Genitourinary
Erectile dysfunction [2]

Neuromuscular/Skeletal
Asthenia / fatigue (>5%) [10]
Ataxia [2]

Ocular
Diplopia (double vision) [2]
Eyelid twitching / eyelid myokymia [2]
Glaucoma (includes acute angle-closure glaucoma) [18]
Hypopyon [2]
Myopia [12]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [7]
Vision loss [3]

Renal
Nephrolithiasis (formation of a kidney stone) [5]

Respiratory
Influenza- ('flu)-like syndrome (<2%)

Other
Adverse effects / adverse reactions [11]
Death [2]
Infection (>5%)
Side effects [3]
Teratogenicity [8]

TOPOTECAN

Trade name: Hycamtin (GSK)
Indications: Metastatic ovarian carcinoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Topoisomerase I inhibitor
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: atorvastatin, darunavir, gefitinib, lapatinib, oxaliplatin, pantoprazole, safinamide, sofosbuvir & velpatasvir
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: BONE MARROW SUPPRESSION

Hair
Alopecia / hair loss (59%) [7]

Mucosal
Mucositis [2]
Stomatitis (oral mucositis) (24%) [4]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) [2]
Paresthesias (9%)

Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea [5]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [3]
Vomiting [4]

Hematologic
Anemia [11]
Febrile neutropenia [5]
Granulocytopenia [2]
Myelosuppression / bone marrow suppression / myelotoxicity [3]
Neutropenia (neutrophils decreased) [16]
Thrombocytopenia [15]

Neuromuscular/Skeletal
Asthenia / fatigue [9]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Dyspnea / shortness of breath [3]

Other
Adverse effects / adverse reactions [2]
Death [5]
Infection [2]

TOREMIFENE

Trade name: Fareston (ProStrakan)
Indications: Metastatic breast cancer
Class: Selective estrogen receptor modulator (SERM)
Half-life: ~5 days
Clinically important, potentially hazardous interactions with: amoxapine, arsenic, dolasetron, efavirenz, pazopanib, sugammadex, telavancin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: QT PROLONGATION

Skin
Diaphoresis (see also hyperhidrosis) (20%) [6]
Edema / fluid retention (see also peripheral edema) (5%) [2]
Flushing / rubefaction [3]
Hot flashes / hot flushes (35%) [4]

Cardiovascular
Thromboembolism [3]
Venous thromboembolism [2]

Central Nervous System
Headache [2]
Vertigo / dizziness [2]

Endocrine/Metabolic
ALP increased [2]
Galactorrhea (<10%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [2]
Vomiting [2]

Genitourinary
Priapism (<10%)
Vaginal bleeding [2]
Vaginal discharge [2]

Ocular
Cataract [3]

TORSEMIDE

Synonym: Torasemide
Trade names: Demadex (Roche), Torem (Roche)
Indications: Essential hypertension, edema due to congestive heart failure, hepatic, pulmonary or renal edema
Class: Diuretic, loop
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, amikacin, aminoglycosides, aminophylline, anti-diabetics, antihypertensives, cephalosporins, cisplatin, gentamicin, indomethacin, kanamycin, neomycin, probenecid, salicylates, streptomycin, tobramycin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Torsemide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Photosensitivity (<10%)
Purpura [2]
Urticaria / hives (<10%)
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Central Nervous System
Headache (7%)
Vertigo / dizziness (3%)

Endocrine/Metabolic
Pseudoporphyria [2]

Gastrointestinal/Hepatic
Constipation (2%)
Diarrhea (2%)
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Nausea (2%)

Neuromuscular/Skeletal
Arthralgia (2%)
Asthenia / fatigue (2%)
Myalgia/Myopathy (2%)

Respiratory
Cough (2%)
Pharyngolaryngeal pain (2%)
Rhinitis (3%)

TOSITUMOMAB & IODINE^{131}

Trade names: Bexxar (Corixa) (GSK), Iodine^{131} I-Tositumomab (MDS Nordion)
Indications: Non-Hodgkin's lymphoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, Monoclonal antibody
Half-life: 8 days
Clinically important, potentially hazardous interactions with: abciximab, argatroban, cilostazol, citalopram, clopidogrel, dabigatran, eptifibatide, meloxicam, tinzaparin
Pregnancy category: D

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SERIOUS ALLERGIC REACTIONS / ANAPHYLAXIS, PROLONGED AND SEVERE CYTOPENIAS, AND RADIATION EXPOSURE

Skin
- Diaphoresis (see also hyperhidrosis) (8%)
- Peripheral edema (see also edema) (9%)
- Pruritus (itching) (10%) [2]
- Rash (17%) [2]

Cardiovascular
- Chest pain (7%)
- Hypotension (7%)
- Vasodilation (5%)

Central Nervous System
- Anorexia (14%)
- Chills (18%) [2]
- Fever (pyrexia) (includes hyperpyrexia) (37%) [2]
- Headache (16%) [2]
- Pain (19%)
- Somnolence (drowsiness) (5%) [2]
- Vertigo / dizziness (5%)

Endocrine/Metabolic
- Hypothyroidism (7%) [2]
- Weight loss (6%)

Gastrointestinal/Hepatic
- Abdominal pain (15%)
- Constipation (6%)
- Diarrhea (12%)
- Dyspepsia / functional dyspepsia / gastroparesis (6%)
- Nausea (36%) [3]
- Vomiting (15%)

Hematologic
- Anemia [2]
- Cytopenia [2]
- Hemotoxicity [5]
- Neutropenia (neutrophils decreased) [5]
- Thrombocytopenia [3]

Neuromuscular/Skeletal
- Arthralgia (10%) [2]
- Asthenia / fatigue (46%) [2]
- Back pain (8%)
- Myalgia/Myopathy (13%) [5]
- Neck pain (6%)

Respiratory
- Cough (21%)
- Dyspnea / shortness of breath (11%)
- Pharyngitis (sore throat) (12%)
- Pneumonia (6%) [2]
- Rhinitis (10%)

Other
- Infection (21%) [2]

TRABECTEDIN

Trade name: Yondelis (Janssen)
Indications: Advanced soft tissue sarcoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor)
Half-life: 180 hours
Clinically important, potentially hazardous interactions with: alcohol, aprepitant, atorvastatin, clarithromycin, cyclosporine, fluconazole, ketoconazole, phenobarbital, rifampin, ritonavir, rosuvastatin, St John's wort, strong CYP3A inducers or inhibitors, verapamil
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Edema / fluid retention (see also peripheral edema) (<10%)
- Flushing / rubefaction (<10%)
- Necrosis (skin necrosis) [2]
- Peripheral edema (see also edema) [2]

Hair
- Alopecia / hair loss (<10%)

Mucosal
- Mucositis [3]

Cardiovascular
- Cardiomyopathy [2]
- Hypotension (<10%)

Central Nervous System
- Anorexia (>10%) [4]
- Dysgeusia (taste perversion) (<10%)
- Headache (>10%) [3]
- Insomnia (<10%)
- Neurotoxicity (<10%)
- Paresthesias (<10%)
- Vertigo / dizziness (<10%)

Endocrine/Metabolic
- ALT increased [14]
- Appetite decreased (<10%) [3]
- AST increased [7]
- GGT increased [2]
- Hypertransaminasemia (transaminitis) / elevated transaminases [2]
- Weight loss (<10%)

Gastrointestinal/Hepatic
- Abdominal pain (<10%)
- Constipation (<10%) [6]
- Diarrhea (<10%) [5]
- Dyspepsia / functional dyspepsia / gastroparesis (<10%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [13]
- Nausea (<10%) [17]
- Vomiting (<10%) [15]

Hematologic
- Anemia (>10%) [8]
- Febrile neutropenia [6]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
- Myelosuppression / bone marrow suppression / myelotoxicity [4]
- Neutropenia (neutrophils decreased) [20]
- Sepsis [2]
- Thrombocytopenia [8]

Local
- Injection-site reaction (<10%)

Neuromuscular/Skeletal
- Arthralgia (<10%)
- Asthenia / fatigue (>10%) [18]
- Back pain (<10%)
- Myalgia/Myopathy (<10%)
- Rhabdomyolysis [10]

Respiratory
- Cough (<10%)
- Dyspnea / shortness of breath (<10%) [3]

Other
- Adverse effects / adverse reactions [2]
- Death [2]

TRAGACANTH GUM

Family: Fabaceae; Leguminosae
Scientific names: *Astragalus gossypinus, Astragalus gummifer*
Indications: Diarrhea. Ingredient in pharmaceuticals, foods, toothpaste, denture adhesives, emulsifier, binding agent, demulcent, stabilizer
Class: Food additive, Laxative
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: See also Astragalus root.

TRAMADOL

Trade names: Rybix ODT (Victory Pharma), Ultracet (Ortho-McNeil), Ultram (Ortho-McNeil)
Indications: Pain
Class: Opiate agonist
Half-life: 6–7 hours
Clinically important, potentially hazardous interactions with: alcohol, amitriptyline, carbamazepine, cinacalcet, citalopram, delavirdine, desflurane, desipramine, desvenlafaxine, duloxetine, erythromycin, fluoxetine, fluvoxamine, ketoconazole, levomepromazine, linezolid, lorcaserin, MAO inhibitors, nefazodone, ondansetron, paroxetine hydrochloride, phenelzine, quinidine, risperidone, safinamide, selegiline, selegiline, tapentadol, terbinafine, tianeptine, tipranavir, tranylcypromine, venlafaxine, vilazodone, zuclopenthixol
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
- Angioedema [2]
- Contact dermatitis [2]
- Diaphoresis (see also hyperhidrosis) (9%) [3]
- Flushing / rubefaction [2]
- Hypersensitivity [2]
- Peripheral edema (see also edema) [2]
- Pruritus (itching) (<10%) [4]
- Rash (<5%) [2]
- Urticaria / hives (<18%)

Mucosal
- Xerostomia (dry mouth) (10%) [5]

Cardiovascular
- Vasodilation (<5%)

Central Nervous System
- Anorexia (<5%)
- Anxiety (<5%)
- Catatonia [2]
- Confusion (<5%)
- Euphoria / elation (<5%)
- Fever (pyrexia) (includes hyperpyrexia) [2]
- Hallucinations, auditory [2]
- Hallucinations, visual (see also Charles Bonnet syndrome) [3]
- Headache [8]
- Insomnia [3]
- Nervousness (<5%)
- Restless legs syndrome [5]

Seizures [16]
Serotonin syndrome [18]
Sleep-related disorder (<5%)
Somnolence (drowsiness) [8]
Tic disorder [2]
Tremor (5–10%)
Vertigo / dizziness [19]

Endocrine/Metabolic
Adrenal insufficiency (hypoadrenalism) [2]
Hypoglycemia (see also insulin autoimmune syndrome) [15]
Hyponatremia [4]

Gastrointestinal/Hepatic
Abdominal pain (<5%) [3]
Constipation [9]
Diarrhea [2]
Flatulence (<5%)
Nausea [27]
Vomiting [25]

Genitourinary
Urinary frequency (<5%)
Urinary retention (<5%)

Neuromuscular/Skeletal
Asthenia / fatigue (<5%) [3]
Hypertonia (<5%)

Ocular
Mydriasis [2]
Visual disturbances (<5%)

Respiratory
Apnea [2]
Respiratory depression [2]

Other
Adverse effects / adverse reactions [8]
Death [2]
Hiccups / singultus [2]

TRAMETINIB

Trade name: Mekinist (Novartis)
Indications: Melanoma (unresectable or metastatic) in patients with BRAF V600E or V600K mutations
Class: MEK inhibitor (mitogen-activated protein kinase (MEK1 and MEK2) inhibitor)
Half-life: 4–5 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (19%) [8]
Actinic keratoses [2]
Cellulitis (<10%)
Cutaneous toxicity / skin toxicity (87%) [5]
Dermatitis (19%) [2]
Edema / fluid retention (see also peripheral edema) (32%)
Erythema [2]
Exanthems [2]
Folliculitis (<10%)
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [2]
Hyperkeratosis [3]
Keratosis pilaris [2]
Lymphedema (32%)
Panniculitis [4]
Papillomas [2]
Papulopustular eruption [2]
Peripheral edema (see also edema) (32%) [9]
Pruritus (itching) (10%) [4]
Pustules / pustular eruption (<10%)
Rash (57%) [19]
Squamous cell carcinoma [4]
Sweet's syndrome [3]
Xerosis / xeroderma (see also dry skin) (11%) [3]

Hair
Alopecia / hair loss [4]

Nails
Paronychia (10%)

Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (15%)
Epistaxis (nosebleed) (13%)
Gingival bleeding (13%)
Mucosal inflammation (15%)
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (15%)
Rectal hemorrhage / rectal bleeding (13%)
Stomatitis (oral mucositis) (15%) [2]
Xerostomia (dry mouth) (<10%)

Cardiovascular
Bradycardia / sinus bradycardia (<10%)
Cardiomyopathy (7%)
Cardiotoxicity [6]
Hypertension (15%) [7]

Central Nervous System
Chills [4]
Dysgeusia (taste perversion) (<10%)
Fever (pyrexia) (includes hyperpyrexia) [16]
Headache [5]
Vertigo / dizziness (<10%)

Endocrine/Metabolic
ALP increased (24%)
ALT increased (39%) [4]
Appetite decreased [2]
AST increased (60%) [5]
Hypoalbuminemia / albumin decreased (42%)

Gastrointestinal/Hepatic
Abdominal pain (13%)
Black stools / melena (13%)
Constipation [3]
Diarrhea (43%) [21]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [14]
Vomiting [9]

Genitourinary
Hematuria (13%)
Vaginal bleeding (13%)

Hematologic
Anemia (38%) [3]
Hemorrhage (13%)
Neutropenia (neutrophils decreased) [2]
Thrombocytopenia [3]

Neuromuscular/Skeletal
Arthralgia [6]
Asthenia / fatigue [18]
Rhabdomyolysis (<10%) [2]

Ocular
Chorioretinopathy [3]
Conjunctival hemorrhage (13%)
Retinopathy [4]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [4]
Vision blurred (<10%) [4]
Xerophthalmia (dry eyes) (<10%)

Respiratory
Cough [2]
Pneumonitis (2%)

Other
Adverse effects / adverse reactions [7]

TRANDOLAPRIL

Trade names: Mavik (AbbVie), Tarka (AbbVie)
Indications: Hypertension
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive, Vasodilator
Half-life: 6 hours
Clinically important, potentially hazardous interactions with: alcohol, aldesleukin, aliskiren, allopurinol, alpha blockers, amiloride, angiotensin II receptor antagonists, antacids, antidiabetics, antipsychotics, anxiolytics and hypnotics, baclofen, beta blockers, calcium channel blockers, clonidine, corticosteroids, cyclosporine, diazoxide, diuretics, estrogens, general anesthetics, gold & gold compounds, heparins, hydralazine, insulin, levodopa, lithium, MAO inhibitors, metformin, methyldopa, minoxidil, moxisylyte, moxonidine, nitrates, nitroprusside, NSAIDs, potassium salts, spironolactone, sulfonylureas, tizanidine, triamterene, trimethoprim
Pregnancy category: D (category C in first trimester; category D in second and third trimesters)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with hereditary/idiopathic angioedema and in patients with a history of angioedema related to previous treatment with an ACE inhibitor. Tarka is trandolapril and verapamil.
Warning: FETAL TOXICITY

Skin
Angioedema [3]
Edema / fluid retention (see also peripheral edema) (>3%)

Mucosal
Xerostomia (dry mouth) (>3%)

Cardiovascular
Bradycardia / sinus bradycardia (5%)
Cardiogenic shock (4%)
Hypotension (11%)

Central Nervous System
Hyperesthesia (>3%)
Stroke / cerebral infarction (3%)
Syncope / fainting (6%)
Vertigo / dizziness (23%)

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (5%)
Hyperkalemia (5%)
Hypocalcemia (5%)

Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis (6%)
Gastritis / pangastritis / gastric irritation (4%)

Neuromuscular/Skeletal
Asthenia / fatigue (3%)
Myalgia/Myopathy (5%)

Respiratory
Cough (35%) [5]

TRANEXAMIC ACID

Trade name: Cyklokapron (Pharmacia)
Indications: Fibrinolysis
Class: Antifibrinolytic
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: B

Skin
Fixed eruption [2]
Central Nervous System
Headache [3]
Seizures [12]
Endocrine/Metabolic
Menstrual irregularities [3]
Gastrointestinal/Hepatic
Abdominal pain [2]
Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [3]
Other
Adverse effects / adverse reactions [3]

TRANYLCYPROMINE

Trade name: Parnate (Concordia)
Indications: Depression
Class: Antidepressant, Monoamine oxidase (MAO) inhibitor
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: amitriptyline, amoxapine, amphetamines, bupropion, citalopram, clomipramine, cyproheptadine, desipramine, dextroamphetamine, dextromethorphan, diethylpropion, dopamine, doxepin, entacapone, ephedrine, epinephrine, fluoxetine, fluvoxamine, imipramine, levodopa, mazindol, meperidine, methamphetamine, nefazodone, nortriptyline, opicapone, paroxetine hydrochloride, phendimetrazine, phentermine, phenylephrine, phenylpropanolamine, pizotifen, protriptyline, pseudoephedrine, rizatriptan, sertraline, sibutramine, sumatriptan, sympathomimetics, tramadol, tricyclic antidepressants, trimipramine, tryptophan, tyramine-containing foods, venlafaxine, viloxazine, zolmitriptan
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Consuming tyramine-containing foods or drinks while you are taking tranylcypromine can raise your blood pressure to dangerous levels. These include the following: aged cheeses, avocados, banana skins, bologna and other processed luncheon meats, chicken livers, chocolate, figs, canned pickled herring, meat extracts, pepperoni, raisins, raspberries, soy sauce, vermouth, sherry and red wines.
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Central Nervous System
Delirium [2]
Serotonin syndrome [3]

TRASTUZUMAB

Trade name: Herceptin (Genentech)
Indications: Metastatic breast cancer, stomach cancer
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Biologic, HER2/neu receptor antagonist (HER2 receptor antagonist), Monoclonal antibody, Tyrosine kinase inhibitor
Half-life: 2–16 days (dose dependent)
Clinically important, potentially hazardous interactions with: abatacept, abciximab, alefacept, antineoplastics, azacitidine, betamethasone, cabazitaxel, denileukin, docetaxel, doxorubicin, fingolimod, gefitinib, immunosuppressants, leflunomide, lenalidomide, oxaliplatin, paclitaxel, pazopanib, pemetrexed, pralatrexate, temsirolimus
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: CARDIOMYOPATHY, INFUSION REACTIONS, EMBRYO-FETAL TOXICITY, and PULMONARY TOXICITY

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (2%) [4]
Cutaneous toxicity / skin toxicity [3]
Dermatomyositis [3]
Edema / fluid retention (see also peripheral edema) (8%)
Erythema [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [11]
Herpes simplex (2%)
Hypersensitivity [3]
Peripheral edema (see also edema) (5–10%)
Photosensitivity [2]
Pruritus (itching) (2%)
Radiation recall dermatitis [2]
Rash (4–18%) [12]
Hair
Alopecia / hair loss [6]
Nails
Nail disorder (2%)
Mucosal
Epistaxis (nosebleed) (2%)
Mucositis [4]
Stomatitis (oral mucositis) [5]
Cardiovascular
Arrhythmias (3%)
Cardiac disorder / cardiac dysfunction [5]
Cardiac failure [5]
Cardiomyopathy [2]
Cardiotoxicity [31]
Congestive heart failure (2–7%) [8]
Hypertension (4%) [3]
Myocardial toxicity [3]
Palpitation (3%)
Tachycardia (5%)
Central Nervous System
Anorexia (14%) [6]
Chills (5–32%) [8]
Depression (6%)
Fever (pyrexia) (includes hyperpyrexia) (6–36%) [7]
Headache (10–26%) [3]
Insomnia (14%)
Neurotoxicity [4]
Pain (47%) [2]
Paresthesias (2–9%)
Peripheral neuropathy [9]
Vertigo / dizziness (4–13%)
Endocrine/Metabolic
ALT increased [7]
Appetite decreased [2]
AST increased [3]
Hyperbilirubinemia [2]
Hyperglycemia (includes glucose increased) [4]
Hypertransaminasemia (transaminitis) / elevated transaminases [2]
Gastrointestinal/Hepatic
Abdominal pain (2–22%)
Constipation (2%)
Diarrhea (7–25%) [35]
Dyspepsia / functional dyspepsia / gastroparesis (2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
Nausea (6–33%) [11]
Vomiting (4–23%) [5]
Genitourinary
Urinary tract infection (3–5%)
Hematologic
Anemia (4%) [9]
Febrile neutropenia [18]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (3%) [13]
Neutropenia (neutrophils decreased) [38]
Thrombocytopenia [8]
Local
Infusion-related reactions [5]
Injection-site reaction (21–40%) [7]
Neuromuscular/Skeletal
Arthralgia (6–8%) [5]
Asthenia / fatigue (5–47%) [24]
Back pain (5–22%)
Bone or joint pain (3–7%)
Muscle spasm (3%)
Myalgia/Myopathy (4%) [4]
Respiratory
Cough (5–26%)
Dyspnea / shortness of breath (3–22%) [2]
Influenza (4%)
Influenza- ('flu)-like syndrome (10%) [3]
Nasopharyngitis (8%)
Pharyngitis (sore throat) (12%)
Pharyngolaryngeal pain (2%)
Pneumonia [3]
Pneumonitis [2]
Pulmonary toxicity [4]
Rhinitis (2–14%)
Sinusitis (2–9%)
Upper respiratory tract infection (3%)
Other
Adverse effects / adverse reactions [9]
Allergic reactions (3%) [2]
Death [5]
Infection (20%) [3]

TRASTUZUMAB EMTANSINE

Synonym: T-DM1
Trade name: Kadcyla (Genentech)
Indications: HER2-positive, metastatic breast cancer in patients who previously received trastuzumab and a taxane, separately or in combination
Class: Antibody drug conjugate (ADC), Biologic, HER2-targeted antibody-drug conjugate, Monoclonal antibody
Half-life: 4 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: HEPATOTOXICITY, CARDIAC TOXICITY, EMBRYO-FETAL TOXICITY

Skin
- Hypersensitivity (2%)
- Peripheral edema (see also edema) (7%)
- Pruritus (itching) (6%)
- Rash (12%)
- Telangiectasia [2]

Mucosal
- Epistaxis (nosebleed) (23%) [2]
- Stomatitis (oral mucositis) (14%)
- Xerostomia (dry mouth) (17%)

Cardiovascular
- Cardiotoxicity [2]
- Hypertension (5%)
- Systolic dysfunction / ejection fraction reduced [2]

Central Nervous System
- Chills (8%)
- Dysgeusia (taste perversion) (8%)
- Fever (pyrexia) (includes hyperpyrexia) (19%) [2]
- Headache (28%) [4]
- Insomnia (12%)
- Peripheral neuropathy (21%) [4]
- Vertigo / dizziness (10%)

Endocrine/Metabolic
- ALP increased (5%)
- ALT increased (82%) [4]
- AST increased (98%) [7]
- Hypokalemia (10%) [3]

Gastrointestinal/Hepatic
- Abdominal pain (19%)
- Constipation (27%) [3]
- Diarrhea (24%) [6]
- Dyspepsia / functional dyspepsia / gastroparesis (9%)
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [16]
- Nausea (40%) [10]
- Vomiting (19%)

Genitourinary
- Urinary tract infection (9%)

Hematologic
- Anemia (14%) [10]
- Febrile neutropenia [3]
- Hemorrhage (32%) [2]
- Neutropenia (neutrophils decreased) (7%) [5]
- Thrombocytopenia (31%) [31]

Neuromuscular/Skeletal
- Arthralgia (19%) [3]
- Asthenia / fatigue (18–36%) [15]
- Bone or joint pain (36%)
- Myalgia/Myopathy (14%)

Ocular
- Conjunctivitis (conjunctival inflammation) (4%)
- Lacrimation (3%)
- Vision blurred (5%)
- Xerophthalmia (dry eyes) (4%)

Respiratory
- Cough (18%)
- Dyspnea / shortness of breath (12%)
- Pneumonia [3]

Other
- Adverse effects / adverse reactions [5]
- Death [3]

TRAZODONE

Trade names: Desyrel (Bristol-Myers Squibb), Oleptro (Angelini)
Indications: Depression
Class: Antidepressant; tricyclic, Serotonin reuptake inhibitor
Half-life: 3–6 hours
Clinically important, potentially hazardous interactions with: amiodarone, amprenavir, atazanavir, boceprevir, citalopram, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, darunavir, delavirdine, fluoxetine, fluvoxamine, ginkgo biloba, indinavir, linezolid, lopinavir, MAO inhibitors, nefazodone, paroxetine hydrochloride, sertraline, tapentadol, telaprevir, tipranavir, venlafaxine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SUICIDALITY IN CHILDREN AND ADOLESCENTS

Skin
- Edema / fluid retention (see also peripheral edema) (<10%)
- Exanthems [6]
- Photosensitivity [2]
- Psoriasis (exacerbation) [2]
- Urticaria / hives [3]

Hair
- Alopecia / hair loss [2]

Mucosal
- Xerostomia (dry mouth) (>10%) [6]

Cardiovascular
- Arrhythmias [2]
- QT interval prolonged / QT prolongation [2]

Central Nervous System
- Delirium [3]
- Dysgeusia (taste perversion) (>10%)
- Headache [3]
- Parkinsonism [4]
- Sedation (>5%)
- Serotonin syndrome [7]
- Somnolence (drowsiness) (>5%) [3]
- Tremor (<10%)
- Vertigo / dizziness (>5%) [4]

Gastrointestinal/Hepatic
- Constipation (>5%)
- Nausea [2]

Genitourinary
- Priapism (12%) [23]
- Sexual dysfunction [2]

Neuromuscular/Skeletal
- Myalgia/Myopathy (<10%)

Ocular
- Vision blurred (>5%)

TREPROSTINIL

Synonym: Treprostinil palmitil (an ester prodrug)
Trade names: Remodulin (United Therapeutics), Tyvaso (United Therapeutics)
Indications: Pulmonary arterial hypertension, patients requiring transition from epoprostenol
Class: Antihypertensive, Platelet aggregation inhibitor, Prostaglandin
Half-life: 2–4 hours
Clinically important, potentially hazardous interactions with: anticoagulants, antihypertensives, CYP2C8 inhibitors or inducers, diuretics, gemfibrozil, meloxicam, rifampin, rifapentine, vasodilators
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
- Edema / fluid retention (see also peripheral edema) (9%)
- Flushing / rubefaction [5]
- Hot flashes / hot flushes [2]
- Pruritus (itching) (8%)
- Rash (14%)

Mucosal
- Throat irritation [2]

Cardiovascular
- Hypotension (4%) [2]
- Vasodilation (11%)

Central Nervous System
- Headache (27%) [13]
- Pain (13%)
- Vertigo / dizziness (9%) [2]

Gastrointestinal/Hepatic
- Diarrhea (25%) [8]
- Nausea (22%) [7]

Local
- Application-site reactions (83%)
- Injection-site bleeding (33%)
- Injection-site pain (85%) [4]
- Injection-site reaction (83%) [2]

Neuromuscular/Skeletal
- Jaw pain (13%) [6]

Respiratory
- Cough [5]

Other
- Adverse effects / adverse reactions [3]

TRETINOIN

Synonyms: all-trans-retinoic acid; ATRA
Trade names: Aknemycin Plus (EM Industries), Renova (Ortho), Retin-A Micro (Ortho), Solage (Galderma), Vesanoid (Roche)
Indications: Acne vulgaris, skin aging, facial roughness, fine wrinkles, hyperpigmentation [T], acute promyelocytic leukemia [O]
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Retinoid
Half-life: 0.5–2 hours
Clinically important, potentially hazardous interactions with: aldesleukin, bexarotene
Pregnancy category: D (category B (topical), category C (oral), category D in third trimester)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Oral retinoids can cause birth defects, and women should avoid tretinoin when pregnant or trying to conceive. Avoid prolonged exposure to sunlight.
[T] = Topical; [O] = Oral.

Skin
- Bullous dermatosis [2]
- Burning / skin burning sensation [O][T] (10–40%) [20]
- Cellulitis [O] (<10%)
- Crusting [2]
- Dermatitis [7]
- Desquamation (14%)
- Diaphoresis (see also hyperhidrosis) (20%)
- Differentiation syndrome [O] (25%) [19]
- Edema / fluid retention (see also peripheral edema) (29%) [8]
- Erythema [O][T] (<49%) [19]
- Erythema nodosum [4]
- Exfoliative dermatitis [O] (8%) [3]
- Facial edema [O] (<10%)
- Flaking [O] (23%)
- Hyperkeratosis [O] (78%)
- Hypomelanosis (5%) [2]
- Pallor [O] (<10%)
- Palmar–plantar desquamation [O] (<10%)
- Peeling [4]
- Photosensitivity [O][T] (10%) [3]
- Pigmentation (5%) [3]
- Pruritus (itching) [O][T] (5–40%) [14]
- Rash [O][T] (54%) [3]
- Scaling (10–40%) [16]
- Stinging (<26%) [8]
- Sweet's syndrome [22]
- Ulcerations (scrotal) [9]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
- Xerosis / xeroderma (see also dry skin) [O] (49–100%) [19]

Hair
- Alopecia areata [O] (14%)

Nails
- Pyogenic granuloma [3]

Mucosal
- Cheilitis (inflammation of the lips) [O] (10%)
- Xerostomia (dry mouth) [O] (10%)

Cardiovascular
- Phlebitis (11%)

Central Nervous System
- Depression [O] (14%)
- Fever (pyrexia) (includes hyperpyrexia) [O] [6]
- Headache [3]
- Intracranial pressure increased (intracranial hypertension) (see also pseudotumor cerebri) [3]
- Pain [O] (37%)
- Paresthesias [O] (17%)
- Pseudotumor cerebri (see also intracranial hypertension) [O] [12]
- Shivering [O] (63%)
- Tremor [O] (<10%)

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
- Pancreatitis / acute pancreatitis [2]

Hematologic
- Hemorrhage [2]

Local
- Injection-site reaction (17%)

Neuromuscular/Skeletal
- Arthralgia [O] (10%) [3]
- Bone or joint pain [O] (77%) [3]
- Myalgia/Myopathy (14%) [3]

Ocular
- Diplopia (double vision) [2]
- Ocular itching / ocular pruritus [O] (10%)
- Ocular pigmentation [O] (<10%)
- Xerophthalmia (dry eyes) [O] (<10%) [2]

Other
- Death [O] [2]
- Infection [O] (58%)

TRIAMCINOLONE

Trade names: Aristospan (Sabex), Azmacort (Kos), Kenalog (Apothecon), Nasacort (Aventis), Triacet (Teva)
Indications: Arthralgias, asthma, dermatoses, inflammatory ocular conditions, rhinitis
Class: Corticosteroid / Glucocorticoid, Corticosteroid, systemic, Corticosteroid, topical
Half-life: 17–25 days
Clinically important, potentially hazardous interactions with: ACE inhibitors, acetazolamide, adrenergic neurone blockers, aldesleukin, alpha blockers, aminoglutethimide, aminophylline, amphotericin B, angiotensin II receptor antagonists, antacids, antidiabetics, antifungals, aprepitant, aspirin, barbiturates, beta blockers, beta$_2$ sympathomimetics, calcium channel blockers, calcium salts, carbamazepine, cardiac glycosides, clonidine, denosumab, diazoxide, diuretics, erythromycin, estrogens, fluconazole, fosaprepitant, histamine, hydralazine, isoniazid, itraconazole, ketoconazole, leflunomide, leflunomide, live vaccines, loop diuretics, macrolide antibiotics, methyl salicylate, methyldopa, mifamurtide, mifepristone, minoxidil, mitotane, moxonidine, natalizumab, neuromuscular blocking agents, nitrates, nitroprusside, NSAIDs, oral contraceptives, pancuronium, phenindione, phenobarbital, phenytoin, pimecrolimus, primidone, quinolones, rifampin, rifamycin derivatives, salicylates, sipuleucel-T, sodium benzoate, sodium phenylbutyrate, somatropin, tacrolimus, thiazides, vaccines, vecuronium, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
- Atrophy / Skin atrophy [4]
- Bruise / bruising / contusion / ecchymosis (ecchymoses) [2]
- Burning / skin burning sensation [2]
- Dermatitis [3]
- Erythema [5]
- Moon face [2]
- Nicolau syndrome [2]
- Pigmentation [7]
- Scaling [2]
- Urticaria / hives [2]

Central Nervous System
- Headache [7]
- Pain [2]

Endocrine/Metabolic
- Cushing's syndrome [6]

Local
- Injection-site lipoatrophy/lipohypertrophy [4]
- Injection-site pain [2]

Neuromuscular/Skeletal
- Osteoporosis [3]

Ocular
- Cataract [30]
- Chorioretinopathy [5]
- Conjunctival ulceration [2]
- Endophthalmitis [20]
- Eyelid ptosis / blepharoptosis [3]
- Glaucoma (includes acute angle-closure glaucoma) [10]
- Intraocular hypertension [8]
- Intraocular pressure increased [7]
- Maculopathy [2]
- Ocular hypertension [7]
- Ocular pressure [22]
- Retinal detachment [3]
- Uveitis / anterior uveitis / posterior uveitis / panuveitis [3]
- Vision impaired [3]

Other
- Adverse effects / adverse reactions [4]
- Allergic reactions [3]
- Hoigne's syndrome [2]

TRIAMTERENE

Trade names: Dyazide (GSK), Dyrenium (Concordia)
Indications: Edema
Class: Diuretic, potassium-sparing
Half-life: 1–2 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, acemetacin, benazepril, captopril, cyclosporine, enalapril, fosinopril, indomethacin, lisinopril, metformin, moexipril, potassium iodide, potassium salts, quinapril, ramipril, spironolactone, trandolapril, zofenopril
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Dyazide and Maxzide are triamterene and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Edema / fluid retention (see also peripheral edema) (<10%)
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (with hydrochlorothiazide) [2]
Photosensitivity [2]
Rash (<10%)

TRIAZOLAM

Trade name: Halcion (Pfizer)
Indications: Insomnia
Class: Benzodiazepine
Half-life: 1.5–5.5 hours
Clinically important, potentially hazardous interactions with: amprenavir, atazanavir, boceprevir, clarithromycin, darunavir, delavirdine, efavirenz, erythromycin, fosamprenavir, indinavir, itraconazole, ketoconazole, lopinavir, nelfinavir, ombitasvir/paritaprevir/ritonavir, ombitasvir/paritaprevir/ritonavir and dasabuvir, paclitaxel, posaconazole, rifampin, ritonavir, telaprevir, telithromycin, tipranavir, viloxazine
Pregnancy category: X

Skin
Dermatitis (<10%)
Diaphoresis (see also hyperhidrosis) (>10%) [2]
Pruritus (itching) [2]
Rash (>10%)
Mucosal
Sialopenia (>10%)
Sialorrhea (ptyalism; hypersalivation) (<10%)
Xerostomia (dry mouth) (>10%) [4]
Central Nervous System
Amnesia [19]
Dysgeusia (taste perversion) [2]
Tremor (<10%)
Neuromuscular/Skeletal
Ataxia [2]
Ocular
Diplopia (double vision) [2]

TRICHLORMETHIAZIDE

Indications: Edema, hypertension
Class: Diuretic, thiazide
Half-life: N/A
Clinically important, potentially hazardous interactions with: digoxin, lithium
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Trichlormethiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

TRIENTINE

Synonym: triethylenetetramine
Trade names: Cufence (Univar Solutions), Cuprior (Orphalan), Cuvrior (Orphalan), Syprine (Bausch Health US)
Indications: Wilson's disease
Class: Chelator
Half-life: 13.8 to 16.5 hours (trientine tetrahydrochloride)
Clinically important, potentially hazardous interactions with: ferrous sulfate, mineral supplements (e.g. iron, zinc, calcium, or magnesium)
Pregnancy category: C (Chelator-induced copper deficiency may have adverse effects on the fetus.)
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Trientine hydrochloride is the USAN for trientine dihydrochloride. Administer trientine formulations at least 1 hour apart from any other oral drug. Worsening of clinical symptoms, including neurological deterioration, may occur at the beginning of trientine therapy due to mobilization of excess stores of copper. Adjust the dosage or discontinue trientine if the patient's clinical condition worsens.

Skin
Rash (12%)
Hair
Alopecia / hair loss (8%)
Central Nervous System
Mood changes (8%)
Gastrointestinal/Hepatic
Abdominal pain (19%)
Colitis [2]
Gastrointestinal adverse reaction (15%)

TRIFLUOPERAZINE

Indications: Psychoses, anxiety
Class: Antipsychotic, Neuroleptic, Phenothiazine
Half-life: 10–20 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, adrenergic neurone blockers, antihistamines, arsenic, beta blockers, chlorpheniramine, diazoxide, diuretics, dofetilide, hydralazine, kaolin, lithium, minoxidil, moxonidine, myelosuppressives, nitrates, nitroprusside, pentamidine, pimozide, piperazine, quinolones, sotalol, sparfloxacin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Photosensitivity (<10%)
Rash (<10%)
Central Nervous System
Neuroleptic malignant syndrome [2]
Parkinsonism (>10%) [3]
Endocrine/Metabolic
Mastodynia (<10%)

TRIFLURIDINE & TIPIRACIL

Trade name: Lonsurf (Monarch)
Indications: Metastatic colorectal cancer in patients who have been previously treated with fluoropyrimidine-, oxaliplatin-and irinotecan-based chemotherapy, an anti-VEGF biological therapy, and if RAS wild-type, an anti-EGFR therapy
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Thymidine phosphorylase inhibitor, Thymidine-based nucleoside analogue
Half-life: 2 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A (Can cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: See also separate entry for trifluridine.

Hair
Alopecia / hair loss (7%)
Mucosal
Stomatitis (oral mucositis) (8%)
Central Nervous System
Anorexia [3]
Dysgeusia (taste perversion) (7%)
Fever (pyrexia) (includes hyperpyrexia) (19%)
Endocrine/Metabolic
Appetite decreased (39%) [3]
Gastrointestinal/Hepatic
Abdominal pain (21%) [3]
Diarrhea (32%) [4]
Nausea (48%) [7]
Vomiting (28%) [3]
Genitourinary
Urinary tract infection (4%)
Hematologic
Anemia (77%) [20]
Febrile neutropenia [3]
Granulocytopenia [3]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [13]
Neutropenia (neutrophils decreased) (67%) [23]
Thrombocytopenia (42%) [5]
Neuromuscular/Skeletal
Asthenia / fatigue (52%) [9]
Respiratory
Nasopharyngitis (4%)
Pulmonary embolism (2%)
Other
Adverse effects / adverse reactions [4]
Death [2]
Infection (27%)

TRIHEXYPHENIDYL

Indications: Parkinsonism
Class: Muscarinic antagonist
Half-life: 3–4 hours
Clinically important, potentially hazardous interactions with: anticholinergics, arbutamine
Pregnancy category: C

Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Photosensitivity (<10%)
Xerosis / xeroderma (see also dry skin) (>10%)
Mucosal
Xerostomia (dry mouth) (30–50%)
Central Nervous System
Hallucinations [3]

TRIMEPRAZINE

Synonym: alimemazine
Indications: Pruritus, urticaria
Class: Antipsychotic, Histamine H1 receptor antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Mucosal
Xerostomia (dry mouth) (<10%)

TRIMETHOBENZAMIDE

Trade name: Tigan (Monarch)
Indications: Prevention and treatment of nausea and vomiting
Class: Antiemetic
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers

TRIMETHOPRIM

Trade names: Bactrim (Women First), Septra (Monarch)
Indications: Various urinary tract infections caused by susceptible organisms, acute otitis media in children, acute and chronic bronchitis
Class: Antibiotic, Antimicrobial
Half-life: 8–10 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, amantadine, angiotensin II receptor antagonists, antidiabetics, azathioprine, benazepril, captopril, carvedilol, cilazapril, conivaptan, coumarins, cyclosporine, CYP2C8 substrates, CYP2C9 inhibitors, CYP3A4 inducers, dapsone, deferasirox, digoxin, dofetilide, enalapril, eplerenone, fosinopril, irbesartan, lamivudine, leucovorin, levoleucovorin, lisinopril, memantine, mercaptopurine, metformin, methotrexate, olmesartan, oral typhoid vaccine, PEG-interferon, phenytoin, pioglitazone, pralatrexate, procainamide, pyrimethamine, quinapril, ramipril, repaglinide, rifampin, sulfonylureas, trandolapril
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Although trimethoprim has been known to elicit occasional adverse reactions by itself, it is most commonly used in conjunction with sulfamethoxazole (co-trimoxazole - see separate entry).

Skin
DRESS syndrome [2]
Fixed eruption [6]
Pruritus (itching) (<10%)
Rash (3–7%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Central Nervous System
Aseptic meningitis [3]
Endocrine/Metabolic
Hyperkalemia [3]
Hyponatremia [3]
Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Hematologic
Anemia [2]
Thrombocytopenia [2]
Neuromuscular/Skeletal
Rhabdomyolysis [3]

TRIMIPRAMINE

Trade name: Surmontil (Odyssey)
Indications: Major depression
Class: Antidepressant; tricyclic
Half-life: 20–26 hours
Clinically important, potentially hazardous interactions with: amprenavir, arbutamine, bupropion, clonidine, epinephrine, formoterol, guanethidine, isocarboxazid, linezolid, MAO inhibitors, phenelzine, quinolones, sparfloxacin, tranylcypromine, venlafaxine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Mucosal
Xerostomia (dry mouth) (>10%) [2]
Cardiovascular
QT interval prolonged / QT prolongation [2]
Central Nervous System
Dysgeusia (taste perversion) (>10%)
Parkinsonism (<10%)
Seizures [4]

TRIPELENNAMINE

Trade name: PBZ (Novartis)
Indications: Allergic rhinitis, urticaria
Class: Histamine H1 receptor antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: alcohol, barbiturates, chloral hydrate, ethchlorvynol, paraldehyde, phenothiazines
Pregnancy category: B
Note: The intravenous use of a pentazocine/tripelennamine combination (T's and Blues) was a major drug abuse problem in the 1970s.

Skin
Purpura [2]
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Seizures [2]

TRIPROLIDINE

Indications: Allergic rhinitis
Class: Histamine H1 receptor antagonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Most of the trade name drugs are triprolidine and pseudoephedrine.

Skin
Diaphoresis (see also hyperhidrosis) (<10%)
Mucosal
Xerostomia (dry mouth) (<10%)
Central Nervous System
Hallucinations, visual (see also Charles Bonnet syndrome) [3]

TRIPTORELIN

Trade names: Decapeptyl (Ipsen), Trelstar (Debiopharma)
Indications: Palliative treatment of advanced prostate carcinoma
Class: Gonadotropin-releasing hormone (GnRH) agonist
Half-life: ~3 hours
Clinically important, potentially hazardous interactions with: hyperprolactinemic drugs
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Edema / fluid retention (see also peripheral edema) (<10%)
Hot flashes / hot flushes (59–73%) [6]
Hyperhidrosis (see also diaphoresis) (<10%)
Rash (2%)
Cardiovascular
Chest pain (2%)
Hypertension (<4%)
Central Nervous System
Anorexia (2%)
Headache (2–7%)
Insomnia (<2%)
Pain (2–3%)
Paresthesias (<10%)
Vertigo / dizziness (<3%)
Endocrine/Metabolic
ALP increased (2%)
Gynecomastia (2%)
Libido decreased (2%)
Mastodynia (2%)
Pituitary apoplexy [2]
Gastrointestinal/Hepatic
Constipation (2%)
Dyspepsia / functional dyspepsia / gastroparesis (2%)

Nausea (<10%)
Vomiting (2%)

Genitourinary
Dysuria (5%)
Erectile dysfunction (10%)
Impotence (2–7%)
Testicular atrophy (8%)

Local
Injection-site erythema (<10%)
Injection-site inflammation (<10%)
Injection-site pain (4%)
Injection-site reaction (<10%)

Neuromuscular/Skeletal
Arthralgia (2%)
Asthenia / fatigue (2%)
Back pain (<10%)
Bone or joint pain (12–13%)
Leg cramps (2%)
Leg pain (2–5%)

Respiratory
Cough (2%)

Other
Adverse effects / adverse reactions [3]

TROGLITAZONE

Trade names: Prelay (Sankyo), Rezulin (Pfizer)
Indications: Management of Type II diabetes (noninsulin-dependent diabetes mellitus (NIDDM) also known as adult-onset diabetes)
Class: Antidiabetic, CYP3A4 inducer, Thiazolidinedione
Half-life: 16–34 hours
Clinically important, potentially hazardous interactions with: cholestyramine, digoxin, terfenadine
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Troglitazone should not be used in Type I diabetes or for the treatment of diabetic keto-acidosis.
Not available in USA, UK or Japan.
Warning: HEPATOTOXICITY

Skin
Peripheral edema (see also edema) (5%)

Central Nervous System
Headache (11%)
Pain (10%)
Vertigo / dizziness (6%)

Endocrine/Metabolic
ALT increased (2%)

Gastrointestinal/Hepatic
Diarrhea (5%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [5]
Nausea (6%)

Genitourinary
Urinary tract infection (5%)

Neuromuscular/Skeletal
Asthenia / fatigue (6%)
Back pain (6%)

Respiratory
Pharyngitis (sore throat) (5%)
Rhinitis (5%)

Other
Infection (18%)

TROLEANDOMYCIN

Trade name: TAO (Pfizer)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; macrolide, Antimicrobial
Half-life: N/A
Clinically important, potentially hazardous interactions with: aprepitant, astemizole, carbamazepine, colchicine, copanlisib, crizotinib, cyclosporine, dihydroergotamine, dutasteride, eletriptan, ergot alkaloids, ergotamine, erlotinib, erythromycin, fluoxetine, fluvoxamine, methylergonovine, methylprednisolone, methysergide, midostaurin, neratinib, oral contraceptives, paroxetine hydrochloride, pimozide, prednisolone, rifampin, rilpivirine, sertraline, solifenacin, terfenadine, warfarin
Pregnancy category: C

Skin
Exanthems [2]
Pruritus (itching) [2]
Rash (<10%)
Urticaria / hives (<10%)

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]

TROSPIUM

Trade name: Sanctura (Allergan)
Indications: Overactive bladder
Class: Anticholinergic, Antispasmodic, Muscarinic antagonist
Half-life: 20 hours
Clinically important, potentially hazardous interactions with: anticholinergics, antihistamines, botulinum toxin (A & B), cannabinoids, clozapine, disopyramide, domperidone, haloperidol, ketoconazole, levodopa, maois, memantine, metformin, metoclopramide, morphine, nefopam, pancuronium, parasypathomimetics, phenothiazines, pramlintide, procainamide, secretin, tenofovir disoproxil, tricyclic antidepressants, vancomycin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

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Mucosal
Xerostomia (dry mouth) (20%) [16]

Central Nervous System
Dysgeusia (taste perversion) (<10%)
Headache (4%) [4]

Gastrointestinal/Hepatic
Abdominal pain (2%)
Constipation (10%) [6]

Neuromuscular/Skeletal
Asthenia / fatigue (2%)

Other
Adverse effects / adverse reactions [4]

TROVAFLOXACIN

Trade name: Trovan (Pfizer)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; quinolone, Antimicrobial
Half-life: 9.5 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Trovafloxacin has been withdrawn in the USA except for intravenous hospital use.
Warning: HEPATOTOXICITY

Skin
Pruritus (itching) (2%)
Rash (2%)

Central Nervous System
Headache [3]
Neurotoxicity [2]
Vertigo / dizziness [5]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [11]

Genitourinary
Vaginitis (includes vulvitis) (<10%)

TRYPTOPHAN

Other common trade names: 5-HT, 5-HTP, 5-hydroxytryptophan, 5-OHTrp, L-2-amino-3-(indole-3yl) propionic acid, L-trypt, L-tryptophan
Indications: Insomnia, depression, myofascial pain, premenstrual syndrome, aid to smoking cessation, bruxism
Class: Amino acid, Antidepressant
Half-life: N/A
Clinically important, potentially hazardous interactions with: citalopram, desipramine, duloxetine, fluoxetine, fluvoxamine, isocarboxazid, linezolid, milnacipran, paroxetine hydrochloride, phenelzine, sibutramine, tranylcypromine, vilazodone
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Tryptophan is an essential amino acid. It is a precursor of serotonin and is also converted to nicotinic acid and nicotinamide.

Skin
Eosinophilia–myalgia syndrome [23]
Eosinophilic fasciitis [13]
Scleroderma (see also morphea / localized scleroderma) [8]

Neuromuscular/Skeletal
Myalgia/Myopathy [2]

Respiratory
Pulmonary hypertension [2]

TURMERIC

Family: Zingiberaceae
Scientific names: *Curcuma aromatica, Curcuma domestica, Curcuma longa, Curcuma xanthorrhiza*
Indications: Arthritis, anticarcinogen, stimulant, carminative, amenorrhea, angina, asthma, colorectal cancer, delirium, diarrhea, dyspepsia, flatulence, hemorrhage, hepatitis, hypercholesterolemia, hypertension, jaundice, mania, menstrual disorders, ophthalmia, tendonitis. **Topical:** conjuctivitis, skin cancer, smallpox, chickenpox, leg ulcers. Food coloring in cheese, margarine, sweets, snack foods, cosmetics, essential oil in perfumes, culinary spice
Class: Anti-inflammatory, Anti-Tumor Necrosis Factor-alpha (TNF-α antagonist)
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: N/A
Note: Persons with symptoms of gallstones or obstruction of bile passages should avoid turmeric.

Skin
Dermatitis [6]
Rash [3]
Mucosal
Stomatitis (oral mucositis) [2]
Central Nervous System
Headache [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea [6]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [2]
Other
Adverse effects / adverse reactions [4]

TYPHOID VACCINE

Trade names: Typherix (GSK), Typhim Vi (Sanofi Pasteur), Vivotif (Berna Biotech)
Indications: Immunization against typhoid fever
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: alcohol, antibiotics, antimalarials, atovaquone/proguanil, azathioprine, belimumab, cefixime, ceftaroline fosamil, ceftobiprole, chloroquine, ciprofloxacin, corticosteroids, daptomycin, fingolimod, gemifloxacin, hydroxychloroquine, immunosuppressants, interferon gamma, leflunomide, mefloquine, mercaptopurine, sulfonamides, telavancin, tigecycline, tinidazole, tocilizumab, ustekinumab
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Vivotif is a live oral vaccine.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [2]
Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<3%) [6]
Headache (5–20%) [3]
Myelitis / myeloradiculitis [2]
Gastrointestinal/Hepatic
Abdominal pain (6%) [2]
Diarrhea (<3%)
Nausea (2–8%)
Vomiting (2%)
Local
Injection-site edema [3]
Injection-site erythema (4–5%) [2]
Injection-site induration (5–15%)
Injection-site pain (27–41%) [6]
Neuromuscular/Skeletal
Asthenia / fatigue (4–24%) [3]
Myalgia/Myopathy (3–7%) [3]
Other
Adverse effects / adverse reactions [4]
Death [2]

ULIPRISTAL

Trade names: ella (Watson), ellaOne (HRA Pharma)
Indications: Emergency contraception within 120 hours (5 days) of unprotected sexual intercourse or contraceptive failure
Class: Progestogen antagonist
Half-life: 32 hours
Clinically important, potentially hazardous interactions with: antacids, barbiturates, bosentan, carbamazepine, clarithromycin, conivaptan, CYP3A4 inducers, dabigatran, deferasirox, digoxin, efavirenz, felbamate, griseofulvin, H2-receptor antagonists, hypericum perforatum, itraconazole, ketoconazole, levonorgestrel, nefazodone, omeprazole, oxcarbazepine, pantoprazole, phenobarbital, phenytoin, progestogens, proton pump inhibitors, rifampin, rifapentine, ritonavir, St John's wort, telithromycin, topiramate
Pregnancy category: X
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Hot flashes / hot flushes [3]
Central Nervous System
Headache (18–19%) [8]
Mood changes (<10%)
Vertigo / dizziness (5%) [2]
Endocrine/Metabolic
Mastodynia (<10%) [2]
Menstrual irregularities [3]
Gastrointestinal/Hepatic
Abdominal pain (8–15%) [5]
Dyspepsia / functional dyspepsia / gastroparesis (<10%)
Nausea (12–13%) [7]
Vomiting (<10%)
Genitourinary
Dysmenorrhea (7–13%)
Pelvic pain (<10%)
Neuromuscular/Skeletal
Asthenia / fatigue (6%)
Back pain (<10%)
Myalgia/Myopathy (<10%)
Other
Infection (<10%)

UMECLIDINIUM

Trade name: Incruse (GSK)
Indications: Chronic obstructive pulmonary disease (COPD)
Class: Anticholinergic, Muscarinic antagonist
Half-life: 11 hours
Clinically important, potentially hazardous interactions with: anticholinergics
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Mucosal
Oropharyngeal pain [2]
Cardiovascular
Angina [2]
Arrhythmias [2]
Extrasystoles [3]
Hypertension [3]
Supraventricular tachycardia [2]
Tachycardia [2]
Central Nervous System
Dysgeusia (taste perversion) [3]
Headache [12]
Gastrointestinal/Hepatic
Constipation [2]
Genitourinary
Urinary tract infection [2]
Neuromuscular/Skeletal
Arthralgia (2%) [2]
Back pain [5]
Respiratory
Bronchitis [2]
COPD (exacerbation) [5]
Cough (3%) [6]
Dysphonia (includes voice disorders / voice changes) [4]
Influenza [2]
Nasopharyngitis (8%) [12]
Pharyngitis (sore throat) [2]
Pneumonia [4]
Sinusitis [3]
Upper respiratory tract infection [5]
Other
Adverse effects / adverse reactions [4]

UNOPROSTONE

Trade name: Rescula (Novartis)
Indications: Open-angle glaucoma
Class: Prostaglandin
Half-life: 14 minutes
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Mucosal
Xerostomia (dry mouth) [3]
Cardiovascular
Hypertension (<5%)
Central Nervous System
Headache (<5%)
Insomnia (<5%)
Pain (<5%)
Paresthesias (tongue) [3]
Vertigo / dizziness (<5%)

Endocrine/Metabolic
Diabetes mellitus (<5%)
Neuromuscular/Skeletal
Back pain (<5%)
Ocular
Abnormal vision (5–10%)
Blepharitis (<5%)
Cataract (<5%)
Conjunctivitis (conjunctival inflammation) (<5%)
Eyelashes – hypertrichosis (10–14%)
Foreign body sensation (5–10%)
Iris pigmentation [3]
Keratitis (<5%)
Lacrimation (5–10%)
Ocular burning (10–25%) [2]
Ocular discharge (<5%)
Ocular hemorrhage (<5%)
Ocular itching / ocular pruritus (10–25%)
Ocular pain (<5%)
Ocular pigmentation [3]
Ocular stinging (10–25%) [2]
Photophobia (<5%)
Respiratory
Bronchitis (<5%)
Cough (<5%)
Influenza- ('flu)-like syndrome (6%)
Pharyngitis (sore throat) (<5%)
Rhinitis (<5%)
Sinusitis (<5%)
Other
Allergic reactions (<5%)

URACIL/TEGAFUR

Trade name: Uftoral (Bristol-Myers Squibb)
Indications: Metastatic colorectal cancer
Class: Antimetabolite, Folic acid antagonist
Half-life: 6.5 hours
Clinically important, potentially hazardous interactions with: allopurinol, cimetidine, clozapine, metronidazole, phenytoin, tegafur/gimeracil/oteracil, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Tegafur is a prodrug of fluorouracil (see separate entry).

Skin
Acral erythema [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [6]
Keratoderma [2]
Photosensitivity [3]
Nails
Nail pigmentation [2]
Mucosal
Mucositis [4]
Stomatitis (oral mucositis) [6]
Central Nervous System
Anosmia (smell loss) / smell disorder (see also hyposmia) [2]
Pain [2]
Endocrine/Metabolic
ALT increased [2]
Gastrointestinal/Hepatic
Abdominal pain [2]
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Nausea [2]
Neuromuscular/Skeletal
Asthenia / fatigue [9]
Other
Side effects [2]

URAPIDIL

Trade name: Eupressyl (Nycomed)
Indications: Hypertension
Class: Adrenergic alpha-receptor antagonist, Serotonin agonist
Half-life: 4.7 hours (oral); 2.7 hours (intravenous)
Clinically important, potentially hazardous interactions with: none known
Note: Not approved by the FDA. Approved on a national level in several countries in Europe, South America, Japan and other Asian regions.

Cardiovascular
Bradycardia / sinus bradycardia [2]
Tachycardia [2]
Central Nervous System
Headache [8]
Intracranial pressure increased (intracranial hypertension) (see also pseudotumor cerebri) [2]
Somnolence (drowsiness) [2]
Vertigo / dizziness [8]
Neuromuscular/Skeletal
Asthenia / fatigue [4]

UROKINASE

Trade name: Abbokinase (AbbVie)
Indications: Acute myocardial infarction, coronary artery thrombosis, pulmonary embolism
Class: Fibrinolytic, Plasminogen activator
Half-life: 10–20 minutes
Clinically important, potentially hazardous interactions with: aspirin, bivalirudin, ibuprofen, indomethacin
Pregnancy category: B

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (>10%)
Angioedema (>10%)
Ocular
Periorbital edema (see also eyelid edema) (>10%)

URSODIOL

Synonyms: ursodeoxycholic acid; UDCA
Trade names: Actigall (Watson), Destolit (Norgine), Urdox (Wockhardt), Urso 250 (Aptalis), Urso Forte (Aptalis), Ursogal (Galen)
Indications: The dissolution of radiolucent (i.e. non-radio opaque) cholesterol gallstones in patients with a functioning gallbladder, primary biliary cirrhosis, biliary calculus, cholelithiasis
Class: Cholesterol antagonist, Urolithic
Half-life: 100 hours
Clinically important, potentially hazardous interactions with: aluminum based antacids, aluminum hydroxide, charcoal, cholestyramine, clofibrate, colestimide, colestipol, cyclosporine, dapsone, estradiol, estrogens, nitrendipine, oral contraceptives, P4503A substrates
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Lichenoid eruption / lichenoid reaction [3]
Pruritus (itching) [3]
Rash (3%)
Hair
Alopecia / hair loss (<5%)
Cardiovascular
Chest pain (3%)
Central Nervous System
Headache (18–25%)
Insomnia (2%)
Vertigo / dizziness (17%)
Endocrine/Metabolic
Weight gain [2]
Gastrointestinal/Hepatic
Abdominal pain (43%)
Cholecystitis (5%)
Constipation (26%)
Diarrhea (27%) [4]
Dyspepsia / functional dyspepsia / gastroparesis (16%) [2]
Flatulence (7%)
Gastrointestinal disorder / discomfort [2]
Nausea (14%) [4]
Vomiting (9–14%) [3]
Genitourinary
Dysmenorrhea (5%)
Urinary tract infection (6%)
Hematologic
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (3%)
Neuromuscular/Skeletal
Arthralgia (7%)
Asthenia / fatigue (3–7%)
Back pain (7–12%)
Bone or joint pain (6%)
Myalgia/Myopathy (5%)
Respiratory
Bronchitis (6%)
Cough (7%)
Influenza- ('flu)-like syndrome (6%)
Pharyngitis (sore throat) (8%)
Rhinitis (5%)
Sinusitis (5–11%)
Upper respiratory tract infection (12–15%)
Other
Adverse effects / adverse reactions [3]
Allergic reactions (5%)
Infection (viral) (9–19%)

USTEKINUMAB

Trade name: Stelara (Centocor)
Indications: Plaque psoriasis (moderate to severe), active psoriatic arthritis, active Crohn's disease (moderate to severe)
Class: Antipsoriatic agent, Biologic, Interleukin-12/23 antagonist, Monoclonal antibody
Half-life: 15–32 days
Clinically important, potentially hazardous interactions with: live vaccines, typhoid vaccine, yellow fever vaccine
Pregnancy category: B

Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Bullous pemphigoid / pemphigoid [5]
Cellulitis (<10%)
Herpes zoster [2]
Pruritus (itching) (<10%)
Psoriasis [3]

Mucosal
Nasal congestion (<10%)

Cardiovascular
Cardiotoxicity [3]

Central Nervous System
Depression (<10%)
Headache (<10%) [9]
Leukoencephalopathy / posterior reversible encephalopathy syndrome (PRES) [5]
Vertigo / dizziness (<10%)

Gastrointestinal/Hepatic
Diarrhea (<10%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]

Local
Injection-site reaction [7]

Neuromuscular/Skeletal
Arthralgia [3]
Asthenia / fatigue (<10%) [3]
Back pain (<10%)
Myalgia/Myopathy (<10%)
Psoriatic arthralgia / psoriatic arthritis [2]

Respiratory
Nasopharyngitis (10%) [12]
Pharyngolaryngeal pain (<10%)
Tuberculosis [2]
Upper respiratory tract infection (10%) [9]

Other
Adverse effects / adverse reactions [17]
Infection [15]
Malignancies [2]

VALACYCLOVIR

Trade name: Valtrex (GSK)
Indications: Genital herpes, herpes simplex, herpes zoster
Class: Antiviral, Guanine nucleoside analog
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, immunosuppressants, meperidine, tenofovir disoproxil
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients

Central Nervous System
Hallucinations [2]
Headache [5]
Neurotoxicity [5]

Gastrointestinal/Hepatic
Abdominal pain [2]
Nausea [4]
Vomiting [3]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [5]

VALBENAZINE

Trade name: Ingrezza (Neurocrine Biosciences)
Indications: Tardive dyskinesia
Class: Vesicular monoamine transporter 2 inhibitor
Half-life: 15–22 hours
Clinically important, potentially hazardous interactions with: carbamazepine, clarithromycin, digoxin, fluoxetine, isocarboxazid, itraconazole, ketoconazole, MAO inhibitors, paroxetine hydrochloride, phenelzine, phenytoin, quinidine, rifampin, selegiline, St John's wort, strong CYP2D6 inducers, strong CYP3A4 inducers or inhibitors
Pregnancy category: N/A (May cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Mucosal
Xerostomia (dry mouth) (<5%) [2]

Central Nervous System
Akathisia (<3%)
Depression [2]
Gait instability / postural instability (<4%)
Headache (3%) [6]
Impaired concentration (<5%)
Restlessness (<3%)
Sedation (<11%)
Somnolence (drowsiness) (<11%) [6]
Suicidal ideation [2]
Vertigo / dizziness (<4%) [2]

Endocrine/Metabolic
Appetite decreased [2]

Gastrointestinal/Hepatic
Constipation (<5%) [2]
Diarrhea [2]
Nausea (2%) [3]
Vomiting (3%)

Genitourinary
Urinary retention (<5%)
Urinary tract infection [3]

Neuromuscular/Skeletal
Arthralgia (2%)
Asthenia / fatigue (<11%) [6]

Ocular
Vision blurred (<5%)

VALDECOXIB

Trade name: Bextra (Pfizer)
Indications: Osteoarthritis, adult rheumatoid arthritis, dysmenorrhea
Class: COX-2 inhibitor, Non-steroidal anti-inflammatory (NSAID), Sulfonamide
Half-life: 8–11 hours
Clinically important, potentially hazardous interactions with: aspirin, dextromethorphan, lithium, warfarin
Pregnancy category: C
Note: Valdecoxib is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome. NSAIDs may cause an increased risk of serious cardiovascular and gastrointestinal adverse events, which can be fatal. This risk may increase with duration of use.
This drug has been withdrawn.
Warning: CARDIOVASCULAR AND GASTROINTESTINAL RISKS

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<2%)
Bruise / bruising / contusion / ecchymosis (ecchymoses) (<2%)
Cellulitis (<2%)
Dermatitis (<2%)
Diaphoresis (see also hyperhidrosis) (<2%)
Eczema / eczematous reaction / eczematous eruption (<2%)
Edema / fluid retention (see also peripheral edema) (<2%)
Exanthems (<2%)
Facial edema (<2%)
Hematoma (<2%)
Hot flashes / hot flushes (<2%)
Lipomatosis (<2%)
Peripheral edema (see also edema) (2–3%)
Photosensitivity (<2%)
Pruritus (itching) (<2%)
Psoriasis (<2%)
Rash (<2%)
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Ulcerations (<2%)
Urticaria / hives (<2%) [2]
Xerosis / xeroderma (see also dry skin) (<2%)

Hair
Alopecia / hair loss (<2%)

Mucosal
Stomatitis (oral mucositis) (<2%)
Xerostomia (dry mouth) (<2%)

Cardiovascular
Myocardial infarction [4]
Myocardial toxicity [2]
Thrombophlebitis (<2%)

Central Nervous System
Chills (<2%)
Depression (<2%)
Dysgeusia (taste perversion) (<2%)
Hyperesthesia (<2%)
Myokymia / twitching (<2%)
Paresthesias (<2%)
Stroke / cerebral infarction [3]
Tremor (<2%)

Neuromuscular/Skeletal
Arthralgia (<2%)
Back pain (2–3%)
Myalgia/Myopathy (2%)
Tendinopathy/Tendon rupture (<2%)

Ocular
Periorbital edema (see also eyelid edema) (<2%)

Otic
Tinnitus (2–10%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Respiratory
Cough (<2%)
Influenza- ('flu)-like syndrome (2%)
Upper respiratory tract infection (6–7%)

Other
Allergic reactions (<2%)

VALERIAN

Family: Valerianaceae
Scientific names: *Valeriana edulis, Valeriana jatamansii, Valeriana officinalis, Valeriana sitchensis, Valeriana wallichii*
Indications: Depression, tremors, epilepsy, attention deficit hyperactivity disorder, rheumatism, nervous asthma, gastric spasms, colic, menstrual cramps, hot flashes. Flavoring in foods and beverages
Class: Anxiolytic
Half-life: N/A
Clinically important, potentially hazardous interactions with: amitriptyline, escitalopram, eszopiclone
Pregnancy category: N/A

Central Nervous System
- Somnolence (drowsiness) [2]
- Tremor [2]

Gastrointestinal/Hepatic
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Other
- Adverse effects / adverse reactions [2]

VALGANCICLOVIR

Trade name: Valcyte (Roche)
Indications: Cytomegalovirus retinitis (CMV) in patients with AIDS, prevention of CMV disease in high-risk transplant patients
Class: Antiviral, Guanine nucleoside analog
Half-life: 4 hours (in severe renal impairment up to 68%)
Clinically important, potentially hazardous interactions with: abacavir, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, emtricitabine, tenofovir disoproxil
Pregnancy category: N/A (May cause fetal toxicity based on findings in animal studies)
Important contra-indications noted in the prescribing guidelines for: nursing mothers
Note: Valganciclovir is rapidly converted to ganciclovir in the body.
Warning: HEMATOLOGIC TOXICITY, IMPAIRMENT OF FERTILITY, FETAL TOXICITY, MUTAGENESIS AND CARCINOGENESIS

Mucosal
- Oral candidiasis [2]

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) [3]
- Headache [2]
- Neurotoxicity [2]
- Paresthesias (8%)

Hematologic
- Neutropenia (neutrophils decreased) [10]

Other
- Allergic reactions (<5%)
- Infection (<5%)

VALPROIC ACID

Synonyms: valproate sodium; divalproex
Trade names: Depacon (AbbVie), Depakene (AbbVie), Depakote (AbbVie)
Indications: Seizures, migraine
Class: Anticonvulsant, Antipsychotic
Half-life: 6–16 hours
Clinically important, potentially hazardous interactions with: amitriptyline, aspirin, ceftobiprole, cholestyramine, clobazam, clozapine, doripenem, eslicarbazepine, ethosuximide, imipenem/cilastatin/relebactam, indinavir, ivermectin, lesinurad, levomepromazine, lumateperone, meropenem, meropenem & vaborbactam, olanzapine, oxcarbazepine, paliperidone, risperidone, rufinamide, temozolomide, tipranavir, topiramate, topiramate, vorinostat, zidovudine, zinc, zuclopenthixol
Pregnancy category: D
Note: Gestational exposure to valproate is associated with an unacceptably high risk of major congenital malformations, neurodevelopmental disorders, and other adverse outcomes. Prescription of valproate to reproductive-age women is therefore strongly discouraged in many parts of the world.
Warning: LIFE-THREATENING ADVERSE REACTIONS

Skin
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (<5%) [4]
- DRESS syndrome [17]
- Edema / fluid retention (see also peripheral edema) [3]
- Erythema multiforme [3]
- Erythroderma [3]
- Exanthems (5%) [3]
- Facial edema (>5%)
- Furunculosis (<5%)
- Hypersensitivity [5]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [6]
- Peripheral edema (see also edema) (<5%)
- Petechiae (<5%)
- Pruritus (itching) (>5%)
- Pseudolymphoma [2]
- Purpura [2]
- Rash (>5%) [7]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [19]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [3]

Hair
- Alopecia / hair loss (7%) [23]
- Curly hair [6]
- Hirsutism [2]

Nails
- Nail pigmentation [2]

Mucosal
- Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [8]
- Glossitis (inflammation of the tongue) (<5%)
- Stomatitis (oral mucositis) (<5%)
- Xerostomia (dry mouth) (<5%) [2]

Central Nervous System
- Brain atrophy [2]
- Cerebral edema / brain edema [2]
- Cognitive impairment [2]
- Coma [3]
- Confusion [2]
- Delirium [2]
- Dysgeusia (taste perversion) (<5%)
- Encephalopathy (includes hepatic encephalopathy) [30]
- Gait instability / postural instability [2]
- Headache [2]
- Neurotoxicity [4]
- Paresthesias (<5%)
- Parkinsonism [16]
- Sedation [3]
- Seizures [10]
- Somnolence (drowsiness) [11]
- Tremor [16]
- Vertigo / dizziness [7]

Endocrine/Metabolic
- Acute intermittent porphyria [2]
- Appetite increased [2]
- AST increased [2]
- GGT increased [2]
- Hyperammonemia [30]
- Hyponatremia [2]
- Metabolic syndrome [4]
- Porphyria [2]
- SIADH [6]
- Weight gain [23]

Gastrointestinal/Hepatic
- Constipation [2]
- Dyspepsia / functional dyspepsia / gastroparesis [2]
- Hepatic steatosis [2]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [22]
- Nausea [5]
- Pancreatitis / acute pancreatitis [34]
- Vomiting [3]

Genitourinary
- Enuresis (urinary incontinence) [7]
- Vaginitis (includes vulvitis) (<5%)

Hematologic
- Coagulopathy (includes disseminated intravascular coagulation / DIC) [3]
- Eosinophilia [2]
- Hemotoxicity [3]
- Hypofibrinogenemia [2]
- Myelosuppression / bone marrow suppression / myelotoxicity [4]
- Neutropenia (neutrophils decreased) [4]
- Pancytopenia (includes bicytopenia) [8]
- Pure red cell aplasia [2]
- Thrombocytopenia [6]

Neuromuscular/Skeletal
- Asthenia / fatigue [4]
- Osteoporosis [3]
- Rhabdomyolysis [3]

Ocular
- Cataract [2]
- Ocular adverse effect [2]

Otic
- Hearing loss (hypoacusis) [3]

Renal
- Fanconi syndrome [4]

Respiratory
- Pleural effusion [4]
- Pneumonitis [2]

Other
- Adverse effects / adverse reactions [8]
- Allergic reactions (<5%)
- Congenital malformations [4]
- Death [9]
- Teratogenicity [31]

VALSARTAN

Trade names: Byvalson (Forest), Diovan (Novartis), Diovan HCT (Novartis), Exforge (Novartis), Valturna (Novartis)
Indications: Hypertension
Class: Angiotensin receptor antagonist (blocker), Antihypertensive
Half-life: 9 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Byvalson is valsartan and nebivolol; Exforge is valsartan and amlodipine; Valturna is valsartan and aliskiren; Diovan HCT is valsartan and hydrochlorothiazide. Hydrochlorothiazide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.
See also separate profile for Sacubitril/Valsartan.
Warning: FETAL TOXICITY

Skin
- Angioedema (>2%) [9]
- Edema / fluid retention (see also peripheral edema) [6]
- Peripheral edema (see also edema) [4]
- Photosensitivity [3]
- Pruritus (itching) (>2%)
- Pseudolymphoma [2]
- Rash (>2%)

Mucosal
- Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) (<10%)
- Xerostomia (dry mouth) (>10%)

Cardiovascular
- Hypotension [2]

Central Nervous System
- Dysgeusia (taste perversion) (>10%)
- Headache [7]
- Paresthesias (>2%)
- Vertigo / dizziness [10]

Endocrine/Metabolic
- Hyperkalemia [3]

Gastrointestinal/Hepatic
- Enteropathy [2]

Neuromuscular/Skeletal
- Arthralgia (<10%)
- Myalgia/Myopathy (10–29%)

Respiratory
- Cough [2]
- Nasopharyngitis [3]
- Upper respiratory tract infection [3]

Other
- Adverse effects / adverse reactions [6]
- Allergic reactions (>2%)

VANCOMYCIN

Trade name: Vancocin (Lilly)
Indications: Various infections caused by susceptible organisms
Class: Antibiotic, Antibiotic; glycopeptide, Antimicrobial
Half-life: 5–11 hours
Clinically important, potentially hazardous interactions with: meloxicam, metformin, pentamidine, rocuronium, succinylcholine, teicoplanin, trospium
Pregnancy category: C

Skin
- Abscess [2]
- AGEP [9]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [14]
- Angioedema [3]
- Bullous dermatosis [5]
- Cellulitis [3]
- DRESS syndrome [31]
- Erythema multiforme [5]
- Exanthems [16]
- Exfoliative dermatitis [4]
- Fixed eruption [2]
- Flushing / rubefaction (<10%)
- Hypersensitivity [8]
- Leukocytoclastic vasculitis (angiitis) [5]
- Linear IgA bullous dermatosis [59]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
- Maculopapular rash / morbilliform rash [7]
- Pruritus (itching) [12]
- Rash [22]
- Red man syndrome (<14%) [57]
- Red neck syndrome [2]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [18]
- Urticaria / hives [8]
- Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Cardiovascular
- Cardiac arrest [3]
- Extravasation [2]
- Hypotension [3]
- Phlebitis (14–23%) [6]

Central Nervous System
- Chills (>10%) [2]
- Dysgeusia (taste perversion) (>10%)
- Fever (pyrexia) (includes hyperpyrexia) [9]
- Headache [5]
- Vertigo / dizziness [2]

Endocrine/Metabolic
- ALT increased [2]
- AST increased [3]
- Hypokalemia [2]

Gastrointestinal/Hepatic
- Constipation [3]
- Diarrhea [7]
- Gastrointestinal disorder / discomfort [2]
- Nausea [12]
- Vomiting [6]

Hematologic
- Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') [2]
- Anemia [2]
- Eosinophilia [4]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [2]
- Leukocytosis (elevated white blood cell (WBC) count) [2]
- Neutropenia (neutrophils decreased) [11]
- Thrombocytopenia [21]

Local
- Infusion-related reactions [2]
- Injection-site extravasation [2]

Ocular
- Retinal vasculitis (includes hemorrhagic occlusive retinal vasculitis (HORV)) [9]

Otic
- Ototoxicity [5]
- Tinnitus [2]

Renal
- Nephritis / interstitial nephritis / tubulointerstitial nephritis [4]
- Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [38]
- Renal failure [4]

Other
- Adverse effects / adverse reactions [7]
- Allergic reactions (<5%) [5]
- Death [7]

VANDETANIB

Trade name: Caprelsa (AstraZeneca)
Indications: Medullary thyroid cancer
Class: Angiogenesis inhibitor / antiangiogenic agent, Epidermal growth factor receptor (EGFR) inhibitor / antagonist, Tyrosine kinase inhibitor
Half-life: 19 days
Clinically important, potentially hazardous interactions with: amiodarone, amoxapine, antiarrhythmics, arsenic, carbamazepine, chloroquine, clarithromycin, CYP3A4 inducers, dexamethasone, disopyramide, dofetilide, dolasetron, efavirenz, granisetron, haloperidol, methadone, moxifloxacin, pazopanib, phenobarbital, phenytoin, pimozide, procainamide, QT prolonging agents, rifabutin, rifampin, rifapentine, sotalol, St John's wort, telavancin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with congenital long QT syndrome.
Warning: QT PROLONGATION, TORSADES DE POINTES, AND SUDDEN DEATH

Skin
- Acneiform eruption / acneiform dermatitis / acneiform rash (35%) [4]
- Cutaneous toxicity / skin toxicity [9]
- Folliculitis [5]
- Hand–foot syndrome (palmar–plantar erythrodysesthesia) [4]
- Photosensitivity (13%) [8]
- Phototoxicity [4]
- Pigmentation [6]
- Pruritus (itching) (11%) [2]
- Rash (53%) [35]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [4]
- Xerosis / xeroderma (see also dry skin) (15%) [3]

Hair
- Hair changes [2]

Nails
Paronychia [5]
Photo-onycholysis [2]
Splinter hemorrhage [2]
Mucosal
Mucositis [2]
Stomatitis (oral mucositis) [2]
Cardiovascular
Hypertension (33%) [25]
QT interval prolonged / QT prolongation (14%) [26]
Central Nervous System
Anorexia [3]
Depression (10%)
Headache (26%) [4]
Insomnia (13%)
Neurotoxicity [2]
Endocrine/Metabolic
ALT increased (51%) [3]
Appetite decreased (21%) [3]
Hypocalcemia (11%) [2]
Hypothyroidism [2]
Thyroid dysfunction [2]
Weight loss (10%) [2]
Gastrointestinal/Hepatic
Abdominal pain (21%)
Constipation [2]
Diarrhea (57%) [46]
Dyspepsia / functional dyspepsia / gastroparesis (11%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (33%) [14]
Vomiting (15%) [6]
Hematologic
Anemia [3]
Hemorrhage [2]
Hemotoxicity [2]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) [5]
Platelets decreased (9%)
Neuromuscular/Skeletal
Asthenia / fatigue (15–24%) [18]
Ocular
Keratopathy (see also cornea verticillata) [2]
Renal
Proteinuria (10%) [2]
Respiratory
Cough (11%)
Dyspnea / shortness of breath [3]
Nasopharyngitis (11%)
Other
Adverse effects / adverse reactions [6]
Death [3]

VARDENAFIL

Trade name: Levitra (Bayer)
Indications: Erectile dysfunction
Class: Phosphodiesterase type 5 (PDE5) inhibitor
Half-life: 4–5 hours
Clinically important, potentially hazardous interactions with: alfuzosin, alpha blockers, amyl nitrite, antifungals, antihypertensives, atazanavir, boceprevir, bosentan, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, conivaptan, CYP3A4 inhibitors, darunavir, dasatinib, disopyramide, doxazosin, erythromycin, etravirine, fosamprenavir, grapefruit juice, high-fat foods, indinavir, itraconazole, ketoconazole, lopinavir, macrolide antibiotics, nelfinavir, nicorandil, nifedipine, nitrates, nitroglycerin, nitroprusside, phosphodiesterase 5 inhibitors, protease inhibitors, riociguat, ritonavir, sapropterin, saquinavir, tamsulosin, telaprevir, terazosin, tipranavir, viloxazine
Pregnancy category: B (not indicated for use in women)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%)
Angioedema (<2%)
Diaphoresis (see also hyperhidrosis) (<2%)
Erythema (<2%)
Facial edema (<2%)
Flushing / rubefaction (11%) [14]
Photosensitivity (<2%)
Pruritus (itching) (<2%)
Rash (<2%)
Mucosal
Nasal congestion [4]
Xerostomia (dry mouth) (<2%)
Cardiovascular
Angina (<2%)
Chest pain (<2%)
Hypotension (<2%)
Myocardial infarction (<2%)
Palpitation (<2%)
QT interval prolonged / QT prolongation [2]
Tachycardia (<2%)
Ventricular arrhythmia (<2%)
Central Nervous System
Amnesia (<2%)
Dysesthesia (<2%)
Headache (7–15%) [16]
Pain (<2%)
Paresthesias (<2%)
Seizures (<2%)
Sleep-related disorder (<2%)
Somnolence (drowsiness) (<2%)
Syncope / fainting (<2%)
Vertigo / dizziness (2%) [3]
Endocrine/Metabolic
ALT increased (<2%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)
Gastrointestinal/Hepatic
Abdominal pain (<2%)
Diarrhea (<2%)
Dyspepsia / functional dyspepsia / gastroparesis [3]
Gastritis / pangastritis / gastric irritation (<2%)
Gastroesophageal reflux (<2%)
Nausea (<2%)
Vomiting (<2%)
Genitourinary
Erection (<2%)
Priapism (<2%)
Neuromuscular/Skeletal
Arthralgia (<2%)
Back pain (<2%)
Cramps (<2%)
Myalgia/Myopathy (<2%)
Ocular
Conjunctivitis (conjunctival inflammation) (<2%)
Dyschromatopsia (<2%)
Intraocular pressure increased (<2%)
Ocular hyperemia (<2%)
Ocular pain (<2%)
Photophobia (<2%)
Visual disturbances (<2%)
Otic
Hearing loss (hypoacusis) [2]
Tinnitus (<2%)
Respiratory
Dyspnea / shortness of breath (<2%)
Influenza- ('flu)-like syndrome (3%)
Rhinitis (9%) [10]
Sinusitis (3%)
Other
Allergic reactions (<2%)

VARENICLINE

Trade names: Champix (Pfizer), Chantix (Pfizer)
Indications: Smoking deterrent
Class: Nicotinic antagonist
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SERIOUS NEUROPSYCHIATRIC EVENTS

Skin
AGEP [4]
Rash (<3%)
Mucosal
Stomatitis (oral mucositis) [2]
Xerostomia (dry mouth) (4–6%)
Cardiovascular
Cardiotoxicity [5]
Central Nervous System
Abnormal dreams (9–13%) [18]
Aggression (includes anger) [3]
Anorexia (<2%)
Anxiety [6]
Depression [10]
Dysgeusia (taste perversion) (5–8%)
Hallucinations [2]
Hallucinations, visual (see also Charles Bonnet syndrome) [2]
Headache (15–19%) [13]
Insomnia (18–19%) [17]
Irritability [2]
Mania [5]
Mood changes [4]
Neuropsychiatric / neuropsychological adverse effect [2]
Nightmares (<2%)
Psychosis [7]
Sleep disturbances [7]
Sleep-related disorder (2–5%) [3]
Somnolence (drowsiness) (3%) [2]
Suicidal ideation [7]
Endocrine/Metabolic
Appetite decreased (<2%)
Appetite increased (3–4%) [2]
Gastrointestinal/Hepatic
Abdominal pain (5–7%) [4]
Constipation (5–8%) [5]
Dyspepsia / functional dyspepsia / gastroparesis (5%) [3]
Flatulence (6–9%)

Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea (16–30%) [32]
Vomiting (<5%) [3]

Neuromuscular/Skeletal
Asthenia / fatigue (<7%) [6]

Respiratory
Dyspnea / shortness of breath (<2%)
Upper respiratory tract infection (5–7%)

Other
Adverse effects / adverse reactions [10]
Death [3]
Sneezing (sternutation) [2]

VECURONIUM

Indications: Adjunct to general anesthesia
Class: Non-depolarizing neuromuscular blocker
Half-life: 65–75 minutes
Clinically important, potentially hazardous interactions with: aminoglycosides, betamethasone, cyclosporine, gentamicin, halothane, inhalational anesthetics, kanamycin, magnesium salts, neomycin, quinidine, streptomycin, succinylcholine, tazobactam, tobramycin, triamcinolone
Pregnancy category: C

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [11]

Cardiovascular
Bradycardia / sinus bradycardia [8]

Local
Injection-site pain [4]

VEDOLIZUMAB

Trade name: Entyvio (Takeda)
Indications: Ulcerative colitis, Crohn's disease
Class: Biologic, Integrin receptor antagonist, Monoclonal antibody
Half-life: 25 days
Clinically important, potentially hazardous interactions with: live vaccines, natalizumab, TNF blockers
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Pruritus (itching) (3%)
Rash (3%) [3]

Mucosal
Oropharyngeal pain (3%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (9%) [5]
Headache (12%) [11]

Gastrointestinal/Hepatic
Abdominal pain [7]
Cholestatic liver injury / cholestatic hepatitis [2]
Colitis [5]
Crohn's disease (exacerbation) [2]
Nausea (9%) [9]
Vomiting [4]

Hematologic
Anemia [4]

Local
Infusion-related reactions (4%) [4]

Neuromuscular/Skeletal
Arthralgia (12%) [9]
Asthenia / fatigue (6%) [6]
Back pain (4%) [3]
Pain in extremities (3%)

Respiratory
Bronchitis (4%)
Cough (5%) [3]
Influenza (4%)
Nasopharyngitis (13%) [11]
Sinusitis (3%)
Upper respiratory tract infection (7%) [7]

Other
Adverse effects / adverse reactions [15]
Cancer [2]
Infection [9]
Malignancies [2]

VEMURAFENIB

Trade name: Zelboraf (Roche)
Indications: Melanoma (metastatic or unresectable)
Class: BRAF inhibitor
Half-life: 57 hours
Clinically important, potentially hazardous interactions with: amoxapine, arsenic, atazanavir, carbamazepine, clarithromycin, CYP substrates, dolasetron, efavirenz, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, pazopanib, phenobarbital, phenytoin, rifabutin, rifampin, rifapentine, ritonavir, saquinavir, telavancin, telithromycin, voriconazole, warfarin
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [6]
Actinic keratoses [4]
Basal cell carcinoma [2]
Cutaneous toxicity / skin toxicity [12]
DRESS syndrome [8]
Eccrine squamous syringometaplasia [2]
Erythema (14%) [2]
Exanthems [9]
Granulomas [2]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [8]
Hyperkeratosis (24%) [18]
Keratoacanthoma (Grzybowski syndrome) [28]
Keratoses [4]
Keratosis pilaris [10]
Lymphoma [2]
Melanoma [3]
Milia [2]
Nevi [6]
Panniculitis [10]
Papillomas (21%) [2]
Papular lesions (5%)
Peripheral edema (see also edema) (17%)
Photosensitivity (33%) [30]
Pruritus (itching) (23%) [10]
Radiation recall dermatitis [2]
Rash (37%) [27]
Squamous cell carcinoma (24%) [36]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [10]
Sunburn (10%)
Transient acantholytic dermatosis (Grover's disease) [4]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]
Verrucae vulgaris / warts / verrucae [2]
Verrucous lesions [3]
Vitiligo [2]
Xerosis / xeroderma (see also dry skin) [5]

Hair
Alopecia / hair loss (45%) [19]
Hair changes [2]

Nails
Paronychia [3]
Pyogenic granuloma [2]

Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth [2]

Cardiovascular
QT interval prolonged / QT prolongation [4]

Central Nervous System
Bell's palsy (facial palsy) [2]
Dysgeusia (taste perversion) (14%)
Fever (pyrexia) (includes hyperpyrexia) (19%) [6]
Headache (23%) [3]
Paralysis / paraplegia [2]

Endocrine/Metabolic
ALT increased [6]
Appetite decreased (18%) [2]
AST increased [5]
GGT increased [2]

Gastrointestinal/Hepatic
Constipation (12%)
Diarrhea (28%) [9]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (35%) [10]
Pancreatitis / acute pancreatitis [2]
Vomiting (18%) [4]

Neuromuscular/Skeletal
Arthralgia (53%) [23]
Asthenia / fatigue (38%) [20]
Back pain (8%)
Bone or joint pain (8%)
Myalgia/Myopathy (8–13%) [2]
Pain in extremities (18%)

Ocular
Chorioretinopathy [2]
Ocular adverse effect [2]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [9]
Vision blurred [2]

Respiratory
Cough (8%)

Other
Adverse effects / adverse reactions [12]
Neoplasms [2]
Vogt-Koyanagi-Harada syndrome [4]

VENETOCLAX

Trade name: Venclexta (AbbVie)
Indications: Chronic lymphocytic leukemia in patients with 17p deletion, as detected by an FDA approved test, who have received at least one prior therapy
Class: BCL-2 inhibitor
Half-life: 26 hours
Clinically important, potentially hazardous interactions with: amiodarone, azithromycin, bosentan, captopril, carbamazepine, carvedilol, ciprofloxacin, clarithromycin, conivaptan, cyclosporine, digoxin, diltiazem, dronedarone, efavirenz, erythromycin, etravirine, everolimus, felodipine, fluconazole, grapefruit juice, indinavir, itraconazole, ketoconazole, live vaccines, lopinavir, modafinil, nafcillin, phenytoin, posaconazole, quercetin, quinidine, ranolazine, rifampin, ritonavir, sirolimus, St John's wort, stong or moderate P-gp inhibitors or substrates, strong or moderate CYP3A inducers or inhibitors, telaprevir, ticagrelor, verapamil, voriconazole
Pregnancy category: N/A (May cause fetal harm)
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Concomitant use of strong CYP3A inhibitors during initiation and ramp-up phase is contra-indicated.

Skin
- Peripheral edema (see also edema) (11%)

Central Nervous System
- Fever (pyrexia) (includes hyperpyrexia) (16%) [4]
- Headache (15%) [2]

Endocrine/Metabolic
- Hyperkalemia (20%)
- Hyperphosphatemia (15%)
- Hyperuricemia (6%)
- Hypocalcemia (9%)
- Hypokalemia (12%)

Gastrointestinal/Hepatic
- Constipation (14%)
- Diarrhea (35%) [12]
- Nausea (33%) [14]
- Vomiting (15%) [4]

Hematologic
- Anemia (29%) [12]
- Febrile neutropenia [7]
- Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [4]
- Neutropenia (neutrophils decreased) (45%) [18]
- Thrombocytopenia (22%) [14]

Neuromuscular/Skeletal
- Asthenia / fatigue (21%) [9]
- Back pain (10%)

Renal
- Tumor lysis syndrome (TLS) [13]

Respiratory
- Cough (13%)
- Pneumonia (8%) [4]
- Upper respiratory tract infection (22%) [6]

Other
- Adverse effects / adverse reactions [2]
- Death [5]
- Infection [2]

VENLAFAXINE

Trade names: Effexor (Wyeth), Effexor XL (Wyeth)
Indications: Major depressive disorder
Class: Antidepressant, Serotonin-norepinephrine reuptake inhibitor
Half-life: 3–7 hours
Clinically important, potentially hazardous interactions with: 5HT1 agonists, artemether/lumefantrine, aspirin, atomoxetine, clozapine, desvenlafaxine, dexibuprofen, diclofenac, duloxetine, entacapone, haloperidol, indinavir, isocarboxazid, ketoconazole, linezolid, lithium, MAO inhibitors, meloxicam, metoclopramide, metoprolol, mirtazapine, moclobemide, naratriptan, NSAIDs, phenelzine, selegiline, sibutramine, SNRIs, SSRIs, St John's wort, sumatriptan, tramadol, tranylcypromine, trazodone, trimipramine, triptans, viloxazine, voriconazole, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Skin
- Angioedema [2]
- Bruise / bruising / contusion / ecchymosis (ecchymoses) [2]
- Diaphoresis (see also hyperhidrosis) [7]
- Hyperhidrosis (see also diaphoresis) [2]
- Pruritus (itching) (<10%)
- Rash (3%)

Hair
- Alopecia / hair loss [2]

Mucosal
- Xerostomia (dry mouth) (22%) [10]

Cardiovascular
- Cardiac failure [2]
- Cardiomyopathy [3]
- Hypertension [7]
- Myocardial infarction [2]
- Orthostatic hypotension [2]
- Preeclampsia [2]
- QT interval prolonged / QT prolongation [6]
- Tachycardia [2]

Central Nervous System
- Akathisia [2]
- Delirium [2]
- Dysgeusia (taste perversion) (2%)
- Hallucinations, visual (see also Charles Bonnet syndrome) [3]
- Headache [8]
- Insomnia [5]
- Mania [10]
- Paresthesias (3%)
- Psychosis [3]
- Restless legs syndrome [3]
- Seizures [8]
- Serotonin syndrome [24]
- Somnolence (drowsiness) [9]
- Tremor (<10%) [3]
- Vertigo / dizziness [10]
- Yawning [2]

Endocrine/Metabolic
- Appetite decreased [2]
- Galactorrhea [4]
- Hyponatremia [4]
- Libido increased [2]
- Mastodynia [2]
- SIADH [6]
- Weight gain [2]

Gastrointestinal/Hepatic
- Constipation [6]
- Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [8]
- Nausea [16]
- Vomiting [3]

Genitourinary
- Ejaculatory dysfunction [2]
- Enuresis (urinary incontinence) [2]
- Sexual dysfunction [8]
- Urinary retention [2]

Neuromuscular/Skeletal
- Asthenia / fatigue [5]
- Dystonia [2]
- Rhabdomyolysis [3]

Ocular
- Glaucoma (includes acute angle-closure glaucoma) [2]

Respiratory
- Pneumonitis [3]

Other
- Adverse effects / adverse reactions [3]
- Bruxism (teeth grinding) [7]

VERAPAMIL

Trade names: Calan (Pfizer), Covera-HS (Pfizer), Isoptin (AbbVie), Tarka (AbbVie), Verelan (Schwarz)
Indications: Angina, arrhythmias, hypertension
Class: Antiarrhythmic class IV, Calcium channel blocker, CYP3A4 inhibitor
Half-life: 2–8 hours
Clinically important, potentially hazardous interactions with: acebutolol, afatinib, aliskiren, amiodarone, amitriptyline, amprenavir, aspirin, atazanavir, atenolol, atorvastatin, avanafil, betaxolol, betrixaban, bisoprolol, carbamazepine, carteolol, celiprolol, clonidine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, dabigatran, dantrolene, darifenacin, deflazacort, delavirdine, digoxin, dofetilide, dronedarone, dutasteride, epirubicin, eplerenone, erythromycin, esmolol, everolimus, fingolimod, flibanserin, indacaterol, ivabradine, lemborexant, lovastatin, lumateperone, metoprolol, mifepristone, nadolol, naldemedine, naloxegol, neratinib, nevirapine, olaparib, oxprenolol, oxtriphylline, palbociclib, penbutolol, pindolol, ponesimod, posaconazole, propranolol, quinidine, ranolazine, sibutramine, silodosin, simvastatin, talazoparib, telaprevir, telithromycin, timolol, trabectedin, ubrogepant, venetoclax, voclosporin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Tarka is verapamil and trandolapril.

Skin
- Angioedema [3]
- Diaphoresis (see also hyperhidrosis) [2]
- Edema / fluid retention (see also peripheral edema) (2%)
- Erythema multiforme [4]
- Erythromelalgia / erythermalgia [2]
- Exanthems [8]

Exfoliative dermatitis [2]
Flushing / rubefaction (<7%) [4]
Hyperkeratosis (palms) [2]
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Peripheral edema (see also edema) (<10%)
Photosensitivity [4]
Pruritus (itching) [6]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [5]
Urticaria / hives [5]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Hair
Alopecia / hair loss [5]

Mucosal
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth (19%) [10]

Cardiovascular
Atrial fibrillation [2]
Atrioventricular block [2]
Bradycardia / sinus bradycardia [11]
Congestive heart failure [2]
Hypotension [3]
QT interval prolonged / QT prolongation [2]
Torsades de pointes [2]

Central Nervous System
Parkinsonism [2]
Seizures [3]

Endocrine/Metabolic
Gynecomastia [8]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]

Neuromuscular/Skeletal
Rhabdomyolysis [2]

Other
Death [2]
Side effects [2]

VERTEPORFIN

Trade name: Visudyne (Novartis)
Indications: Neovascular (wet) age-related macular degeneration
Class: Photosensitizer
Half-life: 5–6 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Eczema / eczematous reaction / eczematous eruption (<10%)
Photosensitivity (<10%) [2]

Mucosal
Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis) (<10%)

Cardiovascular
Atrial fibrillation (<10%)
Chest pain [2]
Hypertension (<10%)

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (<10%)
Hypoesthesia (numbness) (<10%)
Sleep-related disorder (<10%)
Vertigo / dizziness (<10%)

Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<10%)

Gastrointestinal/Hepatic
Constipation (<10%)
Nausea (<10%)

Genitourinary
Albuminuria (<10%)

Hematologic
Anemia (<10%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<10%)
Leukocytosis (elevated white blood cell (WBC) count) (<10%)

Local
Infusion-site pain (<10%)
Injection-site reaction (10–30%)

Neuromuscular/Skeletal
Arthralgia (<10%)
Asthenia / fatigue (<10%)
Back pain (<10%)
Myasthenia gravis (<10%)

Ocular
Blepharitis (<10%)
Cataract (<10%)
Conjunctivitis (conjunctival inflammation) (<10%)
Diplopia (double vision) (<10%)
Endophthalmitis [2]
Intraocular inflammation [2]
Lacrimation (<10%)
Ocular itching / ocular pruritus (<10%)
Vision loss (severe) (<5%)
Visual disturbances (10–30%)
Xerophthalmia (dry eyes) (<10%)

Otic
Hearing loss (hypoacusis) (<10%)

Respiratory
Influenza- ('flu)-like syndrome (<10%)
Pharyngitis (sore throat) (<10%)

Other
Cancer (gastrointestinal) (<10%)

VIDARABINE

Synonyms: adenine arabinoside; ara-A
Trade name: Vira-A Ophthalmic (Pfizer)
Indications: Herpetic keratoconjunctivitis
Class: Antiviral; nucleoside analog
Half-life: 3.3 hours
Clinically important, potentially hazardous interactions with: allopurinol, insulin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Central Nervous System
Neurotoxicity [9]
Pain [2]
Tremor [4]

Other
Death [2]

VIGABATRIN

Trade name: Sabril (Lundbeck)
Indications: Epilepsy, infantile spasms (West's syndrome)
Class: Anticonvulsant, Antiepileptic
Half-life: 7.5 hours
Clinically important, potentially hazardous interactions with: antipsychotics, chloroquine, hydroxychloroquine, MAO inhibitors, mefloquine, orlistat, phenytoin, rufinamide, SSRIs, St John's wort, tricyclic antidepressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: VISION LOSS

Skin
Peripheral edema (see also edema) (5–7%)
Rash (6%) [2]

Cardiovascular
Chest pain (<5%)

Central Nervous System
Abnormal dreams (<5%)
Anxiety (4%)
Confusion (4–14%)
Depression (8%) [4]
Dysarthria (2%)
Encephalopathy (includes hepatic encephalopathy) [4]
Fever (pyrexia) (includes hyperpyrexia) (4–7%)
Gait instability / postural instability (6–12%)
Headache (18%)
Hypoesthesia (numbness) (4–5%)
Hyporeflexia (4–5%)
Impaired concentration (9%)
Incoordination (7%)
Insomnia (7%)
Irritability (7%)
Memory loss/memory impaired (7%)
Nervousness (2–5%)
Peripheral neuropathy (4%)
Psychosis [2]
Sedation (4%)
Seizures (11%) [4]
Somnolence (drowsiness) (17%) [3]
Status epilepticus (2–5%)
Tremor (7%)
Vertigo / dizziness (15%)

Endocrine/Metabolic
Appetite increased (<5%)
Weight gain (10%) [4]

Gastrointestinal/Hepatic
Abdominal distension (2%)
Abdominal pain (2–3%)
Constipation (5–8%)
Diarrhea (7%)
Dyspepsia / functional dyspepsia / gastroparesis (4–5%)
Nausea (7%)
Vomiting (6%)

Genitourinary
Dysmenorrhea (5–9%)
Erectile dysfunction (5%)
Urinary tract infection (4–5%)

Hematologic
Anemia (6%)

Neuromuscular/Skeletal
Arthralgia (5–10%)
Asthenia / fatigue (16%) [2]

Back pain (4–7%)
Muscle spasm (3%)
Myalgia/Myopathy (3–5%)
Pain in extremities (2–6%)

Ocular
Diplopia (double vision) (6%)
Nystagmus (7%)
Ocular pain (5%)
Optic atrophy [2]
Retinopathy [12]
Vision blurred (6%)
Vision impaired [20]

Otic
Tinnitus (2%)

Respiratory
Bronchitis (5%)
Cough (2–14%)
Influenza (5–7%)
Nasopharyngitis (10%)
Pharyngolaryngeal pain (7–14%)
Upper respiratory tract infection (10%)

Other
Adverse effects / adverse reactions [4]
Dipsia (thirst) / polydipsia (2%)
Toothache (odontalgia) (2–5%)

VILAZODONE

Trade name: Viibryd (Merck KGaA)
Indications: Major depressive disorder
Class: Antidepressant, Serotonin-norepinephrine reuptake inhibitor
Half-life: 25 hours
Clinically important, potentially hazardous interactions with: anticoagulants, aspirin, buspirone, CNS-active agents, CYP3A4 inhibitors or inducers, efavirenz, erythromycin, ketoconazole, MAO inhibitors, NSAIDs, SNRIs, SSRIs, tramadol, triptans, tryptophan, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Mucosal
Xerostomia (dry mouth) (8%) [2]

Cardiovascular
Palpitation (2%)

Central Nervous System
Abnormal dreams (4%)
Headache [4]
Insomnia (6%) [5]
Paresthesias (3%)
Restlessness (3%)
Somnolence (drowsiness) (3%) [3]
Tremor (2%)
Vertigo / dizziness (9%) [2]

Endocrine/Metabolic
Appetite increased (2%)
Libido decreased (4–5%)

Gastrointestinal/Hepatic
Diarrhea (28%) [15]
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Flatulence (3%)
Gastroenteritis (3%)
Nausea (23%) [15]
Vomiting (5%) [5]

Genitourinary
Ejaculatory dysfunction (2%)
Erectile dysfunction (2%)
Sexual dysfunction (3%) [2]

Neuromuscular/Skeletal
Arthralgia (3%)
Asthenia / fatigue (4%)

Other
Adverse effects / adverse reactions [3]

VILDAGLIPTIN

Trade name: Galvus (Novartis)
Indications: Type II diabetes mellitus
Class: Antidiabetic, Dipeptidyl peptidase-4 (DPP-4) (gliptin) inhibitor
Half-life: 2–3 hours
Clinically important, potentially hazardous interactions with: corticosteroids, sympathomimetics, thiazides, thyroid products
Pregnancy category: N/A
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Angioedema [2]
Bullous pemphigoid / pemphigoid [6]
Peripheral edema (see also edema) [3]

Central Nervous System
Headache [6]
Vertigo / dizziness [2]

Endocrine/Metabolic
Hypoglycemia (see also insulin autoimmune syndrome) [8]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Pancreatitis / acute pancreatitis [4]

Respiratory
Nasopharyngitis [3]

Other
Adverse effects / adverse reactions [18]

VINBLASTINE

Trade names: Velban (Lilly), Velbe (Lilly), Velsar (Lilly)
Indications: Lymphomas, melanoma, carcinomas
Class: Antimitotic, Vinca alkaloid
Half-life: initial: 3.7 minutes; terminal: 24.8 hours
Clinically important, potentially hazardous interactions with: aldesleukin, aprepitant, erythromycin, fluconazole, itraconazole, ketoconazole, lopinavir, miconazole, posaconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Acral necrosis [2]
Dermatitis (<10%)
Photosensitivity (<10%) [2]
Pigmentation [3]
Radiation recall dermatitis [2]
Rash (<10%)
Raynaud's phenomenon (<10%) [17]

Hair
Alopecia / hair loss (>10%)

Mucosal
Mucositis [2]
Oral lesions (<5%)
Stomatitis (oral mucositis) (>10%)

Central Nervous System
Dysgeusia (taste perversion) (metallic taste) (>10%)
Paresthesias (<10%)
Peripheral neuropathy [2]

Endocrine/Metabolic
SIADH [4]

Gastrointestinal/Hepatic
Diarrhea [2]

Hematologic
Hemolytic uremic syndrome [2]
Neutropenia (neutrophils decreased) [3]

Local
Injection-site necrosis [2]

Neuromuscular/Skeletal
Myalgia/Myopathy (<10%)

Otic
Tinnitus [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Adverse effects / adverse reactions [2]

VINCRISTINE

Synonym: oncovin
Trade name: Vincasar (Teva)
Indications: Leukemias, lymphomas, neuroblastoma, Wilm's tumor
Class: Antimitotic, Vinca alkaloid
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: aldesleukin, aprepitant, bromelain, fluconazole, gadobenate, influenza vaccine, itraconazole, ketoconazole, lopinavir, miconazole, nifedipine, posaconazole, thalidomide
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Erythroderma [2]
Exanthems [3]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [2]
Rash (<10%)
Raynaud's phenomenon [2]

Hair
Alopecia / hair loss (20–70%) [9]

Nails
Beau's lines (transverse nail bands) [3]
Leukonychia striata (Mees' lines) [6]
Nail pigmentation [2]

Mucosal
Oral lesions (<10%) [2]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (<10%)

Cardiovascular
Hypertension [2]
Phlebitis (<10%)

Central Nervous System
Anorexia [2]
Cranial neuropathy [3]
Dysgeusia (taste perversion) (<10%)

Neurotoxicity [17]
Paresthesias (<10%)
Peripheral neuropathy [18]
Seizures [7]

Endocrine/Metabolic
Hyponatremia [2]
SIADH [10]

Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [2]

Hematologic
Anemia [2]
Febrile neutropenia [5]
Hemolytic uremic syndrome [4]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
Neutropenia (neutrophils decreased) [10]
Thrombocytopenia [10]

Local
Injection-site cellulitis (>10%)
Injection-site necrosis (>10%)

Neuromuscular/Skeletal
Asthenia / fatigue [2]
Myalgia/Myopathy (<10%)

Ocular
Eyelid ptosis / blepharoptosis [4]

Respiratory
Pneumonia [2]

Other
Adverse effects / adverse reactions [7]
Death [6]
Infection [3]
Vocal cord palsy [2]

VINORELBINE

Trade name: Navelbine (Kyowa Kirin)
Indications: Non-small cell lung cancer
Class: Antimitotic, Vinca alkaloid
Half-life: 28–44 hours
Clinically important, potentially hazardous interactions with: aldesleukin, itraconazole
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: MYELOSUPPRESSION

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash [3]
Hand–foot syndrome (palmar–plantar erythrodysesthesia) [9]
Rash (<5%) [2]
Recall reaction [2]

Hair
Alopecia / hair loss (12%) [5]

Mucosal
Mucositis [2]
Stomatitis (oral mucositis) (>10%) [6]

Cardiovascular
Extravasation [2]
Hypertension [2]
Phlebitis (7%)

Central Nervous System
Anorexia [7]
Dysgeusia (taste perversion) (metallic taste) (>10%)
Hyperesthesia (<10%)
Neurotoxicity [4]
Paresthesias (<10%)
Peripheral neuropathy [2]

Endocrine/Metabolic
ALT increased [2]
AST increased [2]
SIADH [3]

Gastrointestinal/Hepatic
Constipation [5]
Diarrhea [14]
Esophagitis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [12]
Vomiting [8]

Hematologic
Anemia [8]
Febrile neutropenia [6]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [12]
Myelosuppression / bone marrow suppression / myelotoxicity [2]
Neutropenia (neutrophils decreased) [31]
Thrombocytopenia [4]

Local
Injection-site irritation (<10%)
Injection-site necrosis (<10%)
Injection-site phlebitis (12%) [2]

Neuromuscular/Skeletal
Asthenia / fatigue [14]
Bone or joint pain [3]
Myalgia/Myopathy (<5%)

Other
Adverse effects / adverse reactions [2]
Death [2]
Infection [4]

VISMODEGIB

Trade name: Erivedge (Genentech)
Indications: Basal cell carcinoma
Class: Hedgehog (Hh) signaling pathway inhibitor
Half-life: 4–12 days
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Patients should not donate blood or blood products while receiving vismodegib and for at least 7 months after the last dose.
Warning: EMBRYO-FETAL TOXICITY

Skin
Cutaneous toxicity / skin toxicity [2]
Squamous cell carcinoma [3]

Hair
Alopecia / hair loss (64%) [29]

Central Nervous System
Ageusia (taste loss) / taste disorder (11%) [8]
Anorexia [3]
Dysgeusia (taste perversion) (55%) [25]

Endocrine/Metabolic
Amenorrhea [4]
Appetite decreased (25%) [7]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Hyperbilirubinemia [2]
Hyperglycemia (includes glucose increased) [2]
Hyponatremia (4%) [4]
Hypophosphatemia [2]
Weight loss (45%) [18]

Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation (21%)
Diarrhea (29%) [8]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]
Nausea (30%) [9]
Vomiting (14%) [3]

Genitourinary
Azotemia (2%)

Hematologic
Anemia [2]

Neuromuscular/Skeletal
Arthralgia (16%) [2]
Asthenia / fatigue (40%) [17]
Muscle spasm (72%) [24]
Myalgia/Myopathy [6]

Respiratory
Pulmonary embolism [2]

Other
Adverse effects / adverse reactions [11]
Death [4]

VITAMIN A

Trade name: Aquasol A (aaiPharma)
Indications: Vitamin A deficiency
Class: Vitamin
Half-life: N/A
Clinically important, potentially hazardous interactions with: acitretin, alitretinoin, bexarotene, cholestyramine, fish oil supplements, isotretinoin, minocycline, orlistat, prednisone, tetracycline, warfarin
Pregnancy category: A (the pregnancy category will be X if used in doses above the RDA)

Skin
Dermatitis [7]
Pruritus (itching) [2]
Xerosis / xeroderma (see also dry skin) (<10%)

Hair
Alopecia / hair loss [11]

Mucosal
Oral mucosal eruption [2]

VITAMIN E

Synonym: alpha tocopherol
Trade name: Aquasol E (aaiPharma)
Indications: Vitamin E deficiency
Class: Vitamin
Half-life: N/A
Clinically important, potentially hazardous interactions with: amprenavir, cholestyramine, orlistat, tipranavir, warfarin
Pregnancy category: A (the pregnancy category will be C if used in doses above the RDA)

Skin
Dermatitis [13]
Erythema multiforme [3]
Sclerosing lipogranuloma [2]

Genitourinary
Prostate cancer (increased risk) [4]

VORAPAXAR

Trade name: Zontivity (Merck)
Indications: Reduction of thrombotic cardiovascular events in patients with a history of myocardial infarction or with peripheral arterial disease
Class: Protease-activated receptor-1 (PAR-1) antagonist
Half-life: 3–4 days
Clinically important, potentially hazardous interactions with: boceprevir, carbamazepine, clarithromycin, conivaptan, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, phenytoin, posaconazole, rifampin, ritonavir, saquinavir, St John's wort, strong CYP3A inhibitors or inducers, telaprevir, telithromycin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with a history of stroke, transient ischemic attack, or intracranial hemorrhage, or with active pathological bleeding.
Warning: BLEEDING RISK

Skin
- Exanthems (2%)
- Rash (2%)

Cardiovascular
- Cardiotoxicity [2]

Central Nervous System
- Depression (2%)
- Intracranial hemorrhage [5]

Hematologic
- Anemia (5%)
- Bleeding (25%) [10]

Ocular
- Diplopia (double vision) (<2%)
- Retinopathy (<2%)

Other
- Adverse effects / adverse reactions [3]

VORICONAZOLE

Trade name: Vfend (Pfizer)
Indications: Invasive aspergillosis
Class: Antifungal / antimycotic, Antifungal; triazole, Antimicrobial, CYP3A4 inhibitor
Half-life: 6–24 hours (dose dependent)
Clinically important, potentially hazardous interactions with: abiraterone, alfentanil, alfuzosin, almotriptan, alosetron, amphotericin B, antineoplastics, apixaban, aprepitant, artemether/lumefantrine, astemizole, atazanavir, atorvastatin, barbiturates, benzodiazepines, boceprevir, bortezomib, bosentan, brigatinib, brinzolamide, buspirone, busulfan, cabazitaxel, cabozantinib, calcifediol, calcium channel blockers, carbamazepine, carvedilol, chloramphenicol, chloroquine, ciclesonide, cilostazol, cinacalcet, ciprofloxacin, cisapride, clopidogrel, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colchicine, conivaptan, copanlisib, coumarins, crizotinib, cyclosporine, CYP2C19 inhibitors and inducers, CYP2C9 inhibitors and substrates, CYP3A4 substrates, darunavir, diazepam, diclofenac, didanosine, dienogest, docetaxel, dofetilide, dronedarone, dutasteride, efavirenz, eletriptan, eplerenone, ergot alkaloids, ergotamine, erlotinib, esomeprazole, estrogens, eszopiclone, etravirine, everolimus, fentanyl, fesoterodine, food, gadobutrol, gefitinib, grapefruit juice, guanfacine, halofantrine, HMG-CoA reductase inhibitors, ibrutinib, ibuprofen, imatinib, irinotecan, ixabepilone, lapatinib, letermovir, lomitapide, lopinavir, losartan, lumateperone, macrolide antibiotics, maraviroc, meloxicam, methadone, methylergonovine, methylprednisolone, methysergide, midazolam, midostaurin, mifepristone, mometasone, neratinib, nilotinib, nisoldipine, olaparib, ombitasvir/paritaprevir/ritonavir, omeprazole, oxycodone, palbociclib, pantoprazole, paricalcitol, pazopanib, PEG-interferon, phenobarbital, phenytoin, phosphodiesterase 5 inhibitors, pimecrolimus, pimozide, ponatinib, prasugrel, progestins, progestogens, protease inhibitors, proton pump inhibitors, QT prolonging agents, quetiapine, quinidine, quinine, ramelteon, ranolazine, reboxetine, regorafenib, repaglinide, ribociclib, rifabutin, rifampin, rifapentine, rilpivirine, ritonavir, rivaroxaban, romidepsin, ruxolitinib, salmeterol, saquinavir, saxagliptin, silodosin, simeprevir, simvastatin, sirolimus, solifenacin, sonidegib, sorafenib, St John's wort, sucralfate, sulfonylureas, sunitinib, tacrolimus, tadalafil, tamsulosin, telaprevir, temsirolimus, tetrabenazine, tezacaftor/ivacaftor, thioridazine, ticagrelor, tolterodine, tolvaptan, vemurafenib, venetoclax, venlafaxine, vitamin K antagonists, ziprasidone, zolpidem
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
- Actinic keratoses [2]
- Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) (<2%)
- Angioedema (<2%)
- Bruise / bruising / contusion / ecchymosis (ecchymoses) (<2%)
- Cellulitis (<2%)
- Contact dermatitis (<2%)
- Cyanosis / acrocyanosis (<2%)
- Dermatitis (<2%)
- Diaphoresis (see also hyperhidrosis) (<2%) [2]
- Eczema / eczematous reaction / eczematous eruption (<2%)
- Edema / fluid retention (see also peripheral edema) (<2%)
- Erythema [5]
- Erythema multiforme (<2%)
- Exfoliative dermatitis (<2%)
- Facial edema (<2%)
- Fixed eruption (<2%)
- Furunculosis (<2%)
- Graft-versus-host reaction (<2%)
- Granulomas (<2%)
- Herpes simplex (<2%)
- Lentigo (lentigines; lentigos (pl)) [3]
- Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) (<2%) [5]
- Lymphadenopathy (<2%)
- Melanoma (<2%)
- Melanosis / melanocytosis (<2%)
- Peripheral edema (see also edema) (<2%)
- Petechiae (<2%)
- Photosensitivity (8%) [18]
- Phototoxicity [13]
- Pigmentation (<2%)
- Pruritus (itching) (8%) [2]
- Psoriasis (<2%)
- Purpura (<2%)
- Rash (5%) [8]
- Squamous cell carcinoma (<2%) [11]
- Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) (<2%) [6]
- Urticaria / hives (<2%)
- Xerosis / xeroderma (see also dry skin) (<2%) [2]

Hair
- Alopecia / hair loss (<2%) [4]

Nails
- Nail changes [3]

Mucosal
- Cheilitis (inflammation of the lips) (<2%) [4]
- Gingival bleeding (<2%)
- Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth (<2%)
- Gingivitis (<2%)
- Glossitis (inflammation of the tongue) (<2%)
- Rectal hemorrhage / rectal bleeding (<2%)
- Stomatitis (oral mucositis) (<2%)
- Tongue edema (<2%)
- Xerostomia (dry mouth) (<2%)

Cardiovascular
- Arrhythmias (<2%)
- Atrial fibrillation (<2%)
- Atrioventricular block (<2%)
- Bradycardia / sinus bradycardia (<2%)
- Bundle branch block (<2%)
- Cardiac arrest (<2%)
- Cardiomyopathy (<2%)
- Chest pain (<2%)
- Congestive heart failure (<2%)
- Extrasystoles (<2%)
- Hypertension (<2%)
- Hypotension (<2%)
- Myocardial infarction (<2%)
- Palpitation (<2%)
- Phlebitis (<2%)
- Postural hypotension (<2%)
- QT interval prolonged / QT prolongation (<2%) [13]
- Supraventricular tachycardia (<2%)
- Tachycardia (2%) [2]
- Thrombophlebitis (<2%)
- Torsades de pointes [8]
- Vasodilation (<2%)
- Ventricular arrhythmia (<2%)
- Ventricular fibrillation (<2%)
- Ventricular tachycardia (<2%)

Central Nervous System
- Abnormal dreams (<2%)
- Ageusia (taste loss) / taste disorder (<2%)
- Agitation (<2%)
- Akathisia (<2%)
- Amnesia (<2%)
- Anorexia (<2%)
- Anxiety (<2%)
- Cerebral edema / brain edema (<2%)
- Cerebral hemorrhage (<2%)
- Cerebral ischemia (<2%)
- Cerebrovascular accident (<2%)
- Chills (4%)
- Coma (<2%)
- Confusion (<2%) [2]
- Delirium (<2%) [2]
- Dementia (<2%)
- Depersonalization (<2%)
- Depression (<2%)

Dysgeusia (taste perversion) (<2%)
Encephalitis (<2%)
Encephalopathy (includes hepatic encephalopathy) (<2%) [3]
Euphoria / elation (<2%)
Extrapyramidal symptoms (<2%)
Fever (pyrexia) (includes hyperpyrexia) (6%)
Guillain-Barré syndrome / acute inflammatory demyelinating polyradiculoneuropathy (<2%)
Hallucinations (2%) [9]
Hallucinations, visual (see also Charles Bonnet syndrome) [6]
Headache (3%) [3]
Hypoesthesia (numbness) (<2%)
Insomnia (<2%) [2]
Intracranial pressure increased (intracranial hypertension) (see also pseudotumor cerebri) (<2%)
Neurotoxicity [7]
Paresthesias (<2%)
Peripheral neuropathy [4]
Psychosis (<2%) [2]
Seizures (<2%)
Somnolence (drowsiness) (<2%)
Status epilepticus (<2%)
Suicidal ideation (<2%)
Syncope / fainting (<2%)
Tremor (<2%)
Vertigo / dizziness (<2%)

Endocrine/Metabolic
ALP increased (4%)
ALT increased [2]
AST increased [2]
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) (<2%)
Diabetes insipidus (<2%)
GGT increased (<2%)
Hypercalcemia (<2%)
Hypercholesterolemia (<2%)
Hyperglycemia (includes glucose increased) (<2%)
Hyperkalemia (<2%) [2]
Hypermagnesemia (<2%)
Hypernatremia (<2%)
Hyperthyroidism (<2%)
Hyperuricemia (<2%)
Hypervolemia (fluid overload) (<2%)
Hypocalcemia (<2%)
Hypoglycemia (see also insulin autoimmune syndrome) (<2%)
Hypokalemia (2%) [4]
Hypomagnesemia (<2%)
Hyponatremia (<2%)
Hypophosphatemia (<2%)
Hypothyroidism (<2%)
Libido decreased (<2%)
Pseudoporphyria [8]

Gastrointestinal/Hepatic
Abdominal pain (<2%)
Ascites (<2%)
Black stools / melena (<2%)
Cholecystitis (<2%)
Cholelithiasis (gallstones in the gallbladder) (<2%)
Constipation (<2%)
Diarrhea (<2%) [2]
Duodenitis (<2%)
Dyspepsia / functional dyspepsia / gastroparesis (<2%)
Dysphagia (<2%)
Esophagitis (<2%)
Flatulence (<2%)
Gastroenteritis (<2%)
Gastrointestinal bleeding (<2%)
Gastrointestinal perforation / perforated colon / gastric perforation (<2%)
Gastrointestinal ulceration (<2%)
Hematemesis (<2%)
Hepatic failure (<2%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [23]
Nausea (5%) [3]
Pancreatitis / acute pancreatitis (<2%) [2]
Peritonitis (<2%)
Pseudomembranous colitis (<2%)
Vomiting (4%) [2]

Genitourinary
Anuria (<2%)
Cystitis (<2%)
Dysmenorrhea (<2%)
Dysuria (<2%)
Enuresis (urinary incontinence) (<2%)
Epididymitis (<2%)
Glycosuria (<2%)
Hematuria (<2%)
Impotence (<2%)
Oliguria (<2%)
Urinary retention (<2%)
Urinary tract infection (<2%)
Uterine bleeding (<2%)
Vaginal bleeding (<2%)

Hematologic
Agranulocytosis / severe selective neutropenia (see also 'Neutropenia') (<2%)
Anemia (<2%)
Eosinophilia (<2%)
Hemolytic anemia (<2%)
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased (<2%)
Myelosuppression / bone marrow suppression / myelotoxicity (<2%)
Pancytopenia (includes bicytopenia) (<2%)
Prothrombin time (INR) increased (<2%)
Sepsis (<2%)
Thrombocytopenia (<2%)

Local
Injection-site infection (<2%)
Injection-site inflammation (<2%)
Injection-site pain (<2%)

Neuromuscular/Skeletal
Arthralgia (<2%) [2]
Asthenia / fatigue (<2%) [2]
Ataxia (<2%)
Back pain (<2%)
Bone or joint pain (<2%)
Hypertonia (<2%)
Leg cramps (<2%)
Myalgia/Myopathy (<2%) [4]
Myasthenia gravis [2]
Osteomalacia (<2%)
Osteoporosis (<2%)
Periostitis deformans [26]
Rhabdomyolysis [2]
Skeletal fluorosis [2]

Ocular
Abnormal vision (19%)
Accommodation disorder (<2%)
Blepharitis (<2%)
Conjunctivitis (conjunctival inflammation) (<2%)
Corneal opacity (<2%)
Diplopia (double vision) (<2%)
Keratitis (<2%)
Keratoconjunctivitis (<2%)
Mydriasis (<2%)
Night blindness (<2%)
Nystagmus (<2%)
Ocular adverse effect [3]
Ocular hemorrhage (<2%)
Ocular pain (<2%)
Oculogyric crisis (<2%)
Optic atrophy (<2%)
Optic neuritis (<2%)
Papilledema (<2%)
Photophobia (2%) [2]
Retinitis (<2%)
Scleritis (<2%)
Uveitis / anterior uveitis / posterior uveitis / panuveitis (<2%)
Visual disturbances (19%) [16]
Xerophthalmia (dry eyes) (<2%)

Otic
Ear pain (<2%)
Hearing loss (hypoacusis) (<2%)
Tinnitus (<2%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury (<2%) [5]
Renal tubular necrosis (<2%)

Respiratory
Cough (<2%)
Dysphonia (includes voice disorders / voice changes) (<2%)
Dyspnea / shortness of breath (<2%)
Hemoptysis (<2%)
Hypoxia (see also hypoxemia) (<2%)
Influenza- ('flu)-like syndrome (<2%)
Pharyngitis (sore throat) (<2%)
Pleural effusion (<2%)
Pneumonia (<2%)
Pneumonitis [2]
Pulmonary embolism (<2%)
Respiratory distress (<2%)
Rhinitis (<2%)
Sinusitis (<2%)
Upper respiratory tract infection (<2%)

Other
Adverse effects / adverse reactions (20%) [12]
Infection (<2%)
Malignancies [2]
Multiorgan failure (<2%)
Periodontal infection (<2%)

VORINOSTAT

Trade name: Zolinza (Merck)
Indications: Cutaneous T-cell lymphoma
Class: Antineoplastic / anticancer agent (see also Immune checkpoint inhibitor), Histone deacetylase (HDAC) inhibitor
Half-life: ~2 hours
Clinically important, potentially hazardous interactions with: alfuzosin, artemether/lumefantrine, chloroquine, ciprofloxacin, coumarins, dronedarone, gadobutrol, nilotinib, pimozide, QT prolonging agents, quinine, tetrabenazine, thioridazine, valproic acid, vitamin K antagonists, ziprasidone
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Exanthems [2]
Peripheral edema (see also edema) (13%)

Pruritus (itching) (12%)
Hair
Alopecia / hair loss (19%) [2]
Mucosal
Mucositis [2]
Stomatitis (oral mucositis) [2]
Xerostomia (dry mouth) (16%)
Cardiovascular
QT interval prolonged / QT prolongation [3]
Central Nervous System
Anorexia [5]
Chills (16%)
Dysgeusia (taste perversion) (28%)
Fever (pyrexia) (includes hyperpyrexia) (10%)
Headache (12%)
Vertigo / dizziness (15%)
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Dehydration [2]
Hyperglycemia (includes glucose increased) [3]
Weight loss [4]
Gastrointestinal/Hepatic
Abdominal pain [2]
Constipation [2]
Diarrhea [7]
Nausea [10]
Vomiting [4]
Hematologic
Anemia (14%) [7]
Febrile neutropenia [2]
Hemotoxicity [2]
Leukocytopenia (leukopenia) / leukocytes (white blood cells) decreased [3]
Lymphopenia (lymphocytopenia) / lymphocytes decreased [6]
Neutropenia (neutrophils decreased) [10]
Thrombocytopenia [16]
Neuromuscular/Skeletal
Asthenia / fatigue (52%) [11]
Renal
Renal failure [2]
Respiratory
Cough (11%)
Upper respiratory tract infection (10%)
Other
Adverse effects / adverse reactions [2]

VORTIOXETINE

Trade name: Trintellix (formerly Brintellix) (Takeda)
Indications: Major depressive disorder
Class: Antidepressant, Serotonin receptor agonist, Serotonin receptor antagonist, Serotonin reuptake inhibitor
Half-life: ~66 hours
Clinically important, potentially hazardous interactions with: bupropion, carbamazepine, fluoxetine, MAO inhibitors, paroxetine hydrochloride, phenytoin, quinidine, rifampin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Warning: SUICIDAL THOUGHTS AND BEHAVIORS

Skin
Hyperhidrosis (see also diaphoresis) [6]
Pruritus (itching) (<3%)
Mucosal
Xerostomia (dry mouth) (6–8%) [18]
Central Nervous System
Abnormal dreams (<3%) [2]
Agitation [2]
Anxiety [2]
Headache [26]
Hypomania [2]
Insomnia [7]
Somnolence (drowsiness) [4]
Vertigo / dizziness (6–9%) [19]
Endocrine/Metabolic
Weight gain [2]
Gastrointestinal/Hepatic
Constipation (3–6%) [13]
Diarrhea (7–10%) [16]
Flatulence (<3%)
Nausea (21–32%) [40]
Vomiting (3–6%) [17]
Genitourinary
Sexual dysfunction (<5%) [10]
Neuromuscular/Skeletal
Asthenia / fatigue [7]
Respiratory
Nasopharyngitis [7]
Upper respiratory tract infection [2]
Other
Adverse effects / adverse reactions [3]

WARFARIN

Trade name: Coumadin (Bristol-Myers Squibb)
Indications: Thromboembolic disease, pulmonary embolism
Class: Anticoagulant, Coumarin
Half-life: 1.5–2.5 days (highly variable)
Clinically important, potentially hazardous interactions with: acemetacin, amiodarone, amobarbital, amprenavir, antithyroid agents, aprepitant, aprobarbital, aspirin, atazanavir, atorvastatin, azathioprine, azithromycin, barbiturates, beclomethasone, betamethasone, bezafibrate, bismuth, bivalirudin, boceprevir, bosentan, butabarbital, capecitabine, cefixime, celecoxib, ceritinib, chondroitin, cimetidine, ciprofloxacin, clarithromycin, clofibrate, clopidogrel, clorazepate, co-trimoxazole, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, colesevelam, cyclosporine, danazol, daptomycin, darunavir, dasiglucagon, delavirdine, desvenlafaxine, dexamethasone, dexibuprofen, dexlansoprazole, diclofenac, dicloxacillin, dirithromycin, disulfiram, dronedarone, duloxetine, econazole, efavirenz, enzalutamide, ergotamine, erlotinib, erythromycin, eslicarbazepine, etoricoxib, exenatide, fenofibrate, fluconazole, flunisolide, fluoxymesterone, fosamprenavir, gefitinib, gemfibrozil, glucagon, grapefruit juice, heparin, imatinib, influenza vaccine, inotersen, itraconazole, ketoconazole, leflunomide, lepirudin, letermovir, levofloxacin, levothyroxine, liothyronine, liraglutide, lomitapide, lopinavir, menadione, mephobarbital, methimazole, methyl salicylate, methylprednisolone, methyltestosterone, metronidazole, miconazole, mifepristone, moricizine, moxifloxacin, nafcillin, nalidixic acid, nandrolone, nilutamide, norfloxacin, obeticholic acid, ofloxacin, omeprazole, oritavancin, orlistat, pantoprazole, PEG-interferon, penicillin G, penicillin V, penicillins, pentobarbital, phenobarbital, phenylbutazones, phytonadione, piperacillin, piroxicam, prasugrel, primidone, propoxyphene, propranolol, propylthiouracil, quinidine, quinine, rabeprazole, resveratrol, rifampin, rifapentine, rofecoxib, romidepsin, ropinirole, rosuvastatin, roxithromycin, salicylates, secobarbital, simvastatin, sitaxentan, sorafenib, St John's wort, stanozolol, sulfamethoxazole, sulfinpyrazone, sulfisoxazole, sulfonamides, sulindac, tamsulosin, tegafur/gimeracil/oteracil, telaprevir, telithromycin, teriflunomide, testosterone, tibolone, tigecycline, tinidazole, tolmetin, tolterodine, triamcinolone, troleandomycin, uracil/tegafur, valdecoxib, vemurafenib, venlafaxine, vilazodone, vitamin A, vitamin E, zafirlukast, zileuton
Pregnancy category: X (category D for women with mechanical heart valves)
Note: Alternative remedies, including herbals, may potentially increase the risk of bleeding or potentiate the effects of warfarin therapy. Some of these include the following: angelica root, arnica flower, anise, asafetida, bogbean, borage seed oil, bromelain, dan-shen, devil's claw, fenugreek, feverfew, garlic, ginger, ginkgo biloba, ginseng, horse chestnut, lovage root, meadowsweet, onion, parsley, passionflower herb, poplar, quassia, red clover, rue, turmeric and willow bark.
Warning: BLEEDING RISK

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) [2]
Calcification [3]
Dermatitis [2]
Exanthems [7]
Gangrene [6]
Hematoma [3]
Hypersensitivity [3]
Leukocytoclastic vasculitis (angiitis) [2]
Necrosis (skin necrosis) (>10%) [118]
Pruritus (itching) [2]
Purplish erythema (feet and toes) [8]
Purpura [3]
Rash [2]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [3]
Urticaria / hives [3]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [7]
Hair
Alopecia / hair loss (>10%) [8]
Mucosal
Tongue hematoma / lingual hematoma [4]
Cardiovascular
Myocardial infarction [2]
Central Nervous System
Headache [2]
Intracranial hemorrhage [2]
Vertigo / dizziness [2]
Gastrointestinal/Hepatic
Black stools / melena [2]
Gastrointestinal bleeding [6]
Hematemesis [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [3]
Genitourinary
Priapism [4]

Hematologic
Anticoagulation [3]
Bleeding [18]
Hemorrhage [8]
Prothrombin time (INR) increased [5]
Thrombosis [2]

Neuromuscular/Skeletal
Rhabdomyolysis [2]

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [4]

Other
Adverse effects / adverse reactions [9]
Death [4]

WILLOW BARK

Family: Salicaceae
Scientific names: *Salix alba, Salix fragilis, Salix purpurea*
Indications: Colds, infections, headaches, pain, muscle and joint aches, influenza, gouty arthritis, ankylosing spondylitis, rheumatoid arthritis, osteoarthritis
Class: Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: NSAIDs, salicylates
Pregnancy category: N/A

XIPAMIDE

Trade name: Diurexan (Meda)
Indications: Hypertension
Class: Antihypertensive
Half-life: N/A
Clinically important, potentially hazardous interactions with: ACTH, amphotericin, carbenoxolone, corticosteroids, laxatives, lithium

Cardiovascular
Ventricular fibrillation [2]

XYLOMETAZOLINE

Trade name: Otrivine (Novartis)
Indications: Nasal congestion, perennial and allergic rhinitis, sinusitis
Class: Alpha adrenoceptor agonist
Half-life: N/A
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Mucosal
Epistaxis (nosebleed) [2]
Mucosal bleeding [2]

YARROW

Family: Compositae
Scientific name: *Achillea millefolium*
Indications: Fevers, common cold, essential hypertension, digestive complaints, loss of appetite, amenorrhea, dysentery, diarrhea, cerebral and coronary thromboses, menstrual pain, bleeding piles, toothache, muscle spasms, gastrointestinal disorders. **Topical:** slow-healing wounds, skin inflammations, cosmetics
Class: Anti-inflammatory
Half-life: N/A
Clinically important, potentially hazardous interactions with: anticoagulants, antiepileptics, hypertensives, hypotensives
Pregnancy category: N/A

Skin
Dermatitis [4]

YELLOW FEVER VACCINE

Trade names: Stamaril (Sanofi Pasteur), YF-VAX (Sanofi Pasteur)
Indications: Immunization against yellow fever
Class: Vaccine
Half-life: N/A
Clinically important, potentially hazardous interactions with: azathioprine, belimumab, corticosteroids, fingolimod, hydroxychloroquine, immunosuppressants, interferon-gamma, leflunomide, mercaptopurine, prednisone, tocilizumab, ustekinumab
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Contra-indicated in patients with hypersensitivity to egg or chick embryo protein.

Skin
Anaphylactoid reactions / anaphylaxis (includes anaphylactic shock) [8]
Hypersensitivity [2]
Rash (3%)
Urticaria / hives [2]

Central Nervous System
Encephalopathy (includes hepatic encephalopathy) [4]
Fever (pyrexia) (includes hyperpyrexia) (low-grade) (<5%) [3]
Headache (<30%) [2]
Myelitis / myeloradiculitis [2]
Neurotoxicity [11]

Gastrointestinal/Hepatic
Diarrhea (<10%) [2]
Hepatitis [2]
Nausea (<10%)
Vomiting (<10%) [2]

Local
Infusion-site erythema (<5%)
Infusion-site pain (<5%)

Neuromuscular/Skeletal
Asthenia / fatigue (10–30%) [2]
Myalgia/Myopathy (10–30%) [2]

Respiratory
Influenza [2]

Other
Adverse effects / adverse reactions [15]
Death [13]
Multiorgan failure [3]
Viscerotropic disease (acute multiple organ system dysfunction) [20]

YOHIMBINE

Family: Rubiaceae
Scientific name: *Pausinystalia yohimbe*
Indications: Impotence, alpha2-adrenergic blocker, orthostatic hypertension
Class: Rauwolfia alkaloid
Half-life: 36 minutes
Clinically important, potentially hazardous interactions with: amitriptyline, benazepril, captopril, clevidipine, lisinopril, terbutaline, tricyclic antidepressants
Pregnancy category: N/A

Skin
Flushing / rubefaction [2]

Mucosal
Sialorrhea (ptyalism; hypersalivation) [2]

Cardiovascular
Hypertension [5]
Tachycardia [4]

Central Nervous System
Agitation [2]
Anxiety [6]
Headache [3]

Gastrointestinal/Hepatic
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [4]

Genitourinary
Urinary frequency [2]

ZAFIRLUKAST

Trade name: Accolate (AstraZeneca)
Indications: Asthma
Class: Leukotriene receptor antagonist
Half-life: 10 hours
Clinically important, potentially hazardous interactions with: aminophylline, aspirin, carvedilol, CYP2C9 substrates, CYP3A4 substrates, erythromycin, high protein foods, interferon alfa, primidone, vitamin K antagonists, warfarin
Pregnancy category: B
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Contra-indicated in patients with hepatic impairment including hepatic cirrhosis.

Skin
Churg-Strauss syndrome [6]

Central Nervous System
Fever (pyrexia) (includes hyperpyrexia) (2%)
Headache (13%)
Pain (generalized) (2%)
Vertigo / dizziness (2%)

Gastrointestinal/Hepatic
Abdominal pain (2%)
Diarrhea (3%)
Nausea (3%)
Vomiting (2%)

Neuromuscular/Skeletal
Asthenia / fatigue (2%)
Back pain (2%)
Myalgia/Myopathy (2%)

Respiratory
Cough [2]
Other
Infection (4%)

ZALCITABINE

Synonyms: dideoxycytidine; ddC
Trade name: Hivid (Roche)
Indications: Advanced HIV infection
Class: Antiretroviral, Nucleoside analog reverse transcriptase inhibitor
Half-life: 2.9 hours
Clinically important, potentially hazardous interactions with: none known
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Edema / fluid retention (see also peripheral edema) [3]
Exanthems [9]
Pruritus (itching) (3–5%)
Rash (2–11%) [2]
Urticaria / hives (3%)
Mucosal
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae) [6]
Oral lesions (40–73%) [3]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (3–64%) [4]
Stomatitis (oral mucositis) (3%)
Central Nervous System
Neurotoxicity [2]
Neuromuscular/Skeletal
Myalgia/Myopathy (<6%)
Other
Side effects [2]

ZALEPLON

Trade name: Sonata (Wyeth)
Indications: Insomnia
Class: Hypnotic, non-benzodiazepine
Half-life: 1 hour
Clinically important, potentially hazardous interactions with: alcohol, cimetidine, erythromycin, imipramine, ketoconazole, promethazine, rifampin, rifapentine, thioridazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Cardiovascular
Tachycardia [2]
Central Nervous System
Amnesia (2–4%)
Anorexia (<2%)
Confusion [2]
Depersonalization (<2%)
Hallucinations [3]
Headache (30–42%) [3]
Hypoesthesia (numbness) (<2%)
Paresthesias (3%)
Parosmia (<2%)
Slurred speech [2]
Somnambulism (sleepwalking; noctambulism) [2]
Somnolence (drowsiness) (5–6%) [4]
Tremor (2%)
Vertigo / dizziness (7–9%) [4]
Gastrointestinal/Hepatic
Abdominal pain (6%)
Nausea (6–8%)
Vomiting [2]
Genitourinary
Dysmenorrhea (3–4%)
Neuromuscular/Skeletal
Asthenia / fatigue (5–7%)
Ataxia [2]
Ocular
Ocular pain (3–4%)
Otic
Hyperacusis (<2%)
Other
Adverse effects / adverse reactions [2]
Viscerotropic disease (acute multiple organ system dysfunction) [2]

ZANAMIVIR

Trade name: Relenza (GSK)
Indications: Influenza A and B
Class: Antiviral, Neuraminidase inhibitor
Half-life: 2.5–5.1 hours
Clinically important, potentially hazardous interactions with: live attenuated influenza vaccine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers

Skin
Urticaria / hives (<2%)
Mucosal
Nasal discomfort (12%)
Central Nervous System
Anorexia (4%)
Chills (5–9%)
Fever (pyrexia) (includes hyperpyrexia) (5–9%)
Headache (13–24%) [2]
Vertigo / dizziness (<2%)
Endocrine/Metabolic
Appetite decreased (4%)
Appetite increased (4%)
Gastrointestinal/Hepatic
Abdominal pain (<2%)
Diarrhea (3%) [2]
Nausea (3%) [2]
Neuromuscular/Skeletal
Arthralgia (<2%)
Asthenia / fatigue (5–8%)
Bone or joint pain (6%)
Myalgia/Myopathy (<8%)
Respiratory
Bronchitis (2%)
Bronchospasm [3]
Cough (7–17%)
Respiratory failure [2]
Sinusitis (2%)
Upper respiratory tract infection (3–13%) [2]
Other
Infection (2%)

ZICONOTIDE

Trade name: Prialt (Jazz)
Indications: Analgesic, severe chronic pain
Class: Neuronal calcium channel blocker
Half-life: 4.6 hours
Clinically important, potentially hazardous interactions with: CNS depressants
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Ziconotide is a synthetic analog of a substance isolated from the venom of carnivorous oceanic snails that sting their prey with a cocktail of neurotoxins injected through a harpoon-like tube. Ziconotide is 100 to 1,000 times more powerful than morphine.
Warning: NEUROPSYCHIATRIC ADVERSE REACTIONS

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (~2%)
Cellulitis (~2%)
Diaphoresis (see also hyperhidrosis) (5%)
Edema / fluid retention (see also peripheral edema) (~2%)
Pruritus (itching) (7%)
Xerosis / xeroderma (see also dry skin) (~2%)
Mucosal
Xerostomia (dry mouth) (~2%)
Cardiovascular
Atrial fibrillation (~2%)
Chest pain (~2%)
Hypertension (~2%)
Hypotension (~2%)
Tachycardia (~2%)
Central Nervous System
Amnesia (8%)
Anorexia (6%)
Anxiety (8%)
Chills (~2%)
Confusion (15%) [8]
Depression (~2%) [2]
Dysarthria (7%)
Dysesthesia (7%)
Dysgeusia (taste perversion) (5%)
Fever (pyrexia) (includes hyperpyrexia) (5%)
Gait instability / postural instability [3]
Hallucinations [4]
Hallucinations, auditory [2]
Headache (13%)
Hyperesthesia (~2%)
Insomnia (6%)
Myokymia / twitching (~2%)
Pain (11%)
Paresthesias (7%)
Rigors (7%)
Seizures (<2%)
Somnolence (drowsiness) (17%) [4]
Suicidal ideation (<2%)
Tremor (7%)
Vertigo / dizziness (47%) [10]
Endocrine/Metabolic
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Gastrointestinal/Hepatic
Abdominal pain (~2%)
Diarrhea (18%)
Nausea (40%) [5]

Vomiting (16%) [3]

Genitourinary
Urinary retention (9%) [4]

Neuromuscular/Skeletal
Arthralgia (~2%)
Asthenia / fatigue (18%)
Ataxia (14%)
Back pain (~2%)
Muscle spasm (6%)
Myalgia/Myopathy (~2%)
Rhabdomyolysis (<2%)

Ocular
Diplopia (double vision) (~2%)
Nystagmus (8%) [3]
Periorbital edema (see also eyelid edema) (~2%)
Photophobia (~2%)
Vision blurred (12%) [2]
Visual disturbances (10%)

Otic
Tinnitus (~2%)

Respiratory
Influenza- ('flu)-like syndrome (~2%)
Sinusitis (5%)

Other
Adverse effects / adverse reactions [3]
Infection (~2%)

ZIDOVUDINE

Synonyms: azidothymidine; AZT
Trade names: Combivir (ViiV), Retrovir (ViiV), Trizivir (ViiV)
Indications: HIV infection
Class: Antiretroviral, Nucleoside analog reverse transcriptase inhibitor
Half-life: 0.5–3 hours
Clinically important, potentially hazardous interactions with: atovaquone, bone marrow suppressives, clarithromycin, darunavir, diclofenac, doxorubicin, fluconazole, ganciclovir, indinavir, interferon alfa, interferon beta, lopinavir, meloxicam, methadone, NSAIDs, PEG-interferon, phenytoin, probenecid, pyrimethamine, ribavirin, rifampin, rifapentine, stavudine, tipranavir, valproic acid
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers
Note: Combivir is zidovudine and lamivudine; Trizivir is zidovudine, abacavir and lamivudine.
Warning: HEMATOLOGICAL TOXICITY, MYOPATHY, LACTIC ACIDOSIS AND SEVERE HEPATOMEGALY, and EXACERBATIONS OF HEPATITIS B

Skin
Acneiform eruption / acneiform dermatitis / acneiform rash (<5%)
Bromhidrosis (<5%)
Diaphoresis (see also hyperhidrosis) (5–19%)
Edema of lip (<5%)
Erythema multiforme [2]
Exanthems (<5%) [6]
Lipoatrophy [2]
Lipodystrophy [2]
Pigmentation [10]
Pruritus (itching) [4]
Rash (17%) [8]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [6]
Urticaria / hives (<5%) [2]
Vasculitis (angiitis) / cutaneous vasculitis (angiitis) [2]

Hair
Alopecia / hair loss [2]
Hypertrichosis (eyelashes) [2]

Nails
Nail pigmentation [27]

Mucosal
Oral lichenoid eruption [2]
Oral pigmentation [8]
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha) (<5%)
Tongue edema (<5%)
Tongue pigmentation [4]

Central Nervous System
Dysgeusia (taste perversion) (5–19%) [2]
Headache [3]
Paresthesias (<8%)

Endocrine/Metabolic
Acidosis (includes lactic acidosis) [6]

Gastrointestinal/Hepatic
Abdominal pain [3]
Diarrhea [2]
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [3]
Pancreatitis / acute pancreatitis [3]
Vomiting [2]

Hematologic
Anemia [14]
Neutropenia (neutrophils decreased) [3]

Neuromuscular/Skeletal
Asthenia / fatigue [3]
Myalgia/Myopathy [5]

Other
Adverse effects / adverse reactions [9]
Teratogenicity [2]

ZILEUTON

Trade name: Zyflo (AbbVie)
Indications: Asthma
Class: Leukotriene receptor antagonist
Half-life: 2.5 hours
Clinically important, potentially hazardous interactions with: anisindione, anticoagulants, astemizole, dicumarol, methylergonovine, pimozide, propranolol, warfarin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

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Neuromuscular/Skeletal
Myalgia/Myopathy (3%)

ZINC

Trade name: Cold-Eeze (The Quigley Corp)
Indications: Supplement to intravenous solutions given for total parenteral nutrition (TPN)
Class: Food supplement, Trace element
Half-life: N/A
Clinically important, potentially hazardous interactions with: baloxavir marboxil, chlorothiazide, chlortetracycline, chlorthalidone, ciprofloxacin, cisplatin, deferoxamine, demeclocycline, doxycycline, eltrombopag, ethambutol, ferrous sulfate, gatifloxacin, gemifloxacin, hydrochlorothiazide, indapamide, levofloxacin, lymecycline, metolozone, minocycline, moxifloxacin, norfloxacin, ofloxacin, oxytetracycline, propofol, tetracycline, valproic acid
Pregnancy category: C
Note: Zinc is found in meats, seafood, dairy products, legumes, nuts, whole grains. Zinc oxide and zinc sulfate are used to fortify wheat products.

Skin
Churg-Strauss syndrome [2]
Dermatitis [4]

Mucosal
Oral mucosal irritation [2]

Central Nervous System
Anosmia (smell loss) / smell disorder (see also hyposmia) [3]
Dysgeusia (taste perversion) [5]

ZIPRASIDONE

Trade name: Geodon (Pfizer)
Indications: Schizophrenia, bipolar I disorder
Class: Antipsychotic
Half-life: 7 hours
Clinically important, potentially hazardous interactions with: acetylcholinesterase inhibitors, alcohol, alfuzosin, amitriptyline, amoxapine, amphetamines, antifungals, arsenic, artemether/lumefantrine, asenapine, astemizole, carbamazepine, chloroquine, ciprofloxacin, citalopram, CNS depressants, conivaptan, dasatinib, degarelix, dolasetron, dopamine agonists, dopamine agonists, dronedarone, food, gadobutrol, ketoconazole, lapatinib, levodopa, levofloxacin, lithium, methylphenidate, metoclopramide, moxifloxacin, nilotinib, pazopanib, pimavanserin, pimozide, QT prolonging agents, quinagolide, quinine, ranolazine, St John's wort, telavancin, telithromycin, tetrabenazine, thioridazine, voriconazole, vorinostat
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients
Note: Ziprasidone should be avoided in patients with congenital long QT syndrome or a history of cardiac arrhythmias.
Warning: INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

Skin
Angioedema [2]
Diaphoresis (see also hyperhidrosis) (2%)
DRESS syndrome [2]
Fungal dermatitis (2%)
Furunculosis (2%)
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)) [2]
Rash (4%)
Urticaria / hives (5%)

Mucosal
Rectal hemorrhage / rectal bleeding (2%)
Sialorrhea (ptyalism; hypersalivation) (4%)
Tongue edema (3%)
Xerostomia (dry mouth) (<5%)

Cardiovascular
Bradycardia / sinus bradycardia (2%)
Chest pain (3%)
Hypertension (2–3%)
Postural hypotension (5%)
QT interval prolonged / QT prolongation [22]
Tachycardia (2%) [2]
Torsades de pointes [6]

Central Nervous System
Agitation (2%) [3]
Akathisia (2–10%) [5]
Anorexia (2%)
Anxiety (2–5%) [2]
Depression [2]
Dyskinesia (<10%) [2]
Extrapyramidal symptoms (2–31%) [6]
Headache (3–18%) [3]
Hyperesthesia (<2%)
Hypokinesia (<5%)
Insomnia (3%) [5]
Mania [2]
Myokymia / twitching (<10%)
Neuroleptic malignant syndrome [6]
Paralysis / paraplegia (<10%)
Paresthesias (<2%)
Sedation [4]
Somnolence (drowsiness) (8–31%) [12]
Speech disorder (2%)
Tardive syndrome / tardive dyskinesia [5]
Tremor (<10%) [2]
Vertigo / dizziness (3–16%) [2]

Endocrine/Metabolic
Diabetes mellitus [2]
Galactorrhea [3]
Weight gain [7]

Gastrointestinal/Hepatic
Abdominal pain (<2%)
Constipation (2–9%)
Diarrhea (3–5%)
Dyspepsia / functional dyspepsia / gastroparesis (<8%)
Dysphagia (2%)
Nausea (4–12%) [4]
Vomiting (3–5%)

Genitourinary
Dysmenorrhea (2%)
Priapism [4]

Local
Infusion-site pain (7–9%)

Neuromuscular/Skeletal
Asthenia / fatigue (2–6%) [4]
Dystonia (<10%) [6]
Hypertonia (<10%)
Myalgia/Myopathy (2%)
Rhabdomyolysis [2]

Ocular
Abnormal vision (3–6%)

Respiratory
Cough (increased) (3%)
Dyspnea / shortness of breath (2%)
Pharyngitis (sore throat) (3%)
Respiratory tract infection (8%)
Rhinitis (<4%)
Upper respiratory tract infection (8%)

Other
Adverse effects / adverse reactions [8]
Death [2]

ZOFENOPRIL

Trade names: Bifril (Menarini), Zantipres (Menarini), Zofenil (Menarini), Zofepril (Menarini), Zofil (Menarini), Zopranol (Menarini)
Indications: Hypertension, myocardial infarction
Class: Angiotensin-converting enzyme (ACE) inhibitor, Antihypertensive
Half-life: 5.5 hours
Clinically important, potentially hazardous interactions with: allopurinol, amiloride, cimetidine, corticosteroids, cyclosporine, insulin, lithium, potassium sparing diuretics, potassium supplements, procainamide, spironolactone, triamterene
Pregnancy category: N/A (not recommended in pregnancy)
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Cardiovascular
Hypotension [5]

Central Nervous System
Headache [2]
Vertigo / dizziness [2]

Genitourinary
Polyuria [2]

Neuromuscular/Skeletal
Asthenia / fatigue (3%)

Respiratory
Cough [5]

Other
Adverse effects / adverse reactions [3]

ZOLEDRONATE

Synonym: zoledronic acid
Trade names: Aclasta (Novartis), Reclast (Novartis), Zometa (Novartis)
Indications: Hypercalcemia of malignancy, Paget's disease, osteoporosis
Class: Bisphosphonate
Half-life: 7 days
Clinically important, potentially hazardous interactions with: aminoglycosides, bisphosphonates, loop diuretics, nephrotoxics
Pregnancy category: D
Important contra-indications noted in the prescribing guidelines for: the elderly; nursing mothers; pediatric patients

Skin
Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE) [2]
Candidiasis / candidosis (12%)
Dermatitis (11%)
Dermatomyositis [3]
Edema / fluid retention (see also peripheral edema) [3]
Peripheral edema (see also edema) (5–21%)
Rash [3]

Hair
Alopecia / hair loss (12%)

Mucosal
Mucositis (5–10%)
Stomatitis (oral mucositis) (8%)

Cardiovascular
Atrial fibrillation [3]
Chest pain (5–10%)
Hypotension (11%)

Central Nervous System
Agitation (13%)
Anorexia (9–22%)
Anxiety (11–14%)
Chills [2]
Confusion (7–13%)
Depression (14%)
Fever (pyrexia) (includes hyperpyrexia) (32–44%) [20]
Headache (5–19%) [4]
Hypoesthesia (numbness) (12%)
Insomnia (15–16%)
Paresthesias (15%)
Rigors (11%)
Seizures [2]
Somnolence (drowsiness) (5–10%)
Vertigo / dizziness (18%)

Endocrine/Metabolic
Appetite decreased (13%)
Creatine phosphokinase (CPK) / creatine kinase increased (hyperCKemia) [2]
Dehydration (5–14%)
Hyperparathyroidism [2]
Hypocalcemia (5–10%) [29]
Hypokalemia (12%)
Hypomagnesemia (11%)
Hypophosphatemia (13%) [6]
Weight loss (16%)

Gastrointestinal/Hepatic
Abdominal pain (14–16%)
Constipation (27–31%) [3]
Diarrhea (17–24%) [2]
Dyspepsia / functional dyspepsia / gastroparesis (10%)
Dysphagia (5–10%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [7]
Nausea (29–46%) [12]
Vomiting (14–32%) [2]

Genitourinary
Urinary tract infection (12–14%)

Hematologic
Acute-phase reaction [7]
Anemia (22–33%) [8]
Granulocytopenia (5–10%)
Neutropenia (neutrophils decreased) (12%)
Pancytopenia (includes bicytopenia) (5–10%)
Thrombocytopenia (5–10%)

Neuromuscular/Skeletal
Arthralgia (5–10%) [9]
Asthenia / fatigue (5–39%) [11]
Back pain (15%)
Bone or joint pain (12–55%) [15]
Fractures [4]
Myalgia/Myopathy (23%) [7]
Osteonecrosis / avascular necrosis [56]
Pain in extremities (14%)

Ocular
Ocular adverse effect [2]
Ocular inflammation [3]
Scleritis [2]
Uveitis / anterior uveitis / posterior uveitis / panuveitis [12]

Renal
Fanconi syndrome [2]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [15]
Renal failure [4]
Renal function abnormal / renal dysfunction [2]

Respiratory
Cough (12–22%)

Dyspnea / shortness of breath (22–27%)
Influenza- ('flu)-like syndrome [9]
Pharyngolaryngeal pain (8%)
Upper respiratory tract infection (10%)

Other
Adverse effects / adverse reactions [7]
Infection (5–10%)
Neoplasms (malignant / aggrevated) (20%)

ZOLMITRIPTAN

Trade name: Zomig (AstraZeneca)
Indications: Migraine attacks
Class: 5-HT1 agonist, Serotonin receptor agonist, Triptan
Half-life: 3 hours
Clinically important, potentially hazardous interactions with: cimetidine, ciprofloxacin, dihydroergotamine, ergot-containing drugs, fluoxetine, fluvoxamine, isocarboxazid, levofloxacin, MAO inhibitors, methysergide, moclobemide, moxifloxacin, naratriptan, norfloxacin, ofloxacin, oral contraceptives, phenelzine, propranolol, rizatriptan, sertraline, sibutramine, SNRIs, SSRIs, St John's wort, sumatriptan, tranylcypromine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Diaphoresis (see also hyperhidrosis) (2–3%)
Hot flashes / hot flushes (>10%)

Mucosal
Xerostomia (dry mouth) (3–5%)

Cardiovascular
Chest pain (2–4%)
Myocardial infarction [4]

Central Nervous System
Dysgeusia (taste perversion) [4]
Headache [2]
Neurotoxicity [2]
Paresthesias (5–9%) [6]
Somnolence (drowsiness) (5–8%)
Vertigo / dizziness (2–10%) [3]
Warm feeling (includes feeling hot) (5–7%)

Gastrointestinal/Hepatic
Dyspepsia / functional dyspepsia / gastroparesis (<3%)
Dysphagia (<2%)
Nausea (4–9%) [2]

Neuromuscular/Skeletal
Jaw pain (4–10%)
Myalgia/Myopathy (2%) [2]
Neck pain (4–10%)

Renal
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]

Other
Adverse effects / adverse reactions [6]

ZOLPIDEM

Trade name: Ambien (Sanofi-Aventis)
Indications: Insomnia
Class: Hypnotic, non-benzodiazepine
Half-life: 2.6 hours
Clinically important, potentially hazardous interactions with: alcohol, antihistamines, azatadine, azelastine, brompheniramine, buclizine, chlorpheniramine, chlorpromazine, cimetidine, clemastine, cobicistat/elvitegravir/emtricitabine/tenofovir alafenamide, cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil, dexchlorpheniramine, erythromycin, imipramine, ketoconazole, meclizine, pizotifen, ramelteon, rifampin, rifapentine, ritonavir, telaprevir, voriconazole
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Rash (2%)

Mucosal
Xerostomia (dry mouth) (3%) [3]

Cardiovascular
Palpitation (2%)
Tachycardia [2]
Torsades de pointes [2]

Central Nervous System
Amnesia [16]
Anxiety [2]
Compulsions / obsessive-compulsive symptoms [2]
Confusion [3]
Delirium [5]
Depression (2%)
Dysgeusia (taste perversion) [4]
Euphoria / elation [2]
Gait instability / postural instability [3]
Hallucinations [13]
Hallucinations, visual (see also Charles Bonnet syndrome) [9]
Headache (7%) [11]
Mania [2]
Nightmares [2]
Seizures [7]
Sleep-related disorder [19]
Sleep-related eating disorder (SRED) [4]
Slurred speech [2]
Somnambulism (sleepwalking; noctambulism) [17]
Somnolence (drowsiness) (2–8%) [11]
Vertigo / dizziness (<5%) [12]

Gastrointestinal/Hepatic
Abdominal pain (2%)
Constipation (2%)
Diarrhea (<3%)
Hepatotoxicity / liver injury / acute liver injury / drug-induced liver injury (DILI) [2]
Nausea [5]
Vomiting [2]

Neuromuscular/Skeletal
Asthenia / fatigue (3%) [4]
Ataxia [3]
Back pain (3%)
Fractures [2]
Myalgia/Myopathy (7%)

Respiratory
Influenza- ('flu)-like syndrome (2%)
Pharyngitis (sore throat) (3%)
Sinusitis (4%)

Other
Adverse effects / adverse reactions [8]
Allergic reactions (4%)

ZONISAMIDE

Trade name: Zonegran (Concordia)
Indications: Epilepsy
Class: Anticonvulsant, Antiepileptic; sulfonamide
Half-life: 63 hours
Clinically important, potentially hazardous interactions with: caffeine, metformin
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients
Note: Zonisamide is a sulfonamide and can be absorbed systemically. Sulfonamides can produce severe, possibly fatal, reactions such as toxic epidermal necrolysis and Stevens-Johnson syndrome.

Skin
Bruise / bruising / contusion / ecchymosis (ecchymoses) (2%)
DRESS syndrome [4]
Hypersensitivity [4]
Oligohydrosis (reduced sweating) [8]
Purpura (2%)
Rash (3%) [6]
Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) [9]

Mucosal
Xerostomia (dry mouth) (2%)

Central Nervous System
Agitation (9%) [4]
Anorexia (13%) [9]
Anxiety (3%)
Cognitive impairment (6%) [4]
Confusion (6%)
Depression (6%) [4]
Dysgeusia (taste perversion) (2%)
Fever (pyrexia) (includes hyperpyrexia) [2]
Headache (10%) [7]
Insomnia (6%)
Irritability (9%) [4]
Mania [2]
Nervousness (2%)
Neuroleptic malignant syndrome [2]
Paresthesias (4%)
Psychosis [3]
Restless legs syndrome [3]
Schizophrenia (2%)
Somnolence (drowsiness) (17%) [22]
Speech disorder (2–5%)
Suicidal ideation [2]
Vertigo / dizziness (13%) [18]

Endocrine/Metabolic
Appetite decreased [8]
Weight loss (3%) [20]

Gastrointestinal/Hepatic
Abdominal pain (6%)
Constipation (2%)
Diarrhea (5%)
Dyspepsia / functional dyspepsia / gastroparesis (3%)
Nausea (9%) [2]
Vomiting [2]

Neuromuscular/Skeletal
Asthenia / fatigue (7–8%) [9]
Ataxia (6%) [3]

Ocular
Diplopia (double vision) (6%) [2]
Nystagmus (4%)

Renal
Nephrolithiasis (formation of a kidney stone) [4]
Nephrotoxicity / kidney injury / acute kidney injury (AKI) / drug-induced kidney injury [2]
Respiratory
Influenza- ('flu)-like syndrome (4%)
Pneumonitis [2]
Rhinitis (2%)
Other
Adverse effects / adverse reactions [12]
Side effects [4]
Teratogenicity [2]

ZOTAROLIMUS

Trade names: Endeavor (Medtronic), ZoMaxx Drug-Eluting Coronary Stent (AbbVie)
Indications: Ischemic heart disease, restenosis
Class: Angiogenesis inhibitor / antiangiogenic agent, Macrolide immunosuppressant (derivative of sirolimus), mTOR inhibitor
Half-life: 33–36 hours
Clinically important, potentially hazardous interactions with: ketoconazole, sirolimus
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Skin
Rash (<6%)
Xerosis / xeroderma (see also dry skin) (<13%)
Cardiovascular
Cardiotoxicity [4]
Myocardial infarction [3]
Subacute thrombosis [2]
Central Nervous System
Headache (4–13%)
Pain (13–63%)
Gastrointestinal/Hepatic
Abdominal pain (<6%)
Diarrhea (<6%)
Genitourinary
Hematuria (<13%)
Local
Application-site reactions (13–63%)
Injection-site reaction (13–38%)

ZUCLOPENTHIXOL

Trade name: Clopixol (Lundbeck)
Indications: Psychoses, especially schizophrenia
Class: Antipsychotic
Half-life: 24 hours
Clinically important, potentially hazardous interactions with: ACE inhibitors, alcohol, alpha blockers, amantadine, amiodarone, angiotensin II receptor antagonists, antiarrythmics, anticholinergics, antihistamines, antipsychotics, anxiolytics and hypnotics, apomorphine, arsenic, artemether/lumefantrine, atomoxetine, atropine sulfate, barbiturates, bromocriptine, cabergoline, calcium channel blockers, carbamazepine, cisapride, clozapine, CNS depressants, corticosteroids, digoxin, disopyramide, dofetilide, doxazosin, efavirenz, erythromycin, ethosuximide, general anesthetics, guanethidine, histamine, hydralazine, levodopa, lithium, memantine, methadone, methyldopa, metoclopramide, moxifloxacin, opioid analgesics, oxcarbazepine, pergolide, phenytoin, piperazine, pramipexole, primidone, quinidine, ritonavir, ropinirole, rotigotine, sibutramine, sodium oxybate, sotalol, synpathomimetics, tetrabenazine, thiazide diuretics, thioridazine, tramadol, tricyclic antidepressants, valproic acid
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: the elderly; pediatric patients

Skin
Hyperhidrosis (see also diaphoresis) (3%)
Pruritus (itching) (2%)
Seborrhea (2%)
Mucosal
Salivary hypersecretion (8%)
Xerostomia (dry mouth) (15%)
Central Nervous System
Anxiety (17%)
Depression (8%)
Headache (5%)
Hypokinesia (8%)
Insomnia (16%)
Neuroleptic malignant syndrome [4]
Somnolence (drowsiness) (32%)
Tremor (19%)
Vertigo / dizziness (11%)
Endocrine/Metabolic
Libido decreased (3%)
Gastrointestinal/Hepatic
Nausea (2%)
Vomiting (3%)
Genitourinary
Priapism [4]
Neuromuscular/Skeletal
Hypertonia (19%)
Ocular
Abnormal vision (4%)
Accommodation disorder (6%)
Other
Death [2]
Side effects [2]

ZUCLOPENTHIXOL ACETATE

Trade name: Clopixol-Acuphase (Lundbeck)
Indications: Schizophrenia
Class: Antipsychotic
Half-life: 32 hours
Clinically important, potentially hazardous interactions with: guanethidine, levodopa, piperazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Central Nervous System
Neuroleptic malignant syndrome [3]
Genitourinary
Priapism [2]

ZUCLOPENTHIXOL DECANOATE

Trade name: Clopixol Depot (Lundbeck)
Indications: Schizophrenia
Class: Antipsychotic
Half-life: 19 days
Clinically important, potentially hazardous interactions with: guanethidine, levodopa, piperazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: nursing mothers; pediatric patients

Central Nervous System
Neuroleptic malignant syndrome [3]
Genitourinary
Priapism [3]

ZUCLOPENTHIXOL DIHYDROCHLORIDE

Trade name: Clopixol tablets (Lundbeck)
Indications: Schizophrenia
Class: Antipsychotic
Half-life: 20 hours
Clinically important, potentially hazardous interactions with: guanethidine, levodopa, piperazine
Pregnancy category: C
Important contra-indications noted in the prescribing guidelines for: pediatric patients

Central Nervous System
Neuroleptic malignant syndrome [3]
Genitourinary
Priapism [2]

DESCRIPTIONS OF IMPORTANT REACTIONS

Acanthosis nigricans

Acanthosis nigricans (AN) is a process characterized by a soft, velvety, brown or grayish-black thickening of the skin that is symmetrically distributed over the axillae, neck, inguinal areas and other body folds.

While most cases of AN are seen in obese and prepubertal children, it can occur as a marker for various endocrinopathies as well as in female patients with elevated testosterone levels, irregular menses, and hirsutism. It is frequently a concomitant of an underlying malignant condition, principally an adenocarcinoma of the intestinal tract.

Acneiform eruption / acneiform dermatitis / acneiform rash

Acneiform eruptions are inflammatory follicular reactions that resemble acne vulgaris and that are manifested clinically as papules or pustules. They are monomorphic reactions, have a monomorphic appearance, and are found primarily on the upper parts of the body. Unlike acne vulgaris, there are rarely comedones present. Consider a drug-induced acneiform eruption if:

- The onset is sudden
- There is a worsening of existing acne lesions
- The extent is considerable from the outset
- The appearance is monomorphic
- The localization is unusual for acne as, for example, when the distal extremities are involved
- The patient's age is unusual for regular acne
- There is an exposure to a potentially responsible drug.

Acute febrile neutrophilic dermatosis (Sweet's / Sweet syndrome)

Acute febrile neutrophilic dermatosis is a disorder that appears more frequently in females and has several characteristic features. The lesions – tender, erythematous or purple, annular plaques or nodules – appear suddenly and are most prominent on the face, neck and upper extremities. Pain and fever often accompany the eruption. While the cause is unknown, about 15% of the patients have some type of myeloproliferative disorder, primarily leukemias.

Acute generalized exanthematous pustulosis (AGEP)

Arising on the face or intertriginous areas, acute generalized exanthematous pustulosis (AGEP) is characterized by a rapidly evolving, wide-spread, scarlatiniform eruption covered with hundreds of small superficial pustules. If a rash looks like pustular psoriasis without a history of pustular psoriasis, AGEP must be considered.

Often accompanied by a high fever, AGEP usually occurs within 24 hours of the drug exposure.

Ageusia (taste loss) / taste disorder

Ageusia is the loss of taste functions of the tongue, essentially the inability to detect sweet, sour, bitter, or salty substances, and umami (the taste of monosodium glutamate).

Alopecia / hair loss

Many drugs have been reported to occasion hair loss. More commonly appearing as a diffuse alopecia, it affects women more frequently than men and is limited in most instances to the scalp. Axillary and pubic hairs are rarely affected except with anticoagulants.

The hair loss from cytostatic agents, which is dose-dependent and begins about 2 weeks after the onset of therapy, is a result of the interruption of the anagen (growing) cycle of hair. With other drugs the hair loss does not begin until 2–5 months after the medication has been begun. With cholesterol-lowering drugs, diffuse alopecia is a result of interference with normal keratinization.

The scalp is normal and the drug-induced alopecia is almost always reversible within 1–3 months after the therapy has been discontinued. The regrown hair is frequently depigmented and occasionally more curly.

Angioedema

Angioedema is a term applied to a variant of urticaria in which the subcutaneous tissues, rather than the dermis, are mainly involved. Also known as Quincke's edema, giant urticaria, and angioneurotic edema, this acute, evanescent, skin-colored, circumscribed edema usually affects the most distensible tissues: the lips, eyelids, earlobes, and genitalia. It can also affect the mucous membranes of the tongue, mouth, and larynx.

Symptoms of angioedema, frequently unilateral, asymmetrical and nonpruritic, last for an hour or two but can persist for 2–5 days.

The etiological factors associated with angioedema are as varied as that of urticaria (see separate entry).

Anosmia (smell loss) / smell disorder

Anosmia, or odor blindness, is the total absence of the sense of smell. It can be either temporary or permanent.

Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)

Aphthous stomatitis – also known as canker sores – is a frequent disease of the oral mucous membranes. Arising as tiny, discrete or grouped, papules or vesicles, these painful lesions develop into small (2–5 mm in diameter), round, shallow ulcerations having a grayish, yellow base surrounded by a thin red border.

Located predominantly over the labial and buccal mucosae, these aphthae heal without scarring in 10–14 days. Frequently, there are recurrences.

Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE)

Baboon syndrome or symmetric drug-related intertriginous and flexural exanthema (SDRIFE) is an unusual presentation of a drug eruption with a characteristic intertriginous distribution pattern.

Originally described as a type of systemic contact dermatitis characterized by pruritic exanthems involving the buttocks and major flexures (groins and axillae), some investigators believe that this entity is a form of recall phenomenon. In children, it is important in the differential diagnosis of viral exanthems.

Black tongue / black hairy tongue (lingua villosa nigra)

Black hairy tongue (BHT) represents a benign hyperplasia of the filiform papillae of the anterior two-thirds of the tongue. These papillary elongations, usually associated with black, brown, or yellow pigmentation attributed to the overgrowth of pigment-producing bacteria, may be as long as 2 cm.

Occurring only in adults, BHT has been associated with the administration of oral antibiotics, poor dental hygiene, and excessive smoking.

Bullous dermatosis

Bullous and vesicular drug eruptions are diseases in which blisters and vesicles occur as a complication of the administration of drugs. Blisters are a well-known manifestation of cutaneous reactions to drugs.

In many types of drug reactions, bullae and vesicles may be found in addition to other manifestations. Bullae are usually noted in: erythema

multiforme, Stevens-Johnson syndrome/toxic epidermal necrolysis, fixed eruptions when very intense, urticaria, vasculitis, porphyria cutanea tarda, and phototoxic reactions (from furosemide and nalidixic acid). Tense, thick-walled bullae can be seen in bromoderma and iododerma as well as in barbiturate overdosage.

DRESS syndrome

DRESS syndrome is an acronym for Drug Rash with Eosinophilia and Systemic Symptoms. It is also known as the Drug-Induced Pseudolymphoma and Drug Hypersensitivity Syndrome.The symptoms of DRESS syndrome usually begin 1–8 weeks after exposure to the offending drug.

Erythema multiforme

Erythema multiforme is a relatively frequent, acute, self-limited, inflammatory reaction pattern that is often associated with a preceding herpes simplex or mycoplasma infection. Other causes are associated with connective tissue disease, physical agents, X-ray therapy, pregnancy and internal malignancies, to mention a few. In 50% of the cases, no cause can be found. In a recent prospective study of erythema multiforme, only 10% were drug related.

The eruption rapidly occurs over a period of 12–24 hours. In about half the cases there are prodromal symptoms of an upper respiratory infection accompanied by fever, malaise, and varying degrees of muscular and joint pains.

Clinically, bluish-red, well-demarcated, macular, papular, or urticarial lesions, as well as the classical 'iris' or 'target lesions', sometimes with central vesicles, bullae, or purpura, are distributed preferentially over the distal extremities, especially over the dorsa of the hands and extensor aspects of the forearms. Lesions tend to spread peripherally and may involve the palms and trunk as well as the mucous membranes of the mouth and genitalia. Central healing and overlapping lesions often lead to arciform, annular and gyrate patterns. Lesions appear over the course of a week or 10 days and resolve over the next two weeks.

Erythema nodosum

Erythema nodosum is a cutaneous reaction pattern characterized by erythematous, tender or painful subcutaneous nodules frequently distributed over the anterior aspect of the lower legs, and occasionally elsewhere. More frequent in young women, erythema nodosum is often associated with increased estrogen levels as occurs during pregnancy and with the ingestion of oral contraceptives. It is also an occasional manifestation of streptococcal infection, sarcoidosis, secondary syphilis, tuberculosis, certain deep fungal infections, Hodgkin's disease, inflammatory bowel disease, leukemia, and radiation therapy and is often preceded by fever, fatigue, arthralgia, vomiting, and diarrhea.

The incidence of erythema nodosum due to drugs is low and it is impossible to distinguish clinically between erythema nodosum due to drugs and that caused by other factors.

Exanthems

Exanthems, often resembling viral rashes, represent the most frequent type of cutaneous drug eruption. Described as maculopapular or morbilliform eruptions, these flat, barely raised, erythematous patches, from one to several millimeters in diameter, are usually bilateral and symmetrical. They usually begin on the head and neck or upper torso and progress downward to the limbs. They may present or develop into confluent areas and may be accompanied by pruritus and a mild fever.

The exanthems caused by drugs can be classified as:

- Morbilliform eruptions: fingernail-sized erythematous patches
- Scarlatiniform eruptions: punctate, pinpoint, or pinhead-sized lesions in erythematous areas that have a tendency to coalesce. Circumoral pallor and the subsequent appearance of scaling may also be noted.

Maculopapular drug eruptions usually fade with desquamation and, occasionally, postinflammatory hyperpigmentation, in about 2 weeks. They invariably recur on rechallenge.

Exanthems often have a sudden onset during the first 2 weeks of administration, except in cases of semisynthetic penicillin administration, when the exanthems frequently develop after the first 2 weeks following the initial dose.

Exfoliative dermatitis

Exfoliative dermatitis is a rare but serious reaction pattern that is characterized by erythema, pruritus and scaling over the entire body (erythroderma).

Drug-induced exfoliative dermatitis usually begins a few weeks or longer following the administration of a culpable drug. Beginning as erythematous, edematous patches, often on the face, it spreads to involve the entire integument. The skin becomes swollen and scarlet and may ooze a straw-colored fluid; this is followed in a few days by desquamation. High fever, severe malaise and chills, along with enlargement of lymph nodes, often coexist with the cutaneous changes.

One of the most dangerous of all reaction patterns, exfoliative dermatitis can be accompanied by any or all of the following: hypothermia, fluid and electrolyte loss, cardiac failure, and gastrointestinal hemorrhage. Death may supervene if the drug is continued after the onset of the eruption.

Secondary infection often complicates the course of the disease. Once the active dermatitis has receded, hyperpigmentation as well as loss of hair and nails may ensue.

Fixed eruption

A fixed eruption is an unusual hypersensitivity reaction characterized by one or more well-demarcated erythematous plaques that recur at the same cutaneous (or mucosal) site or sites each time exposure to the offending agent occurs. The sizes of the lesions vary from a few millimeters to as much as 20 centimeters in diameter. Almost any drug that is ingested, injected, inhaled, or inserted into the body can trigger this skin reaction.

The eruption typically begins as a sharply marginated, solitary edematous papule or plaque – occasionally surmounted by a large bulla – which usually develops 30 minutes to 8 hours following the administration of a drug. If the offending agent is not promptly eliminated, the inflammation intensifies, producing a dusky red, violaceous or brown patch that may crust, desquamate, or blister within 7–10 days. The lesions are rarely pruritic. Favored sites are the hands, feet, face, and genitalia (especially the glans penis).

The reason for the specific localization of the skin lesions in a fixed drug eruption is unknown. The offending drug cannot be detected at the skin site. Certain drugs cause a fixed eruption at specific sites, for example, tetracycline and ampicillin often elicit a fixed eruption on the penis, whereas aspirin usually causes skin lesions on the face, limbs and trunk.

Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth

Gingival hyperplasia, a frequent, undesirable, non-allergic drug reaction, begins as a diffuse swelling of the interdental papillae.

Particularly prevalent with phenytoin therapy, gingival hyperplasia begins about 3 months after the onset of therapy and occurs in 30 to 70% of patients receiving it. The severity of the reaction is dose-dependent and children and young adults are more frequently affected. The most severe cases are noted in young women.

In many cases, gingival hyperplasia is accompanied by painful and bleeding gums. There is often superimposed secondary bacterial gingivitis. This can be so extensive that the teeth of the maxilla and mandible are completely overgrown.

Hand-foot syndrome (palmar-plantar erythrodysesthesia)

Hand-foot syndrome (also known as acral erythema, palmar-plantar erythrodysesthesia, palmoplantar erythrodysesthesia, palmar-plantar erythema, and Bergdorf's reaction) is a syndrome that is characterized by well-demarcated painful erythema, edema, numbness, and desquamation over the palms and soles that may develop following treatment with a variety of chemotherapeutic agents including bleomycin, cisplatin, cyclophosphamide, hydroxyurea, idarubicin, methotrexate, sorafenib, sunitinib,

and others. Tenderness involving the skin overlying the fingers and toes, followed by bulla formation and subsequent desquamation, often supervenes.

This side effect results when a small amount of the culpable drug leaks out of the blood vessels, damaging tissues. This reaction predominates over the palms and soles, where eccrine glands are more numerous, and also as a result of the increased friction and heat that extremities are exposed to through daily activities.

Lichenoid eruption / lichenoid reaction

Lichenoid eruptions are so called because of their resemblance to lichen planus, a papulosquamous disorder that characteristically presents as multiple, discrete, violaceous, flat-topped papules, often polygonal in shape and which are extremely pruritic.

Not infrequently, lichenoid lesions appear weeks or months following exposure to the responsible drug. As a rule, the symptoms begin to recede a few weeks following the discontinuation of the drug.

Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)

A reaction, clinically and pathologically resembling idiopathic systemic lupus erythematosus (SLE), has been reported in association with a large variety of drugs. There is some evidence that drug-induced SLE, invariably accompanied by a positive ANA reaction with 90% having antihistone antibodies, may have a genetically determined basis. These symptoms of SLE, a relatively benign form of lupus, recede within days or weeks following the discontinuation of the responsible drug. Skin lesions occur in about 20% of cases. Drugs cause fewer than 8% of all cases of SLE.

Onycholysis

Onycholysis, the painless separation of the nail plate from the nail bed, is one of the most frequent nail disorders. The unattached portion, which is white and opaque, usually begins at the free margin and proceeds proximally, causing part or most of the nail plate to become separated. The attached, healthy portion of the nail, by contrast, is pink and translucent.

Paresthesias

Paresthesias are abnormal neurological sensations such as burning, prickling, numbness, pruritus, formication, or tingling, often described as 'pins and needles' or of a limb being 'asleep'. It is a symptom of partial damage to a peripheral nerve, as occurs from a head or spinal injury, lack of blood supply to a nerve, or in many cases medications. Paresthesias can affect various parts of the body; hands, fingers, and feet are frequent sites but all areas are possibilities.

Pemphigus vulgaris

Pemphigus vulgaris (PV) is a rare, serious, acute or chronic, blistering disease involving the skin and mucous membranes. Characterized by thin-walled, easily ruptured, flaccid bullae that are seen to arise on normal or erythematous skin and over mucous membranes, the lesions of PV appear initially in the mouth (in about 60% of the cases) and then spread, after weeks or months, to involve the axillae and groin, scalp, face, and neck. The lesions may become generalized. Because of their fragile roofs, the bullae rupture, leaving painful erosions and crusts may develop principally over the scalp.

Peyronie's disease

First described in 1743 by the French surgeon, François de la Peyronie, Peyronie's disease is a rare, benign connective tissue disorder involving the growth of fibrous plaques in the soft tissue of the penis. Beginning as a localized inflammation, it often develops into a hardened scar. Affecting as many as 1% of men, it may cause deformity, pain, cord-like lesions, or abnormal curvature of the penis when erect.

Photosensitivity

A photosensitive reaction is a chemically induced change in the skin that makes an individual unusually sensitive to electromagnetic radiation (light). On absorbing light of a specific wavelength, an oral, injected or topical drug may be chemically altered to produce a reaction ranging from macules and papules, vesicles and bullae, edema, urticaria, or an acute eczematous reaction. Any eruption that is prominent on the face, the dorsa of the hands, the 'V' of the neck, and the presternal area should suggest an adverse reaction to light. The distribution is the key to the diagnosis. Initially the eruption, which consists of erythema, edema, blisters, weeping and desquamation, involves the forehead, rims of the ears, the nose, the malar eminences and cheeks, the sides and back of the neck, the extensor surfaces of the forearms and the dorsa of the hands. These reactions frequently spare the shaded areas: those under the chin, under the nose, behind the ears, and inside the fold of the upper eyelids. There is usually a sharp cut-off at the site of jewelry and at clothing margins. All light-exposed areas need not be affected equally.

There are two main types of photosensitive reactions: the phototoxic and the photoallergic reaction. Phototoxic reactions, the most frequent type of drug-induced photosensitivity, resemble an exaggerated sunburn and occur within 5–20 hours after the skin has been exposed to a photosensitizing substance and light of the proper wavelength and intensity. It is not a form of allergy – prior sensitization is not required – and, theoretically, could occur in anyone given enough drug and light. Phototoxic reactions are dose-dependent both for drug and sunlight. Patients with phototoxicity reactions are frequently sensitive to ultraviolet A (UVA radiation), the so-called 'tanning rays' at 320–400 nm. Phototoxic reactions may cause onycholysis, as the nailbed is particularly susceptible because of its lack of melanin protection. Patients with a true photoallergy (the interaction of drug, light and the immune system), a less frequent form of drug-induced photosensitivity, are often sensitive to UVB radiation, the so-called 'burning rays' at 290–320 nm. Photoallergic reactions, unlike phototoxic responses, represent an immunologic change and require a latent period of from 24 to 48 hours during which sensitization occurs. They are not dose-related. If the photosensitizer acts internally, it is a photodrug reaction; if it acts externally, it is photocontact dermatitis.

Pigmentation

Drug-induced pigmentation on the skin, hair, nails, and mucous membranes is a result of either melanin synthesis, increased lipofuscin synthesis, or post-inflammatory pigmentation. Color changes, which can be localized or widespread, can also be a result of a deposition of bile pigments (jaundice), exogenous metal compounds, and direct deposition of elements such as carotene or quinacrine.

Post-inflammatory pigmentation can follow a variety of drug-induced inflammatory cutaneous reactions; fixed eruptions are known to leave a residual pigmentation that can persist for months.

Pityriasis rosea-like eruption

Pityriasis rosea, often mistaken for ringworm, is a unique disorder that usually begins as a single, large, round or oval pinkish patch known as the 'mother' or 'herald' patch. The most frequent sites for this solitary lesion are the chest, the back, or the abdomen. This is followed in about 2 weeks by a blossoming of small, flat, round or oval, scaly patches of similar color, each with a central collarette scale, usually distributed in a Christmas tree pattern over the trunk and, to a lesser degree, the extremities. This eruption seldom itches and usually limits itself to areas from the neck to the knees. The etiology of idiopathic pityriasis rosea is unknown.

In drug-induced pityriasis rosea, the 'herald patch' is usually absent, and the eruption will often not follow the classic pattern.

Pruritus (itching)

Generalized itching, without any visible signs, is one of the rarer adverse reactions to drugs. More frequently than not, drug-induced itching – moderate or severe – is fairly generalized. For most drugs it is not known in what way they elicit pruritus; some drugs can cause itching directly or

indirectly through cholestasis. Pruritus may develop by different pathogenetic mechanisms: allergic, pseudoallergic (histamine release), neurogenic, by vasodilatation, cholestatic effect, and others.

Pseudolymphoma

Pseudolymphoma is not a specific disease. It is an inflammatory response to various stimuli – known or unknown – that results in a lymphomatous-appearing, but benign, accumulation of inflammatory cells. It may resemble true lymphoma clinically and histologically. Localized, nodular pseudo-lymphomas typically mimic B-cell lymphoma.

Pseudoporphyria

Pseudoporphyria is an infrequent, reversible, photoinduced, cutaneous bullous disorder with clinical, histologic and immunofluorescent similarities to porphyria cutanea tarda but without the accompanying biochemical porphyrin abnormalities. It is usually seen as localized bullae and skin fragility on sun-exposed skin, often on the dorsum of the hands and fingers. While pseudoporphyria has been linked with numerous causes, including chronic renal failure, dialysis, and ultraviolet radiation, several medications, primarily naproxen and other nonsteroidal inflammatory drugs, have been reported to trigger this reaction pattern. Blue/gray eye color appears to be an independent risk factor for the development of pseudoporphyria.

Psoriasis

Many drugs, as a result of their pharmacological action, have been implicated in the precipitation or exacerbation of psoriasis or psoriasiform eruptions. Psoriasis is a frequent, chronic, papulosquamous disorder of unknown etiology with characteristic histopathological features and many biochemical, physiological, and immunological abnormalities. The effect and extent of drug-induced psoriatic eruptions are dose-dependent.

Purpura

Purpura, a result of hemorrhage into the skin, can be divided into thrombocytopenic purpura and non-thrombocytopenic purpura (vascular purpura). Both thrombocytopenic and vascular purpura may be due to drugs, and most of the drugs producing purpura may do so by giving rise to vascular damage and thrombocytopenia. In both types of purpura, allergic or toxic (nonallergic) mechanisms may be involved. Some drugs combine with platelets to form an antigen, stimulating formation of antibody to the platelet-drug combination. Thus, the drug appears to act as a hapten; subsequent antigen-antibody reaction causes platelet destruction leading to thrombocytopenia. The purpuric lesions are usually more marked over the lower portions of the body, notably the legs and dorsal aspects of the feet in ambulatory patients.

Other drug-induced cutaneous reactions – erythema multiforme, erythema nodosum, fixed eruption, necrotizing vasculitis, and others – can have a prominent purpuric component.

Raynaud's phenomenon

Raynaud's phenomenon is the paroxysmal, cold-induced constriction of small arteries and arterioles of the fingers and, less often, the toes. Although estimates vary, recent surveys show that Raynaud's phenomenon may affect 5–10 percent of the general population in the United States. Occurring more frequently in women, Raynaud's phenomenon is characterized by blanching, pallor, and cyanosis. In severe cases, secondary changes may occur: thinning and ridging of the nails, telangiectasias of the nail folds, and, in the later stages, sclerosis and atrophy of the digits.

Rhabdomyolysis

Rhabdomyolysis is the breakdown of muscle fibers, the result of skeletal muscle injury, that leads to the release of potentially toxic intracellular contents into the plasma. The causes are diverse: muscle trauma from vigorous exercise, electrolyte imbalance, extensive thermal burns, crush injuries, infections, various toxins and drugs, and a host of other factors. Rhabdomyolysis can result from direct muscle injury by myotoxic drugs such as cocaine, heroin and alcohol. About 10–40% of patients with rhabdomyolysis develop acute renal failure. The classic triad of symptoms of rhabdomyolysis is muscle pain, weakness and dark urine. Most frequently, the involved muscle groups are those of the back and lower calves. The primary diagnostic indicator of this syndrome is significantly elevated serum creatine phosphokinase.

Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN)

Previously classified clinically and in the Litt database as two separate adverse drug reactions, Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) (also known as Lyell's syndrome) are now considered to be at either end of a spectrum of severe epidermolytic and potentially fatal adverse cutaneous drug reactions, differing only by their extent of skin detachment. SJS and TEN are characterized by mucocutaneous tenderness and typically hemorrhagic erosions, erythema and more or less severe epidermal detachment presenting as blisters and areas of denuded skin. Other symptoms, which may precede the cutaneous manifestations, include fever, myalgia, malaise, headache, arthralgia and ocular involvement.

Drugs are usually identified as the main cause of SJS/TEN, but Mycoplasma pneumoniae and Herpes simplex virus infections have also been associated with SJS/TEN. Genetic susceptibility to SJS and TEN is likely as exemplified by the strong association observed in Han Chinese between a genetic marker, the human leukocyte antigen HLA-B*1502, and SJS induced by carbamazepine. Diagnosis relies mainly on clinical signs together with the histological analysis of a skin biopsy showing typical full-thickness epidermal necrolysis due to extensive keratinocyte apoptosis.

Tinnitus

Tinnitus (from the Latin word to tinkle or ring like a bell) is the perception of sound – ringing, buzzing, hissing, humming, whistling, whining, roaring, or ticking, clicking, banging, beeping, pulsating – in the human ear, when none exists. It has also been described as a 'whooshing' sound, like wind or waves, 'crickets' or 'tree frogs' or 'locusts.' To some it's a chirping, clanging, sizzling, rumbling, or a dreadful shrieking noise. And it can be like rushing water, breaking glass or chain saws running. Nearly 40 million Americans suffer from this disorder.

Urticaria / hives

Urticaria induced by drugs is, after exanthems, the second most frequent type of drug reaction. Urticaria, or hives, is a vascular reaction of the skin characterized by pruritic, erythematous wheals. These welts – or wheals – caused by localized edema, can vary in size from one millimeter in diameter to large palm-sized swellings, favor the covered areas (trunk, buttocks, chest), and are, more often than not, generalized. Urticaria usually develops within 36 hours following the administration of the responsible drug. Individual lesions rarely persist for more than 24 hours.

Urticaria may be the only symptom of drug sensitivity, or it may be a concomitant or followed by the manifestations of serum sickness. Urticaria may be accompanied by angioedema of the lips or eyelids. It may, on rare occasions, progress to anaphylactoid reactions or to anaphylaxis.

Vasculitis (angiitis) / cutaneous vasculitis (angiitis)

Drug-induced cutaneous necrotizing vasculitis, a clinicopathologic process characterized by inflammation and necrosis of blood vessels, often presents with a variety of small, palpable purpuric lesions most frequently distributed over the lower extremities: urticaria-like lesions, small ulcerations, and occasional hemorrhagic vesicles and pustules. The basic process involves an immunologically mediated response to antigens that result in vessel wall damage.

Beginning as small macules and papules, they ultimately eventuate into purpuric lesions and, in the more severe cases, into hemorrhagic blisters and frank ulcerations. A polymorphonuclear infiltrate and fibrinoid changes in the small dermal vessels characterize the vasculitic reaction.

Vertigo / dizziness

Vertigo, a specific type of dizziness, is a feeling of unsteadiness. It is the sensation of spinning or swaying while actually remaining stationary with respect to the surroundings. It is a result of either motion sickness, a viral infection of the organs of balance, low blood sugar, or medications. It is a symptom of multiple sclerosis, carbon monoxide poisoning, and Ménière's disease.

Vertigo is one of the most frequently reported health problems in adults. According to the National Institutes of Health, about 40% of people in the United States experience vertigo at least once during their lifetime. Prevalence is higher in women and increases with age.

Xerostomia (dry mouth)

Xerostomia is a dryness of the oral cavity that makes speaking, chewing and swallowing difficult. Some people also experience changes in taste and salivary gland enlargement. Lack of saliva may predispose one to oral infection, such as candidiasis, and increase the risk of dental caries. Resulting from a partial or complete absence of saliva production, xerostomia can be caused by many drugs.

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Drugs that cause important reactions

Acanthosis nigricans
- Amprenavir
- Azathioprine
- Diethylstilbestrol
- Estrogens
- Fusidic Acid
- Heroin
- Insulin
- Mechlorethamine
- Methsuximide
- Methyltestosterone
- Niacin
- Niacinamide
- Oral Contraceptives
- Palifermin
- Prednisolone
- Prednisone
- Somatropin
- Thioridazine
- Tryptophan

Acneiform eruption / acneiform dermatitis / acneiform rash
- Acamprosate
- Acyclovir
- Adalimumab
- Adapalene
- Afatinib
- Alosetron
- Alprazolam
- Aminolevulinic Acid
- Androstenedione
- Aprepitant
- Aripiprazole
- Atorvastatin
- Azathioprine
- Basiliximab
- Bedaquiline
- Belatacept
- Betamethasone
- Bevacizumab
- Bexarotene
- Bosutinib
- Brimonidine
- Budesonide
- Bupropion
- Buserelin
- Buspirone
- Cabergoline
- Capecitabine
- Carbamazepine
- Ceritinib
- Cetirizine
- Cetuximab
- Chasteberry
- Chloral Hydrate
- Chlorotrianisene
- Cidofovir
- Ciprofloxacin
- Cisplatin
- Clobetasol
- Clofazimine
- Clomipramine
- Cobimetinib
- Cocoa
- Crofelemer
- Cyanocobalamin
- Cyclophosphamide
- Cyclosporine
- Dabrafenib
- Daclizumab
- Dacomitinib
- Dactinomycin
- Danazol
- Dantrolene
- Dapsone
- Dasatinib
- Deflazacort
- Demeclocycline
- Dexamethasone
- Dexlansoprazole
- Diazepam
- Diltiazem
- Disulfiram
- Docetaxel
- Doxycycline
- Duloxetine
- Durvalumab
- Efalizumab
- Eflornithine
- Encorafenib
- Epoetin Alfa
- Erlotinib
- Erythromycin
- Escitalopram
- Esmolol
- Esomeprazole
- Estazolam
- Estramustine
- Estrogens
- Eszopiclone
- Etanercept
- Ethionamide
- Everolimus
- Famotidine
- Felbamate
- Fenoprofen
- Finasteride
- Fluconazole
- Fluorides
- Fluorouracil
- Fluoxetine
- Fluoxymesterone
- Fluvoxamine
- Folic Acid
- Follitropin Alfa/Beta
- Fosphenytoin
- Gabapentin
- Ganciclovir
- Gefitinib
- Gemcitabine
- Gestrinone
- Glatiramer
- Gold & Gold Compounds
- Goserelin
- Granulocyte Colony-Stimulating Factor (G-CSF)
- Grepafloxacin
- Halothane
- Heroin
- Histrelin
- Hyaluronic Acid
- Hydroquinone
- Imatinib
- Infliximab
- Interferon Alfa
- Interferon Beta
- Ipilimumab
- Irinotecan
- Isoniazid
- Isotretinoin
- Ivacaftor
- Ixazomib
- Lamotrigine
- Lansoprazole
- Lapatinib
- Leflunomide
- Lenalidomide
- Letrozole
- Leucovorin
- Levonorgestrel
- Lisdexamfetamine
- Lithium
- Lopinavir
- Maprotiline
- MDMA
- Medroxyprogesterone
- Mephenytoin
- Mesalamine
- Methotrexate
- Methoxsalen
- Methyltestosterone
- Minoxidil
- Mobocertinib
- Mometasone
- Mycophenolate
- Nabumetone
- Nadolol
- Nafarelin
- Naltrexone
- Nandrolone
- Naratriptan
- Necitumumab
- Nefazodone
- Nicotine
- Nilotinib
- Nimodipine
- Nisoldipine
- Nitrofurantoin
- Nivolumab
- Nizatidine
- Olsalazine
- Oral Contraceptives
- Osimertinib
- Oxcarbazepine
- Paclitaxel
- Panitumumab
- Panobinostat
- Pantoprazole
- Paroxetine Hydrochloride
- Pentostatin
- Phenobarbital
- Phenylbutazone
- Phenytoin
- Pimecrolimus
- Ponatinib
- Potassium Iodide
- Prednisolone
- Prednisone
- Pretomanid
- Progestins
- Propafenone
- Propranolol
- Propylthiouracil
- Psoralens
- Pyrazinamide
- Pyridoxine
- Quinidine
- Quinine
- Ramipril
- Riboflavin
- Rifampin
- Rifapentine
- Risperidone
- Ritonavir
- Rufinamide
- Ruxolitinib
- Saquinavir
- Selumetinib
- Sertraline
- Sibutramine
- Simvastatin
- Sirolimus
- Smallpox Vaccine
- Sodium Oxybate
- Sorafenib
- Sparfloxacin
- Stanozolol
- Sunitinib
- Tacrine
- Temsirolimus
- Teriflunomide
- Testosterone
- Tetracycline
- Tiagabine
- Tibolone
- Tizanidine
- Topiramate
- Trametinib
- Trastuzumab
- Tretinoin
- Trioxsalen
- Triptorelin
- Ulipristal
- Valdecoxib
- Vandetanib
- Vedolizumab
- Vemurafenib
- Venlafaxine
- Verapamil
- Vinblastine
- Vinorelbine
- Vorinostat
- Zalcitabine
- Zaleplon
- Zidovudine
- Zolpidem
- Zonisamide

Acute febrile neutrophilic dermatosis (Sweet's / Sweet syndrome)
- Abacavir
- Aceclofenac
- Acetaminophen
- Adalimumab
- Aldesleukin
- Allopurinol
- Amoxapine
- Amoxicillin
- Azacitidine
- Azathioprine
- BCG Vaccine
- Bortezomib
- Capsicum
- Cedazuridine & Decitabine
- Celecoxib
- Chloroquine
- Ciprofloxacin
- Citalopram
- Clindamycin
- Clofazimine
- Clopidogrel
- Clozapine
- Co-Trimoxazole
- Codeine
- Covid-19 Vaccine, mRNA
- Cytarabine
- Dabigatran
- Dabrafenib
- Dapagliflozin
- Dasatinib
- Diazepam
- Doxycycline
- Enasidenib
- Erlotinib
- Esomeprazole
- Fluconazole
- Furosemide
- Glucagon
- Granulocyte Colony-Stimulating Factor (G-CSF)
- Haloperidol
- Hydralazine
- Hydroxychloroquine
- Ibrutinib
- Imatinib
- Infliximab
- Influenza Vaccine
- Ipilimumab
- Isotretinoin
- Ixazomib
- Lamotrigine
- Lenalidomide
- Letrozole
- Levofloxacin
- Levomepromazine
- Midostaurin
- Minocycline
- Mirtazapine
- Mitoxantrone
- Nilotinib
- Niraparib
- Nitrofurantoin
- Nivolumab
- Norfloxacin
- Ofloxacin
- Omeprazole
- Oral Contraceptives
- Palbociclib
- Pandemic Influenza Vaccine (H1N1)
- PEG-Interferon
- Pemetrexed
- Perphenazine
- Phenylbutazone
- Pneumococcal Vaccine
- Promethazine
- Propylthiouracil
- Quinupristin/Dalfopristin
- Ribavirin
- Risankizumab
- Sulfamethoxazole
- Sulfasalazine
- Ticagrelor
- Tocilizumab
- Topotecan
- Trametinib
- Tretinoin
- Verapamil
- Vorinostat

Acute generalized exanthematous pustulosis (AGEP)
- Acarbose
- Acetaminophen
- Acetazolamide
- Aldesleukin
- Allopurinol
- Amoxapine
- Amoxicillin
- Amphotericin B
- Ampicillin
- Apalutamide
- Aspirin
- Atezolizumab
- Atovaquone/Proguanil
- Azathioprine
- Azithromycin
- Bacampicillin
- Bendamustine
- Benznidazole
- Bupropion
- Carbamazepine
- Carbimazole
- Cefaclor
- Cefazolin
- Cefditoren
- Cefepime
- Cefotaxime
- Ceftazidime
- Ceftriaxone
- Cefuroxime
- Celecoxib
- Cephalexin
- Cephradine
- Cetirizine
- Cetuximab
- Chloramphenicol
- Chloroquine
- Chlorzoxazone
- Ciprofloxacin
- Clindamycin
- Clopidogrel
- Cloxacillin
- Clozapine
- Co-Trimoxazole
- Codeine
- Cytarabine
- Dalteparin
- Dapsone
- Daptomycin
- Dexamethasone
- Dextromethorphan
- Dihydrocodeine
- Diltiazem
- Diphenhydramine
- Docetaxel
- Doripenem
- Doxycycline
- Enzalutamide
- Epoetin Alfa
- Erlotinib
- Ertapenem
- Erythromycin
- Etanercept
- Etodolac
- Famotidine
- Fenofibrate
- Fexofenadine
- Finasteride
- Flucloxacillin
- Fluconazole
- Furosemide
- Galantamine
- Gefitinib
- Ginkgo Biloba
- Hydrochlorothiazide
- Hydroxychloroquine
- Hydroxyzine
- Ibuprofen
- Icodextrin
- Imatinib
- Imipenem/Cilastatin
- Immune Globulin IV
- Infliximab
- Influenza Vaccine
- Iodixanol
- Iohexol
- Iomeprol
- Ioversol
- Isoniazid
- Isotretinoin
- Itraconazole
- Ketoconazole
- Lamivudine
- Lamotrigine
- Lansoprazole
- Levetiracetam
- Levofloxacin
- Lincomycin
- Lindane
- Lopinavir
- Meloxicam
- Meropenem
- Metamizole
- Methimazole
- Methoxsalen
- Methylphenidate
- Methylprednisolone
- Metronidazole
- Mexiletine
- Midodrine
- Mifepristone
- Minocycline
- Morphine
- Moxifloxacin
- Naltrexone
- Nifedipine
- Nimesulide
- Nivolumab
- Nystatin
- Olanzapine
- Omeprazole
- Oxacillin
- Pemetrexed
- Phenobarbital
- Phenytoin
- Piperacillin/Tazobactam
- Piroxicam
- Prednisolone
- Pristinamycin
- Progestins
- Propafenone
- Propoxyphene
- Pseudoephedrine
- Pyrazinamide
- Pyrimethamine
- Quetiapine
- Quinidine
- Ranibizumab
- Ranitidine
- Ranolazine
- Rifabutin
- Rifampin
- Ritodrine
- Rivaroxaban
- Senna
- Sertraline
- Simvastatin
- Sorafenib
- Streptomycin
- Sulfamethoxazole
- Sulfasalazine
- Teicoplanin
- Telavancin
- Terazosin
- Terbinafine
- Tetrazepam
- Thalidomide
- Thallium
- Ticlopidine
- Tigecycline
- Tocilizumab
- Tosufloxacin
- Valdecoxib
- Valproic Acid
- Vancomycin
- Varenicline
- Vemurafenib
- Zidovudine

Ageusia / taste loss / taste disorder
- Acarbose
- Aspirin
- Atorvastatin
- Azelastine
- Betaxolol
- Candesartan
- Captopril
- Carbamazepine
- Cetirizine
- Chlorhexidine
- Clindamycin
- Clopidogrel
- Cocaine
- Cyclobenzaprine
- Doxorubicin
- Enalapril
- Eslicarbazepine
- Etidronate
- Feverfew
- Fluoxetine
- Fluvoxamine
- Fosinopril
- Grepafloxacin
- Hydroxychloroquine
- Indomethacin
- Interferon Alfa
- Isotretinoin
- Lenalidomide

Losartan
Maribavir
Methimazole
Nefazodone
Nitroglycerin
Paroxetine Hydrochloride
Penicillamine
Phenylbutazone
Phenytoin
Propofol
Propylthiouracil
Ramipril
Rifabutin
Rifaximin
Rimantadine
Ritonavir
Rivastigmine
Sonidegib
Sulindac
Sunitinib
Terbinafine
Tiagabine
Tiopronin
Topiramate
Valrubicin
Venlafaxine
Vismodegib
Voriconazole
Zalcitabine

Alopecia / hair loss

Abemaciclib
Acetohexamide
Acitretin
Acyclovir
Adalimumab
Afatinib
Aflibercept
Albendazole
Aldesleukin
Alectinib
Alemtuzumab
Alitretinoin
Allopurinol
Alpelisib
Altretamine
Amantadine
Amiloride
Aminolevulinic Acid
Aminosalicylate Sodium
Amiodarone
Amitriptyline
Amlodipine
Amoxapine
Anagrelide
Anastrozole
Androstenedione
Anidulafungin
Aprepitant
Arsenic
Aspirin
Astemizole
Atenolol
Atorvastatin
Atovaquone/Proguanil
Atropine Sulfate
Avapritinib
Axitinib
Azathioprine
Belatacept
Belinostat
Bendamustine
Benznidazole
Betamethasone
Betaxolol
Bevacizumab
Bexarotene
Bezafibrate
Bicalutamide
Bismuth
Bleomycin
Botulinum Toxin (A & B)
Brentuximab Vedotin
Brinzolamide
Bromocriptine
Budesonide
Bupropion
Buspirone
Busulfan
Cabazitaxel
Cabergoline
Cabozantinib
Calcipotriol
Calcium Hydroxylapatite
Capecitabine
Captopril
Carbamazepine
Carboplatin
Carmustine
Carvedilol
Celecoxib
Certolizumab
Cetirizine
Cetuximab
Cevimeline
Chlorambucil
Chloramphenicol
Chlordiazepoxide
Chlorpropamide
Cidofovir
Cimetidine
Cisplatin
Citalopram
Clarithromycin
Clofibrate
Clomiphene
Clomipramine
Clonazepam
Clonidine
Cobimetinib
Colchicine
Crizotinib
Cyclophosphamide
Cyclosporine
Cytarabine
Dabrafenib
Dacarbazine
Daclatasvir
Daclizumab
Dacomitinib
Dactinomycin
Dalteparin
Danazol
Dasatinib
Daunorubicin
Decitabine
Deferasirox
Deflazacort
Degarelix
Delavirdine
Desipramine
Dexamethasone
Diazoxide
Diclofenac
Dicumarol
Didanosine
Diethylpropion
Diflunisal
Diltiazem
Dimethyl Fumarate
Docetaxel
Donepezil
Doxazosin
Doxepin
Doxorubicin
Duloxetine
Dupilumab
Eculizumab
Efavirenz
Eflornithine
Eltrombopag
Enalapril
Encorafenib
Enoxaparin
Entecavir
Epinephrine
Epirubicin
Epoetin Alfa
Erdafitinib
Eribulin
Erlotinib
Erythromycin
Escitalopram
Eslicarbazepine
Estramustine
Estrogens
Eszopiclone
Etanercept
Ethambutol
Ethionamide
Etoposide
Everolimus
Evolocumab
Exemestane
Febuxostat
Fenofibrate
Fenoprofen
Fingolimod
Flecainide
Fluconazole
Fludarabine
Fluorouracil
Fluoxetine
Fluoxymesterone
Flurbiprofen
Fluvoxamine
Foscarnet
Fulvestrant
Gabapentin
Gadodiamide
Ganciclovir
Gefitinib
Gemcitabine
Gentamicin
Glasdegib
Glatiramer
Gold & Gold Compounds
Goserelin
Granisetron
Granulocyte Colony-Stimulating Factor (G-CSF)
Grepafloxacin
Haloperidol
Halothane
Heparin
Hepatitis B Vaccine
Human Papillomavirus Vaccine (Bivalent)
Hydroxychloroquine
Hydroxyurea
Hyoscyamine
Ibandronate
Ibritumomab
Ibuprofen
Idarubicin
Ifosfamide
Imatinib
Imipramine
Imiquimod
Immune Globulin IV
Indinavir
Indomethacin
Infigratinib
Infliximab
Interferon Alfa
Interferon Beta
Ipilimumab
Ipratropium
Irinotecan
Isavuconazonium Sulfate
Isoniazid
Isotretinoin
Itraconazole
Ixabepilone
Ixazomib
Ketoconazole
Ketoprofen
Ketorolac
Labetalol
Lamivudine
Lamotrigine
Lanreotide
Lansoprazole
Lapatinib
Leflunomide
Lenvatinib
Letrozole
Leucovorin
Leuprolide
Levamisole
Levobetaxolol
Levobunolol
Levodopa
Levothyroxine
Liothyronine
Lisinopril
Lithium
Lomustine
Lopinavir
Loratadine
Losartan
Lovastatin
Lutetium Lu177 Dotatate
Maprotiline
Mebendazole
Mechlorethamine
Meclofenamate
Medroxyprogesterone
Mefloquine
Meloxicam
Melphalan
Memantine
Mepolizumab
Mercaptopurine
Mesalamine
Metformin
Methimazole
Methotrexate
Methyltestosterone
Methysergide
Metoprolol
Mexiletine
Minocycline

Minoxidil
Mirtazapine
Mitomycin
Mitotane
Mitoxantrone
Mizoribine
Mobocertinib
Moexipril
Mycophenolate
Nabumetone
Nadolol
Nalidixic Acid
Naltrexone
Naproxen
Naratriptan
Nefazodone
Neratinib
Nifedipine
Nilotinib
Nimodipine
Nintedanib
Nisoldipine
Nitisinone
Nitrofurantoin
Nivolumab
Nortriptyline
Octreotide
Olanzapine
Olaparib
Olaratumab
Omacetaxine
Omalizumab
Ombitasvir/Paritaprevir/
Ritonavir
Omeprazole
Oral Contraceptives
Osilodrostat
Oxaliplatin
Oxerutins
Paclitaxel
Palbociclib
Panitumumab
Panobinostat
Pantoprazole
Paricalcitol
Paroxetine Hydrochloride
Pasireotide
Pazopanib
PEG-Interferon
Pegvisomant
Pembrolizumab
Pemetrexed
Pemigatinib
Penicillamine
Pentosan
Pentostatin
Peplomycin
Pergolide
Pertuzumab
Pexidartinib hydrochloride
Phentermine
Phenytoin
Piroxicam
Pramipexole
Prazosin
Prednisolone
Prednisone
Procarbazine
Propafenone
Propranolol
Propylthiouracil
Protriptyline
Pyridostigmine
Quetiapine
Quinacrine
Quinapril
Quinidine
Rabeprazole
Raltitrexed
Ramipril
Regorafenib
Ribavirin
Ribociclib
Riluzole
Ripretinib
Risperidone
Ritonavir
Rituximab
Rivaroxaban
Rivastigmine
Rofecoxib
Ropinirole
Rucaparib
Ruxolitinib
Selenium
Sertraline
Setmelanotide
Sodium Oxybate
Sonidegib
Sorafenib
Sotalol
Sparfloxacin
Spinosad
Spironolactone
St John's Wort
Strontium Ranelate
Sulfasalazine
Sulfisoxazole
Sulindac
Sunitinib
Tacrine
Tacrolimus
Talazoparib
Tamoxifen
Tegafur/Gimeracil/Oteracil
Temozolomide
Temsirolimus
Teniposide
Tepotinib
Terbinafine
Terfenadine
Teriflunomide
Testosterone
Thalidomide
Thallium
Thioguanine
Thiotepa
Tiagabine
Timolol
Tinzaparin
Tiopronin
Tizanidine
Tocainide
Tolcapone
Topiramate
Topotecan
Trabectedin
Trametinib
Trastuzumab
Trastuzumab Emtansine
Trazodone
Trientine
Trifluridine & Tipiracil
Trimethadione
Trimipramine
Triptorelin
Ursodiol
Valdecoxib
Valproic Acid
Vandetanib
Vasopressin
Vemurafenib
Venlafaxine
Verapamil
Vinblastine
Vincristine
Vinorelbine
Vismodegib
Vitamin A
Voclosporin
Voriconazole
Vorinostat
Warfarin
Zaleplon
Zidovudine
Ziprasidone
Zoledronate
Zonisamide
Zoster Vaccine

Angioedema

Acetaminophen
Acetylcysteine
Acitretin
Acyclovir
Adalimumab
Albendazole
Aldesleukin
Alefacept
Alemtuzumab
Alendronate
Aliskiren
Allopurinol
Alogliptin
Alprazolam
Alteplase
Aminoglutethimide
Aminosalicylate Sodium
Amiodarone
Amitriptyline
Amlodipine
Amodiaquine
Amoxicillin
Ampicillin
Ampicillin/Sulbactam
Anidulafungin
Anthrax Vaccine
Ascorbic Acid
Asenapine
Asparaginase
Aspartame
Aspirin
Atorvastatin
Atracurium
Avacopan
Azatadine
Azathioprine
Azithromycin
Aztreonam
Benazepril
Benznidazole
Bevacizumab
Bezafibrate
Bismuth
Bleomycin
Brivaracetam
Brompheniramine
Budesonide
Bupropion
Butabarbital
Canagliflozin
Candesartan
Captopril
Carbamazepine
Carisoprodol
Carvedilol
Cefaclor
Cefadroxil
Cefixime
Cefoxitin
Cefprozil
Ceftazidime
Ceftriaxone
Cefuroxime
Celecoxib
Cephalexin
Certolizumab
Cetirizine
Chloral Hydrate
Chlorambucil
Chloramphenicol
Chlordiazepoxide
Chloroquine
Chlorpheniramine
Chlorpromazine
Chlorpropamide
Chlorthalidone
Chlorzoxazone
Cilazapril
Cimetidine
Cinoxacin
Ciprofloxacin
Cisplatin
Clarithromycin
Clemastine
Clonazepam
Clonidine
Clopidogrel
Cloxacillin
Clozapine
Co-Trimoxazole
Cocaine
Codeine
Cromolyn
Cyanocobalamin
Cyclamate
Cyclobenzaprine
Cyclophosphamide
Cyclosporine
Cyproheptadine
Dacarbazine
Danazol
Darunavir
Daunorubicin
Deferoxamine
Deflazacort
Delavirdine
Desipramine
Dexchlorpheniramine
Diazepam
Diclofenac
Dicumarol
Diethylstilbestrol
Diflunisal
Dihydrocodeine
Diltiazem
Dimenhydrinate
Diphenhydramine
Dipyridamole
Disulfiram
Dofetilide
Doxazosin
Doxorubicin

Doxycycline
Dronedarone
Droperidol
Dupilumab
Dutasteride
Echinacea
Efalizumab
Enalapril
Enoxaparin
Epoetin Alfa
Erythromycin
Esomeprazole
Estramustine
Estrogens
Etanercept
Ethambutol
Etidronate
Etodolac
Etomidate
Etoricoxib
Everolimus
Ezetimibe
Famotidine
Febuxostat
Felodipine
Fenoprofen
Fentanyl
Feverfew
Fluconazole
Fluorouracil
Fluoxetine
Fluphenazine
Flurbiprofen
Fluvoxamine
Fosinopril
Fulvestrant
Glatiramer
Glucagon
Gold & Gold Compounds
Griseofulvin
Haloperidol
Halothane
Henna
Heparin
Hepatitis B Vaccine
Heroin
Histrelin
Hyaluronic Acid
Hydralazine
Hydrochlorothiazide
Hydrocortisone
Hydromorphone
Hydroxychloroquine
Hydroxyzine
Ibritumomab
Ibuprofen
Icatibant
Iloperidone
Imidapril
Imiglucerase
Imipenem/Cilastatin
Imipramine
Imiquimod
Indapamide
Indomethacin
Infliximab
Insulin
Interferon Alfa
Iodixanol
Iothalamate
Irbesartan
Isoniazid
Isotretinoin
Itraconazole
Ivacaftor
Ivermectin
Ixekizumab
Ketoconazole
Ketoprofen
Ketorolac
Labetalol
Lacosamide
Lamivudine
Lamotrigine
Ledipasvir & Sofosbuvir
Lepirudin
Levamisole
Levetiracetam
Levofloxacin
Levothyroxine
Lidocaine
Linezolid
Lisinopril
Lithium
Lixisenatide
Loratadine
Losartan
Lurasidone
MDMA
Mebendazole
Mebeverine
Mechlorethamine
Meclizine
Meclofenamate
Mefenamic Acid
Meloxicam
Melphalan
Meperidine
Mephenytoin
Mephobarbital
Mepivacaine
Meprobamate
Mesna
Metformin
Methohexital
Methotrexate
Methylphenidate
Metoclopramide
Metoprolol
Metronidazole
Miconazole
Midazolam
Miltefosine
Minocycline
Mirtazapine
Mitotane
Moexipril
Monosodium Glutamate
Montelukast
Nabumetone
Nalidixic Acid
Naloxone
Naproxen
Neomycin
Nevirapine
Nicardipine
Nifedipine
Nimesulide
Nitrofurantoin
Ofloxacin
Olanzapine
Olmesartan
Omalizumab
Ombitasvir/Paritaprevir/
Ritonavir and Dasabuvir
Omeprazole
Oral Contraceptives
Oritavancin
Oxaliplatin
Oxaprozin
Oxcarbazepine
Paclitaxel
Paliperidone
Pamidronate
Panitumumab
Pantoprazole
Paroxetine Hydrochloride
PEG-Interferon
Pegaptanib
Pegaspargase
Penicillin G
Penicillin V
Pentagastrin
Pentobarbital
Pentoxifylline
Perflutren
Perindopril
Phenelzine
Phenobarbital
Phenolphthalein
Phenylbutazone
Phenytoin
Pioglitazone
Piroxicam
Potassium Iodide
Prasugrel
Praziquantel
Prazosin
Prilocaine
Primaquine
Pristinamycin
Procainamide
Procarbazine
Progestins
Promethazine
Propafenone
Propofol
Propranolol
Propylthiouracil
Protamine Sulfate
Pseudoephedrine
Pyrimethamine
Quinapril
Quinestrol
Quinidine
Quinine
Ramipril
Ranitidine
Riboflavin
Rifampin
Risperidone
Rituximab
Rofecoxib
Ropinirole
Sacubitril/Valsartan
Saxagliptin
Secobarbital
Sertraline
Sirolimus
Sitagliptin
Solifenacin
Sorafenib
Sparfloxacin
Streptokinase
Streptomycin
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Sulfites
Sulindac
Sumatriptan
Tacrolimus
Tartrazine
Telithromycin
Telmisartan
Tenecteplase
Terbinafine
Terfenadine
Teriflunomide
Tetracycline
Thiamine
Thiopental
Thioridazine
Thiotepa
Ticagrelor
Ticlopidine
Tinidazole
Tiopronin
Tiotropium
Tocilizumab
Tolmetin
Tositumomab & Iodine[131]
Tosufloxacin
Tramadol
Trandolapril
Trastuzumab
Trazodone
Trifluoperazine
Trimeprazine
Trimetrexate
Tripelennamine
Triprolidine
Triptorelin
Troleandomycin
Trospium
Trovafloxacin
Urokinase
Valsartan
Vancomycin
Vardenafil
Vedolizumab
Venlafaxine
Verapamil
Vildagliptin
Vinblastine
Vincristine
Voriconazole
Vorinostat
Warfarin
Yellow Fever Vaccine
Zalcitabine
Zidovudine
Ziprasidone
Zofenopril

Anosmia (smell loss) / smell disorders

Amikacin
Aspirin
Cocaine
Dorzolamide
Doxycycline
Enalapril
Fluticasone Propionate
Interferon Alfa
Levodopa
Methazolamide
Methoxsalen
Midodrine
Nifedipine
Propofol
Pyrazinamide

Terbinafine
Uracil/Tegafur
Varenicline
Zinc

Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)
Afatinib
Aldesleukin
Amodiaquine
Amoxicillin
Anagrelide
Artesunate
Asparaginase
Aspirin
Azathioprine
Azelastine
Azithromycin
Aztreonam
Belatacept
Benznidazole
Bupropion
Candesartan
Captopril
Cefaclor
Certolizumab
Cetuximab
Cisplatin
Co-Trimoxazole
Cyclophosphamide
Cyclosporine
Delavirdine
Diclofenac
Docetaxel
Doxepin
Doxorubicin
Epirubicin
Erlotinib
Everolimus
Exemestane
Fenoprofen
Fluorides
Fluorouracil
Fluoxetine
Gold & Gold Compounds
Hepatitis B Vaccine
Hydroxyurea
Imatinib
Imiquimod
Indinavir
Interferon Alfa
Ipilimumab
Ketorolac
Labetalol
Ledipasvir & Sofosbuvir
Lenvatinib
Losartan
Methotrexate
Mycophenolate
Naproxen
Nicorandil
Nivolumab
Olanzapine
Omacetaxine
Orlistat
Paclitaxel
Pantoprazole
Paroxetine Hydrochloride
Pemetrexed
Penicillamine
Piroxicam
Prednisone
Pyrimethamine
Rifabutin
Risdiplam
Rofecoxib
Sertraline
Siltuximab
Sirolimus
Sorafenib
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Tegafur/Gimeracil/Oteracil
Temsirolimus
Tocilizumab
Tosufloxacin
Trametinib
Valsartan
Vedolizumab
Zalcitabine

Baboon syndrome / symmetrical drug-related intertriginous and flexural exanthema (SDRIFE)
Acetaminophen
Allopurinol
Aminophylline
Amoxicillin
Ampicillin
Ampicillin/Sulbactam
Aspirin
Betamethasone
Cefadroxil
Cefuroxime
Celecoxib
Cephalexin
Cetuximab
Cimetidine
Ciprofloxacin
Cisplatin
Clarithromycin
Clindamycin
Cloxacillin
Clozapine
Codeine
Covid-19 Vaccine, mRNA
Disulfiram
Doxycycline
Erythromycin
Etoricoxib
Everolimus
Fluconazole
Fluorouracil
Gefitinib
Gemcitabine
Golimumab
Heparin
Hydrochlorothiazide
Hydroxyurea
Hydroxyzine
Immune Globulin IV
Infliximab
Iomeprol
Iopromide
Itraconazole
Ketoconazole
Lactulose
Levocetirizine
Mefenamic Acid
Meropenem
Mesalamine
Metronidazole
Mitomycin
Naproxen
Nystatin
Omeprazole
Oral Contraceptives
Osimertinib
Oxycodone
Pantoprazole
Penicillin V
Pirfenidone
Pristinamycin
Pseudoephedrine
Ranitidine
Remdesivir
Risperidone
Rivastigmine
Roxithromycin
Secnidazole
Tacrolimus
Tamoxifen
Telmisartan
Terbinafine
Valacyclovir
Valsartan
Vancomycin
Varenicline
Zoledronate

Black tongue / black hairy tongue (lingua villosa nigra)
Amoxicillin
Benztropine
Ceftriaxone
Chloramphenicol
Clarithromycin
Clonazepam
Co-Trimoxazole
Cocaine
Doxycycline
Erlotinib
Erythromycin
Fluoxetine
Griseofulvin
Lansoprazole
Linezolid
Methyldopa
Minocycline
Moxifloxacin
Nicotine
Nortriptyline
Olanzapine
Oxytetracycline
PEG-Interferon
Piperacillin/Tazobactam
Ribavirin
Streptomycin
Sulfamethoxazole
Tetracycline
Thiothixene

Bullous dermatosis
Acetazolamide
Acitretin
Afatinib
Aldesleukin
Alemtuzumab
Amifostine
Aminocaproic Acid
Aminophylline
Aminosalicylate Sodium
Amitriptyline
Ampicillin
Anthrax Vaccine
Argatroban
Arsenic
Aspirin
Atropine Sulfate
Bergamot
Bleomycin
Bumetanide
Buspirone
Busulfan
Butabarbital
Butalbital
Capsicum
Captopril
Carbamazepine
Celecoxib
Cetirizine
Cevimeline
Chloral Hydrate
Chloramphenicol
Chlorpromazine
Chlorpropamide
Ciprofloxacin
Clonazepam
Clopidogrel
Co-Trimoxazole
Cocaine
Codeine
Colchicine
Cyanocobalamin
Cyclamate
Cyclosporine
Cytarabine
Dalteparin
Dapsone
Desoximetasone
Dextromethorphan
Diazepam
Diclofenac
Dicumarol
Diethylstilbestrol
Diflunisal
Digoxin
Disulfiram
Entacapone
Ephedrine
Erlotinib
Estrogens
Ethambutol
Ethchlorvynol
Felbamate
Fluconazole
Fluorouracil
Fluoxetine
Fluvoxamine
Fondaparinux
Fosphenytoin
Frovatriptan
Furosemide
Ganciclovir
Garlic
Gemcitabine
Glyburide
Gold & Gold Compounds
Griseofulvin
Henna
Hydralazine
Hydrochlorothiazide
Hydroxychloroquine
Ibuprofen
Ibutilide
Imipramine
Imiquimod
Indomethacin
Infliximab
Influenza Vaccine
Insulin
Interferon Alfa

Isoniazid
Ivermectin
Ketoprofen
Lamotrigine
Leflunomide
Lindane
Lisinopril
Lithium
Lomefloxacin
Mechlorethamine
Meloxicam
Mephenytoin
Meprobamate
Methicillin
Methotrexate
Methoxsalen
Miconazole
Minoxidil
Mitomycin
Mometasone
Moxifloxacin
Mycophenolate
Nabumetone
Nalidixic Acid
Naproxen
Nifedipine
Norfloxacin
Omeprazole
Oral Contraceptives
Oxacillin
Penicillamine
Pentamidine
Pentobarbital
Pentostatin
Phenobarbital
Phenolphthalein
Phenytoin
Piroxicam
Prednicarbate
Promethazine
Propranolol
Propyphenazone
Pyridoxine
Pyrimethamine
Quinethazone
Reserpine
Rifampin
Risperidone
Ritonavir
Rituximab
Rivastigmine
Rofecoxib
Rue
Senna
Sertraline
Smallpox Vaccine
Sparfloxacin
Streptomycin
Sulfadoxine
Sulfamethoxazole
Sulfisoxazole
Sunitinib
Temazepam
Tetracycline
Thalidomide
Thiopental
Tinzaparin
Tolbutamide
Tranexamic Acid
Tretinoin
Trioxsalen
Urokinase
Ustekinumab
Valproic Acid
Vancomycin
Vasopressin
Vinblastine
Warfarin
Zalcitabine
Zidovudine
Zolpidem

DRESS syndrome

Abacavir
Acenocoumarol
Acetaminophen
Afatinib
Allopurinol
Amikacin
Aminosalicylate Sodium
Amitriptyline
Amlodipine
Amoxicillin
Ampicillin
Anakinra
Apalutamide
Aspirin
Atenolol
Atorvastatin
Azithromycin
Benznidazole
Binimetinib
Boceprevir
Bosentan
Bupropion
Caffeine
Canakinumab
Captopril
Carbamazepine
Cefadroxil
Cefepime
Cefixime
Cefotaxime
Ceftriaxone
Celecoxib
Cenobamate
Chlorambucil
Cidofovir
Cilostazol
Ciprofloxacin
Clindamycin
Clomipramine
Clonazepam
Clopidogrel
Clozapine
Co-Trimoxazole
Cobimetinib
Codeine
Covid-19 Vaccine, mRNA
Cyclobenzaprine
Cycloserine
Daclatasvir
Dapsone
Darunavir
Dextromethorphan
Diclofenac
Doxycycline
Efalizumab
Efavirenz
Emtricitabine
Encorafenib
Erlotinib
Esomeprazole
Ethambutol
Ethosuximide
Febuxostat
Felbamate
Fenofibrate
Fluoxetine
Gabapentin
Ginseng
Hydroxychloroquine
Ibuprofen
Imatinib
Ipilimumab
Isoniazid
Lamotrigine
Leflunomide
Lenalidomide
Leucovorin
Levetiracetam
Linezolid
Lithium
Meropenem
Mesalamine
Metamizole
Metformin
Methimazole
Minocycline
Mitoxantrone
Modafinil
Moxifloxacin
Naproxen
Nelfinavir
Nevirapine
Nitrazepam
Nitrofurantoin
Nivolumab
Olanzapine
Oxazepam
Oxcarbazepine
Pandemic Influenza Vaccine (H1N1)
PEG-Interferon
Penicillin V
Perampanel
Perindopril
Phenobarbital
Phenylbutazone
Phenytoin
Piperacillin/Tazobactam
Piroxicam
Primidone
Promethazine
Propylthiouracil
Pyrazinamide
Pyrimethamine
Quetiapine
Quinine
Raltegravir
Ramipril
Ribavirin
Rifampin
Ritonavir
Rivaroxaban
Sildenafil
Sorafenib
Spironolactone
Streptomycin
Strontium Ranelate
Sulfadiazine
Sulfamethoxazole
Sulfasalazine
Teicoplanin
Telaprevir
Temozolomide
Tenofovir Disoproxil
Tenoxicam
Terbinafine
Teriflunomide
Thiamine
Tocilizumab
Torsemide
Trimethoprim
Valproic Acid
Vancomycin
Vemurafenib
Warfarin
Ziprasidone
Zonisamide

Erythema multiforme

Acamprosate
Acarbose
Acebutolol
Acetaminophen
Acetazolamide
Adalimumab
Aldesleukin
Alectinib
Alendronate
Allopurinol
Amifostine
Aminosalicylate Sodium
Amiodarone
Amlodipine
Amoxicillin
Amphotericin B
Ampicillin
Anastrozole
Anthrax Vaccine
Arsenic
Aspirin
Atovaquone/Proguanil
Atropine Sulfate
Avelumab
Azathioprine
Aztreonam
Benznidazole
Bezafibrate
Bortezomib
Bosutinib
Bumetanide
Bupropion
Busulfan
Butabarbital
Butalbital
Candesartan
Capsicum
Carbamazepine
Carisoprodol
Cefaclor
Cefadroxil
Cefamandole
Cefixime
Cefotaxime
Cefpodoxime
Cefprozil
Ceftazidime
Ceftriaxone
Cefuroxime
Celecoxib
Cephalexin
Cephalothin
Chloral Hydrate
Chlorambucil
Chloramphenicol
Chlordiazepoxide
Chloroquine
Chlorpromazine
Chlorpropamide
Chlorzoxazone
Cimetidine
Ciprofloxacin

Cisplatin
Clindamycin
Clofibrate
Clonazepam
Clozapine
Co-Trimoxazole
Codeine
Collagen (Bovine)
Crizotinib
Cyclobenzaprine
Cyclophosphamide
Danazol
Dapsone
Delavirdine
Desoximetasone
Dexamethasone
Diclofenac
Dicloxacillin
Didanosine
Diflunisal
Dihydrocodeine
Diltiazem
Dimenhydrinate
Docetaxel
Dorzolamide
Doxycycline
Durvalumab
Elotuzumab
Enalapril
Enoxacin
Enoxaparin
Erythromycin
Estrogens
Ethambutol
Ethosuximide
Etodolac
Etoposide
Etoricoxib
Everolimus
Famotidine
Fenbufen
Fenoprofen
Flucloxacillin
Fluconazole
Fluorouracil
Fluoxetine
Flurbiprofen
Fosphenytoin
Furazolidone
Furosemide
Gadoversetamide
Gemfibrozil
Glucagon
Glyburide
Gold & Gold Compounds
Griseofulvin
Henna
Hepatitis B Vaccine
Human Papillomavirus (HPV) Vaccine
Hyaluronic Acid
Hydrochlorothiazide
Hydroxychloroquine
Hydroxyurea
Hydroxyzine
Ibuprofen
Icodextrin
Imatinib
Imipenem/Cilastatin
Imiquimod
Indapamide
Indomethacin
Infliximab
Interferon Beta
Iomeprol
Ipilimumab
Isoniazid
Isotretinoin
Ixazomib
Ketoprofen
Lamotrigine
Lansoprazole
Leflunomide
Lenalidomide
Levamisole
Levetiracetam
Levofloxacin
Lidocaine
Lithium
Loracarbef
Loratadine
Lorazepam
Maprotiline
Mechlorethamine
Meclofenamate
Mefenamic Acid
Meloxicam
Mephenytoin
Meprobamate
Metamizole
Methenamine
Methicillin
Methotrexate
Methyldopa
Minocycline
Minoxidil
Misoprostol
Mitomycin
Mitotane
Moxifloxacin
Nabumetone
Nalidixic Acid
Naproxen
Neomycin
Nifedipine
Nilotinib
Nitrofurantoin
Nitroglycerin
Nivolumab
Nystatin
Ombitasvir/Paritaprevir/Ritonavir
Omeprazole
Oral Contraceptives
Oritavancin
Oseltamivir
Oxaprozin
Oxazepam
Oxybutynin
Paclitaxel
Palbociclib
Pancreatin
Pandemic Influenza Vaccine (H1N1)
Pantoprazole
Paramethadione
Pembrolizumab
Pemetrexed
Penicillamine
Pentobarbital
Permethrin
Phenobarbital
Phenolphthalein
Phensuximide
Phenylbutazone
Phenytoin
Piroxicam
Pneumococcal Vaccine
Pravastatin
Prednicarbate
Prednisolone
Primidone
Probenecid
Progestins
Promethazine
Propranolol
Pseudoephedrine
Pyrazinamide
Pyrimethamine
Quetiapine
Quinidine
Quinine
Ramipril
Regorafenib
Ribavirin
Ribociclib
Rifampin
Risedronate
Risperidone
Ritodrine
Roxatidine
Saquinavir
Scopolamine
Senna
Sertraline
Simvastatin
Smallpox Vaccine
Sorafenib
Spironolactone
Streptomycin
Sulfacetamide
Sulfadiazine
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Sulindac
Sunitinib
Tamsulosin
Tea Tree
Telithromycin
Telmisartan
Terbinafine
Tetracycline
Tetrazepam
Thalidomide
Thiabendazole
Thiopental
Thioridazine
Ticlopidine
Tiopronin
Tobramycin
Tocainide
Tolbutamide
Tolcapone
Tolmetin
Trazodone
Trihexyphenidyl
Trimethadione
Valproic Acid
Vancomycin
Vandetanib
Vemurafenib
Verapamil
Vinblastine
Vitamin A
Vitamin E
Voriconazole
Zalcitabine
Zidovudine

Erythema nodosum

Abatacept
Acetaminophen
Acyclovir
Aldesleukin
Amiodarone
Anastrozole
Arsenic
Aspartame
Aspirin
Azathioprine
Benznidazole
Busulfan
Carbamazepine
Carbimazole
Certolizumab
Chlordiazepoxide
Chlorpropamide
Ciprofloxacin
Clomiphene
Co-Trimoxazole
Codeine
Colchicine
Dapsone
Dasatinib
Diclofenac
Disopyramide
Dupilumab
Echinacea
Estrogens
Etanercept
Fluoxetine
Furosemide
Glucagon
Gold & Gold Compounds
Granulocyte Colony-Stimulating Factor (G-CSF)
Hepatitis B Vaccine
Human Papillomavirus (HPV) Vaccine
Hydralazine
Hydroxychloroquine
Ibuprofen
Imatinib
Indomethacin
Interferon Alfa
Isotretinoin
Ixazomib
Levofloxacin
Lidocaine
Meclofenamate
Medroxyprogesterone
Meprobamate
Metamizole
Methimazole
Methyldopa
Minocycline
Montelukast
Naproxen
Nifedipine
Nitrofurantoin
Nivolumab
Omeprazole
Oral Contraceptives
Paroxetine Hydrochloride
Penicillamine
Ponatinib
Propylthiouracil
Quinacrine
Smallpox Vaccine
Streptomycin
Sulfamethoxazole

- Sulfasalazine
- Sulfisoxazole
- Terbinafine
- Thalidomide
- Ticlopidine
- Tretinoin
- Trimethoprim
- Verapamil
- Zileuton

Exanthems

- Abacavir
- Acamprosate
- Acebutolol
- Acenocoumarol
- Acetaminophen
- Acetazolamide
- Acetohexamide
- Acitretin
- Acyclovir
- Aldesleukin
- Allopurinol
- Alprazolam
- Amantadine
- Amcinonide
- Amikacin
- Amiloride
- Aminocaproic Acid
- Aminoglutethimide
- Aminophylline
- Aminosalicylate Sodium
- Amiodarone
- Amlodipine
- Amoxapine
- Amoxicillin
- Amphotericin B
- Ampicillin
- Amprenavir
- Anastrozole
- Anidulafungin
- Anistreplase
- Anthrax Vaccine
- Apalutamide
- Aprotinin
- Arsenic
- Aspartame
- Aspirin
- Astemizole
- Atazanavir
- Atovaquone
- Atovaquone/Proguanil
- Azacitidine
- Azathioprine
- Azelastine
- Azithromycin
- Aztreonam
- Bacampicillin
- Baclofen
- Benactyzine
- Benazepril
- Bendamustine
- Bendroflumethiazide
- Benznidazole
- Betamethasone
- Bevacizumab
- Bexarotene
- Bicalutamide
- Bismuth
- Bleomycin
- Bortezomib
- Bosentan
- Bosutinib
- Brompheniramine
- Budesonide
- Bupropion
- Buserelin
- Busulfan
- Butabarbital
- Butalbital
- Candesartan
- Captopril
- Carbamazepine
- Carboplatin
- Carisoprodol
- Carmustine
- Carvedilol
- Cefaclor
- Cefadroxil
- Cefamandole
- Cefazolin
- Cefdinir
- Cefepime
- Cefoperazone
- Cefotaxime
- Cefoxitin
- Cefpodoxime
- Ceftazidime
- Ceftriaxone
- Cefuroxime
- Celecoxib
- Cephalexin
- Cephalothin
- Cephapirin
- Cephradine
- Ceritinib
- Cetirizine
- Cetuximab
- Cevimeline
- Chloral Hydrate
- Chlorambucil
- Chloramphenicol
- Chlordiazepoxide
- Chlormezanone
- Chloroquine
- Chlorothiazide
- Chlorpromazine
- Chlorpropamide
- Cimetidine
- Ciprofloxacin
- Cisplatin
- Citalopram
- Cladribine
- Clarithromycin
- Clemastine
- Clindamycin
- Clofibrate
- Clomiphene
- Clonazepam
- Clopidogrel
- Clorazepate
- Cloxacillin
- Clozapine
- Co-Trimoxazole
- Cobimetinib
- Codeine
- Colchicine
- Colestipol
- Cyanocobalamin
- Cyclamate
- Cyclophosphamide
- Cycloserine
- Cyclosporine
- Cyclothiazide
- Cyproheptadine
- Cytarabine
- Dabigatran
- Dabrafenib
- Dacarbazine
- Daclizumab
- Dalteparin
- Danazol
- Dantrolene
- Dapsone
- Daunorubicin
- Deferasirox
- Delavirdine
- Denosumab
- Desipramine
- Dexamethasone
- Diazepam
- Diclofenac
- Dicloxacillin
- Dicumarol
- Dicyclomine
- Diethylpropion
- Diethylstilbestrol
- Diflunisal
- Digoxin
- Diltiazem
- Dimenhydrinate
- Diphenhydramine
- Dipyridamole
- Disopyramide
- Disulfiram
- Docetaxel
- Docusate
- Doxazosin
- Doxepin
- Doxorubicin
- Doxycycline
- Dronedarone
- Durvalumab
- Efavirenz
- Eletriptan
- Elotuzumab
- Emtricitabine
- Enalapril
- Enoxacin
- Enoxaparin
- Entecavir
- Ephedrine
- Epoetin Alfa
- Eprosartan
- Erlotinib
- Erythromycin
- Esomeprazole
- Estramustine
- Estrogens
- Etanercept
- Ethacrynic Acid
- Ethambutol
- Ethionamide
- Ethosuximide
- Etodolac
- Etoposide
- Etoricoxib
- Etravirine
- Everolimus
- Exemestane
- Felodipine
- Fenofibrate
- Fenoprofen
- Flecainide
- Fluconazole
- Flucytosine
- Fludarabine
- Fluorouracil
- Fluoxetine
- Flurazepam
- Flurbiprofen
- Flutamide
- Folic Acid
- Foscarnet
- Fosfomycin
- Furazolidone
- Furosemide
- Gabapentin
- Galantamine
- Ganciclovir
- Gatifloxacin
- Gefitinib
- Gemcitabine
- Gemfibrozil
- Gemifloxacin
- Gentamicin
- Ginkgo Biloba
- Glimepiride
- Glipizide
- Glucagon
- Glyburide
- Gold & Gold Compounds
- Granulocyte Colony-Stimulating Factor (G-CSF)
- Grepafloxacin
- Griseofulvin
- Halothane
- Heparin
- Heroin
- Hydralazine
- Hydrochlorothiazide
- Hydromorphone
- Hydroxychloroquine
- Hydroxyurea
- Hydroxyzine
- Ibrutinib
- Ibuprofen
- Icodextrin
- Idarubicin
- Imatinib
- Imipenem/Cilastatin
- Imipramine
- Imiquimod
- Indapamide
- Indinavir
- Indomethacin
- Infliximab
- Insulin
- Interferon Alfa
- Iobenguane
- Ipilimumab
- Irbesartan
- Irinotecan
- Isocarboxazid
- Isoniazid
- Isosorbide Dinitrate
- Isotretinoin
- Isradipine
- Itraconazole
- Ivermectin
- Ixazomib
- Ketoconazole
- Ketoprofen
- Ketorolac
- Labetalol
- Lamivudine
- Lamotrigine
- Lapatinib
- Lenalidomide
- Lenvatinib
- Letrozole
- Levamisole
- Levetiracetam
- Levodopa

Levofloxacin
Lidocaine
Lincomycin
Linezolid
Lisinopril
Lithium
Loracarbef
Lovastatin
Maprotiline
Measles, Mumps & Rubella (MMR) Virus Vaccine
Mebendazole
Mechlorethamine
Meclofenamate
Mefenamic Acid
Mefloquine
Meloxicam
Melphalan
Memantine
Mephenytoin
Meprobamate
Mercaptopurine
Meropenem
Mesalamine
Mesna
Metamizole
Methazolamide
Methenamine
Methicillin
Methimazole
Methohexital
Methotrexate
Methoxsalen
Methsuximide
Methyldopa
Methylphenidate
Metoclopramide
Metoprolol
Metronidazole
Mexiletine
Miconazole
Minocycline
Minoxidil
Misoprostol
Mitomycin
Mitotane
Moexipril
Moricizine
Morphine
Nabumetone
Nadolol
Nafarelin
Nafcillin
Nalidixic Acid
Naltrexone
Naproxen
Naratriptan
Nefazodone
Nelfinavir
Neomycin
Nevirapine
Niacin
Nifedipine
Nilotinib
Nimesulide
Nimodipine
Nisoldipine
Nitisinone
Nitrofurantoin
Nivolumab
Norfloxacin
Nystatin
Octreotide
Ofloxacin
Olanzapine
Olmesartan
Olsalazine
Omega-3 Fatty Acids
Omeprazole
Oral Contraceptives
Oxacillin
Oxaliplatin
Oxaprozin
Oxcarbazepine
Paclitaxel
Paliperidone
Pamidronate
Panobinostat
Pantoprazole
Paromomycin
Paroxetine Hydrochloride
PEG-Interferon
Pembrolizumab
Pemoline
Penbutolol
Penicillamine
Penicillin V
Pentagastrin
Pentamidine
Pentazocine
Pentobarbital
Pentostatin
Perflutren
Perphenazine
Phenazopyridine
Phenobarbital
Phenolphthalein
Phenylbutazone
Phenytoin
Phytonadione
Piperacillin/Tazobactam
Piroxicam
Potassium Iodide
Prazosin
Prednisolone
Primaquine
Primidone
Pristinamycin
Procainamide
Procarbazine
Prochlorperazine
Promazine
Promethazine
Propafenone
Propofol
Propolis
Propoxyphene
Propranolol
Propylthiouracil
Protamine Sulfate
Pseudoephedrine
Pyrazinamide
Pyrimethamine
Quinacrine
Quinapril
Quinethazone
Quinidine
Quinine
Quinupristin/Dalfopristin
Ramipril
Ranitidine
Rapacuronium
Regorafenib
Repaglinide
Ribavirin
Rifampin
Ritodrine
Ritonavir
Rituximab
Rivaroxaban
Rivastigmine
Rofecoxib
Ropinirole
Rucaparib
Saccharin
Saquinavir
Scopolamine
Sertraline
Simvastatin
Smallpox Vaccine
Sorafenib
Sparfloxacin
Spironolactone
Streptokinase
Streptomycin
Streptozocin
Succimer
Sucralfate
Sulfadiazine
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfinpyrazone
Sulfisoxazole
Sulindac
Tacrine
Tacrolimus
Tamoxifen
Teicoplanin
Telaprevir
Telmisartan
Temozolomide
Temsirolimus
Terazosin
Terbinafine
Terfenadine
Testosterone
Tetracycline
Tetrazepam
Thalidomide
Thiabendazole
Thiamine
Thimerosal
Thioguanine
Thiopental
Thioridazine
Thiothixene
Tiagabine
Ticarcillin
Ticlopidine
Tinzaparin
Tiopronin
Tipranavir
Tizanidine
Tobramycin
Tocainide
Tolazamide
Tolazoline
Tolbutamide
Tolmetin
Topiramate
Tramadol
Trametinib
Trazodone
Triamcinolone
Trimeprazine
Trimethadione
Trimetrexate
Troleandomycin
Uracil/Tegafur
Valdecoxib
Valproic Acid
Valsartan
Vancomycin
Vardenafil
Varenicline
Vemurafenib
Venlafaxine
Verapamil
Vincristine
Vitamin A
Vorapaxar
Vorinostat
Warfarin
Zalcitabine
Zidovudine
Ziprasidone
Zoledronate
Zonisamide

Exfoliative dermatitis

Acamprosate
Acetaminophen
Acitretin
Afatinib
Aldesleukin
Alitretinoin
Allopurinol
Aminoglutethimide
Aminolevulinic Acid
Aminophylline
Aminosalicylate Sodium
Amiodarone
Amobarbital
Amoxicillin
Amphotericin B
Ampicillin
Arsenic
Aspirin
Avelumab
Azathioprine
Aztreonam
Benzyl Alcohol
Bexarotene
Bismuth
Bosutinib
Bumetanide
Butabarbital
Butalbital
Capecitabine
Captopril
Carbamazepine
Carvedilol
Cefoxitin
Cefpodoxime
Celecoxib
Chlorambucil
Chloroquine
Chlorpropamide
Cimetidine
Ciprofloxacin
Cisplatin
Clofazimine
Clofibrate
Clonazepam
Co-Trimoxazole
Codeine
Cytarabine
Dapsone
Dasatinib
Daunorubicin
Demeclocycline
Desipramine

Dexamethasone
Diazepam
Diclofenac
Dicloxacillin
Diethylstilbestrol
Diflunisal
Diltiazem
Doxorubicin
Efavirenz
Eletriptan
Enalapril
Enoxacin
Ephedrine
Esmolol
Esomeprazole
Estrogens
Ethambutol
Ethosuximide
Fenoprofen
Flecainide
Fluconazole
Flurbiprofen
Fluvoxamine
Fosphenytoin
Furosemide
Gefitinib
Gemcitabine
Gemfibrozil
Gentamicin
Gold & Gold Compounds
Granulocyte Colony-Stimulating Factor (G-CSF)
Grepafloxacin
Griseofulvin
Hydroxychloroquine
Ibuprofen
Icodextrin
Idelalisib
Imatinib
Imipramine
Indomethacin
Irinotecan
Isavuconazonium Sulfate
Isoniazid
Isotretinoin
Ixabepilone
Ixazomib
Ketoconazole
Ketoprofen
Ketorolac
Lansoprazole
Lapatinib
Leflunomide
Lenalidomide
Lidocaine
Lisinopril
Lithium
Lomefloxacin
Meclofenamate
Mefenamic Acid
Mefloquine
Mephenytoin
Mephobarbital
Methicillin
Methotrexate
Methsuximide
Methylphenidate
Mexiletine
Mezlocillin
Minocycline
Mitomycin
Nalidixic Acid
Nevirapine
Nifedipine
Nilotinib
Nisoldipine
Nitisinone
Nitrofurantoin
Nitroglycerin
Nivolumab
Omacetaxine
Ombitasvir/Paritaprevir/Ritonavir
Omeprazole
Oxaprozin
Oxcarbazepine
Oxytetracycline
Panitumumab
Pantoprazole
Paramethadione
Pazopanib
Pembrolizumab
Pentobarbital
Pentostatin
Phenobarbital
Phenolphthalein
Phenylbutazone
Phenytoin
Piroxicam
Procarbazine
Propranolol
Propylthiouracil
Pseudoephedrine
Pyrazinamide
Pyrimethamine
Quinacrine
Quinapril
Quinidine
Quinine
Raltitrexed
Rifampin
Risperidone
Rivastigmine
Romidepsin
Secobarbital
Senna
Sildenafil
Smallpox Vaccine
Sorafenib
Sparfloxacin
Streptomycin
Strontium Ranelate
Sulfacetamide
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Sulindac
Sunitinib
Tacrolimus
Teicoplanin
Terfenadine
Tetracycline
Thalidomide
Tiagabine
Ticlopidine
Tizanidine
Tobramycin
Tocainide
Trazodone
Tretinoin
Trimethadione
Trimethoprim
Trovafloxacin
Umbralisib
Vancomycin
Venlafaxine
Verapamil
Vitamin A
Voriconazole
Vorinostat
Yohimbine
Zalcitabine
Ziprasidone

Fixed eruption

Aceclofenac
Acetaminophen
Acyclovir
Adalimumab
Albendazole
Alendronate
Allopurinol
Aminosalicylate Sodium
Amitriptyline
Amlexanox
Amodiaquine
Amoxicillin
Amphotericin B
Ampicillin
Arsenic
Aspirin
Atenolol
Atorvastatin
Atropine Sulfate
Azathioprine
Bacampicillin
BCG Vaccine
Bisacodyl
Bismuth
Bisoprolol
Bleomycin
Bucillamine
Butabarbital
Butalbital
Carbamazepine
Carisoprodol
Cefaclor
Cefazolin
Cefixime
Cefotaxime
Ceftazidime
Ceftriaxone
Celecoxib
Cephalexin
Cetirizine
Chloral Hydrate
Chloramphenicol
Chlordiazepoxide
Chlorhexidine
Chlormezanone
Chloroquine
Chlorothiazide
Chlorpromazine
Chlorpropamide
Cimetidine
Ciprofloxacin
Clarithromycin
Clindamycin
Clioquinol
Clopidogrel
Co-Trimoxazole
Cocaine
Codeine
Colchicine
Cyproterone
Dacarbazine
Danazol
Dapsone
Demeclocycline
Dextromethorphan
Diazepam
Diclofenac
Diflunisal
Dimenhydrinate
Diphenhydramine
Disulfiram
Docetaxel
Doxorubicin
Doxycycline
Ephedrine
Erdosteine
Erythromycin
Esomeprazole
Estrogens
Etanercept
Ethchlorvynol
Etodolac
Etoricoxib
Finasteride
Flavoxate
Flecainide
Fluconazole
Flurbiprofen
Foscarnet
Furosemide
Gabapentin
Ganciclovir
Ginkgo Biloba
Glipizide
Griseofulvin
Guanethidine
Heparin
Heroin
Hydralazine
Hydrochlorothiazide
Hydroxychloroquine
Hydroxyurea
Hydroxyzine
Ibuprofen
Imipramine
Indapamide
Indomethacin
Infliximab
Influenza Vaccine
Iohexol
Iopromide
Isotretinoin
Itraconazole
Ivermectin
Ketoconazole
Lamotrigine
Leuprolide
Levamisole
Levocetirizine
Levofloxacin
Licorice
Lidocaine
Loperamide
Loratadine
Lorazepam
Meclofenamate
Mefenamic Acid
Melatonin
Meloxicam
Meprobamate
Mesna
Metamizole
Metformin
Methenamine
Methimazole
Methyldopa
Methylphenidate

Metronidazole
Miconazole
Minocycline
Modafinil
Nabumetone
Naproxen
Neomycin
Niacin
Nifedipine
Nimesulide
Nitrofurantoin
Norfloxacin
Nystatin
Ofloxacin
Olanzapine
Olopatadine
Omeprazole
Ondansetron
Oral Contraceptives
Orphenadrine
Oxazepam
Oxcarbazepine
Oxybutynin
Oxytetracycline
Paclitaxel
Papaverine
Paroxetine Hydrochloride
PEG-Interferon
Pentobarbital
Phenobarbital
Phenolphthalein
Phenylbutazone
Phenylephrine
Phenylpropanolamine
Phenytoin
Piperacillin/Tazobactam
Piroxicam
Procarbazine
Prochlorperazine
Promethazine
Propofol
Propolis
Propranolol
Pseudoephedrine
Pyrazinamide
Pyridoxine
Pyrimethamine
Quinacrine
Quinidine
Quinine
Ranitidine
Ribavirin
Rifampin
Rofecoxib
Ropinirole
Roxithromycin
Rupatadine
Saccharin
Saquinavir
Scopolamine
Sorafenib
Streptomycin
Sulfadiazine
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Sulindac
Tadalafil
Tartrazine
Temazepam
Terbinafine
Terfenadine
Tetracycline
Thiabendazole
Thiopental
Ticlopidine
Tinidazole
Tolbutamide
Topiramate
Topotecan
Tosufloxacin
Tranexamic Acid
Triamcinolone
Trifluoperazine
Trimethoprim
Tripelennamine
Triprolidine
Ursodiol
Valproic Acid
Vancomycin
Voriconazole
Zolmitriptan

Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth
Amlodipine
Basiliximab
Carbamazepine
Cevimeline
Clarithromycin
Clobazam
Co-Trimoxazole
Cycloserine
Cyclosporine
Diltiazem
Erythromycin
Eslicarbazepine
Everolimus
Felodipine
Fosphenytoin
Isradipine
Ketoconazole
Lamotrigine
Levetiracetam
Levonorgestrel
Lithium
Marihuana
Metoprolol
Mycophenolate
Nicardipine
Nifedipine
Nisoldipine
Oral Contraceptives
Palifermin
Penicillamine
Phenobarbital
Phenytoin
Primidone
Propranolol
Sertraline
Sirolimus
Tacrolimus
Tartrazine
Tiagabine
Topiramate
Valproic Acid
Vemurafenib
Verapamil
Vigabatrin
Voriconazole
Zonisamide

Hand-foot syndrome (palmar–plantar erythrodysesthesia)
Afatinib
Aflibercept
Avapritinib
Avelumab
Axitinib
Bevacizumab
Bleomycin
Bosutinib
Brentuximab Vedotin
Cabazitaxel
Cabozantinib
Capecitabine
Carboplatin
Cetuximab
Cisplatin
Clofarabine
Co-Trimoxazole
Cobimetinib
Cyclophosphamide
Cytarabine
Dabrafenib
Dacomitinib
Dasatinib
Daunorubicin
Docetaxel
Doxorubicin
Encorafenib
Epirubicin
Erdafitinib
Erlotinib
Etoposide
Everolimus
Fluorouracil
Gefitinib
Gemcitabine
Hydroxyurea
Ibandronate
Idarubicin
Imatinib
Infigratinib
Infliximab
Interferon Alfa
Ipilimumab
Irinotecan
Ixabepilone
Ketoconazole
Lapatinib
Lenvatinib
Letrozole
Leucovorin
Mercaptopurine
Mesalamine
Methotrexate
Mitomycin
Mobocertinib
Neratinib
Nilotinib
Nintedanib
Olaparib
Oxaliplatin
Paclitaxel
Palifermin
Panitumumab
Pazopanib
PEG-Interferon
Pemigatinib
Phenytoin
Regorafenib
Ripretinib
Rucaparib
Selumetinib
Sorafenib
Sunitinib
Tegafur/Gimeracil/Oteracil
Temozolomide
Temsirolimus
Tivozanib
Trabectedin
Trametinib
Trastuzumab
Tucatinib
Turmeric
Uracil/Tegafur
Valproic Acid
Vandetanib
Varenicline
Vemurafenib
Vincristine
Vinorelbine
Vorinostat

Lichenoid eruption / lichenoid reaction
Acebutolol
Acyclovir
Adalimumab
Alendronate
Allopurinol
Aminosalicylate Sodium
Amoxicillin
Anakinra
Apalutamide
Apixaban
Aspirin
Atenolol
Atorvastatin
Avelumab
Azathioprine
BCG Vaccine
Captopril
Carbamazepine
Carvedilol
Ceftriaxone
Certolizumab
Chloral Hydrate
Chloroquine
Chlorothiazide
Chlorpromazine
Chlorpropamide
Cinnarizine
Clonazepam
Clopidogrel
Co-Trimoxazole
Colchicine
Crizotinib
Cycloserine
Cyclosporine
Dactinomycin
Demeclocycline
Diazoxide
Diflunisal
Diltiazem
Dorzolamide
Durvalumab
Efavirenz
Enalapril
Esomeprazole
Etanercept
Ethambutol
Fluoxymesterone
Flurbiprofen
Fluvastatin
Furosemide
Glimepiride
Glyburide
Gold & Gold Compounds
Granulocyte Colony-Stimulating Factor (G-CSF)

Griseofulvin
Henna
Hepatitis B Vaccine
Hydrochlorothiazide
Hydroxychloroquine
Hydroxyurea
Ibuprofen
Imatinib
Imiquimod
Immune Globulin IV
Indomethacin
Infliximab
Influenza Vaccine
Interferon Alfa
Irbesartan
Isoniazid
Isotretinoin
Ketoconazole
Labetalol
Lansoprazole
Leflunomide
Levamisole
Lisinopril
Lorazepam
Lovastatin
Mercaptopurine
Mesalamine
Metformin
Methamphetamine
Methyldopa
Methyltestosterone
Metoprolol
Nadolol
Naproxen
Nebivolol
Nelfinavir
Nifedipine
Nivolumab
Obinutuzumab
Olanzapine
Omeprazole
Oral Contraceptives
Orlistat
Pantoprazole
PEG-Interferon
Pembrolizumab
Penicillamine
Peppermint
Phenytoin
Pindolol
Pirfenidone
Piroxicam
Pneumococcal Vaccine
Pravastatin
Propranolol
Propylthiouracil
Pyrimethamine
Quinacrine
Quinidine
Quinine
Ranitidine
Relugolix
Ribavirin
Rifampin
Risperidone
Roxatidine
Salsalate
Sildenafil
Simeprevir
Simvastatin
Sofosbuvir
Solifenacin
Sotalol
Sparfloxacin
Spironolactone
Streptomycin
Sulfadoxine
Sulfamethoxazole
Sulindac
Temazepam
Tenofovir Disoproxil
Terazosin
Terbinafine
Testosterone
Tetracycline
Thimerosal
Thioridazine
Timolol
Tiopronin
Tiotropium
Tolazamide
Tolbutamide
Torsemide
Trichlormethiazide
Tripelennamine
Triprolidine
Ursodiol
Venlafaxine
Zidovudine
Zoster Vaccine

Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE)

Acebutolol
Acetazolamide
Adalimumab
Albuterol
Aldesleukin
Allopurinol
Aminoglutethimide
Aminosalicylate Sodium
Amiodarone
Amitriptyline
Amlodipine
Anastrozole
Anthrax Vaccine
Atenolol
Atorvastatin
Belatacept
Betaxolol
Bevacizumab
Bortezomib
Bupropion
Butabarbital
Butalbital
Capecitabine
Captopril
Carbamazepine
Carbimazole
Cefepime
Cefuroxime
Celecoxib
Celiprolol
Chlorambucil
Chlordiazepoxide
Chlorothiazide
Chlorpromazine
Chlorpropamide
Chlorthalidone
Cilazapril
Cimetidine
Cinnarizine
Citalopram
Clobazam
Clofibrate
Clonidine
Clozapine
Co-Trimoxazole
Covid-19 Vaccine, mRNA
Cyclophosphamide
Cyclosporine
Cysteamine
Danazol
Dapsone
Dasatinib
Denosumab
Diethylstilbestrol
Diltiazem
Disopyramide
Docetaxel
Domperidone
Doxazosin
Doxorubicin
Doxycycline
Durvalumab
Efalizumab
Emtricitabine
Enalapril
Esomeprazole
Estrogens
Etanercept
Ethambutol
Ethionamide
Ethosuximide
Fluorouracil
Fluoxymesterone
Fluphenazine
Flutamide
Fluvastatin
Fosphenytoin
Furosemide
Gemcitabine
Gold & Gold Compounds
Golimumab
Granulocyte Colony-Stimulating Factor (G-CSF)
Griseofulvin
Hepatitis B Vaccine
Human Papillomavirus (HPV) Vaccine
Hydralazine
Hydrochlorothiazide
Hydroxyurea
Ibandronate
Ibuprofen
Imipramine
Imiquimod
Immune Globulin IV
Immune Globulin SC
Infliximab
Interferon Alfa
Interferon Beta
Ipilimumab
Isoniazid
Labetalol
Lamotrigine
Lansoprazole
Leflunomide
Letrozole
Leuprolide
Levetiracetam
Levodopa
Lidocaine
Lisinopril
Lithium
Lovastatin
Mephenytoin
Meprobamate
Mercaptopurine
Mesalamine
Methimazole
Methoxsalen
Methsuximide
Methyldopa
Methyltestosterone
Methysergide
Metoprolol
Mexiletine
Minocycline
Minoxidil
Mitotane
Nafcillin
Nalidixic Acid
Naproxen
Nifedipine
Nitrofurantoin
Nivolumab
Olsalazine
Omeprazole
Oral Contraceptives
Osimertinib
Oxcarbazepine
Paclitaxel
Pantoprazole
PEG-Interferon
Pembrolizumab
Penicillamine
Pentobarbital
Perphenazine
Phenelzine
Phenobarbital
Phenolphthalein
Phenylbutazone
Phenytoin
Pindolol
Piroxicam
Potassium Iodide
Pravastatin
Prazosin
Prednicarbate
Primidone
Procainamide
Promethazine
Propafenone
Propranolol
Propylthiouracil
Psoralens
Quinidine
Quinine
Ranitidine
Reserpine
Ribavirin
Rifabutin
Rifampin
Rilpivirine
Rituximab
Secukinumab
Sertraline
Simvastatin
Smallpox Vaccine
Somatropin
Spironolactone
Streptomycin
Sulfadiazine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Tamoxifen
Tenofovir Disoproxil
Terbinafine
Terfenadine
Testosterone

Tetracycline
Thioridazine
Ticlopidine
Timolol
Tiopronin
Tiotropium
Tocainide
Triamterene
Trichlormethiazide
Trientine
Trimethadione
Trimethoprim
Trioxsalen
Uracil/Tegafur
Ustekinumab
Valproic Acid
Vancomycin
Verapamil
Vitamin E
Voriconazole
Yohimbine
Zafirlukast
Zinc
Ziprasidone
Zonisamide

Onycholysis

Acitretin
Adalimumab
Allopurinol
Bleomycin
Capecitabine
Captopril
Clofazimine
Dabrafenib
Docetaxel
Doxorubicin
Erdafitinib
Estrogens
Etoposide
Gold & Gold Compounds
Hydroxyurea
Ibuprofen
Irinotecan
Isotretinoin
Ketoprofen
Methotrexate
Mitoxantrone
Mycophenolate
Nintedanib
Nitrofurantoin
Nivolumab
Oral Contraceptives
Paclitaxel
Pemetrexed
Propranolol
Roxithromycin
Tasonermin
Tetracycline
Valproic Acid
Vemurafenib

Paresthesias

Acamprosate
Acetazolamide
Acitretin
Acyclovir
Adalimumab
Adenosine
Afamelanotide
Agalsidase
Alitretinoin
Allopurinol
Almotriptan
Alprazolam
Altretamine
Amifampridine
Amikacin
Amiloride
Amiodarone
Amlodipine
Amoxapine
Amphotericin B
Amprenavir
Anagrelide
Apraclonidine
Arbutamine
Arformoterol
Aripiprazole
Arsenic
Artemether/Lumefantrine
Articaine
Aspirin
Astemizole
Atorvastatin
Avacopan
Avanafil
Azatadine
Azithromycin
Baclofen
Basiliximab
Bedaquiline
Benazepril
Benznidazole
Benzthiazide
Bepridil
Betaxolol
Bicalutamide
Blinatumomab
Bortezomib
Bremelanotide
Brivaracetam
Bromocriptine
Brompheniramine
Bupivacaine
Bupropion
Buspirone
Cabergoline
Cabozantinib
Caffeine
Calcitonin
Candesartan
Capecitabine
Captopril
Carbamazepine
Carboplatin
Carfilzomib
Carisoprodol
Carteolol
Carvedilol
Caspofungin
Ceftazidime
Ceftibuten
Ceftizoxime
Ceftolozane & Tazobactam
Celecoxib
Cephapirin
Ceritinib
Cetirizine
Cevimeline
Chloramphenicol
Chlorothiazide
Chlorpheniramine
Chlorthalidone
Cidofovir
Cilostazol
Cinacalcet
Cinoxacin
Ciprofloxacin
Cisplatin
Citalopram
Clemastine
Clonazepam
Clopidogrel
Clozapine
Coagulation Factor IX (Recombinant)
Colistin
Copanlisib
Crisaborole
Cyclamate
Cyclobenzaprine
Cyclophosphamide
Cyclosporine
Cyproheptadine
Dalfampridine
Daptomycin
Dasatinib
Delafloxacin
Delavirdine
Demeclocycline
Denileukin
Desvenlafaxine
Dexamethasone
Dexchlorpheniramine
Dichlorphenamide
Diclofenac
Difelikefalin
Diflunisal
Dihydroergotamine
Diltiazem
Dimenhydrinate
Diphenhydramine
Dipyridamole
Dirithromycin
Disopyramide
Dobutamine
Docetaxel
Dofetilide
Dolutegravir
Donepezil
Doxycycline
Duloxetine
Efavirenz
Eflornithine
Eletriptan
Eltrombopag
Emtricitabine
Enalapril
Enoxacin
Entecavir
Entrectinib
Enzalutamide
Epirubicin
Epoetin Alfa
Epoprostenol
Eprosartan
Ergotamine
Ertapenem
Escitalopram
Esmolol
Esomeprazole
Estazolam
Eszopiclone
Etanercept
Etelcalcetide
Ethoxzolamide
Etravirine
Evolocumab
Exemestane
Ezetimibe
Ezogabine
Famciclovir
Famotidine
Febuxostat
Felbamate
Felodipine
Fentanyl
Ferric Gluconate
Ferumoxsil
Ferumoxytol
Fexinidazole
Fingolimod
Flecainide
Fluconazole
Flucytosine
Fludarabine
Flumazenil
Fluorouracil
Fluoxetine
Flurbiprofen
Flutamide
Fosamprenavir
Foscarnet
Fosfomycin
Fosinopril
Fosphenytoin
Frovatriptan
Fulvestrant
Gabapentin
Gadobenate
Gadobutrol
Gadodiamide
Gadofosveset
Gadopentetate
Gadoteridol
Gadoversetamide
Gadoxetate
Galantamine
Ganciclovir
Gatifloxacin
Gemcitabine
Gemfibrozil
Gentamicin
Glatiramer
Glipizide
Glucarpidase
Glyburide
Grepafloxacin
Griseofulvin
Guanadrel
Guanethidine
Guanfacine
Halofantrine
Histrelin
Human Papillomavirus Vaccine (Bivalent)
Hydrocodone
Hydroflumethiazide
Ibuprofen
Imatinib
Imipenem/Cilastatin
Indapamide
Indinavir
Indomethacin
Infliximab
Inotersen
Insulin
Interferon Alfa
Interferon Beta
Iodixanol
Iohexol
Iopromide
Ioversol

Ipilimumab
Ipratropium
Irbesartan
Isavuconazonium Sulfate
Isoniazid
Isradipine
Ixazomib
Ketoconazole
Ketoprofen
Ketorolac
Labetalol
Lamivudine
Lamotrigine
Lansoprazole
Laronidase
Lasmiditan
Leflunomide
Leucovorin
Leuprolide
Levalbuterol
Levamisole
Levetiracetam
Levobupivacaine
Levofloxacin
Levomilnacipran
Lidocaine
Lisinopril
Lomefloxacin
Loratadine
Lorcainide
Losartan
Lovastatin
Lubiprostone
Maraviroc
MDMA
Meclizine
Meclofenamate
Medroxyprogesterone
Mefloquine
Meloxicam
Menadione
Methazolamide
Methimazole
Methyclothiazide
Methyldopa
Metoclopramide
Metolazone
Metronidazole
Mexiletine
Midodrine
Miglustat
Milnacipran
Miltefosine
Minocycline
Mirtazapine
Mitomycin
Modafinil
Monosodium Glutamate
Moricizine
Moxifloxacin
Nabumetone
Nadolol
Nafarelin
Naproxen
Naratriptan
Nebivolol
Nefazodone
Nelarabine
Nelfinavir
Nesiritide
Nevirapine
Niacin
Niacinamide
Nicardipine
Nifedipine
Nilotinib
Nilutamide
Nisoldipine
Nitrofurantoin
Nivolumab
Nizatidine
Nusinersen
Ofloxacin
Omacetaxine
Omalizumab
Omeprazole
Ondansetron
Oseltamivir
Oxaliplatin
Oxilan
Oxprenolol
Oxycodone
Oxymetazoline
Oxytetracycline
Paclitaxel
Palifermin
Pandemic Influenza Vaccine (H1N1)
Pantoprazole
Paricalcitol
Paroxetine Hydrochloride
Pegaspargase
Pegvisomant
Pembrolizumab
Pentamidine
Pentostatin
Pentoxifylline
Perampanel
Perflutren
Pergolide
Perindopril
Phentermine
Phenytoin
Pindolol
Pirbuterol
Piroxicam
Pizotifen
Plasma (Human) Blood Product
Posaconazole
Pramipexole
Pravastatin
Prazosin
Prednicarbate
Pregabalin
Prilocaine
Procarbazine
Promethazine
Propafenone
Propylthiouracil
Pyridoxine
Quetiapine
Quinapril
Quinupristin/Dalfopristin
Rabeprazole
Ramipril
Ranolazine
Rasagiline
Rasburicase
Reboxetine
Repaglinide
Rifabutin
Rifampin
Riluzole
Rimantadine
Risedronate
Risperidone
Ritonavir
Rivaroxaban
Rivastigmine
Rizatriptan
Rofecoxib
Romiplostim
Ropinirole
Ropivacaine
Rosuvastatin
Rotigotine
Saquinavir
Sertraline
Sibutramine
Sildenafil
Siltuximab
Sincalide
Sipuleucel-T
Sirolimus
Smallpox Vaccine
Sodium Oxybate
Somatropin
Sonidegib
Sotalol
Sparfloxacin
St John's Wort
Stavudine
Streptomycin
Succimer
Sufentanil
Sugammadex
Sulfasalazine
Sulindac
Sumatriptan
Tacrine
Tacrolimus
Tadalafil
Taliglucerase
Tartrazine
Tecovirimat
Tegafur/Gimeracil/Oteracil
Telaprevir
Telbivudine
Telithromycin
Telmisartan
Temozolomide
Terazosin
Terfenadine
Teriflunomide
Teriparatide
Tesamorelin
Testosterone
Tetrabenazine
Tetracycline
Thalidomide
Thallium
Thiamine
Thyrotropin Alfa
Tiagabine
Tibolone
Tiludronate
Timolol
Tinidazole
Tiotropium
Tizanidine
Tobramycin
Tocainide
Tofacitinib
Tolcapone
Tolterodine
Topiramate
Topotecan
Torsemide
Trabectedin
Tramadol
Trandolapril
Trastuzumab
Travoprost
Trazodone
Tretinoin
Triazolam
Trihexyphenidyl
Trimeprazine
Tripelennamine
Triprolidine
Triptorelin
Trovafloxacin
Unoprostone
Valacyclovir
Valdecoxib
Valganciclovir
Valproic Acid
Valsartan
Vardenafil
Venlafaxine
Verapamil
Vernakalant
Vilazodone
Vinblastine
Vincristine
Vinorelbine
Voriconazole
Zaleplon
Ziconotide
Zidovudine
Zileuton
Ziprasidone
Zoledronate
Zolmitriptan
Zolpidem
Zonisamide
Zuclopenthixol

Pemphigus vulgaris

Acetaminophen
Acetazolamide
Aldesleukin
Amoxicillin
Ampicillin
Aspirin
Atorvastatin
Avelumab
Benazepril
Bucillamine
Caffeine
Captopril
Carbamazepine
Carbimazole
Cefaclor
Cefadroxil
Cefazolin
Cefixime
Ceftazidime
Ceftriaxone
Cefuroxime
Cephalexin
Chloroquine
Cilazapril
Clonidine
Cocaine
Cyclophosphamide
Diclofenac
Enalapril
Epinephrine
Famotidine
Fludarabine
Fosinopril

- Garlic
- Glyburide
- Gold & Gold Compounds
- Haloperidol
- Hepatitis B Vaccine
- Heroin
- Hydroxychloroquine
- Ibuprofen
- Imatinib
- Imiquimod
- Influenza Vaccine
- Ingenol Mebutate
- Interferon Alfa
- Interferon Beta
- Isotretinoin
- Ketoprofen
- Latanoprost
- Levamisole
- Levodopa
- Meprobamate
- Metamizole
- Metformin
- Methoxsalen
- Moexipril
- Montelukast
- Mycophenolate
- Nifedipine
- Nivolumab
- Omeprazole
- Pembrolizumab
- Penicillamine
- Phenobarbital
- Phenylbutazone
- Phenytoin
- Piroxicam
- Propranolol
- Psoralens
- Quinapril
- Ramipril
- Rifampin
- Rituximab
- Secukinumab
- Spironolactone
- Timolol
- Tiopronin
- Tocilizumab
- Trandolapril
- Trioxsalen
- Typhoid Vaccine

Peyronie's disease

- Acebutolol
- Betaxolol
- Carvedilol
- Labetalol
- Methotrexate
- Metoprolol
- Nadolol
- Papaverine
- Pindolol
- Propranolol
- Ropinirole
- Timolol

Photosensitivity

- Acamprosate
- Aceclofenac
- Acetohexamide
- Acetylcysteine
- Acitretin
- Acyclovir
- Aldesleukin
- Alectinib
- Allopurinol
- Almotriptan
- Aloe Vera (Gel, Juice, Leaf)
- Alprazolam
- Amantadine
- Amiloride
- Aminolevulinic Acid
- Aminosalicylate Sodium
- Amiodarone
- Amitriptyline
- Amlodipine
- Amoxapine
- Anagrelide
- Apremilast
- Arsenic
- Astemizole
- Atorvastatin
- Atropine Sulfate
- Azatadine
- Azathioprine
- Azilsartan
- Azithromycin
- Benazepril
- Bendroflumethiazide
- Benztropine
- Bergamot
- Bezafibrate
- Bicalutamide
- Brigatinib
- Brompheniramine
- Bumetanide
- Bupropion
- Butabarbital
- Butalbital
- Calcipotriol
- Canagliflozin
- Candesartan
- Capecitabine
- Captopril
- Carbamazepine
- Carisoprodol
- Carvedilol
- Cefazolin
- Ceftazidime
- Celecoxib
- Ceritinib
- Cetirizine
- Cevimeline
- Chlorambucil
- Chlordiazepoxide
- Chlorhexidine
- Chloroquine
- Chlorothiazide
- Chlorpheniramine
- Chlorpromazine
- Chlorpropamide
- Chlortetracycline
- Chlorthalidone
- Ciprofloxacin
- Clemastine
- Clofazimine
- Clofibrate
- Clomipramine
- Clopidogrel
- Clorazepate
- Clozapine
- Co-Trimoxazole
- Cobimetinib
- Colchicine
- Crizotinib
- Cyclamate
- Cyproheptadine
- Dabrafenib
- Dacarbazine
- Daclatasvir
- Danazol
- Dapsone
- Dasatinib
- Demeclocycline
- Desipramine
- Desoximetasone
- Dexamethasone
- Dexchlorpheniramine
- Diazoxide
- Diclofenac
- Diflunisal
- Diltiazem
- Dimenhydrinate
- Diphenhydramine
- Disopyramide
- Docetaxel
- Dong Quai
- Doxepin
- Doxycycline
- Dronedarone
- Duloxetine
- Eculizumab
- Efavirenz
- Enalapril
- Enoxacin
- Epoetin Alfa
- Erlotinib
- Esomeprazole
- Estrogens
- Eszopiclone
- Ethambutol
- Ethionamide
- Etodolac
- Febuxostat
- Felbamate
- Fenofibrate
- Flucytosine
- Fluorouracil
- Fluoxetine
- Flurbiprofen
- Flutamide
- Fluvoxamine
- Fosinopril
- Furazolidone
- Furosemide
- Ganciclovir
- Gatifloxacin
- Gemifloxacin
- Gentamicin
- Ginseng
- Glimepiride
- Glipizide
- Glyburide
- Glycopyrrolate
- Gold & Gold Compounds
- Goldenseal
- Grepafloxacin
- Griseofulvin
- Haloperidol
- Heroin
- Hydralazine
- Hydrochlorothiazide
- Hydroflumethiazide
- Hydroxychloroquine
- Hydroxyurea
- Hydroxyzine
- Hyoscyamine
- Ibuprofen
- Imatinib
- Imipramine
- Indapamide
- Indomethacin
- Interferon Alfa
- Interferon Beta
- Irbesartan
- Irinotecan
- Isocarboxazid
- Isoniazid
- Isotretinoin
- Itraconazole
- Kanamycin
- Ketoconazole
- Ketoprofen
- Ketorolac
- Lamotrigine
- Levofloxacin
- Lisinopril
- Lomefloxacin
- Loncastuximab tesirine
- Loratadine
- Losartan
- Loxapine
- Maprotiline
- Meclizine
- Meclofenamate
- Melatonin
- Meloxicam
- Meprobamate
- Mercaptopurine
- Mesalamine
- Mesoridazine
- Metformin
- Methenamine
- Methotrexate
- Methoxsalen
- Methyclothiazide
- Methyldopa
- Methylphenidate
- Metolazone
- Midostaurin
- Minocycline
- Minoxidil
- Mitomycin
- Moexipril
- Molindone
- Moxifloxacin
- Nabumetone
- Nalidixic Acid
- Naproxen
- Naratriptan
- Nefazodone
- Nifedipine
- Nimesulide
- Nivolumab
- Norfloxacin
- Nortriptyline
- Ofloxacin
- Olanzapine
- Olmesartan
- Omalizumab
- Ombitasvir/Paritaprevir/ Ritonavir
- Oral Contraceptives
- Oxaprozin
- Oxerutins
- Oxytetracycline
- Paclitaxel
- Pantoprazole
- Paroxetine Hydrochloride
- PEG-Interferon
- Pentobarbital
- Pentosan
- Pentostatin
- Phenelzine
- Phenobarbital
- Phenytoin

Pilocarpine
Pimozide
Pirfenidone
Piroxicam
Polythiazide
Porfimer
Pravastatin
Procainamide
Prochlorperazine
Procyclidine
Promazine
Promethazine
Propranolol
Propylthiouracil
Protriptyline
Psoralens
Pyrazinamide
Pyridoxine
Pyrimethamine
Quetiapine
Quinacrine
Quinapril
Quinethazone
Quinidine
Quinine
Rabeprazole
Ramipril
Ranitidine
Regorafenib
Ribavirin
Rifaximin
Risperidone
Ritonavir
Ropinirole
Rosemary
Rucaparib
Rue
Saccharin
Saquinavir
Sarecycline
Scopolamine
Sertraline
Sildenafil
Simeprevir
Simvastatin
Sitagliptin
Smallpox Vaccine
Sofosbuvir
Sotalol
Sparfloxacin
St John's Wort
Streptomycin
Sulfadiazine
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Sulindac
Sumatriptan
Tacrolimus
Tartrazine
Tegafur/Gimeracil/Oteracil
Telmisartan
Tenofovir Disoproxil
Terfenadine
Tetracycline
Thimerosal
Thioguanine
Thioridazine
Thiothixene
Tiagabine
Tiopronin
Tiotropium
Tocilizumab
Tolazamide
Tolbutamide
Tolmetin
Topiramate
Torsemide
Trametinib
Tranylcypromine
Trastuzumab
Trazodone
Tretinoin
Triamterene
Triazolam
Trichlormethiazide
Trifarotene
Trifluoperazine
Trihexyphenidyl
Trimeprazine
Trimethadione
Trimipramine
Trioxsalen
Tripelennamine
Triprolidine
Trovafloxacin
Uracil/Tegafur
Valdecoxib
Valproic Acid
Valsartan
Vandetanib
Vardenafil
Vemurafenib
Venlafaxine
Verapamil
Verteporfin
Vinblastine
Voriconazole
Xipamide
Yarrow
Zalcitabine
Zaleplon
Ziprasidone
Zolmitriptan
Zolpidem

Pigmentation

Acitretin
Adapalene
Afamelanotide
Alendronate
Alitretinoin
Amantadine
Amifostine
Aminolevulinic Acid
Amiodarone
Amitriptyline
Amlodipine
Amoxicillin
Apomorphine
Arformoterol
Arsenic
Asenapine
Asfotase Alfa
Azacitidine
Azathioprine
Azithromycin
Benznidazole
Bergamot
Betaxolol
Bevacizumab
Bimatoprost
Bismuth
Bleomycin
Bortezomib
Budesonide
Bupropion
Busulfan
Cabozantinib
Calcipotriol
Capecitabine
Capsicum
Captopril
Carboplatin
Carmustine
Cefprozil
Ceftriaxone
Cetirizine
Cevimeline
Chlorhexidine
Chloroquine
Chlorotrianisene
Chlorpromazine
Cidofovir
Ciprofloxacin
Cisplatin
Citalopram
Clarithromycin
Clobetasol
Clofazimine
Clomipramine
Clonazepam
Clonidine
Clozapine
Co-Trimoxazole
Cobicistat/Elvitegravir/
Emtricitabine/Tenofovir
Disoproxil
Colistin
Collagen (Bovine)
Cyclophosphamide
Dactinomycin
Dapsone
Dasatinib
Daunorubicin
Deferasirox
Degarelix
Deoxycholic Acid
Desipramine
Dexamethasone
Diazepam
Dicumarol
Diethylstilbestrol
Diltiazem
Docetaxel
Donepezil
Doxorubicin
Doxycycline
Eletriptan
Elotuzumab
Eltrombopag
Emtricitabine
Enoxacin
Epirubicin
Ertapenem
Erythromycin
Esmolol
Estradiol
Estramustine
Estrogens
Eszopiclone
Etoposide
Ezogabine
Fentanyl
Ferric carboxymaltose
(injection)
Finasteride
Fluconazole
Fluorides
Fluorouracil
Fluoxetine
Fluphenazine
Fluticasone Propionate
Fluvoxamine
Foscarnet
Ganciclovir
Gefitinib
Glyburide
Gold & Gold Compounds
Goserelin
Grepafloxacin
Griseofulvin
Guarana
Halobetasol
Haloperidol
Henna
Heroin
Human Papillomavirus (HPV)
Vaccine
Hyaluronic Acid
Hydrochlorothiazide
Hydroquinone
Hydroxychloroquine
Hydroxyurea
Idarubicin
Ifosfamide
Imatinib
Imipramine
Imiquimod
Indapamide
Indinavir
Insulin
Interferon Alfa
Ipilimumab
Irinotecan
Isotretinoin
Ixabepilone
Ixazomib
Ketoconazole
Ketoprofen
Labetalol
Lamivudine
Lapatinib
Latanoprost
Leflunomide
Lenalidomide
Leuprolide
Levetiracetam
Levobupivacaine
Levodopa
Levofloxacin
Levonorgestrel
Levothyroxine
Lidocaine
Linezolid
Lithium
Lomefloxacin
Loxapine
Lycopene
Mechlorethamine
Medroxyprogesterone
Mephenytoin
Mercaptopurine
Mesoridazine
Methamphetamine
Methotrexate
Methoxsalen
Methyldopa
Methysergide
Metoclopramide
Minocycline
Minoxidil

Mirtazapine
Mitomycin
Mitotane
Molindone
Naratriptan
Niacin
Nicorandil
Nicotine
Nifedipine
Nisoldipine
Nitazoxanide
Nitisinone
Nivolumab
Olanzapine
Omacetaxine
Omeprazole
Oral Contraceptives
Orphenadrine
Oxytetracycline
Paclitaxel
Palifermin
Pamidronate
Panitumumab
Pantoprazole
Paromomycin
Paroxetine Hydrochloride
Pazopanib
PEG-Interferon
Pembrolizumab
Pemetrexed
Pentazocine
Pentostatin
Perphenazine
Phenazopyridine
Phenobarbital
Phenolphthalein
Phenytoin
Pimozide
Polidocanol
Porfimer
Prilocaine
Procarbazine
Prochlorperazine
Promazine
Propofol
Propranolol
Psoralens
Pyridoxine
Pyrimethamine
Quinacrine
Quinestrol
Quinidine
Quinine
Rabeprazole
Regorafenib
Ribavirin
Rifabutin
Rifampin
Rifapentine
Risperidone
Ropinirole
Ruxolitinib
Salmeterol
Saquinavir
Sertraline
Setmelanotide
Sildenafil
Siltuximab
Smallpox Vaccine
Sorafenib
Sparfloxacin
Spironolactone
Stanozolol
Sulfadiazine
Sulfasalazine
Sunitinib
Tacrolimus
Tafluprost
Tamoxifen
Tegafur/Gimeracil/Oteracil
Telithromycin
Telmisartan
Terbinafine
Tetracycline
Thioridazine
Thiotepa
Thiothixene
Tiagabine
Tigecycline
Tinidazole
Tolcapone
Topiramate
Trastuzumab
Travoprost
Tretinoin
Triamcinolone
Trifluoperazine
Trioxsalen
Triptorelin
Unoprostone
Uracil/Tegafur
Vandetanib
Venlafaxine
Verapamil
Vinblastine
Vincristine
Vinorelbine
Vitamin A
Voriconazole
Warfarin
Zidovudine
Zinc
Zoledronate

Pityriasis rosea-like eruption

Acetaminophen
Acyclovir
Allopurinol
Ampicillin
Arsenic
Asenapine
Aspirin
Atenolol
BCG Vaccine
Bismuth
Captopril
Clonidine
Clozapine
Codeine
Covid-19 Vaccine, mRNA
Domperidone
Dupilumab
Everolimus
Gold & Gold Compounds
Hydrochlorothiazide
Imatinib
Isotretinoin
Ketotifen
Lamotrigine
Lisinopril
Meprobamate
Metronidazole
Mitomycin
Naproxen
Nimesulide
Nortriptyline
Omeprazole
Ondansetron
Pneumococcal Vaccine
Terbinafine
Tiopronin
Tripelennamine

Pruritus (itching)

Abacavir
Abametapir
Abatacept
Abciximab
Acamprosate
Acebutolol
Acetaminophen
Acetohexamide
Acetylcysteine
Acitretin
Acyclovir
Adalimumab
Adapalene
Adefovir
Afatinib
Albendazole
Albuterol
Aldesleukin
Alefacept
Alemtuzumab
Alendronate
Alfentanil
Alglucerase
Alitretinoin
Allopurinol
Almotriptan
Alogliptin
Alpelisib
Alpha-Lipoic Acid
Alprazolam
Alprostadil
Altretamine
Alvimopan
Amantadine
Amcinonide
Amikacin
Amiloride
Aminoglutethimide
Aminolevulinic Acid
Aminophylline
Aminosalicylate Sodium
Amiodarone
Amitriptyline
Amlodipine
Amodiaquine
Amoxapine
Amoxicillin
Amphotericin B
Ampicillin
Anagrelide
Anastrozole
Anidulafungin
Anthrax Vaccine
Anti-Thymocyte Immunoglobulin (Rabbit)
Apalutamide
Apomorphine
Apraclonidine
Aprepitant
Arsenic
Artemether/Lumefantrine
Artemisia
Artesunate
Articaine
Asciminib
Asfotase Alfa
Asparaginase
Aspartame
Aspirin
Astemizole
Atazanavir
Atenolol
Atezolizumab
Atomoxetine
Atorvastatin
Atovaquone
Atovaquone/Proguanil
Atracurium
Avelumab
Axitinib
Azacitidine
Azathioprine
Azithromycin
Aztreonam
Bacampicillin
Bacitracin
Baclofen
Basiliximab
Becaplermin
Bedaquiline
Belinostat
Belumosudil
Benazepril
Bendamustine
Bendroflumethiazide
Benralizumab
Benzalkonium
Benznidazole
Benzyl Alcohol
Betamethasone
Betaxolol
Bevacizumab
Bexarotene
Bezafibrate
Bicalutamide
Bimatoprost
Bismuth
Black Cohosh
Bleomycin
Boceprevir
Bortezomib
Bosentan
Bosutinib
Boswellia
Botulinum Toxin (A & B)
Brentuximab Vedotin
Brimonidine
Brodalumab
Budesonide
Bumetanide
Bupivacaine
Buprenorphine
Bupropion
Burosumab
Buspirone
Butorphanol
Butterbur
Cabergoline
Caffeine
Calcipotriol
Calcium Hydroxylapatite
Canagliflozin
Capecitabine
Capsicum
Captopril
Carbamazepine
Carbetocin
Carboplatin
Carisoprodol
Carmustine

Carvedilol
Caspofungin
Cefaclor
Cefadroxil
Cefamandole
Cefazolin
Cefdinir
Cefditoren
Cefepime
Cefiderocol
Cefixime
Cefmetazole
Cefonicid
Cefoperazone
Cefotaxime
Cefotetan
Cefoxitin
Cefpodoxime
Cefprozil
Ceftaroline Fosamil
Ceftazidime
Ceftibuten
Ceftizoxime
Ceftobiprole
Ceftolozane & Tazobactam
Ceftriaxone
Cefuroxime
Celecoxib
Cemiplimab
Cenobamate
Cephalexin
Cephalothin
Cephapirin
Cephradine
Certolizumab
Cetirizine
Cetrorelix
Cetuximab
Cevimeline
Chasteberry
Chloral Hydrate
Chlorambucil
Chloramphenicol
Chlordiazepoxide
Chlorhexidine
Chlormezanone
Chloroquine
Chlorothiazide
Chlorpheniramine
Chlorpromazine
Chlorpropamide
Cholestyramine
Ciclopirox
Cidofovir
Cimetidine
Cinoxacin
Ciprofloxacin
Cisplatin
Citalopram
Cladribine
Clarithromycin
Clindamycin
Clobetasol
Clofarabine
Clofazimine
Clofibrate
Clomiphene
Clomipramine
Clonidine
Clopidogrel
Clotrimazole
Cloxacillin
Clozapine
Co-Trimoxazole
Coagulation Factor IX (Recombinant)
Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Alafenamide
Cobimetinib
Cocoa
Codeine
Colchicine
Collagen (Bovine)
Comfrey
Conivaptan
Crisaborole
Cromolyn
Cyanocobalamin
Cyclamate
Cyclobenzaprine
Cyclophosphamide
Cyclosporine
Cytarabine
Dabrafenib
Dacarbazine
Daclatasvir
Daclizumab
Dacomitinib
Dactinomycin
Dalbavancin
Dalteparin
Danaparoid
Danazol
Dapsone
Daptomycin
Darbepoetin Alfa
Darifenacin
Darunavir
Dasatinib
Daunorubicin
Decitabine
Deferasirox
Deferoxamine
Defibrotide
Delafloxacin
Delavirdine
Demeclocycline
Denileukin
Denosumab
Deoxycholic Acid
Desipramine
Desonide
Desoximetasone
Dexamethasone
Dexlansoprazole
Diatrizoate
Diazepam
Diclofenac
Dicloxacillin
Dicumarol
Dicyclomine
Didanosine
Diethylpropion
Diethylstilbestrol
Difelikefalin
Diflunisal
Digoxin
Dihydrocodeine
Dihydrotachysterol
Diltiazem
Dimethyl Fumarate
Diphenhydramine
Diphenoxylate
Dipyridamole
Dirithromycin
Disopyramide
Dobutamine
Docetaxel
Dolasetron
Dolutegravir
Donepezil
Doripenem
Dostarlimab
Doxapram
Doxazosin
Doxepin
Doxercalciferol
Doxorubicin
Doxycycline
Dronedarone
Droperidol
Duloxetine
Durvalumab
Ecallantide
Echinacea
Econazole
Eculizumab
Efavirenz
Eflornithine
Elbasvir & Grazoprevir
Eletriptan
Emicizumab
Emtricitabine
Enalapril
Encorafenib
Enfuvirtide
Enoxacin
Enoxaparin
Entecavir
Enzalutamide
Epinephrine
Epirubicin
Epoetin Alfa
Epoprostenol
Eprosartan
Ergocalciferol
Erlotinib
Ertapenem
Ertugliflozin
Erythromycin
Escitalopram
Esomeprazole
Estazolam
Estramustine
Estrogens
Eszopiclone
Etanercept
Etelcalcetide
Ethambutol
Etidronate
Etodolac
Everolimus
Evolocumab
Exemestane
Exenatide
Ezetimibe
Factor VIII - von Willebrand Factor
Famciclovir
Famotidine
Febuxostat
Felbamate
Felodipine
Fenofibrate
Fenoprofen
Fentanyl
Ferric Gluconate
Ferumoxytol
Fexinidazole
Fidaxomicin
Finafloxacin
Finasteride
Fingolimod
Flecainide
Fluconazole
Fludarabine
Fluocinonide
Fluorides
Fluorouracil
Fluoxetine
Fluphenazine
Flurbiprofen
Fluticasone Propionate
Folic Acid
Follitropin Alfa/Beta
Fondaparinux
Formoterol
Fosamprenavir
Foscarnet
Fosfomycin
Fosinopril
Fosphenytoin
Fostemsavir
Fremanezumab
Frovatriptan
Fulvestrant
Furazolidone
Furosemide
Gabapentin
Gadobenate
Gadobutrol
Gadodiamide
Gadofosveset
Gadopentetate
Gadoteridol
Gadoversetamide
Gadoxetate
Ganciclovir
Gatifloxacin
Gefitinib
Gemcitabine
Gemfibrozil
Gemifloxacin
Gemtuzumab
Gentamicin
Ginseng
Glatiramer
Glecaprevir & Pibrentasvir
Gliclazide
Glimepiride
Glipizide
Glucosamine
Glyburide
Glycopyrrolate
Gold & Gold Compounds
Golimumab
Goserelin
Granulocyte Colony-Stimulating Factor (G-CSF)
Grepafloxacin
Griseofulvin
Guanabenz
Guanfacine
Guselkumab
Halcinonide
Halobetasol
Halofantrine
Halometasone
Haloperidol
Henna
Heparin

Heroin
Histrelin
Human Papillomavirus (HPV) Vaccine
Human Papillomavirus Vaccine (Bivalent)
Hyaluronic Acid
Hydralazine
Hydrochlorothiazide
Hydrocodone
Hydrocortisone
Hydromorphone
Hydroquinone
Hydroxychloroquine
Hydroxyurea
Ibandronate
Ibritumomab
Ibuprofen
Icatibant
Icodextrin
Idursulfase
Imatinib
Imidapril
Imiglucerase
Imipenem/Cilastatin
Imipramine
Imiquimod
Immune Globulin IV
Immune Globulin SC
Indapamide
Indinavir
Indomethacin
Infliximab
Ingenol Mebutate
Insulin
Insulin Glulisine
Interferon Alfa
Interferon Beta
Iobenguane
Iodixanol
Iohexol
Iomeprol
Iopromide
Ioversol
Ipilimumab
Ipratropium
Irbesartan
Irinotecan
Isavuconazonium Sulfate
Isocarboxazid
Isoniazid
Isosorbide Mononitrate
Isotretinoin
Isradipine
Itraconazole
Ivermectin
Ixabepilone
Ixazomib
Ixekizumab
Japanese Encephalitis Vaccine
Kanamycin
Ketamine
Ketoconazole
Ketoprofen
Ketorolac
Ketotifen
Labetalol
Lacosamide
Lamivudine
Lamotrigine
Lanreotide
Lansoprazole
Lapatinib
Latanoprost
Ledipasvir & Sofosbuvir
Leflunomide
Lenalidomide
Lepirudin
Letrozole
Leucovorin
Leuprolide
Levamisole
Levetiracetam
Levobunolol
Levobupivacaine
Levofloxacin
Levomilnacipran
Levothyroxine
Lidocaine
Linagliptin
Lincomycin
Lindane
Linezolid
Linseed
Liraglutide
Lisinopril
Lithium
Lixisenatide
Lomefloxacin
Lonafarnib
Loncastuximab tesirine
Loracarbef
Loratadine
Losartan
Lovastatin
Loxapine
Luliconazole
Lurasidone
Mafenide
Maralixibat
Maraviroc
Mebendazole
Mechlorethamine
Meclofenamate
Medroxyprogesterone
Mefenamic Acid
Mefloquine
Meloxicam
Melphalan
Memantine
Meperidine
Mephenytoin
Mepivacaine
Mepolizumab
Meprobamate
Meropenem
Mesalamine
Mesna
Metamizole
Metformin
Methadone
Methenamine
Methimazole
Methotrexate
Methoxsalen
Methyl salicylate
Methyldopa
Methylprednisolone
Metolazone
Metoprolol
Metronidazole
Mexiletine
Micafungin
Miconazole
Midazolam
Midodrine
Midostaurin
Mifepristone
Milnacipran
Miltefosine
Minocycline
Minoxidil
Mirabegron
Mistletoe
Mitomycin
Mitotane
Mobocertinib
Modafinil
Moexipril
Molindone
Mometasone
Moricizine
Morphine
Moxidectin
Moxifloxacin
Mupirocin
Muromonab-CD3
Mycophenolate
Myrrh
Nabumetone
Nadolol
Nafarelin
Nalbuphine
Nalidixic Acid
Nalmefene
Naloxone
Naltrexone
Naproxen
Naratriptan
Natalizumab
Necitumumab
Nefazodone
Nelfinavir
Neostigmine
Nesiritide
Nevirapine
Niacin
Niacinamide
Nicotine
Nifedipine
Nilotinib
Nilutamide
Nimesulide
Nimodipine
Nintedanib
Nisoldipine
Nitazoxanide
Nitisinone
Nitrofurantoin
Nitrofurazone
Nitroglycerin
Nivolumab
Nizatidine
Norfloxacin
Nystatin
Obeticholic Acid
Octreotide
Ofatumumab
Ofloxacin
Olanzapine
Olaparib
Oliceridine
Olsalazine
Omacetaxine
Omadacycline
Omalizumab
Ombitasvir/Paritaprevir/Ritonavir
Ombitasvir/Paritaprevir/Ritonavir and Dasabuvir
Omega-3 Fatty Acids
Omeprazole
Ondansetron
Oral Contraceptives
Oritavancin
Osimertinib
Oxacillin
Oxaliplatin
Oxaprozin
Oxerutins
Oxilan
Oxybutynin
Oxycodone
Oxymetazoline
Oxymorphone
Oxytetracycline
Ozenoxacin
Paclitaxel
Pafolacianine
Palifermin
Paliperidone
Palonosetron
Pancrelipase
Panitumumab
Pantoprazole
Papaverine
Paricalcitol
Paromomycin
Paroxetine Hydrochloride
Paroxetine Mesylate
Pasireotide
Pazopanib
PEG-Interferon
Pegaspargase
Pegvisomant
Pembrolizumab
Pemetrexed
Penicillamine
Penicillin V
Pentagastrin
Pentamidine
Pentazocine
Pentosan
Pentostatin
Pentoxifylline
Perflutren
Perindopril
Permethrin
Pertuzumab
Pexidartinib hydrochloride
Phenelzine
Phenobarbital
Phenolphthalein
Phenytoin
Pimecrolimus
Pindolol
Pirfenidone
Piroxicam
Plasma (Human) Blood Product
Pneumococcal Vaccine
Podophyllotoxin
Polidocanol
Polypodium Leucotomos
Pomalidomide
Posaconazole
Pralatrexate
Pramipexole
Pravastatin
Praziquantel
Prazosin

Prednicarbate
Prednisolone
Prednisone
Pregabalin
Pretomanid
Prilocaine
Primaquine
Pristinamycin
Probenecid
Procainamide
Procarbazine
Prochlorperazine
Propafenone
Propofol
Propranolol
Propylthiouracil
Protriptyline
Psoralens
Pyrazinamide
Pyrimethamine
Quazepam
Quinacrine
Quinapril
Quinethazone
Quinidine
Quinine
Quinupristin/Dalfopristin
Rabeprazole
Raltegravir
Raltitrexed
Ramipril
Ranitidine
Rasburicase
Regorafenib
Remifentanil
Repaglinide
Retapamulin
Ribavirin
Ribociclib
Rifampin
Rifapentine
Rifaximin
Ripretinib
Risedronate
Risperidone
Ritonavir
Rituximab
Rivaroxaban
Rivastigmine
Rizatriptan
Rocuronium
Rofecoxib
Romidepsin
Ropinirole
Ropivacaine
Rosuvastatin
Rotigotine
Rucaparib
Rufinamide
Saccharin
Sacubitril/Valsartan
Salmeterol
Saquinavir
Sarilumab
Satralizumab
Saxagliptin
Scopolamine
Secukinumab
Segesterone Acetate
Selumetinib
Sertaconazole
Sertraline
Sevelamer
Sevoflurane
Sibutramine
Sildenafil
Siltuximab
Simeprevir
Simvastatin
Sirolimus
Smallpox Vaccine
Sodium Iodide I-131
Sodium Oxybate
Sofosbuvir
Sofosbuvir & Velpatasvir
Sonidegib
Sorafenib
Sotalol
Sparfloxacin
Spectinomycin
Spinosad
Spironolactone
St John's Wort
Streptokinase
Streptomycin
Streptozocin
Succimer
Succinylcholine
Sucralfate
Sufentanil
Sugammadex
Sulfadiazine
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Sulfites
Sulindac
Sumatriptan
Sunitinib
Tacrine
Tacrolimus
Tadalafil
Taliglucerase
Talimogene Laherparepvec
Tamoxifen
Tartrazine
Tazarotene
Tea Tree
Tecovirimat
Tedizolid
Tegafur/Gimeracil/Oteracil
Tegaserod
Teicoplanin
Telaprevir
Telavancin
Telbivudine
Telithromycin
Telmisartan
Temozolomide
Temsirolimus
Tepotinib
Terazosin
Terbinafine
Terbutaline
Terconazole
Teriflunomide
Tesamorelin
Testosterone
Tetracycline
Thalidomide
Thiabendazole
Thiamine
Thioguanine
Thiopental
Thiotepa
Thyrotropin Alfa
Tiagabine
Tibolone
Ticlopidine
Tigecycline
Tiludronate
Timolol
Tinidazole
Tinzaparin
Tiopronin
Tipranavir
Tizanidine
Tobramycin
Tocainide
Tocilizumab
Tofacitinib
Tolazamide
Tolbutamide
Tolcapone
Tolmetin
Tolterodine
Tolvaptan
Topiramate
Tositumomab & Iodine[131]
Tosufloxacin
Tramadol
Trametinib
Trandolapril
Tranexamic Acid
Trastuzumab
Trastuzumab Emtansine
Travoprost
Trazodone
Treprostinil
Tretinoin
Triamcinolone
Triazolam
Triclabendazole
Trifarotene
Trimeprazine
Trimethadione
Trimethoprim
Trimetrexate
Trioxsalen
Triprolidine
Triptorelin
Troleandomycin
Trovafloxacin
Typhoid Vaccine
Ulipristal
Unoprostone
Ursodiol
Ustekinumab
Valdecoxib
Valganciclovir
Valproic Acid
Valrubicin
Valsartan
Vancomycin
Vandetanib
Vardenafil
Varenicline
Varicella Vaccine
Vedolizumab
Vemurafenib
Venlafaxine
Verapamil
Vernakalant
Vestronidase
Vincristine
Vitamin A
Voriconazole
Vorinostat
Vortioxetine
Warfarin
Zalcitabine
Zaleplon
Ziconotide
Zidovudine
Zileuton
Zolmitriptan
Zolpidem
Zonisamide
Zoster Vaccine
Zuclopenthixol

Pseudolymphoma

Adalimumab
Aldesleukin
Allopurinol
Alprazolam
Amitriptyline
Amlodipine
Aspirin
Atenolol
Black Cohosh
Bromocriptine
Captopril
Carbamazepine
Cefixime
Cefuroxime
Chlorpromazine
Cimetidine
Clarithromycin
Clonazepam
Clonidine
Co-Trimoxazole
Cyclosporine
Dapsone
Desipramine
Diclofenac
Diflunisal
Diltiazem
Doxepin
Estrogens
Etanercept
Ethosuximide
Ethotoin
Fluorouracil
Fluoxetine
Fosinopril
Furosemide
Gemcitabine
Gemfibrozil
Glatiramer
Gold & Gold Compounds
Hepatitis A Vaccine
Hepatitis B Vaccine
Human Papillomavirus (HPV) Vaccine
Hydrochlorothiazide
Ibuprofen
Imatinib
Indomethacin
Infliximab
Interferon Alfa
Ketoprofen
Lamotrigine
Leucovorin
Lisinopril
Lithium
Lorazepam
Losartan
Lovastatin
Methotrexate
Methylphenidate
Metoprolol

Mexiletine
Nabumetone
Naproxen
Nitrofurantoin
Nizatidine
Oxaliplatin
Oxaprozin
Perphenazine
Phenobarbital
Phenytoin
Procainamide
Ranitidine
Sulfamethoxazole
Sulfasalazine
Sulindac
Tamoxifen
Terfenadine
Thioridazine
Valproic Acid
Valsartan
Zoledronate

Pseudoporphyria
Acitretin
Amiodarone
Ampicillin
Ampicillin/Sulbactam
Aspirin
Bumetanide
Carisoprodol
Cefepime
Celecoxib
Chlorthalidone
Ciprofloxacin
Cyclosporine
Diclofenac
Diflunisal
Fluorouracil
Flutamide
Furosemide
Hydrochlorothiazide
Ibuprofen
Imatinib
Indomethacin
Isotretinoin
Ketoprofen
Mefenamic Acid
Metformin
Nabumetone
Nalidixic Acid
Naproxen
Olanzapine
Oral Contraceptives
Oxaprozin
Piroxicam
Psoralens
Pyridoxine
Quinidine
Rofecoxib
Tetracycline
Torsemide
Triamterene
Voriconazole

Psoriasis
Abatacept
Acebutolol
Aceclofenac
Acetazolamide
Acitretin
Adalimumab
Aldesleukin
Aminoglutethimide
Amiodarone
Amoxicillin
Ampicillin
Anakinra
Apremilast
Arsenic
Aspirin
Atenolol
Atezolizumab
Avelumab
Baricitinib
BCG Vaccine
Betamethasone
Bisoprolol
Bupropion
Calcipotriol
Candesartan
Captopril
Carbamazepine
Carvedilol
Certolizumab
Cetuximab
Chlorambucil
Chloroquine
Chlorthalidone
Cimetidine
Clarithromycin
Clonidine
Clopidogrel
Co-Trimoxazole
Cyclosporine
Dabrafenib
Daclizumab
Diclofenac
Digoxin
Diltiazem
Dipyridamole
Docetaxel
Donepezil
Doxorubicin
Doxycycline
Dupilumab
Durvalumab
Efalizumab
Eletriptan
Enalapril
Esmolol
Etanercept
Fexofenadine
Flecainide
Fluorouracil
Fluoxetine
Fluoxymesterone
Foscarnet
Gemfibrozil
Glyburide
Gold & Gold Compounds
Golimumab
Granulocyte Colony-Stimulating Factor (G-CSF)
Henna
Human Papillomavirus (HPV) Vaccine
Hydroxychloroquine
Hydroxyurea
Ibuprofen
Imatinib
Imiquimod
Indomethacin
Infliximab
Interferon Alfa
Interferon Beta
Interferon Gamma
Ipilimumab
Ketoprofen
L-Methylfolate
Labetalol
Lapatinib
Letrozole
Levamisole
Levetiracetam
Levobetaxolol
Lisinopril
Lithium
Losartan
MDMA
Meclofenamate
Mefloquine
Meloxicam
Mesalamine
Methicillin
Methotrexate
Methyltestosterone
Metipranolol
Metoprolol
Modafinil
Morphine
Mycophenolate
Nadolol
Nilotinib
Nivolumab
Olanzapine
Ombitasvir/Paritaprevir/Ritonavir
Omeprazole
Oral Contraceptives
Oxprenolol
Paroxetine Hydrochloride
PEG-Interferon
Pembrolizumab
Penicillamine
Pentostatin
Perindopril
Phenylbutazone
Pindolol
Potassium Iodide
Prednisolone
Primaquine
Propafenone
Propranolol
Quinacrine
Quinidine
Rabeprazole
Ramipril
Ranitidine
Ribavirin
Risperidone
Ritonavir
Rituximab
Rivastigmine
Rofecoxib
Ropinirole
Saquinavir
Secukinumab
Sertraline
Siltuximab
Sitagliptin
Sorafenib
Sotalol
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Tacrine
Tazarotene
Telmisartan
Terbinafine
Terfenadine
Teriflunomide
Testosterone
Tetracycline
Thalidomide
Thioguanine
Tiagabine
Timolol
Tocilizumab
Tofacitinib
Trazodone
Urapidil
Ustekinumab
Valdecoxib
Vedolizumab
Venlafaxine
Voriconazole

Purpura
Acenocoumarol
Acetaminophen
Acetazolamide
Acitretin
Adalimumab
Aldesleukin
Alemtuzumab
Allopurinol
Alteplase
Aminocaproic Acid
Aminoglutethimide
Aminolevulinic Acid
Aminosalicylate Sodium
Amiodarone
Amitriptyline
Amlodipine
Amphotericin B
Ampicillin
Anastrozole
Anti-Thymocyte Globulin (Equine)
Arsenic
Artemether/Lumefantrine
Aspartame
Aspirin
Azacitidine
Azathioprine
Azilsartan
Aztreonam
Bendamustine
Beta-Carotene
Betaxolol
Bevacizumab
Bortezomib
Botulinum Toxin (A & B)
Buspirone
Busulfan
Butabarbital
Butalbital
Capecitabine
Captopril
Carbamazepine
Carbenicillin
Carteolol
Carvedilol
Cefaclor
Cefoxitin
Celecoxib
Cephalothin
Cetirizine
Chloral Hydrate
Chlorambucil
Chloramphenicol
Chlordiazepoxide
Chlorothiazide
Chlorpromazine
Chlorpropamide

Chlorthalidone
Cilostazol
Cinacalcet
Ciprofloxacin
Citalopram
Cladribine
Clarithromycin
Clidinium
Clofibrate
Clomiphene
Clomipramine
Clonazepam
Clopidogrel
Clozapine
Co-Trimoxazole
Cocaine
Creatine
Cycloserine
Cyclosporine
Cytarabine
Dabigatran
Danazol
Dapsone
Delavirdine
Desipramine
Diazepam
Diclofenac
Dicumarol
Diethylpropion
Diethylstilbestrol
Digoxin
Diltiazem
Diphenhydramine
Dipyridamole
Disopyramide
Disulfiram
Donepezil
Doxazosin
Doxepin
Doxorubicin
Doxycycline
Drotrecogin Alfa
Duloxetine
Enalapril
Enoxacin
Enoxaparin
Entacapone
Ephedrine
Eprosartan
Erlotinib
Escitalopram
Estazolam
Estramustine
Estrogens
Ethacrynic Acid
Ethambutol
Ethchlorvynol
Ethionamide
Ethosuximide
Ethotoin
Famotidine
Febuxostat
Felodipine
Fenoprofen
Fentanyl
Flucloxacillin
Fluconazole
Fluoxetine
Fluvoxamine
Fondaparinux
Frovatriptan
Furosemide
Gabapentin
Galantamine
Gefitinib
Gentamicin
Glatiramer
Glipizide
Glyburide
Gold & Gold Compounds
Golimumab
Grapefruit Juice
Griseofulvin
Guanfacine
Heparin
Hepatitis B Vaccine
Heroin
Histrelin
Horse Chestnut (Bark, Flower, Leaf, Seed)
Hyaluronic Acid
Hydralazine
Hydrochlorothiazide
Hydrocortisone
Hydroxyurea
Hydroxyzine
Ibritumomab
Ibuprofen
Imatinib
Imipramine
Indomethacin
Influenza Vaccine
Insulin
Interferon Alfa
Interferon Beta
Iohexol
Ipodate
Isoniazid
Isotretinoin
Itraconazole
Ketoconazole
Ketoprofen
Ketorolac
Labetalol
Lamotrigine
Leflunomide
Lenalidomide
Leuprolide
Levamisole
Levobupivacaine
Levodopa
Levofloxacin
Lidocaine
Lincomycin
Lindane
Linezolid
Lisinopril
Lithium
Lomefloxacin
Loratadine
Lovastatin
Maprotiline
Measles, Mumps & Rubella (MMR) Virus Vaccine
Mecasermin
Mechlorethamine
Meclofenamate
Medroxyprogesterone
Mefloquine
Meloxicam
Mephenytoin
Meprobamate
Metformin
Methimazole
Methoxsalen
Methyldopa
Methylphenidate
Metoclopramide
Metolazone
Miconazole
Minocycline
Mirabegron
Mitomycin
Mitoxantrone
Montelukast
Nalidixic Acid
Naproxen
Naratriptan
Natalizumab
Nifedipine
Nimesulide
Nitrofurantoin
Nitroglycerin
Octreotide
Olanzapine
Omacetaxine
Oral Contraceptives
Osimertinib
Oxaliplatin
Oxcarbazepine
Oxytetracycline
Paroxetine Hydrochloride
Pegaspargase
Pembrolizumab
Penicillamine
Pentagastrin
Pentobarbital
Pentosan
Pentostatin
Perindopril
Phenobarbital
Phensuximide
Phenytoin
Pirbuterol
Piroxicam
Plicamycin
Pravastatin
Prednisone
Prilocaine
Procainamide
Prochlorperazine
Promethazine
Propafenone
Propranolol
Propylthiouracil
Pyrimethamine
Quinidine
Quinine
Ramipril
Ranitidine
Rapacuronium
Rifampin
Rifapentine
Risperidone
Rituximab
Rivastigmine
Ropinirole
Rotigotine
Ruxolitinib
Sertraline
Sildenafil
Simvastatin
Sirolimus
Smallpox Vaccine
Streptokinase
Streptomycin
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Sulindac
Tacrine
Tacrolimus
Tadalafil
Tamoxifen
Tartrazine
Tecovirimat
Teicoplanin
Tetracycline
Thalidomide
Thiamine
Thiopental
Ticlopidine
Tinzaparin
Tizanidine
Tolbutamide
Tolmetin
Topiramate
Topotecan
Torsemide
Tosufloxacin
Trichlormethiazide
Trimethadione
Tripelennamine
Valacyclovir
Valproic Acid
Vancomycin
Varicella Vaccine
Vasopressin
Verapamil
Voriconazole
Warfarin
Zolpidem
Zonisamide

Raynaud's phenomenon

Acebutolol
Amphotericin B
Aripiprazole
Arsenic
Atenolol
Bisoprolol
Bleomycin
Bromocriptine
Carboplatin
Carteolol
Cisplatin
Clonidine
Cocaine
Cyclosporine
Dextroamphetamine
Dopamine
Doxorubicin
Estrogens
Ethosuximide
Fluoxetine
Gemcitabine
Gemfibrozil
Hepatitis B Vaccine
Human Papillomavirus (HPV) Vaccine
Hydroxyurea
Iloprost
Interferon Alfa
Interferon Beta
Isotretinoin
Labetalol
Lamotrigine
Leflunomide
Methotrexate
Methylphenidate
Metoprolol
Minocycline

Nadolol
Octreotide
Phentermine
Pindolol
Propofol
Propranolol
Quinine
Ribavirin
Rofecoxib
Sotalol
Spironolactone
Sulfasalazine
Sulindac
Sumatriptan
Tegafur/Gimeracil/Oteracil
Tegaserod
Telmisartan
Tenofovir Disoproxil
Teriflunomide
Thiothixene
Timolol
Uracil/Tegafur
Vinblastine
Vincristine
Yohimbine
Zolmitriptan

Rhabdomyolysis

Abacavir
Abiraterone
Acetaminophen
Aldesleukin
Allopurinol
Alprazolam
Aminocaproic Acid
Aminophylline
Amiodarone
Amisulpride
Amitriptyline
Amlodipine
Amobarbital
Amoxicillin
Amphotericin B
Aprobarbital
Aspirin
Atorvastatin
Atropine Sulfate
Azacitidine
Azathioprine
Azithromycin
Baclofen
Benztropine
Bezafibrate
Buprenorphine
Bupropion
Butabarbital
Butalbital
Cabozantinib
Caffeine
Carbamazepine
Carbimazole
Chlorpromazine
Cholestyramine
Ciprofibrate
Ciprofloxacin
Cisplatin
Citalopram
Clarithromycin
Clofibrate
Clopidogrel
Clozapine
Co-Trimoxazole
Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Disoproxil
Cocaine
Colchicine
Colistin
Creatine
Cyclosporine
Cytarabine
Dabrafenib
Dacarbazine
Danazol
Daptomycin
Dasatinib
Deferasirox
Delavirdine
Desipramine
Dexketoprofen
Dextroamphetamine
Diatrizoate
Diazepam
Diclofenac
Didanosine
Digoxin
Diltiazem
Diphenhydramine
Distigmine
Dolutegravir
Domperidone
Doxepin
Droperidol
Enflurane
Enoxacin
Epinephrine
Erlotinib
Erythromycin
Esomeprazole
Fenbufen
Fenofibrate
Fluconazole
Fluorouracil
Fluoxetine
Fluphenazine
Fluprednisolone
Fluvastatin
Fusidic Acid
Gabapentin
Gatifloxacin
Gemcitabine
Gemfibrozil
Granulocyte Colony-Stimulating Factor (G-CSF)
Grapefruit Juice
Haloperidol
Halothane
Heroin
Hydroxychloroquine
Ibuprofen
Imatinib
Infliximab
Influenza Vaccine
Interferon Alfa
Interferon Beta
Ipilimumab
Isoflurane
Isoniazid
Isotretinoin
Itraconazole
Ketoconazole
Labetalol
Lacosamide
Lamivudine
Lamotrigine
Leflunomide
Lenalidomide
Leuprolide
Levetiracetam
Levodopa
Levofloxacin
Levomepromazine
Licorice
Lindane
Linezolid
Lithium
Lorazepam
Lovastatin
Loxapine
Lurasidone
Maraviroc
MDMA
Meloxicam
Melphalan
Mephobarbital
Meprobamate
Metformin
Methadone
Methamphetamine
Methohexital
Metoprolol
Minocycline
Mirtazapine
Mizoribine
Molindone
Morphine
Moxifloxacin
Myrrh
Naltrexone
Naproxen
Nefazodone
Nelarabine
Nelfinavir
Nitrazepam
Nivolumab
Norfloxacin
Ofloxacin
Olanzapine
Omeprazole
Paclitaxel
Palbociclib
Paliperidone
Pancuronium
Pantoprazole
PEG-Interferon
Pembrolizumab
Pemetrexed
Pemoline
Pentamidine
Pentobarbital
Perphenazine
Phendimetrazine
Phenelzine
Phenobarbital
Phenylpropanolamine
Phenytoin
Pioglitazone
Pravastatin
Pregabalin
Primidone
Propofol
Protamine Sulfate
Protriptyline
Pyrazinamide
Quetiapine
Quinacrine
Quinine
Rabeprazole
Raltegravir
Ranolazine
Red Rice Yeast
Ribavirin
Rifampin
Rifaximin
Risperidone
Ritodrine
Ritonavir
Rosuvastatin
Sacubitril/Valsartan
Saw Palmetto
Secobarbital
Sertraline
Sevoflurane
Sildenafil
Simeprevir
Simvastatin
Sirolimus
Sitagliptin
Sofosbuvir & Velpatasvir
Sonidegib
Sotalol
St John's Wort
Stanozolol
Streptokinase
Streptomycin
Succinylcholine
Sulfamethoxazole
Sulfasalazine
Sulpiride
Sunitinib
Tacrolimus
Tasonermin
Tenecteplase
Tenofovir Disoproxil
Terbinafine
Terbutaline
Teriflunomide
Terlipressin
Thiopental
Ticagrelor
Tolcapone
Tolvaptan
Trabectedin
Trametinib
Trandolapril
Tranylcypromine
Trientine
Trifluoperazine
Trimethoprim
Trospium
Valproic Acid
Vasopressin
Venlafaxine
Verapamil
Vinblastine
Voriconazole
Warfarin
Ziconotide
Ziprasidone

Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN)

Abacavir
Aceclofenac
Acetaminophen
Acetazolamide
Acyclovir
Adalimumab
Adefovir
Afatinib
Albendazole

Albuterol
Aldesleukin
Alfuzosin
Allopurinol
Alogliptin
Alprostadil
Amifostine
Aminophylline
Aminosalicylate Sodium
Amiodarone
Amitriptyline
Amlodipine
Amobarbital
Amoxapine
Amoxicillin
Ampicillin
Amprenavir
Anthrax Vaccine
Apalutamide
Aripiprazole
Arsenic
Asparaginase
Aspirin
Astemizole
Atorvastatin
Atovaquone
Atovaquone/Proguanil
Atropine Sulfate
Azathioprine
Azithromycin
Aztreonam
BCG Vaccine
Bendamustine
Benznidazole
Benzydamine
Bezafibrate
Bleomycin
Bortezomib
Bosutinib
Bromfenac
Bucillamine
Bupropion
Busulfan
Butabarbital
Butalbital
Cabergoline
Capecitabine
Captopril
Carbamazepine
Carbenicillin
Carvedilol
Caspofungin
Cefaclor
Cefadroxil
Cefamandole
Cefazolin
Cefdinir
Cefepime
Cefixime
Cefmetazole
Cefonicid
Cefoperazone
Cefotaxime
Cefotetan
Cefoxitin
Cefpodoxime
Cefprozil
Ceftazidime
Ceftibuten
Ceftizoxime
Ceftriaxone
Cefuroxime
Celecoxib
Cephalexin
Cephalothin
Cephapirin
Cephradine
Cetuximab
Chlorambucil
Chloramphenicol
Chlordiazepoxide
Chlormezanone
Chloroquine
Chlorpromazine
Chlorpropamide
Chlorthalidone
Cilostazol
Cimetidine
Cinnarizine
Ciprofloxacin
Cisplatin
Cladribine
Clarithromycin
Clindamycin
Clobazam
Clofibrate
Clomiphene
Clopidogrel
Cloxacillin
Clozapine
Co-Trimoxazole
Cobimetinib
Cocaine
Codeine
Colchicine
Cyclophosphamide
Cycloserine
Cyclosporine
Cytarabine
Danazol
Dapsone
Darunavir
Deflazacort
Delavirdine
Demeclocycline
Denileukin
Dexamethasone
Dextroamphetamine
Diatrizoate
Diclofenac
Dicloxacillin
Didanosine
Diflunisal
Diltiazem
Dimenhydrinate
Diphenhydramine
Dipyridamole
Disulfiram
Docetaxel
Dorzolamide
Doxycycline
Dronedarone
Duloxetine
Efavirenz
Enalapril
Enoxacin
Ephedrine
Erythromycin
Eslicarbazepine
Ethambutol
Ethosuximide
Etidronate
Etodolac
Etoposide
Etoricoxib
Famotidine
Felbamate
Fenbufen
Fenofibrate
Fenoprofen
Fexofenadine
Flucloxacillin
Fluconazole
Fludarabine
Fluoxetine
Fluphenazine
Flurazepam
Flurbiprofen
Fluvoxamine
Foscarnet
Furosemide
Gabapentin
Galantamine
Gefitinib
Gemcitabine
Gemeprost
Gentamicin
Ginkgo Biloba
Ginseng
Glipizide
Gold & Gold Compounds
Grepafloxacin
Griseofulvin
Heparin
Heroin
Human Papillomavirus (HPV) Vaccine
Hydralazine
Hydrochlorothiazide
Hydroxychloroquine
Ibandronate
Ibuprofen
Idelalisib
Imatinib
Imipenem/Cilastatin
Imiquimod
Immune Globulin IV
Indapamide
Indinavir
Indomethacin
Infliximab
Iohexol
Ipilimumab
Isoniazid
Isotretinoin
Itraconazole
Ivermectin
Ixazomib
Ketoprofen
Ketorolac
Lacosamide
Lamivudine
Lamotrigine
Lansoprazole
Latanoprost
Leflunomide
Lenalidomide
Letrozole
Levamisole
Levetiracetam
Levofloxacin
Lidocaine
Lincomycin
Linezolid
Lomefloxacin
Lomustine
Loracarbef
Lorazepam
Lovastatin
Lymecycline
Maprotiline
Mebendazole
Mechlorethamine
Meclofenamate
Medroxyprogesterone
Mefenamic Acid
Mefloquine
Meloxicam
Meperidine
Mephenytoin
Mephobarbital
Meprobamate
Mercaptopurine
Meropenem
Mesna
Metamizole
Methamphetamine
Methazolamide
Methimazole
Methotrexate
Methsuximide
Methyldopa
Methylprednisolone
Metolazone
Metronidazole
Mexiletine
Miltefosine
Minocycline
Minoxidil
Mirtazapine
Mizoribine
Modafinil
Moxifloxacin
Mupirocin
Nabumetone
Nalidixic Acid
Naproxen
Neomycin
Nevirapine
Nifedipine
Nimesulide
Nitrofurantoin
Nivolumab
Norfloxacin
Nystatin
Ofloxacin
Omeprazole
Ondansetron
Oral Contraceptives
Oseltamivir
Osimertinib
Oxacillin
Oxaprozin
Oxazepam
Oxcarbazepine
Paclitaxel
Palbociclib
Panitumumab
Pantoprazole
Papaverine
PEG-Interferon
Pembrolizumab
Pemetrexed
Penicillamine
Penicillin G
Penicillin V
Pentamidine
Pentazocine
Pentobarbital
Peplomycin
Phenobarbital
Phenolphthalein

Phenylbutazone
Phenytoin
Piroxicam
Plicamycin
Prednisolone
Primidone
Pristinamycin
Procarbazine
Prochlorperazine
Promethazine
Propranolol
Propylthiouracil
Pyridoxine
Pyrimethamine
Quinidine
Quinine
Raltegravir
Ramipril
Ranitidine
Regorafenib
Reserpine
Ribavirin
Ribociclib
Rifampin
Rifaximin
Risedronate
Ritodrine
Rituximab
Rofecoxib
Secobarbital
Sertraline
Sibutramine
Sitagliptin
Smallpox Vaccine
Sofosbuvir
Sorafenib
Stavudine
Streptomycin
Streptozocin
Strontium Ranelate
Sulfacetamide
Sulfadiazine
Sulfadoxine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Sulindac
Sunitinib
Tamoxifen
Tegafur/Gimeracil/Oteracil
Teicoplanin
Telaprevir
Temozolomide
Tenofovir Disoproxil
Terbinafine
Terconazole
Teriflunomide
Tetracycline
Tetrazepam
Thalidomide
Thiabendazole
Thiopental
Thioridazine
Ticlopidine
Tigecycline
Tiludronate
Timolol
Tocainide
Tolbutamide
Tolmetin
Torsemide
Trimethadione
Trimethoprim
Trovafloxacin
Valdecoxib
Valproic Acid
Vancomycin
Vandetanib
Varicella Vaccine
Vemurafenib
Venlafaxine
Verapamil
Vinorelbine
Vitamin A
Voriconazole
Warfarin
Zidovudine
Zoledronate
Zonisamide

Tinnitus

Acamprosate
Acetaminophen
Acetazolamide
Acitretin
Adalimumab
Almotriptan
Amikacin
Amitriptyline
Anagrelide
Aprepitant
Arsenic
Artemether/Lumefantrine
Artesunate
Aspirin
Atorvastatin
Avanafil
Azithromycin
Baclofen
Bedaquiline
Betaxolol
Bismuth
Bleomycin
Bortezomib
Botulinum Toxin (A & B)
Bupropion
Carbimazole
Carboplatin
Carvedilol
Cefpodoxime
Chlorambucil
Chloramphenicol
Chloroquine
Chlorpromazine
Cilostazol
Ciprofloxacin
Cisplatin
Citalopram
Clarithromycin
Clindamycin
Clomipramine
Colistin
Cyclobenzaprine
Cycloserine
Cyclosporine
Dasatinib
Daunorubicin
Deferoxamine
Degarelix
Delafloxacin
Desvenlafaxine
Devil's Claw
Dexamethasone
Dexlansoprazole
Doxepin
Doxycycline
Dronabinol
Duloxetine
Eletriptan
Elotuzumab
Eprosartan
Erlotinib
Erythromycin
Escitalopram
Eslicarbazepine
Esomeprazole
Eszopiclone
Etanercept
Ethambutol
Etoposide
Febuxostat
Frovatriptan
Gadodiamide
Gadoteridol
Gadoversetamide
Gentamicin
Glatiramer
Halofantrine
Hepatitis B Vaccine
Hydroxychloroquine
Ibuprofen
Imipramine
Indomethacin
Interferon Alfa
Isavuconazonium Sulfate
Isoniazid
Kanamycin
Ketorolac
Lapatinib
Lenalidomide
Levobetaxolol
Levofloxacin
Lidocaine
Lofexidine
Mefloquine
Meloxicam
Mesalamine
Methyl salicylate
Metronidazole
Minocycline
Moexipril
Moxifloxacin
Muromonab-CD3
Nabumetone
Nadolol
Naproxen
Nitroprusside
Omacetaxine
Pamidronate
Paromomycin
PEG-Interferon
Perflutren
Phenelzine
Piroxicam
Propylthiouracil
Quinine
Rabeprazole
Ranitidine
Ranolazine
Ribavirin
Rifaximin
Rivastigmine
Ropivacaine
Rotigotine
Ruxolitinib
Salsalate
Sarecycline
Sertraline
Sildenafil
Sirolimus
Sodium Oxybate
Sorafenib
St John's Wort
Sumatriptan
Tacrolimus
Tadalafil
Teicoplanin
Tetracycline
Tiagabine
Tobramycin
Tramadol
Triptorelin
Valdecoxib
Valproic Acid
Vancomycin
Vardenafil
Venlafaxine
Vigabatrin
Vinblastine
Vincristine
Voriconazole
Zaleplon
Ziconotide
Ziprasidone
Zolpidem
Zonisamide

Urticaria

Abatacept
Acamprosate
Acarbose
Acebutolol
Aceclofenac
Acetaminophen
Acetohexamide
Acetylcysteine
Acyclovir
Adalimumab
Albendazole
Albiglutide
Albuterol
Alclometasone
Aldesleukin
Alefacept
Alemtuzumab
Alendronate
Alfentanil
Alglucerase
Alglucosidase Alfa
Alirocumab
Allopurinol
Alpha-Lipoic Acid
Alprazolam
Alprostadil
Alteplase
Amcinonide
Aminolevulinic Acid
Aminophylline
Aminosalicylate Sodium
Amiodarone
Amlodipine
Amobarbital
Amodiaquine
Amoxapine
Amoxicillin
Amphotericin B
Ampicillin
Anagrelide
Anakinra
Anidulafungin
Anistreplase
Anthrax Vaccine
Anti-Thymocyte Globulin (Equine)

Aprepitant
Arsenic
Artemether/Lumefantrine
Artesunate
Artichoke
Asciminib
Asfotase Alfa
Asparaginase
Asparaginase *Erwinia chrysanthemi*
Aspartame
Aspirin
Astemizole
Atenolol
Atorvastatin
Atovaquone/Proguanil
Atracurium
Atropine Sulfate
Avelumab
Azacitidine
Azathioprine
Azithromycin
Aztreonam
Bacitracin
BCG Vaccine
Benazepril
Benralizumab
Benznidazole
Bepotastine
Betamethasone
Bezafibrate
Bictegravir/Emtricitabine/Tenofovir Alafenamide
Bismuth
Bosutinib
Brinzolamide
Brodalumab
Bumetanide
Bupropion
Buspirone
Busulfan
Butorphanol
Caffeine
Calcipotriol
Calcitonin
Canagliflozin
Capsicum
Captopril
Caraway
Carbamazepine
Carbenicillin
Carboplatin
Carisoprodol
Caspofungin
Cefaclor
Cefadroxil
Cefamandole
Cefazolin
Cefdinir
Cefditoren
Cefepime
Cefixime
Cefmetazole
Cefonicid
Cefoperazone
Cefotaxime
Cefotetan
Cefpodoxime
Cefprozil
Ceftaroline Fosamil
Ceftazidime
Ceftibuten
Ceftizoxime
Ceftolozane & Tazobactam
Ceftriaxone
Cefuroxime
Celecoxib
Cephalexin
Cephalothin
Cephapirin
Cephradine
Certolizumab
Cetirizine
Chasteberry
Chloral Hydrate
Chlorambucil
Chloramphenicol
Chlordiazepoxide
Chlorhexidine
Chloroquine
Chlorothiazide
Chlorpromazine
Chlorpropamide
Chlorthalidone
Chlorzoxazone
Cidofovir
Cilostazol
Cimetidine
Cinoxacin
Ciprofloxacin
Cisplatin
Clarithromycin
Clemastine
Clindamycin
Clioquinol
Clofibrate
Clomiphene
Clomipramine
Clonidine
Clopidogrel
Clorazepate
Cloxacillin
Clozapine
Co-Trimoxazole
Coagulation Factor IX (Recombinant)
Cocaine
Codeine
Colchicine
Colestipol
Crisaborole
Cromolyn
Cyanocobalamin
Cyclamate
Cyclobenzaprine
Cyclophosphamide
Cycloserine
Cyclosporine
Cysteamine
Cytarabine
Dacarbazine
Daclizumab
Dalbavancin
Dapagliflozin
Dapsone
Darunavir
Dasatinib
Daunorubicin
Decitabine
Deferasirox
Deferoxamine
Deflazacort
Degarelix
Delafloxacin
Delavirdine
Deoxycholic Acid
Desipramine
Desloratadine
Dexamethasone
Dexlansoprazole
Dextroamphetamine
Diazepam
Diclofenac
Dicloxacillin
Dicumarol
Diethylstilbestrol
Diflunisal
Digoxin
Dihydrocodeine
Diltiazem
Dimenhydrinate
Dimethyl Fumarate
Dinutuximab
Diphenoxylate
Dipyridamole
Dirithromycin
Disulfiram
Docetaxel
Donepezil
Doxacurium
Doxazosin
Doxorubicin
Doxycycline
Dupilumab
Echinacea
Efalizumab
Efavirenz
Eletriptan
Emicizumab
Emtricitabine
Enalapril
Enfuvirtide
Enoxacin
Enoxaparin
Ephedrine
Ertapenem
Erythromycin
Esomeprazole
Estazolam
Estrogens
Eszopiclone
Etanercept
Etelcalcetide
Ethambutol
Ethionamide
Ethosuximide
Etodolac
Etoricoxib
Evolocumab
Exenatide
Famotidine
Febuxostat
Felbamate
Felodipine
Fenofibrate
Fenoprofen
Fentanyl
Ferric carboxymaltose (injection)
Ferumoxytol
Fexofenadine
Finasteride
Flecainide
Flucloxacillin
Flumazenil
Fluorides
Fluoxetine
Flurbiprofen
Fluvoxamine
Folic Acid
Foscarnet
Fosinopril
Fulvestrant
Furazolidone
Furosemide
Gadobenate
Gadodiamide
Gadopentetate
Gadoteridol
Gadoversetamide
Ganciclovir
Garlic
Gefitinib
Gemfibrozil
Gemifloxacin
Gentamicin
Glatiramer
Glimepiride
Glipizide
Glucagon
Glyburide
Gold & Gold Compounds
Golimumab
Granulocyte Colony-Stimulating Factor (G-CSF)
Grapefruit Juice
Grepafloxacin
Griseofulvin
Halothane
Henna
Heparin
Hepatitis B Vaccine
Heroin
Histrelin
Hops
Human Papillomavirus Vaccine (Bivalent)
Hydrochlorothiazide
Hydrocodone
Hydrocortisone
Hydromorphone
Hydroxychloroquine
Hydroxyzine
Ibritumomab
Ibuprofen
Idarubicin
Idursulfase
Imatinib
Imiglucerase
Imipenem/Cilastatin
Imipramine
Immune Globulin IV
Indapamide
Indinavir
Indomethacin
Infliximab
Insulin
Insulin Glulisine
Interferon Alfa
Interferon Beta
Iodixanol
Iohexol
Iomeprol
Iopromide
Ioversol
Ipilimumab
Ipratropium
Irbesartan
Isavuconazonium Sulfate
Isoniazid
Isotretinoin
Isradipine

Itraconazole
Ivacaftor
Ivermectin
Ixazomib
Ixekizumab
Japanese Encephalitis Vaccine
Kava
Ketamine
Ketoconazole
Ketoprofen
Ketorolac
Labetalol
Lamivudine
Lamotrigine
Lanreotide
Lansoprazole
Leflunomide
Lenalidomide
Lepirudin
Lesinurad
Leucovorin
Leuprolide
Levamisole
Levetiracetam
Levocetirizine
Levofloxacin
Levomilnacipran
Levonorgestrel
Levothyroxine
Lidocaine
Linaclotide
Linagliptin
Lincomycin
Lindane
Linezolid
Liothyronine
Liraglutide
Lisinopril
Lithium
Lixisenatide
Lomefloxacin
Loracarbef
Loratadine
Losartan
Lubiprostone
Maprotiline
Measles, Mumps & Rubella (MMR) Virus Vaccine
Mebeverine
Mechlorethamine
Meclofenamate
Medroxyprogesterone
Mefenamic Acid
Mefloquine
Meloxicam
Melphalan
Memantine
Meningococcal Group B Vaccine
Meperidine
Mephenytoin
Meprobamate
Mercaptopurine
Meropenem
Mesna
Metamizole
Metformin
Methadone
Methamphetamine
Methazolamide
Methimazole
Methohexital
Methotrexate
Methoxsalen
Methsuximide
Methyldopa
Methylphenidate
Methylprednisolone
Metoclopramide
Metolazone
Metronidazole
Mexiletine
Micafungin
Miconazole
Midazolam
Milk Thistle
Miltefosine
Minocycline
Mirabegron
Mistletoe
Mitomycin
Mitotane
Mivacurium
Moexipril
Monosodium Glutamate
Montelukast
Moricizine
Moxidectin
Moxifloxacin
Mycophenolate
Nabumetone
Nafarelin
Nalbuphine
Nalidixic Acid
Naloxone
Naproxen
Naratriptan
Nefazodone
Nelfinavir
Neomycin
Neostigmine
Nevirapine
Niacin
Nicardipine
Nifedipine
Nifurtimox
Nilotinib
Nimesulide
Nisoldipine
Nitrofurantoin
Nitroglycerin
Nivolumab
Nizatidine
Norfloxacin
Obeticholic Acid
Octreotide
Ofatumumab
Ofloxacin
Olanzapine
Olsalazine
Omadacycline
Omalizumab
Ombitasvir/Paritaprevir/Ritonavir
Omeprazole
Ondansetron
Oral Contraceptives
Oritavancin
Osimertinib
Oxacillin
Oxaliplatin
Oxaprozin
Oxerutins
Oxilan
Oxprenolol
Oxycodone
Oxymorphone
Paclitaxel
Paliperidone
Pantoprazole
Pantothenic Acid
Paroxetine Hydrochloride
PEG-Interferon
Pegaptanib
Pegaspargase
Pembrolizumab
Pemetrexed
Penicillamine
Penicillin G
Penicillin V
Pentamidine
Pentosan
Pentostatin
Perflutren
Permethrin
Perphenazine
Phenobarbital
Phenolphthalein
Phenylbutazone
Phenytoin
Phytonadione
Pilocarpine
Pipecuronium
Piroxicam
Pitavastatin
Pizotifen
Plasma (Human) Blood Product
Pneumococcal Vaccine
Polidocanol
Pomalidomide
Porfimer
Potassium Iodide
Praziquantel
Prazosin
Prednicarbate
Prednisolone
Prednisone
Prilocaine
Primaquine
Primidone
Pristinamycin
Probenecid
Procainamide
Procarbazine
Progestins
Promethazine
Propafenone
Propofol
Propoxyphene
Propranolol
Propylthiouracil
Propyphenazone
Protamine Sulfate
Psoralens
Quinacrine
Quinapril
Quinestrol
Quinidine
Quinine
Quinupristin/Dalfopristin
Rabeprazole
Ramipril
Ranitidine
Rapacuronium
Remifentanil
Ribavirin
Riboflavin
Rifampin
Rifapentine
Rifaximin
Risankizumab
Risedronate
Risperidone
Ritonavir
Rituximab
Rivaroxaban
Rivastigmine
Rofecoxib
Ropinirole
Roxithromycin
Rupatadine
Saccharin
Salmeterol
Salsalate
Saquinavir
Sebelipase Alfa
Secretin
Secukinumab
Sertraline
Sildenafil
Simvastatin
Smallpox Vaccine
Sodium Oxybate
Solifenacin
Sorafenib
Sparfloxacin
Spectinomycin
Spironolactone
Streptokinase
Streptomycin
Sufentanil
Sulfadiazine
Sulfamethoxazole
Sulfasalazine
Sulfisoxazole
Sulfites
Sulindac
Sulpiride
Sumatriptan
Tacrine
Tacrolimus
Tartrazine
Tedizolid
Tegafur/Gimeracil/Oteracil
Teicoplanin
Telithromycin
Telmisartan
Tenecteplase
Teniposide
Tenofovir Disoproxil
Terbinafine
Terfenadine
Teriflunomide
Tesamorelin
Tetracycline
Thalidomide
Thiabendazole
Thimerosal
Thiopental
Thiotepa
Thyrotropin Alfa
Tiagabine
Ticlopidine
Tigecycline
Tinidazole
Tinzaparin
Tirofiban
Tizanidine
Tocilizumab
Tolazamide
Tolbutamide

- Tolcapone
- Tolmetin
- Topiramate
- Torsemide
- Tosufloxacin
- Tramadol
- Trazodone
- Triamcinolone
- Triclabendazole
- Trimethadione
- Trimethoprim
- Tripelennamine
- Troleandomycin
- Trovafloxacin
- Turmeric
- Urofollitropin
- Valdecoxib
- Valsartan
- Vancomycin
- Vardenafil
- Varicella Vaccine
- Vasopressin
- Vedolizumab
- Velaglucerase Alfa
- Venlafaxine
- Verapamil
- Viltolarsen
- Voriconazole
- Vosoritide
- Warfarin
- Yarrow
- Yellow Fever Vaccine
- Zalcitabine
- Zaleplon
- Zanamivir
- Zidovudine
- Ziprasidone
- Zolmitriptan
- Zolpidem
- Zonisamide

Vasculitis

- Abatacept
- Acebutolol
- Aceclofenac
- Acenocoumarol
- Acetaminophen
- Acyclovir
- Adalimumab
- Aldesleukin
- Alemtuzumab
- Allopurinol
- Aminosalicylate Sodium
- Amiodarone
- Amitriptyline
- Amlodipine
- Amoxapine
- Amoxicillin
- Amphotericin B
- Ampicillin
- Anastrozole
- Anistreplase
- Anthrax Vaccine
- Asparaginase
- Aspartame
- Aspirin
- Atenolol
- Atorvastatin
- Azacitidine
- Azatadine
- Azathioprine
- Azithromycin
- BCG Vaccine
- Bendamustine
- Bevacizumab
- Bexarotene
- Blinatumomab
- Bortezomib
- Bosentan
- Bromocriptine
- Busulfan
- Captopril
- Carbamazepine
- Carbimazole
- Carvedilol
- Caspofungin
- Celecoxib
- Certolizumab
- Cetuximab
- Cevimeline
- Chloramphenicol
- Chlordiazepoxide
- Chloroquine
- Chlorothiazide
- Chlorpromazine
- Chlorpropamide
- Chlorthalidone
- Chlorzoxazone
- Cimetidine
- Cinacalcet
- Ciprofloxacin
- Citalopram
- Cladribine
- Clarithromycin
- Clindamycin
- Clorazepate
- Clozapine
- Co-Trimoxazole
- Cocaine
- Colchicine
- Cromolyn
- Cyclophosphamide
- Cyclosporine
- Cyproheptadine
- Cytarabine
- Daclizumab
- Deferasirox
- Delavirdine
- Diazepam
- Diclofenac
- Didanosine
- Diflunisal
- Digoxin
- Diltiazem
- Diphenhydramine
- Disulfiram
- Doxycycline
- Dronedarone
- Dupilumab
- Efavirenz
- Enalapril
- Enfuvirtide
- Ephedrine
- Epirubicin
- Erlotinib
- Erythromycin
- Estrogens
- Etanercept
- Ethacrynic Acid
- Etodolac
- Etoposide
- Everolimus
- Exemestane
- Ezetimibe
- Famciclovir
- Famotidine
- Fenbufen
- Flucloxacillin
- Fluorouracil
- Fluoxetine
- Flurbiprofen
- Fluticasone Propionate
- Furosemide
- Gabapentin
- Gefitinib
- Gemcitabine
- Gemfibrozil
- Gentamicin
- Glatiramer
- Glimepiride
- Glucagon
- Glyburide
- Gold & Gold Compounds
- Golimumab
- Granulocyte Colony-Stimulating Factor (G-CSF)
- Griseofulvin
- Guanethidine
- Heparin
- Hepatitis B Vaccine
- Heroin
- Hydralazine
- Hydrochlorothiazide
- Hydroxychloroquine
- Hydroxyurea
- Ibrutinib
- Ibuprofen
- Icodextrin
- Imatinib
- Imipenem/Cilastatin
- Imipramine
- Imiquimod
- Immune Globulin IV
- Indapamide
- Indinavir
- Indomethacin
- Infliximab
- Influenza Vaccine
- Insulin
- Insulin Aspart
- Interferon Alfa
- Interferon Beta
- Interferon Gamma
- Ipilimumab
- Isoniazid
- Isotretinoin
- Itraconazole
- Ixazomib
- Ketoconazole
- Ketorolac
- Leflunomide
- Leuprolide
- Levamisole
- Levetiracetam
- Levofloxacin
- Lisinopril
- Lithium
- Maprotiline
- MDMA
- Meclofenamate
- Mefenamic Acid
- Mefloquine
- Meloxicam
- Melphalan
- Meningococcal Group B Vaccine
- Meperidine
- Meprobamate
- Mercaptopurine
- Mesalamine
- Metformin
- Methimazole
- Methocarbamol
- Methotrexate
- Methoxsalen
- Methyldopa
- Methylphenidate
- Metolazone
- Minocycline
- Mitotane
- Nabumetone
- Naproxen
- Nelfinavir
- Nicotine
- Nifedipine
- Nimesulide
- Nivolumab
- Nizatidine
- Ofloxacin
- Olanzapine
- Olaparib
- Omeprazole
- Oxacillin
- Oxaliplatin
- Pantoprazole
- Paroxetine Hydrochloride
- PEG-Interferon
- Pembrolizumab
- Pemetrexed
- Penicillamine
- Penicillin V
- Pergolide
- Phenobarbital
- Phenylbutazone
- Phenytoin
- Phytonadione
- Piroxicam
- Potassium Iodide
- Pramipexole
- Pregabalin
- Procainamide
- Propylthiouracil
- Psoralens
- Pyridoxine
- Quinapril
- Quinidine
- Quinine
- Ramipril
- Ranitidine
- Ribavirin
- Rifampin
- Risedronate
- Ritodrine
- Rituximab
- Rivastigmine
- Rofecoxib
- Secukinumab
- Simvastatin
- Sirolimus
- Sofosbuvir
- Sorafenib
- Sotalol
- Spironolactone
- Streptokinase
- Streptomycin
- Sulfadiazine
- Sulfamethoxazole
- Sulfasalazine
- Sulfisoxazole
- Sulfites
- Sulindac
- Tacrolimus
- Tamoxifen

- Tartrazine
- Telithromycin
- Telmisartan
- Terbutaline
- Tetracycline
- Thalidomide
- Thiamine
- Thioridazine
- Ticlopidine
- Tinidazole
- Tocainide
- Tocilizumab
- Torsemide
- Trastuzumab Emtansine
- Trazodone
- Tretinoin
- Trichlormethiazide
- Trimethadione
- Trioxsalen
- Triptorelin
- Ustekinumab
- Valproic Acid
- Vancomycin
- Vemurafenib
- Verapamil
- Vinorelbine
- Warfarin
- Zafirlukast
- Zidovudine

Vertigo

- Abacavir
- Abaloparatide
- Abarelix
- Abatacept
- Abemaciclib
- Abiraterone
- Abrocitinib
- Acamprosate
- Acebutolol
- Aceclofenac
- Acetaminophen
- Acetohexamide
- Acitretin
- Adalimumab
- Adenosine
- Aducanumab
- Afamelanotide
- Afatinib
- Aflibercept
- Agalsidase
- Albendazole
- Albiglutide
- Aldesleukin
- Alectinib
- Alefacept
- Alemtuzumab
- Alfuzosin
- Alirocumab
- Aliskiren
- Allopurinol
- Almotriptan
- Alogliptin
- Alosetron
- Alpha-Lipoic Acid
- Alprazolam
- Alprostadil
- Amantadine
- Amifampridine
- Amiloride
- Amiodarone
- Amisulpride
- Amitriptyline
- Amlodipine
- Amodiaquine
- Amoxapine
- Amoxicillin
- Anagrelide
- Anidulafungin
- Anti-Thymocyte Immunoglobulin (Rabbit)
- Antihemophilic Factor
- Apalutamide
- Apixaban
- Apomorphine
- Apremilast
- Aprepitant
- Arformoterol
- Aripiprazole
- Armodafinil
- Arsenic
- Artemether/Lumefantrine
- Artemisia
- Artesunate
- Articaine
- Asciminib
- Asenapine
- Atazanavir
- Atenolol
- Atomoxetine
- Atorvastatin
- Atovaquone/Proguanil
- Avacopan
- Avanafil
- Avapritinib
- Avelumab
- Axitinib
- Azacitidine
- Azathioprine
- Azilsartan
- Azithromycin
- Baclofen
- Basiliximab
- Bedaquiline
- Belatacept
- Belinostat
- Belzutifan
- Benazepril
- Bendamustine
- Benralizumab
- Benznidazole
- Benzphetamine
- Bepridil
- Betaxolol
- Bezafibrate
- Bictegravir/Emtricitabine/Tenofovir Alafenamide
- Binimetinib
- Biperiden
- Bismuth
- Bisoprolol
- Black Cohosh
- Bleomycin
- Blinatumomab
- Bortezomib
- Bosentan
- Bosutinib
- Botulinum Toxin (A & B)
- Bremelanotide
- Brentuximab Vedotin
- Brexanolone
- Brexpiprazole
- Brinzolamide
- Brivaracetam
- Brodalumab
- Bromocriptine
- Bupivacaine
- Buprenorphine
- Bupropion
- Burosumab
- Butorphanol
- C1-Esterase Inhibitor
- Cabazitaxel
- Cabergoline
- Cabozantinib
- Canagliflozin
- Canakinumab
- Candesartan
- Cannabidiol
- Capecitabine
- Carbamazepine
- Carbetocin
- Carboplatin
- Carfilzomib
- Cariprazine
- Carisoprodol
- Carvedilol
- Casimersen
- Caspofungin
- Cedazuridine & Decitabine
- Cefditoren
- Cefepime
- Cefpodoxime
- Ceftaroline Fosamil
- Ceftazidime & Avibactam
- Ceftolozane & Tazobactam
- Ceftriaxone
- Cefuroxime
- Celecoxib
- Celiprolol
- Cenobamate
- Certolizumab
- Cevimeline
- Chasteberry
- Chloroquine
- Chlorpromazine
- Chlorthalidone
- Chlorzoxazone
- Cholera Vaccine
- Choline Fenofibrate
- Cilazapril
- Cilostazol
- Cinacalcet
- Cinnarizine
- Ciprofloxacin
- Cisplatin
- Citalopram
- Clevidipine
- Clobazam
- Clofarabine
- Clofazimine
- Clomipramine
- Clonidine
- Clozapine
- Co-Trimoxazole
- Coagulation Factor IX (Recombinant)
- Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Disoproxil
- Codeine
- Colesevelam
- Crizotinib
- Crofelemer
- Cyclobenzaprine
- Cycloserine
- Cyclosporine
- Cysteamine
- Cytarabine
- Dabigatran
- Dabrafenib
- Daclatasvir
- Daclizumab
- Dalbavancin
- Dalfampridine
- Dantrolene
- Dapagliflozin
- Dapsone
- Daptomycin
- Darbepoetin Alfa
- Daridorexant
- Darifenacin
- Dasatinib
- Daunorubicin
- Decitabine
- Deferasirox
- Deflazacort
- Degarelix
- Delafloxacin
- Denileukin
- Denosumab
- Desloratadine
- Desmopressin
- Desvenlafaxine
- Deutetrabenazine
- Dexamethasone
- Dexketoprofen
- Dexmedetomidine
- Dextroamphetamine
- Dextromethorphan
- Diatrizoate
- Diazepam
- Diazoxide
- Diclofenac
- Dicyclomine
- Diethylpropion
- Difelikefalin
- Dihydrocodeine
- Dihydroergotamine
- Diltiazem
- Diphenhydramine
- Dipyridamole
- Disopyramide
- Disulfiram
- Docetaxel
- Dofetilide
- Dolasetron
- Dolutegravir
- Donepezil
- Doravirine
- Doravirine/Lamiduvine/Tenofovir Disoproxil
- Doxazosin
- Doxepin
- Doxercalciferol
- Doxorubicin
- Doxycycline
- Dronabinol
- Dronedarone
- Droxidopa
- Duloxetine
- Dutasteride
- Echinacea
- Eculizumab
- Edaravone
- Edrophonium
- Efavirenz
- Eflornithine
- Elagolix Sodium
- Eletriptan
- Eliglustat
- Elotuzumab
- Eluxadoline

Empagliflozin
Emtricitabine
Enalapril
Encorafenib
Entacapone
Entecavir
Entrectinib
Enzalutamide
Epinephrine
Eplerenone
Epoetin Alfa
Eprosartan
Eravacycline
Eribulin
Escitalopram
Eslicarbazepine
Esomeprazole
Estramustine
Eszopiclone
Etanercept
Etravirine
Everolimus
Evolocumab
Exenatide
Ezetimibe
Ezogabine
Factor VIII - von Willebrand Factor
Famotidine
Febuxostat
Fedratinib hydrochloride
Felbamate
Fentanyl
Ferric carboxymaltose (injection)
Ferric Gluconate
Ferumoxytol
Fesoterodine
Fexinidazole
Finasteride
Fingolimod
Flecainide
Flibanserin
Flumazenil
Fluorouracil
Fluoxetine
Fluphenazine
Flurbiprofen
Fluticasone Furoate
Fluticasone Propionate
Fluvoxamine
Follitropin Alfa/Beta
Fomepizole
Fomivirsen
Formoterol
Fosfomycin
Fosphenytoin
Fostamatinib
Fostemsavir
Frovatriptan
Fulvestrant
Furazolidone
Gabapentin
Gadobenate
Gadobutrol
Gadodiamide
Gadofosveset
Gadopentetate
Gadoteridol
Gadoversetamide
Gadoxetate
Galantamine
Gatifloxacin
Gefitinib
Gemifloxacin
Gentamicin
Gilteritinib
Glasdegib
Glatiramer
Gliclazide
Glimepiride
Glipizide
Glycopyrrolate
Golimumab
Golodirsen
Goserelin
Granisetron
Granulocyte Colony-Stimulating Factor (G-CSF)
Guanabenz
Guanadrel
Guanethidine
Guanfacine
Halofantrine
Haloperidol
Hawthorn (Fruit, Leaf, Flower Extract)
Human Papillomavirus (HPV) Vaccine
Human Papillomavirus Vaccine (Bivalent)
Hydrochlorothiazide
Hydrocodone
Hydromorphone
Hydroxychloroquine
Ibalizumab
Ibandronate
Ibrexafungerp
Ibritumomab
Ibrutinib
Icatibant
Icodextrin
Idebenone
Iloperidone
Iloprost
Imatinib
Imidapril
Imiglucerase
Imipramine
Imiquimod
Immune Globulin IV
Indapamide
Indinavir
Indoramin
Infliximab
Influenza Vaccine
Insulin
Insulin Detemir
Interferon Alfa
Interferon Beta
Iobenguane
Iodixanol
Iohexol
Iomeprol
Iopromide
Ioversol
Ipilimumab
Irinotecan
Isavuconazonium Sulfate
Isocarboxazid
Isosorbide Mononitrate
Isradipine
Istradefylline
Itraconazole
Ivabradine
Ivacaftor
Ivermectin
Ixabepilone
Japanese Encephalitis Vaccine
Kanamycin
Kava
Ketamine
Ketoconazole
Ketorolac
Lacosamide
Lamivudine
Lamotrigine
Lansoprazole
Lapatinib
Larotrectinib
Lasmiditan
Latanoprost
Ledipasvir & Sofosbuvir
Leflunomide
Lenalidomide
Lenvatinib
Lesinurad
Letrozole
Levetiracetam
Levodopa
Levofloxacin
Levomepromazine
Levomilnacipran
Levonorgestrel
Lidocaine
Linagliptin
Linezolid
Liothyronine
Liraglutide
Lisdexamfetamine
Lisinopril
Lithium
Lixisenatide
Lofexidine
Lomitapide
Lopinavir
Loratadine
Lorazepam
Lorcainide
Lorcaserin
Lorlatinib
Losartan
Lovastatin
Loxapine
Lubiprostone
Lumateperone
Lumiracoxib
Lurasidone
Lutetium Lu177 Dotatate
Macitentan
Maraviroc
Marihuana
Mazindol
MDMA
Mebendazole
Mefloquine
Melatonin
Meloxicam
Melphalan flufenamide
Memantine
Meperidine
Mepolizumab
Meptazinol
Mesalamine
Metamizole
Metaxalone
Metformin
Methocarbamol
Methotrexate
Methoxyflurane
Methylnaltrexone
Methylphenidate
Methylprednisolone
Metronidazole
Mexiletine
Micafungin
Midazolam
Midostaurin
Mifepristone
Miglustat
Milnacipran
Miltefosine
Minocycline
Minoxidil
Mirabegron
Mirtazapine
Mivacurium
Mizoribine
Moclobemide
Modafinil
Moexipril
Montelukast
Morphine
Moxidectin
Moxifloxacin
Moxonidine
Mupirocin
Muromonab-CD3
Mycophenolate
Nabilone
Nabumetone
Nadolol
Nalbuphine
Nalmefene
Naloxegol
Naloxone
Naltrexone
Naproxen
Naratriptan
Nateglinide
Nebivolol
Nefazodone
Nelarabine
Nelfinavir
Nesiritide
Netupitant & Palonosetron
Niacin
Nicorandil
Nifedipine
Nifurtimox
Nilotinib
Nilutamide
Nintedanib
Niraparib
Nisoldipine
Nitazoxanide
Nivolumab
Nizatidine
Norfloxacin
Nortriptyline
Obeticholic Acid
Octreotide
Ofloxacin
Olanzapine
Oliceridine
Olmesartan
Olodaterol
Omacetaxine
Omadacycline
Omalizumab
Ombitasvir/Paritaprevir/Ritonavir

Ombitasvir/Paritaprevir/Ritonavir and Dasabuvir
Omeprazole
Ondansetron
Opicapone
Oral Contraceptives
Oritavancin
Orlistat
Osilodrostat
Oxaliplatin
Oxcarbazepine
Oxerutins
Oxilan
Oxprenolol
Oxybutynin
Oxycodone
Oxymorphone
Paclitaxel
Palbociclib
Paliperidone
Palonosetron
Pancrelipase
Pandemic Influenza Vaccine (H1N1)
Panitumumab
Panobinostat
Pantoprazole
Paricalcitol
Paroxetine Hydrochloride
Paroxetine Mesylate
Pasireotide
Patisiran
PEG-Interferon
Pegaptanib
Pegaspargase
Peginesatide
Pegloticase
Pegvisomant
Pembrolizumab
Pemetrexed
Pentamidine
Pentazocine
Perampanel
Perflutren
Pergolide
Perindopril
Pertuzumab
Phendimetrazine
Phenelzine
Phenobarbital
Phenoxybenzamine
Phentermine
Pilocarpine
Pioglitazone
Piracetam
Pirfenidone
Piroxicam
Pizotifen
Plazomicin
Pomalidomide
Ponatinib
Ponesimod
Posaconazole
Pramipexole
Pramlintide
Pranlukast
Prasugrel
Pravastatin
Praziquantel
Prazosin
Prednicarbate
Prednisolone
Pregabalin
Prenylamine
Pretomanid
Promazine
Promethazine
Propafenone
Propoxyphene
Propranolol
Prucalopride
Pseudoephedrine
Pyrimethamine
Quetiapine
Quinagolide
Quinapril
Quinidine
Quinine
Rabeprazole
Radium-223 Dichloride
Raltegravir
Ramelteon
Ramipril
Ranolazine
Rasagiline
Reboxetine
Regadenoson
Remifentanil
Repaglinide
Reslizumab
Revefenacin
Ribavirin
Rifabutin
Rifampin
Rifapentine
Rifaximin
Rilpivirine
Riluzole
Rimantadine
Rimonabant
Riociguat
Risedronate
Risperidone
Ritonavir
Rituximab
Rivaroxaban
Rivastigmine
Rizatriptan
Rofecoxib
Roflumilast
Rolapitant
Romiplostim
Ropinirole
Ropivacaine
Rosuvastatin
Rotigotine
Roxatidine
Rucaparib
Rufinamide
Rupatadine
Ruxolitinib
Sacubitril/Valsartan
Safinamide
Salmeterol
Sarecycline
Saw Palmetto
Saxagliptin
Scopolamine
Secnidazole
Selegiline
Selenium
Selexipag
Selinexor
Sertraline
Setmelanotide
Sibutramine
Sildenafil
Silodosin
Simvastatin
Sincalide
Siponimod
Sipuleucel-T
Sitaxentan
Sodium Oxybate
Sofosbuvir
Solifenacin
Solriamfetol
Sonidegib
Sorafenib
Sotorasib
Spectinomycin
St John's Wort
Streptomycin
Strontium Ranelate
Sucralfate
Sufentanil
Sugammadex
Sulfadoxine
Sulfasalazine
Sumatriptan
Sunitinib
Suvorexant
Tacrine
Tacrolimus
Tadalafil
Tafenoquine
Talazoparib
Taliglucerase
Talimogene Laherparepvec
Tamoxifen
Tamsulosin
Tapentadol
Tedizolid
Tegafur/Gimeracil/Oteracil
Tegaserod
Teicoplanin
Telavancin
Telbivudine
Telithromycin
Telmisartan
Telotristat Ethyl
Temozolomide
Tenapanor hydrochloride
Tenofovir Disoproxil
Tepotinib
Terazosin
Terbutaline
Teriparatide
Tetrabenazine
Tetracaine & Oxymetazoline
Tezacaftor/Ivacaftor
Thalidomide
Thiabendazole
Thioridazine
Thyrotropin Alfa
Tiagabine
Tianeptine
Ticagrelor
Tigecycline
Tildrakizumab
Tiludronate
Timolol
Tinidazole
Tiotropium
Tipranavir
Tizanidine
Tocainide
Tocilizumab
Tofacitinib
Tolcapone
Tolterodine
Tolvaptan
Topiramate
Toremifene
Torsemide
Tositumomab & Iodine[131]
Tosufloxacin
Trabectedin
Tramadol
Trametinib
Trandolapril
Tranylcypromine
Trastuzumab
Trastuzumab Emtansine
Trazodone
Treprostinil
Triclabendazole
Trimipramine
Triptorelin
Troglitazone
Trospium
Trovafloxacin
Typhoid Vaccine
Ubrogepant
Ulipristal
Unoprostone
Urapidil
Ursodiol
Ustekinumab
Valbenazine
Valerian
Valproic Acid
Valrubicin
Valsartan
Vancomycin
Vardenafil
Varenicline
Varicella Vaccine
Velaglucerase Alfa
Venlafaxine
Verapamil
Verteporfin
Vigabatrin
Vilazodone
Vildagliptin
Vismodegib
Voriconazole
Vorinostat
Vortioxetine
Vosoritide
Warfarin
Zafirlukast
Zaleplon
Zanamivir
Ziconotide
Zidovudine
Ziprasidone
Zofenopril
Zoledronate
Zolmitriptan
Zolpidem
Zonisamide
Zoster Vaccine
Zuclopenthixol

Xerostomia

Abemaciclib
Acamprosate
Acebutolol
Acetaminophen
Acetazolamide
Acitretin
Aclidinium

Afatinib
Aflibercept
Albendazole
Albuterol
Aldesleukin
Almotriptan
Alprazolam
Alprostadil
Amantadine
Amifostine
Amiloride
Amisulpride
Amitriptyline
Amlodipine
Amoxapine
Amoxicillin
Apraclonidine
Aprepitant
Arbutamine
Aripiprazole
Armodafinil
Arsenic
Asenapine
Astemizole
Atomoxetine
Atropine Sulfate
Azatadine
Azelastine
Baclofen
Balsalazide
Bendamustine
Bendroflumethiazide
Benzphetamine
Benztropine
Bepridil
Betaxolol
Bexarotene
Bicalutamide
Bisacodyl
Bismuth
Bisoprolol
Botulinum Toxin (A & B)
Brexanolone
Brexpiprazole
Brimonidine
Brinzolamide
Bromelain
Bromocriptine
Brompheniramine
Bumetanide
Buprenorphine
Bupropion
Buspirone
Butorphanol
Cabergoline
Caffeine
Canagliflozin
Cannabidiol
Captopril
Cariprazine
Carisoprodol
Carvedilol
Cefditoren
Cefiderocol
Cefixime
Ceftibuten
Celecoxib
Cenobamate
Cetirizine
Cetuximab
Cevimeline
Chasteberry
Chlordiazepoxide
Chlormezanone
Chlorpheniramine
Chlorpromazine
Ciprofloxacin
Cisplatin
Citalopram
Clarithromycin
Clemastine
Clindamycin
Clomipramine
Clonazepam
Clonidine
Clorazepate
Clozapine
Codeine
Conivaptan
Crofelemer
Cromolyn
Cyclobenzaprine
Cyproheptadine
Daclatasvir
Dacomitinib
Dapagliflozin
Darifenacin
Dasatinib
Daunorubicin
Degarelix
Delavirdine
Desipramine
Desloratadine
Desvenlafaxine
Deutetrabenazine
Dexamethasone
Dexchlorpheniramine
Dexketoprofen
Dexlansoprazole
Dexmedetomidine
Dexmethylphenidate
Dextroamphetamine
Dextromethorphan
Diazepam
Diclofenac
Dicyclomine
Didanosine
Diethylpropion
Diflunisal
Dihydrocodeine
Dihydroergotamine
Diltiazem
Dimenhydrinate
Diphenhydramine
Diphenoxylate
Dirithromycin
Disopyramide
Domperidone
Donepezil
Doxazosin
Doxepin
Dronabinol
Duloxetine
Dutasteride
Efavirenz
Eletriptan
Eltrombopag
Enalapril
Enfuvirtide
Enoxacin
Entacapone
Ephedra
Ephedrine
Epinephrine
Eprosartan
Erdafitinib
Eribulin
Escitalopram
Eslicarbazepine
Esmolol
Estazolam
Eszopiclone
Etravirine
Everolimus
Exemestane
Ezogabine
Famotidine
Felbamate
Felodipine
Fenoprofen
Fentanyl
Fesoterodine
Flavoxate
Flecainide
Flibanserin
Fluconazole
Flumazenil
Fluorides
Fluoxetine
Fluphenazine
Flurazepam
Flurbiprofen
Fluvoxamine
Formoterol
Fosfomycin
Fosinopril
Fosphenytoin
Frovatriptan
Furosemide
Gabapentin
Gadobenate
Gadodiamide
Gadopentetate
Gadoteridol
Gadoversetamide
Gadoxetate
Ganciclovir
Gemifloxacin
Glatiramer
Glycopyrrolate
Goserelin
Granisetron
Grepafloxacin
Griseofulvin
Guanabenz
Guanadrel
Guanethidine
Guanfacine
Haloperidol
Hydrocodone
Hydromorphone
Hydroxyzine
Hyoscyamine
Ibuprofen
Iloperidone
Imatinib
Imipramine
Indapamide
Indinavir
Infigratinib
Inotersen
Insulin
Interferon Alfa
Ioversol
Ipilimumab
Ipratropium
Isocarboxazid
Isoetharine
Isoproterenol
Isotretinoin
Isradipine
Itraconazole
Ketoprofen
Ketorolac
Ketotifen
Lamivudine
Lamotrigine
Lansoprazole
Leflunomide
Lenalidomide
Lenvatinib
Letrozole
Levocetirizine
Levodopa
Levofloxacin
Levomilnacipran
Liraglutide
Lisdexamfetamine
Lisinopril
Lithium
Lofexidine
Lomefloxacin
Loperamide
Loratadine
Lorazepam
Lorcaserin
Losartan
Lovastatin
Loxapine
Lubiprostone
Lumateperone
Maprotiline
Marihuana
Mazindol
MDMA
Meclizine
Meloxicam
Meperidine
Mesalamine
Metamizole
Methadone
Methamphetamine
Methantheline
Methazolamide
Methyldopa
Methylphenidate
Metoclopramide
Metolazone
Metronidazole
Mexiletine
Midodrine
Mifepristone
Miglustat
Milnacipran
Minocycline
Mirabegron
Mirtazapine
Mizolastine
Modafinil
Moexipril
Molindone
Moricizine
Morphine
Moxifloxacin
Moxisylyte
Moxonidine
Mupirocin
Nabilone
Nabumetone
Nadolol
Nalbuphine
Nalmefene

Naloxone
Naltrexone
Naproxen
Nedocromil
Nefazodone
Neostigmine
Neratinib
Nevirapine
Nicardipine
Nicotine
Nifedipine
Nilotinib
Nilutamide
Niraparib
Nisoldipine
Nitrofurantoin
Nitroglycerin
Nivolumab
Nizatidine
Norfloxacin
Nortriptyline
Ofloxacin
Olanzapine
Olaparib
Olodaterol
Omacetaxine
Omeprazole
Ondansetron
Opicapone
Orlistat
Oxaliplatin
Oxazepam
Oxcarbazepine
Oxprenolol
Oxybutynin
Oxycodone
Oxymorphone
Oxytocin
Paliperidone
Palonosetron
Panobinostat
Pantoprazole
Papaverine
Paricalcitol
Paromomycin
Paroxetine Hydrochloride
PEG-Interferon
Pembrolizumab
Pemetrexed
Pemigatinib
Pentamidine
Pentazocine
Pentoxifylline
Perflutren
Pergolide
Perindopril
Pexidartinib hydrochloride
Phendimetrazine
Phenelzine
Phenobarbital
Phenoxybenzamine
Phentermine
Pilocarpine
Pimozide
Pirfenidone
Piroxicam
Pitolisant hydrochloride
Pizotifen
Posaconazole
Pralsetinib
Pramipexole
Prazepam
Prazosin
Pregabalin
Prochlorperazine
Procyclidine
Promethazine
Propafenone
Propantheline
Propofol
Propoxyphene
Propranolol
Protriptyline
Pseudoephedrine
Pyridostigmine
Pyrimethamine
Quazepam
Quetiapine
Quinapril
Rabeprazole
Raltitrexed
Ramipril
Ranolazine
Rasagiline
Reboxetine
Regadenoson
Regorafenib
Remifentanil
Reserpine
Rifaximin
Riluzole
Rimantadine
Risperidone
Ritonavir
Rivaroxaban
Rivastigmine
Rizatriptan
Rofecoxib
Rolapitant
Ropinirole
Rotigotine
Rucaparib
Rupatadine
Salmeterol
Saquinavir
Scopolamine
Selegiline
Selpercatinib
Sertindole
Sertraline
Setmelanotide
Sevoflurane
Sibutramine
Sildenafil
Sodium Oxybate
Solifenacin
Solriamfetol
Sorafenib
Sotalol
Sparfloxacin
Spironolactone
St John's Wort
Sucralfate
Sugammadex
Sulfamethoxazole
Sulfasalazine
Sulindac
Sulpiride
Sumatriptan
Sunitinib
Suvorexant
Tacrine
Tadalafil
Tamoxifen
Tamsulosin
Tapentadol
Tasimelteon
Tecovirimat
Tedizolid
Telithromycin
Telmisartan
Temazepam
Terazosin
Terbutaline
Terfenadine
Thalidomide
Thiabendazole
Thioguanine
Thioridazine
Thiothixene
Tiagabine
Tianeptine
Tigecycline
Tiludronate
Timolol
Tinidazole
Tiotropium
Tizanidine
Tocainide
Tolcapone
Tolterodine
Tolvaptan
Topiramate
Toremifene
Tosufloxacin
Tramadol
Trametinib
Trandolapril
Tranylcypromine
Trastuzumab Emtansine
Trazodone
Tretinoin
Triamcinolone
Triamterene
Triazolam
Trihexyphenidyl
Trimeprazine
Trimipramine
Tripelennamine
Triprolidine
Trospium
Trovafloxacin
Tryptophan
Ubrogepant
Ulipristal
Umeclidinium
Unoprostone
Valbenazine
Valdecoxib
Valproic Acid
Valsartan
Vardenafil
Varenicline
Vemurafenib
Venlafaxine
Verapamil
Vibegron
Vilazodone
Viloxazine
Vitamin A
Voriconazole
Vorinostat
Vortioxetine
Zalcitabine
Zaleplon
Ziconotide
Zidovudine
Ziprasidone
Zolmitriptan
Zolpidem
Zonisamide
Zuclopenthixol

Main Classes of Drugs

5-HT1 agonists
- Almotriptan
- Eletriptan
- Frovatriptan
- Naratriptan
- Rizatriptan
- Sumatriptan
- Zolmitriptan

5-HT3 antagonists
- Alosetron
- Dolasetron
- Granisetron
- Ondansetron
- Palonosetron

Adrenergic alpha-receptor agonists
- Clonidine
- Dexmedetomidine
- Dopamine
- Ephedrine
- Guanabenz
- Guanadrel
- Guanethidine
- Guanfacine
- Methyldopa
- Midodrine
- Mirtazapine
- Phenylephrine
- Phenylpropanolamine
- Polythiazide
- Pseudoephedrine

Adrenergic alpha-receptor antagonists
- Alfuzosin
- Doxazosin
- Phenoxybenzamine
- Phentolamine
- Prazosin
- Silodosin
- Tamsulosin
- Terazosin
- Urapidil

Adrenergic alpha2-receptor agonists
- Apraclonidine
- Brimonidine
- Lofexidine
- Tizanidine

Adrenergic beta-receptor agonists
- Arbutamine
- Dobutamine
- Isoetharine
- Isoproterenol
- Isoxsuprine
- Metoprolol

Adrenergic beta-receptor antagonists
- Betaxolol
- Carteolol
- Carvedilol
- Esmolol
- Labetalol
- Levobetaxolol
- Levobunolol
- Metipranolol
- Nadolol
- Nebivolol
- Penbutolol
- Pindolol
- Timolol

Alkylating agents
- Altretamine
- Bendamustine
- Busulfan
- Carboplatin
- Carmustine
- Chlorambucil
- Cisplatin
- Cyclophosphamide
- Dacarbazine
- Estramustine
- Ifosfamide
- Lomustine
- Loncastuximab tesirine
- Mechlorethamine
- Melphalan
- Melphalan flufenamide
- Mitomycin
- Oxaliplatin
- Procarbazine
- Streptozocin
- Temozolomide
- Thiotepa

Amphetamines
- Benzphetamine
- Dextroamphetamine
- Diethylpropion
- MDMA
- Methamphetamine
- Methylphenidate
- Pemoline
- Phendimetrazine
- Phentermine
- Prenylamine

Analeptics
- Doxapram
- Modafinil

Analgesics
- **narcotic**
  - Dextromethorphan
- **non-narcotic**
  - Acetaminophen
- **non-opioid**
  - Ketorolac
- **opioid**
  - Alfentanil
  - Dihydrocodeine
  - Fentanyl
  - Meptazinol
  - Tapentadol
- **urinary**
  - Pentosan
  - Phenazopyridine

Anesthetics
- Alfentanil
- Edrophonium
- Fentanyl
- Ketamine
- **general**
  - Chloral Hydrate
  - Propofol
  - Sodium Oxybate
  - Sufentanil
- **inhalation**
  - Desflurane
  - Enflurane
  - Halothane
  - Isoflurane
  - Methoxyflurane
  - Sevoflurane
- **local**
  - Articaine
  - Bupivacaine
  - Cocaine
  - Levobupivacaine
  - Lidocaine
  - Mepivacaine
  - Ropivacaine
  - Tetracaine & Oxymetazoline

Angiotensin Converting Enzyme (ACE) inhibitors
- Benazepril
- Captopril
- Cilazapril
- Enalapril
- Fosinopril
- Imidapril
- Lisinopril
- Moexipril
- Perindopril
- Quinapril
- Ramipril
- Trandolapril
- Zofenopril

Angiotensin II receptor antagonists (blockers)
- Azilsartan
- Candesartan
- Eprosartan
- Irbesartan
- Losartan
- Olmesartan
- Telmisartan
- Valsartan

Anti-inflammatories
- Aloe Vera (Gel, Juice, Leaf)
- Amlexanox
- Amodiaquine
- Bloodroot
- Boswellia
- Bromelain
- Butterbur
- Caraway
- Clofazimine
- Colchicine
- Devil's Claw
- Eucalyptus
- Evening Primrose
- Fish Oils
- Fluprednisolone
- Henna
- Horsetail
- Juniper
- Licorice
- Linseed
- Meadowsweet
- Myrrh
- Omega-3 Fatty Acids
- Polypodium Leucotomos
- Roflumilast
- Sarsaparilla
- Saw Palmetto
- Turmeric
- Willow Bark
- Yarrow

Antiarrhythmics
- **class Ia**
  - Disopyramide
  - Procainamide
  - Quinidine
- **class Ib**
  - Lidocaine
  - Mexiletine
  - Phenytoin
  - Tocainide
- **class Ic**
  - Flecainide
  - Lorcainide
  - Moricizine
  - Propafenone
- **class II**
  - Acebutolol
  - Atenolol
  - Esmolol
  - Labetalol
  - Metoprolol
  - Nadolol
  - Propranolol
  - Sotalol
- **class III**
  - Amiodarone
  - Bretylium
  - Dofetilide
  - Dronedarone
  - Ibutilide
  - Sotalol
  - Vernakalant
- **class IV**
  - Adenosine
  - Amlodipine
  - Bepridil
  - Digoxin
  - Diltiazem
  - Verapamil

Antibiotics
- **aminoglycoside**
  - Amikacin
  - Gentamicin
  - Kanamycin
  - Neomycin
  - Paromomycin
  - Plazomicin
  - Streptomycin
  - Tobramycin
- **anthracycline**
  - Bleomycin

- Dactinomycin
- Daunorubicin
- Doxorubicin
- Epirubicin
- Idarubicin
- Mitomycin
- Mitoxantrone
- Peplomycin
- Valrubicin

beta-lactam
- Amoxicillin
- Ampicillin/Sulbactam
- Aztreonam
- Becampicillin
- Carbenicillin
- Cefiderocol
- Ceftazidime & Avibactam
- Ceftolozane & Tazobactam
- Cloxacillin
- Flucloxacillin
- Methicillin
- Mezlocillin
- Nafcillin
- Oxacillin
- Penicillin G
- Penicillin V
- Piperacillin
- Ticarcillin

carbapenem
- Doripenem
- Ertapenem
- Imipenem/Cilastatin
- Imipenem/Cilastatin/ Relebactam
- Meropenem
- Meropenem & Vaborbactam

fluoroquinolone
- Besifloxacin
- Ciprofloxacin
- Delafloxacin
- Enoxacin
- Finafloxacin
- Gatifloxacin
- Gemifloxacin
- Levofloxacin
- Lomefloxacin
- Moxifloxacin
- Norfloxacin
- Ofloxacin
- Sparfloxacin
- Tosufloxacin

glycopeptide
- Daptomycin
- Teicoplanin
- Vancomycin

lincosamide
- Clindamycin
- Clindamycin/Tretinoin
- Lincomycin

macrolide
- Azithromycin
- Clarithromycin
- Dirithromycin
- Erythromycin
- Fidaxomicin
- Roxithromycin
- Telithromycin
- Troleandomycin

nitrofuran
- Furazolidone
- Nitrofurazone

oxazolidinone
- Linezolid
- Tedizolid

penicillin
- Amoxicillin
- Ampicillin
- Ampicillin/Sulbactam
- Bacampicillin
- Carbenicillin
- Cloxacillin
- Dicloxacillin
- Flucloxacillin
- Methicillin
- Mezlocillin
- Nafcillin
- Oxacillin
- Penicillin G
- Penicillin V
- Piperacillin
- Ticarcillin

quinolone
- Cinoxacin
- Ciprofloxacin
- Grepafloxacin
- Levofloxacin
- Nalidixic Acid
- Ozenoxacin
- Trovafloxacin

rifamycin
- Rifabutin
- Rifampin
- Rifapentine
- Rifaximin

streptogramin
- Pristinamycin
- Quinupristin/Dalfopristin

sulphonamide
- Co-Trimoxazole
- Sulfacetamide
- Sulfadiazine
- Sulfadoxine
- Sulfamethoxazole
- Sulfisoxazole

tetracycline
- Chlortetracycline
- Demeclocycline
- Doxycycline
- Eravacycline
- Lymecycline
- Minocycline
- Omadacycline
- Oxytetracycline
- Sarecycline
- Tetracycline
- Tigecycline

topical
- Mupirocin
- Retapamulin

triazole
- Efinaconazole
- Fluconazole
- Isavuconazonium Sulfate
- Itraconazole
- Posaconazole
- Terconazole
- Voriconazole

miscellaneous
- Aminosalicylate Sodium
- Bacitracin
- Benznidazole
- Capreomycin
- Ceftriaxone
- Chloramphenicol
- Cycloserine
- Dapsone
- Ethionamide
- Fosfomycin
- Isoniazid
- Methenamine
- Nitrofurantoin
- Plicamycin
- Pyrazinamide
- Quinacrine
- Spectinomycin
- Tigecycline
- Trimethoprim

Anticonvulsants
- Brivaracetam
- Carbamazepine
- Ezogabine
- Felbamate
- Gabapentin
- Lacosamide
- Lamotrigine
- Levetiracetam
- Mephenytoin
- Oxcarbazepine
- Perampanel
- Phenacemide
- Phenobarbital
- Phensuximide
- Phenytoin
- Pregabalin
- Primidone
- Tetrazepam
- Tiagabine
- Topiramate
- Valproic Acid
- Vigabatrin
- Zonisamide

antiepileptic
- Brivaracetam
- Cenobamate
- Clobazam
- Eslicarbazepine
- Lacosamide
- Lamotrigine
- Perampanel
- Rufinamide
- Vigabatrin

hydantoin
- Ethotoin
- Fosphenytoin
- Mephenytoin
- Phenytoin

oxazolidinedione
- Paramethadione
- Trimethadione

succinimide
- Ethosuximide
- Methsuximide

Antidepressants
- Bupropion
- Citalopram
- Desvenlafaxine
- Duloxetine
- Escitalopram
- Fluoxetine
- Fluvoxamine
- Isocarboxazid
- Levomilnacipran
- Milnacipran
- Moclobemide
- Nefazodone
- Paroxetine Hydrochloride
- Phenelzine
- Reboxetine
- Selegiline
- Sertraline
- Tianeptine
- Tranylcypromine
- Tryptophan
- Venlafaxine
- Vilazodone
- Vortioxetine

tetracyclic
- Maprotiline
- Mianserin
- Mirtazapine

tricyclic
- Amitriptyline
- Amoxapine
- Clomipramine
- Desipramine
- Doxepin
- Imipramine
- Nortriptyline
- Protriptyline
- Trazodone
- Trimipramine

Antiemetics
- Amisulpride
- Aprepitant
- Artichoke
- Chlorpromazine
- Dexamethasone
- Dimenhydrinate
- Diphenhydramine
- Domperidone
- Dronabinol
- Droperidol
- Granisetron
- Haloperidol
- Marihuana
- Meclizine
- Metoclopramide
- Nabilone
- Ondansetron
- Palonosetron
- Peppermint
- Perphenazine
- Prochlorperazine
- Rolapitant
- Scopolamine
- Trimethobenzamide

Antifungals

antimycotic
- Amphotericin B
- Caspofungin
- Ciclopirox
- Clioquinol
- Clotrimazole
- Econazole
- Efinaconazole
- Fluconazole
- Griseofulvin
- Ibrexafungerp
- Isavuconazonium Sulfate
- Itraconazole
- Ketoconazole
- Luliconazole
- Micafungin
- Miconazole
- Nystatin
- Posaconazole
- Rosemary
- Sertaconazole
- Terbinafine
- Terconazole
- Thiabendazole
- Voriconazole

oxaborole
Tavaborole

Antimalarials
Amodiaquine
Artemether/Lumefantrine
Artemisia
Artesunate
Atovaquone
Atovaquone/Proguanil
Chloroquine
Halofantrine
Hydroxychloroquine
Mefloquine
Primaquine
Pyrimethamine
Quinacrine
Quinidine
Quinine
Sulfadoxine
Tafenoquine

Antimycobacterials
Aminosalicylate Sodium
Bedaquiline
Clofazimine
Dapsone
Ethambutol
Ethionamide
Flucytosine
Isoniazid
Para-Aminosalicylic Acid
Potassium Iodide
Pretomanid
Pyrazinamide
Rifampin
Rifapentin
Star Anise (Chinese)

echinocandin
Anidulafungin

Antineoplastics
Anastrozole
Arsenic
Asparaginase
Asparaginase *Erwinia chrysanthemi*
Atezolizumab
Avelumab
Azacitidine
Bexarotene
Cabazitaxel
Capecitabine
Carboplatin
Cemiplimab-rwlc
Cetuximab
Cisplatin
Cladribine
Cytarabine
Dacarbazine
Dasatinib
Decitabine
Denileukin
Docetaxel
Eribulin
Erlotinib
Everolimus
Floxuridine
Fludarabine
Fluorouracil
Gefitinib
Gemcitabine
Gemtuzumab
Hydroxyurea
Ibritumomab
Imatinib
Irinotecan
Ixabepilone
Lapatinib
Levamisole
Mercaptopurine
Mitotane
Mitoxantrone
Nelarabine
Nilotinib
Nilutamide
Nivolumab
Oxaliplatin
Paclitaxel
Panitumumab
Pazopanib
Pegaspargase
Pembrolizumab
Pentostatin
Porfimer
Raltitrexed
Sorafenib
Streptozocin
Sunitinib
Tegafur/Gimeracil/Oteracil
Temozolomide
Temsirolimus
Teniposide
Testolactone
Thioguanine
Topotecan
Tositumomab & Iodine131
Trabectedin
Trastuzumab
Tretinoin
Trifluridine & Tipiracil
Vorinostat

Antiplatelets
Abciximab
Aspirin
Cilostazol
Dipyridamole
Eptifibatide
Tirofiban

CPTP
Cangrelor
Ticagrelor

thienopyridine
Clopidogrel
Prasugrel
Ticlopidine

Antiprotozoals
Atovaquone
Chloroquine
Clioquinol
Hydroxychloroquine
Mefloquine
Metronidazle
Nifurtimox
Nitazoxanide
Pentamidine
Primaquine
Pyrimethamine
Quinidine
Quinine

Antipsychotics
Amisulpride
Aripiprazole
Asenapine
Brexpiprazole
Carbamazepine
Cariprazine
Chlorpromazine
Clozapine
Droperidol
Fluphenazine
Haloperidol
Iloperidone
Levomepromazine
Lithium
Loxapine
Lumateperone
Lurasidone
Mesoridazine
Molindone
Olanzapine
Paliperidone
Perphenazine
Pimavanserin
Pimozide
Prochlorperazine
Promazine
Quetiapine
Risperidone
Sertindole
Thioridazine
Thiothixene
Trifluoperazine
Trimeprazine
Valproic Acid
Ziprasidone
Zuclopenthixol
Zuclopenthixol Acetate
Zuclopenthixol Decanoate
Zuclopenthixol Dihydrochloride

Antiretrovirals
Adefovir
Amprenavir
Atazanavir
Bictegravir/Emtricitabine/Tenofovir Alafenamide
Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Alafenamide
Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Disoproxil
Darunavir
Delavirdine
Didanosine
Dolutegravir
Efavirenz
Emtricitabine
Enfuvirtide
Fosamprenavir
Hydroxyurea
Ibalizumab
Indinavir
Lamivudine
Lopinavir
Maraviroc
Nelfinavir
Nevirapine
Raltegravir
Rilpivirine
Ritonavir
Saquinavir
Stavudine
Tenofovir Disoproxil
Zalcitabine
Zidovudine

Antiviral
Acyclovir
Amantadine
Cytarabine
Entecavir
Famciclovir
Foscarnet
Ganciclovir
Imiquimod
Letermovir
Oseltamivir
Penciclovir
Peramivir
Podophyllotoxin
Rimantadine
Tenofovir Alafenamide
Trifluridine
Valacyclovir
Valganciclovir
Zanamivir

nucleoside analog
Ribavirin
Vidarabine

nucleotide analog
Cidofovir
Remdesivir

topical
Acyclovir
Docosanol

Anxiolytics
Buspirone
Chlormezanone
Kava
Lavender
Meprobamate
Tetrazepam
Valerian

Barbiturates
Amobarbital
Aprobarbital
Butabarbital
Butalbital
Mephobarbital
Methohexital
Pentobarbital
Phenobarbital
Primidone
Secobarbital
Thiopental

Benzodiazepines
Alprazolam
Chlordiazepoxide
Clobazam
Clonazepam
Clorazepate
Diazepam
Estazolam
Flurazepam
Lorazepam
Midazolam
Nitrazepam
Oxazepam
Prazepam
Quazepam
Remimazolam
Temazepam
Tetrazepam
Triazolam

Bisphosphonates
Alendronate
Etidronate
Ibandronate
Pamidronate
Risedronate
Tiludronate

Zoledronate

Calcium channel blockers
Amlodipine
Bepridil
Clevidipine
Diltiazem
Felodipine
Isradipine
Nicardipine
Nifedipine
Nimodipine
Nisoldipine
Prenylamine
Verapamil

Carbonic anhydrase inhibitors
Acetazolamide
Brinzolamide
Dichlorphenamide
Dorzolamide
Ethoxzolamide
Methazolamide

CB1 Cannabinoid receptor antagonists
Rimonabant

Central muscle relaxants
Carisoprodol
Chlormezanone
Chlorzoxazone
Cyclobenzaprine
Meprobamate
Metaxalone
Methocarbamol
Orphenadrine

Cephalosporins
1st generation
Cefadroxil
Cefazolin
Cephalexin
Cephalothin
Cephapirin
Cephradine
2nd generation
Cefaclor
Cefamandole
Cefmetazole
Cefonicid
Cefotetan
Cefoxitin
Cefprozil
Cefuroxime
Loracarbef
3rd generation
Cefdinir
Cefditoren
Cefixime
Cefoperazone
Cefotaxime
Cefpodoxime
Ceftazidime
Ceftazidime & Avibactam
Ceftibuten
Ceftizoxime
Ceftriaxone
4th generation
Cefepime
Cefiderocol
5th generation
Ceftaroline Fosamil
Ceftobiprole
Ceftolozane & Tazobactam

Cholinesterase inhibitors
Donepezil
Edrophonium
Galantamine
Neostigmine
Physostigmine
Rivastigmine
Succinylcholine
Tacrine

CNS stimulants
Cocaine
Dexmethylphenidate
Dextroamphetamine
Lisdexamfetamine
Modafinil

Corticosteroids
Alclometasone
Amcinonide
Beclomethasone
Betamethasone
Budesonide
Ciclesonide
Clobetasol
Cortisone
Deflazacort
Desonide
Desoximetasone
Dexamethasone
Difluprednate
Fludrocortisone
Flumetasone
Flunisolide
Fluocinolone
Fluocinonide
Fluprednisolone
Fluticasone Furoate
Fluticasone Propionate
Halcinonide
Halobetasol
Halometasone
Hydrocortisone
Loteprednol
Methylprednisolone
Mometasone
Prednicarbate
Prednisolone
Prednisone
Tixocortol
Triamcinolone
antagonist
Mifepristone
Misoprostol

COX-2 inhibitors
Celecoxib
Etodolac
Etoricoxib
Meloxicam
Nimesulide
Rofecoxib
Valdecoxib

CYP3A4 inhibitors
Amiodarone
Aprepitant
Boceprevir
Chloramphenicol
Cimetidine
Ciprofloxacin
Clarithromycin
Conivaptan
Delavirdine
Diltiazem
Erythromycin
Fluconazole
Fluvoxamine
Grapefruit Juice
Imatinib
Indinavir
Itraconazole
Ketoconazole
Mifepristone
Nefazodone
Nelfinavir
Norfloxacin
Ombitasvir/Paritaprevir/Ritonavir
Ombitasvir/Paritaprevir/Ritonavir & Dasabuvir
Ritonavir
Saquinavir
Telaprevir
Telithromycin
Verapamil
Voriconazole

Dermal fillers
Azficel-T
Calcium Hydroxylapatite

Dipeptidyl peptidase-4 (DPP-4) inhibitors
Alogliptin
Linagliptin
Saxagliptin
Sitagliptin
Vildagliptin

Disease-modifying antirheumatics (DMARD)
Abatacept
Adalimumab
Azathioprine
Bucillamine
Certolizumab
Chloroquine
Cyclosporine
Etanercept
Gold & Gold Compounds
Golimumab
Hydroxychloroquine
Infliximab
Leflunomide
Methotrexate
Minocycline
Penicillamine
Rituximab
Sulfasalazine
Tocilizumab

Diuretics
Acetazolamide
Blue Cohosh
Boswellia
Brinzolamide
Caffeine
Chicory
Cranberry
Dorzolamide
Eplerenone
Eucalyptus
Horse Chestnut (Bark, Flower, Leaf, Seed)
Horsetail
Isosorbide
Meadowsweet
Methazolamide
Spironolactone
Squill
loop
Bumetanide
Ethacrynic Acid
Furosemide
Torsemide
potassium-sparing
Amiloride
Triamterene
thiazide
Bendroflumethiazide
Benzthiazide
Chlorothiazide
Chlorthalidone
Cyclothiazide
Hydrochlorothiazide
Hydroflumethiazide
Indapamide
Methyclothiazide
Metolazone
Polythiazide
Quinethazone
Trichlormethiazide

Dopamine receptor agonists
Apomorphine
Bromocriptine
Cabergoline
Dopexamine
Fenoldopam
Pergolide
Pramipexole
Quinagolide
Ropinirole
Rotigotine

Dopamine receptor antagonists
Amisulpride
Domperidone
Metoclopramide
Sulpiride

Endothelin receptor (ETR) antagonists
Ambrisentan
Bosentan
Macitentan
Sitaxentan

Epidermal growth factor receptor (EGFR) inhibitors/antagonists
Afatinib
Cetuximab
Dacomitinib
Erlotinib
Gefitinib
Lapatinib
Necitumumab
Neratinib
Osimertinib
Panitumumab
Vandetanib

Eugeroics
Armodafinil

Fibrinolytics
Alteplase
Anistreplase
Reteplase
Streptokinase
Tenecteplase
Urokinase

Gonadotropin-releasing hormone (GnRH) agonists
- Buserelin
- Goserelin
- Histrelin
- Leuprolide
- Nafarelin
- Triptorelin

antagonist
- Abarelix
- Cetrorelix
- Degarelix
- Elagolix Sodium
- Ganirelix
- Relugolix

Histamines

H1 receptor antagonist
- Alcaftadine
- Astemizole
- Azatadine
- Azelastine
- Bepotastine
- Brompheniramine
- Buclizine
- Carbinoxamine
- Cetirizine
- Chlorpheniramine
- Cinnarizine
- Clemastine
- Cyproheptadine
- Desloratadine
- Dexchlorpheniramine
- Diphenhydramine
- Epinastine
- Fexofenadine
- Hydroxyzine
- Ketotifen
- Levocetirizine
- Loratadine
- Meclizine
- Mizolastine
- Olopatadine
- Phenindamine
- Promethazine
- Pyrilamine
- Rupatadine
- Terfenadine
- Trimeprazine
- Tripelennamine
- Triprolidine

H2 receptor antagonist
- Cimetidine
- Famotidine
- Nizatidine
- Ranitidine
- Roxatidine

Histone deacetylase (HDAC) inhibitors
- Belinostat
- Panobinostat
- Romidepsin
- Vorinostat

HMG-CoA reductase inhibitors
- Atorvastatin
- Fluvastatin
- Lovastatin
- Pravastatin
- Red Rice Yeast
- Rosuvastatin
- Simvastatin

Hormones
- Drospirenone/Estetrol
- Estradiol
- Levonorgestrel
- Melatonin
- Oral Contraceptives
- Sincalide

polypeptide
- Glucagon
- Insulin
- Insulin Aspart
- Mecasermin
- Nesiritide
- Secretin

Immune checkpoint inhibitors

Programmed death-ligand (PD-L1) inhibitor
- Atezolizumab
- Avelumab
- Cemiplimab-rwlc
- Durvalumab

Programmed death receptor-1 (PD-1) inhibitor
- Cemiplimab-rwlc
- Dostarlimab
- Nivolumab
- Pembrolizumab

Immunomodulators
- Aldesleukin
- Aristolochia
- Arnica
- Bifidobacteria
- Brewer's Yeast
- Cordyceps
- Dong Quai
- Echinacea
- Efalizumab
- Garlic
- Ginseng
- Glatiramer
- Goldenseal
- Imiquimod
- Immune Globulin IV
- Immune Globulin SC
- Interferon Alfa
- Interferon Beta
- Interferon Gamma
- Lactobacillus
- Lemon Balm
- Lenalidomide
- Levamisole
- Milk Thistle
- Mistletoe
- Natalizumab
- Palivizumab
- PEG-Interferon
- Pimecrolimus
- Pomalidomide
- Propolis
- Resveratrol
- Sarsaparilla
- Siberian Ginseng
- Sinecatechins

Immunosuppressants
- Alefacept
- Alemtuzumab
- Anti-Thymocyte Globulin (Equine)
- Anti-Thymocyte Immunoglobulin (Rabbit)
- Azathioprine
- Belatacept
- Belimumab
- Cyclosporine
- Daclizumab
- Everolimus
- Fingolimod
- Mizoribine
- Muromonab-CD3
- Mycophenolate
- Phellodendron
- Pirfenidone
- Rituximab
- Sirolimus
- Tacrolimus
- Thalidomide

Mast cell stabilizers
- Cromolyn
- Lodoxamide
- Nedocromil
- Pemirolast

Monoamine oxidase (MAO) inhibitors
- Isocarboxazid
- Phenelzine
- Tranylcypromine

mTOR inhibitors
- Everolimus
- Temsirolimus
- Zotarolimus

Muscarinic antagonists
- Aclidinium
- Amitriptyline
- Amoxapine
- Atropine Sulfate
- Benactyzine
- Benztropine
- Biperiden
- Chlorpheniramine
- Chlorpromazine
- Cinnarizine
- Clidinium
- Clomipramine
- Darifenacin
- Dicyclomine
- Diphenhydramine
- Disopyramide
- Doxepin
- Fesoterodine
- Flavoxate
- Glycopyrrolate
- Hydroxyzine
- Hyoscyamine
- Imipramine
- Ipratropium
- Maprotiline
- Mepenzolate
- Olanzapine
- Orphenadrine
- Oxybutynin
- Phenelzine
- Prochlorperazine
- Procyclidine
- Propantheline
- Scopolamine
- Solifenacin
- Tiotropium
- Tolterodine
- Trihexyphenidyl
- Trospium
- Umeclidinium

Muscarinic cholinergic agonists
- Bethanechol
- Carbachol
- Cevimeline
- Methantheline
- Pilocarpine

Non-depolarizing neuromuscular blockers
- Atracurium
- Cisatracurium
- Doxacurium
- Pancuronium
- Pipecuronium
- Rapacuronium
- Rocuronium
- Vecuronium

Non-nucleoside reverse transcriptase inhibitors
- Delavirdine
- Doravirine
- Efavirenz
- Emtricitabine/Rilpivirine/Tenofovir Alafenamide
- Etravirine
- Nevirapine
- Rilpivirine

Non-steroidal anti-inflammatories (NSAIDs)
- Aceclofenac
- Acemetacin
- Aspirin
- Benzydamine
- Bromfenac
- Celecoxib
- Dexibuprofen
- Dexketoprofen
- Diclofenac
- Diflunisal
- Etodolac
- Etoricoxib
- Fenbufen
- Fenoprofen
- Flurbiprofen
- Ibuprofen
- Indomethacin
- Ketoprofen
- Ketorolac
- Meclofenamate
- Mefenamic Acid
- Meloxicam
- Metamizole
- Methyl salicylate
- Nabumetone
- Naproxen
- Nepafenac
- Nimesulide
- Oxaprozin
- Phenylbutazone
- Piroxicam
- Pranoprofen
- Rofecoxib
- Salsalate
- Sulindac
- Tenoxicam
- Tolmetin
- Valdecoxib

Nucleoside analog reverse transcriptase inhibitors
- Abacavir
- Bictegravir/Emtricitabine/Tenofovir Alafenamide
- Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Alafenamide

- Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Disoproxil
- Didanosine
- Emtricitabine
- Emtricitabine/Rilpivirine/Tenofovir Alafenamide
- Lamivudine
- Stavudine
- Telbivudine
- Tenofovir Disoproxil
- Zalcitabine
- Zidovudine

Oligonucleotides
- Defibrotide

Opiate agonists
- Codeine
- Heroin
- Hydrocodone
- Hydromorphone
- Loperamide
- Meperidine
- Methadone
- Morphine
- Nalbuphine
- Oxycodone
- Oxymorphone
- Pentazocine
- Propoxyphene
- Sufentanil
- Tramadol

Phosphodiesterase inhibitors
- Apremilast
- Avanafil
- Cilostazol
- Inamrinone
- Milrinone
- Roflumilast
- Sildenafil
- Tadalafil
- Vardenafil

Prostaglandins
- Alprostadil
- Dinoprostone
- Iloprost
- Treprostinil
- Unoprostone

Prostaglandin analogs
- Bimatoprost
- Gemeprost
- Latanoprost
- Tafluprost
- Travoprost

Proton pump inhibitors (PPI)
- Dexlansoprazole
- Esomeprazole
- Lansoprazole
- Omeprazole
- Pantoprazole
- Rabeprazole

Retinoids
- Acitretin
- Adapalene
- Alitretinoin
- Bexarotene
- Clindamycin/Tretinoin
- Isotretinoin
- Tretinoin
- Trifarotene

Selective estrogen receptor modulators (SERM)
- Chlorotrianisene
- Clomiphene
- Ospemifene
- Raloxifene
- Tamoxifen
- Tibolone
- Toremifene

Selective serotonin reuptake inhibitors (SSRI)
- Citalopram
- Escitalopram
- Fluoxetine
- Fluvoxamine
- Paroxetine Hydrochloride
- Paroxetine Mesylate
- Sertraline

Serotonins

antagonist
- Buspirone
- Sibutramine

serotonin receptor agonist
- Almotriptan
- Eletriptan
- Frovatriptan
- Lorcaserin
- Rizatriptan
- Sumatriptan
- Vortioxetine
- Zolmitriptan

serotonin receptor antagonist
- Naratriptan
- Vortioxetine

serotonin reuptake inhibitor
- Duloxetine
- Trazodone
- Vortioxetine

serotonin type 3 receptor antagonist
- Alosetron
- Dolasetron
- Granisetron
- Netupitant & Palonosetron
- Ondansetron
- Palonosetron

serotonin type 4 receptor agonist
- Prucalopride
- Tegaserod

serotonin-norepinephrine reuptake inhibitor
- Desvenlafaxine
- Levomilnacipran
- Venlafaxine
- Vilazodone

Statins
- Atorvastatin
- Fluvastatin
- Lovastatin
- Pitavastatin
- Pravastatin
- Rosuvastatin
- Simvastatin

Sulfonylureas
- Acetohexamide
- Chlorpropamide
- Gliclazide
- Glimepiride
- Glipizide
- Glyburide
- Tolazamide
- Tolazoline
- Tolbutamide

Topoisomerase 1 inhibitors
- Irinotecan
- Topotecan

Topoisomerase 2 inhibitors
- Etoposide
- Teniposide

Trace elements
- Arsenic
- Selenium
- Sulfites
- Zinc

Tyrosine kinase inhibitors
- Afatinib
- Avapritinib
- Axitinib
- Bosutinib
- Brigatinib
- Cabozantinib
- Crizotinib
- Dacomitinib
- Dasatinib
- Erdafitinib
- Erlotinib
- Gefitinib
- Imatinib
- Lapatinib
- Leflunomide
- Lenvatinib
- Nilotinib
- Nintedanib
- Osimertinib
- Pazopanib
- Ponatinib
- Pralsetinib
- Regorafenib
- Ripretinib
- Sorafenib
- Sunitinib
- Tivozanib
- Trastuzumab
- Tucatinib
- Vandetanib
- Zanubrutinib

Vaccines
- Anthrax Vaccine
- BCG Vaccine
- Cholera Vaccine
- Covid-19 Vaccine, mRNA
- Diphtheria Antitoxin
- Hemophilus B Vaccine
- Hepatitis A Vaccine
- Hepatitis B Vaccine
- Human Papillomavirus (HPV) Vaccine
- Human Papillomavirus Vaccine (Bivalent)
- Inactivated Polio Vaccine
- Influenza Vaccine
- Japanese Encephalitis Vaccine
- Measles, Mumps & Rubella (MMR) Virus Vaccine
- Meningococcal Group B Vaccine
- Meningococcal Groups C & Y & Haemophilus B Tetanus Toxoid Conjugate Vaccine
- Pandemic Influenza Vaccine (H1N1)
- Pneumococcal Vaccine
- Sipuleucel-T
- Smallpox Vaccine
- Typhoid Vaccine
- Varicella Vaccine
- Yellow Fever Vaccine
- Zoster Vaccine

Vasodilators
- Ambrisentan
- Amyl Nitrite
- Astragalus Root
- Benazepril
- Bosentan
- Captopril
- Cilazapril
- Diazoxide
- Enalapril
- Fosinopril
- Hydralazine
- Iloprost
- Isosorbide Dinitrate
- Isosorbide Mononitrate
- Minoxidil
- Nesiritide
- Nitroglycerin
- Nitroprusside
- Prenylamine
- Quinapril
- Ramipril
- Trandolapril

peripheral
- Cilostazol
- Cinnarizine
- Epoprostenol
- Papaverine
- Pentoxifylline
- Peppermint

Vitamins
- Ascorbic Acid
- Beta-Carotene
- Cyanocobalamin
- Ergocalciferol
- Folic Acid
- Niacin
- Niacinamide
- Pantothenic Acid
- Phytonadione
- Pyridoxine
- Riboflavin
- Thiamine
- Vitamin A
- Vitamin E

Vitamin D receptor agonists
- Dihydrotachysterol
- Doxercalciferol
- Paricalcitol

Xanthine alkaloids
- Aminophylline
- Caffeine
- Green Tea
- Pentoxifylline

CLASS REACTIONS*

ACE INHIBITORS

	B	C	E	F	L	P	Q	R	T	Z	=
SKIN											
Anaphylaxis		[1]	[1]		•	[1]		•			✓
Angioedema	[8]	[45] (15%)	[75]	[3]	[44] (70%)	[6]	[10]	[13]	[3]	[1]	✓✓
Bullous dermatosis		[1]			[1]						
Bullous pemphigoid / pemphigoid		[2]	[2]		[1]						
Dermatitis		[3]		[1]				[1]			
Diaphoresis (see also hyperhidrosis)	[1]		[1]	•	•	•	[3]	[2]			✓
DRESS syndrome		[2]				[1]		[1]			
Edema / fluid retention (see also peripheral edema)			[1]	•		•	[4]	[1]	•		✓
Erythema		[1]	[1]		•	•		[1]			✓
Erythema multiforme			•					•			
Erythroderma		[2]	[1]	[1]							
Exanthems	[1]	[19] (10%)	[9]		[4]		[1]	[1]			✓
Exfoliative dermatitis		[4]	•		[2]		•				
Facial edema					[1]	•	[1]				
Flushing / rubefaction	[1]	[2]	[4]		[2]		•	[2]	•		✓
Jaundice		[1]						[1]			
Kaposi's sarcoma		[2]			[2]		[1]				
Lichen planus pemphigoides		[2]						[3]			
Lichenoid eruption / lichenoid reaction		[12]	[2]		[2]						
Linear IgA	[1]	[5]									
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))		[8]	[2]		[1]						

B Benazepril; **C** Captopril; **E** Enalapril; **F** Fosinopril; **L** Lisinopril; **P** Perindopril; **Q** Quinapril; **R** Ramipril; **T** Trandolapril; **Z** Zofenopril

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These tables concentrate on skin, hair, nails and mucosal reactions.

* The following conventions are followed in these tables:

•	reaction noted (package inserts)
[3]	number of published reports of a reaction
(8%)	highest incidence that has ever been noted or reported
?	20 reports or over or an incidence of 20% or over recorded for this reaction for a minority of drugs in the class
✓	at least half the drugs in the class selection have this reaction noted or reported
✓✓	all drugs in the class selection have this reaction noted or reported
Note:	reactions noted or reported for only one drug in a class selection have been excluded

	B	C	E	F	L	P	Q	R	T	Z	=
Mycosis fungoides		[2]	[1]								
Palmoplantar pustulosis		[1]				[1]					
Pemphigus	[1]	[24]	[11]	[1]			[1]	[1]	•		✓
Pemphigus foliaceus	[1]	[2]	[2]	[1]	[2]	[1]	[1]	[1]	[1]		✓
Peripheral edema (see also edema)	[3]		[2]		[1]	[4]	[3]				✓
Photosensitivity	•	[3]	[2]	•	•		[2]	[2]			✓
Pityriasis rosea		[6]			[2]						
Pruritus (itching)	[1]	[8] (10%)	[3]	[1]	•	(<10%)	[7]	[3]	•		✓
Pseudolymphoma		[2]		[1]	[1]						
Psoriasis		[8]	[3]		[1]	•		[1]			✓
Purpura		[1]	[1]		[2]	•		•			✓
Rash	[1]	[12] (4–7%)	[5]	[1]	[5]	[1] (<10%)	[5]	[4]	•	•	✓✓
Stevens-Johnson syndrome		[4]	[1] (5%)					[2]			
Urticaria / hives	[1]	[9] (7%)	[5]	•	[2]		•	•			✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)		[7]	[2]		[1]		•	[1]			✓
Xerosis / xeroderma (see also dry skin)		[1]				•					
HAIR											
Alopecia / hair loss		[4]	[1]		[1]		•	(<10%)			✓
NAILS											
Nail dystrophy		[2]	[1]								
MUCOSAL											
Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis)		[2]	[2]		[1]						
Gingival bleeding			[1]					[1]			
Glossitis (inflammation of the tongue)		[3]	•								
Oral burn		[1]	[1]								
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)		[4]	[2]								
Sialorrhea (ptyalism; hypersalivation)		[1]						•			
Tongue edema			[4]		[3]	[2]					
Xerostomia (dry mouth)		[1]	•	•	•	•	•	•	•		✓

B Benazepril; **C** Captopril; **E** Enalapril; **F** Fosinopril; **L** Lisinopril; **P** Perindopril; **Q** Quinapril; **R** Ramipril; **T** Trandolapril; **Z** Zofenopril

ANTIARRHYTHMICS

	A	Di	Dr	F	I	L	Pn	Pf	Pr	Q	S	=
SKIN												
Acneiform eruption / acneiform dermatitis / acneiform rash								•	[2]	[2]		
AGEP								[1]		[2]		
Anaphylaxis	[2]		[2]			[7]			[1]			
Angioedema	[2]		[1]			[3]	[1]	[1]	[2]	•		✓
Bullous dermatosis					[1]				[1]			
Cutaneous toxicity / skin toxicity	[5]	[1]	[1]	[1]		[3]		[1]				✓
Dermatitis		•	[1] (<10%)			[27]	[1] (6%)		[2]	[4]		✓
Diaphoresis (see also hyperhidrosis)	[2]			•	[1]	[1]		•				
Eczema / eczematous reaction / eczematous eruption			[1] (<10%)			[3]			[2]			
Edema / fluid retention (see also peripheral edema)	(<10%)	•		•		[2]		•			(5%)	✓
Erythema			(5%)			[3]		[1]	[1]			
Erythema multiforme	[1]					[2]			[1]	[1]		
Erythema nodosum	[2]	[1]				[1]						
Exanthems	[5]	[1] (<5%)	[1]	[1]		[2]	[5] (8%)	[1]	[4]	[6] (17%)		✓
Exfoliative dermatitis	[1]			•		[2]			[1]	[5]		
Fixed eruption				[1]		[2]			[1]	[2]		
Flushing / rubefaction	(<10%)			•			•	•	[2]	[2]		✓
Hypersensitivity	[1]		[1]			[9]	[2]			[1]		
Leukocytoclastic vasculitis (angiitis)	[1]		[1]						[1]		[1]	
Lichen planus (includes hypertrophic lichen planus)							[1]			[7]		
Lichenoid eruption / lichenoid reaction									[3]	[6]	[1]	
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))	[5] (5%)	[3]				[1]	[176] (15–20%)	[3]	[2]	[35]		✓
Necrosis (skin necrosis)	[1]								[3]			

A Amiodarone; **Di** Disopyramide; **Dr** Dronedarone; **F** Flecainide; **I** Ibutilide; **L** Lidocaine; **Pn** Procainamide; **Pf** Propafenone; **Pr** Propranolol; **Q** Quinidine; **S** Sotalol

	A	Di	Dr	F	I	L	Pn	Pf	Pr	Q	S	=
Photosensitivity	[42] (10–75%)	[1]	[1]				[1]		[1]	[21]	•	✓
Phototoxicity	[4]		[2]						[1]	[1]		
Pigmentation	[70] (<10%)					[1]				[3]		?
Pruritus (itching)	[2] (<5%)	•	[1] (<10%)	•		[3]	•	•	[1]	[3]	(<10%)	✓
Psoriasis	[2]			[2]				[2]	[21]	[5]	[3]	✓
Purpura	[1]	[1]				[1]	[3]	•	[1]	[13]		✓
Rash	[1]	•	[8] (<10%)	•		•	•	•	[3] (<10%)	(<10%)	•	✓
Raynaud's phenomenon									[3] (59%)		•	?
Sjögren's syndrome							[1]			[1]		
Stevens-Johnson syndrome	[2]		[1]			[1]			[3]	[2]		
Urticaria / hives	[1]			•		[5]	[1] (<5%)	[1]	[3]	[1]		✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[6]		[1]				[5]			[5]	[1]	
HAIR												
Alopecia / hair loss	[5]			•				•	[6]	[1]	•	✓
MUCOSAL												
Oral lesions		[1] (40%)						[1]				?
Oral mucosal eruption							[1]			[2]		
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)		[1]				[1]			[1]			
Sialorrhea (ptyalism; hypersalivation)	(<10%)							[1]				
Xerostomia (dry mouth)		[2] (40%)		•				•	[1]		•	?

A Amiodarone; **Di** Disopyramide; **Dr** Dronedarone; **F** Flecainide; **I** Ibutilide; **L** Lidocaine; **Pn** Procainamide; **Pf** Propafenone; **Pr** Propranolol; **Q** Quinidine; **S** Sotalol

ANTIBIOTICS, MACROLIDE

	A	C	D	E	F	R	Te	Tr	=
SKIN									
AGEP	[3]			[3]					
Anaphylaxis	[2]	[2]		[2]			[1]		✓
Angioedema	[1]	[1]		[1]			[1]	[1]	✓
Candidiasis / candidosis	•						•		
Churg-Strauss syndrome	[2]					[1]			
Cutaneous toxicity / skin toxicity	[1]	[1]							
Dermatitis	[1]			[4]					
Erythema	[2]					[1]			
Erythema multiforme				[1]			•		
Exanthems	[3]	[3]		[4] (<5%)				[2]	✓
Fixed eruption		[3]		[6]		[1]			
Hypersensitivity	[3]	[3]		[3] (<10%)	[1]	[1]	[1]		✓
Jarisch–Herxheimer reaction	[2]			[1]					
Jaundice	[1]						[2]		
Pruritus (itching)	[3]	[1]	•		•		•	[2]	✓
Pustules / pustular eruption	[1]			[1]					
Rash	[7] (2–10%)	[2]	•	[3]	•	[2]	•	(<10%)	✓✓
SDRIFE		[3]		[2]		[1]			
Stevens-Johnson syndrome	[9] (5%)	[4]		[13] (10%)					?
Urticaria / hives	[2]	[1]	•	[4]		[2]	•	[1] (<10%)	✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[1]	[3]		[1]			•		✓
HAIR									
Alopecia / hair loss		[1]		[1]					
MUCOSAL									
Black tongue / black hairy tongue (lingua villosa nigra)		[1]		[1]					
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth		[1]		[1]					
Glossitis (inflammation of the tongue)		[1]					•		
Oral candidiasis				(<10%)			•		

A Azithromycin; **C** Clarithromycin; **D** Dirithromycin; **E** Erythromycin; **F** Fidaxomicin; **R** Roxithromycin; **Te** Telithromycin; **Tr** Troleandomycin

	A	C	D	E	F	R	Te	Tr	=
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)			•	[1]					
Stomatitis (oral mucositis)		[2]					•		
Xerostomia (dry mouth)		[1]	•				•		

A Azithromycin; **C** Clarithromycin; **D** Dirithromycin; **E** Erythromycin; **F** Fidaxomicin; **R** Roxithromycin; **Te** Telithromycin; **Tr** Troleandomycin

ANTICONVULSANTS

	Ca	Cl	E	G	Lac	Lam	Le	O	Phb	Phy	Pre	R	Te	To	Tr	Va	=
SKIN																	
Acne keloid	[1]									[2]							
Acneiform eruption / acneiform dermatitis / acneiform rash	[1]			•		[1]		•	[1]	[8]		(<10%)		•			✓
AGEP	[5]					[1]	[1]		[1]	[5]			[1]			[1]	
Anaphylaxis						[1]				[1]			[1]				
Angioedema	[5]				[2]	[1] (<10%)	[1]	[2]	•	[2]							
Bruise / bruising / contusion / ecchymosis (ecchymoses)						•	•	•								[4] (<5%)	
Bullae	[1]	[1]							[1]								
Bullous dermatosis	[4]					[1]			[5]	[1]						[1]	
Bullous pemphigoid / pemphigoid				[2]			[1]										
Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR))	[7]					[1]		[1]		[5]							
Cutaneous toxicity / skin toxicity	[2]	[1]		[1]						[1]							
Dermatitis	[7]								[1]				[4]	•	[1]		
Diaphoresis (see also hyperhidrosis)	(<10%)					•		•	[1]					•		[1]	
DRESS syndrome	[75] (77%)			[2]		[36] (11%)	[7]	[7]	[24] (6%)	[46] (68%)						[17]	✓
Eczema / eczematous reaction / eczematous eruption	[2]					•								•			
Edema / fluid retention (see also peripheral edema)				[5]			[1]	•	[1]		[9]			•		[3]	
Epidermolysis bullosa	[1]									[1]							
Erythema	[1]		•			[2] (~10%)	[2]										
Erythema multiforme	[17]					[4]	[2]		[7]	[11]			[2]		[4]	[3]	✓
Erythroderma	[12]						[1]		[2] (16%)	[9] (6%)						[3]	
Exanthems	[36] (17%)			[2]		[19] (20%)	[1]	[4]	[13] (70%)	[22] (71%)			[2]	[1]	[3]	[3] (14%)	✓
Exfoliative dermatitis	[24]							[1]	[6]	[15]					[2]		?
Facial edema	[2]			•		•								[1]		•	

Ca Carbamazepine; **Cl** Clobazam; **E** Eslicarbazepine; **G** Gabapentin; **Lac** Lacosamide; **Lam** Lamotrigine; **Le** Levetiracetam; **O** Oxcarbazepine; **Phb** Phenobarbital; **Phy** Phenytoin; **Pre** Pregabalin; **R** Rufinamide; **Te** Tetrazepam; **To** Topiramate; **Tr** Trimethadione; **V** Valproic Acid

	Ca	Cl	E	G	Lac	Lam	Le	O	Phb	Phy	Pre	R	Te	To	Tr	Va	=
Fixed eruption	[10]					[1]		[1]	[9]	[5]				[2]		[1]	
Flushing / rubefaction						•								[1] (27%)			?
Granuloma annulare							[1]							[1]			
Hand–foot syndrome (palmar–plantar erythrodysesthesia)										[1]						[1]	
Hot flashes / hot flushes				[1]		(<10%)		•						(<10%)			
Hyperhidrosis (see also diaphoresis)			•			[1]		•			[1]						
Hypersensitivity	[72]		•	[1]		[30] (<10%)	[1]	[6]	[12]	[47] (23%)	[1]	•				[5]	✓
Leukocytoclastic vasculitis (angiitis)				[1]			[1]										
Lichen planus (includes hypertrophic lichen planus)	[2]									[1]							
Lichenoid eruption / lichenoid reaction	[8]									[1]							
Linear IgA	[1]									[8]							
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))	[35]	[1]				[5]	[1]	[2]	[2]	[19]					[7]	[6]	✓
Lupus syndrome / drug-induced lupus (DIL)						[2]				[1]							
Lymphadenopathy	[2]					[1]		[1]				•					
Lymphoma	[2]									[6]							
Lymphoproliferative disease / lymphoproliferative disorder	[5]									[1]							
Mycosis fungoides	[3]						[1]	[1]		[7]							
Pemphigus	[3]								[1]	[2]							
Peripheral edema (see also edema)	[1]		•	[14] (8%)					[1]	[1]	[16] (18%)					[1] (<5%)	
Petechiae	[1]					•										[1] (<5%)	
Photosensitivity	[9]					[2]			[1]	[1]				•	[1]	[1]	
Pigmentation							[1]		[1]	[4]				•			
Pruritus (itching)	[7]			[1]	[1]	[3]	[1]		[1]	[5]	[1] (17 cases)	•		[3]	[1]	[1]	✓
Pseudolymphoma	[17]					[1]			[1]	[31]						[2]	?
Psoriasis	[1]						[1]										
Purpura	[8]			[1]		[1]		•	[2]	[4]				•	[1]	[2]	✓

Ca Carbamazepine; **Cl** Clobazam; **E** Eslicarbazepine; **G** Gabapentin; **Lac** Lacosamide; **Lam** Lamotrigine; **Le** Levetiracetam; **O** Oxcarbazepine; **Phb** Phenobarbital; **Phy** Phenytoin; **Pre** Pregabalin; **R** Rufinamide; **Te** Tetrazepam; **To** Topiramate; **Tr** Trimethadione; **V** Valproic Acid

	Ca	Cl	E	G	Lac	Lam	Le	O	Phb	Phy	Pre	R	Te	To	Tr	Va	=
Pustules / pustular eruption	[5]								[1]	[3]							
Rash	[31] (12%)	[3]	[4]	[2]	[6]	[55] (12–22%)	[5]	[12] (9%)	[4]	[13] (17%)	[1]	[1]		[3] (6%)	[1]	[7]	✓
Scleroderma (see also morphea / localized scleroderma)										[1]						[1]	
Sjøgren's syndrome						[1]			[1]	[1]						[1]	
Stevens-Johnson syndrome	[151] (68%)	[3]	[1]	[2]	[3]	[87] (30%)	[4]	[14]	[40] (29%)	[103] (68%)			[4]		[1]	[19]	✓
Thrombocytopenic purpura	[1]				[1]												
Toxicoderma	[1]								[1]								
Urticaria / hives	[14] (7%)					[1]	[2]		[1]	[5]				[1]	[3]		?
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[7]			[1]			[1]		[1]	[11]	[1]				[2]	[3]	?
Xerosis / xeroderma (see also dry skin)						•								[1]			
HAIR																	
Alopecia / hair loss	[7] (~6%)		•	[2]		[2]				[3]				[2]	[1]	[23] (<10%)	?
Alopecia areata						[1]			[1]								
Hirsutism	[1] (25%)					•				[8] (13%)						[2] (60%)	?
Poliosis									[1]							[1]	
NAILS																	
Nail changes										[2]				•			
Nail hypoplasia	[1]								[2]	[3]							
Nail pigmentation										[1]						[2]	
Onychomadesis	[1]															[1]	
MUCOSAL																	
Epistaxis			•					•				(<10%)					
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth	[1]	[1]	•			•	[1]		[4] (16%)	[60] (16–94%)				[2]		[8] (42%)	✓
Gingivitis				•		•	•							•			
Mucocutaneous eruption (includes fixed eruption)	[4]									[2]							
Mucocutaneous lymph node syndrome	[2]									[1]							

Ca Carbamazepine; **Cl** Clobazam; **E** Eslicarbazepine; **G** Gabapentin; **Lac** Lacosamide; **Lam** Lamotrigine; **Le** Levetiracetam; **O** Oxcarbazepine; **Phb** Phenobarbital; **Phy** Phenytoin; **Pre** Pregabalin; **R** Rufinamide; **Te** Tetrazepam; **To** Topiramate; **Tr** Trimethadione; **V** Valproic Acid

	Ca	Cl	E	G	Lac	Lam	Le	O	Phb	Phy	Pre	R	Te	To	Tr	Va	=
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)	[2]					[1]		[1]		[1]							
Sialorrhea (ptyalism; hypersalivation)		[1]				•								[1] (4–5%)			
Stomatitis (oral mucositis)			•			•								•		(<5%)	
Xerostomia (dry mouth)			•	[1] (5%)		(6%)		•	[1]		[11] (17%)			[7] (16%)		[2] (<5%)	✓

Ca Carbamazepine; **Cl** Clobazam; **E** Eslicarbazepine; **G** Gabapentin; **Lac** Lacosamide; **Lam** Lamotrigine; **Le** Levetiracetam; **O** Oxcarbazepine; **Phb** Phenobarbital; **Phy** Phenytoin; **Pre** Pregabalin; **R** Rufinamide; **Te** Tetrazepam; **To** Topiramate; **Tr** Trimethadione; **V** Valproic Acid

ANTIDEPRESSANTS, TRICYCLIC

	Ami	Amo	C	De	Do	I	N	P	Tra	Tri	=
SKIN											
Angioedema	[1]			[1]		[1]			[1]		
Bullous dermatosis	[1]					[1]					
Cyanosis / acrocyanosis			[1]		[1]						
Dermatitis	[1]		[1]		[9]			[1]			
Diaphoresis (see also hyperhidrosis)	[1] (<10%)	(<10%)	[2] (43%)	[2] (<10%)	(<10%)	[8] (25%)	(<10%)	(<10%)	[1]	[1] (<10%)	✓✓
DRESS syndrome	[2]		[1]								
Edema / fluid retention (see also peripheral edema)	[1]	(<10%)	•			[1]			(<10%)		✓
Erythroderma	[1]				[1]						
Exanthems		[2]		[5] (6%)	[1]	[6] (6%)			[6]		✓
Exfoliative dermatitis				[1]		[4]			[1]		
Fixed eruption	[1]					[1]					
Flushing / rubefaction			(8%)	[1]	[1]	[1]					
Hypersensitivity	[1]		[2]								
Lichen planus (includes hypertrophic lichen planus)	[1]					[1]					
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))	[1]					[1]					
Photosensitivity	[3]	•	[3]	[1]	[1]	[3]	[2]	[1]	[2]	•	✓✓
Pigmentation	[4]		[1]	[3]		[13]					
Pruritus (itching)	[3]	[1]	[1] (6%)	[4]	[1]	[6]		[1] (<5%)	•		✓
Pseudolymphoma	[2]			[2]	[2]						
Purpura	[2]		•	[2]	[1]	[3]					✓
Rash		(<10%)	(8%)	[1]	[1]				[1]		✓
Stevens-Johnson syndrome	[1] (5%)	[2]									
Urticaria / hives		•	[1]	[3]		[6]			[3]		✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[1]	[1]				[1]			[1]		
HAIR											
Alopecia / hair loss	[1]	•	•	[1]	•	[2]	•	•	[2]	•	✓✓
Alopecia areata			[1]			[1]					
MUCOSAL											
Glossitis (inflammation of the tongue)					[1]	[2]					
Mucosal membrane desquamation				[1]		[1]					
Stomatitis (oral mucositis)	[1]				[1]	[2]					
Xerostomia (dry mouth)	[17] (79%)	[1] (14%)	[6] (84%)	[5]	[6] (5%)	[16] (21%)	[9]	•	[6]	[2]	✓✓

Ami Amitriptyline; **Amo** Amoxapine; **C** Clomipramine; **De** Desipramine; **Do** Doxepin; **I** Imipramine; **N** Nortriptyline; **P** Protriptyline; **Tra** Trazodone; **Tri** Trimipramine

ANTIFUNGAL, IMIDAZOLE

	C	E	K	L	M	T	=
SKIN							
Angioedema			[3]		[1]		
Burning / skin burning sensation	[2]	•	[1]				✓
Contact dermatitis	[1]	[2]		[2]	[2]		✓
Dermatitis	[9]		[3]		[11]	[3]	✓
Erythema		•		[1]			
Exanthems			[7] (10%)		[5] (87%)	[4]	✓
Fixed eruption			[2]		[1]	[2]	✓
Hypersensitivity		[1]	[3]			•	✓
Pruritus (itching)	[1]	[1]	[5] (10%)		[3] (36%)	[1]	✓
Purpura			[2]		[1] (3–8%)		
Rash		•	[3]		(9%)	(<10%)	✓
Urticaria / hives			[2]		[1]	[1] (<5%)	✓

C Clotrimazole; **E** Econazole; **K** Ketoconazole; **L** Luliconazole; **M** Miconazole; **T** Thiabendazole

ANTIMALARIALS

	Amo	A/L	Arm	Ars	A/P	C	Ha	Hy	M	Pr	Py	Qu	Qud	Qun	S	=
SKIN																
Acneiform eruption / acneiform dermatitis / acneiform rash													[2]	[2]		
AGEP					[1]	[1]		[27] (25%)			[1]		[2]			?
Anaphylaxis							[1]	[1]	[2]		•					
Angioedema	[1]					[1]		•		[1]	[2]		•	•	[1]	✓
Bullous dermatosis								[2]			[2]				[1]	
Cutaneous toxicity / skin toxicity						[2]		[1]								
Dermatitis		[1]				[2]		[1]			•		[4]	[6]		
DRESS syndrome								[4]			[2]			[1]		
Erythema									[2]		[1]				[1]	
Erythema annulare centrifugum (see also gyrate erythema)						[2]		[3]								
Erythema multiforme					[2]	•		[3]			[4]		[1]	[2]	[3]	
Erythema nodosum								[1]				[1]				
Erythroderma						[3]		[5]								
Exanthems					[1]	[3] (<5%)		[4] (<5%)	[1] (30%)	[1] (5%)	[3]	[3] (80%)	[6] (17%)	[3] (<5%)	[1]	✓
Exfoliative dermatitis						[4]		[3]	[1]		[2]	[3] (8%)	[5]	[2]	[3]	✓
Fixed eruption	[1]					•		•			[3]	[3]	[2]	[12]	[2]	✓
Flushing / rubefaction													[2]	•		
Hypersensitivity		[1]									[1]		[1]	[1]	•	
Lesions								[1]	[1]							
Lichen planus (includes hypertrophic lichen planus)								[1]					[7]	[3]		
Lichenoid eruption / lichenoid reaction						[6]		[4]			[2]	[6] (12%)	[6]	[3]		
Livedo reticularis													[6]	[3]		
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))													[35]	[1]		?
Lymphoproliferative disease / lymphoproliferative disorder								[1]			[1]		[1]			
Ochronosis												[2]		[1]		
Pemphigus						[1]		[1]								

Amo Amodiaquine; **A/L** Artemether/Lumefantrine; **Arm** Artemisia; **Ars** Artesunate; **A/P** Atovaquone/Proguanil; **C** Chloroquine; **Ha** Halofantrine; **Hy** Hydroxychloroquine; **M** Mefloquine; **Pr** Primaquine; **P** Pyrimethamine; **Qu** Quinacrine; **Qud** Quinidine; **Qun** Quinine; **S** Sulfadoxine

	Amo	A/L	Arm	Ars	A/P	C	Ha	Hy	M	Pr	Py	Qu	Qud	Qun	S	=
Photosensitivity						[8]		[6]			[3]	[1]	[21]	[19]	[2]	
Phototoxicity					[1]	[1]		[3]					[1]			
Pigmentation						[15]		[21] (<10%)			[5]	[9]	[3]	[6]		?
Pruritus (itching)	[4]	[2]	[2]	[4]	(<10%)	[36] (47%)	[3]	[13] (47%)	[2] (4–10%)	•	[2]	•	[3]	[1]	[2]	✓✓
Psoriasis						[19]		[17] (28%)	[2]	[1]		[1]	[5]			?
Purpura		[1]							[1]		[1]		[13]	[13]	[1]	
Pustules / pustular eruption		[1]				[1]		[1]			[1]		[1]			
Rash		[6] (11%)	[2]			[1]	[2]	[5] (<10%)	[1] (<10%)		•	[1]	(<10%)	[1]	•	✓
Stevens-Johnson syndrome					[1]	[9]		[4]	[3]		[33] (<10%)		[2]	[5]	[37] (<10%)	✓
Sweet syndrome						[1]		[1]								
Thrombocytopenic purpura								[2]						[8]		
Urticaria / hives	[1]	[2]		[1]	[1]	[5]		[2]	[1]	[1]		[1]	[1]	[2]		✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)								[1]	[3]				[5]	[5]		
HAIR																
Alopecia / hair loss					[1]			[2]	•			[2] (80%)	[1]			?
Hair pigmentation						[10]		[8] (<10%)								
NAILS																
Discoloration / nails (dyschromia)						[1]		[1]								
Nail pigmentation						[2]		[3]				[2]				
MUCOSAL																
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)	[1]			[1]							[1]				[1]	
Gingival pigmentation						[1]		[1]								
Glossitis (inflammation of the tongue)											•				•	
Oral edema				[1]							[1]				[1]	
Oral mucosal eruption													[2]	[1]		
Oral pigmentation						[14]		[7]				[4]	[1]			
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)					[3] (6%)	[1]									[1]	
Stomatitis (oral mucositis)						•	•	[2]							[1]	

Amo Amodiaquine; **A/L** Artemether/Lumefantrine; **Arm** Artemisia; **Ars** Artesunate; **A/P** Atovaquone/Proguanil; **C** Chloroquine; **Ha** Halofantrine; **Hy** Hydroxychloroquine; **M** Mefloquine; **Pr** Primaquine; **P** Pyrimethamine; **Qu** Quinacrine; **Qud** Quinidine; **Qun** Quinine; **S** Sulfadoxine

ANTINEOPLASTICS

	A	Ca	Cy	Da	Do	Er	Ev	F	G	H	Im	It	L	P	T	=
SKIN																
Acneiform eruption / acneiform dermatitis / acneiform rash		[3] (10%)		[2] (<10%)	[1] (13%)	[29] (73–80%)	[5] (26%)		[3] (20%)		[3]	[4] (78%)	[4] (90%)	[6] (83%)		✓
Acral erythema		[1]	[16] (35%)		[1]					[8]				[4]		?
Actinic keratoses		[3]	[1]							[1]				[1]		
AGEP			[1]		[2]	[3]					[7]					
Anaphylaxis			[3]		[3]	[1] (30%)		•						[3]		?
Angioedema							[4]							[1]		
Bullous dermatosis			[1]			[1]			[2]							
Bullous pemphigoid / pemphigoid						[1]	[1]									
Cellulitis			[1] (7%)				[1] (21%)		[6]							?
Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR))										[1]	[1] (71%)					?
Cutaneous toxicity / skin toxicity		[4] (33%)	[5] (41%)	[8] (36%)	[10] (56%)	[10] (84%)	[9] (63%)		[7] (80%)	[1] (5%)	[9] (30–44%)	[4] (34%)	[7] (46%)	[10] (15%)	[1]	✓
Dermatitis	[1]	[10] (37%)		[1] (<10%)	[1]	[5] (33%)	[2] (19%)		[6] (24%)	[3]				[2] (13%)	[1] (<5%)	✓
Dermatomyositis		[1]			[1]				[2]	[29]	[1]			[1]		?
Desquamation			[2]		[1]	[1]								[1] (7%)	(<5%)	
Diaphoresis (see also hyperhidrosis)	[1]	•						(14%)			(13%)	•				
DRESS syndrome						[2]					[5]					
Eczema / eczematous reaction / eczematous eruption				(<10%)		[1]			[1]							
Edema / fluid retention (see also peripheral edema)		[3] (18%)	[1]	[8] (38%)	[24] (100%)	[1]	[6] (39%)	(8–19%)	[4] (13%)		[40] (80%)	[1]	[1] (29%)	[2] (21%)	[3] (26%)	✓
Erythema			[7] (22%)	[2]	[4]	(18%)	[2] (<10%)		[1]		[5] (<10%)	[1] (10%)	[1]	[6]	[1] (<5%)	✓
Erythema multiforme	[1]				[1]		[1]			•	[2]			[1]		
Erythema nodosum	[1]			•							[1]					
Erythroderma			[1]					[1]			[4]				[1]	

A Anastrozole; **Ca** Capecitabine; **Cy** Cytarabine; **Da** Dasatinib; **Do** Docetaxel; **Er** Erlotinib; **Ev** Everolimus; **F** Fludarabine; **G** Gemcitabine; **H** Hydroxyurea; **Im** Imatinib; **Ir** Irinotecan; **L** Lapatinib; **P** Paclitaxel; **T** Tegafur/Gimeracil/Oteracil

	A	Ca	Cy	Da	Do	Er	Ev	F	G	H	Im	It	L	P	T	=
Exanthems	[1]		[7] (60%)		[3]	[3] (8%)	[4] (30%)	[1]	[2]	[1] (<10%)	[9]	[1]	[1]	[2]		✓
Exfoliative dermatitis		[1] (31–37%)	[1]	[1]					[1]		[4]	(14%)	[1] (14%)			?
Facial edema						[1]	[1]		[1]		[3] (<10%)					
Facial erythema					[2]					[1]						
Fissures						[1]						[1] (21%)				?
Fixed eruption					[1]					[4]				[2]		
Flagellate dermatitis					[1]									[1]		
Flushing / rubefaction	•			[1] (<10%)	[2] (6%)							(11%)		[3] (28%)	(<5%)	?
Folliculitis						[9] (11%)	[1]				[1]		[1]	[2]		
Gangrene									[1]	[1]						
Graft-versus-host reaction				[1]				[1]			[1]					
Hand–foot syndrome (palmar–plantar erythrodysesthesia)		[183] (89%)	[22]	[1]	[48] (33%)	[3] (30–60%)	[9] (71%)		[22] (44%)	[1]	[3]	[6] (16%)	[10] (76%)	[20] (40%)	[13] (11%)	✓
Hematoma														[1]	[1]	
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis	[1]		[1]													
Herpes zoster			[2]					[2]								
Hyperhidrosis (see also diaphoresis)				[1] (<10%)			[1] (8%)				[1]	[1]				
Hypersensitivity		[1]	[2]	•	[15] (28%)		[2] (<10%)		[3]					[26] (52–54%)		?
Ichthyosis										[3]				[1]		
Jaundice		[3] (35%)											[1] (35%)		(<5%)	?
Keratoses										[2]	[1]					
Lesions					[1]						[1]					
Leukocytoclastic vasculitis (angiitis)									[1]		[1]					
Lichen planus (includes hypertrophic lichen planus)										[3]	[7]					
Lichenoid eruption / lichenoid reaction										[3]	[14]					

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	A	Ca	Cy	Da	Do	Er	Ev	F	G	H	Im	It	L	P	T	=
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))	[3]	[4]		[1]	[1]				[1]	[3]				[5]		?
Lymphedema							[2]		[1]							
Maculopapular rash / morbilliform rash						[1]					[1]					
Necrosis (skin necrosis)						[1]			[3]							
Neutrophilic dermatosis			[1]											[1]		
Neutrophilic eccrine hidradenitis			[11]								[3]					
Panniculitis				[4]							[3]					
Papulopustular eruption		[1]				[9] (29%)								[1]		?
Peripheral edema (see also edema)	(10%)			[3] (44%)	[9] (32%)		[8] (4–39%)	(7%)	[4]	[1]	[5] (75%)				[1] (45%)	✓
Petechiae			[1]					[1]	(16%)		[1] (<10%)					
Photosensitivity		[2]		[1]	[6] (11%)	[1]				[1]	[3] (<10%)	[1]		[4]	•	✓
Pigmentation		[10] (18%)		[1]	[2]					[19] (59%)	[14] (60%)	[1]	[1] (18%)	[3] (5%)	[10] (55%)	✓
Pityriasis rosea							•				[6]					
Pruritus (itching)	[1] (2–5%)	[2] (33%)	(<10%)	[5] (18%)	[1]	[10] (33%)	[5] (91%)	•	[2] (13%)	[3]	[3] (10%)	[4] (19%)	[3] (33%)	[6] (10%)	[1] (<5%)	✓✓
Pseudolymphoma									[1]		[3]					
Psoriasis					[3]					[1]	[3]		[1]			
Purpura	[1]	•	[1]			[3]				[2]	[1]					
Radiation recall dermatitis		[6]	[1]		[18]	[1]	[1]		[17] (74%)	[2]				[11]		✓
Rash	[2] (32%)	[14] (65%)	[4] (61%)	[12] (34%)	[13] (22–44%)	[119] (80%)	[51] (91%)	[1] (4–15%)	[35] (100%)		[27] (69%)	[7] (56%)	[26] (55%)	[19] (83%)	[6] (12%)	✓
Raynaud's phenomenon									[3]	[1]					(<5%)	
Recall reaction					[3]		[1]		[1]			[1]		[2]		
Rosacea						[2]					[1]					
Scleroderma (see also morphea / localized scleroderma)		[1]			[9]				[1]					[7]		
SDRIFE							[1]		[1]	[1]						
Seborrheic dermatitis				[1]		[1]										
Seborrheic keratoses		[1]	[2]		[1]				[2]							
Squamous cell carcinoma								[1]		[2]	[2]					

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	A	Ca	Cy	Da	Do	Er	Ev	F	G	H	Im	It	L	P	T	=
Squamous syringometaplasia			[1]		[1]											
Stevens-Johnson syndrome		[3]	[2]		[3]			[1]	[4]		[15]			[2]	[3]	✓
Sweet syndrome			[1]	[1]		[1]					[4]					
Telangiectasia						[1]				[2]	[1]					
Thrombocytopenic purpura					[2]		[1]		[8]							
Toxic dermatitis		[1]													[1]	
Toxic erythema			[1] (55%)						[1]							?
Ulcerations			[1]	[1]						[28]					(<5%)	?
Urticaria / hives			[1]	[1] (<10%)	[1]						[3]			[4]	[1] (11%)	
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[2]		[3]			[1]	[1]		[3]	[6]	[2]					
Wound complications		[1]					[1] (11%)									
Xerosis / xeroderma (see also dry skin)	[1] (27%)	[2] (29%)		[1] (<10%)	[2]	[13] (56%)	[1] (13–18%)		[1]	[7] (<10%)	[2] (<10%)	[1] (40%)	[1] (29%)		[2] (<5%)	✓
HAIR																
Alopecia / hair loss	[1] (2–5%)	[10] (55%)	[5] (100%)	[3] (<10%)	[33] (100%)	[10] (14%)	[1] (14%)	(<10%)	[15] (15%)	[8] (<10%)	[2] (10–15%)	[24] (80%)	[2] (33%)	[52] (100%)	[4] (<5%)	✓✓
NAILS																
Beau's lines					[3] (45%)									[1] (29%)		?
Blue lunulae					[1]					[1]						
Hyponychial dermatitis		[1]			[1]											
Leukonychia striata (Mees' lines)			[3] (33%)		[2]					[1]				[2]		?
Melanonychia		[1]			[2]					[9] (17%)				[1]		
Nail changes		[1] (53%)			[18] (58–89%)	[3] (25%)				[4]		[1] (9%)		[6]		?
Nail disorder		[1] (10%)		[1]	[2] (11–41%)		[2] (52%)				[1]		[1] (10%)	[1]	(<5%)	✓
Nail dystrophy					[1]					[2]	[2]					
Nail loss		[1] (45%)			[3] (45%)											?
Nail pigmentation					[7] (10–50%)					[19] (5%)	[2]			[4] (52%)		?

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	A	Ca	Cy	Da	Do	Er	Ev	F	G	H	Im	It	L	P	T	=
Nail toxicity		[1] (40%)												[1] (40%)		?
Onycholysis		[3]			[15]					[2]		[1]		[11] (13%)		
Onychomadesis		[3] (24%)									[1] (29%)			[2]		?
Paronychia		[2] (27%)			[5]	[14] (23%)	[1]		[1] (16%)			[1] (25%)	[4] (27%)	[1]	[2] (<5%)	✓
Pyogenic granuloma		[2]			[2]	[1]						[1]		[2]		
Subungual hematoma / subungual hemorrhage					[2]									[1] (9%)		
Subungual hyperkeratosis		[1]			[2]									[1]		
MUCOSAL																
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)					[2] (30–33%)	[1]	[5] (21%)			[1]	[1]			[1] (19%)	[1]	?
Cheilitis (inflammation of the lips)		[1] (14%)									[1]		[1] (14%)			
Epistaxis					[1] (83%)		[3] (73%)	•				[1] (7%)		[2]		?
Gingivitis			[1]		[1]											
Mucocutaneous eruption (includes fixed eruption)				[1]						[1]	[1]					
Mucosal inflammation		[2] (13%)	[1]		[2] (55%)	[1] (18%)	[3] (50%)					[1] (10%)	[1] (15%)	[3] (69%)		✓
Mucositis		[17] (58%)	[3] (32%)	[1] (16%)	[15] (20-30%)	[10] (21%)	[18] (75%)	•	[7] (36%)		[2] (15%)	[4] (30%)	[2] (11–35%)	[15] (17–35%)	[7] (26%)	✓
Oral lesions			[5] (66%)							[2]				[1] (3–8%)		?
Oral pigmentation		[2]								[2]	[4]					
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)		[1] (18%)	•			[1]	[4] (32%)			[8]	[3] (15%)					?
Oropharyngeal pain					[1]		[1] (11%)				[1]					
Rectal hemorrhage / rectal bleeding		[1]		[1]												
Rhinorrhea							•					[1]				
Stomatitis (oral mucositis)		[19] (41%)	[2]	[1]	[26] (19–53%)	[12] (26%)	[87] (44–86%)	(9%)	[14] (17%)	[4]		[6] (20%)	[1] (41%)	[11] (62%)	[12] (37%)	✓
Xerostomia (dry mouth)				[1] (33%)			[1] (8–11%)				[1] (44%)					?

A Anastrozole; **Ca** Capecitabine; **Cy** Cytarabine; **Da** Dasatinib; **Do** Docetaxel; **Er** Erlotinib; **Ev** Everolimus; **F** Fludarabine; **G** Gemcitabine; **H** Hydroxyurea; **Im** Imatinib; **Ir** Irinotecan; **L** Lapatinib; **P** Paclitaxel; **T** Tegafur/Gimeracil/Oteracil

ANTIPSYCHOTICS

	Am	Ar	Ca	Cl	H	Le	Li	Lu	O	Pi	Pr	Q	R	T	V	=
SKIN																
Acneiform eruption / acneiform dermatitis / acneiform rash		[1]	[1]				[21] (11%)						•			
AGEP			[5]	[1]					[2]			[1]			[1]	
Anaphylaxis									[1]		(<10%)					
Angioedema			[5]	[2]	[1]		[2]	•	[2]				[6]	[1]		✓
Bruise / bruising / contusion / ecchymosis (ecchymoses)									•						[4] (<5%)	
Bullous dermatosis			[4]				[1]						•		[1]	
Candidiasis / candidosis									•			•				
Cutaneous toxicity / skin toxicity	[1]		[2]	[5]			[2]			[1]						
Dermatitis			[7]	•	•		[4]		[1]					[1]		
Diaphoresis (see also hyperhidrosis)			(<10%)	[4] (31%)	[2]				•			(<10%)	•		[1]	?
DRESS syndrome			[75] (77%)	[1]			[2]		[1]			[2]			[17]	?
Eczema / eczematous reaction / eczematous eruption			[2]	•			[1]		•				[1]			
Edema / fluid retention (see also peripheral edema)				•			[3]		[3]			[2]	[3]		[3]	
Erythema			[1]	[1]			[2]									
Erythema multiforme			[17]	•			[1]					[1]	[1]	[1]	[3]	
Erythroderma			[12]												[3]	
Exanthems			[36] (17%)	[2]			[11]		•		[1]			[1]	[3] (14%)	?
Exfoliative dermatitis			[24]				[3]						•			?
Facial edema			[2]						•	(<10%)		•			•	
Fixed eruption			[10]						[1]		[3]				[1]	
Furunculosis													•		(<5%)	
Hyperhidrosis (see also diaphoresis)		[1]										•				
Hypersensitivity			[72]						[2]						[5]	?
Lesions							[1]						[1]			
Lichen planus (includes hypertrophic lichen planus)			[2]				[1]									

Am Amisulpride; **Ar** Aripiprazole; **Ca** Carbamazepine; **Cl** Clozapine; **H** Haloperidol; **Le** Levomepromazine; **Li** Lithium; **Lu** Lurasidone; **O** Olanzapine; **Pi** Pimozide; **Pr** Prochlorperazine; **Q** Quetiapine; **R** Risperidone; **T** Thioridazine; **V** Valproic Acid

	Am	Ar	Ca	Cl	H	Le	Li	Lu	O	Pi	Pr	Q	R	T	V	=
Lichenoid eruption / lichenoid reaction			[8]						[1]				•	[1]		
Linear IgA			[1]				[4]									
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))			[35]	[4]			[5]							[1]	[6]	?
Lymphoproliferative disease / lympho-proliferative disorder			[5]											[1]		
Morphea / localized scleroderma (see also scleroderma)							[1]								[1]	
Mycosis fungoides			[3]				[1]									
Pemphigus			[3]		[1]											
Peripheral edema (see also edema)			[1]						[5] (<10%)			[6]	[4] (16%)		[1] (<5%)	
Petechiae			[1]	•											[1] (<5%)	
Photosensitivity			[9]	[1]	[3]				•	[1]	[3] (<10%)	•	[2] (<10%)	[2] (<10%)	[1]	✓
Pigmentation					•		•		[1]	[1]	•		•	[3]		
Pruritus (itching)			[7]	•	•		[9]	•	•		(<10%)		•		[1]	✓
Pseudolymphoma			[17]				[1]							[1]	[2]	
Psoriasis			[1]				[59]		[3]				•			?
Purpura			[8]	•			[2]		(<10%)		[1]		•		[2]	
Pustules / pustular eruption			[5]				[2]		[1]							
Rash		[2] (7%)	[31] (12%)	[2]	•		[1] (<10%)	•	[2]	(8%)	(<10%)	•	[2]	[3] (<10%)	[7]	✓
SDRIFE				[2]									[1]			
Seborrhea									•				•			
Seborrheic dermatitis					[2]		[3]									
Stevens-Johnson syndrome		[2]	[151] (68%)	[1]							[2]			[1]	[19]	?
Sweet syndrome				[1]	[1]	[1]										
Thrombocytopenic purpura			[1]									[2]				
Toxicoderma			[1]				[1]									
Ulcerations							[5]		•				•			
Urticaria / hives			[14] (7%)	•			[3]		•				[2]			
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)			[7]	[1]			[4]		[1]					[1]	[3]	

Am Amisulpride; **Ar** Aripiprazole; **Ca** Carbamazepine; **Cl** Clozapine; **H** Haloperidol; **Le** Levomepromazine; **Li** Lithium; **Lu** Lurasidone; **O** Olanzapine; **Pi** Pimozide; **Pr** Prochlorperazine; **Q** Quetiapine; **R** Risperidone; **T** Thioridazine; **V** Valproic Acid

	Am	Ar	Ca	Cl	H	Le	Li	Lu	O	Pi	Pr	Q	R	T	V	=
Verrucae vulgaris / warts / verrucae							[1]						•			
Xerosis / xeroderma (see also dry skin)							[1]		•			•	•			
HAIR																
Alopecia / hair loss			[7] (~6%)		[1]		[18] (10–19%)		[3]			[1]	[2]		[23] (<10%)	✓
Alopecia areata				[1]	[2]		[3]									
Hirsutism			[1] (25%)						•						[2] (60%)	?
Hypertrichosis													•	[1]		
Poliosis					[1]										[1]	
NAILS																
Onychomadesis			[1]				[1]								[1]	
Photo-onycholysis		[1]							[1]							
MUCOSAL																
Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis)				•			[1]									
Epistaxis									(<10%)				[1]			
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth			[1]				[1]								[8] (42%)	?
Gingivitis									•			[1]	•			
Glossitis (inflammation of the tongue)						[1]			•			•			(<5%)	
Oral mucosal eruption			[1]											[1]		
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)			[2]				[4]		•			•				
Sialorrhea (ptyalism; hypersalivation)		[5] (4–11%)		[82] (92%)	[1]		[4]	•	[4]	[1] (14%)		[3]	[12] (13%)			✓
Stomatitis (oral mucositis)							[2]		•			•	[1]		(<5%)	
Tongue edema									•			•	•			
Tongue pigmentation									•		[1]		•			
Xerostomia (dry mouth)	[1]	[7] (15%)		[3] (6%)	[4] (21%)		[6]		[13] (19%)	[3]	•	[22] (31%)	[7] (18%)	[1]	[2] (<5%)	✓

Am Amisulpride; **Ar** Aripiprazole; **Ca** Carbamazepine; **Cl** Clozapine; **H** Haloperidol; **Le** Levomepromazine; **Li** Lithium; **Lu** Lurasidone; **O** Olanzapine; **Pi** Pimozide; **Pr** Prochlorperazine; **Q** Quetiapine; **R** Risperidone; **T** Thioridazine; **V** Valproic Acid

ANTIRETROVIRALS

	Ad	Am	At	C/A	C/D	Da	De	Ef	Em	H	I	L	N	R	T	=
SKIN																
Acneiform eruption / acneiform dermatitis / acneiform rash												(<10%)		•		
Angioedema						•	•									
Bruise / bruising / contusion / ecchymosis (ecchymoses)							•							•		
Cutaneous toxicity / skin toxicity			[1] (21%)					[2] (39%)		[1] (5%)	[1]	[1] (6%)		[2]		?
Dermatitis							•			[3]	•	[1]	•	[1]		
Diaphoresis (see also hyperhidrosis)							•	[1]			•		•	(<10%)	•	
DRESS syndrome						[1]		[2]	[1]				[1]	[1]	[2]	
Eczema / eczematous reaction / eczematous eruption								•						•		
Edema / fluid retention (see also peripheral edema)									[1]					(6%)		
Erythema							•	[1] (11%)								
Erythema multiforme							•			•						
Exanthems		[1]	[1]				(7%)	[3] (27%)	(17%)	[1] (<10%)	[1]		[1]	[2]		✓
Flushing / rubefaction								•			•			(13%)		
Folliculitis							•	•			•			•		
Hypersensitivity			[1]			[2]	[1]	[5]	[1]			[1]	[1]	(8%)	[1]	✓
Jaundice			[11] (13%)								[1]	[1]		[3] (13%)		
Lesions			[1]											[1]		
Lichenoid eruption / lichenoid reaction								[1]		[3]			[1]		[2]	
Lipodystrophy						[1]		[2]			[8] (14%)	(<10%)	[1]	[4]	•	
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))									[1]	[3]					[1]	
Peripheral edema (see also edema)							•	•		[1]				(6%)		
Photosensitivity								[5]		[1]				•	[1]	

Ad Adefovir; **Am** Amprenavir; **At** Atazanavir; **C/A** Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Alafenamide; **C/D** Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Disoproxil; **Da** Darunavir; **De** Delavirdine; **Ef** Efavirenz; **Em** Emtricitabine; **H** Hydroxyurea; **I** Indinavir; **L** Lopinavir; **N** Nelfinavir; **R** Ritonavir; **T** Tenofovir Disoproxil

	Ad	Am	At	C/A	C/D	Da	De	Ef	Em	H	I	L	N	R	T	=
Pigmentation									[3] (32%)	[19] (59%)						?
Pruritus (itching)	(<10%)		[1]	[1]		•	•	(11%)	(17–30%)	[3]	[2] (86%)		•	(12%)		✓
Psoriasis										[1]				•		
Purpura							•			[2]						
Rash	[1] (<10%)	[6] (20–27%)	[7] (3–20%)		[3] (22%)	[9] (11%)	[5] (18–50%)	[16] (31%)	[6] (17–30%)		[2] (67%)	[5] (69%)	[4] (<10%)	[12] (69%)	[5] (5–18%)	✓
Raynaud's phenomenon										[1]					[1]	
Seborrhea							•				•			•		
Stevens-Johnson syndrome	[2]	[1]				[1]	[1]	[5] (8%)			[2]				[3]	
Urticaria / hives						•	•	[1]	[1] (17–30%)		•		[1]	(8%)	[1]	?
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)							•	[1]		[6]	[1]		[1]			
Vesiculobullous eruption							•		(17–30%)							?
Xerosis / xeroderma (see also dry skin)							•			[7] (<10%)	[2] (12%)			•		
HAIR																
Alopecia / hair loss							•	•		[8] (<10%)	[5] (12%)	[3]		[2]		
Alopecia areata			[1]								[1]	[1]		[1]		
NAILS																
Nail changes							•			[4]						
Nail pigmentation										[19] (5%)		[1]		[1]		
Onychocryptosis (ingrowing toe nail)											[2]			[1]		
MUCOSAL																
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)							•			[1]	•					
Cheilitis (inflammation of the lips)											[4] (52%)			[1]		?
Gingivitis							•				•			•		
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)							•			[8]			•	•		

Ad Adefovir; **Am** Amprenavir; **At** Atazanavir; **C/A** Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Alafenamide; **C/D** Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Disoproxil; **Da** Darunavir; **De** Delavirdine; **Ef** Efavirenz; **Em** Emtricitabine; **H** Hydroxyurea; **I** Indinavir; **L** Lopinavir; **N** Nelfinavir; **R** Ritonavir; **T** Tenofovir Disoproxil

	Ad	Am	At	C/A	C/D	Da	De	Ef	Em	H	I	L	N	R	T	=
Oropharyngeal pain												[1]		(16%)		
Sialolithiasis			[1]											[1]		
Sialorrhea (ptyalism; hypersalivation)							•					[1]		[1]		
Stomatitis (oral mucositis)							•			[4]						
Xerostomia (dry mouth)							•	•			•			•		

Ad Adefovir; **Am** Amprenavir; **At** Atazanavir; **C/A** Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Alafenamide; **C/D** Cobicistat/Elvitegravir/Emtricitabine/Tenofovir Disoproxil; **Da** Darunavir; **De** Delavirdine; **Ef** Efavirenz; **Em** Emtricitabine; **H** Hydroxyurea; **I** Indinavir; **L** Lopinavir; **N** Nelfinavir; **R** Ritonavir; **T** Tenofovir Disoproxil

BENZODIAZEPINES

	A	Clb	Cln	Clr	D	F	L	M	O	Tem	Tet	Tri	=
SKIN													
Acneiform eruption / acneiform dermatitis / acneiform rash	[1]				[1]								
Anaphylaxis					[1]			[1]		[1]	[1]		
Angioedema	[1]		[1]		[1]			[1]					
Bullous dermatosis			[2]		[1]					[1]			
Dermatitis	[5]		(<10%)	(<10%)	[3] (<10%)	(<10%)	(<10%)		(<10%)	(<10%)	[4]	[1] (<10%)	✓
Diaphoresis (see also hyperhidrosis)	(16%)		[1]	•	•	•	•		•	•		[2]	✓
DRESS syndrome			[1]						[1]				
Edema / fluid retention (see also peripheral edema)	(5%)							[2]					
Erythema multiforme			[1]				[1]		[1]		[2]		
Exanthems	[1]		[1]	[1]	[6]	[1]					[2]		✓
Exfoliative dermatitis			[1]		[2]								
Fixed eruption					[2]		[1]		[1]	[1]			
Flushing / rubefaction					[1]			[1]					
Lichenoid eruption / lichenoid reaction			[2]							[1]			
Peripheral edema (see also edema)					[1]			•					
Photosensitivity	[4]			[1]								[1]	
Phototoxicity	[1]										[2]		
Pruritus (itching)	[2] (<10%)				[1]			[3]				[2]	
Pseudolymphoma	[1]		[2]				[2]						
Purpura			[1]		[4]								
Rash	[4] (11%)	[3]	•	•	[2]	•	•	•	•	•		[1]	✓
Stevens-Johnson syndrome		[3]				[1]	[1]		[1]		[4]		
Urticaria / hives				[1]	[1]			[2]					
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)				[1]	[1]								

A Alprazolam; **Clb** Clobazam; **Cln** Clonazepam; **Clr** Clorazepate; **D** Diazepam; **F** Flurazepam; **L** Lorazepam; **M** Midazolam; **O** Oxazepam; **Tem** Temazepam; **Tet** Tetrazepam; **Tri** Triazolam

	A	Clb	Cln	Clr	D	F	L	M	O	Tem	Tet	Tri	=
MUCOSAL													
Burning Mouth Syndrome / glossodynia / glossalgia / glossopyrosis (also includes stomatodynia / oral dysesthesia / stomatopyrosis)			[1]									•	
Nasal discomfort					[3] (6%)			[1] (12%)					
Sialopenia	(33%)		•	•		•	•		•	•		[1]	✓
Sialorrhea (ptyalism; hypersalivation)	•	[1]	(<10%)	(<10%)		(<10%)	[1]	•	(<10%)	(<10%)		(<10%)	✓
Xerostomia (dry mouth)	[6] (15%)		[1]	•	[1]	•	•		•	•		[4]	✓

A Alprazolam; **Clb** Clobazam; **Cln** Clonazepam; **Clr** Clorazepate; **D** Diazepam; **F** Flurazepam; **L** Lorazepam; **M** Midazolam; **O** Oxazepam; **Tem** Temazepam; **Tet** Tetrazepam; **Tri** Triazolam

BETA BLOCKERS

	Ac	At	B	C	N	P	S	=
SKIN								
Anaphylaxis		[2]				[1]		
Cold extremities			[1]			[7] (36%)		?
Dermatitis		[1]			[1]	[2]		
Diaphoresis (see also hyperhidrosis)	[1]		•	[1]				
Edema / fluid retention (see also peripheral edema)	•		[1]				(5%)	
Erythema multiforme	•					[1]		
Exanthems	[1]					[4]		
Fixed eruption		[1]	[1]			[1]		
Leukocytoclastic vasculitis (angiitis)						[1]	[1]	
Lichenoid eruption / lichenoid reaction	[2]	[1]			[1]	[3]	[1]	✓
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))	[14]	[2]		[1]		[2]		✓
Necrosis (skin necrosis)		[3]				[3]		
Peripheral edema (see also edema)			(<10%)		•			
Photosensitivity						[1]	•	
Pityriasis rubra pilaris	[1]	[1]						
Pruritus (itching)	•	(<5%)				[1]	(<10%)	✓
Psoriasis	[2]	[7]	[1]			[21]	[3]	✓
Rash	[1]	[1]	(<10%)		•	[3] (<10%)	•	✓
Raynaud's phenomenon	[2]	[2]	(<10%)			[3] (59%)	•	✓
Urticaria / hives	[2]	[2]				[3]		
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[2]	[1]					[1]	
HAIR								
Alopecia / hair loss		[1]				[6]	•	
MUCOSAL								
Xerostomia (dry mouth)	•		•			[1]	•	✓

Ac Acebutolol; **At** Atenolol; **B** Bisoprolol; **C** Celiprolol; **N** Nebivolol; **P** Propranolol; **S** Sotalol

BISPHOSPHONATES

	A	E	I	P	R	Z	=
SKIN							
Angioedema	[2]	•		•			✓
Candidiasis / candidosis				(6%)		(12%)	
Eczema / eczematous reaction / eczematous eruption	[1] (13%)				[1]		
Edema / fluid retention (see also peripheral edema)				•		[3]	
Erythema	[1]					[1]	
Erythema multiforme	[2]				[1]		
Exanthems				[1]		[1]	
Hypersensitivity	[3] (19%)	•		•	[1]		✓
Peripheral edema (see also edema)	[1]				(8%)	(5–21%)	✓
Pruritus (itching)	[1]	[1]	[1] (4–5%)		•		✓
Rash	[5]	•	[1]	[1]	[1] (8%)	[3] (6%)	✓✓
Stevens-Johnson syndrome		[1]	[1]		[1]	[1]	✓
Urticaria / hives	[1]				[1]		
HAIR							
Alopecia / hair loss			[1]			[1] (12%)	
MUCOSAL							
Stomatitis (oral mucositis)	[1]			•		(8%)	✓

A Alendronate; **E** Etidronate; **I** Ibandronate; **P** Pamidronate; **R** Risedronate; **Z** Zoledronate

CALCIUM CHANNEL BLOCKERS

	A	B	D	F	I	Nic	Nif	Nis	V	=
SKIN										
Acneiform eruption / acneiform dermatitis / acneiform rash			[1]					•	[1]	
AGEP			[21]				[3]			?
Anaphylaxis						[1]	[1]			
Angioedema	[6] (6%)		[3]	[1]		[1]	[2]		[3]	✓
Bruise / bruising / contusion / ecchymosis (ecchymoses)			•					•	[1]	
Cutaneous toxicity / skin toxicity	[2]		[2]						[1]	
Dermatitis	(<10%)		[1]				[1]			
Diaphoresis (see also hyperhidrosis)	•	•	[2]	[1]	•		[2]	•	[2]	✓
Eczema / eczematous reaction / eczematous eruption	[2]		[1]							
Edema / fluid retention (see also peripheral edema)	[22] (5–14%)	(<10%)	[4] (<10%)	[1]	[6] (7%)	•	[3]	[1]	[1]	✓✓
Erythema			[2]	•			[2]			
Erythema multiforme	[2]		[11] (31%)				[5]		[4]	?
Erythema nodosum							[2]		[1]	
Erythromelalgia / erythermalgia			[1]			[4]	[6]		[2]	
Exanthems	[2]		[17] (31%)	[2]	[1]		[9]	[1]	[8]	✓
Exfoliative dermatitis			[6]				[5]	•	[2]	
Facial edema	[1]			•			•	•		
Flushing / rubefaction	[5] (<10%)		[6] (<10%)	[10] (44%)	[9] (10%)	[2] (6%)	[9] (44%)	[1] (13%)	[4] (<7%)	✓
Hyperkeratosis			[1]						[2]	
Hypersensitivity	[1]		[2]							
Lichenoid eruption / lichenoid reaction			[1]				[3]			
Linear IgA	[1]								[1]	
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))	[1]		[5]				[3]		[2]	

A Amlodipine; **B** Bepridil; **D** Diltiazem; **F** Felodipine; **I** Isradipine; **Nic** Nicardipine; **Nif** Nifedipine; **Nis** Nisoldipine; **V** Verapamil

	A	B	D	F	I	Nic	Nif	Nis	V	=
Peripheral edema (see also edema)	[47] (34%)	•	[1] (5–8%)	[6] (22%)		[2] (7%)	[12] (6%)	[6] (22%)	[1] (<10%)	✓
Petechiae	[1]		•					•		
Photosensitivity	[1]		[12]				[5]		[4]	
Pigmentation	[2]		[10]					•		
Pruritus (itching)	[3]		[6]	•	[1] (6%)		[3]	•	[6]	✓
Pseudolymphoma	[1]		[1]							
Purpura	[2]		[3]	[1]			[3]		[1]	✓
Pustules / pustular eruption			[2]					•		
Rash	(<10%)	[1]	[4]	•	•	[3]	[2]	•	[2]	✓✓
Stevens-Johnson syndrome	[2]		[6]				[5]		[5]	
Telangiectasia	[6]			[2]			[2]			
Ulcerations							[1]	•		
Urticaria / hives	[1]		[5]	[1]	•	[3]	[7]	•	[5]	✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[2]		[6]				[4]		[2]	
Xerosis / xeroderma (see also dry skin)	•							•		
HAIR										
Alopecia / hair loss	•		[2]				[4]	•	[5]	✓
Hair pigmentation							[1]		[1]	
NAILS										
Nail dystrophy			[1]				[1]		[1]	
MUCOSAL										
Gingival hyperplasia / gingival hypertrophy / gingival enlargement / gingival overgrowth	[40] (31%)		[10] (21%)	[6] (2–10%)	[1]	[2]	[76] (75%)	•	[10] (19%)	✓
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)			[1]					•	[1]	
Xerostomia (dry mouth)	[1]	[2] (<10%)	[2]	[1]	•	•	•	•	•	✓✓

A Amlodipine; **B** Bepridil; **D** Diltiazem; **F** Felodipine; **I** Isradipine; **Nic** Nicardipine; **Nif** Nifedipine; **Nis** Nisoldipine; **V** Verapamil

CEPHALOSPORINS

	Cclor	Cef	Cnir	Cpm	Cixm	Ctxm	Ctan	CF	Czim	Cple	Caxn	Coxm	=
SKIN													
AGEP	[2]	[2]		[1]		[1]			[1]		[9]	[2]	✓
Anaphylaxis	[6] (65%)	[7] (13 cases)			[1]	[1]	[3]	•	[3]		[15]	[7]	✓
Angioedema	•				•				•		[3]	•	
Candidiasis / candidosis			•	•			•		•		[3] (5%)		
Dermatitis	[1]	[1]									[2]		
DRESS syndrome				[1]	[1]	[5]					[3]		
Erythema										(9%)		[1]	
Erythema multiforme	[6]				[1] (13%)	[2]			[1]		[1]	•	✓
Exanthems	[9]	[3]	•	•		[3]			[1]		[7] (6%)	[2] (6%)	✓
Fixed eruption	[2]	[1]			[1]	[1]			[1]		[1]		✓
Hypersensitivity	[2]	[3]		[2]	[1]	[2]	[1]	[2]	[1]	[1]	[4]	[4]	✓
Jarisch–Herxheimer reaction											[1]	[1]	
Linear IgA					[2]						[2]		
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))				[2]								[1]	
Pemphigus		[1]			[1]						[1]	[1]	
Pemphigus erythematodes (pemphigus erythematosus) (Senear-Usher syndrome)									[2]			[1]	
Photosensitivity		[1]							[1]				
Pruritus (itching)	[4]	[3]	•	[3]	[1]	[3]	•	[7]	[3]	[1] (9%)	[2]	•	✓✓
Pseudolymphoma					[1]							[1]	
Pustules / pustular eruption	[1]	[3]										[1]	
Radiation recall dermatitis		[2]					[1]						
Rash	[2] (12%)	[1]	•	[12] (51%)	[2]	[3]	[2]	[10] (10%)	[5]	[1]	[5]	[1]	✓✓
Serum sickness-like reaction	[23]	[2]	•		[1]		•				[2]	[2]	✓
Stevens-Johnson syndrome	[2]	[2]	•	[2]	[4]	[3]	•		[1]		[3]	[2]	✓
Urticaria / hives	[5]	•	•	[1]	[2] (13%)	•	•	•	•		[4]	[2]	✓
MUCOSAL													
Oral candidiasis		•		•							[1]	[1]	

Cclor Cefaclor; **Cef** Cefazolin; **Cnir** Cefdinir; **Cpm** Cefepime; **Cixm** Cefixime; **Ctxm** Cefotaxime; **Ctan** Cefotetan; **CF** Ceftaroline Fosamil; **Czim** Ceftazidime; **Cple** Ceftobiprole; **Caxn** Ceftriaxone; **Coxm** Cefuroxime

CORTICOSTEROIDS, TOPICAL

	A	D	F	H	M	T	=
SKIN							
Acneiform eruption / acneiform dermatitis / acneiform rash		[6] (15%)			[1]		
Anaphylaxis		[3]		[18]		[2]	✓
Atrophy / Skin atrophy			[1]	[1]	[2]	[4]	✓
Bruise / bruising / contusion / ecchymosis (ecchymoses)		[1] (16%)	[1]	[1]		[2]	✓
Burning / skin burning sensation		[1]	[2]	[1]	[4]	[2]	✓
Churg-Strauss syndrome			[1]			[1]	
Cushingoid features		[1]	[1]				
Dermatitis	[3]	[5]		[11]		[3]	✓
Eczema / eczematous reaction / eczematous eruption				[4] (5%)		[1]	
Embolia cutis medicamentosa (Nicolau syndrome) / livedoid dermatitis		[1]				[2]	
Erythema		[1]			[2]	[5]	✓
Exanthems		[4] (16%)				[1]	
Hypersensitivity		[6] (52–54%)		[6]		[1]	✓
Perioral dermatitis			[2]		[1]		
Peripheral edema (see also edema)		[9] (83%)	[1]				?
Photoallergic reaction	[1]			[1]			
Pigmentation		[2] (16%)				[7]	
Pruritus (itching)		[7]	[3] (6%)	[2]	[2]	[1]	✓
Rash		[11] (67%)	(8%)	[2]			✓
Telangiectasia				[1]	[2]	[1] (41%)	✓
Urticaria / hives	[1]	[1]		[5]		[2]	✓
Xerosis / xeroderma (see also dry skin)		[2] (16%)			[1]		
MUCOSAL							
Epistaxis			[1] (9%)		[2]		
Oral candidiasis		[2]	[12] (<31%)		[3]		✓
Oropharyngeal pain			[4] (3–22%)		[1]		?
Xerostomia (dry mouth)		[1]				[1]	

A Alclometasone; **D** Dexamethasone; **F** Fluticasone Propionate; **H** Hydrocortisone; **M** Mometasone; **T** Triamcinolone

DIPEPTIDYL-PEPTIDASE 4 (DPP4) INHIBITORS

	Alog	Lina	Saxa	Sita	Vild	=
SKIN						
Anaphylaxis	[1]			[1]		
Angioedema	[1]		[1]	[3]	[2]	✓
Bullous pemphigoid / pemphigoid	[2]	[1]		[3]	[6]	✓
Edema / fluid retention (see also peripheral edema)			[1]	[3]		
Hypersensitivity	[2]	[1]	[1]			✓
Lymphoma				[1]	[1]	
Peripheral edema (see also edema)	[1]	[1] (10%)	•		[3] (5%)	✓
Pruritus (itching)	[2]	[1]	[1]			✓
Rash	[1]		[1]	[2]	[1]	✓
Stevens-Johnson syndrome	[1]			[1]		
MUCOSAL						
Stomatitis (oral mucositis)	[1]				[1]	

Alog Alogliptin; **Lina** Linagliptin; **Saxa** Saxagliptin; **Sita** Sitagliptin; **Vild** Vildagliptin

DISEASE-MODIFYING ANTIRHEUMATIC DRUG (DMARDS)

	Ab	Ad	An	E	G	I	R	Toc	Tof	=
SKIN										
Abscess		[1]		[2]		[4]			[1]	
Acneiform eruption / acneiform dermatitis / acneiform rash		[3]		[1]		[6]				
AGEP				[1]		[2]		[1]		
Anaphylaxis		[2]	[1]	[2]		[11]	[7]	[5]		✓
Angioedema		[4]		[1]		[2] (11%)	[4] (11%)	[1]		✓
Atopic dermatitis				[1]		[1]				
Basal cell carcinoma	[3]				[1]	[1]				
Bullous dermatosis						[1]	[1]			
Bullous pemphigoid / pemphigoid		[1]		[1]						
Candidiasis / candidosis		[1]				[4] (5%)		[1]		
Carcinoma		[2]		[2]						
Cellulitis	[1]	[2] (<5%)	[1]	[2]		[5]	[1]	[9]		✓
Cutaneous toxicity / skin toxicity		[1]	[1]		[1]	[2] (75%)	[3] (12%)	[1]		✓
Dermatitis		[1]		[3]		[4]	[2]			✓
Dermatomyositis		[5]		[4]						
DRESS syndrome			[1]					[1]		
Eczema / eczematous reaction / eczematous eruption	[2] (15%)	[2]				[5] (19–30%)				?
Edema / fluid retention (see also peripheral edema)						[3]	[1]			
Erysipelas	[1]	[1] (<5%)								
Erythema		[1]				[1]	[2] (16%)		•	✓
Erythema annulare centrifugum (see also gyrate erythema)							[1]	[1]		
Erythema multiforme		[4]				[3]				
Erythema nodosum	[1]			[1]						
Exanthems				[2]		[4]	[1]			
Facial edema	[1]					[1]	[1]	[1]		
Fixed eruption		[1]		[1]		[1]				
Flushing / rubefaction	[1]					[2] (39%)	(5%)			?
Folliculitis				[1]		[2]		[1]		
Furunculosis	[1]	[1]								
Granuloma annulare				[1]		[1]				

Ab Abatacept; **Ad** Adalimumab; **An** Anakinra; **E** Etanercept; **G** Golimumab; **I** Infliximab; **R** Rituximab; **Toc** Tocilizumab; **Tof** Tofacitinib

	Ab	Ad	An	E	G	I	R	Toc	Tof	=
Granulomas		[1]		[2]		[1]				
Granulomatous reaction		[6]	[1]	[5]		[1]				
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis		[2]		[3]		[5]	[1]			✓
Herpes		[1]				[2]				
Herpes simplex	[3] (<5%)	[1]		[1]		[4] (10%)	[2]			✓
Herpes zoster	[3]	[10]		[6]		[11]	[7]	[8]	[17] (14%)	✓
Hidradenitis suppurativa (acne inversa)		[2]		[2]		[1]	[1]	[1]	[1]	✓
Hypersensitivity	[2]	[3]		[1]		[11] (11%)	[6] (9–11%)	[6]		✓
Kaposi's sarcoma		[1]				[1]	[3]			
Leprosy		[1]		[2]		[1]				
Lesions		[2]				[1]				
Leukocytoclastic vasculitis (angiitis)		[1]			[1]	[3]				
Lichen planus (includes hypertrophic lichen planus)				[2]		[2]				
Lichenoid eruption / lichenoid reaction		[5]	[1]	[3]		[3]				
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))		[18]		[25]	[3]	[35] (59%)	[1]			✓
Lupus syndrome / drug-induced lupus (DIL)		[5]		[4]		[13]	[1]			
Lymphadenopathy		[1]				[1]				
Lymphoma	[1]	[8]		[3]	[1]	[9]	[1]	[1]		✓
Lymphoproliferative disease / lymphoproliferative disorder				[1]		[1]				
Melanoma		[6]		[2]	[1]	[1]		[1]		✓
Molluscum contagiosum		[1]				[2]				
Morphea / localized scleroderma (see also scleroderma)		[1]		[1]		[1]				
Necrotizing fasciitis				[1]		[1]				
Neutrophilic dermatosis	[1]	[1]		[1]						
Nevi				[1]		[2]				
Non-Hodgkin's lymphoma		[1]		[1]						
Palmoplantar pustulosis		[4]				[3]	[4]			
Papulopustular eruption						[1]		[1]		
Pemphigus							[1]	[1]		
Peripheral edema (see also edema)	[1]	(<5%)		[1]		[1]	[1] (14%)	•	[1]	✓
Pigmented purpuric dermatosis / eruption		[1]			[1]					
Pityriasis lichenoides / pityriasis lichenoides chronica / pityriasis lichenoides et varioliformis acuta (see also Mucha-Habermann disease)		[2]		[1]		[3]				
Pruritus (itching)	•	[6]		[2] (14%)		[8] (20%)	[8] (14%)	[1]	•	✓

Ab Abatacept; **Ad** Adalimumab; **An** Anakinra; **E** Etanercept; **G** Golimumab; **I** Infliximab; **R** Rituximab; **Toc** Tocilizumab; **Tof** Tofacitinib

	Ab	Ad	An	E	G	I	R	Toc	Tof	=
Pseudolymphoma		[1]		[1]		[2]				
Psoriasiform dermatitis		[1]				[1]				
Psoriasis	[14]	[41]	[1]	[21]	[2]	[57] (19%)	[4]	[4]	[2] (<6%)	✓✓
Pustules / pustular eruption		[1]		[2]		[5]				
Pyoderma gangrenosum		[4]		[1]		[2]	[6]	[1]		✓
Rash	[6] (23%)	[6] (12%)		[8] (15%)	[4]	[13] (25%)	[13] (58%)	[9]	[3]	✓
Rosacea		[1]		[1]		[1]				
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis)		[9]	[1]	[10]		[5]	[3]	[1]		✓
Scabies				[1]				[1]		
SDRIFE					[1]	[1]				
Serum sickness						[2]	[24] (<20%)			?
Serum sickness-like reaction						[5]	[5] (<17%)			
Skin cancer		[1]		[1]		[1]			[1]	✓
Squamous cell carcinoma	[5]	[5]		[4]	[1]	[1]				✓
Stevens-Johnson syndrome		[2]				[3]	[6]			
Sweet syndrome		[4]				[1]		[1]		
Tumors		[1]					[1] (11%)			
Urticaria / hives	[1]	[5]	[1]	[3]		[7] (17%)	[5] (8%)	[2]		✓
Varicella zoster				[1]				[1]		
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[2]	[9] (13%)		[23] (25%)	[1]	[18] (63%)	[5]	[1]		✓
Vitiligo		[2]				[4]				
HAIR										
Alopecia / hair loss		[5]		[5] (20%)		[7]	[1]			?
Alopecia areata		[7]		[1]	[1]	[4]				
Alopecia universalis		[3]					[1]			
Follicular mucinosis		[1]				[1]				
MUCOSAL										
Mucocutaneous reactions				[1]			[2]			
Oral candidiasis						[1]		[1]		
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)				[1]				[2]		
Oropharyngeal pain				[1] (9%)			[1]	[1]	[1] (<6%)	
Stomatitis (oral mucositis)	[3] (24%)					[1]	[2] (69%)	•		?

Ab Abatacept; **Ad** Adalimumab; **An** Anakinra; **E** Etanercept; **G** Golimumab; **I** Infliximab; **R** Rituximab; **Toc** Tocilizumab; **Tof** Tofacitinib

EGFR INHIBITORS

	A	C	E	G	L	M	N	O	P	Sor	Sun	V	=
SKIN													
Acneiform eruption / acneiform dermatitis / acneiform rash	[29] (61–93%)	[69] (97%)	[29] (73–80%)	[34] (66–85%)	[4] (90%)	[2] (18%)		[1]	[18] (81%)	[7] (<10%)	[1] (<10%)	[4] (35%)	✓
AGEP		[1]	[3]	[1]						[2]			
Anaphylaxis		[7] (13%)	[1] (30%)	[1]					[1]				?
Bullous dermatosis	•		[1]								[1] (7%)		
Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR))		[1] (77%)		[1]				[1]			[1]		
Cutaneous toxicity / skin toxicity	[3]	[22] (63%)	[10] (84%)	[12] (68%)	[7] (46%)			[2] (39%)	[26] (95%)	[20] (75%)	[24] (67%)	[9] (48–50%)	✓
Dermatitis	[1] (21%)	[4] (80%)	[5] (33%)									[1]	?
Desquamation		[3] (89%)	[1]	[2] (39%)					[3] (13%)	[10] (50%)			?
DRESS syndrome	[1]		[2]							[1]			
Eczema / eczematous reaction / eczematous eruption		[1]	[1]	[1]					[2]	[2]			
Edema / fluid retention (see also peripheral edema)			[1]		[1] (29%)	(9%)			[1] (15%)	[3] (11%)	[6] (32%)		✓
Erosive pustular dermatosis	[1]			[1]									
Erythema		[3] (14%)	(18%)	[1]	[1]				[5] (65%)	[4] (19%)	[6] (7%)		✓
Exanthems		[5]	[3] (8%)	[3] (21%)	[1]					[3]			?
Exfoliative dermatitis	•			[1]	[1] (14%)				[2] (25%)	[1] (<10%)	[1] (10%)		✓
Fissures	[2] (12%)	[4] (14%)	[1]				•		[5] (21%)				?
Folliculitis	[1]	[13] (83%)	[9] (11%)	[4]	[1]				[3]	[3]		[5] (49%)	✓
Hand–foot syndrome (palmar–plantar erythrodysesthesia)	[2] (10%)	[5] (6%)	[3] (30–60%)	[3] (31%)	[10] (76%)	•	[1] (48%)		[3] (23%)	[133] (89%)	[78] (67%)	[4] (36%)	✓
Papulopustular eruption		[7] (83%)	[9] (29%)	[3] (21%)					[4] (21–41%)			[1]	?

A Afatinib; **C** Cetuximab; **E** Erlotinib; **G** Gefitinib; **L** Lapatinib; **M** Mobocertinib; **N** Neratinib; **O** Osimertinib; **P** Panitumumab; **Sor** Sorafenib; **Sun** Sunitinib; **V** Vandetanib

	A	C	E	G	L	M	N	O	P	Sor	Sun	V	=
Peripheral edema (see also edema)		[1] (40%)		[1] (22%)					[1] (12%)		[1] (17%)		?
Photosensitivity			[1]									[8] (23%)	?
Pigmentation				[1]	[1] (18%)				[1]	[2]	[15] (91%)	[6]	✓
Pruritus (itching)	[3] (13%)	[9] (40%)	[10] (33%)	[6] (61%)	[3] (33%)	[2] (24%)		[1]	[10] (91%)	[10] (21%)	[3] (<10%)	[2] (11%)	✓
Psoriasis		[1]			[1]					[3]			
Purpura			[3]	[1]									
Pustules / pustular eruption		[2]		[1]					[1]				
Radiation recall dermatitis		[3] (32%)	[1]							[3]	[1]		?
Rash	[54] (61–93%)	[52] (89%)	[119] (80%)	[69] (66–85%)	[26] (55%)	[2] (78%)	[1] (18%)	[15] (53%)	[33] (91%)	[56] (30–75%)	[17] (14–38%)	[35] (67%)	✓✓
Rosacea		[1]	[2]										
SDRIFE		[1]		[1]				[1]					
Stevens-Johnson syndrome	[4]	[4]		[2]				[4]	[1]	[3]	[1]	[4]	✓
Telangiectasia		[1]	[1]						[1]				
Ulcerations		[1]		[2]							[1]		
Urticaria / hives				[1]				[1]		[1]			
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)		[1]	[1]	[1]						[1]			
Xerosis / xeroderma (see also dry skin)	[8] (36%)	[15] (49%)	[13] (56%)	[13] (53%)	[1] (29%)		(6%)	[4] (46%)	[12] (62%)	[6] (14%)	[3] (17%)	[3] (15%)	✓
HAIR													
Alopecia / hair loss	[1] (7%)	[2] (5%)	[10] (14%)	[6]	[2] (33%)	[1] (19%)	[1] (46%)		[3] (54%)	[31] (67%)	[6] (5–12%)	[1]	✓
Folliculitis decalvans	[1]		[3]										
Hair changes		[3]	[4] (20%)						[2] (9%)	[1] (26%)		[2]	?
Hypertrichosis		[5]	[4]	[2]									
NAILS													
Nail changes	[2] (16%)	[1] (21%)	[3] (25%)	[1] (17%)					[2] (9–29%)				?
Nail disorder		[3]			[1] (10%)		(8%)		[1]		[1] (<10%)		
Paronychia	[18] (33–85%)	[19] (39%)	[14] (23%)	[16] (14–32%)	[4] (27%)	[2] (39%)		[9] (46%)	[14] (85%)			[5] (7%)	✓
Pyogenic granuloma		[1]	[1]	[2]					[1]				

A Afatinib; **C** Cetuximab; **E** Erlotinib; **G** Gefitinib; **L** Lapatinib; **M** Mobocertinib; **N** Neratinib; **O** Osimertinib; **P** Panitumumab; **Sor** Sorafenib; **Sun** Sunitinib; **V** Vandetanib

	A	C	E	G	L	M	N	O	P	Sor	Sun	V	=
MUCOSAL													
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)	•	[1]	[1]							[1]			
Cheilitis (inflammation of the lips)	[1] (7%)				[1] (14%)					[1]			
Epistaxis	[3] (17%)			[1]			(5%)		[1]	[2] (11%)	[2] (13%)		✓
Mucosal inflammation	[7] (69%)		[1] (18%)		[1] (15%)				[1] (6%)		[4] (54%)	[1] (27%)	✓
Mucositis	[10] (50–90%)	[11]	[10] (21%)	[4] (6–17%)	[2] (11–35%)		[1] (6%)		[4] (75%)	[14] (52%)	[19] (~60%)	[2] (14%)	✓
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)		[1]	[1]	[1]						[1] (5%)			
Stomatitis (oral mucositis)	[22] (50–90%)	[7] (82%)	[12] (26%)	[10] (33%)	[1] (41%)	[2] (46%)	[2] (53%)	[4] (18%)	[4] (100%)	[14] (28%)	[21] (60%)	[2] (33%)	✓✓
Xerostomia (dry mouth)	[1] (20%)	(11%)					•			[1] (<10%)	[2] (~60%)		?

A Afatinib; **C** Cetuximab; **E** Erlotinib; **G** Gefitinib; **L** Lapatinib; **M** Mobocertinib; **N** Neratinib; **O** Osimertinib; **P** Panitumumab; **Sor** Sorafenib; **Sun** Sunitinib; **V** Vandetanib

FLUOROQUINOLONES

	C	E	Gat	Gem	L	M	N	O	=
SKIN									
AGEP	[4]				[1]	[2]			
Anaphylaxis	[15]				[6]	[5]		[4]	✓
Angioedema	[8]				[1]			[3]	
Bullous dermatosis	[1]					[2]	[1]		
Candidiasis / candidosis	[2]			•	•	•		[1]	✓
Cutaneous toxicity / skin toxicity	[3]				[1]				
Dermatitis				•			[1]	[1]	
Desquamation					[1]	[1]			
Diaphoresis (see also hyperhidrosis)	[5]	•	•		[1]	•	•		✓
DRESS syndrome	[2]					[1]			
Edema / fluid retention (see also peripheral edema)	•	•	•		[1]			•	✓
Erythema					[2]		[2]	[1]	
Erythema multiforme	[5]	•			[1]				
Erythema nodosum	[1]				[1]				
Exanthems	[4]	[1]	•	[1]	[2]		[2]	[3]	✓
Exfoliative dermatitis	•	•							
Facial edema	[2]		•	•					
Fixed eruption	[14]				[1]		[3]	[5]	✓
Flushing / rubefaction	[1]			•		[1]			
Hot flashes / hot flushes	[1]			•					
Hypersensitivity	[5]				[5]	[6]		[2]	✓
Linear IgA	[2]						[1]		
Lupus syndrome / drug-induced lupus (DIL)	[1]				[1]				
Peripheral edema (see also edema)	[1]		•			[1]			
Photosensitivity	[20]	[5]	[2]	[2]	[3]	[5]	[1]	[8]	✓✓
Phototoxicity	[5]	[5]	[1]		[5]		[4]	[3]	✓
Pigmentation	[1]	[1]			[1]				
Pruritus (itching)	[11]	[1] (8%)	•	•	[3]	[3]	[1]	[5]	✓✓
Purpura	[4]	•			[3]				
Radiation recall dermatitis	[1]		[1]		[2]				
Rash	[14] (<10%)	•	•	[7] (2–7%)	[2]	[4]	•	[5] (<10%)	✓✓

C Ciprofloxacin; **E** Enoxacin; **Gat** Gatifloxacin; **Gem** Gemifloxacin; **L** Levofloxacin; **M** Moxifloxacin; **N** Norfloxacin; **O** Ofloxacin

	C	E	Gat	Gem	L	M	N	O	=
Stevens-Johnson syndrome	[20]	•			[6] (5%)	[2]	[4]	[8]	✓
Sweet syndrome	[1]				[1]		[1]	[1]	✓
Thrombocytopenic purpura	[1]					[2]			
Toxic pustuloderma							[1]	[1]	
Urticaria / hives	[10]	[1]		•	[1]	[3]	[1]	[3]	✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[11]				[3]			[4]	
Xerosis / xeroderma (see also dry skin)	[1]				[1]	•		[1]	✓
NAILS									
Photo-onycholysis						[1]	[2]	[3]	
MUCOSAL									
Glossitis (inflammation of the tongue)			•			•			
Oral candidiasis	[1]		•						
Stomatitis (oral mucositis)	[4]	•	•			[1]			✓
Xerostomia (dry mouth)	[3]	•		•	[1]	[1]	•	•	✓

C Ciprofloxacin; **E** Enoxacin; **Gat** Gatifloxacin; **Gem** Gemifloxacin; **L** Levofloxacin; **M** Moxifloxacin; **N** Norfloxacin; **O** Ofloxacin

H1 RECEPTOR ANTAGONISTS

	A	B	Cet	Chl	Cin	Cle	Cyp	D	F	H	L	M	P	R	T	=
SKIN																
AGEP			[2]					[1]	[1]	[3]						
Anaphylaxis	[1]		[2]	[2]				[4]		[2]	•		[1]			
Angioedema			•	(<10%)		•	•	[1]		[3]	[1]	•	•		[1]	✓
Bullous dermatosis			•										•			
Cutaneous toxicity / skin toxicity							[1]	[2]		[1]						
Dermatitis	[1]		•	[4] (<10%)			[1]	[4]		[1]	•		[3]			✓
Desquamation			[1]							[1]						
Diaphoresis (see also hyperhidrosis)			•								•					
Eczema / eczematous reaction / eczematous eruption								[2]					[1]			
Edema / fluid retention (see also peripheral edema)						•	•	•		•						
Erythema multiforme										[2]	•		[2]			
Exanthems	[1]		[1]			[1]	[1]	[1]		[3]			[1]		[1]	✓
Fixed eruption			[7]					[4]		[3]	[3]		[1]	[1]	[1]	
Flushing / rubefaction			[1] (60%)			[1]				[1]	•					?
Hypersensitivity										[1]			[1]			
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))					[1]								[2]		[1]	
Palmar erythema			[1]							[1]						
Photosensitivity	[1]		•	(<10%)		[1]	[1]	[3]		•	•	•	[12]		[3]	✓
Phototoxicity			•				[1]	[1]		[1]			[1]			
Pruritus (itching)	[1]		[1]	[1]				[2]			[1]					
Psoriasis									[1]						[2]	
Purpura			•					[1]		[1]	•		[2]			
Rash	[1]		•			•	•	•		•	[1]	•	[1]	•	•	✓
Stevens-Johnson syndrome	[1]				[1] (5%)			[3]	[2]				[2]			
Urticaria / hives	[2]		[9]			[1]			[3]	[4]	[4]		[3]	[1]	[1]	✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)							[1]	[1]								

A Astemizole; **B** Buclizine; **Cet** Cetirizine; **Chl** Chlorpheniramine; **Cin** Cinnarizine; **Cle** Clemastine; **Cyp** Cyproheptadine; **D** Diphenhydramine; **F** Fexofenadine; **H** Hydroxyzine; **L** Loratadine; **M** Meclizine; **P** Promethazine; **R** Rupatadine; **T** Terfenadine

	A	B	Cet	Chl	Cin	Cle	Cyp	D	F	H	L	M	P	R	T	=
Xerosis / xeroderma (see also dry skin)			•								•					
HAIR																
Alopecia / hair loss	[1]		•								•				[3]	
MUCOSAL																
Oral mucosal eruption	[1]														[1]	
Sialorrhea (ptyalism; hypersalivation)			•								•					
Stomatitis (oral mucositis)			•								•					
Xerostomia (dry mouth)	[4]		[2] (6%)	(<10%)		[2] (<10%)	[3] (<10%)	[1] (<10%)		[6] (12%)	[9]	(<10%)	[2] (<10%)	[1] (<10%)	[1] (<10%)	✓

A Astemizole; **B** Buclizine; **Cet** Cetirizine; **Chl** Chlorpheniramine; **Cin** Cinnarizine; **Cle** Clemastine; **Cyp** Cyproheptadine; **D** Diphenhydramine; **F** Fexofenadine; **H** Hydroxyzine; **L** Loratadine; **M** Meclizine; **P** Promethazine; **R** Rupatadine; **T** Terfenadine

HMG-COA REDUCTASE INHIBITORS/STATINS

	A	F	L	Pi	Pr	R	S	=
SKIN								
Acneiform eruption / acneiform dermatitis / acneiform rash	•						[1] (36%)	?
Bruise / bruising / contusion / ecchymosis (ecchymoses)	•					•		
Cutaneous toxicity / skin toxicity	[2]					[1]	[1]	
Dermatomyositis	[4]	[1]	[1]		[2]		[5]	✓
Diaphoresis (see also hyperhidrosis)	•						[1]	
Eczema / eczematous reaction / eczematous eruption	•				[2]		[4] (5%)	
Edema / fluid retention (see also peripheral edema)	•		[1] (6%)		•		[2] (30%)	?
Eosinophilic fasciitis	[1]						[2]	
Erythema multiforme					[1]		[2]	
Exanthems			[3] (5%)				[1]	
Flushing / rubefaction			[1] (10%)		[1]		[1] (30%)	?
Herpes zoster	[1]	[1]	[1]		[1]	[1]	[1]	✓
Hypersensitivity			[1]				[1]	
Jaundice	[2]						[1]	
Lichenoid eruption / lichenoid reaction	[2]	[1]	[1]		[2]		[2]	✓
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))	[2]	[2]	[4]		[1]		[5]	✓
Peripheral edema (see also edema)						•	[2] (50%)	?
Petechiae	•						[1]	
Photosensitivity	•				[1]		[7]	
Pruritus (itching)	[1]		[2] (5%)		[2]	[1]	[3]	✓
Purpura			[1]		[1]		[3]	
Radiation recall dermatitis						[1]	[1]	
Rash	[2]	•	[3] (5%)		[7] (5–7%)	•	[4] (<10%)	✓
Stevens-Johnson syndrome	[2]		[1]					
Urticaria / hives	[1]						[1]	
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[1]						[2]	

A Atorvastatin; **F** Fluvastatin; **L** Lovastatin; **Pi** Pitavastatin; **Pr** Pravastatin; **R** Rosuvastatin; **S** Simvastatin

	A	F	L	Pi	Pr	R	S	=
HAIR								
Alopecia / hair loss	[1]		•					
MUCOSAL								
Cheilitis (inflammation of the lips)	•						[1]	
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)	•					[1]		
Stomatitis (oral mucositis)	•						[2] (64%)	?

A Atorvastatin; **F** Fluvastatin; **L** Lovastatin; **Pi** Pitavastatin; **Pr** Pravastatin; **R** Rosuvastatin; **S** Simvastatin

IMMUNE CHECKPOINT INHIBITORS

	A	D	I	N	P	=
SKIN						
Acneiform eruption / acneiform dermatitis / acneiform rash		•	[1]	[1]		✓
AGEP	[1]			[1]		
Bullous pemphigoid / pemphigoid	[1]	[1]		[10]	[17]	✓
Cutaneous toxicity / skin toxicity		•	[4] (35%)	[7] (7–17%)	[7] (10%)	✓
Dermatitis		•	[14] (12%)	[3]	[6] (33%)	✓
Dermatomyositis	[1]	[1]	[4]	[7]	[5]	✓✓
DRESS syndrome			[3]	[3]		
Eczema / eczematous reaction / eczematous eruption		•	[1]	[2]	[1]	✓
Edema / fluid retention (see also peripheral edema)		•		[4] (17%)	[2]	✓
Eosinophilic fasciitis				[5]	[4]	
Erythema		•	[6]	[5]	[3]	✓
Erythema multiforme		•	[2]	[2] (<10%)	[1]	✓
Exanthems		•	[6] (20%)	[3]	[4]	✓
Exfoliative dermatitis				(<10%)	•	
Granuloma annulare		[1]	[1]	[2]	[2]	✓
Granulomas			[5]		[1]	
Hypersensitivity			[1]	[3]		
Lichen planus (includes hypertrophic lichen planus)		•		[3]	[5]	✓
Lichen planus pemphigoides	[1]			[2]	[1]	✓
Lichenoid dermatitis	[2]			[3]	[4]	✓
Lichenoid eruption / lichenoid reaction		[1]		[4]	[7]	✓
Linear IgA	[1]			[1]		✓
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))		[2]	[2]	[4]	[1]	✓
Lymphadenopathy			[3]	[3]	[1]	✓
Morphea / localized scleroderma (see also scleroderma)				[4]	[4]	
Pemphigus				[1]	[1]	
Peripheral edema (see also edema)	[2] (18%)	[1] (26–38%)			[1] (17%)	✓
Pigmentation			[1] (23%)	[1]	[1]	✓

A Atezolizumab; **D** Durvalumab; **I** Ipilimumab; **N** Nivolumab; **P** Pembrolizumab

	A	D	I	N	P	=
Pruritus (itching)	[6] (20%)	[3] (40–60%)	[24] (65%)	[29] (47%)	[21] (33%)	✓✓
Psoriasiform dermatitis				[2]	[2]	
Psoriasiform eruption (see also psoriasis)	[1]	[1]				
Psoriasis	[4]	[2]	[2]	[9] (<10%)	[7]	✓✓
Pustules / pustular eruption		•		[1]		
Rash	[7] (18%)	[2] (40–60%)	[34] (83%)	[47] (55%)	[26] (50%)	✓✓
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis)	[2]		[5]	[7]	[9]	✓
Scleroderma (see also morphea / localized scleroderma)				[2]	[3]	
Sjögren's syndrome	[1]	[1]	[1]	[1]	[2] (6%)	✓✓
Stevens-Johnson syndrome			[4]	[8]	[13]	✓
Sweet syndrome			[3]	[1]		
Thrombocytopenic purpura	[1]	•		[2]		✓
Thrombotic thrombocytopenic purpura			[3]	[3]	[1]	✓
Transient acantholytic dermatosis (Grover's disease)			[3]	[2]	[2]	✓
Ulcerations			[1]	[1]		
Urticaria / hives			[3]	[2]	[1]	✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)			[3]	[1]	[4]	✓
Vesiculation			[1]	[1]		
Vitiligo			[4]	[15] (5–11%)	[14] (25%)	✓
Xerosis / xeroderma (see also dry skin)		[1] (30–50%)	[1] (13%)			?
HAIR						
Alopecia / hair loss			[3] (19%)	[1]	[2]	✓
Alopecia areata				[3]	[3]	
MUCOSAL						
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)			[1]	[1]		
Mucositis	[1]		[1]		[2]	✓
Stomatitis (oral mucositis)				[2] (<10%)	[4] (9%)	
Xerostomia (dry mouth)			[1]	[3]	[2] (10%)	✓

A Atezolizumab; **D** Durvalumab; **I** Ipilimumab; **N** Nivolumab; **P** Pembrolizumab

MONOCLONAL ANTIBODIES

	Ad	An	At	B	D	Ib	In	Ip	N	Pem	Per	R	S	T	U	V	=
SKIN																	
Abscess	[1]			[1]			[4]						[1]				
Acneiform eruption / acneiform dermatitis / acneiform rash	[3]			[6] (83%)			[6]	[1]	[1]							[1]	?
AGEP			[1]				[2]		[1]					[1]			
Anaphylaxis	[2]		[1]			[1]	[11]					[7]		[5]		•	
Angioedema	[4]			[1]		(5%)	[2] (11%)					[4] (11%)		[1]		[1]	
Basal cell carcinoma							[1]								[1]	[1]	
Bruise / bruising / contusion / ecchymosis (ecchymoses)						(7%)	[1]										
Bullous dermatosis							[1]					[1]			[1]		
Bullous pemphigoid / pemphigoid	[1]		[1]						[10]	[17]					[5]		
Candidiasis / candidosis	[1]						[4] (5%)						[8] (10%)	[1]			
Cellulitis	[2] (<5%)			[1]	[9]		[5]					[1]		[9]	(<10%)		
Cutaneous toxicity / skin toxicity	[1]			[9] (16%)		[1]	[2] (75%)	[4] (35%)	[7] (7–17%)	[7] (10%)		[3] (12%)		[1]			✓
Dermatitis	[1]			[1]	[2] (11%)		[4]	[14] (12%)	[3]	[6] (33%)		[2]					✓
Dermatomyositis	[5]		[1]					[4]	[7]	[5]							
Diaphoresis (see also hyperhidrosis)						•				[1]		[2] (15%)					
DRESS syndrome								[3]	[3]					[1]			
Eczema / eczematous reaction / eczematous eruption	[2]				[10] (15%)		[5] (19–30%)	[1]	[2]	[1]			[2]		[1]		✓
Edema / fluid retention (see also peripheral edema)				[2] (15%)			[3]		[4] (17%)	[2]	[1] (5–26%)	[1]					?
Eosinophilic fasciitis									[5]	[4]							
Erysipelas	[1] (<5%)				•										[1]		
Erythema	[1]			[1]			[1]	[6]	[5]	[3]	[1]	[2] (16%)					✓
Erythema annulare centrifugum (see also gyrate erythema)												[1]		[1]	[1]		
Erythema multiforme	[4]						[3]	[2]	[2] (<10%)	[1]							

Ad Adalimumab; **An** Anifrolumab; **At** Atezolizumab; **B** Bevacizumab; **D** Denosumab; **Ib** Ibritumomab; **In** Infliximab; **Ip** Ipilimumab; **N** Nivolumab; **Pem** Pembrolizumab; **Per** Pertuzumab; **R** Rituximab; **S** Secukinumab; **T** Tocilizumab; **U** Ustekinumab ; **V** Vedolizumab

	Ad	An	At	B	D	Ib	In	Ip	N	Pem	Per	R	S	T	U	V	=
Exanthems				[1]	[1]		[4]	[6] (20%)	[3]	[4]		[1]					?
Exfoliative dermatitis									(<10%)	•							
Facial edema							[1]					[1]		[1]			
Fixed eruption	[1]						[1]										
Flushing / rubefaction						(6%)	[2] (39%)					(5%)					?
Folliculitis							[2]	[1] (7%)						[1]			
Granuloma annulare							[1]	[1]	[2]	[2]							
Granulomas	[1]						[1]	[5]		[1]							
Granulomatous reaction	[6]						[1]		[2]								
Hand–foot syndrome (palmar–plantar erythrodysesthesia)				[13] (57%)			[2] (31%)	[1]									?
Hematoma				[1]						[1]							
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis	[2]						[5]		[2]			[1]	[3]				
Herpes	[1]						[2]										
Herpes simplex	[1]						[4] (10%)					[2]					
Herpes zoster	[10]	[2] (6%)			•		[11]					[7]		[8]	[2]		
Hidradenitis suppurativa (acne inversa)	[2]						[1]		[1]			[1]	[1]	[1]			
Hyperhidrosis (see also diaphoresis)	[1]			[1] (8%)		(8%)											
Hypersensitivity	[3]	•			[3] (19%)		[11] (11%)	[1]	[3]		[1] (10%)	[6] (9–11%)		[6]		[1]	✓
Impetigo							[1]						•				
Jaundice									[1]					[1]			
Kaposi's sarcoma	[1]						[1]					[3]					
Keratoacanthoma (Grzybowski syndrome)							[1]			[1]							
Leprosy	[1]						[1]										
Lesions	[2]						[1]										
Leukocytoclastic vasculitis (angiitis)	[1]						[3]						[1]				

Ad Adalimumab; **An** Anifrolumab; **At** Atezolizumab; **B** Bevacizumab; **D** Denosumab; **Ib** Ibritumomab; **In** Infliximab; **Ip** Ipilimumab; **N** Nivolumab; **Pem** Pembrolizumab; **Per** Pertuzumab; **R** Rituximab; **S** Secukinumab; **T** Tocilizumab; **U** Ustekinumab ; **V** Vedolizumab

	Ad	An	At	B	D	Ib	In	Ip	N	Pem	Per	R	S	T	U	V	=
Lichen planus (includes hypertrophic lichen planus)							[2]		[3]	[5]							
Lichen planus pemphigoides			[1]						[2]	[1]							
Lichen sclerosus							[1]		[4]								
Lichenoid dermatitis			[2]						[3]	[4]							
Lichenoid eruption / lichenoid reaction	[5]						[3]		[4]	[7]							
Linear IgA			[1]				[1]		[1]						[1]		
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))	[18]			[1]	[1]		[35] (59%)	[2]	[4]	[1]		[1]	[3]		[1]		✓
Lupus syndrome / drug-induced lupus (DIL)	[5]			[1]			[13]	[1]				[1]			[1]		
Lymphadenopathy	[1]						[1]	[3]	[3]	[1]							
Lymphoma	[8]						[9]					[1]		[1]			
Maculopapular rash / morbilliform rash										[1]				[1]			
Melanoma	[6]						[1]							[1]			
Molluscum contagiosum	[1]						[2]										
Morphea / localized scleroderma (see also scleroderma)	[1]						[1]		[4]	[4]							
Necrosis (skin necrosis)				[2]								[1]					
Neutrophilic dermatosis	[1]							[1]									
Nevi			[1]				[2]										
Palmoplantar pustulosis	[4]		[1]				[3]					[4]					
Papulopustular eruption							[1]							[1]			
Pemphigus									[1]	[1]		[1]	[1]	[1]			
Peripheral edema (see also edema)	(<5%)		[2] (18%)	[1] (8%)	(5%)	(8%)	[1]			[1] (17%)	(23%)	[1] (14%)		•			✓
Photosensitivity									[1]					[1]			
Pigmentation				[1]				[1] (23%)	[1]	[1]							?
Pigmented purpuric dermatosis / eruption	[1]									[1]							

Ad Adalimumab; **An** Anifrolumab; **At** Atezolizumab; **B** Bevacizumab; **D** Denosumab; **Ib** Ibritumomab; **In** Infliximab; **Ip** Ipilimumab; **N** Nivolumab; **Pem** Pembrolizumab; **Per** Pertuzumab; **R** Rituximab; **S** Secukinumab; **T** Tocilizumab; **U** Ustekinumab ; **V** Vedolizumab

	Ad	An	At	B	D	Ib	In	Ip	N	Pem	Per	R	S	T	U	V	=
Pityriasis lichenoides / pityriasis lichenoides chronica / pityriasis lichenoides et varioliformis acuta (see also Mucha-Habermann disease)	[2]						[3]										
Pruritus (itching)	[6]		[6] (20%)	[1] (91%)	•	(7%)	[8] (20%)	[24] (65%)	[29] (47%)	[21] (33%)	(14%)	[8] (14%)	[4]	[1]	(<10%)	[1]	✓
Pseudolymphoma	[1]						[2]										
Psoriasiform dermatitis	[1]						[1]		[2]	[2]							
Psoriasiform eruption (see also psoriasis)			[1]				[4]										
Psoriasis	[41]		[4]				[57] (19%)	[2]	[9] (<10%)	[7]		[4]	[2] (6–16%)	[4]	[3]	[1]	✓
Purpura				[1]		(7%)						[1]					
Pustules / pustular eruption	[1]						[5]		[1]						[1]		
Pyoderma gangrenosum	[4]						[2]			[1]		[6]	[3]	[1]			
Rash	[6] (12%)		[7] (18%)	[18] (91%)	[4]	(7%)	[13] (25%)	[34] (83%)	[47] (55%)	[26] (50%)	[9] (60–70%)	[13] (58%)		[9]		[3]	✓
Rosacea	[1]						[1]	[1]									
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis)	[9]		[2]				[5]	[5]	[7]	[9]		[3]		[1]	[1]		✓
Scleroderma (see also morphea / localized scleroderma)	[1]								[2]	[3]							
Serum sickness							[2]					[24] (<20%)					?
Serum sickness-like reaction						[1]	[5]					[5] (<17%)					
Sjøgren's syndrome			[1]					[1]	[1]	[2] (6%)							
Skin cancer	[1]						[1]						[1]				
Squamous cell carcinoma	[5]						[1]	[1] (7%)							[1]	[1]	
Stevens-Johnson syndrome	[2]						[3]	[4]	[8]	[13]		[6]					
Sweet syndrome	[4]						[1]	[3]	[1]					[1]			
Thrombocytopenic purpura	[1]		[1]	[2]					[2]						[1]		

Ad Adalimumab; **An** Anifrolumab; **At** Atezolizumab; **B** Bevacizumab; **D** Denosumab; **Ib** Ibritumomab; **In** Infliximab; **Ip** Ipilimumab; **N** Nivolumab; **Pem** Pembrolizumab; **Per** Pertuzumab; **R** Rituximab; **S** Secukinumab; **T** Tocilizumab; **U** Ustekinumab ; **V** Vedolizumab

	Ad	An	At	B	D	Ib	In	Ip	N	Pem	Per	R	S	T	U	V	=
Thrombotic thrombocytopenic purpura								[3]	[3]	[1]							
Tinea	[1]												•				
Transient acantholytic dermatosis (Grover's disease)								[3]	[2]	[2]							
Tumors	[1]				[1]							[1] (11%)			[1]	[1]	
Ulcerations				[3]			[1]	[1]	[1]								
Urticaria / hives	[5]					•	[7] (17%)	[3]	[2]	[1]		[5] (8%)	[1]	[2]		[1]	✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[9] (13%)			[1]			[18] (63%)	[3]	[1]	[4]		[5]	[3]	[1]	[1]		✓
Vesiculation	[1]							[1]	[1]								
Vitiligo	[2]						[4]	[4]	[15] (5–11%)	[14] (25%)							?
Xerosis / xeroderma (see also dry skin)				[1]				[1] (13%)			[1] (11%)						
HAIR																	
Alopecia / hair loss	[5]			[5] (43%)		[1]	[7]	[3] (19%)	[1]	[2]	[1] (61%)	[1]					✓
Alopecia areata	[7]						[4]		[3]	[3]					[1]		
Alopecia universalis	[3]							[1]				[1]					
Follicular mucinosis	[1]						[1]										
Lichen planopilaris							[2]			[2]							
NAILS																	
Nail toxicity				[1] (40%)						[1]							?
Onycholysis	[1]								[1]								
Onychomycosis							[1] (33%)						[1]				?
Paronychia				[2] (25%)					[1]		(7%)						?
MUCOSAL																	
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)								[1]	[1]					[2]		[1]	
Behçet's disease / Behçet's syndrome										[1]			[4]				
Epistaxis				[6] (32%)		(5%)					[1]						?

Ad Adalimumab; **An** Anifrolumab; **At** Atezolizumab; **B** Bevacizumab; **D** Denosumab; **Ib** Ibritumomab; **In** Infliximab; **Ip** Ipilimumab; **N** Nivolumab; **Pem** Pembrolizumab; **Per** Pertuzumab; **R** Rituximab; **S** Secukinumab; **T** Tocilizumab; **U** Ustekinumab ; **V** Vedolizumab

	Ad	An	At	B	D	Ib	In	Ip	N	Pem	Per	R	S	T	U	V	=
Mucocutaneous reactions											[1]	[2]					
Mucosal inflammation				[2] (59%)							[1] (28%)						?
Mucositis			[1]	[14] (75%)		[1]		[1]		[2]							?
Oral candidiasis							[1]						[2]	[1]			
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)				[2] (18%)							[1] (41–43%)			[2]			?
Oropharyngeal pain												[1]	[1]	[1]	[1]	[1]	
Perianal fistula				[1] (67%)			[1]	[1]									?
Stomatitis (oral mucositis)				[8] (75%)			[1]		[2] (<10%)	[4] (9%)	[1] (19%)	[2] (69%)		•			?
Xerostomia (dry mouth)								[1]	[3]	[2] (10%)							

Ad Adalimumab; **An** Anifrolumab; **At** Atezolizumab; **B** Bevacizumab; **D** Denosumab; **Ib** Ibritumomab; **In** Infliximab; **Ip** Ipilimumab; **N** Nivolumab; **Pem** Pembrolizumab; **Per** Pertuzumab; **R** Rituximab; **S** Secukinumab; **T** Tocilizumab; **U** Ustekinumab ; **V** Vedolizumab

NON-STEROIDAL ANTI-INFLAMMATORIES (NSAIDS)

	Acec	Acem	Asp	C	Dexi	Dexk	Dicl	E	I	Mel	Met	N	=
SKIN													
AGEP			[1]	[7]					[5] (50%)	[1]	[3]		?
Anaphylaxis	[2]		[8] (<10%)	[8]	[1]		[16] (48%)	[1]	[5] (25%)	[1]	[12] (9%)	[2]	✓
Angioedema			[32] (22%)	[9]			[2]	[3]	[8]	[3]		[5]	✓
Bruise / bruising / contusion / ecchymosis (ecchymoses)			[1]						[1]	[1]		(3–9%)	
Bullous dermatosis			[4]	[1]			[2]		[3]	•		[5]	✓
Bullous pemphigoid / pemphigoid			[1]	[1]			[1]		[2]				
Dermatitis				[2]			[10]		[5]				
Dermatitis herpetiformis			[1]				[2]		[1]				
Dermatomyositis			[1]				[1]						
Diaphoresis (see also hyperhidrosis)				•			•		[1]		[1]	[3]	
DRESS syndrome			[2]	[1]			[1]		[4]		[1]	[4]	✓
Eczema / eczematous reaction / eczematous eruption							•		[1]	[1]			
Edema / fluid retention (see also peripheral edema)				[5] (6%)					[1]	[1] (6%)		[1] (<9%)	
Embolia cutis medicamentosa (Nicolau syndrome) / livedoid dermatitis							[18]		[2]				
Erythema				[2] (14%)			[4]	[1]		[2]	[2]	[1]	✓
Erythema multiforme			[9]	[3]			[6]	[1]	[11] (13%)	[1]	[1]	[2]	✓
Erythema nodosum			[9]				•		[1] (<5%)		[1]	[1]	
Erythroderma			[2]								[1]		
Exanthems			[11] (18%)	[7] (49%)			[6] (<5%)	[1]	[9]	[1]	[3]	[9] (14%)	✓
Exfoliative dermatitis			[1]	[1]			[1]		[1]				
Facial edema				[1]			[1]			[1]			
Fixed eruption	[2]		[22]	[2]			[4] (18%)	[6]	[15]	[1]	[9] (9%)	[26] (24%)	✓
Flushing / rubefaction			[1]				•						

Acec Aceclofenac; **Acem** Acemetacin; **Asp** Aspirin; **C** Celecoxib; **Dexi** Dexibuprofen; **Dexk** Dexketoprofen; **Dicl** Diclofenac; **E** Etoricoxib; **I** Ibuprofen; **Mel** Meloxicam; **Met** Metamizole; **N** Naproxen

	Acec	Acem	Asp	C	Dexi	Dexk	Dicl	E	I	Mel	Met	N	=
Hematoma			[1]							[3]			
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis									[1]	[1]			
Herpes simplex			[1]	•								[1]	
Herpes zoster				•					[1]				
Hot flashes / hot flushes				[1]					•	•		[1]	
Hypersensitivity	[1]		[5]	[9]			[5]	[1] (10%)	[5]	[2] (5%)	[1]	[2]	✓
Lichen planus (includes hypertrophic lichen planus)											[1]	[3]	
Lichenoid eruption / lichenoid reaction			[2]									[3]	
Linear IgA			[2]				[7]					[1]	
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))				[1]					[5]			[2]	
Necrotizing fasciitis							[1]				[1]		
Pemphigus			[1]				[1]		[1]		[1]		
Peripheral edema (see also edema)			[1]	[2]			[1]	[1]	[2] (5%)	[1]		[1]	✓
Photoallergic reaction				[1]			[1]						
Photosensitivity	[2]			•			[4]		[6]	•		[16]	✓
Pityriasis rosea			[3]									[1]	
Pruritus (itching)			[6]	[6]			[6] (<10%)		[6] (<5%)	[3]		[5] (17%)	✓
Pseudolymphoma			[1]				[1]		[1]			[1]	
Psoriasis	[1]		[3]				[1]		[2]	[1]			
Purpura			[8]	[1]			[2]		[1]	•		[4]	✓
Pustules / pustular eruption				[1]								[2]	
Rash			(<10%)	[11] (40%)			[4] (6%)		[3]	[3]		[2] (3–9%)	✓
SDRIFE			[1]	[1]				[1]				[1]	
Serum sickness-like reaction									[1]			[1]	
Stevens-Johnson syndrome	[1]		[14]	[6]			[11] (5%)	[6]	[15] (17%)	[1]	[5] (24%)	[5]	✓
Sweet syndrome	[1]			[3]									
Thrombocytopenic purpura							[1]		[1]				

Acec Aceclofenac; **Acem** Acemetacin; **Asp** Aspirin; **C** Celecoxib; **Dexi** Dexibuprofen; **Dexk** Dexketoprofen; **Dicl** Diclofenac; **E** Etoricoxib; **I** Ibuprofen; **Mel** Meloxicam; **Met** Metamizole; **N** Naproxen

	Acec	**Acem**	**Asp**	**C**	**Dexi**	**Dexk**	**Dicl**	**E**	**I**	**Mel**	**Met**	**N**	**=**
Ulcerations			•								[1]		
Urticaria / hives	[1]		[72] (83%)	[11]			[7]	[4]	[10]	[4]	[3]	[6] (<5%)	✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[3]		[2]	[4]			[3]		[8]	•		[9]	✓
Vesiculobullous eruption									[2]			[1]	
Xerosis / xeroderma (see also dry skin)				•			[3]						
HAIR													
Alopecia / hair loss			[1]	[3]			•		[2]	•		[3]	✓
NAILS													
Nail changes				•					[1]				
MUCOSAL													
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)			[3]				[1]					[1]	
Epistaxis			[2]							[1]			
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)			[4]				[1]		[1]		[1]	[1]	
Stomatitis (oral mucositis)				[4] (8%)			•	[1]				•	
Tongue edema							[1]	[1]					
Xerostomia (dry mouth)				•		[1]	[2] (26%)		•	•	[1]	[2]	✓

Acec Aceclofenac; **Acem** Acemetacin; **Asp** Aspirin; **C** Celecoxib; **Dexi** Dexibuprofen; **Dexk** Dexketoprofen; **Dicl** Diclofenac; **E** Etoricoxib; **I** Ibuprofen; **Mel** Meloxicam; **Met** Metamizole; **N** Naproxen

PROTON PUMP INHIBITORS (PPI)

	D	E	L	O	P	R	=
SKIN							
Acneiform eruption / acneiform dermatitis / acneiform rash		•	•		•		✓
AGEP			[1]	[2]			
Anaphylaxis		[1]	[7]	[7]	[13]		✓
Angioedema		•		[5]	•		✓
Bruise / bruising / contusion / ecchymosis (ecchymoses)					•	•	
Candidiasis / candidosis		•	•				
Dermatitis		•	[1]	[1]	•		✓
Diaphoresis (see also hyperhidrosis)		•	[1]	[1]	[1]	•	✓
Eczema / eczematous reaction / eczematous eruption		[1]		[2]	[1] (9%)		✓
Edema / fluid retention (see also peripheral edema)		•	[1]	[2] (<10%)	•		✓
Erythema dyschromicum perstans / ashy dermatosis		[1]	[1]	[1]			✓
Erythema multiforme			[2]	[1]	•		✓
Erythroderma			[1]	[2]			
Exanthems		•		[1]	•		✓
Exfoliative dermatitis		[1]	[1]	[3]			✓
Facial edema			[2]	[1]	[1]	•	✓
Fixed eruption		[2]		[1]			
Flushing / rubefaction		•	[1]				
Fungal dermatitis		•			•		
Herpes zoster					•	•	
Hypersensitivity			[3]	[2]	[2]	[1]	✓
Lichenoid eruption / lichenoid reaction		[1]	[1]	[2]	[1]		✓
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))		[3]	[3]	[5]	[3]		✓
Peripheral edema (see also edema)		•	[2]	[2]	[2]	•	✓
Photosensitivity		[1]			[1]	•	✓
Pigmentation				[1]		•	
Pruritus (itching)		•	[1] (3–10%)	[8] (<10%)	[1]	[2]	✓

D Dexlansoprazole; **E** Esomeprazole; **L** Lansoprazole; **O** Omeprazole; **P** Pantoprazole; **R** Rabeprazole

	D	E	L	O	P	R	=
Pruritus ani et vulvae		•	[1]				
Psoriasis				[1]		•	
Rash		[1]	(3–10%)	[6]	[3] (9%)	[3]	✓
Rowell syndrome / Rowell's syndrome		[1]		[1]			
SDRIFE				[3]	[2]		
Stevens-Johnson syndrome			[5]	[5]	[1]		✓
Sweet syndrome		[1]		[1]			
Urticaria / hives		[1]	[3]	[9] (<10%)	[2]	•	✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)				[2]	[1]		
Xerosis / xeroderma (see also dry skin)		[1]		[2]	•	•	✓
HAIR							
Alopecia / hair loss			[1]	[2]	•	•	✓
MUCOSAL							
Gingivitis					•	•	
Glossitis (inflammation of the tongue)			[1]		•	•	✓
Oral candidiasis	•			[3]	•		✓
Stomatitis (oral mucositis)			[2]	[1]	•	•	✓
Tongue edema		•			[1]		
Xerostomia (dry mouth)	•		•	[2] (<10%)	•	•	✓

D Dexlansoprazole; **E** Esomeprazole; **L** Lansoprazole; **O** Omeprazole; **P** Pantoprazole; **R** Rabeprazole

TNF INHIBITORS

	A	C	E	G	I	=
SKIN						
Abscess	[1]		[2]		[4]	✓
Acneiform eruption / acneiform dermatitis / acneiform rash	[3]		[1]		[6]	✓
AGEP			[1]		[2]	
Anaphylaxis	[2]		[2]		[11]	✓
Angioedema	[4]	•	[1]		[2] (11%)	✓
Atopic dermatitis			[1]		[1]	
Basal cell carcinoma				[1]	[1]	
Bullous pemphigoid / pemphigoid	[1]		[1]			
Candidiasis / candidosis	[1]				[4] (5%)	
Carcinoma	[2]		[2]			
Cellulitis	[2] (<5%)		[2]		[5]	✓
Cutaneous toxicity / skin toxicity	[1]	[1]		[1]	[2] (75%)	✓
Dermatitis	[1]	•	[3]		[4]	✓
Dermatomyositis	[5]		[4]			
Eczema / eczematous reaction / eczematous eruption	[2]				[5] (19–30%)	?
Erythema	[1]				[1]	
Erythema multiforme	[4]				[3]	
Erythema nodosum		[1]	[1]			
Exanthems			[2]		[4]	
Fixed eruption	[1]		[1]		[1]	✓
Folliculitis		[1]	[1]		[2]	✓
Granuloma annulare			[1]		[1]	
Granulomas	[1]		[2]		[1]	✓
Granulomatous reaction	[6]		[5]		[1]	✓
Henoch-Schönlein purpura / IgA vasculitis / immunoglobulin A vasculitis	[2]		[3]		[5]	✓
Herpes	[1]				[2]	
Herpes simplex	[1]		[1]		[4] (10%)	✓
Herpes zoster	[10]	[3]	[6]		[11]	✓
Hidradenitis suppurativa (acne inversa)	[2]		[2]		[1]	✓

A Adalimumab; **C** Certolizumab; **E** Etanercept; **G** Golimumab; **I** Infliximab

	A	C	E	G	I	=
Hypersensitivity	[3]	•	[1]		[11] (11%)	✓
Kaposi's sarcoma	[1]				[1]	
Leprosy	[1]		[2]		[1]	✓
Lesions	[2]				[1]	
Leukocytoclastic vasculitis (angiitis)	[1]	[1]		[1]	[3]	✓
Lichen planus (includes hypertrophic lichen planus)		[1]	[2]		[2]	✓
Lichenoid eruption / lichenoid reaction	[5]	[1]	[3]		[3]	✓
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))	[18]		[25]	[3]	[35] (59%)	✓
Lupus syndrome / drug-induced lupus (DIL)	[5]	[1]	[4]		[13]	✓
Lymphadenopathy	[1]				[1]	
Lymphoma	[8]		[3]	[1]	[9]	✓
Lymphoproliferative disease / lymphoproliferative disorder			[1]		[1]	
Melanoma	[6]		[2]	[1]	[1]	✓
Molluscum contagiosum	[1]				[2]	
Morphea / localized scleroderma (see also scleroderma)	[1]		[1]		[1]	✓
Necrotizing fasciitis			[1]		[1]	
Neutrophilic dermatosis	[1]		[1]			
Nevi			[1]		[2]	
Non-Hodgkin's lymphoma	[1]		[1]			
Palmoplantar pustulosis	[4]				[3]	
Peripheral edema (see also edema)	(<5%)		[1]		[1]	✓
Pigmented purpuric dermatosis / eruption	[1]	[1]		[1]		✓
Pityriasis lichenoides / pityriasis lichenoides chronica / pityriasis lichenoides et varioliformis acuta (see also Mucha-Habermann disease)	[2]		[1]		[3]	✓
Pruritus (itching)	[6]	[1]	[2] (14%)		[8] (20%)	✓
Pseudolymphoma	[1]		[1]		[2]	✓
Psoriasiform dermatitis	[1]				[1]	
Psoriasiform eruption (see also psoriasis)		[1]			[4]	
Psoriasis	[41]	[7]	[21]	[2]	[57] (19%)	✓✓
Pustules / pustular eruption	[1]		[2]		[5]	✓

A Adalimumab; **C** Certolizumab; **E** Etanercept; **G** Golimumab; **I** Infliximab

	A	C	E	G	I	=
Pyoderma gangrenosum	[4]	[1]	[1]		[2]	✓
Rash	[6] (12%)	[2] (5%)	[8] (15%)	[4]	[13] (25%)	✓✓
Rosacea	[1]		[1]		[1]	✓
Sarcoidosis / sarcoid-like reaction (cutaneous sarcoidosis)	[9]	[1]	[10]		[5]	✓
SDRIFE				[1]	[1]	
Serum sickness		•			[2]	
Skin cancer	[1]		[1]		[1]	✓
Squamous cell carcinoma	[5]		[4]	[1]	[1]	✓
Stevens-Johnson syndrome	[2]				[3]	
Sweet syndrome	[4]				[1]	
Tumors	[1]	[1]				
Urticaria / hives	[5]	•	[3]		[7] (17%)	✓
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)	[9] (13%)	•	[23] (25%)	[1]	[18] (63%)	✓✓
Vitiligo	[2]				[4]	
HAIR						
Alopecia / hair loss	[5]	[1]	[5] (20%)		[7]	✓
Alopecia areata	[7]		[1]	[1]	[4]	✓
Follicular mucinosis	[1]				[1]	

A Adalimumab; **C** Certolizumab; **E** Etanercept; **G** Golimumab; **I** Infliximab

TYROSINE-KINASE INHIBITORS

	Af	Ax	Cbo	Crz	D	E	I	Lpt	Lef	Len	M	Nlo	Nnt	O	P	T	=
SKIN																	
Acneiform eruption / acneiform dermatitis / acneiform rash	[29] (61–93%)				[2] (<10%)	[29] (73–80%)	[3]	[4] (90%)	(<10%)		[2] (18%)	[1] (<10%)		[1]		[4] (5%)	✓
AGEP						[3]	[7]										
Anaphylaxis						[1] (30%)			•							[1]	?
Bullous dermatosis	•					[1]			[3]								
Cutaneous adverse reaction (includes severe cutaneous adverse drug reaction (SCAR))							[1] (71%)							[1]			?
Cutaneous toxicity / skin toxicity	[3]		[3]	[1]	[8] (36%)	[10] (84%)	[9] (30–44%)	[7] (46%)		[3]		[8]		[2] (39%)	[5]	[3] (46%)	✓
Depigmentation								(21%)							[1]		?
Dermatitis	[1] (21%)				[1] (<10%)	[5] (33%)			(<10%)			(<10%)					
Dermatomyositis							[1]		[1]							[3]	
Diaphoresis (see also hyperhidrosis)							(13%)		(<10%)							[1]	
DRESS syndrome	[1]					[2]	[5]		[5]								
Eczema / eczematous reaction / eczematous eruption					(<10%)	[1]			[1]			(<10%)					
Edema / fluid retention (see also peripheral edema)				[15] (23–55%)	[8] (38%)	[1]	[40] (80%)	[1] (29%)			(9%)	[3]			[1] (6%)	[1] (5–26%)	✓
Erythema		[1]	(11%)		[2]	(18%)	[5] (<10%)	[1]				[2] (<10%)				[2]	✓
Erythema multiforme				[1]			[2]		[1]			[1]					
Erythema nodosum					•		[1]										
Exanthems						[3] (8%)	[9]	[1]		(21%)		[2]					
Exfoliative dermatitis	•				[1]		[4]	[1] (14%)	[1]			[1]			[1] (35%)		?
Facial edema						[1]	[3] (<10%)					•			•		
Fissures	[2] (12%)					[1]											

Af Afatinib; **Ax** Axitinib; **Cbo** Cabozantinib; **Crz** Crizotinib; **D** Dasatinib; **E** Erlotinib; **I** Imatinib; **Lpt** Lapatinib; **Lef** Leflunomide; **Len** Lenvatinib; **M** Mobocertinib; **Nlo** Nilotinib; **Nnt** Nintedanib; **O** Osimertinib; **P** Pazopanib; **T** Trastuzumab

	Af	Ax	Cbo	Crz	D	E	I	Lpt	Lef	Len	M	Nlo	Nnt	O	P	T	=
Flushing / rubefaction					[1] (<10%)							(<10%)	[1] (19%)				
Folliculitis	[1]					[9] (11%)	[1]	[1]				[1] (<10%)				[1]	
Graft-versus-host reaction					[1]		[1]										
Hand–foot syndrome (palmar–plantar erythrodysesthesia)	[2] (10%)	[20] (64%)	[24] (60%)		[1]	[3] (30–60%)	[3]	[10] (76%)		[14] (57%)	•	[1]	[2]		[12] (44%)	[11] (29%)	✓
Hematoma												(<10%)	[1]				
Herpes					(<10%)				(<10%)			•					
Herpes zoster									[1]							•	
Hyperhidrosis (see also diaphoresis)					[1] (<10%)		[1]					(<10%)	[1] (12%)				
Hyperkeratosis			(7%)							(7%)							
Hypersensitivity					•				[1]							[3]	
Jaundice			(25%)					[1] (35%)				•			[1]		?
Keratosis pilaris						[1]						[1]					
Leukocytoclastic vasculitis (angiitis)	[1]						[1]								[1]		
Lichen planus (includes hypertrophic lichen planus)							[7]		[1]			[1]					
Lichenoid eruption / lichenoid reaction				[1]			[14]		[2]								
Lupus erythematosus (subacute cutaneous lupus erythematosus (SCLE))					[1]				[9]					[1]			
Maculopapular rash / morbilliform rash						[1]	[1]				[2] (16%)						
Panniculitis					[4]		[3]										
Peripheral edema (see also edema)				[7] (28%)	[3] (44%)		[5] (75%)		(<10%)	[3] (37%)		[1] (44%)			[1] (16%)	(5–10%)	✓
Photosensitivity				[3]	[1]	[1]	[3] (<10%)									[2]	
Pigmentation					[1]		[14] (60%)	[1] (18%)	(<10%)						[7] (16%)		?
Pruritus (itching)	[3] (13%)	[1] (8%)			[5] (18%)	[10] (33%)	[3] (10%)	[3] (33%)	[3]		[2] (24%)	[18] (9–21%)	[1] (19%)	[1]	[3] (16%)	•	✓

Af Afatinib; **Ax** Axitinib; **Cbo** Cabozantinib; **Crz** Crizotinib; **D** Dasatinib; **E** Erlotinib; **I** Imatinib; **Lpt** Lapatinib; **Lef** Leflunomide; **Len** Lenvatinib; **M** Mobocertinib; **Nlo** Nilotinib; **Nnt** Nintedanib; **O** Osimertinib; **P** Pazopanib; **T** Trastuzumab

	Af	Ax	Cbo	Crz	D	E	I	Lpt	Lef	Len	M	Nlo	Nnt	O	P	T	=
Psoriasiform eruption (see also psoriasis)							[1]			[1]							
Psoriasis							[3]	[1]				[1]					
Purpura						[3]	[1]		(<10%)								
Pyoderma gangrenosum							[2]			[1]					[1]		
Radiation recall dermatitis						[1]										[2]	
Rash	[54] (61–93%)	[3] (14%)	[1] (30%)	[5] (21%)	[12] (34%)	[119] (80%)	[27] (69%)	[26] (55%)	[17] (12%)	[1] (23%)	[2] (78%)	[19] (56%)	[4] (41%)	[15] (53%)	[6] (21%)	[12] (56%)	✓✓
Rosacea						[2]	[1]					[1]					
Seborrheic dermatitis					[1]	[1]											
Squamous cell carcinoma							[2]					[1]					
Stevens-Johnson syndrome	[4]						[15]		[5]					[4]			?
Sweet syndrome					[1]	[1]	[4]					[3]					
Telangiectasia						[1]	[1]										
Ulcerations					[1]				[3] (<10%)						[1]	•	
Urticaria / hives					[1] (<10%)		[3]		•			(<10%)		[1]			
Vasculitis (angiitis) / cutaneous vasculitis (angiitis)						[1]	[2]		[4] (<10%)								
Xerosis / xeroderma (see also dry skin)	[8] (36%)	(10%)	[1] (23%)		[1] (<10%)	[13] (56%)	[2] (<10%)	[1] (29%)	•	[1] (20%)		[2] (13–17%)		[4] (46%)	[1]	[1]	✓
HAIR																	
Alopecia / hair loss	[1] (7%)	[2] (6%)	(16%)	[1] (7%)	[3] (<10%)	[10] (14%)	[2] (10–15%)	[2] (33%)	[21] (10%)	(12%)	[1] (19%)	[5] (<10%)	[2] (71%)		[2] (23%)	[6] (33%)	✓
Folliculitis decalvans	[1]					[3]											
Hair changes			(34%)			[4] (20%)									(38%)		?
Hair pigmentation			[2] (34%)		[2]				(<10%)						[9] (58%)		?
NAILS																	
Nail changes	[2] (16%)					[3] (25%)			[1] (<10%)							[1]	?
Nail disorder					[1]		[1]	[1] (10%)								[1] (15–40%)	?

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	Af	Ax	Cbo	Crz	D	E	I	Lpt	Lef	Len	M	Nlo	Nnt	O	P	T	=
Nail dystrophy							[2]									[1]	
Paronychia	[18] (33–85%)					[14] (23%)		[4] (27%)			[2] (39%)			[9] (46%)		[1] (30%)	?
MUCOSAL																	
Aphthous stomatitis / aphthous ulcer / aphtha (aphthae)	•					[1]	[1]			(41%)							?
Cheilitis (inflammation of the lips)	[1] (7%)						[1]	[1] (14%)									
Epistaxis	[3] (17%)	[1] (8%)								[1] (24%)			[2]		[2]	•	
Gingivitis									(<10%)	(10%)							
Mucocutaneous eruption (includes fixed eruption)					[1]		[1]					[1]					
Mucosal inflammation	[7] (69%)	[2] (15%)	[3] (35%)			[1] (18%)		[1] (15%)		[1] (50%)					[1] (7%)	[1]	✓
Mucositis	[10] (50–90%)	[1] (30%)	[1]		[1] (16%)	[10] (21%)	[2] (15%)	[2] (11–35%)							[1]	[4] (23%)	✓
Oral ulceration (see also aphthous stomatitis / aphthous ulcer / aphtha)						[1]	[3] (15%)		•	(41%)		•					?
Oropharyngeal pain							[1]			(25%)							?
Stomatitis (oral mucositis)	[22] (50–90%)	[3] (21%)	[4] (51%)	[1] (11%)	[1]	[12] (26%)		[1] (41%)	•	[5] (47%)	[2] (46%)	•	[1]	[4] (18%)	[5] (16%)	[5] (62%)	✓
Xerostomia (dry mouth)	[1] (20%)				[1] (33%)		[1] (44%)		(<10%)	(17%)		[1] (11%)					?

Af Afatinib; **Ax** Axitinib; **Cbo** Cabozantinib; **Crz** Crizotinib; **D** Dasatinib; **E** Erlotinib; **I** Imatinib; **Lpt** Lapatinib; **Lef** Leflunomide; **Len** Lenvatinib; **M** Mobocertinib; **Nlo** Nilotinib; **Nnt** Nintedanib; **O** Osimertinib; **P** Pazopanib; **T** Trastuzumab

GENETIC ASSOCIATIONS

Table 1 – Reported genetic associations with cutaneous adverse drug reactions and other immune-mediated reactions

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Allele	Reaction	Ethnic population	Sensitivity (%)	Specificity (%)	PPV	NPV	Est.	Ref.
ANTIBIOTICS / ANTI-INFLAMMATORY								
Dapsone								
HLA-B*13:01	DRESS	Chinese	85.5–90	85.7–93.1	7.8	99.8		[1–4]
HLA-B*13:01	DRESS	Thai						[4,5]
HLA-B*13:01	SJS/TEN	Thai						[4,5]
HLA-B*13:01	DILI	East Indian						[6]
ANTIBIOTICS, SULFONAMIDES								
Sulfamethoxazole Trimethoprim								
HLA-A*29	SJS/TEN	Caucasian/European						[7]
HLA-A*30	FDE	Turkish						[8]
HLA-A*30-B*13-C*06	FDE	Turkish						[9]
HLA-A*11:01	SJS/DRESS	Japanese						[9]
HLA-B*14:01 HLA-B*35:01	DILI	Caucasian/European African American						[10]
HLA-B12 (HLA-B*44)	SJS/TEN	Caucasian/European						[7]
HLA-B*38	SJS/TEN	Caucasian/European						[11]
HLA-B*13:01[2]	SJS/TEN DRESS	Southeast Asia (Taiwan, Thailand, Malaysia)			3.64 (DRESS)	99.92 (DRESS)		[12]
HLA-B*13:01 HLA-C*08:01	DRESS SJS/TEN SJS/TEN	Thailand HIV co-infected						[13] [14]
HLA-B*07:02/HLA-C*07:02 haplotype[3]	Respiratory Failure	Caucasian/European Children						[15]
HLA-DR*07	SJS/TEN	Caucasian/European						[7]
ANTIBIOTICS, VANCOMYCIN								
HLA-A*32:01	DRESS	Caucasian/European			20%			[16–18]

Allele	Reaction	Ethnic population	Sensitivity (%)	Specificity (%)	PPV	NPV	Est.	Ref.
ANTIBIOTICS, BETA-LACTAM								
HLA-B*57:01 (flucloxacillin)	DILI	Caucasian/European			0.12%	99.99%		[19]
HLA-DRB1*15:01 (amoxicillin-clavulanate) HLA-DQB1*06:02 HLA-A*02:01	DILI	Caucasian/European Northern European						[20]
HLA-B*55:01	Self-reported penicillin allergy	Caucasian/European						[21]
HLA-DRB3*02:02	Delayed hypersensitivity to penicillins	Southwestern Europeans						[22]
HLA-DRB1*10:01	Skin test positive immediate penicillin allergy	Caucasian/European	unknown	unknown	unknown	unknown		[23]
ANTIBIOTICS, MINOCYCLINE								
HLA-B*35:02	DILI	Caucasian/European						[24]
ANTIBIOTICS, NITROFURANTOIN								
HLA-DRB1*11:04	DILI, autoimmune variant	Caucasian/European (United States)						[25]
HLA-A*33:03	DILI	Caucasian/European						[26]
ANTIFUNGAL, TERBINAFINE								
HLA-A*33:01	DILI	Caucasian/European						[23]
ANTIPARASITICS, BENZNIDAZOLE								
HLA*11:01 HLA*29:02 HLA*68	DRESS	Bolivian			100 100 48	70 70 84		
HLA-B*35	Moderate to severe morbilliform drug eruption, DRESS, SJS/TEN		64.8%	56.9%	35%	81.9%		[28]
ANTICONVULSANTS								
Carbamazepine								
HLA-A*24:02	SJS/TEN	Chinese (Han)						[29]
HLA-A*31	DRESS	Japanese						[30]
HLA-A*31	EM	Japanese						[30]
HLA-A*31	MPE	Japanese						[30]
HLA-A*31	SJS/TEN	Japanese						[30]
HLA-A*31:01	DRESS	Caucasian/European	70	96.1	0.89	99.98		[31,32]
HLA-A*31:01	DRESS	Chinese (Han)	50	95.8	0.59	99.97		[32,33]
HLA-A*31:01	DRESS	Japanese	60.7	87.5			A	[34]
HLA-A*31:01	DRESS	Korean						[35]
HLA-A*31:01	MPE	Caucasian/European						[31]

Allele	Reaction	Ethnic population	Sensitivity (%)	Specificity (%)	PPV	NPV	Est.	Ref.
HLA-A*31:01	MPE	Chinese (Han)						[33,36]
HLA-A*31:01	SJS/TEN	Caucasian/European						[31,37]
HLA-A*31:01	SJS/TEN	Chinese (Han)						[37]
HLA-A*31:01	SJS/TEN	Japanese	60.7	87.5			A	[34,37]
HLA-A*31:01	SJS/TEN	Korean						[37]
HLA-B*15:02	MPE	Thai						[38]
HLA-B*15:02	SJS/TEN	Chinese						[39]
HLA-B*15:02	SJS/TEN	Chinese (Han)	72.2–100	86.3–95.8	3.4–9	92–100		[29,32,33,37, 40–48]
HLA-B*15:02	SJS/TEN	Indian						[49]
HLA-B*15:02	SJS/TEN	Korean						[42]
HLA-B*15:02	SJS/TEN	Malaysian	96	88	1.8	100	B	[37,39,42]
HLA-B*15:02	SJS/TEN	Thai	88.1–100	75–88.1	1.92	99.96		[38,42, 50–52]
HLA-B*15:11	SJS/TEN	Chinese (Han)						[29,53]
HLA-B*15:11	SJS/TEN	Japanese						[53]
HLA-B*15:11	SJS/TEN	Korean						[53]
HLA-B*15:11	SJS/TEN	Thai						[53]
HLA-B*15:11	SJS/TEN	Vietnamese						[53]
HLA-B*15:21	SJS/TEN	Thai						[38]
HLA-B*51:01	DRESS	Chinese (Han)						[53]
HLA-B*51:01	MPE	Chinese (Han)						[53]
HLA-B*58:01	DRESS	Thai						[38]
HLA-B*58:01	MPE	Thai						[38]
HLA-DRB1*14:05	MPE	Chinese (Han)						[54]
Lamotrigine								
HLA-A*02:07	DRESS	Thai						[55]
HLA-A*02:07	MPE	Thai						[55]
HLA-A*02:07	SJS/TEN	Thai						[55]
HLA-A*24:02 / HLA-C*01:02	MPE	Korean						[56]
HLA-A*30:01	MPE	Chinese (Han)						[54]
HLA-A*31:01	DRESS	Korean						[57]
HLA-A*31:01	SJS/TEN	Korean						[57]
HLA-A*33:03	MPE	Thai						[55]
HLA-A*68:01	DRESS	Caucasian/European						[58]
HLA-A*68:01	SJS/TEN	Caucasian/European						[58]
HLA-B*13:02	MPE	Chinese (Han)						[54]
HLA-B*15:02	DRESS	Thai						[55]
HLA-B*15:02	MPE	Thai						[55]
HLA-B*15:02	SJS/TEN	Chinese (Han)	29.4	89.7				[41,45,59]

Allele	Reaction	Ethnic population	Sensitivity (%)	Specificity (%)	PPV	NPV	Est.	Ref.
HLA-B*15:02	SJS/TEN	Thai						[55]
HLA-B*38	SJS/TEN	Caucasian/European						[11]
HLA-B*44:03	MPE	Thai						[55]
HLA-B*58:01	DRESS	Caucasian/European						[58]
HLA-B*58:01	SJS/TEN	Caucasian/European						[58]
HLA-C*07:18	DRESS	Caucasian/European						[58]
HLA-C*07:18	SJS/TEN	Caucasian/European						[58]
HLA-DQB1*06:09	DRESS	Caucasian/European						[58]
HLA-DQB1*06:09	SJS/TEN	Caucasian/European						[58]
HLA-DRB1*13:01	DRESS	Caucasian/European						[58]
HLA-DRB1*13:01	SJS/TEN	Caucasian/European						[58]
Oxcarbazepine								
HLA-B*15:02	MPE	Chinese (Han)						[60]
HLA-B*15:02	SJS/TEN	Chinese (Han)						[36]
HLA-B*38:02	MPE	Chinese (Han)						[61]
Phenobarbital								
CYP2C19*2	DRESS	Thai						[62]
CYP2C19*2	SJS/TEN	Thai						[62]
HLA-B*51:01	SJS/TEN	Japanese						[63]
Phenytoin								
CYP2C9*3	DRESS	Chinese (Han)						[64]
CYP2C9*3	DRESS	Japanese						[64]
CYP2C9*3	DRESS	Malaysian						[64]
CYP2C9*3	SJS/TEN	Chinese (Han)						[64]
CYP2C9*3	SJS/TEN	Japanese						[64]
CYP2C9*3	SJS/TEN	Malaysian						[64]
CYP2C9*3	SJS/TEN	Thai						[65]
HLA-B*13:01	SJS/TEN	Chinese (Han)						[36]
HLA-B*15:02	SJS/TEN	Chinese (Han)	36.6	87.2				[36,41,45]
HLA-B*15:02	SJS/TEN	Malaysian						[66]
HLA-B*15:02	SJS/TEN	Thai						[50]
HLA-B*15:13	DRESS	Malaysian						[67]
HLA-B*15:13	SJS/TEN	Malaysian	53.8	90.6				[66]
HLA-B*56:02	SJS/TEN	Thai						[65]
HLA-B*56:02	DRESS	Australian Aboriginal						[66]
HLA-C*08:01	SJS/TEN	Chinese (Han)						[36]
HLA-DRB1*16:02	SJS/TEN	Chinese (Han)						[36]
Zonisamide								
HLA-A*02:07	SJS/TEN	Japanese						[63]

Allele	Reaction	Ethnic population	Sensitivity (%)	Specificity (%)	PPV	NPV	Est.	Ref.
ANTIRETROVIRALS								
Nevirapine								
CYP2B6 T983C	SJS/TEN	African (Malawian, Ugandan)						[68]
CYP2B6 T983C	SJS/TEN	African (Mozambique)						[69]
HLA-C*04	DRESS	Chinese (Han)						[70]
HLA-C*04	SJS/TEN	African (Malawian)			2.6	99.2		[70]
HLA-C*04:01 (rs5010528)	SJS/TEN	African (Sub-Saharan)			2.8	42.4		[73]
HLA-C*08	DRESS	Japanese						[72]
HLA-C*08:02 / HLA-B*14:02	DRESS	Caucasian/European (Sardinian)						[74]
HLA-DRB1*01:01	DRESS	Caucasian/European						[75]
ANTIRETROVIRALS, NUCLEOSIDE ANALOG REVERSE TRANSCRIPTASE INHIBITORS								
Abacavir								
HLA-B*57:01	HSS	African/African descent	100	99	50	100	D	[76,77]
HLA-B*57:01	HSS	Caucasian/European	100	96	66	100	D	[76–80]
HLA-B*57:01	HSS	Hispanic	26	99	96	60	D	[77]
ANTIRETROVIRAL INTEGRASE INHIBITOR								
HLA-B*53:01 (raltegravir)	DRESS	African/African American						[81,82]
CARBONIC ANHYDRASE INHIBITORS								
Acetazolamide								
HLA-B*59	SJS/TEN	Korean						[83]
Methazolamide								
HLA-B*59	SJS/TEN	Japanese						[84]
HLA-B*59:01[4] HLA-B*55:02[4]	SJS/TEN	Han Chinese						[86]
HLA-B*59:01	SJS/TEN	Chinese (Han)	87.5	63.3				[85]
HLA-B*59:01	SJS/TEN	Korean						[87]
HLA-C*01:02	SJS/TEN	Chinese (Han)						[86]
HLA-C*01:02	SJS/TEN	Korean						[87]
DISEASE-MODIFYING ANTIRHEUMATIC DRUGS (DMARDS)								
Sulfasalazine								
HLA-B*13:01	DRESS	Chinese (Han)	66.7	86.7				[88]
NON-STEROIDAL INFLAMMATORY (NSAID)								
Isoxicam, Piroxicam								
HLA-A*02	SJS/TEN	Caucasian/European						[7]
HLA-B*12	SJS/TEN	Caucasian/European						[7]

Allele	Reaction	Ethnic population	Sensitivity (%)	Specificity (%)	PPV	NPV	Est.	Ref.
Oxicams								
HLA-B*73	SJS/TEN	Caucasian/European						[11]
XANTHINE OXIDASE INHIBITORS								
Allopurinol								
HLA-A*33:03	DRESS	Korean	88	73.7	0.8	99.96	A,C	[89]
HLA-A*33:03	SJS/TEN	Korean	88	73.7	0.8	99.96	A,C	[89]
HLA-B*58:01	DRESS	Caucasian/European						[90–92]
HLA-B*58:01	DRESS	Caucasian/European (Portuguese)						[93]
HLA-B*58:01	DRESS	Chinese (Han)	84–100	82–88.9	1.6–5	100	A	[91,92,94–97]
HLA-B*58:01	DRESS	Japanese						[90,91]
HLA-B*58:01	DRESS	Korean	92–100	89.5–90.7	2.06	99.98	A	[89,91,92,98]
HLA-B*58:01	DRESS	Thai						[91,92]
HLA-B*58:01	MPE	Chinese (Han)	100	88.89			A	[91,92,94]
HLA-B*58:01	MPE	European						[91]
HLA-B*58:01	MPE	Japanese						[91]
HLA-B*58:01	MPE	Korean						[91]
HLA-B*58:01	MPE	Thai						[91]
HLA-B*58:01	SJS/TEN	Asian, East						[99]
HLA-B*58:01	SJS/TEN	Asian, South						[99]
HLA-B*58:01	SJS/TEN	Caucasian/European	50–60		50–60%	95	B,E	[16,91,92,99 100]
HLA-B*58:01	SJS/TEN	Caucasian/European (Portuguese)						[98]
HLA-B*58:01	SJS/TEN	Caucasian/European (Sardinian)						[101]
HLA-B*58:01	SJS/TEN	Chinese (Han)	84–100	82–88.89	1.6–5	100	A	[91,92,94–97,99,100]
HLA-B*58:01	SJS/TEN	Japanese	50–60			99	B	[91,92,99, 100,103]
HLA-B*58:01	SJS/TEN	Korean	92–100	89.5–90.7	2.06	99.98	A	[89,91,92, 98,99]
HLA-B*58:01	SJS/TEN	Thai	100	87	1.52	100		[91,92,99, 103,104]
HLA-B*58:01[5] HLA-C*03:02[5]	SJS/TEN DRESS	Vietnamese Vietnamese						[105]
HLA-B*58:01[6] HLA-A*34:02[6] HLA-B*53:01[6]	DILI	European, African and Hispanic American						[106]
HLA-B*58:01 in presence of HLA-A*24:02 and DRB1*13:02	DRESS	Korean	83.33% 33.33%	89.05% 97.55%	1.62% 2.86%	99.96% 99.85%		[107]
HLA-C*03:02	DRESS	Korean	92	87.7	1.77	99.98	A,C	[89]
HLA-C*03:02	SJS/TEN	Korean	92	87.7	1.77	99.98	A,C	[88]

Allele	Reaction	Ethnic population	Sensitivity (%)	Specificity (%)	PPV	NPV	Est.	Ref.
rs2734583	DRESS	Thai	90.6	86.0			A,C	[108]
rs2734583	SJS/TEN	Thai	90.6	86.0			A,C	[108]
rs2734583 (*BAT1*); rs3094011 (*HCP5*); GA005234 (*MICC*)	SJS/TEN	Japanese					C	[109]
rs3099844	DRESS	Thai	90.6	85.0			A,C	[108]
rs3099844	SJS/TEN	Thai	90.6	85.0			A,C	[108]
rs9263726	DRESS	Thai	90.6	82.4			A,C	[108]
rs9263726	SJS/TEN	Thai	90.6	82.4			A,C	[108]
rs9263726 (*PSORS1C1*)	SJS/TEN	Japanese					C	[109]
ANTI-NEOPLASTIC OR IMMUNOSUPPRESANT								
HLA-DRB1*07:01 HLA-DQB1*02:01 (Asparaginase)	anaphylaxis	Caucasian/European						[110,111]
HLA-DQA1*02:01 HLA-DRB1*07:01 (Azathioprine)	pancreatitis	Caucasian/European			9%			[112]
HLA-C*06:02 (Azathioprine)	Hypersensitivity syndrome	Caucasian/Australian	33.3%	100%	100%	66.7%		[113]
ANTI-THYROID								
HLA-B*38:02 (*5 SNPS) HLA-B*27:05 (3/5 SNPS) HLA-DRB1*08:03	Agranulocytosis Agranulocytosis Agranulocytosis	Han Chinese European Han Chinese		99.9% >99%	7% 30%			[114,115] [116]
HLA-DRB1*08:03[7] HLA-B*39:01[7]	Agranulocytosis Agranulocytosis	Japanese Japanese						[117]
STATINS								
DRB1*11:01 DRB1*08:03	Necrotizing autoimmune myopathy	Caucasian/European Japanese						[118] [118]
STRONTIUM RANELATE								
HLA-A*33:03	RESS SJS/TEN	Southeast Asian						[119,120,121]
HERBAL DRUGS								
HLA-B*35:01 (Polygonum multiflorum) HLA-B*35:01 (Green Tea Extract)	DILI DILI							[122] [123]
HLA-B*35:01 (Garcinia cambogia and Green Tea)[8]	DILI	European American						[124]
HLA-B*35:01 (Tumeric, Curcumin)	DILI	European American						[125]
HLA-B*35:01 (Kampo medicines)	DILI	Japanese						[126]
IL-1 and IL-6 INHIBITORS								
HLA-DRB1*15:01[9] HLA-DRB1*15 haplotypes[9]	Delayed hypersensitivity reaction with DRESS features	Caucasian Children with Still's Disease						[127]

A – Sensitivities, specificities, PPVs, and NPVs include or are based on data from studies which analyzed multiple cutaneous reactions (e.g. SJS/TEN, DRESS, MPE, EM, etc.) as a group. If data do not have a range, they are derived from a single study and should be considered as an estimate.
B – Sensitivities, specificities, PPVs, and NPVs include or are based on data from studies which analyzed multiple ethnicities (e.g. Chinese (Han), Japanese, Korean, Thai, Caucasian/European, etc.) as a group. If data do not have a range, they are derived from a single study and should be considered as an estimate.
C – Genes are in linkage with HLA*B*58:01
D – Post-marketing surveillance supports a 100% negative predictive value in all populations including Hispanic and African American
E – 50–60% of African and European ancestry individuals carry HLA-B*58:01 in association with allopurinol SJS/TEN and DRESS [128]
DILI, drug induced liver injury; DRESS, drug reaction with eosinophilia and systemic symptoms; EM, erythema multiforme; FDE, fixed drug eruption; HSS, hypersensitivity syndrome; MPE, maculopapular exanthema; NPV, negative predictive value; PPV, positive predictive value; SJS/TEN, Stevens-Johnson syndrome/toxic epidermal necrolysis; the category DRESS includes drug-induced hypersensitivity syndrome (DIHS) and hypersensitivity syndrome (HSS), excluding abacavir HSS.

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The table of recommendations from various sources regarding genetic screening to prevent cutaneous adverse drug reactions is now available on the Litt database at https://www.drugeruptiondata.com/about_book.

Taylor & Francis
Taylor & Francis Group
http://taylorandfrancis.com

Concordance of synonyms and trade names with generic names

Synonym/Trade name	Generic
3,4-methylenedioxymethamphetamine	MDMA
3TC	lamivudine
4-aminopyridine	dalfampridine
4-AP	dalfampridine
4-demethoxydaunorubicin	idarubicin
4-DMDR	idarubicin
5-Aminolevulinic acid	aminolevulinic acid
5-aminosalicylic acid	mesalamine
5-ASA	mesalamine
5-aza-2'-deoxycytidine	decitabine
5-fluorouracil	fluorouracil
6-mercaptopurine	mercaptopurine
6-MP	mercaptopurine
13-cis-retinoic acid	isotretinoin

A

Abbokinase	urokinase
Abelcet	amphotericin B
Abilify	aripiprazole
Ablavar	gadofosveset
Abreva	docosanol
Accolate	zafirlukast
AccuNeb	albuterol
Accupril	quinapril
Accupro	quinapril
Accuretic	hydrochlorothiazide, quinapril
Accutane	isotretinoin
acemetacine	acemetacin
acemetacinum	acemetacin
Aceon	perindopril
acetylsalicylic acid	aspirin
aciclovir	acyclovir
Aciphex	rabeprazole
Aclasta	zoledronate
Aclovate	alclometasone
Acomplia	rimonabant
Acova	argatroban
ACT	dactinomycin
Actemra	tocilizumab
ActHIB	Hemophilus B vaccine
Actidose-Aqua	charcoal
Actifen	dexibuprofen
Actigall	ursodiol
Actimmune	interferon gamma
actinomycin-D	dactinomycin
Actiq	fentanyl
Activase	alteplase
activated carbon	charcoal
activated charcoal	charcoal
Actonel	risedronate
Actos	pioglitazone
Acular	ketorolac
ACV	acyclovir
acycloguanosine	acyclovir
Aczone	dapsone
Adalat	nifedipine
Adapin	doxepin
Adasuve	loxapine
Adcetris	brentuximab vedotin
Adcirca	tadalafil
Adderall	dextroamphetamine
Addyi	flibanserin
Adempas	riociguat
adenine arabinoside	vidarabine
Adenocard	adenosine
Adenocur	adenosine
Adipex-P	phentermine
Adlyxin	lixisenatide
Adoxa	doxycycline
Adrenaclick	epinephrine
Adrenalin	epinephrine
adrenaline	epinephrine
AdreView	iobenguane
Adriamycin	doxorubicin
Advair	fluticasone propionate, salmeterol
Advantan	methylprednisolone
Advicor	lovastatin, niacin
Advil	ibuprofen
Aerobid	flunisolide
Afinitor	everolimus
Afluria	influenza vaccine
Afstyla	antihemophilic factor
Agenerase	amprenavir
Aggrastat	tirofiban
Aggrenox	aspirin, dipyridamole
Agrippal	influenza vaccine
Agrylin	anagrelide
Akineton	biperiden
Aknemycin Plus	tretinoin
Akynzeo	netupitant & palonosetron
Ala-Cort	hydrocortisone
ALA	alpha-lipoic acid
Alamast	pemirolast
Alavert	loratadine
Albalon	naphazoline
Albenza	albendazole
Aldactazide	hydrochlorothiazide, spironolactone
Aldactone	spironolactone
Aldara	imiquimod
Aldoclor	chlorothiazide, methyldopa
Aldoril	hydrochlorothiazide
Aldurazyme	laronidase
Alecensa	alectinib
Alesse	oral contraceptives
Aleve	naproxen
Alfenta	alfentanil
alimemazine	trimeprazine
Alimta	pemetrexed
Alinia	nitazoxanide
Aliqopa	copanlisib
Alkeran	melphalan
all-trans-retinoic acid	tretinoin
Allegra-D	pseudoephedrine
Allegra	fexofenadine

Alli	orlistat
Almogran	almotriptan
Alocril	nedocromil
Alomide	lodoxamide
Alora	estradiol
Aloxi	palonosetron
alpha tocopherol	vitamin E
Alphadrol	fluprednisolone
Alphagan P	brimonidine
Alphanate	factor VIII - von Willebrand factor
Alprolix	coagulation factor IX (recombinant)
Alrex	loteprednol
Alsuma	sumatriptan
Altabax	retapamulin
Altace	ramipril
Altargo	retapamulin
Altoprev	lovastatin
Alunbrig	brigatinib
Alurate	aprobarbital
Alvesco	ciclesonide
Amaryl	glimepiride
Ambi	hydroquinone
Ambien	zolpidem
AmBisome	amphotericin B
Ameluz	aminolevulinic acid
Amerge	naratriptan
amethopterin	methotrexate
Amevive	alefacept
amfepramone	diethylpropion
Amgevita	adalimumab
Amicar	aminocaproic acid
Amikacin sulfate	amikacin
Amitiza	lubiprostone
Amjevita	adalimumab
Amnesteem	isotretinoin
Amoxapine	amoxapine
Amoxil	amoxicillin
amoxycillin	amoxicillin
Amphocin	amphotericin B
Amphotec	amphotericin B
Ampyra	dalfampridine
amrinone	inamrinone
Amyvid	florbetapir F18
Anacin-3	acetaminophen
Anacin	aspirin
Anafranil	clomipramine
Analgin	metamizole
Anamantle HC	lidocaine
Anandron	nilutamide
Anascorp	immune globulin (equine)
Ancef	cefazolin
Ancobon	flucytosine
Androcur	cyproterone
Androderm	testosterone
AndroGel	testosterone
Android	methyltestosterone
Anectine	succinylcholine
Angiomax	bivalirudin
Ansaid	flurbiprofen
Antabuse	disulfiram
antegren	natalizumab
Antivert	meclizine
Antizol	fomepizole
Anturane	sulfinpyrazone
Anzemet	dolasetron
APAP	acetaminophen
Aphthasol	amlexanox
Aphtheal	amlexanox
Apidra	insulin glulisine
Apokyn	apomorphine
Apresazide	hydralazine
Apresoline	hydralazine
Aprovel	irbesartan
Aptiom	eslicarbazepine
Aptivus	tipranavir
Aquasol A	vitamin A
Aquasol E	vitamin E
ara-A	vidarabine
ara-C	cytarabine
Aralen	chloroquine
Aranesp	darbepoetin alfa
Arava	leflunomide
Arcalyst	rilonacept
Arcapta Neohaler	indacaterol
Arcoxia	etoricoxib
Arduan	pipecuronium
Aredia	pamidronate
Aricept Evess	donepezil
Aricept	donepezil
Arimidex	anastrozole
Aristada	aripiprazole
Aristospan	triamcinolone
Arixtra	fondaparinux
Arnuity	fluticasone furoate
Aromasin	exemestane
Arpraziquantel	praziquantel
Arranon	nelarabine
Arsenic trioxide (Trisenox)	arsenic
Arthro-Aid	glucosamine
Arthrotec	diclofenac, misoprostol
Arzerra	ofatumumab
ASA	aspirin
Asacol	mesalamine
Asclera	polidocanol
Ascriptin	aspirin
Asmanex	mometasone
Astelin	azelastine
Atabrine	quinacrine
Atacand HCT	hydrochlorothiazide
Atacand	candesartan
Atarax	hydroxyzine
Atelvia	risedronate
Atgam	anti-thymocyte globulin (equine)
Athimil	mianserin
Ativan	lorazepam
ATP	adenosine
ATRA	tretinoin
Atripla	efavirenz, emtricitabine, tenofovir disoproxil
Atromid-S	clofibrate
Atrovent	ipratropium
Aubagio	teriflunomide
Augmentin	amoxicillin
auranofin	gold & gold compounds
Aurorix	moclobemide
aurothioglucose	gold & gold compounds
Austedo	deutetrabenazine
Auvi-Q	epinephrine
Avage	tazarotene
Avalide	hydrochlorothiazide, irbesartan
Avandamet	metformin, rosiglitazone
Avandaryl	glimepiride, rosiglitazone
Avandia	rosiglitazone

Avapro	irbesartan
Avastin	bevacizumab
Avaxim	hepatitis A vaccine
Avelox	moxifloxacin
Aventyl	nortriptyline
Aviane	oral contraceptives
Avinza	morphine
Avodart	dutasteride
Avonex	interferon beta
Avycaz	ceftazidime & avibactam
Axert	almotriptan
Axid	nizatidine
Aygestin	progestins
Azactam	aztreonam
Azacytidine	azacitidine
Azasan	azathioprine
AzaSite	azithromycin
AZD9291	osimertinib
azidothymidine	zidovudine
Azilect	rasagiline
Azlaire	pranlukast
Azmacort	triamcinolone
Azopt	brinzolamide
AZT	zidovudine
Azulfidine	sulfasalazine
Azzalure	botulinum toxin (A & B)

B

Baciguent	bacitracin
Baciim	bacitracin
Bacille Calmette-Guerin	BCG vaccine
Baclofen	baclofen
Bactrim	co-trimoxazole, sulfamethoxazole, trimethoprim
Bactroban	mupirocin
BAL5788	ceftobiprole
BAL	dimercaprol
Banflex	orphenadrine
Banzel	rufinamide
Baraclude	entecavir
Baratol	indoramin
Barhemsys	amisulpride
Basaglar	insulin glargine
Bavencio	avelumab
Baxdela	delafloxacin
Beconase AQ	beclomethasone
Beleodaq	belinostat
Bellafill	collagen (bovine)
Belviq	lorcaserin
Benadryl	diphenhydramine, pseudoephedrine
BeneFIX	coagulation factor IX (recombinant)
Benicar	olmesartan
Benlysta	belimumab
Bentyl	dicyclomine
Benzaclin	clindamycin
Beromun	tasonermin
Besivance	besifloxacin
Besponsa	inotuzumab ozogamicin
Beta-Adalat	atenolol
Beta-Val	betamethasone
Betaferon	interferon beta
Betapace	sotalol
Betaseron	interferon beta
Betatrex	betamethasone
Betoptic [Ophthalmic]	betaxolol
Bevyxxa	betrixaban
Bexsero	meningococcal group B vaccine
Bextra	valdecoxib
Bexxar	tositumomab & iodine^{131}
Bezalip	bezafibrate
BG-12	dimethyl fumarate
Biaxin	clarithromycin
Biaxsig	roxithromycin
BiCNU	carmustine
Bifril	zofenopril
Biktarvy	bictegravir/emtricitabine/tenofovir alafenamide
Biltricide	praziquantel
Binosto	alendronate
Bio-Active Selenium	selenium
BioThrax	anthrax vaccine
Blenoxane	bleomycin
bleo	bleomycin
Blephamide	prednisolone, sulfacetamide
Blincyto	blinatumomab
BLM	bleomycin
Blocadren	timolol
BNT162b2	covid-19 vaccine, mrna
Bocouture	botulinum toxin (A & B)
Bolvidon	mianserin
Bondronat	ibandronate
Boniva	ibandronate
Bontril	phendimetrazine
Bosulif	bosutinib
Botox	botulinum toxin (A & B)
Bredinin	mizoribine
Breo	fluticasone furoate
Brethine	terbutaline
Brevibloc	esmolol
Brevicon	oral contraceptives
Bricanyl	terbutaline
Bridion	sugammadex
Brilinta	ticagrelor
Brisdelle	paroxetine mesylate
British anti-Lewisite	dimercaprol
Briviact	brivaracetam
Bromfed	brompheniramine, pseudoephedrine
Brovana	arformoterol
Bumex	bumetanide
BuSpar	buspirone
Butisol	butabarbital
Bydureon	exenatide
Byetta	exenatide
Bystolic	nebivolol
Byvalson	nebivolol, valsartan

C

C7E3	abciximab
Caduet	amlodipine, atorvastatin
Calan	verapamil
calcidiol	calcifediol
Calcimar	calcitonin
calcipotriene	calcipotriol
Calquence	acalabrutinib
Camoquin	amodiaquine
Campath	alemtuzumab
Campral	acamprosate
Camptosar	irinotecan
Canasa	mesalamine
Cancidas	caspofungin
Canesten	clotrimazole
cannabis	marihuana

Capastat	capreomycin
Capex	fluocinolone
Capoten	captopril
Capozide	captopril, hydrochlorothiazide
Caprelsa	vandetanib
Carac	fluorouracil
Carafate	sucralfate
carampicillin	bacampicillin
Carbastat Ophthalmic	carbachol
carbidopa	levodopa
Carbometyx	cabozantinib
Carbomix	charcoal
carboxypeptidase G_2	glucarpidase
Cardase	ethoxzolamide
Cardene	nicardipine
Cardicor	bisoprolol
Cardioxane	dexrazoxane
Cardizem	diltiazem
Cardura	doxazosin
Casodex	bicalutamide
Cataflam	diclofenac
Catapres	clonidine
Catena	idebenone
Caverject	alprostadil
Cayston	aztreonam
CDDP	cisplatin
Ceclor	cefaclor
Cedax	ceftibuten
CeeNU	lomustine
cefalexin	cephalexin
Cefizox	ceftizoxime
Cefobid	cefoperazone
cefradine	cephradine
Ceftin	cefuroxime
Celebrex	celecoxib
Celectol	celiprolol
Celestone	betamethasone
Celexa	citalopram
CellCept	mycophenolate
Celol	celiprolol
Celontin	methsuximide
Celsentri	maraviroc
Celvapan	pandemic influenza vaccine (H1N1)
Ceptaz	ceftazidime
Cerdelga	eliglustat
Cerebyx	fosphenytoin
Ceredase	alglucerase
Certican	everolimus
Certolizumab pegol	certolizumab
Cervarix	human papillomavirus vaccine (bivalent)
Cervidel	dinoprostone
Cesamet	nabilone
Champix	varenicline
Chantix	varenicline
Chemet	succimer
Chibroxin	norfloxacin
Chirocaine	levobupivacaine
Chlor-Trimeton	chlorpheniramine
chloroiodoquin	clioquinol
chlorphenamine	chlorpheniramine
chlortalidone	chlorthalidone
Cholbam	cholic acid
Choledyl SA	oxtriphylline
Choledyl	oxtriphylline
Cholestagel	colesevelam
Cialis	tadalafil
Ciloxan Ophthalmic	ciprofloxacin
Cimzia	certolizumab
Cinqair	reslizumab
Cipramil	citalopram
Cipro	ciprofloxacin
Ciproxin	ciprofloxacin
Citanest	prilocaine
citrovorum factor	leucovorin
Claforan	cefotaxime
Claravis	isotretinoin
Clarinex	desloratadine
Claritin-D	loratadine
Claritin	loratadine
Clavulin	amoxicillin
Cleocin-T	clindamycin
Cleocin	clindamycin
Cleviprex	clevidipine
Clexane	enoxaparin
Climara	estradiol
Clindagel	clindamycin
Clindets	clindamycin
Clinoril	sulindac
Clomid	clomiphene
Clopixol Depot	zuclopenthixol decanoate
Clopixol tablets	zuclopenthixol dihydrochloride
Clopixol-Acuphase	zuclopenthixol acetate
Clopixol	zuclopenthixol
Cloxapen	cloxacillin
Clozaril	clozapine
club drug	MDMA
Coartem	artemether/lumefantrine
Cogentin	benztropine
Cognex	tacrine
Colase	docusate
Colazal	balsalazide
Colazide	balsalazide
Cold-Eeze	zinc
Colestid	colestipol
Colofac	mebeverine
Colomycin	colistin
Combivent	albuterol, ipratropium
Combivir	lamivudine, zidovudine
Cometriq	cabozantinib
Comirnaty	covid-19 vaccine, mrna
Compazine	prochlorperazine
Complera	emtricitabine, rilpivirine, tenofovir disoproxil
Comtan	entacapone
Comtess	entacapone
Comvax	Hemophilus B vaccine, hepatitis B vaccine, influenza vaccine
Concerta	methylphenidate
Concor	bisoprolol
Contrave	naltrexone
Copaxone	glatiramer
Copegus	ribavirin
copolymer-1	glatiramer
Coracten	nifedipine
Cordarone	amiodarone
Coreg	carvedilol
Corflo	nicorandil
Corlanor	ivabradine
Corlopam	fenoldopam
Cortef	hydrocortisone
Cortenema	hydrocortisone
Cortisporin	bacitracin
Cortone	cortisone

Corvert	ibutilide
Corzide	bendroflumethiazide, nadolol
Cosentyx	secukinumab
Cosmegen	dactinomycin
Cosopt	dorzolamide, timolol
Cotazym	pancrelipase
Cotellic	cobimetinib
Cotrimoxazole	co-trimoxazole
Coumadin	warfarin
Covera-HS	verapamil
Cozaar	losartan
CPG2	glucarpidase
CPM	cyclophosphamide
Creon 1000	pancreatin
Creon	pancrelipase
Cresemba	isavuconazonium sulfate
Crestor	rosuvastatin
crisantaspase	asparaginase *Erwinia chrysanthemi*
Crixivan	indinavir
cromolyn sodium	cromolyn
Crystapen	penicillin G
CsA	cyclosporine
CT-P13 is biosimilar infliximab	infliximab
CTX	cyclophosphamide
Cubicin	daptomycin
Cufence	trientine
Cuprior	trientine
Cutivate	fluticasone propionate
Cuvitru	immune globulin sc
Cuvposa	glycopyrrolate
Cuvrior	trientine
CyA	cyclosporine
Cyclocort	amcinonide
Cyclosporine-A	cyclosporine
Cyklokapron	tranexamic acid
Cylert	pemoline
Cymbalta	duloxetine
Cyramza	ramucirumab
Cystagon	cysteamine
Cystrin	oxybutynin
CYT	cyclophosphamide
Cytadren	aminoglutethimide
Cytomel	liothyronine
Cytosar-U	cytarabine
Cytotec	misoprostol
Cytovene	ganciclovir
Cytoxan	cyclophosphamide

D

D-cycloserine	cycloserine
D.H.E. 45	dihydroergotamine
D4T	stavudine
Dacogen	decitabine
Daklinza	daclatasvir
Daliresp	roflumilast
Dalmane	flurazepam
Dalvance	dalbavancin
Daraprim	pyrimethamine
Darvocet-N	acetaminophen, propoxyphene
Darvon Compound	aspirin, propoxyphene
Darvon	propoxyphene
Darzalex	daratumumab
daunomycin	daunorubicin
DaunoXome	daunorubicin
Daxas	roflumilast
Daypro	oxaprozin
DDAVP	desmopressin
ddC	zalcitabine
Deca-Durabolin	nandrolone
Decadron	dexamethasone
Decapeptyl	triptorelin
Decentan	perphenazine
Declomycin	demeclocycline
Definity	perflutren
Defitelio	defibrotide
Delatestryl	testosterone
Delta-Cortef	prednisolone
Deltaran	dexibuprofen
Deltasone	prednisone
Demadex	torsemide
Demerol	meperidine
Demulen	oral contraceptives
Denavir	penciclovir
Deniban	amisulpride
Denzapine	clozapine
deoxycoformycin	pentostatin
Depacon	valproic acid
Depade	naltrexone
Depakene	valproic acid
Depakote	valproic acid
Depen	penicillamine
Deplin	L-methylfolate
Depo-Provera	medroxyprogesterone
DepoCyt	cytarabine
deprenyl	selegiline
Derma-Smoothe	fluocinolone
Descovy	emtricitabine, tenofovir alafenamide
Desferal	deferoxamine
Desogen	oral contraceptives
Desoxyn	methamphetamine
Destolit	ursodiol
Desyrel	trazodone
Detrol	tolterodine
Dexedrine	dextroamphetamine
Dexilant	dexlansoprazole
Dexone	dexamethasone
Dexoptifen	dexibuprofen
DHT	dihydrotachysterol
Diabeta	glyburide
Diabinese	chlorpropamide
Diamicron MR	gliclazide
Diamicron	gliclazide
Diamox	acetazolamide
Diastat	diazepam
Dibenzyline	phenoxybenzamine
DIC	dacarbazine
Dicolmax	diclofenac
Dicynene	etamsylate
dideoxycytidine	zalcitabine
Didrex	benzphetamine
Didronel	etidronate
Differin	adapalene
Difflam	benzydamine
Dificid	fidaxomicin
Diflucan	fluconazole
Dilacor XR	diltiazem
Dilantin	phenytoin
Dilatrate-SR	isosorbide dinitrate
Dilaudid	hydromorphone
dimethyl (E) butenedioate	dimethyl fumarate
Dimetriose	gestrinone

Diovan HCT	hydrochlorothiazide, valsartan
Diovan	valsartan
Dipentum	olsalazine
diphenylhydantoin	phenytoin
Diprivan	propofol
Diprolene	betamethasone
dipyrone	metamizole
disodium cromoglycate	cromolyn
Ditropan	oxybutynin
Diurexan	xipamide
Diuril	chlorothiazide
divalproex	valproic acid
Divigel	estradiol
DMSA	succimer
DNR	daunorubicin
Dolmatil	sulpiride
Dolobid	diflunisal
Dolophine	methadone
Dopram	doxapram
Doral	quazepam
Doralese Tiltab	indoramin
Doribax	doripenem
Doryx	doxycycline
Dostinex	cabergoline
Dovonex	calcipotriol
Doxil	doxorubicin
DPH	phenytoin
Dramamine	dimenhydrinate
Drisdol	ergocalciferol
Droxia	hydroxyurea
Dryvax	smallpox vaccine
DTIC-Dome	dacarbazine
Duexis	famotidine
Dulcolax	bisacodyl
Dulera	formoterol, mometasone
Duoneb	albuterol, ipratropium
Duopa	levodopa
Duphalac	lactulose
Dupixent	dupilumab
Duragesic	fentanyl
Duramorph	morphine
Duratuss	hydrocodone
Duricef	cefadroxil
Durlaza	aspirin
Duzallo	allopurinol, lesinurad
Dyazide	hydrochlorothiazide, triamterene
Dycill	dicloxacillin
Dymelor	acetohexamide
Dynabac	dirithromycin
Dynacin	minocycline
DynaCirc	isradipine
Dyrenium	triamterene
Dysport	botulinum toxin (A & B)

E

E	MDMA
Ebixa	memantine
Ecalta	anidulafungin
Ecotrin	aspirin
ecstasy	MDMA
Edarbi	azilsartan
Edecrin	ethacrynic acid
Edex	alprostadil
Edronax	reboxetine
Edurant	rilpivirine
Effexor XL	venlafaxine
Effexor	venlafaxine
Effient	prasugrel
Efudex	fluorouracil
ELA-Max	lidocaine
Elavil	amitriptyline
Eldepryl	selegiline
Elepsia XR	levetiracetam
Elestrin	estradiol
Elidel	pimecrolimus
Eligard	leuprolide
Eliquis	apixaban
Elitek	rasburicase
Elixophyllin	aminophylline
ella	ulipristal
ellaOne	ulipristal
Ellence	epirubicin
Elmiron	pentosan
Elocon	mometasone
Eloctate	antihemophilic factor
Eloxatin	oxaliplatin
Elspar	asparaginase
Emcor	bisoprolol
Emcyt	estramustine
Emend	aprepitant
Emflaza	deflazacort
Emflex	acemetacin
EMLA	lidocaine
Empliciti	elotuzumab
Emsam	selegiline
Emselex	darifenacin
Emtriva	emtricitabine
Enablex	darifenacin
Enangel	dexketoprofen
Enbrel	etanercept
Endeavor	zotarolimus
Engerix B	hepatitis B vaccine
Entereg	alvimopan
Entex HC	hydrocodone
Entex	pseudoephedrine
Entresto	sacubitril/valsartan
Entyvio	vedolizumab
Envarsus XR	tacrolimus
Eovist	gadoxetate
Epclusa	sofosbuvir & velpatasvir
Epiduo	adapalene
Epipen	epinephrine
Epitol	carbamazepine
Epivir	lamivudine
EPO	epoetin alfa
Epogen	epoetin alfa
Eprex	epoetin alfa
Epzicom	abacavir, lamivudine
Equagesic	aspirin, meprobamate
Eraxis	anidulafungin
Erbitux	cetuximab
Erdotin	erdosteine
Erelzi	etanercept
Ergamisol	levamisole
Ergometrine	ergometrine
Erivedge	vismodegib
Erwinase	asparaginase *Erwinia chrysanthemi*
Erwinaze	asparaginase *Erwinia chrysanthemi*
Eryc	erythromycin
erythropoiesis stimulating protein	darbepoetin alfa
erythropoietin	epoetin alfa

Esbriet	pirfenidone
Esclim	estradiol
eserine	physostigmine
Esgic	butalbital
Eskalith	lithium
Esketamine (S-isomer)	ketamine
Esmirtazapine [(S)-(+	*sofosbuvir*
hashish	marihuana
Havrix	hepatitis A vaccine
Head & Shoulders Shampoo	selenium
Hectorol	doxercalciferol
Helidac	bismuth, tetracycline
Hemangeol	propranolol
Hemlibra	emicizumab
Hep-Flush	heparin
Hepsera	adefovir
Herceptin	trastuzumab
Hetlioz	tasimelteon
hexachlorocyclohexane	lindane
Hexalen	altretamine
hexamethylmelamine	altretamine
Hibiclens	chlorhexidine
HibMenCY	meningococcal groups C & Y & Haemophilus B tetanus toxoid conjugate vaccine
HibTITER	Hemophilus B vaccine
Hiprex	methenamine
Histeamen	astemizole
Histex	carbinoxamine
Hivid	zalcitabine
Hizentra	immune globulin sc
Horizant	gabapentin
Humatin	paromomycin
Humatrope	somatropin
Humira	adalimumab
Humulin	insulin
Hyalgan	hyaluronic acid
Hyaluronan	hyaluronic acid
Hycamtin	topotecan
Hycotuss	hydrocodone
Hydeltrasol	prednisolone
Hydrea	hydroxyurea
Hydrocortone	hydrocortisone
Hydromet	hydrocodone
hydroxycarbamide	hydroxyurea
hydroxydaunomycin	doxorubicin
Hygroton	chlorthalidone
Hylan G-F 20	hyaluronic acid
hyoscine	scopolamine
Hyperstat	diazoxide
Hysingla ER	hydrocodone
Hytakerol	dihydrotachysterol
Hytone	hydrocortisone
Hytrin	terazosin
Hyzaar	hydrochlorothiazide, losartan

I

IB-Stat	hyoscyamine
ibandronic acid	ibandronate
Ibrance	palbociclib
Iclusig	ponatinib
Idamycin	idarubicin
Idelvion	coagulation factor IX (recombinant)
Idhifa	enasidenib
Ifex	ifosfamide
IFN	interferon alfa
IGIV	immune globulin IV
IL-2	aldesleukin
Ilaris	canakinumab
Iletin Lente	insulin
Imbruvica	ibrutinib
Imdur	isosorbide mononitrate
Imfinzi	durvalumab
Imigran	sumatriptan
imipemide	imipenem/cilastatin
Imitrex	sumatriptan
Imlygic	talimogene laherparepvec
Imodium	loperamide
Imovane	eszopiclone
IMOVAX Polio	inactivated polio vaccine
Impavido	miltefosine
Imuran	azathioprine
Inapsine	droperidol
Incivek	telaprevir
Incruse	umeclidinium
Inderal	propranolol
Inderide	hydrochlorothiazide
indometacin	indomethacin
Inegy	simvastatin
INF	interferon alfa
Infergen	interferon alfa
Inflamase	prednisolone
Inflectra	infliximab
Inflexal V	influenza vaccine
Infumorph	morphine
Ingrezza	valbenazine
INH	isoniazid
Inhibase	cilazapril
Inlyta	axitinib
Innofem	estradiol
Innohep	tinzaparin
Innovace	enalapril
Inovelon	rufinamide
Inspra	eplerenone
Intal	cromolyn
Integrilin	eptifibatide
Intelence	etravirine
interleukin-2	aldesleukin
intravenous immunoglobulin (IVIg)	immune globulin IV
Intron A	interferon alfa
Intropin	dopamine
Invanz	ertapenem
Invega	paliperidone
Inversine	mecamylamine
Invirase	saquinavir
Invivac	influenza vaccine
Invokamet	canagliflozin, metformin
Invokana	canagliflozin
Iodine^{131} I-Tositumomab	tositumomab & iodine^{131}
iodochlorhydroxyquin	clioquinol
Ionamin	phentermine
Iopidine	apraclonidine
Ipratropium Steri-Neb	ipratropium
IPV	inactivated polio vaccine
Iquix	levofloxacin
Iressa	gefitinib
Isavuconazole	isavuconazonium sulfate
Isentress	raltegravir
Ismelin	guanethidine
isonicotinic acid hydrazide	isoniazid
Isopredon	fluprednisolone
Isoptin	verapamil

Isordil	isosorbide dinitrate
Isovorin	levoleucovorin
Istin	amlodipine
Istodax	romidepsin
Isuprel	isoproterenol
Iveegam	immune globulin IV
IVIG	immune globulin IV
Ixempra	ixabepilone
Ixiaro	Japanese encepahlitis vaccine

J

Jadenu	deferasirox
Jakafi	ruxolitinib
Jalyn	dutasteride, tamsulosin
Janumet	metformin, sitagliptin
Januvia	sitagliptin
Jardiance	empagliflozin
Jetrea	ocriplasmin
Jevtana	cabazitaxel
Joicela	lumiracoxib
Jublia	efinaconazole
Juluca	dolutegravir, rilpivirine
Jurnista	hydromorphone
Juvederm	hyaluronic acid
Juxtapid	lomitapide

K

Kabikinase	streptokinase
Kadcyla	trastuzumab emtansine
Kadian	morphine
Kaletra	lopinavir, ritonavir
Kalten	atenolol
Kalydeco	ivacaftor
Keflex	cephalexin
Keftab	cephalexin
Kemadrin	procyclidine
Kenalog	triamcinolone
Kengreal	cangrelor
Kepivance	palifermin
Keppra	levetiracetam
Keral	dexketoprofen
Kerlone	betaxolol
Ketalar	ketamine
Ketek	telithromycin
Ketesse	dexketoprofen
Keveyis	dichlorphenamide
Kevzara	sarilumab
Keytruda	pembrolizumab
KI	potassium iodide
Kidrolase	asparaginase
Kineret	anakinra
Kisqali	ribociclib
Klaron	sulfacetamide
Klonopin	clonazepam
Korandil	nicorandil
Korlym	mifepristone
Kovaltry	antihemophilic factor
Kwells	scopolamine
Kybella	deoxycholic acid
Kyleena	levonorgestrel
Kyprolis	carfilzomib
Kytril	granisetron

L

L-asparaginase	asparaginase
L-Cysteine	acetylcysteine
L-deprenyl	selegiline
L-dopa	levodopa
L-DOPS	droxidopa
L-thyroxine sodium	levothyroxine
Lactugal	lactulose
Lambrolizumab	pembrolizumab
Lamictal	lamotrigine
Lamisil	terbinafine
Lamprene	clofazimine
Lanoxin	digoxin
Lantanon	mianserin
Lantus	insulin glargine
Lariam	mefloquine
Lartruvo	olaratumab
Lasix	furosemide
Lastacaft	alcaftadine
Latisse	bimatoprost
Latuda	lurasidone
laViv	azficel-t
Lenvima	lenvatinib
Leponex	clozapine
Lerivon	mianserin
Lescol	fluvastatin
Letairis	ambrisentan
Leukeran	chlorambucil
Leukine	granulocyte colony-stimulating factor (G-CSF)
leuprorelin	leuprolide
Leustatin	cladribine
Levaquin	levofloxacin
Levatol	penbutolol
Levbid	hyoscyamine
Levemir	insulin detemir
Levitra	vardenafil
Levlen	oral contraceptives
Levlite	oral contraceptives
Levora	oral contraceptives
Levosulpiride	sulpiride
Levothyroid	levothyroxine
Levoxyl	levothyroxine
Levsin/SL	hyoscyamine
Levsin	hyoscyamine
Levsinex	hyoscyamine
Levulan Kerastick	aminolevulinic acid
Lexapro	escitalopram
Lexiscan	regadenoson
Lexiva	fosamprenavir
Lexxel	enalapril, felodipine
Lialda	mesalamine
Librax	clidinium
Libritabs	chlordiazepoxide
Librium	chlordiazepoxide
Lidoderm	lidocaine
lignocaine	lidocaine
Limbitrol	amitriptyline, chlordiazepoxide
Lincocin	lincomycin
Linzess	linaclotide
Lioresal	baclofen
Lipitor	atorvastatin
Lipostat	pravastatin
Liptruzet	atorvastatin, ezetimibe
liquid antidote	charcoal
Lithobid	lithium

Livalo	pitavastatin
Livial	tibolone
Lo/Ovral	oral contraceptives
Lodine	etodolac
Lodosyn	carbidopa
Loestrin	oral contraceptives
Lomaira	phentermine
Lomotil	atropine sulfate, diphenoxylate
Loniten	minoxidil
Lonsurf	trifluridine & tipiracil
Lopid	gemfibrozil
Lopressor	hydrochlorothiazide, metoprolol
Loprox	ciclopirox
Lorcet	acetaminophen
Lortab	hydrocodone
Lotemax	loteprednol
Lotensin HCT	benazepril, hydrochlorothiazide
Lotensin	benazepril, hydrochlorothiazide
Lotrel	amlodipine, benazepril
Lotronex	alosetron
Lovenox	enoxaparin
Loxitane	loxapine
Lozol	indapamide
Lucentis	ranibizumab
Ludiomil	maprotiline
Lugol's solution	potassium iodide
Lumigan	bimatoprost
Luminal	phenobarbital
Lunelle	medroxyprogesterone, oral contraceptives
Lunesta	eszopiclone
Lupron Depot-Ped	leuprolide
Lupron	leuprolide
Lustra	hydroquinone
Luvox	fluvoxamine
Luxiq	betamethasone
Luzu	luliconazole
Lynparza	olaparib
Lyrica	pregabalin
Lyrinel	oxybutynin
Lyxumia	lixisenatide

M

Maalox	loperamide
MabCampath	alemtuzumab
MabThera	rituximab
Macrobid	nitrofurantoin
Macrodantin	nitrofurantoin
Macugen	pegaptanib
Malarone	atovaquone/proguanil
Manerix	moclobemide
Marcaine	bupivacaine
marijuana	marihuana
Marinol	dronabinol
Marplan	isocarboxazid
Matulane	procarbazine
Mavik	trandolapril
Mavyret	glecaprevir & pibrentasvir
Maxair	pirbuterol
Maxalt	rizatriptan
Maxaquin	lomefloxacin
Maxidone	hydrocodone
Maxipime	cefepime
Maxitrol	neomycin
mecapegfilgrastim (pegfilgrastim biosimilar)	granulocyte colony-stimulating factor (G-CSF)
Medrol	methylprednisolone
Megace	progestins
Mekinist	trametinib
Melanotan	afamelanotide
Mellaril	thioridazine
Menadione	menadione
Menest	estrogens
Menhibrix	meningococcal groups C & Y & Haemophilus B tetanus toxoid conjugate vaccine
Menostar	estradiol
mepacrine	quinacrine
Mephyton	phytonadione
Mepron	atovaquone
Meptid	meptazinol
mercaptamine	cysteamine
mereletinib	osimertinib
Meridia	sibutramine
Meronem	meropenem
mesalazine	mesalamine
Mesantoin	mephenytoin
Mesnex	mesna
Mestinon	pyridostigmine
Metadate CD	methylphenidate
Metaglip	glipizide
metaiodobenzylguanidine	iobenguane
Methadose	methadone
Methergine	methylergonovine
methotrimeprazine	levomepromazine
Methylin	methylphenidate
methylmorphine	codeine
Meticorten	prednisone
Metrocream	metronidazole
MetroGel	metronidazole
Metrolotion	metronidazole
Mevacor	lovastatin
Mexitil	mexiletine
Miacalcin	calcitonin
Miaxan	mianserin
MIBG	iobenguane
Micardis	hydrochlorothiazide, telmisartan
Micronase	glyburide
Micronor	progestins
Microzide	hydrochlorothiazide
Midamor	amiloride
Mifeprex	mifepristone
Migard	frovatriptan
Migradon	propyphenazone
Migranal	dihydroergotamine
Miltown	meprobamate
Mimpara	cinacalcet
Minipress	prazosin
Minirin	desmopressin
Minitran	nitroglycerin
Minizide	polythiazide, prazosin
Minocin	minocycline
Miochol	acetylcholine
Miradon	anisindione
Mirapex	pramipexole
Mircette	oral contraceptives
Mirena	levonorgestrel
Mirvaso	brimonidine
Mithramycin	plicamycin
mitomycin-C	mitomycin
Mivacron	mivacurium
Mizollen	mizolastine
Mnesis	idebenone

Moban	molindone
Mobic	meloxicam
Mobiflex	tenoxicam
Modalim	ciprofibrate
Modicon	oral contraceptives
Modrasone	alclometasone
Moduretic	amiloride, hydrochlorothiazide
Mogadon	nitrazepam
molly	MDMA
Monistat	miconazole
Mono-Gesic	salsalate
Monoket	isosorbide mononitrate
Monopril	fosinopril
Monurol	fosfomycin
Morphabond	morphine
Motifene	diclofenac
Motilium	domperidone
Motrin	ibuprofen
Movantik	naloxegol
Moxeza	moxifloxacin
MS Contin	morphine
MSIR Oral	morphine
MTC	mitomycin
MTX	methotrexate
Multaq	dronedarone
Multihance	gadobenate
Muse	alprostadil
mustine	mechlorethamine
Mutamycin	mitomycin
Myambutol	ethambutol
Mycamine	micafungin
Mycelex	clotrimazole
Mycobax	BCG vaccine
Mycobutin	rifabutin
Mycology-II	nystatin
mycophenolate mofetil, mycophenolate sodium, mycophenolic acid	mycophenolate
Mycostatin	nystatin
Mydayis	dextroamphetamine
Myfortic	mycophenolate
Myleran	busulfan
Mylotarg	gemtuzumab
Myobloc	botulinum toxin (A & B)
Myochrysine	gold & gold compounds
Myocrisin	gold & gold compounds
Myozyme	alglucosidase alfa
Myrbetriq	mirabegron
Mysoline	primidone

N

N-acetylcysteine	acetylcysteine
N/A	androstenedione
NAC	acetylcysteine
Nafcil	nafcillin
Nalfon	fenoprofen
Nalorex	naltrexone
Namenda	memantine
Naprosyn	naproxen
Naramig	naratriptan
Nardil	phenelzine
Naropin	ropivacaine
Nasacort	triamcinolone
Nasalcrom	cromolyn
Nasalide	flunisolide
Nasarel	flunisolide
Nascobal	cyanocobalamin
Nasonex	mometasone
Natesto	testosterone
Naturetin	bendroflumethiazide
Navane	thiothixene
Navelbine	vinorelbine
Navidrex	cyclopenthiazide
Nebilet	nebivolol
NebuPent	pentamidine
Necon	oral contraceptives
NeoMercazole	carbimazole
Neoral	cyclosporine
Neosar	cyclophosphamide
Neosporin	bacitracin, neomycin
Neotigason	acitretin
NEPA	netupitant & palonosetron
Nerlynx	neratinib
Nesina	alogliptin
Neulactil	pericyazine
Neulasta	granulocyte colony-stimulating factor (G-CSF)
Neupogen	granulocyte colony-stimulating factor (G-CSF)
Neupro	rotigotine
Neurobloc	botulinum toxin (A & B)
Neurontin	gabapentin
Nexavar	sorafenib
Nexium	esomeprazole
Niacor	niacin
Niaspan	niacin
Nicoderm	nicotine
Nicoran	nicorandil
Nicorette	nicotine
nicotinamide	niacinamide
nicotinic acid	niacin
Nicotrol	nicotine
Nilandron	nilutamide
Nimbex	cisatracurium
Nimotop	nimodipine
Ninlaro	ixazomib
Nipent	pentostatin
Nipride	nitroprusside
Nitoman	tetrabenazine
Nitrodur	nitroglycerin
nitrogen mustard	mechlorethamine
nitroglycerol	nitroglycerin
Nitrolingual	nitroglycerin
Nitropress	nitroprusside
Nitrostat	nitroglycerin
Nizoral	ketoconazole
Noctiva	desmopressin
Nolvadex	tamoxifen
Nootropil	piracetam
Norco	hydrocodone
Nordette	oral contraceptives
Norditropin SimpleXx	somatropin
Norditropin	somatropin
Norflex	orphenadrine
Norgesic	aspirin
Norinyl	oral contraceptives
Noritate	metronidazole
Noroxin	norfloxacin
Norpace	disopyramide
Norpramin	desipramine
Norprolac	quinagolide
Northera	droxidopa
Norval	mianserin
Norvasc	amlodipine

Norvir	ritonavir
Novantrone	mitoxantrone
Novolin R	insulin
NovoLog	insulin aspart
NovoRapid	insulin aspart
Noxafil	posaconazole
Nozinan	levomepromazine
Nplate	romiplostim
NTG	nitroglycerin
Nubain	nalbuphine
Nucala	mepolizumab
Nucofed	codeine
Nucynta ER	tapentadol
Nucynta	tapentadol
Nulev	hyoscyamine
Nulojix	belatacept
Nuplazid	pimavanserin
Nuromax	doxacurium
Nutropin	somatropin
NutropinAq	somatropin
Nuvigil	armodafinil

O

Ocaliva	obeticholic acid
Ocrevus	ocrelizumab
Octagam	immune globulin IV
Ocuflox	ofloxacin
Ocupress (ophthalmic)	carteolol
Ocusert Pilo	pilocarpine
Odefsey	emtricitabine/rilpivirine/tenofovir alafenamide
Odomzo	sonidegib
Ofev	nintedanib
Oforta	fludarabine
Ogen	estrogens
Oil of Wintergreen	methyl salicylate
Olbetam	acipimox
Oleptro	trazodone
Olmetec	olmesartan
Olumiant	baricitinib
Olysio	simeprevir
Omnaris	ciclesonide
Omnicef	cefdinir
OmniHIB	Hemophilus B vaccine
Omnipaque	iohexol
Omontys	peginesatide
OnabotulinumtoxinA	botulinum toxin (A & B)
Onbrez Breezhaler	indacaterol
Oncaspar	pegaspargase
oncovin	vincristine
Onfi	clobazam
Onglyza	saxagliptin
Onivyde	irinotecan
Onmel	itraconazole
Onon	pranlukast
Ontak	denileukin
Onzetra Xsail	sumatriptan
Opana	oxymorphone
Opdivo	nivolumab
Opilon	moxisylyte
Opivate	factor VIII - von Willebrand factor
Opizone	naltrexone
Opsumit	macitentan
Opticrom	cromolyn
Optimine	azatadine
OptiPranolol	metipranolol
Optison	perflutren
Optivar	azelastine
Orabloc	articaine
Oracea	doxycycline
OraDisc	amlexanox
Orap	pimozide
Oravig	miconazole
Orencia	abatacept
Orgaran	danaparoid
Orinase	tolbutamide
Orkambi	lumacaftor/ivacaftor
Ortho Tri-Cyclen	oral contraceptives
Ortho-Cept	oral contraceptives
Ortho-Cyclen	oral contraceptives
Ortho-Novum	oral contraceptives
Orudis	ketoprofen
Oruvail	ketoprofen
Osphena	ospemifene
Otezla	apremilast
Otrivine	xylometazoline
Ovace	sulfacetamide
Ovcon	oral contraceptives
Ovral	oral contraceptives
Ovrette	progestins
Oxsoralen	methoxsalen, psoralens
Oxtellar XR	oxcarbazepine
OxyContin	oxycodone
OxyIR	oxycodone
Ozurdex	dexamethasone

P

Pacerone	amiodarone
Palexia	tapentadol
Palladone	hydromorphone
Pamelor	nortriptyline
Panadol	acetaminophen
Pandemrix	pandemic influenza vaccine (H1N1)
Panretin	alitretinoin
Panzyga	immune globulin IV
para-aminosalicylate sodium	aminosalicylate sodium
paracetamol	acetaminophen
Paraflex	chlorzoxazone
Parafon Forte DSC	chlorzoxazone
Paraplatin	carboplatin
Parlodel	bromocriptine
Parnate	tranylcypromine
Paroven	oxerutins
PAS	aminosalicylate sodium
Paser Granules	aminosalicylate sodium
Paxil CR	paroxetine hydrochloride
Paxil	paroxetine hydrochloride
PBZ	tripelennamine
PCE	erythromycin
PCV	pneumococcal vaccine
PDGF	becaplermin
Pediapred	prednisolone
Pediatrix	hepatitis B vaccine
PedivaxHIB	Hemophilus B vaccine
Peganone	ethotoin
pegfilgrastim	granulocyte colony-stimulating factor (G-CSF)
PegIntron	PEG-interferon
Penetrex	enoxacin
Penlac	ciclopirox
Pennsaid	diclofenac
Pentacarinat	pentamidine

Pentam 300	pentamidine
Pentasa	mesalamine
Penthrane	methoxyflurane
Pentoxil	pentoxifylline
Pepcid	famotidine
Pepto-Bismol	bismuth
Percocet	acetaminophen, oxycodone
Perforomist	formoterol
Peri-Colase	docusate
Perjeta	pertuzumab
Perlane	hyaluronic acid
Permax	pergolide
Persantine	dipyridamole
pethidine	meperidine
Pfizer-BioNTech Covid-19 mRNA Vaccine	covid-19 vaccine, mrna
PGE	alprostadil
Phenergan	promethazine
phenobarbitone	phenobarbital
Phenurone	phenacemide
phenylethylmalonylurea	phenobarbital
phenytoin sodium	phenytoin
Phyllocontin	aminophylline
Physiotens	moxonidine
Picato	ingenol mebutate
Pico-Salax	sodium picosulfate
Pilopine	pilocarpine
Pipracil	piperacillin
Pitocin	oxytocin
Pivalone	tixocortol
Plan B	levonorgestrel
Plaquenil	hydroxychloroquine
Platinol	cisplatin
Plavix	clopidogrel
Plegridy	interferon beta
Plenaxis	abarelix
Plendil	felodipine
Pletal	cilostazol
Plexion	sulfacetamide
PncOMP	pneumococcal vaccine
Pneumovax II	pneumococcal vaccine
Pnu-Immune	pneumococcal vaccine
Polymyxin E	colistin
Pomalyst	pomalidomide
Ponstel	mefenamic acid
Portrazza	necitumumab
pot	marihuana
Potassium arsenite solution (Fowler's solution)	arsenic
Potiga	ezogabine
PPA	phenylpropanolamine
PPS	pentosan
PPV	pneumococcal vaccine
Pradaxa	dabigatran
Praluent	alirocumab
Prandin	repaglinide
Pravachol	pravastatin
Praxbind	idarucizumab
Precedex	dexmedetomidine
Precose	acarbose
Prelay	troglitazone
Prelone	prednisolone
Premarin	estrogens
Premphase	medroxyprogesterone
Prempro	medroxyprogesterone
Prepidil	dinoprostone
Prepopik	sodium picosulfate
Preservex	aceclofenac
Prestalia	amlodipine, perindopril
Prevacid	lansoprazole
Prevnar	pneumococcal vaccine
Prevpac	amoxicillin
Prevymis	letermovir
Prexige	lumiracoxib
Prezcobix	darunavir
Prezista	darunavir
Prialt	ziconotide
Priftin	rifapentine
Prilosec	omeprazole
Primacor	milrinone
Primaquine	primaquine
Primaxin	imipenem/cilastatin
Primovist	gadoxetate
Prinivil	lisinopril
Prinzide	hydrochlorothiazide, lisinopril
Priscoline	tolazoline
Pristiq	desvenlafaxine
Proamatine	midodrine
Probuphine	buprenorphine
Procan	procainamide
Procanbid	procainamide
Procardia	nifedipine
Procoralan	ivabradine
Procrit	epoetin alfa
Procysbi	cysteamine
Prograf	tacrolimus
ProHIBIT	Hemophilus B vaccine
Proleukin	aldesleukin
Prolia	denosumab
Prolixin	fluphenazine
Promacta	eltrombopag
Propecia	finasteride
Propyl-Thyracil	propylthiouracil
Proscar	finasteride
prostaglandin E_1	alprostadil
Prostigmin	neostigmine
Prostin VR	alprostadil
Protelos	strontium ranelate
Protium	pantoprazole
Protonix	pantoprazole
Protopam	pralidoxime
Protopic	tacrolimus
Provenge	sipuleucel-T
Proventil	albuterol
Provera	medroxyprogesterone, progestins
Provigil	modafinil
Prozac	fluoxetine
pseudomonic acid	mupirocin
Pulmicort Turbuhaler	budesonide
Purinethol	mercaptopurine
Pyostacine	pristinamycin
Pyrazinamide	pyrazinamide
Pyridium	phenazopyridine

Q

Qnasl	beclomethasone
Qsymia	phentermine, topiramate
Qtern	dapagliflozin, saxagliptin
Qualaquin	quinine
Qudexy	topiramate
Questran	cholestyramine
Quibron	aminophylline
Quixin	levofloxacin

Qvar	beclomethasone

R

Ra-223 dichloride	radium-223 dichloride
Radicava	edaravone
Radiesse	calcium hydroxylapatite
Ranexa	ranolazine
Rapaflo	silodosin
Rapamune	sirolimus
rapamycin	sirolimus
Rapivab	peramivir
Rasilez	aliskiren
Rasuvo	methotrexate
Rayaldee	calcifediol
Razadyne	galantamine
Rebetol	ribavirin
Rebetron	interferon alfa, ribavirin
Rebif	interferon beta
Reclast	zoledronate
Recombivax HB	hepatitis B vaccine
Refludan	lepirudin
Regitine	phentolamine
Reglan	metoclopramide
Regonol	pyridostigmine
Regranex	becaplermin
Relafen	nabumetone
Relenza	zanamivir
Relistor	methylnaltrexone
Relpax	eletriptan
Remeron	mirtazapine
Remicade	infliximab
Reminyl	galantamine
Remodulin	treprostinil
Remsima	infliximab
Renagel	sevelamer
Renese	polythiazide
Renflexis	infliximab
Renova	tretinoin
Renvela	sevelamer
ReoPro	abciximab
Repatha	evolocumab
Requip	ropinirole
Rescriptor	delavirdine
Rescula	unoprostone
Restasis	cyclosporine
Restoril	temazepam
Restylane Fine Lines	hyaluronic acid
Retavase	reteplase
retigabine	ezogabine
Retin-A Micro	tretinoin
Retisert	fluocinolone
Retrovir	zidovudine
Revatio	sildenafil
ReVia	naltrexone
Revlimid	lenalidomide
Revolade	eltrombopag
Rexulti	brexpiprazole
Reyataz	atazanavir
Rezulin	troglitazone
rFVIIIFc	antihemophilic factor
Rheumatrex	methotrexate
Rhinocort	budesonide
Rhopressa	netarsudil
Ribomustin	bendamustine
Ridaura	gold & gold compounds
Rifadin	rifampin
Rifamate	isoniazid
rifampicin	rifampin
Rifater	isoniazid, pyrazinamide
Rilutek	riluzole
Rimactane	rifampin
Rimatil	bucillamine
Rinatec	ipratropium
Risperdal Consta	risperidone
Risperdal	risperidone
Ritalin	methylphenidate
Rituxan	rituximab
Rixubis	coagulation factor IX (recombinant)
Roaccutane	isotretinoin
RoActemra	tocilizumab
Robaxin	methocarbamol
Robinul	glycopyrrolate
Robitussin AC	codeine
Robitussin-CF	pseudoephedrine
Robitussin	dextromethorphan
Rocephin	ceftriaxone
Roferon-A	interferon alfa
Rogaine	minoxidil
Romazicon	flumazenil
Romicin	roxithromycin
Rondec	brompheniramine
Rosula	sulfacetamide
Rowasa	mesalamine
Roxanol	morphine
Roxicodone	oxycodone
Roxit	roxatidine
Rozerem	ramelteon
Rtsun	artesunate
Rubex	doxorubicin
rubidomycin	daunorubicin
Rubraca	rucaparib
Rulid	roxithromycin
Rupafin	rupatadine
Rybix ODT	tramadol
Rydapt	midostaurin
Rynatan	phenylephrine
Rynatuss	ephedrine
Rytary	levodopa
Rythmol	propafenone
Ryzodeg	insulin aspart, insulin degludec

S

S-1	tegafur/gimeracil/oteracil
Sabril	vigabatrin
Saflutan	tafluprost
Saizen	somatropin
Salagen	pilocarpine
salazopyrin	sulfasalazine
salbutamol	albuterol
salicylazosulfapyridine	sulfasalazine
Salonpas	methyl salicylate
Samsca	tolvaptan
Sanctura	trospium
Sancuso	granisetron
Sandimmune	cyclosporine
Sandostatin	octreotide
Sanomigran	pizotifen
Sansert	methysergide
Saphris	asenapine
Sarafem	fluoxetine

sargramostim	granulocyte colony-stimulating factor (G-CSF)
Saridon	propyphenazone
Savaysa	edoxaban
Savella	milnacipran
Saxenda	liraglutide
Scenesse	afamelanotide
SCIG	immune globulin sc
Scitropin A	somatropin
Scopoderm-TTS	scopolamine
Sebvio	telbivudine
Seconal	secobarbital
Secretin-Ferring	secretin
Sectral	acebutolol
Seebri Neohaler	glycopyrrolate
Segontin	prenylamine
Selectol	celiprolol
Selectren	fluprednisolone
SelenoMax	selenium
Selsun Blue	selenium
Selsun Shampoo	selenium
Selzentry	maraviroc
Sensipar	cinacalcet
Sensorcaine	bupivacaine
Septanest	articaine
Septocaine	articaine
Septra	co-trimoxazole, sulfamethoxazole, trimethoprim
Ser-Ap-Es	hydralazine, reserpine
Seractil	dexibuprofen
Serax	oxazepam
Serdolect	sertindole
Serentil	mesoridazine
Serevent	salmeterol
Sernivo	betamethasone
Seromycin	cycloserine
Serophene	clomiphene
Seroquel	quetiapine
Serostim	somatropin
Seroxat	paroxetine hydrochloride
Serpasil	reserpine
Serzone	nefazodone
Signifor	pasireotide
Silenor	doxepin
Siliq	brodalumab
Simcor	niacin, simvastatin
Simponi	golimumab
Simulect	basiliximab
Sinemet	levodopa
Singulair	montelukast
Sinquan	doxepin
Sinthrome	acenocoumarol
Sintrom	acenocoumarol
Sirturo	bedaquiline
Sitavig	acyclovir
sitaxsentan	sitaxentan
Skelaxin	metaxalone
Skelid	tiludronate
Sklice	ivermectin
Slo-Niacin	niacin
SMX-TMP	co-trimoxazole
SMZ-TMP	co-trimoxazole
Solage	tretinoin
Solaraze Gel	diclofenac
Solatene	beta-carotene
Solfa	amlexanox
Solganal	gold & gold compounds
Solian	amisulpride
Soliqua	insulin glargine, lixisenatide
Soliris	eculizumab
Solodyn	minocycline
Solu-Cortef	hydrocortisone
Solu-Medrol	methylprednisolone
Soluspan	betamethasone
Soma Compound	aspirin
Soma	carisoprodol
somatostatin	somatropin
Somatuline Autogel	lanreotide
Somatuline Depot	lanreotide
Somatuline LA	lanreotide
Somavert	pegvisomant
Sonata	zaleplon
Soolantra	ivermectin
Sorbitrate	isosorbide dinitrate
Soriatane	acitretin
Sovaldi	sofosbuvir
Spectracef	cefditoren
Spinraza	nusinersen
Spiriva	tiotropium
Splenda	sucralose
Sporanox	itraconazole
Spravato (S-isomer)	ketamine
Sprycel	dasatinib
SSKI	potassium iodide
St. Joseph Aspirin-Free Cold Tablets	phenylpropanolamine
Stablon	tianeptine
Stadol	butorphanol
Stalevo	entacapone, levodopa
Stamaril	yellow fever vaccine
Starlix	nateglinide
Steglatro	ertugliflozin
Stelara	ustekinumab
Stendra	avanafil
Stimate	desmopressin
Stiolto Respimat	olodaterol, tiotropium
Stivarga	regorafenib
Strattera	atomoxetine
Strensiq	asfotase alfa
Streptase	streptokinase
Streptomycin	streptomycin
Stribild	cobicistat/elvitegravir/emtricitabine/tenofovir disoproxil
Striverdi Respimat	olodaterol
Stromectol	ivermectin
Stugeron	cinnarizine
Suboxone	buprenorphine, naloxone
Subutex	buprenorphine
Sucaryl	cyclamate
Sudafed	pseudoephedrine
Sufenta	sufentanil
Sular	nisoldipine
Sulfacet Sodium	sulfacetamide
Sulfacet-R	sulfacetamide
sulfamethoxazole-trimethoprim	co-trimoxazole
Sulide	nimesulide
Sumavel DosePro	sumatriptan
Sumycin	tetracycline
Suprane	desflurane
Suprax	cefixime
Suprecur	buserelin
Suprefact	buserelin
Surfak	docusate
Surmontil	trimipramine
Survanta	beractant

Sustiva	efavirenz
Sustol	granisetron
Sutent	sunitinib
suxamethonium	succinylcholine
Sylatron	PEG-interferon
Sylvant	siltuximab
Symbicort	budesonide, formoterol
Symbyax	fluoxetine, olanzapine
Symlin	pramlintide
Symmetrel	amantadine
Symproic	naldemedine
Synalar	fluocinolone
Syndros	dronabinol
Synflex	naproxen
Synjardy	empagliflozin, metformin
Synkavite	menadione
Synthroid	levothyroxine
Syprine	trientine

T

T-DM1	trastuzumab emtansine
T-VEC	talimogene laherparepvec
T_3 sodium	liothyronine
T_4	levothyroxine
Tafinlar	dabrafenib
Tagamet	cimetidine
Tagrisso	osimertinib
Taltz	ixekizumab
Talwin Compound	aspirin
Talwin-NX	naloxone
Talwin	pentazocine
Tambocor	flecainide
Tamiflu	oseltamivir, pandemic influenza vaccine (H1N1)
Tanafed	dexchlorpheniramine
Tanzeum	albiglutide
TAO	troleandomycin
Tapazole	methimazole
Taravid	ofloxacin
Tarceva	erlotinib
Targiniq	naloxone, oxycodone
Targocid	teicoplanin
Targretin	bexarotene
Tarka	trandolapril, verapamil
Tasigna	nilotinib
Tavanic	levofloxacin
Tavist	clemastine
Taxol	paclitaxel
Taxotere	docetaxel
Tazicef	ceftazidime
Tazorac	tazarotene
Tecentriq	atezolizumab
Tecfidera	dimethyl fumarate
Technivie	ombitasvir/paritaprevir/ritonavir
Teczem	diltiazem, enalapril
Teflaro	ceftaroline fosamil
Tegretol	carbamazepine
Tekamlo	aliskiren, amlodipine
Tekturna HCT	aliskiren, hydrochlorothiazide
Tekturna	aliskiren
Temodar	temozolomide
Tenex	guanfacine
Tenif	atenolol, nifedipine
Tenoret 50	atenolol
Tenoretic	atenolol, chlorthalidone
Tenormin	atenolol
Tensipine MR	nifedipine
Tenuate	diethylpropion
Tequin	gatifloxacin
Terazol	terconazole
Terlipressin	terlipressin
Terramycin	oxytetracycline
Tessalon	benzonatate
Testim	testosterone
Testred	methyltestosterone
tetrahydrocannabinol	dronabinol
Tetralysal	lymecycline
Tetramide	mianserin
Tev-Tropin	somatropin
Teveten HCT	hydrochlorothiazide
Teveten	eprosartan
Teysuno	tegafur/gimeracil/oteracil
Thalitone	chlorthalidone
Thalomid	thalidomide
THC	dronabinol
Thelin	sitaxentan
theophylline ethylenediamine	aminophylline
thiamazole	methimazole
Thiola	tiopronin
Thiopental	thiopental
Thioplex	thiotepa
Thorazine	chlorpromazine
Thymoglobulin	anti-thymocyte immunoglobulin (rabbit)
Thymoxamine (British Approved Name)	moxisylyte
tiabendazole	thiabendazole
Tiazac	diltiazem
Ticar	ticarcillin
TICE BCG	BCG vaccine
Ticlid	ticlopidine
Tigan	trimethobenzamide
Tikosyn	dofetilide
Tilade	nedocromil
Timentin	ticarcillin
Timolide	timolol
Timoptic	timolol
Tindamax	tinidazole
Tivicay	dolutegravir
TMP-SMX	co-trimoxazole
TMP-SMZ	co-trimoxazole
TOBI	tobramycin
TobraDex	tobramycin
Tofranil	imipramine
Tolak	fluorouracil
Tolectin	tolmetin
Tolinase	tolazamide
Tolvon	mianserin
Tomudex	raltitrexed
Topamax	topiramate
Toprol XL	metoprolol
Toradol	ketorolac
Torasemide	torsemide
Torem	torsemide
Torisel	temsirolimus
Totacillin	ampicillin
Toviaz	fesoterodine
Tozinameran	covid-19 vaccine, mrna
tPA	alteplase
Tracleer	bosentan
Tracrium	atracurium
Tradjenta	linagliptin
Trandate	labetalol
Transderm-Scop Patch	scopolamine

Transtec	buprenorphine
Tranxene	clorazepate
Trasicor	oxprenolol
Trasylol	aprotinin
Treanda	bendamustine
Trecator-SC	ethionamide
Trelstar	triptorelin
Tremfya	guselkumab
Trental	pentoxifylline
Treprostinil palmitil (an ester prodrug)	treprostinil
Tresiba	insulin degludec
Tri-Levlen	oral contraceptives
Tri-Norinyl	oral contraceptives
Triacet	triamcinolone
Triaminic	chlorpheniramine
Tricor	fenofibrate
triethylenetetramine	trientine
Trilafon	perphenazine
Trileptal	oxcarbazepine
Trilipix	choline fenofibrate
Trimox	amoxicillin
Trinalin	azatadine, pseudoephedrine
Trintellix (formerly Brintellix)	vortioxetine
Triostat	liothyronine
Triphasil	oral contraceptives
Trisenox	arsenic
Trisoralen	psoralens
Tritace	ramipril
Triumeq	abacavir, dolutegravir, lamivudine
Trivora	oral contraceptives
Trizivir	abacavir, lamivudine, zidovudine
Trobalt	ezogabine
Trobicin	spectinomycin
Trokendi XR	topiramate
Trovan	trovafloxacin
Troxyca	naltrexone, oxycodone
Trulance	plecanatide
Trulicity	dulaglutide
Trumenba	meningococcal group B vaccine
Trusopt	dorzolamide
Truvada	emtricitabine, tenofovir disoproxil
TS-1	tegafur/gimeracil/oteracil
Tudorza Pressair	aclidinium
Tussi-12D	phenylephrine
Tussi-Organidin	codeine
Tussionex	hydrocodone
Twinrix	hepatitis B vaccine
Tygacil	tigecycline
Tykerb	lapatinib
Tylenol	acetaminophen
Tylox	oxycodone
Tymlos	abaloparatide
Typherix	typhoid vaccine
Typhim Vi	typhoid vaccine
Tysabri	natalizumab
Tyvaso	treprostinil
Tyzeka	telbivudine

U

Ubretid	distigmine
UDCA	ursodiol
Uftoral	uracil/tegafur
Uloric	febuxostat
Ultane	sevoflurane
Ultiva	remifentanil
Ultracet	tramadol
Ultram	tramadol
Ultrasa	pancrelipase
Ultravate	halobetasol
Unasyn	ampicillin/sulbactam
Uniretic	hydrochlorothiazide, moexipril
Unithroid	levothyroxine
Univasc	moexipril
Uprima	apomorphine
Uptravi	selexipag
Urdox	ursodiol
Urecholine	bethanechol
Urief	silodosin
Urispas	flavoxate
Uroxatral	alfuzosin
Urso 250	ursodiol
Urso Forte	ursodiol
ursodeoxycholic acid	ursodiol
Ursogal	ursodiol
Utibron Neohaler	glycopyrrolate, indacaterol

V

V-cillin K	penicillin V
Vagifem	estradiol
Valcyte	valganciclovir
Valium	diazepam
Valni XL	nifedipine
valproate sodium	valproic acid
Valtrex	valacyclovir
Valturna	aliskiren, valsartan
Vanceril	beclomethasone
Vancocin	vancomycin
Vandazole	metronidazole
Vaniqa	eflornithine
Vantin	cefpodoxime
Vaprisol	conivaptan
Vaqta	hepatitis A vaccine
Varithena	polidocanol
Varubi	rolapitant
Vascace	cilazapril
Vaseretic	enalapril, hydrochlorothiazide
Vasocidin	sulfacetamide
Vasosulf	sulfacetamide
Vasotec	enalapril
Vasovist	gadofosveset
Vaxigrip	influenza vaccine
Vectibix	panitumumab
Velban	vinblastine
Velbe	vinblastine
Velcade	bortezomib
Veletri	epoprostenol
Velosef	cephradine
Velosulin	insulin
Velsar	vinblastine
Veltassa	patiromer
Veltin	clindamycin/tretinoin
Vemlidy	tenofovir alafenamide
Venclexta	venetoclax
Venoglobulin	immune globulin IV
Ventavis	iloprost
Ventolin	albuterol
VePesid	etoposide
Verelan	verapamil
Vermox	mebendazole
Versed	midazolam

Vertizin	cinnarizine
Verzenio	abemaciclib
Vesanoid	tretinoin
Vesicare	solifenacin
Vfend	voriconazole
Viadur	leuprolide
Viaflex	heparin
Viagra	sildenafil
Vibativ	telavancin
Viberzi	eluxadoline
Vibra-Tabs	doxycycline
Vibramycin-D	doxycycline
Vicks Formula 44	dextromethorphan
Vicks Vatronol	ephedrine
Vicodin	acetaminophen, hydrocodone
Vicoprofen	hydrocodone, ibuprofen
Victoza	liraglutide
Victrelis	boceprevir
Vidaza	azacitidine
Videx	didanosine
Viekira Pak	ombitasvir/paritaprevir/ritonavir
Viekira XR	ombitasvir/paritaprevir/ritonavir and dasabuvir
Viekirax	ombitasvir/paritaprevir/ritonavir
Viibryd	vilazodone
Vimizim	elosulfase alfa
Vimpat	lacosamide
Vincasar	vincristine
Vioform	clioquinol
Viokace	pancrelipase
viosterol	ergocalciferol
Vioxx	rofecoxib
Vira-A Ophthalmic	vidarabine
Viracept	nelfinavir
Viramune	nevirapine
Virazole	ribavirin
Viread	tenofovir disoproxil
Visipaque	iodixanol
Visken	pindolol
Vistabel	botulinum toxin (A & B)
Vistaril	hydroxyzine
Vistide	cidofovir
Visudyne	verteporfin
Vitamin B_{12}	cyanocobalamin
Vitamin B_1	thiamine
Vitamin B_3	niacin, niacinamide
Vitamin B_6	pyridoxine
Vitamin B_9	folic acid
Vitamin C	ascorbic acid
Vitamin D_2	ergocalciferol
Vitamin K_1	phytonadione
Vitamin K_3	menadione
Vitamin K	phytonadione
Vitrase	hyaluronic acid
Vivactil	protriptyline
Vivaglobin	immune globulin sc
Vivelle-Dot	estradiol
Vivelle	estradiol
Vivitrex	naltrexone
Vivitrol	naltrexone
Vivotif	typhoid vaccine
Volibris	ambrisentan
Volmax	albuterol
Voltaren	diclofenac
Voltarol	diclofenac
Voraxaze	glucarpidase
Vosevi	sofosbuvir/velpatasvir/voxilaprevir
Votrient	pazopanib
Vraylar	cariprazine
Vumon	teniposide
Vytorin	ezetimibe, simvastatin
Vyvanse	lisdexamfetamine

W

Warticon	podophyllotoxin
Welchol	colesevelam
Wellbutrin	bupropion
Wellvone	atovaquone
Wigrettes	ergotamine
Winstrol	stanozolol

X

X	MDMA
Xadago	safinamide
Xagrid	anagrelide
Xalatan	latanoprost
Xalkori	crizotinib
Xanax	alprazolam
Xarelto	rivaroxaban
Xatral	alfuzosin
Xeljanz	tofacitinib
Xeloda	capecitabine
Xenazine	tetrabenazine
Xenical	orlistat
Xeomin	botulinum toxin (A & B)
Xgeva	denosumab
Xifaxan	rifaximin
Xifaxanta	rifaximin
Xigduo XR	dapagliflozin, metformin
Xigris	drotrecogin alfa
Xiidra	lifitegrast
Xofigo	radium-223 dichloride
Xofluza	baloxavir marboxil
Xolair	omalizumab
Xomolix	droperidol
Xopenex	levalbuterol
Xtampza ER	oxycodone
Xtandi	enzalutamide
Xultophy	insulin degludec, liraglutide
xylocaine	lidocaine
Xyrem	sodium oxybate
Xyzal	levocetirizine

Y

Yasmin	oral contraceptives
Yaz	oral contraceptives
Yentreve	duloxetine
Yervoy	ipilimumab
YF-VAX	yellow fever vaccine
Yondelis	trabectedin
Yosprala	aspirin, omeprazole

Z

Zaditor	ketotifen
Zagam	sparfloxacin
Zaltrap	aflibercept
Zanaflex	tizanidine
Zanosar	streptozocin
Zantac	ranitidine
Zantipres	zofenopril
Zaponex	clozapine

Zarontin	ethosuximide
Zaroxolyn	metolazone
Zarxio	granulocyte colony-stimulating factor (G-CSF)
Zebeta	bisoprolol
Zebinix	eslicarbazepine
Zecuity	sumatriptan
Zeftera	ceftobiprole
Zejula	niraparib
Zelapar	selegiline
Zelboraf	vemurafenib
Zelnorm	tegaserod
Zemplar	paricalcitol
Zemuron	rocuronium
Zenapax	daclizumab
Zenpep	pancrelipase
Zepatier	elbasvir & grazoprevir
Zephrex	benzalkonium
Zerbaxa	ceftolozane & tazobactam
Zerit	stavudine
Zestoretic	hydrochlorothiazide, lisinopril
Zestril	lisinopril
Zetia	ezetimibe
Zevalin	ibritumomab
Ziac	bisoprolol, hydrochlorothiazide
Ziagen	abacavir
Ziana	clindamycin/tretinoin
Zimovane	eszopiclone
Zinacef	cefuroxime
Zinbryta	daclizumab
Zinecard	dexrazoxane
Zinplava	bezlotoxumab
Zioptan	tafluprost
Zipsor	diclofenac
Zithromax	azithromycin
ziv-aflibercept	aflibercept
Zocor	simvastatin
Zofenil	zofenopril
Zofepril	zofenopril
Zofil	zofenopril
Zofran	ondansetron
Zohydro ER	hydrocodone
Zoladex	goserelin
zoledronic acid	zoledronate
Zolinza	vorinostat
Zoloft	sertraline
Zomacton	somatropin
ZoMaxx Drug-Eluting Coronary Stent	zotarolimus
Zometa	zoledronate
Zomig	zolmitriptan
Zonegran	zonisamide
Zontivity	vorapaxar
Zopranol	zofenopril
Zorac	tazarotene
Zorbtive	somatropin
Zortress	everolimus
Zosyn	piperacillin, piperacillin/tazobactam
Zovia	oral contraceptives
Zovirax	acyclovir
Zuplenz	ondansetron
Zurampic	lesinurad
Zyban	bupropion
Zyclara	imiquimod
Zydelig	idelalisib
Zyderm	collagen (bovine)
Zydone	hydrocodone
Zyflo	zileuton
Zykadia	ceritinib
Zyloprim	allopurinol
Zymar	gatifloxacin
Zymaxid	gatifloxacin
Zynicor	nicorandil
Zyplast	collagen (bovine)
Zyprexa Relprevv	olanzapine
Zyprexa	olanzapine
Zyrtec	cetirizine
Zytiga	abiraterone
Zyvox	linezolid