CLINICIAN'S POCKET DRUG REFERENCE 2014

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www.drmypoethan.blogspot.com

MUST-KNOW INFORMATION ABOUT 1,400 COMMONLY USED MEDICATIONS
TIPS FOR SAFE PRESCRIPTION WRITING**

1. Take time to write legibly.
2. Print if this would be more legible than handwriting.
3. Use a typewriter or computer if necessary. Prescriptions generated by computerbased electronic medical records will eliminate legibility problems.
4. Carefully print the order to avoid misreading. There are many “sound alike” drugs and medications that have similar spellings (ie, Celexa and Celebrex). For a more extensive list, see www.edrugbook.com.
5. Do not use these clinical abbreviations

<table>
<thead>
<tr>
<th>The Correct Way</th>
<th>Do Not Use</th>
<th>Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>daily</td>
<td>qd</td>
<td>Misinterpreted as “qid” (resulting in 4-fold overdose)</td>
</tr>
<tr>
<td>q other day or q48 hours units</td>
<td>qod</td>
<td>Misinterpreted as “qid” or “qd”</td>
</tr>
<tr>
<td>u or U</td>
<td>1.0 mg</td>
<td>Decimal point can be missed on order (resulting in a 10-fold overdose)</td>
</tr>
<tr>
<td>1 mg (no trailing zero)</td>
<td>.1 mg</td>
<td>Decimal point can be missed on order (resulting in a 10-fold overdose)</td>
</tr>
<tr>
<td>IU</td>
<td>MS, MSO₄</td>
<td>Misinterpreted as magnesium sulfate</td>
</tr>
<tr>
<td>magnesium sulfate</td>
<td>MgSO₄</td>
<td>Misinterpreted as morphine sulfate</td>
</tr>
</tbody>
</table>

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www.eDrugbook.com
www.thescutmonkey.com

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Singapore Sydney Toronto
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EDITORIAL BOARD
PREFACE
MEDICATION KEY
ABBREVIATIONS

CLASSIFICATION
  Allergy
  Antidotes
  Antimicrobial Agents
  Antineoplastic Agents
  Cardiovascular (CV) Agents
  Central Nervous System (CNS) Agents
  Dermatologic Agents
  Dietary Supplements
  Ear (Otic) Agents
  Endocrine System Agents
  Eye (Ophthalmic) Agents
  Gastrointestinal (GI) Agents
  Hematologic Agents
  Immune System Agents
  Musculoskeletal Agents
  OB/GYN Agents
  Pain Medications
  Respiratory Agents
  Urogenital System
  Vaccines/Serums/Toxoids
  Wound Care
  Miscellaneous Therapeutic Agents
  Natural and Herbal Agents

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We are pleased to present the 12th edition of the Clinician’s Pocket Drug Reference. This book is based on the drug presentation style originally used in 1983 in the Clinician’s Pocket Reference, popularly known as the Scut Monkey Book. Our goal is to identify the most frequently used and clinically important medications, including branded, generic, OTC, and herbal products. The book now includes more than 1400 generic product listings with the true number approaching 4000 entries when specific brand names are considered.

Our unique style of presentation includes key “must-know” facts of commonly used medications, essential for both the student and practicing clinician. The inclusion of common uses of medications rather than just the official FDA-labeled indications are based on supporting publications and community standards of care and have been reviewed by our editors and editorial board.

The limitations of difficult-to-read traditional package inserts have been recognized by the US Food and Drug Administration. Today, all newly approved medications provide a more user-friendly package insert. Although very useful, these summaries do not appear alongside similarly approved generic or “competing” similar products, and older medications may not have a newer user-friendly package insert.

It is essential that students and residents in training learn more than the name and dose of the medications they prescribe. Certain common side effects and significant warnings and contraindications are associated with almost all prescription medications. Although providers should ideally be completely familiar with the entire package insert of any medication prescribed, such a requirement is unachievable. References such as the Physician’s Desk Reference and the drug manufacturer’s web site make many package inserts readily available. While newly released medications often have a prominent presence and easy access to all their FDA approved data on the web, it is often not the case of older medications, OTC products, or generics. Likewise, encyclopedic information can be found on certain web sites as well and is occasionally needed when unique clinical situations arise. However, resources that identify the most common and essential facts are sometimes lacking. Our goal is to provide access to not only dosing but to these clinically significant facts and key data, whether for commonly prescribed brand name drugs, generics, or OTC products in this pocket-sized book format. Information contained within is meant for use by healthcare professionals who are already familiar with these commonly prescribed medications.

For 2014 we have added about 40 new drugs with hundreds of changes in other medications based on recent FDA actions and manufacturers, updates. These include deletions of discontinued brand names and compounds and many black box updates. Emergency cardiac care (ECC) guidelines for commonly used medications are based on the American Heart Association (Circulation. 2010; 122 [Suppl 3] http://circ.ahajournals.org/content/vol122/18_suppl_3/) and appear in summary cover tables in the back of the book.

Versions of this book are produced in a variety of electronic or eBook formats. Visit www.eDrugbook.com for a link to some of the electronic versions currently available. Additionally, this web site has enhanced content features such as a comprehensive listing of “look alike–sound
alike” medications that can contribute to prescribing errors and other useful information related to medication prescribing.

Nursing versions of this book (*Nurses Pocket Drug Guide*) with a section of customized Nursing interventions is available and updated annually. An EMS guide based on this book (*EMS Pocket Drug Guide*) with enhanced content specifically for the field provider and emergency medical practitioners is also available. Information and links for these related publications are available on the web site [www.eDrugbook.com](http://www.eDrugbook.com).

We express special thanks to our spouses and families for their long-term support of this book and the entire Scut Monkey Project (www.thescutmonkey.com). The Scut Monkey Project, launched in 1979 at the University of Kentucky College of Medicine, is designed to provide new medical students and other health professional students with the basic tools needed when entering the world of hands-on patient care. Many other schools have adopted the concept of “students teaching students” over the years.

The contributions of the members of the editorial board and in particular, Harriet Lebowitz at McGraw-Hill and Yashmita Hota at Cenveo Publisher Services, are gratefully acknowledged. As a reader, your comments and suggestions are always welcome. Improvements to this and all our books would be impossible without the interest and continual feedback of our readers. We hope this book will help you learn some of the key elements in prescribing medications and allow you to care for your patients in the best way possible.

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Medications are listed by prescribing class and the individual medications are then listed in alphabetical order by generic name. Some of the more commonly recognized trade names are listed for each medication (in parentheses after the generic name) or if available without prescription, noted as OTC (over-the-counter).

**Generic Drug Name (Selected Common Brand Names) [Controlled Substance]**

BOX: Summarized/paraphrased versions of the “Black Box” precautions deemed necessary by the FDA. These are significant precautions, warnings, and contraindications concerning the individual medication.

**Uses:** This includes both FDA-labeled indications bracketed by ** and other “off-label” uses of the medication. Because many medications are used to treat various conditions based on the medical literature and not listed in their package insert, we list common uses of the medication in addition to the official “labeled indications” (FDA approved) based on input from our editorial board.

**Acts:** How the drug works. This information is helpful in comparing classes of drugs and understanding side effects and contraindications.

**Spectrum:** Specifies activity against selected microbes for antimicrobials.

**Dose:**
- **Adults.** Where no specific pediatric dose is given, the implication is that this drug is not commonly used or indicated in that age group. At the end of the dosing line, important dosing modifications may be noted (ie, take with food, avoid antacids, etc)
- **Peds.** If appropriate, dosing for children and infants is included with age ranges as needed w/ P (Warnings and Precautions):
  - [pregnancy/fetal risk categories, breast-feeding (as noted below)]

**CI:** Contraindications
**Disp:** Common dosing forms
**SE:** Common or significant side effects
**Notes:** Other key useful information about the drug.

**CONTROLLED SUBSTANCE CLASSIFICATION**

Medications under the control of the US Drug Enforcement Agency (DEA) (Schedules I–V controlled substances) are indicated by the symbol [C]. Most medications are “uncontrolled” and do not require a DEA prescriber number on the prescription. The following is a general description for the schedules of DEA-controlled substances:

**Schedule (C-I) I:** All nonresearch use forbidden (eg, heroin, LSD, mescaline).

**Schedule (C-II) II:** High addictive potential; medical use accepted. No telephone call-in prescriptions; no refills. Some states require special prescription form (eg, cocaine, morphine,
methadone).

**Schedule (C-III) III**: Low to moderate risk of physical dependence, high risk of psychological dependence; prescription must be rewritten after 6 months or 5 refills (eg, acetaminophen plus codeine).

**Schedule (C-IV) IV**: Limited potential for dependence; prescription rules same as for schedule III (eg, benzodiazepines, propoxyphene).

**Schedule (C-V) V**: Very limited abuse potential; prescribing regulations often same as for uncontrolled medications; some states have additional restrictions.

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**FDA FETAL RISK CATEGORIES**

**Category A**: Adequate studies in pregnant women have not demonstrated a risk to the fetus in the first trimester of pregnancy; there is no evidence of risk in the last two trimesters.

**Category B**: Animal studies have not demonstrated a risk to the fetus, but no adequate studies have been done in pregnant women.

or

Animal studies have shown an adverse effect, but adequate studies in pregnant women have not demonstrated a risk to the fetus during the first trimester of pregnancy, and there is no evidence of risk in the last two trimesters.

**Category C**: Animal studies have shown an adverse effect on the fetus, but no adequate studies have been done in humans. The benefits from the use of the drug in pregnant women may be acceptable despite its potential risks.

or

No animal reproduction studies and no adequate studies in humans have been done.

**Category D**: There is evidence of human fetal risk, but the potential benefits from the use of the drug in pregnant women may be acceptable despite its potential risks.

**Category X**: Studies in animals or humans or adverse reaction reports, or both, have demonstrated fetal abnormalities. The risk of use in pregnant women clearly outweighs any possible benefit.

**Category ?**: No data available (not a formal FDA classification; included to provide complete dataset).

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**BREAST-FEEDING CLASSIFICATION**

No formally recognized classification exists for drugs and breast-feeding. This shorthand was developed for the *Clinician’s Pocket Drug Reference*. 
+ Compatible with breast-feeding
M Monitor patient or use with caution
± Excreted, or likely excreted, with unknown effects or at unknown concentrations
?/- Unknown excretion, but effects likely to be of concern
– Contraindicated in breast-feeding
? No data available
ABBREVIATIONS

Δ: change
?: possible or uncertain
✓: check, follow, or monitor
↓: decrease/decreased
↑: increase/increased
≠: not equal to; not equivalent to
÷: divided
μM: symbol for micromolar
Ab: antibody, abortion
abbrev: abbreviation
Abd: abdominal
ABG: arterial blood gas
ABMT: autologous bone marrow transplantation
abn: abnormal
abx: antibiotics
ac: before meals (*ante cibum*)
ACE: angiotensin-converting enzyme
ACH: acetylcholine
ACIP: American College of International Physicians; Advisory Committee on Immunization Practices
ACLS: advanced cardiac life support
ACS: acute coronary syndrome, American Cancer Society, American College of Surgeons
ACT: activated coagulation time
Acts: Action(s)
ADH: antidiuretic hormone
ADHD: attention-deficit hyperactivity disorder
ADR: adverse drug reaction
ADT: androgen deprivation therapy
AED: anti-epileptic drug
AF: atrial fibrillation
AHA: American Heart Association
AKA: also known as
alk phos: alkaline phosphatase
ALL: acute lymphocytic leukemia
BP: hypertension
BPH: benign prostatic hyperplasia
BPM: beats per minute
BSA: body surface area
BUN: blood urea nitrogen
Ca: calcium
CA: cancer
CABG: coronary artery bypass graft
CAD: coronary artery disease
CAP: community-acquired pneumonia
caps: capsule
cardiotox: cardiotoxicity
CBC: complete blood count
CCB: calcium channel blocker
CCR5: human chemokine receptor 5; HIV attaches to the receptor to infect CD4+ T cells
CDC: Centers for Disease Control and Prevention
CF: cystic fibrosis
CFCs: chlorofluorocarbons
CFU: colony-forming units
CHD: coronary heart disease
CHF: congestive heart failure
chol: cholesterol
Cl: contraindicated
CIDP: chronic inflammatory polyneuropathy
CIWA: Clinical Institute Withdrawal Assessment Score; used to monitor EtOH withdrawal
CK: creatinine kinase
CLL: chronic lymphocytic leukemia
CML: chronic myelogenous leukemia
CMV: cytomegalovirus
CNS: central nervous system
combo: combination
comp: complicated
conc: concentration
cond: condition
cont: continuous
COPD: chronic obstructive pulmonary disease
COX: cyclooxygenase
CP: chest pain
CPP: central precocious puberty
CR: controlled release
CrCl: creatinine clearance
CRF: chronic renal failure
CRPC: castrate-resistant prostate cancer
CSF: cerebrospinal fluid
CV: cardiovascular
CVA: cerebrovascular accident, costovertebral angle
CVH: common variable hypergammaglobulinemia
CXR: chest x-ray
CYP: cytochrome P450 enzyme
D: diarrhea
d: day
DA: dopamine
DBP: diastolic blood pressure
D/C: discontinue
DDP-4: dipeptidyl peptidase-4
derm: dermatologic
D$_5$LR: 5% dextrose in lactated Ringer solution
D$_5$NS: 5% dextrose in normal saline
D$_5$W: 5% dextrose in water
DHT: dihydrotestosterone
DI: diabetes insipidus
DIC: disseminated intravascular coagulation
Disp: dispensed as; how the drug is supplied
DKA: diabetic ketoacidosis
dL: deciliter
DM: diabetes mellitus
DMARD: disease-modifying antirheumatic drug; refers to drugs in randomized trials to decrease erosions and joint space narrowing in rheumatoid arthritis (eg, methotrexate, azathioprine)
DN: diabetic nephropathy
DOT: directly observed therapy (used for TB treatment)
DR: delayed release
DRESS: drug rash with eosinophilia and systemic symptoms
d/t: due to
DTap: Diptheria toxin
DVT: deep venous thrombosis
Dz: disease
† HR: increased heart rate (tachycardia)
hs: at bedtime (*hora somni*)
HSCT: hematopoietic stem cell transplantation
HSV: herpes simplex virus
5-HT: 5-hydroxytryptamine
HTN: hypertension
Hx: history of
hypersens: hypersensitivity
IBD: irritable bowel disease
IBS: irritable bowel syndrome
IBW: ideal body weight
ICP: intracranial pressure
IFIS: intraoperative floppy iris syndrome
Ig: immunoglobulin
IGF: insulin-like growth factor
IHSS: idiopathic hypertropic subaortic stenosis
IL: interleukin
IM: intramuscular
impair: impairment
in: inches
Inf: infusion
inflam: inflammation
Infxn: infection
Inh: inhalation
INH: isoniazid
inhal: inhalation
inhib: inhibits, inhibitor(s)
Inj: injection
INR: international normalized ratio
Insuff: insufficiency
Int: international
intol: intolerance
Intravag: intravaginal
IO: intraosseous
IOP: intraocular pressure
IR: immediate release
ISA: intrinsic sympathomimetic activity
IT: intrathecal
Mg\(^{2+}\): magnesium
MgOH\(_2\): magnesium hydroxide
MI: myocardial infarction, mitral insufficiency
mill: million
min: minute(s)
mL: milliliter(s)
mo: month(s)
MoAb: monoclonal antibody
mod: moderate
MRSA: methicillin-resistant *Staphylococcus aureus*
MS: multiple sclerosis, musculoskeletal
ms: millisecond(s)
MSSA: methicillin-sensitive *Staphylococcus aureus*
MTC: medullary thyroid cancer
MTT: monotetrazolium
MTX: methotrexate
MyG: myasthenia gravis
N: nausea
NA: narrow angle
NAG: narrow angle glaucoma
NCI: National Cancer Institute
nephrotox: nephrotoxicity
neurotox: neurotoxicity
ng: nanogram(s)
NG: nasogastric
NHL: non-Hodgkin lymphoma
NIAON: nonischemic arterial optic neuritis
nl: normal
NO: nitric oxide
NPO: nothing by mouth (*nil per os*)
NRTI: nucleoside reverse transcriptase inhibitor
NS: normal saline
NSAID: nonsteroidal anti-inflammatory drug
NSCLC: non-small cell lung cancer
NSR: normal sinus rhythm
NSTEMI: non-ST elevation myocardial infarction
N/V: nausea and vomiting
N/V/D: nausea, vomiting, diarrhea
NYHA: New York Heart Association
OA: osteoarthritis
OAB: overactive bladder
obst: obstruction
OCD: obsessive compulsive disease
OCP: oral contraceptive pill
OD: overdose
ODT: orally disintegrating tablets
ointment
OK: recommended
ONJ: osteonecrosis of jaw
operative
ophthal: ophthalmic
OSAHS: obstructive sleep apnea/hypopnea syndrome
OTC: over-the-counter
ototoxic: ototoxicity
oz: ounces
PAT: paroxysmal atrial tachycardia
pc: after eating (post cibum)
PCa: cancer of the prostate
PCC: Prothrombin Complex Concentrate
PCI: percutaneous coronary intervention
PCN: penicillin
PCP: Pneumocystis jiroveci (formerly carinii) pneumonia
PCWP: pulmonary capillary wedge pressure
PDE5: phosphodiesterase type 5
PDGF: platelet-derived growth factor
PE: pulmonary embolus, physical examination, pleural effusion
PEA: pulseless electrical activity
PEG: polyethylene glycol
perforation
PFT: pulmonary function test
picogram(s)
PGE-1: prostaglandin E-1
PGTC: primary generalized tonic-clonic (PGTC)
Ph: Philadelphia chromosome
Pheo: pheochromocytoma
photosens: photosensitivity
QT: time from the start of QRS complex to the end of T wave on an electrocardiogram
QTc: QT interval on ECG
RA: rheumatoid arthritis
RAS: renin-angiotensin system
RBC: red blood cell(s) (count)
RCC: renal cell carcinoma
RDA: recommended dietary allowance
RDS: respiratory distress syndrome
rec: recommends
REMS: risk evaluation and mitigation strategy; FDA plan to help ensure that the drug’s benefits outweigh its risks. As part of that plan, the company must conduct educational outreach
resp: respiratory
RHuAb: recombinant human antibody
RIA: radioimmune assay
RLS: restless leg syndrome
R/O, r/o: rule out
RPLS: reversible posterior leukoencephalopathy syndrome
RR: respiratory rate
RSI: rapid sequence intubation
RSV: respiratory syncytial virus
RT: reverse transcriptase
RTA: renal tubular acidosis
Rx: prescription or therapy
Rxn: reaction
s: second(s)
SAD: social anxiety disorder or seasonal affective disorder
SAE: serious adverse event
SBE: subacute bacterial endocarditis
SBP: systolic blood pressure
SCLC: small cell lung cancer
SCr: serum creatinine
SDV: single-dose vial
SE: side effect(s)
SGLT2: sodium-glucose co-transporter 2
SIADH: syndrome of inappropriate antidiuretic hormone
sig: significant
SIRS: systemic inflammatory response syndrome/capillary leak syndrome
SJIA: systemic juvenile idiopathic arthritis
SJS: Stevens-Johnson syndrome
SL: sublingual
SLE: systemic lupus erythematosus
SLUDGE: mnemonic for: Salivation, Lacrimation, Urination, Diaphoresis, GI motility, Emesis
SMX: sulfmethoxazole
SNRIs: serotonin-norepinephrine reuptake inhibitors
SOB: shortness of breath
soln: solution
sp: species
SPAG: small particle aerosol generator
SQ: subcutaneous
SR: sustained release
SSRI: selective serotonin reuptake inhibitor
SSS: sick sinus syndrome
S/Sxs: signs & symptoms
stat: immediately (statim)
STD: sexually transmitted disease
STEMI: ST elevation myocardial infarction
subs: substances
suppl: supplement
supp: suppository
susp: suspension
SVT: supraventricular tachycardia
SWFI: sterile water for injection
SWSD: shift work sleep disorder
Sx: symptom
synth: synthesis
synd: syndrome
Sz: seizure
tab/tabs: tablet/tablets
TB: tuberculosis
TCA: tricyclic antidepressant
TE: thromboembolic event
TEN: toxic epidermal necrolysis
TFT: thyroid function test
TG: triglycerides
TIA: transient ischemic attack
tid: three times a day (ter in die)
CLASSIFICATION (Generic and common brand names)

ALLERGY

Antihistamines
Azelastine (Astelin, Optivar)
Cetirizine (Zyrtec, Zyrtec-D)
Chlorpheniramine (Chlor-Trimeton)
Clemastine fumarate (Tavist)
Cyproheptadine (Periactin)
Desloratadine (Clarinex)
Diphenhydramine (Benadryl)
Fexofenadine (Allegra, Allegra-D, generic)
Hydroxyzine (Atarax, Vistaril)
Levocetirizine (Xyzal)
Loratadine (Alavert, Claritin)

Miscellaneous Antiallergy Agents
Budesonide (Rhinocort, Pulmicort)
Cromolyn sodium (Intal, NasalCrom, Opticrom)
Montelukast (Singulair, generic)
Phenylephrine, oral (Sudafed, others [OTC])

ANTIDOTES
Acetylcysteine (Acetadote, Mucomyst)
Amifostine (Ethyl)
Atropine, systemic (AtroPen Auto-Injector)
Atropine/pralidoxime (DuoDote Auto-Injector)
Centruroides (scorpion) immune F(ab’)2 (Anascorp)
Charcoal, activated (Actidose-Aqua, CharcoCaps, EZ Char, Kerr Insta-Char, Requa Activated Charcoal)
Deferasirox (Exjade)
ANTIMICROBIAL AGENTS

Antibiotics

**AMINOGLYCOSIDES**
- Amikacin (Amikin)
- Gentamicin, injectable (generic)
- Neomycin sulfate (Neo-Fradin, generic)
- Streptomycin (generic)
- Tobramycin (Nebcin)
- Tobramycin, inhalation (TOBI, TOBI Podhaler)

**CARBAPENEMS**
- Doripenem (Doribax)
- Ertapenem (Invanz)
- Imipenem-cilastatin (Primaxin, generic)
- Meropenem (Merrem, generic)

**CEPHALOSPORINS, FIRST-GENERATION**
- Cefadroxil (Duricef, Ultracef)
- Cefazolin (Ancef, Kefzol)
- Cephalexin (Keflex, generic)

**CEPHALOSPORINS, SECOND-GENERATION**
- Cefaclor (Ceclor, Raniclor)
- Cefotetan
- Cefoxitin (Mefoxin)
- Cefprozil (Cefzil)
Cefuroxime (Ceftin [oral], Zinacef [parenteral])

**CEPHALOSPORINS, THIRD-GENERATION**
Cefdinir (Omnicef)
Cefditoren (Spectracef)
Cefotaxime (Claforan)
Cefpodoxime (Vantin)
Ceftazidime (Fortaz, Ceptaz, Tazidime, Tazicef)
Ceftibuten (Cedax)
Ceftriaxone (Rocephin)

**CEPHALOSPORINS, FOURTH-GENERATION**
Cefepime (Maxipime)

**CEPHALOSPORINS, UNCLASSIFIED (“FIFTH-GENERATION”)**
Cefaroline (Teflaro)

**FLUOROQUINOLONES**
Ciprofloxacin (Cipro, Cipro XR)
Gemifloxacin (Factive)
Levofloxacin (Levaquin, generic)
Moxifloxacin (Avelox)
Norfloxacin (Noroxin, Chibroxin Ophthalmic)
Ofloxacin (generic)

**KETOLIDE**
Telithromycin (Ketek)

**MACROLIDES**
Azithromycin (Zithromax)
Clarithromycin (Biaxin, Biaxin XL)
Erythromycin (E-Mycin, E.E.S., Ery-Tab, EryPed, Ilotycin)
Erythromycin and sulfisoxazole (E.S.P.)

**PENICILLINS**
Amoxicillin (Amoxil, Moxatag)
Amoxicillin and clavulanate potassium (Augmentin, Augmentin ES-600, Augmentin XR)
Ampicillin
Ampicillin/sulbactam (Unasyn)
Dicloxacillin (Dynapen, Dycill)
Nafcillin (Nallpen, generic)
Oxacillin (generic)  
Penicillin G, aqueous (potassium or sodium) (Pfizerpen, Pentids)  
Penicillin G benzathine (Bicillin)  
Penicillin G procaine (Wycillin, others)  
Penicillin V (Pen-Vee K, Veetids, others)  
Piperacillin/tazobactam (Zosyn, generic)  
Ticarcillin/clavulanate potassium (Timentin)  

**TETRACYCLINES**  
Doxycycline (Adoxa, Periostat, Oracea, Vibramycin, Vibra-Tabs)  
Minocycline (Dynacin, Minocin, Solodyn)  
Tetracycline (generic)  
Tigecycline (Tigacil)  

**Miscellaneous Antibiotic Agents**  
Aztreonam (Azactam)  
Clindamycin (Cleocin, Cleocin T, others)  
Fosfomycin (Monurol)  
Linezolid (Zyvox)  
Metronidazole (Flagyl, MetroGel)  
Mupirocin (Bactroban, Bactroban Nasal)  
Neomycin topical ([See bacitracin/neomycin/polymyxin B, topical [Neosporin ointment]; bacitracin/neomycin/polymyxin B/hydrocortisone, topical [Cortisporin]])  
Nitrofurantoin (Furadantin, Macrobid, Macrodantin, generic)  
Quinupristin/dalfopristin (Synercid)  
Retapamulin (Altabax)  
Rifaximin (Xifaxan)  
Telavancin (Vibativ)  
Trimethoprim (Primsol, generic)  
Trimethoprim (TMP)/sulfamethoxazole (SMX)  
[Co-Trimoxazole, TMP-SMX] (Bactrim, Bactrim DS, Septra DS, generic)  
Vancomycin (Vancocin, generic)  

**Antifungals**  
Amphotericin B (Fungizone)  
Amphotericin B cholesteryl (Amphotec)  
Amphotericin B lipid complex (Abelcet)  
Amphotericin B liposomal (AmBisome)  
Anidulafungin (Eraxis)
Caspofungin (Cancidas)
Clotrimazole (Lotrimin, Mycelex, others) [OTC]
Clotrimazole/betamethasone (Lotrisone)
Econazole (Spectazole)
Fluconazole (Diflucan, generic)
Itraconazole (Onmel, Sporanox, generic Caps)
Ketoconazole, oral (Nizoral)
Ketoconazole, topical (Extina, Kuric, Xolegel, Nizoral A-D shampoo) [shampoo OTC]
Micafungin (Mycamine)
Miconazole (Monistat 1 combination pack, Monistat 3, Monistat 7) [OTC], (Monistat-Derm)
Nystatin (Mycostatin, Nilstat, Nystop)
Oxiconazole (Oxistat)
Posaconazole (Noxafil)
Sertaconazole (Ertaczo)
Terbinaine (Lamisil, Lamisil AT, generic [OTC])
Triamcinolone/nystatin (Mycolog-II)
Voriconazole (Vfend, generic)

Antimycobacterials
Bedaquiline fumarate (Sirturo)
Dapsone, oral
Ethambutol (Myambutol, generic)
Isoniazid (INH)
Pyrazinamide (generic)
Rifabutin (Mycobutin)
Rifampin (Rifadin, Rimactane, generic)
Rifapentine (Priftin)
Streptomycin

Antiparasitics
Benzyl alcohol (Ulesfia)
Ivermectin, oral (Stromectol)
Ivermectin, topical (Sklice)
Lindane (Kwell, others)
Spinosad (Natroba)

Antiprotozoals
Artemether/lumefantrine (Coartem)
Atovaquone (Mepron)
Atovaquone/proguanil (Malarone)
Hydroxychloroquine (Plaquenil, generic)
Nitazoxanide (Alinia)
Tinidazole (Tindamax, generic)

Antiretrovirals
Abacavir (Ziagen)
Daptomycin (Cubicin)
Darunavir (Prezista)
Delavirdine (Rescriptor)
Didanosine [ddI] (Videx)
Efavirenz (Sustiva)
Efavirenz/emtricitabine/tenofovir (Atripla)
Etravirine (Intelence)
Fosamprenavir (Lexiva)
Indinavir (Crixivan)
Lamivudine (Epivir, Epivir-HBV, 3TC [many combo regimens])
Lopinavir/ritonavir (Kaletra)
Maraviroc (Selzentry)
Nelfinavir (Viracept)
Nevirapine (Viramune, Viramune XR, generic)
Raltegravir (Isentress)
Rilpivirine (Edurant)
Ritonavir (Norvir)
Saquinavir (Invirase)
Stavudine (Zerit, generic)
Tenofovir (Viread)
Tenofovir/emtricitabine (Truvada)
Zidovudine (Retrovir, generic)
Zidovudine/lamivudine (Combivir, generic)

Antivirals
Acyclovir (Zovirax)
Adefovir (Hepsera)
Amantadine (Symmetrel)
Atazanavir (Reyataz)
Boceprevir (Victrelis)
Cidofovir (Vistide)
Emtricitabine (Emtriva)
Enfuvirtide (Fuzeon)
Famciclovir (Famvir, generic)
Foscarnet (Foscavir, generic)
Ganciclovir (Cytovene, Vitraser)
Oseltamivir (Tamiflu)
Palivizumab (Synagis)
Peginterferon alfa-2b (PegIntron)
Penciclovir (Denavir)
Ribavirin (Copegus, Rebetol, Virazole, generic)
Rimantadine (Flumadine, generic)
Telaprevir (Incivek)
Telbivudine (Tyzeka)
Valacyclovir (Valtrex, generic)
Valganciclovir (Valcyte)
Zanamivir (Relenza)

Miscellaneous Antiviral Agents
Daptomycin (Cubicin)
Pentamidine (Pentam 300, NebuPent)

ANTINEOPLASTIC AGENTS

Alkylating Agents
Altretamine (Hexalen)
Bendamustine (Treanda)
Busulfan (Myleran, Busulfex)
Carboplatin (Paraplatin)
Cisplatin (Platinol, Platinol-AQ)
Oxaliplatin (Eloxatin, generic)
Procarbazine (Matulane)
Streptozocin (Zanosar)
Tapentadol (Nucynta)
Temozolomide (Temodar, generic)
Triethylenethiophosphoramide (Thiotepa, Thioplex, Tespa, TSPA)

NITROGEN MUSTARDS
Chlorambucil (Leukeran)
Cyclophosphamide (Cytoxan, Neosar)
Ifosfamide (Ifex, generic)
Mechlorethamine (Mustargen)
Melphalan [L-PAM] (Alkeran, generic)

**NITROSOUREAS**
Carmustine [BCNU] (BiCNU, Gliadel)
Streptozocin (Zanosar)

**Antibiotics**
Bleomycin sulfate (generic)
Dactinomycin (Cosmegen)
Daunorubicin (Cerubidine)
Doxorubicin (Adriamycin, Rubex)
Epirubicin (Ellence)
Idarubicin (Idamycin, generic)
Mitomycin (Mitosol [topical], generic)

**Antimetabolites**
Clofarabine (Clolar)
Cytarabine [Ara-C] (Cytosar-U)
Cytarabine liposome (DepoCyt)
Flouxuridine (generic)
Fludarabine phosphate (Fludara)
Fluorouracil [5-FU] (generic)
Fluorouracil, topical [5-FU] (Carac, Efudex, Fluoroplex, generic)
Gemcitabine (Gemzar, generic)
Mercaptopurine [6-MP] (Purinethol, generic)
Methotrexate (Rheumatrex Dose Pack, Trexall)
Nelarabine (Arranon)
Omacetaxine (Synribo)
Pemetrexed (Alimta)
Pralatrexate (Folotyn)
Romidepsin (Istodax)
Thioguanine (Tabloid)

**Hedgehog Pathway Inhibitor**
Vismodegib (Erivedge)
Hormones
Abiraterone (Zytiga)
Anastrozole (Arimidex)
Bicalutamide (Casodex)
Degarelix (Firmagon)
Enzalutamide (Xtandi)
Estramustine phosphate (Emcyt)
Exemestane (Aromasin, generic)
Flutamide (generic)
Fulvestrant (Faslodex)
Goserelin (Zoladex)
Histrelin acetate (Supprelin LA, Vantas)
Leuprolide (Eligard, Lupron, Lupron DEPOT, Lupron DEPOT-Ped, generic)
Megestrol acetate (Megace, Megace ES)
Nilutamide (Nilandron)
Tamoxifen
Triptorelin (Trelstar 3.75, Trelstar 11.25, Trelstar 22.5)

Immunotherapy
BCG [Bacillus Calmette-Guérin] (TheraCys, Tice BCG)
Interferon alfa (Roferon-A, Intron A)
Sipuleucel-T (Provenge)

Mitotic Inhibitors (Vinca Alkaloids)
Etoposide [VP-16] (Etopophos, Toposar, Vepesid, generic)
Vinblastine (generic)
Vincristine (Marqibo, Vincasar, generic)
Vinorelbine (Navelbine, generic)

Monoclonal Antibodies
Alemtuzumab (Campath relaunch as Lemtrada)
Belimumab (Benlysta)
Bevacizumab (Avastin)
Brentuximab vedotin (Adcetris)
Cetuximab (Erbitux)
Ipilimumab (Yervoy)
Ofatumumab (Arzerra)
Panitumumab (Vectibix)
Pertuzumab (Perjeta)
Trastuzumab (Herceptin)

Proteasome Inhibitor
Bortezomib (Velcade)

Taxanes
Cabazitaxel (Jevtana)
Docetaxel (Taxotere)
Paclitaxel (Abraxane, Taxol, generic)

Tyrosine Kinase Inhibitors (TKIs)
Axitinib (Inlyta)
Bosutinib monohydrate (Bosulif)
Cabozantinib (Cometriq)
Crizotinib (Xalkori)
Dasatinib (Sprycel)
Erlotinib (Tarceva)
Everolimus (Afinitor)
Imatinib (Gleevec)
Lapatinib (Tykerb)
Nilotinib (Tasigna)
Pazopanib (Votrient)
Regorafenib (Stivarga)
Sorafenib (Nexavar)
Sunitinib (Sutent)
Temsirolimus (Torisel)
Vandetanib (Caprelsa)

Miscellaneous Antineoplastic Agents
Aldesleukin [Interleukin-2, IL-2] (Proleukin)
Aminogluthethimide (Cytadren)
L-Asparaginase (Elspar)
Carfilzomib (Kyprolis)
Cladribine (Leustatin)
Dacarbazine (DTIC)
Eribulin (Halaven)
Hydroxyurea (Droxia, Hydrea, generic)
Irinotecan (Camptosar, generic)
Ixabepilone (Ixempra Kit)
Letrozole (Femara)
Leucovorin (generic)
Mitoxantrone (generic)
Panitumumab (Vectibix)
Pemetrexed (Alimta)
Pertuzumab (Perjeta)
Pomalidomide (Pomalyst)
Rasburicase (Elitek)
Sipuleucel-T (Provenge)
Thalidomide (Thalomid)
Topotecan (Hycamtin, generic)
Tretinoin, topical [retinoic acid] (Retin-A, Avita, Renova, Retin-A Micro)
Ziv-Aflibercept (Zaltrap)

CARDIOVASCULAR (CV) AGENTS

Aldosterone Antagonists
Eplerenone (Inspra)
Spironolactone (Aldactone)

Alpha₁-Adrenergic Blockers
Doxazosin (Cardura, Cardura XL)
Prazosin (Minipress, generic)
Terazosin (Hytrin, generic)

Angiotensin-Converting Enzyme (ACE) Inhibitors
Benazepril (Lotensin)
Captopril (Capoten, others)
Enalapril (Vasotec)
Fosinopril (Monopril, generic)
Lisinopril (Prinivil, Zestril)
Moexipril (Univasc, generic)
Perindopril erbumine (Aceon, generic)
Quinapril (Accupril, generic)
Ramipril (Altace, generic)
Trandolapril (Mavik, generic)
Angiotensin II Receptor Antagonists/Blockers (ARBs)
- Amlodipine/olmesartan (Azor)
- Amlodipine/valsartan (Exforge)
- Azilsartan (Edarbi)
- Azilsartan and chlorthalidone (Edarbyclor)
- Candesartan (Atacand)
- Eprosartan (Teveten)
- Irbesartan (Avapro)
- Losartan (Cozaar)
- Telmisartan (Micardis)
- Valsartan (Diovan)

Antiarrhythmic Agents
- Adenosine (Adenocard, Adenoscan)
- Amiodarone (Cordarone, Nexterone, Pacerone)
- Atropine, systemic (AtroPen Auto-Injector)
- Digoxin (Digitek, Lanoxin, Lanoxicaps)
- Disopyramide (Norpace, Norpace CR)
- Dofetilide (Tikosyn)
- Dronedarone (Multaq)
- Esmolol (Brevibloc, generic)
- Flecaïnide (Tambocor, generic)
- Ibutilide (Corvert, generic)
- Lidocaine, systemic (Xylocaine, others)
- Mexilitine (generic)
- Procainamide (generic)
- Propafenone (Rythmol, Rhythmol SR, generic)
- Quinidine (generic)
- Sotalol (Betapace, Sorine, generic)

Beta-Adrenergic Blockers
- Acebutolol (Sectral)
- Atenolol (Tenormin)
- Atenolol/chlorthalidone (Tenoretic)
- Betaxolol (Kerlone)
- Bisoprolol (Zebeta)
- Carvedilol (Coreg, Coreg CR)
- Labetalol (Trandate, Normodyne)
Metoprolol succinate (Toprol XL, generic)
Metoprolol tartrate (Lopressor, generic)
Nadolol (Corgard, generic)
Nebivolol (Bystolic)
Penbutolol (Levatol)
Pindolol (generic)
Propranolol (Inderal LA, Innopran XL, generic)
Timolol (generic)

**Calcium Channel Antagonists/Blockers (CCBs)**

Amlodipine (Norvasc)
Amlodipine/olmesartan (Azor)
Amlodipine/valsartan (Exforge)
Clevidine (Cleviprex)
Diltiazem (Cardizem, Cardizem CD, Cardizem LA, Cardizem SR, Cartia XT, Dilacor XR, Diltia XT, Taztia XT, Tiamate, Tiazac)
Felodipine (Plendil, generic)
Isradipine (DynaCirc, generic)
Nicardipine (Cardene, Cardene SR, generic)
Nifedipine (Adalat CC, Afeditab CR, Procardia, Procardia XL, generic)
Nimodipine (generic)
Nisoldipine (Sular, generic)
Verapamil (Calan, Covera HS, Isoptin, Verelan, generic)

**Centrally Acting Antihypertensive Agents**

Clonidine, oral (Catapres)
Clonidine, transdermal (Catapres-TTS)
Guanfacine (Tenex)
Methyldopa (generic)

**Combination Antihypertensive Agents**

Aliskiren/amlodipine (Tekamlo)
Aliskiren/amlodipine/hydrochlorothiazide (Amturnide)
Amlodipine/valsartan/hydrochlorothiazide (Exforge HCT)
Lisinopril/hydrochlorothiazide (Prinzide, Zestoretic, generic)
Olmesartan, amlodipine, hydrochlorothiazide (Tribenzor)
Olmesartan, olmesartan/hydrochlorothiazine (Benicar, Benicar HCT)
Telmisartan/amlodipine (Twynda)
**Diuretics**

- Acetazolamide (Diamox)
- Amiloride (Midamor)
- Bumetanide (Bumex)
- Chlorothiazide (Diuril)
- Chlorthalidone
- Furosemide (Lasix, generic)
- Hydrochlorothiazide (HydroDIURIL, Esidrix, others)
- Hydrochlorothiazide/amiloride (Moduretic)
- Hydrochlorothiazide/spironolactone (Aldactazide)
- Hydrochlorothiazide/triamterene (Dyazide, Maxzide)
- Indapamide (Lozol)
- Mannitol, intravenous (generic)
- Metolazone (Zaroxolyn, generic)
- Spironolactone (Aldactone, generic)
- Torsemide (Demadex, generic)
- Triamterene (Dyrenium)

**Inotropic/Pressor Agents**

- Digoxin (Digitek, Lanoxin, Lanoxicaps)
- Dobutamine (Dobutrex)
- Dopamine (Intropin)
- Epinephrine (Adrenalin, EpiPen, EpiPen Jr, others)
- Inamrinone [amrinone] (Inocor)
- Isoproterenol (Isuprel)
- Midodrine (Proamatine)
- Milrinone (Primacor, generic)
- Nesiritide (Natrecor)
- Norepinephrine (Levophed)
- Phenylephrine, systemic (generic)

**Lipid-Lowering Agents**

- Cholestyramine (Questran, Questran Light, Prevalite)
- Colesevelam (WelChol)
- Colestipol (Colestid)
- Ezetimibe (Zetia)
- Fenofibrate (Antara, Lipofen, Lofibra, TriCor, Triglide, generic)
- Fenofibric acid (Fibrinor, Trilipix, generic)
Gemfibrozil (Lopid, generic)
Icosapent ethyl (Vascepa)
Lomitapide (Juxtapid)
Mipomersen (Kynamro)
Niacin [nicotinic acid] (Niaspan, Slo-Niacin, Niacor, Nicolar) [OTC forms]
Niacin/lovastatin (Advicor)
Niacin/simvastatin (Simcor)
Omega-3 fatty acid [fish oil] (Lovaza)

Statins
Atorvastatin (Lipitor)
Fluvastatin (Lescol, generic)
Lovastatin (Mevacor, Altoprev)
Pitavastatin (Livalo)
Pravastatin (Pravachol, generic)
Rosuvastatin (Crestor)
Simvastatin (Zocor)

Statin/Antihypertensive Combinations
Amlodipine/atorvastatin (Caduet)

Vasodilators
Alprostadil [prostaglandin E1] (Prostin VR)
Epoprostenol (Veletri, Flolan)
Fenoldopam (Corlopam, generic)
Hydralazine (Apresoline, others)
Iloprost (Ventavis)
Isosorbide dinitrate (Dilatrate-SR, Isordil, Sorbitrate, generic)
Isosorbide mononitrate (Ismo, Imdur, Monoket, generic)
Minoxidil, oral (generic)
Nitroglycerin (Nitrostat, Nitroliungual, Nitro-Bid Ointment, Nitro-Bid IV, Nitrodisc, Transderm-Nitro, NitroMist, others)
Nitroprusside (Nitropress)
Treprostinil sodium (Remodulin, Tyvaso)

Miscellaneous Cardiovascular Agents
Aliskiren (Tekturna)
Aliskiren/hydrochlorothiazide (Tekturna HCT)
Ambrisentan (Letairis)
Conivaptan (Vaprisol)
Dabigatran (Pradaxa)
Prasugrel (Effient)
Ranolazine (Ranexa)
Sildenafil (Viagra, Revatio)

CENTRAL NERVOUS SYSTEM (CNS) AGENTS

Alzheimer Agents
Donepezil (Aricept)
Galantamine (Razadyne, Razadyne ER)
Memantine (Namenda)
Rivastigmine (Exelon, generic)
Rivastigmine, transdermal (Exelon Patch, generic)

Antianxiety Agents
Alprazolam (Xanax, Niravam)
Buspirone (generic)
Chlordiazepoxide (Librium) [C-IV]
Diazepam (Diastat, Valium)
Doxepin (Sinequan, Adapin)
Hydroxyzine (Atarax, Vistaril, generic)
Lorazepam (Ativan, others)
Meprobamate (generic) [C-IV]
Oxazepam (generic) [C-IV]

Anticonvulsants
Carbamazepine (Tegretol XR, Carbatrol, Epitol, Equetro)
Clonazepam (Klonopin)
Clobazam (Onfi)
Diazepam (Diastat, Valium)
Ethosuximide (Zarontin)
Ezogabine (Potiga)
Fosphenytoin (Cerebyx, generic)
Gabapentin (Neurontin, generic)
Lacosamide (Vimpat)
Lamotrigine (Lamictal)
Lamotrigine, extended-release (Lamictal XR)
Levetiracetam (Keppra, Keppra XR)
Lorazepam (Ativan, others)
Magnesium sulfate (various)
Oxcarbazepine (Oxtellar XR, Trileptal, generic)
Pentobarbital (Nembutal) [C-II]
Perampanel (Fycompa)
Phenobarbital (generic) [C-IV]
Phenytoin (Dilantin, generic)
Rufinamide (Banzel)
Tiaagabine (Gabitril, generic)
Topiramate (Topamax, generic)
Valproic acid (Depakene, Depakote, Stavzor, generic)
Vigabatrin (Sabril)
Zonisamide (Zonegran, generic)

Antidepressants

**MONOAMINE OXIDASE INHIBITORS (MAOIs)**

Phenelzine (Nardil, generic)
Selegiline, oral (Eldepryl, Zelapar, generic)
Selegiline, transdermal (Emseal)
Tranylcypromine (Parnate)

**SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs)**

Citalopram (Celexa)
Escitalopram (Lexapro, generic)
Fluoxetine (Gafaxon, Prozac, Prozac Weekly, Sarafem, generic)
Fluvoxamine (Luvox CR, generic)
Paroxetine (Paxil, Paxil CR, Pexeva, generic)
Sertraline (Zoloft)

**SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIs)**

Desvenlafaxine (Pristiq)
Duloxetine (Cymbalta)
Venlafaxine (Effexor, Effexor XR, generic)

**TRICYCLIC ANTIDEPRESSANTS (TCAs)**

Amitriptyline (Elavil)
Desipramine (Norpramin)
Doxepin (Adapin)
Imipramine (Tofranil, generic)
Nortriptyline (Aventyl, Pamelor)

**MISCELLANEOUS ANTIDEPRESSANTS**
Bupropion hydrobromide (Aplenzin)
Bupropion hydrochloride (Wellbutrin, Wellbutrin SR, Wellbutrin XL, Zyban)
Milnacipran (Savella)
Mirtazapine (Remeron, Remeron SolTab, generic)
Nefazodone (generic)
Trazodone (Oleptro, generic)
Vilazodone (Viibryd)

**Antiparkinson Agents**
Amantadine (Symmetrel)
Apomorphine (Apokyn)
Benztropine (Cogentin)
Bromocriptine (Parlodel)
Carbidopa/levodopa (Parcopa, Sinemet)
Entacapone (Comtan)
Ropinirole (Requip, Requip XL, generic)
Rotigotine (Neupro)
Selegiline (Eldepryl, Zelapar)
Tolcapone (Tasmar)
Trihexyphenidyl (generic)

**Antipsychotics**
Aripiprazole (Abilify, Abilify Discmelt)
Asenapine (Saphris)
Chlorpromazine (Thorazine)
Clozapine (Clozaril, FazaClo, Versacloz)
Haloperidol (Haldol, generic)
Iloperidone (Fanapt)
Lithium carbonate, citrate (generic)
Lurasidone (Latuda)
Olanzapine (Zyprexa, Zyprexa Zydis, generic)
Olanzapine, LA parenteral (Zyprexa Relprevv)
Paliperidone (Invega, Invega Sustenna)
Perphenazine (generic)
Pimozide (Orap)
Prochlorperazine (Compro, Procomp, generic)
Quetiapine (Seroquel, Seroquel XR, generic)
Risperidone, oral (Risperdal, Risperdal M-Tab, generic)
Risperidone, parenteral (Risperdal Consta)
Thioridazine (generic)
Thiothixene (generic)
Trifluoperazine (generic)
Ziprasidone (Geodon)

**Sedative Hypnotics**

Dexmedetomidine (Precedex)
Diphenhydramine (Benadryl OTC)
Doxepin (Silenor)
Estazolam (ProSom, generic) [C-IV]
Eszopiclone (Lunesta)
Etopidate (Amidate)
Flurazepam (Dalmane) [C-IV]
Hydroxyzine (Atarax, Vistaril)
Midazolam (generic) [C-IV]
Pentobarbital (Nembutal, others)
Phenobarbital
Propofol (Diprivan, generic)
Ramelteon (Rozerem)
Secobarbital (Seconal)
Temazepam (Restoril, generic) [C-IV]
Triazolam (Halcion, generic)
Zaleplon (Sonata)
Zolpidem (Ambien IR, Ambien CR, Edluar, ZolpiMist, generic) [C-IV]

**Stimulants**

Armodafinil (Nuvigil)
Atomoxetine (Strattera)
Dexmethylphenidate (Focalin, Focalin XR)
Dextroamphetamine (Dexedrine, Procentra) [C-II]
Guanfacine (Intuniv)
Lisdexamfetamine (Vyvanse)
Methylphenidate, oral (Concerta, Metadate CD, Metadate SR, Methylin, Ritalin, Ritalin LA, Ritalin SR, Quillivant XR) [C-II]
Methylphenidate, transdermal (Daytrana)
Modafinil (Provigil, generic) [C-IV]

Miscellaneous CNS Agents

Clomipramine (Anafranil)
Clonidine, oral, extended-release (Kapvay)
Dalfampridine (Ampyra)
Fingolimod (Gilenya)
Gabapentin enacarbil (Horizant)
Interferon beta-1a (Avonex, Rebif)
Meclizine (Antivert) (Dramamine [OTC])
Natalizumab (Tysabri)
Nimodipine (Nimotop)
Rizatriptan (Maxalt, Maxalt-MLT, generic)
Sodium oxybate (Xyrem)
Teriflunomide (Aubagio)
Tetrabenazine (Xenazine)

DERMATOLOGIC AGENTS

Acitretin (Soriatane)
Acyclovir (Zovirax)
Adapalene (Differin)
Adapalene/benzoyl peroxide (Epiduo Gel)
Alefacept (Amevive)
Amphotericin B (Amphocin, Fungizone)
Anthralin (Dritho, Zithranol, Zithranol-RR)
Bacitracin, topical (Baciguent)
Bacitracin/polymyxin B, topical (Polysporin)
Bacitracin/neomycin/polymyxin B, topical (Neosporin ointment)
Bacitracin/neomycin/polymyxin B/hydrocortisone, topical (Cortisporin)
Botulinum toxin type A [abobotulinumtoxin A] (Dysport)
Botulinum toxin type A [onabotulinumtoxin A] (Botox, Botox Cosmetic)
Calcipotriene (Dovonex)
Calcitriol ointment (Vectical)
Capsaicin (Capsin, Zostrix, others)
Ciclopirox (Ciclodan, CNL8, Loprox, Pedipirox-4 nail kit, Penlac)
Ciprofloxacin (Cipro, Cipro XR, Proquin XR)
Clindamycin (Cleocin, Cleocin T, others)
Clindamycin/benzoyl peroxide (Benzaclín)
Clindamycin/tretinoin (Veltin Gel)
Clotrimazole/betamethasone (Lotrisone)
Dapsone, topical (Aczone)
Dibucaine (Nupercainal)
Diclofenac, topical (Solaraze)
Doxepin, topical (Zonalon, Prudoxin)
Econazole (Spectazole)
Erythromycin, topical (Akne-Mycin, Ery, Erythra-Derm, generic)
Erythromycin/benzoyl peroxide (Benzamycin)
Finasteride (Propecia)
Fluorouracil, topical [5-FU] (Efudex)
Gentamicin, topical (generic)
Imiquimod cream (Aldara, Zyclara)
Ingenol mebutate (Picato)
Isotretinoin (Amnesteem, Claravis, Myorisan, Sotret, Zentane, generic)
Ketoconazole (Nizoral, generic)
Ketoconazole, topical (Extina, Nizoral A-D Shampoo, Xolegel) [Shampoo OTC]
Kunecatechins [sinecatechins] (Veregen)
Lactic acid/ammonium hydroxide [Ammonium Lactate] (Lac-Hydrin)
Lindane (generic)
Metronidazole (Flagyl, Flagyl ER, MetroCream, MetroGel, MetroLotion)
Miconazole (Monistat 1 combination pack, Monistat 3, Monistat 7) [OTC], (Monistat-Derm)
Miconazole/zinc oxide/petrolatum (Vusion)
Minocycline (Arestin, Dynacin, Minocin, Solodyn, generic)
Minoxidil, topical (Theroxidil, Rogaine) [OTC]
Mupirocin (Bactroban, Bactroban Nasal)
Naftifine (Naftin)
Nystatin (Mycostatin)
Oxiconazole (Oxistat)
Penciclovir (Denavir)
Permethrin (Elimite, Nix, generic [OTC])
Pimecrolimus (Elidel)
Podophyllin (Condylox, Condylox Gel 0.5%, Podocon-25)
Pramoxine (Anusol Ointment, ProctoFoam NS)
Pramoxine and hydrocortisone (Proctofoam-HC)
Selenium sulfide (Exsel Shampoo, Selsun Blue shampoo, Selsun shampoo)
Silver sulfadiazine (Silvadene, Thermazene, generic)
Steroids, topical (*See Table 3, p 302*)
Tacrolimus, ointment (Protopic)
Tazarotene (Avage, Fabior, Tazorac)
Terbinafine (Lamisil, Lamasil AT [OTC])
Tolnaftate (Tinactin, generic [OTC])
Tretinoin, topical [retinoic acid] (Avita, Retin-A, Retin-A Micro, Renova)
Ustekinumab (Stelara)
Vorinostat (Zolinza)

**DIETARY SUPPLEMENTS**

Calcium acetate (Calphron, Phos-Ex, PhosLo)
Calcium glubionate (Calcionate)
Calcium salts [chloride, gluconate, gluceptate]
Cholecalciferol [vitamin D3] (Delta-D)
Cyanocobalamin [vitamin B12] (Nascobal)
Ferric gluconate complex (Ferrlecit)
Ferrous gluconate (Fergon [OTC], others)
Ferrous sulfate
Ferumoxytol (Feraheme)
Fish oil (Lovaza, others [OTC])
Folic acid, injectable, oral (generic)
Iron dextran (Dexferrum, INFeD)
Iron sucrose (Venofer)
Magnesium oxide (Mag-Ox 400, others [OTC])
Magnesium sulfate (various)
Multivitamins, oral [OTC] (*See Table 12, p 322*)
Phytonadione [vitamin K₁] (Mephyton, generic)
Potassium supplements (*See Table 6, p 314*)
Pyridoxine [vitamin B₆] (generic)
Sodium bicarbonate [NaHCO₃] (generic)
Thiamine [vitamin B₁] (generic)

**EAR (OTIC) AGENTS**

Acetic acid/aluminum acetate, otic (Domeboro Otic)
Benzocaine/antipyrine (Auralgan)
Ciprofloxacin, otic (Cetraxal)
Ciprofloxacin/dexamethasone, otic (Ciprodex)
Ciprofloxacin/hydrocortisone, otic (Cipro HC Otic)
Neomycin/colistin/hydrocortisone (Cortisporin-TC Otic Drops)
Neomycin/colistin/hydrocortisone/thonzonium (Cortisporin-TC Otic Suspension)
Ofloxacin otic (Floxin Otic, Floxin Otic Singles)
Sulfacetamide (Bleph-10, Cetamide, Klaron, generic)
Sulfacetamide/prednisolone (Blephamade)

**ENDOCRINE SYSTEM AGENTS**

**Antidiabetic Agents**

Acarbose (Precose)
Bromocriptine mesylate (Cycloset)
Chlorpropamide (Diabinese)
Glimepiride (Amaryl, generic)
Glimepiride/pioglitazone (Duetact)
Glipizide (Glucotrol, Glucotrol XL, generic)
Glyburide (DiaBeta, Glynase, generic)
Glyburide/metformin (Glucovance, generic)
Insulins, injectable (*See Table 4, p 305*)
Metformin (Fortmet, Glucophage, Glucophage XR, Glumetza, Riomet, generic)
Miglitol (Glyset)
Nateglinide (Starlix, generic)
Pioglitazone (Actos, generic)
Pioglitazone/metformin (ACTOplus Met, ACTOplus MET XR, generic)
Repaglinide (Prandin)
Repaglinide/metformin (PrandiMet)
Rosiglitazone (Avandia)
Tolazamide (generic)
Tolbutamide (generic)

**Dipeptidyl Peptidase-4 (DPP-4) Inhibitors**

Alogliptin (Nesina)
Alogliptin/metformin (Kazano)
Alogliptin/pioglitazone (Oseni)
Linagliptin (Tradjenta)
Saxagliptin (Onglyza)
Saxagliptin/metformin (Kombiglyze XR)
Sitagliptin (Januvia)
Sitagliptin/metformin (Janumet)
Sitagliptin/simvastatin (Juvisync)

**GLUCAGON-LIKE PEPTIDE-1 (GLP-1) RECEPTOR AGONISTS**
Exenatide (Byetta)
Exenatide ER (Bydureon)
Liraglutide recombinant (Victoza)

**SODIUM-GLUCOSE CO-TRANSPORTER 2 (SGLT2) INHIBITORS**
Canagliflozin (Invokana)

**Hormone and Synthetic Substitutes**
Calcitonin (Fortical, Miacalcin)
Calcitriol (Rocaltrol, Calcijex)
Cortisone, systemic and topical *(See Table 2, p 301, and Table 3, p 302)*
Desmopressin (DDAVP, Stimate)
Dexamethasone, systemic and topical (Decadron)
Fludrocortisone (Florinef, generic)
Fluoxymesterone (Androxy) [C-III]
Glucagon, recombinant (GlucaGen)
Hydrocortisone, topical/systemic (Cortef, Solu-Cortef, generic)
Methylprednisolone (A-Methapred, Depo-Medrol, Medrol, Medrol Dosepak, Solu-Medrol, generic) *(See Steroids, p 259, and Table 2, p 301)*
Prednisolone (Flo-Pred, Omnipred, Oraipred, Pediapred, generic) *(See Steroids, p 259, and Table 2, p 301)*
Prednisone (generic) *(See Steroids, p 259, and Table 2, p 301)*
Testosterone (AndroGel 1%, AndroGel 1.62% Androderm, Axiron, Fortesta, Striant, Testim, Testopel)
Vasopressin [antidiuretic hormone, ADH] (Pitressin)

**Hypercalcemia/Osteoporosis Agents**
Alendronate (Fosamax, Fosamax Plus D)
Denosumab (Prolia, Xgeva)
Etidronate (Didronel)
Gallium nitrate (Ganite)
Ibandronate (Boniva, generic)
Pamidronate (generic)
Raloxifene (Evista)
Risedronate (Actonel, Actonel w/ Calcium, generic)
Risedronate, delayed-release (Atelvia)
Teriparatide (Forteo)
Zoledronic acid (Reclast, Zometa, generic)

**Obesity**
Lorcaserin (Belviq)
Orlistat (Xenical, Alli [OTC])
Phentermine (Adipex-P, Suprenza, generic)
Phentermine/topiramate (Qsymia) [C-IV]

**Thyroid/Antithyroid**
Levothyroxine (Synthroid, Levoxyl, others)
Liothyronine [T₃] (Cytomel, Triostat)
Methimazole (Tapazole, generic)
Potassium iodide (Lugol’s Solution, Iosat, SSKI, Thyro-Block, ThyroSafe, ThyroShield) [OTC]
Propylthiouracil (generic)

**Miscellaneous Endocrine Agents**
Cinacalcet (Sensipar)
Demeclocycline (Declomycin)
Diazoxide (Proglycem)
Mifepristone (Korlym)
Pasireotide (Signifor)
Somatropin (Genotropin, Nutropin AQ, Omnitrope, Saizen, Serostim, Zorbtive)
Tesamorelin (Egrifta)

**EYE (OPHTHALMIC) AGENTS**

**Glaucoma Agents**
Acetazolamide (Diamox)
Apraclonidine (Iopidine)
Betaxolol, ophthalmic (Betoptic)
Brimonidine (Alphagan P)
Brimonidine/timolol (Combigan)
Brinzolamide (Azopt)
Carteolol, ophthalmic
Dipivefrin (Propine)
Dorzolamide (Trusopt)
Dorzolamide/timolol (Cosopt)
Echothiophate iodide, ophthalmic (Phospholine Iodide)
Latanoprost (Xalatan)
Levobunolol (AK-Beta, Betagan)
Tafluprost (Zioptan)
Timolol, ophthalmic (Betimol, Timoptic, Timoptic XE, generic)

**Ophthalmic Antibiotics**

Azithromycin, ophthalmic, 1% (AzaSite)
Bacitracin, ophthalmic (AK-Tracin Ophthalmic)
Bacitracin/neomycin/polymyxin B (Neo-polycin, Neosporin Ophthalmic)
Bacitracin/neomycin/polymyxin B/hydrocortisone (Neopolycin HC Cortisporin Ophthalmic)
Bacitracin/polymyxin B, ophthalmic (AK-Poly-Bac Ophthalmic, Polysporin Ophthalmic)
Besifloxacin (Besivance)
Ciprofloxacin, ophthalmic (Ciloxan)
Erythromycin, ophthalmic (Ilotycin)
Gentamicin, ophthalmic (Garamycin, Genoptic, Gentak, generic)
Gentamicin/prednisolone, ophthalmic (Pred-G Ophthalmic)
Levofloxacin ophthalmic (Quixin, Iquix)
Moxifloxacin ophthalmic (Vigamox)
Neomycin/polymyxin B/hydrocortisone (Cortisporin Ophthalmic, Cortisporin Otic)
Neomycin/dexamethasone (AK-Neo-Dex Ophthalmic, NeoDecadron Ophthalmic)
Neomycin/polymyxin B/dexamethasone, ophthalmic (Maxitrol)
Neomycin/polymyxin B/prednisolone (Poly-Pred Ophthalmic)
Norfloxacin, ophthalmic (Chibroxin)
Ofloxacin, ophthalmic (Ocuflox)
Silver nitrate (generic)
Sulfacetamide, ophthalmic (Bleph-10, Cetamide, Sodium Sulamyd)
Sulfacetamide/prednisolone, ophthalmic (Blephamide, others)
Tobramycin ophthalmic (AKTob, Tobrex, generic)
Tobramycin/dexamethasone ophthalmic (TobraDex)
Trifluridine, ophthalmic (Viroptic)

**Miscellaneous Ophthalmic Agents**

Aflibercept (Eylea)
Alcaftadine, ophthalmic (Lastacaft)
Artificial tears (Tears Naturale [OTC])
Atropine (Isopto Atropine, generic)
Bepotastine besilate (Bepreve)
Cidofovir (Vistide)
Cromolyn sodium (Opticrom)
Cyclopentolate (Cyclogyl, Cyclate)
Cyclopentolate/phenylephrine (Cyclomydril)
Cyclosporine (Restasis)
Dexamethasone, ophthalmic (AK-Dex Ophthalmic, Decadron Ophthalmic, Maxidex)
Diclofenac (Voltaren)
Emedastine (Emadine)
Epinastine (Elestat)
Ganciclovir, ophthalmic gel (Zirgan)
Ketotifen (Alaway, Claritin Eye, Zaditor, Zyrtec Itchy Eye) [OTC]
Ketorolac (Acular, Acular LS, Acular PF)
Levocabastine (Livostin)
Lodoxamide (Alomide)
Loteprednol (Alrex, Lotemax)
Naphazoline (Albalon, Naphcon, generic)
Naphazoline/pheniramine (Naphcon A, Visine A, generic)
Nepafenac (Nevanac)
Olopatadine (Patanol, Pataday)
Pemirolast (Alamast)
Phenylephrine (Neo-Synephrine Ophthalmic, AK-Dilate, Zincfrin [OTC])
Ranibizumab (Lucentis)
Rimexolone (Vexol)
Scopolamine ophthalmic

GASTROINTESTINAL (GI) AGENTS

Antacids
Alginic acid/aluminum hydroxide/magnesium trisilicate (Gaviscon) [OTC]
Aluminum hydroxide (Amphojel, AlternaGEL, Dermagran) [OTC]
Aluminum hydroxide/magnesium carbonate (Gaviscon Extra Strength Liquid) [OTC]
Aluminum hydroxide/magnesium hydroxide (Maalox)
Aluminum hydroxide/magnesium hydroxide/simethicone (Mylanta, Mylanta II, Maalox Plus) [OTC]
Aluminum hydroxide/magnesium trisilicate (Gaviscon Regular Strength) [OTC]
Calcium carbonate (Tums, Alka-Mints) [OTC]
Magaldrate (Riopan Plus) [OTC]
Simethicone (generic [OTC])
Antidiarrheals
Bismuth subsalicylate (Pepto-Bismol) [OTC]
Diphenoxylate/atropine (Lomotil, Lonox)
Lactobacillus (Lactinex Granules) [OTC]
Loperamide (Diamode, Imodium) [OTC]
Octreotide (Sandostatin, Sandostatin LAR, generic)
Paregoric [camphorated tincture of opium]
Rifaximin (Xifaxan, Xifaxan 550)

Antiemetics
Aprepitant (Emend)
Chlorpromazine (Thorazine)
Dimenhydrinate (Dramamine, others) [OTC]
Dolasetron (Anzemet)
Dronabinol (Marinol) [C-III]
Droperidol (Inapsine)
Fosaprepitant (Emend, Injection)
Granisetron (generic)
Meclizine (Antivert, Bonine, Dramamine [OTC])
Metoclopramide (Reglan, Clopra, Octamide)
Nabilone (Cesamet)
Ondansetron (Zofran, Zofran ODT)
Ondansetron, oral soluble film (Zuplenz)
Palonosetron (Aloxi)
Prochlorperazine (Compazine)
Promethazine (Promethegan, generic)
Scopolamine (Transderm Scop)
Trimethobenzamide (Tigan, generic)

Antiulcer Agents
Bismuth subcitrate/metronidazole/tetracycline (Pylera)
Cimetidine (Tagamet, Tagamet HB 200 [OTC])
Dexlansoprazole (Dexilant, Kapidex)
Esomeprazole (Nexium)
Famotidine (Fluxid Pepcid, Pepcid AC, generic, [OTC])
Lansoprazole (Prevacid, Prevacid 24HR [OTC])
Nizatidine (Axid, Axid AR [OTC], generic)
Omeprazole (Prilosec, Prilosec [OTC], generic)
Omeprazole, sodium bicarbonate (Zegerid, Zegerid [OTC])
Omeprazole, sodium bicarbonate, magnesium hydroxide (Zegerid w/ Magnesium Hydroxide)
Pantoprazole (Protonix, generic)
Rabeprazole (AcipHex)
Ranitidine (Zantac, Zantac EFFERDose [OTC], generic)
Sucralfate (Carafate, generic)

Cathartics/Laxatives
Bisacodyl (Dulcolax [OTC])
Citric acid/magnesium oxide/sodium picosulfate (Prepopik)
Docusate calcium (Surfak)
Docusate potassium (Dialose)
Docusate sodium (DOSS, Colace)
Glycerin suppository
Lactulose (Constulose, Generlac, Chronulac, Cephulac, Enulose, others)
Magnesium citrate (Citroma, others) [OTC]
Magnesium hydroxide (Milk of Magnesia) [OTC]
Mineral oil [OTC]
Mineral oil enema (Fleet Mineral Oil) [OTC]
Polyethylene glycol-electrolyte solution [PEG-ES] (GoLYTELY, CoLyte)
Polyethylene glycol [PEG] 3350 (MiraLAX) [OTC]
Psyllium (Konsyl, Metamucil, generic)
Sodium phosphate (OsmoPrep, Visicol)
Sorbitol (generic)

Enzymes
Pancrelipase (Creon, Pancreaze, Panakare Plus, Pertzye, Ultresa, Voikace, Zenpep, generic)

Miscellaneous GI Agents
Alosetron (Lotronex)
Alvimopan (Entereg)
Budesonide, oral (Entocort EC)
Balsalazide (Colazal)
Certolizumab pegol (Cimzia)
Crofelemer (Fulyzaq)
Dexpanthenol (Ilopan-Choline Oral, Ilopan)
Dibucaine (Nupercainal)
Dicyclomine (Bentyl)
Fidaxomicin (Dificid)
Hydrocortisone, rectal (Anusol-HC Suppository, Cortifoam Rectal, Proctocort, others, generic)
Hyoscymine (Anaspaz, Cystospaz, Levsin, others, generic)
Hyoscymine/atropine/scopolamine/phenobarbital (Donnatal, others)
Infliximab (Remicade)
Linaclotide (Linzess)
Lubiprostone (Amitiza)
Mesalamine (Apriso, Asacol, Asacol HD, Canasa, Lialda, Pentasa, Rowasa, generic)
Methylnaltrexone bromide (Relistor)
Metoclopramide (Reglan, Clopra, Octamide)
Mineral oil/pramoxine HCl/zinc oxide (Tucks Ointment) [OTC]
Misoprostol (Cytotec, generic)
Neomycin (Neo-Fradin, generic)
Olsalazine (Dipentum)
Oxandrolone (Oxandrin, generic) [C-III]
Pramoxine (Anusol Ointment, ProctoFoam NS, others)
Pramoxine/hydrocortisone (Enzone, Proctofoam-HC)
Propantheline (Pro-Banthine, generic)
Starch, topical, rectal (Tucks Suppositories) [OTC]
Sulfasalazine (Azulfidine, Azulfidine EN, generic)
Teduglutide [rDNA origin] (Gattex)
Vasopressin [antidiuretic hormone (ADH)] (Pitressin)
Witch hazel (Tucks Pads, others [OTC])

HEMATOLOGIC AGENTS

Anticoagulants

Antithrombin, recombinant (ATryn)
Argatoban (generic)
Bivalirudin (Angiomax)
Dabigatran (Pradaxa)
Dalteparin (Fragmin)
Desirudin (Iprivask)
Enoxaparin (Lovenox)
Fondaparinux (Arixtra, generic)
Heparin (generic)
Lepirudin (Refludan)
Protamine (generic)
Warfarin (Coumadin, Jantoven, generic)
Antiplatelet Agents
Abciximab (ReoPro)
Aspirin (Bayer, Ecotrin, St. Joseph’s) [OTC]
Cilostazol (Pletal)
Clopidogrel (Plavix)
Dipyridamole (Persantine)
Dipyridamole/aspirin (Aggrenox)
Eptifibatide (Integrilin)
Prasugrel (Effient)
Rivaroxaban (Xarelto)
Ticagrelor (Brilinta)
Ticlopidine (Ticlid)
Tirofiban (Aggrastat)

Antithrombotic Agents
Alteplase, recombinant [tPA] (Activase)
Aminocaproic acid (Amicar)
Anistreplase (Eminase)
Apixaban (Eliquis)
Dextran 40 (Gentran 40, Rheomacrodex)
Reteplase (Retavase)
Streptokinase (generic)
Tenecteplase (TNKase)

Hematinic Agents
Darbepoetin alfa (Aranesp)
Eltrombopag (Promacta)
Epoetin alfa [erythropoietin (EPO)] (Epogen, Procrit)
Filgrastim [G-CSF] (Neupogen)
Iron dextran (Dexferrum, INFeD)
Iron sucrose (Venofer)
Oprelvekin (Neumega)
Pegfilgrastim (Neulasta)
Plerixafor (Mozobil)
Romiplostim (Nplate)
Sargramostim [GM-CSF] (Leukine)

Volume Expanders
Albumin (Albuked, Albuminar 20, AlbuRx 25, Albutein, Buminate, Kedbumin, Plasbumin)  
Dextran 40 (Gentran 40, Rheomacrodex)  
Hetastarch (Hespan)  
Plasma protein fraction (Plasmanate)

**Miscellaneous Hematologic Agents**

Antihemophilic factor VIII (Monoclate-P)  
Antihemophilic factor [recombinant] (Advate, Hexilate FS, Kogenate FS, Recombinate, Xyntha)  
Decitabine (Dacogen)  
Deferiprone (Ferriprox)  
Desmopressin (DDAVP, Stimate)  
Lenalidomide (Revlimid)  
Pentoxifylline (Trental, generic)  
Prothrombin complex concentrate (human) (Kcentra)  
Ruxolitinib (Jakafi)

**IMMUNE SYSTEM AGENTS**

**Immunomodulators**

Icatibant (Firazyr)  
Interferon alfa (Roferon-A, Intron A)  
Interferon alfacon-1 (Infergen)  
Interferon beta-1a (Rebif)  
Interferon beta-1b (Betaseron, Extavia)  
Interferon gamma-1b (Actimmune)  
Natalizumab (Tysabri)  
Peginterferon alfa-2a [pegylated interferon] (Pegasys)  
Peginterferon alfa-2b [pegylated interferon] (PegIntron)

**Immunomodulators: Disease-Modifying Antirheumatic Drugs (DMARDs)**

Abatacept (Orencia)  
Adalimumab (Humira)  
Anakinra (Kineret)  
Certolizumab pegol (Cimzia)  
Etanercept (Enbrel)  
Golimumab (Simponi)  
Infliximab (Remicade)
Tocilizumab (Actemra)
Tofacitinib (Xeljanz)

**Immunosuppressive Agents**

Azathioprine (Imuran)
Basiliximab (Simulect)
Belatacept (Nulojix)
Cyclosporine (Gengraf, Neoral, Sandimmune)
Daclizumab (Zenapax)
Everolimus (Zortress)
Lymphocyte immune globulin [antithymocyte globulin (ATG)] (Atgam)
Mycophenolate mofetil (CellCept, generic)
Mycophenolic acid (Myfortic, generic)
Sirolimus [rapamycin] (Rapamune)
Steroids, systemic *(See Table 2, p 301)*
Tacrolimus (Prograf, generic)

**MUSCULOSKELETAL AGENTS**

**Antigout Agents**

Allopurinol (Zyloprim, Lopurin, Aloprim)
Colchicine
Febuxostat (Uloric)
Pegloticase (Krystexxa)
Probenecid (Probalan, generic)

**Muscle Relaxants**

Baclofen (Lioresal Intrathecal, Gablofen)
Carisoprodol (Soma)
Chlorzoxazone (Parafon Forte DSC, others)
Cyclobenzaprine (Flexeril)
Cyclobenzaprine, extended-release (Amrix)
Dantrolene (Dantrium, Revonto)
Diazepam (Diastat, Valium)
Metaxalone (Skelaxin)
Methocarbamol (Robaxin, generic)
Orphenadrine (Norflex, generic)

**Neuromuscular Blockers**
Atracurium (Tracrium)
Botulinum toxin type A [incobotulinumtoxinA] (Xeomin)
Botulinum toxin type A [onabotulinumtoxinA] (Botox, Botox Cosmetic)
Botulinum toxin type B [rimabotulinumtoxinB] (Myobloc)
Pancuronium (generic)
Rocuronium (Zemuron, generic)
Succinylcholine (Anectine, Quelicin, generic)
Vecuronium (generic)

Miscellaneous Musculoskeletal Agents
Edrophonium (Enlon)
Leflunomide (Arava)
Methotrexate (Rheumatrex Dose Pack, Trexall, generic)
Sulfasalazine (Azulfidine, Azulfidine EN)
Tizanidine (Zanaflex, generic)

OB/GYN AGENTS

Contraceptives
Copper intrauterine device (IUD) (ParaGard T 380A)
Ethinyl estradiol/norelgestromin (Ortho Evra)
Etonogestrel, implant (Implanon)
Etonogestrel/ethinyl estradiol, vaginal insert (NuvaRing)
Levonorgestrel intrauterine device (IUD) (Mirena)
Medroxyprogesterone (Provera, Depo-Provera, Depo-Sub Q Provera, generic)
Oral contraceptives (See p 217, and Table 5, p 306)

Emergency Contraceptives
Levonorgestrel (Next Choice, Plan B One-Step, generic [OTC])
Ulipristal acetate (Ella)

Estrogen Supplementation

ESTROGEN ONLY
Estradiol, oral (Delestrogen, Estrace, Femtrace, others)
Estradiol, metered gel (Elestrin, Estrogel)
Estradiol, spray (Evamist)
Estradiol, transdermal (Alora, Climara, Estraderm, Vivelle Dot)
Estradiol, vaginal (Estring, Femring, Vagifem)
Estrogen, conjugated (Premarin)
Estrogen, conjugated-synthetic (Cenestin, Enjuvia)
Esterified estrogens (Menest)

**COMBINATION ESTROGEN/PROGESTIN**
- Estradiol/levonorgestrel, transdermal (Climara Pro)
- Estradiol/norethindrone (Activella, generic)
- Estrogen, conjugated/medroxyprogesterone (Prempro, Premphase)

**Vaginal Preparations**
- Amino-Cerv pH 5.5 cream
- Miconazole (Monistat 1 combination pack, Monistat 3, Monistat 7) [OTC], (Monistat-Derm)
- Nystatin (Mycostatin)
- Terconazole (Terazol 3, Terazol 7, generic)
- Tioconazole (generic [OTC])

**Miscellaneous OB/GYN Agents**
- Clomiphene (Clomid)
- Dinoprostone (Cervidil Vaginal Insert, Prepidil Gel, Prostin E2)
- Leuprolide (Lupron)
- Magnesium sulfate (various)
- Medroxyprogesterone (Provera, Depo-Provera, Depo-SubQ Provera)
- Methylergonovine (Methergine)
- Mifepristone [RU 486] (Mifeprex)
- Nafarelin, metered spray (SYNAREL)
- Oxytocin (Pitocin, generic)
- Paroxetine (Brisdelle)
- Terbutaline (generic)
- Tranexamic acid (Lysteda, generic)

**PAIN MEDICATIONS**

**Local/Topical (See also Local Anesthetics Table 1, p 300)**
- Benzocaine (Americaine, Lanacane, Hurricane, various [OTC])
- Benzocaine/antipyrine (Auralgan)
- Bupivacaine (Marcaine)
- Capsaicin (Capsin, Zostrix, others) [OTC]
Cocaine
Dibucaine (Nupercainal)
Lidocaine, lidocaine/epinephrine (Anestacon Topical, Xylocaine, Xylocaine Viscous, Xylocaine MPF, others)
Lidocaine/prilocaine (EMLA, LMX)
Lidocaine/tetracaine, transdermal (Synera)
Mepivacaine (Carbocaine)
Procaine (Novocaine)
Pramoxine (Anusol Ointment, ProctoFoam NS, others)

**Migraine Headache**

Acetaminophen/butalbital, w/ and w/o caffeine (Fioricet, Margesic, Esgic, Dologic Plus, Bupap, Sedapap, Phrenilin)
Almotriptan (Axert)
Aspirin/butalbital/caffeine compound (Fiorinal)
Aspirin/butalbital/caffeine/codeine (Fiorinal w/ Codeine)
Eletriptan (Relpax)
Frovatriptan (Frova)
Naratriptan (Amerge, generic)
Sumatriptan (Alsuma, Imitrex, Imitrex Statdose, Imitrex Nasal Spray, generic)
Sumatriptan/naproxen sodium (Treximet)
Sumatriptan needleless system (Sumavel DosePro)
Zolmitriptan (Zomig, Zomig ZMT, Zomig Nasal)

**Narcotic Analgesics**

Acetaminophen/codeine (Tylenol 2, 3, 4)
Alfentanil (Alfenta)
Buprenorphine (Buprenex)
Buprenorphine/naloxone (Suboxone)
Buprenorphine, transdermal (Butrans)
Butorphanol (Stadol)
Codeine
Fentanyl (Sublimaze)
Fentanyl, transdermal (Duragesic, generic) [C-II]
Fentanyl, transmucosal (Abstral, Actiq, Fentora, Lazanda, Onsolis, generic) [C-II]
Hydrocodone/acetaminophen (Lorcet, Vicodin, Hycet, others)
Hydrocodone/ibuprofen (Vicoprofen, generic) [C-III]
Hydromorphone (Dilaudid, Dilaudid HP, generic) [C-II]
Hydromorphone, extended-release (Exalgo)
Levorphanol (Levo-Dromoran)
Meperidine (Demerol, Meperitab, generic) [C-II]
Methadone (Dolophine, Methadose, generic) [C-II]
Morphine (Avinza XR, Astramorph/PF, Duramorph, Infumorph, MS Contin, Kadian SR, Oramorph SR, Roxanol) [C-II]
Morphine/naltrexone (Embeda)
Nalbuphine (generic)
Oxycodone (OxyContin, Roxicodone, generic) [C-II]
Oxycodone/acetaminophen (Percocet, Tylox)
Oxycodone/aspirin (Percodan)
Oxycodone/ibuprofen (Combunox)
Oxymorphone (Opana, Opana ER) [C-IV]
Propoxyphene (Darvon-N), propoxyphene/acetaminophen (generic), propoxyphene/aspirin (generic) [C-IV]

Nonnarcotic Analgesics

Acetaminophen, injection (Ofirmev)
Acetaminophen, oral [N-acetyl-p-aminophenol (APAP)] (Acephen, Tylenol, others, generic)
Acetaminophen/butalbital/± caffeine (Fioricet, Medigesic, Repan, Sedapap-10, Two-Dyne, Triapin, Axocet, Phrenilin Forte)
Aspirin (Bayer, Ecotrin, St. Joseph’s) [OTC]
Tramadol (Rybix ODT, Ryzolt ER, Ultram, Ultram ER, generic)
Tramadol/acetaminophen (Ultraceat)

Nonsteroidal Anti-inflammatory Drugs (NSAIDs)

Celecoxib (Celebrex)
Diclofenac, oral (Cataflam, Voltaren, Voltaren-XR)
Diclofenac, topical (Flector Patch, Pennsaid, Voltaren gel)
Diclofenac/misoprostol (Arthrotec)
Diflunisal (Dolobid)
Etodolac
Fenoprofen (Nalfon, generic)
Flurbiprofen (Ansaid, Ocufen, generic)
Ibuprofen, oral (Advil, Motrin, Motrin IB, Rufen, others, generic) [OTC]
Ibuprofen, parenteral (Caldolor)
Indomethacin (Indocin, generic)
Ketoprofen (Orudis, Oruvail)
Ketorolac (Toradol)
Ketorolac, nasal (Sprix)
Meloxicam (Mobic, generic)
Nabumetone (Relafen, generic)
Naproxen (Aleve [OTC], Anaprox, Anaprox DS, EC-Naprosyn, Naprelan, Naprosyn, generic)
Naproxen/esomeprazole (Vimovo)
Oxaprozin (Daypro, Daypro ALTA)
Piroxicam (Feldene, generic)
Sulindac (Clinoril, generic)
Tolmetin (generic)

Miscellaneous Pain Medications
Amitriptyline (Elavil)
Clonidine, epidural (Duraclon)
Imipramine (Tofranil)
Pregabalin (Lyrica, generic)
Tapentadol (Nucynta)
Tramadol (Ultram, Ultram ER)
Ziconotide (Prialt)

RESPIRATORY AGENTS

Antitussives, Decongestants, and Expectorants
Acetylcysteine (Acetadote, Mucomyst)
Benzonatate (Tessalon, Zonatuss)
Codeine
Dextromethorphan (Benylin DM, Delsym, Mediquell, PediaCare 1, others) [OTC]
Guaifenesin (Robitussin, others, generic)
Guaifenesin/codeine (Robafen AC, others, generic)
Guaifenesin/dextromethorphan (many OTC bands)
Hydrocodone/homatropine (Hycodan, Hydromet, others, generic) [C-III]
Hydrocodone/pseudoephedrine (Detussin, Histussin-D, others, generic) [C-III]
Potassium iodide (Lugol’s Solution, SSKI)
Pseudoephedrine (Many Mono and Combination Brands [OTC])

Bronchodilators
Albuterol (Proventil, Ventolin, Proair)
Albuterol/ipratropium (Combivent, DuoNeb)
Aminophylline (generic)
Arformoterol (Brovana)
Ephedrine (generic)
Epinephrine (Adrenalin, Sus-Phrine, EpiPen, EpiPen Jr, others)
Formoterol fumarate (Foradil, Perforomist)
**Indacaterol (Arcapta Neohaler)**
Isoproterenol (Isuprel)
Levalbuterol (Xopenex, Xopenex HFA)
Metaproterenol (Alupent, Metaprel)
**Pirbuterol (Maxair, generic)**
Salmeterol (Serevent, Serevent Diskus)
Terbutaline (Brethine, Bricanyl)
Theophylline (Theo24, Theochron, Theolair, generic)

**Respiratory Inhalants**

Acetylcysteine (Acetadote, Mucomyst)
**Beclomethasone (QVAR)**
Beclomethasone, nasal (Beconase AQ)
Budesonide (Rhinocort Aqua, Pulmicort)
**Budesonide/formoterol (Symbicort)**
Ciclesonide, inhaled (Alvesco)
Ciclesonide, nasal (Omnaris, Zettona)
Cromolyn sodium (Intal, NasalCrom, Opticrom, others)
**Fluticasone furoate, nasal (Veramyst)**
Fluticasone propionate, nasal (Flonase, generic)
**Fluticasone propionate, inhaled (Flovent HFA, Flovent Diskus)**
Fluticasone propionate/salmeterol xinafoate (Advair Diskus, Advair HFA)
Formoterol fumarate (Foradil Aerolizer, Perforomist)
**Ipratropium (Atrovent HFA, Atrovent Nasal, generic)**
Mometasone/formoterol (Dulera)
**Mometasone, inhaled (Asmanex Twisthaler)**
Mometasone, nasal (Nasonex)
Olopatadine, nasal (Patanase)
**Phenylephrine, nasal (Neo-Synephrine Nasal [OTC])**
**Roflumilast (Daliresp)**
Tiotropium (Spiriva)
**Tobramycin, inhalation (TOBI, TOBI Podhaler)**
Triamcinolone (Azmacort)

**Surfactants**
Beractant (Survanta)
Calfactant (Infasurf)
Lucinactant (Surfaxin)

Miscellaneous Respiratory Agents
Alpha-1-protease inhibitor (Glassia, Prolastin C)
Aztreonam, inhaled
Dornase alfa (Pulmozyme, DNase)
Mannitol, inhalation (Aridol)
Montelukast (Singulair)
Omalizumab (Xolair)
Tadalafil (Adcirca)
Zafirlukast (Accolate, generic)
Zileuton (Zyflo, Zyflo CR)

UROGENITAL SYSTEM

Benign Prostatic Hyperplasia
Alfuzosin (Uroxatral)
Doxazosin (Cardura, Cardura XL)
Dutasteride (Avodart)
Dutasteride and tamsulosin (Jalyn)
Finasteride (Proscar, generic)
Silodosin (Rapaflo)
Tamsulosin (Flomax, generic)
Terazosin (Hytrin, generic)

Bladder Agents
Belladonna/opium, suppositories (B&O) (generic)
Bethanechol (Urecholine)
Butabarbital/hyoscyamine/phenazopyridine (Pyridium Plus)
Darifenacin (Enablex)
Fesoterodine (Toviaz)
Flavoxate (generic)
Hyoscyamine (Anaspaz, Cystospaz, Levsin)
Hyoscyamine, atropine, scopolamine/phenobarbital (Donnatal, others, generic)
Methenamine hippurate (Hiprex), methenamine mandelate (Urex, Uroquid-Acid No. 2)
Mirabegron (Myrbetriq)
Oxybutynin (Ditropan, Ditropan XL, generic)
Oxybutynin transdermal system (Oxytrol)
Oxybutynin, topical (Gelnique)
Phenazopyridine (Pyridium, Azo-Standard, Urogesic, many others [OTC])
Solifenacin (VESIcare)
Tolterodine (Detrol, Detrol LA, generic)
Trospium (Sanctura, Sanctura XR, generic)

**Erectile Dysfunction**
Alprostadil, intracavernosal (Caverject, Edex)
Alprostadil, urethral suppository (Muse)
Avandafil (Stendra)
Sildenafil (Viagra, Revatio)
Tadalafil (Cialis)
Vardenafil (Levitra, Stayx)
Yohimbine (Yocon, Yohimex)

**Urolithiasis**
Potassium citrate (Urocit-K, generic)
Sodium citrate/citric acid (Bicitra, Oracit)

**Miscellaneous Urology Agents**
Ammonium aluminum sulfate (Alum [OTC])
BCG [Bacillus Calmette-Guérin] (TheraCys, Tice BCG)
Dimethyl sulfoxide [DMSO] (Rimso-50)
Methenamine, phenyl salicylate, methylene blue, benzoic acid, hyoscyamine (Prosed)
Neomycin/polyoxymyxin bladder irrigant (Neosporin GU Irrigant)
Nitrofurantoin (Furadantin, Macrobid, Macrodantin, generic)
Pentosan polysulfate sodium (Elmiron)
Trimethoprim (Trimpex, Proloprim)

**VACCINES/SERUMS/TOXOIDS**
Cytomegalovirus immune globulin [CMV-IG IV] (CytoGam)
Diphtheria & tetanus toxoids (Td) (Decavac, Tenivac for > 7 y)
Diphtheria/tetanus toxoids [DT] (generic only, for < 7 y)
Diphtheria/tetanus toxoids/acellular pertussis, adsorbed [DTaP; for < 7 y] (Daptacel, Infanrix, Tripedia)
Diphtheria/tetanus toxoids/acellular pertussis, adsorbed [Tdap; for > 10–11 y] (Boosters: Adacel, Boostrix)
Diphtheria/tetanus toxoids/acellular pertussis, adsorbed/inactivated poliovirus vaccine
[IPV]/Haemophilus b conjugate vaccine combined (Pentacel)
Diphtheria/tetanus toxoids/acellular pertussis, adsorbed, hepatitis B [recombinant], and inactivated poliovirus vaccine [IPV] combined (Pediarix)
Haemophilus b conjugate vaccine (ActHIB, HibTITER, PedvaxHIB, others)
Hepatitis A [inactivated] and hepatitis B [recombinant] vaccine (Twinrix)
Hepatitis A vaccine (Havrix, Vaqta)
Hepatitis B immune globulin (HyperHep B, HepaGam B, Nabi-HB, H-BIG)
Hepatitis B vaccine (Engerix-B, Recombivax HB)
Human papillomavirus recombinant vaccine (Cervarix [types 16, 18], Gardasil [types 6, 11, 16, 18])
Immune globulin, IV (Gamimmune N, Gammaplex, Gammar IV, Sandoglobulin, others)
Immune globulin, subcutaneous (Vivaglobin)
Influenza vaccine, inactivated, trivalent (IIV3) (Afluria, Fluarix, Flucelvax, FluLaval, Fluvirin, Fluzone, Fluzone High Dose, Fluzone Intradermal)
Influenza vaccine, inactivated, quadrivalent (IIV4) (Fluarix Quadrivalent, Fluzone Quadrivalent)
Influenza vaccine, live-attenuated, quadrivalent (LAIV4) (FluMist)
Influenza vaccine, recombinant, trivalent (RIV3) (FluBlok)
Measles/mumps/rubella vaccine, live [MMR] (M-M-R II)
Measles/mumps/rubella/varicella virus vaccine, live [MMRV] (ProQuad)
Meningococcal conjugate vaccine [quadrivalent, MCV4] (Menactra, Menveo)
Meningococcal groups C and Y and Haemophilus b tetanus toxoid conjugate vaccine (Menhibrix)
Meningococcal polysaccharide vaccine [MPSV4] (Menomune A/C/Y/W-135)
Pneumococcal 13-valent conjugate vaccine (Prevnar 13)
Pneumococcal vaccine, polyvalent (Pneumovax-23)
Rotavirus vaccine, live, oral, monovalent (Rotarix)
Rotavirus vaccine, live, oral, pentavalent (RotaTeq)
Smallpox vaccine (ACAM2000)
Tetanus immune globulin (generic)
Tetanus toxoid (TT) (generic)
Varicella immune globulin (VarZIG)
Varicella virus vaccine (Varivax)
Zoster vaccine, live (Zostavax)

WOUND CARE
Becaplermin (Regranex Gel)

MISCELLANEOUS THERAPEUTIC AGENTS
Acamprosate (Campral)
Alglucosidase alfa (Lumizyme, Myozyme)
C1 esterase inhibitor [human] (Berinert, Cinryze)
Cilostazol (Pletal)
Dextrose 50%/25%
Ecallantide (Kalbitor)
Eculizumab (Soliris)
Ivacaftor (Kalydeco)
Ketamine (Ketalar, generic) [C-III]
Lanthanum carbonate (Fosrenol)
Mecasermin (Increlex)
Megestrol acetate (Megace, Megace-ES, generic)
Methylene blue (Uroline Blue, various)
Naltrexone (ReVia, Vivitrol, generic)
Nicotine, gum (Nicorette, others)
Nicotine, nasal spray (Nicotrol NS)
Nicotine, transdermal (Habitrol, NicoDerm CQ [OTC], others)
Palifermin (Kepivance)
Potassium iodide (Lugol’s Solution, SSKI, Thyro-Block, ThyroSafe, ThyroShield) [OTC]
Sevelamer carbonate (Renvela)
Sevelamer hydrochloride (Renagel)
Sodium polystyrene sulfonate (Kayexalate, Kionex, generic)
Talc (Sterile Talc Powder)
Taliglucerase alfa (Elelyso)
Varenicline (Chantix)

NATURAL AND HERBAL AGENTS

Black cohosh
Chamomile
Cranberry (*Vaccinium macrocarpon*)
Dong quai (*Angelica polymorpha, sinensis*)
Echinacea (*Echinacea purpurea*)
Ephedra/ma huang
Evening primrose oil
Feverfew (*Tanacetum parthenium*)
Fish oil supplements (omega-3 polyunsaturated fatty acid)
Garlic (*Allium sativum*)
Ginger (*Zingiber officinale*)
Ginkgo biloba
Ginseng
Glucosamine sulfate (chitosamine) and chondroitin sulfate
Kava kava (kava kava root extract, *Piper methysticum*)
Melatonin
Milk thistle (*Silybum marianum*)
Red yeast rice
Resveratrol
Saw palmetto (*Serenoa repens*)
St. John’s wort (*Hypericum perforatum*)
Valerian (*Valeriana officinalis*)
Yohimbine (*Pausinystalia yohimbe*) (Yocon, Yohimex)
Abacavir (Ziagen) **BOX:** Allergy (fever, rash, fatigue, GI, resp) reported; stop drug immediately & do not rechallenge; lactic acidosis & hepatomegaly/steatosis reported **Uses:** *HIV Infxn in combo w/ other antiretrovirals* **Acts:** NRTI **Dose:** Adults. 300 mg PO bid or 600 mg PO daily **Peds.** 8 mg/kg bid 16–20 mg/kg daily (stable CD$, undetect VRL) 300 mg bid max w/ **P:** [C, –] CDC rec: HIV-infected mothers not breast-feed (transmission risk) **Disp:** Tabs 300 mg; soln 20 mg/mL **CI:**: Mod–severe hepatic impair hypersens **SE:**: See Box, ↑ LFTs, fat redistribution, N, V, HA, chills **Notes:** Many drug interactions; HLA-B*5701 ↑ risk for fatal hypersens Rxn, genetic screen before use

Abatacept (Orencia) **Uses:** *Mod–severe RAs, juvenile idiopathic arthritis* **Acts:** Selective costimulation modulator, ↓ T-cell activation **Dose:** Adults. Initial 500 mg (< 60 kg), 750 mg (60–100 kg); 1 g (> 100 kg) IV over 30 min; repeat at 2 and 4 wk, then q4wk; SQ regimen: after IV dose, 125 mg SQ w/ in 24 h of Inf, then 125 SQ weekly **Peds 6–17 y.** 10 mg/kg (< 75 kg), 750 mg (75–100 kg), IV over 30 min; repeat at 2 and 4 wk then q4wk (> 100 kg, adult dose) w/ **P:** [C; ?/–] w/ TNF blockers, anakinra; COPD; Hx predisposition to Infxn; w/ immunosuppressants **CI:**: w/ Live vaccines w/ in 3 mo of D/C abatacept **Disp:** IV soln 125 mg/mL **SE:**: HA, URI, N, nasopharyngitis, Inf Rxns/hypersens (dizziness, HA, HTN), COPD exacerbations, cough, dyspnea **Notes:** Screen for TB before use

Abciximab (ReoPro) **Uses:** *Prevent acute ischemic comps in PCP*, MI **Acts:** ↓ Plt aggregation (glycoprotein IIb/IIIa inhib) **Dose:** **ECC 2010.** ACS w/ immediate PCI: 0.25 mg/kg IV bolus 10–60 min before PCI, then 0.125 mcg/kg/min max 10 mcg/min IV for 12 h; w/ heparin. ACS w/ planned PCI w/ in 24 h: 0.25 mg/kg IV bolus, then 10 mcg/min IV over 18–24 h concluding 1 h post-PCI; **PCI:** 0.25 mcg/kg bolus 10–60 min pre-PTCA, then 0.125 mcg/kg/min (max = 10 mcg/min) cont Inf for 12 h w/ **P:** [C, ?/–] **CI:** Active/recent (w/ in 6 wk) internal hemorrhage, CVA w/ in 2 y or CVA w/ sig neuro deficit, bleeding diathesis or PO anticoagulants w/ in 7 d (unless PT < 1.2 × control), ↓ plt (< 100,000 cells/mcL), recent trauma or major surgery (w/ in 6 wk), CNS tumor, AVM, aneurysm, severe uncontrolled HTN, vasculitis, dextran use w/ PTCA, murine protein allergy, w/ other glycoprotein IIb/IIIa inhib **Disp:** Inj 2 mg/mL **SE:** Back pain, ↓ BP, CP, allergic Rxns, bleeding, ↓ plt **Notes:** Use w/ heparin/ASA

Abiraterone (Zytiga) **Uses:** *Castrate-resistant metastatic PCa* **Acts:** CYP17 inhibitor; ↓ testosterone precursors **Dose:** 1000 mg PO qd w/ 5 mg prednisone bid; w/ food 2 h ac and 1 h pc; ↓ w/ hepatic impair w/ **P:** [X, N/A] w/ Severe CHF, monitor for adrenocortical Insuff/excess, w/ CYP2D6 substrate/CYP3A4 inhib or inducers **CI:**: PRG **Disp:** Tabs 250 mg **SE:**: ↑ LFTs, jt swell, ↑ TG, ↓ K+, ↓ PO₄⁻³ edema, muscle pain, hot flush, D, UTI, cough, ↑ BP, ↑ URI, urinary frequency, dyspepsia **Notes:** LFTs, K⁺; CYP17 inhib may ↑ mineralocorticoid SEs; prednisone ↓ ACTH limiting SEs
Acamprosate (Campral) Uses: *Maintain abstinence from EtOH* Acts: ↓ Glutamatergic transmission; ↓ NMDA receptors; related to GABA Dose: 666 mg PO tid; CrCl 30–50 mL/min: 333 mg PO tid w/ P: [C; ?/–] CI: CrCl < 30 mL/min Disp: Tabs 333 mg EC SE: N/D, depression, anxiety, insomnia Notes: Does not eliminate EtOH withdrawal Sx; continue even if relapse occurs

Acarbose (Precose) Uses: *Type 2 DM* Acts: α-Glucosidase inhib; delays carbohydrate digestion to ↓ glucose Dose: 25–100 mg PO tid w/ 1st bite each meal; 50 mg tid (< 60 kg); 100 mg tid (> 60 kg); usual maint 50–100 mg PO tid w/ P: [B, ] w/ Scr > 2 mg/dL; can affect digoxin levels CI: IBD, colonic ulceration, partial intestinal obst; cirrhosis Disp: Tabs 25, 50, 100 mg SE: N/D, depression, anxiety, insomnia, ↑ LFTs, hypersens Rxn Notes: OK w/ sulfonylureas; LFTs q3mo for 1st y

Acebutolol (Sectral) Uses: *HTN, arrhythmias* chronic stable angina Acts: Blocks β-adrenergic receptors, β₁, & ISA Dose: HTN: 400–800 mg/d 2 ÷ doses Arrhythmia: 400–1200 mg/d 2 ÷ doses; ↓ 50% w/ CrCl < 50 mL/min, elderly; max 800 mg/d ↓ 75% w/ CrCl < 25 mL/min; max 400 mg/d w/ P: [B, + M] Can exacerbate ischemic heart Dz, do not D/C abruptly CI: 2nd-/3rd-degree heart block, cardiac failure, cardiogenic shock Disp: Caps 200, 400 mg SE: Fatigue, HA, dizziness, ↓ HR

Acetaminophen [APAP, N-acetyl-p-Aminophenol] (Acephen, Ofirmev, IV [Rx], TYLENOL, Other Generic) [OTC] Uses: *Mild–mod pain, HA, fever* Acts: Nonnarcotic analgesic; ↓ CNS synth of prostaglandins & hypothalamic heat-regulating center Dose: Adults. 650 mg PO or PR q4–6h or 1000 mg PO q6h; max 3 g/24 h Peds < 12 y. 10–15 mg/kg/dose PO or PR q4–6h; max 5 doses/24 h. Administer q6h if CrCl 10–50 mL/min & q8h if CrCl < 10 mL/min w/ P: [C, +] w/ Hepatic/renal impair in elderly & w/ EtOH use (> 3 drinks/d) w/ > 4 g/d; EtOH liver Dz, G6PD deficiency; w/ warfarin CI: Hypersens Disp: Caps 80, 160, 125, 325, 650 mg SE: hepatotoxic; OD hepatotoxic at 10 g; 15 g can be lethal; Rx w/ N-acetylcysteine Notes: No anti-inflammatory or plt-inhibiting action; avoid EtOH risk of liver injury primarily occurs when pts take multiple products containing acetaminophen at one time and exceed the current max dose of 3000 mg within a 24-h period; FDA has requested that all APAP-containing meds be max of 325 mg to limit tox, and change OTC liquids to uniform conc 160 mg/5 mL

Acetaminophen, Injection (Ofirmev) Uses: *Mild–mod pain, fever* Acts: Nonnarcotic analgesic; CNS synth of prostaglandins & hypothalamic heat-regulating center Dose: Adults & Peds > 50 kg. 1000 mg q6h or 650 mg q4h IV; 4000 mg max/d. < 50 kg: 15 mg/kg q6h or 12.5 mg/kg q4h, 75 mg/kg/d max. Peds ≥ 2–12 y: 15 mg/kg q6h or 12.5 mg/kg q4h IV, 75 mg/kg/d max. Min. interval of 4 h w/ P: [C, +] Excess dose can cause hepatic injury; caution w/ liver Dz, alcoholism, malnutrition, hypovolemia, CrCl < 30 g/min CI: Hypersens to components, severe/active liver Dz Disp: IV 1000 mg (10 mg/mL) SE: N/V, HA, insomnia (adults); N/V, constipation, pruritus, agitation, atelectasis (peds) Notes: Min. dosing interval 4 h; infuse over 15 min. No anti-inflammatory or plt-inhibiting action

Acetaminophen + Butalbital ± Caffeine (Fioricet, Margesic, Esgic, Repan, Sedapap, Dolgic Plus, Bupap, Phrenilin Forte) [C-III] Uses: *Tension HA*, mild pain Acts: Nonnarcotic analgesic w/ barbiturate Dose: 1–2 tabs or caps PO q4–6h PRN; ↓ in renal/hepatic impair; 3 g/24 h APAP max w/ P: [C, ?/–] Alcoholic liver Dz, G6PD deficiency CI: Hypersens Disp: Caps Dolgic Plus: ↑ butalbital 50 mg, caffeine 40 mg, APAP 750 mg; Caps Margesic, Esgic: butalbital 50 mg, caffeine 40 mg,
Acetaminophen + Codeine (Tylenol No. 2, 3, and 4) [C-III, C-V] Uses: *Mild–mod pain (No. 2–3); mod–severe pain (No. 4)* Acts: Combined APAP & narcotic analgesic Dose: Adults. 1–2 tabs q4–6h PRN or 30–60 mg/codeine q4–6h based on codeine content (max dose APAP = 4 g/d). Peds. APAP 10–15 mg/kg/dose; codeine 0.5–1 mg/kg dose q4–6h (guide: 3–6 y, 5 mL/dose; 7–12 y, 10 mL/dose) max 2.6 g/d if < 12 y; ↓ in renal/hepatic impair w/ P: [C, ?] Alcoholic liver Dz; G6PD deficiency CI: Hypersens Disp: Tabs 300 mg APAP + codeine (No. 2 = 15 mg, No. 3 = 30 mg, No. 4 = 60 mg); susp (C-V) APAP 120 mg + codeine 12 mg/5 mL SE: Drowsiness, dizziness, N/V Notes: See Acetaminophen note p 36

Acetazolamide (Diamox) Uses: *Diuresis, drug and CHF edema, glaucoma, prevent high-altitude sickness, refractory epilepsy*, metabolic alkalosis, resp stimulant in COPD Acts: Carbonic anhydrase inhib; ↓ renal excretion of hydrogen & ↑ renal excretion of Na⁺, K⁺, HCO₃⁻, & H₂O Dose: Adults. Diuretic: 250–375 mg IV or PO q24h Glaucoma: 250–1000 mg PO q24h in ÷ doses Epilepsy: 8–30 mg/kg/d PO in ÷ doses Altitude sickness: 500–1000 mg/d ÷ dose q8–12h or SR q12–24h start 24 h before & 48–72 h after highest ascent Metabolic alkalosis: 500 mg IV × 1 Resp stimulant: 25 mg bid Peds. Epilepsy: 8–30 mg/kg/24 h PO in ÷ doses; max 1 g/d Diuretic: 5 mg/kg/24 h PO or IV Alkalization of urine: 5 mg/kg/dose PO bid-tid Glaucoma: 8–30 mg/kg/24 h PO in 3 ÷ doses; max 1 g/d; ↓ dose w/ CrCl 10–50 mL/min; avoid if CrCl < 10 mL/min w/ P: [C, +/–] CI: Renal/hepatic/adrenal failure, sulfa allergy, hyperchloremic acidosis Disp: Tabs 125, 250 mg; ER caps 500 mg; Inj 500 mg/vial, powder for recons SE: Malaise, metallic taste, drowsiness, photosens, hyperglycemia Notes: Follow Na⁺ & K⁺; watch for metabolic acidosis; CBC & plts; SR forms not for epilepsy

Acetic Acid & Aluminum Acetate (Otic Domeboro) Uses: *Otitis externa* Acts: Anti-infective Dose: 4–6 gtt in ear(s) q2–3h w/ P: [C, ?] CI: Perfo-rated tympanic membranes Disp: 2% otic soln SE: Local irritation

Acetylcysteine (Acetadote, Mucomyst) Uses: *Mucolytic, antidote to APAP hepatotox/OD*, adjuvant Rx chronic bronchopulmonary Dzs & CF* prevent contrast-induced renal dysfunction Acts: Splits mucoprotein disulfide linkages; restores glutathione in APAP OD to protect liver Dose: Adults & Peds. Nebulizer: 3–5 mL of 20% soln diluted w/ equal vol of H₂O or NS tid-qid Antidote: PO or NG: 140 mg/kg load, then 70 mg/kg q4h × 17 doses (dilute 1:3 in carbonated beverage or OJ), repeat if emesis w/ in 1 h of dosing Acetadote: 150 mg/kg IV over 60 min, then 50 mg/kg over 4 h, then 100 mg/kg over 16 h Prevent renal dysfunction: 600–1200 mg PO bid × 2 d w/ P: [B, ?] Disp: Soln, inhaled and oral 10%, 20%; Acetadote IV soln 20% SE: Bronchospasm (inhaled), N/V, drowsiness, anaphylactoid Rxns w/ IV Notes: Activated charcoal adsorbs PO acetylcysteine for APAP ingestion; start Rx for APAP OD w/ in 6–8 h

Acitretin (Soriatane) BOX: Not to be used by females who are PRG or who intend to become PRG during/for 3 y following drug D/C; no EtOH during/2 mo following D/C; no blood donation for 3 y
following D/C; hepatotoxic Uses: *Severe psoriasis*; other keratinization Dz (lichen planus, etc)

**Acts:** Retinoid-like activity **Dose:** 25–50 mg/d PO, w/ main meal; w/ P: [X, ?/–] Renal/hepatic impair; in women of reproductive potential **CI:** See Box; ↑ serum lipids; w/ MTX or tetracyclines

**Disp:** Caps 10, 17.5, 25 mg **SE:** Hyperesthesia, cheilitis, skin peeling, alopecia, pruritus, rash, arthralgia, GI upset, photosens, thrombocytosis, ↑ triglycerides, ↑ Na⁺, K⁺, PO₄⁻² **Notes:** ✓

**LFTs/lytes/lipids; response takes up to 2–3 mo; informed consent & FDA guide w/ each Rx required**

**Aclidinium Bromide (Tudorza Pressair) Uses:** *Bronchospasm w/ COPD* **Acts:** LA anticholinergic, blocks ACH receptors **Dose:** 400 mcg/inhal, 1 inhal bid **w/ P:** [C, ?] w/ Atropine hypersens, NAG, BPH, or MG; avoid w/ milk allergy **CI:** None **Disp:** Inhal powder, 30/60 doses

**SE:** HA, D, nasopharyngitis, cough **Notes:** Not for acute exacerbation; lactose in powder, avoid w/ milk allergy; OK w/ renal impair

**Acyclovir (Zovirax) Uses:** *Herpes simplex (HSV) (genital/mucocutaneous, encephalitis, keratitis), Varicella zoster, Herpes zoster (shingles) Infxns* **Acts:** Interferes w/ viral DNA synth **Dose:** Adults. **Dose on IBW if obese (> 125% IBW) PO:**

- **Initial genital HSV:** 200 mg PO q4h while awake (5 caps/d) × 10 d or 400 mg PO tid × 7–10 d
- **Chronic HSV suppression:** 400 mg PO bid

- **Intermittent HSV Rx:** As initial, except Rx × 5 d, or 800 mg PO bid, at prodrome **Topical:** Initial herpes genitalis: Apply q3h (6×/d) for 7 d

- **HSV encephalitis:** 10 mg/kg IV q8h × 10 d

- **Herpes zoster:** 800 mg PO 5×/d for 7–10 d

- **IV:** 10 mg/kg/dose IV q8h × 5–7 d

**Children:** 3 mo–12 y:

- **60 mg/kg/d IV ÷ q8h × 14–21 d**

- **10 mg/kg/dose IV qid × 5 d**

- **20 mg/kg/dose PO qid × 5 d** Shingles: < 12 y: 30 mg/kg/d PO or 1500 mg/m²/d IV ÷ q8h × 7–10 d; ↓ w/ CrCl < 50 mL/min **w/ P:** [B, +] **CI:** Component hypersens

**Disp:** Caps 200 mg; tabs 400, 800 mg; susp 200 mg/5 mL; Inj 500 & 1000 mg/vial; Inj soln, 50 mg/mL oint 5% and cream 5% **SE:** Dizziness, lethargy, malaise, confusion, rash, IV site inflammation; transient ↑ Cr/BUN

**Notes:** PO better than topical for herpes genitalis

**Adalimumab (Humira) BOX:** Cases of TB have been observed; ✓ TB skin test prior to use; hep B reactivation possible, invasive fungal, and other opportunistic Infxns reported; lymphoma/other CA possible in children/adolescents **Uses:** *Mod–severe RA w/ an inadequate response to one or more DMARDs, psoriatic arthritis (PA), juvenile idiopathic arthritis (JIA), plaque psoriasis, ankylosing spondylitis (AS), Crohn Dz, ulcerative colitis* **Acts:** TNF-α inhib **Dose:** RA, PA, AS: 40 mg SQ q other wk; may ↑ 40 mg qwk if not on MTX. JIA 15–30 kg 20 mg q other wk

- **Crohn Dz/ulcerative colitis:** 160 mg d 1, 80 mg 2 wk later, then 2 wk later start maint 40 mg q other wk **w/ P:** [B, ?/–] See Box; do not use w/ live vaccines **CI:** None **Disp:** Prefilled 0.4 mL (20 mg) & 0.8 mL (40 mg) syringe

**SE:** Inj site Rxns, HA, rash, ↑ CHF, anaphylaxis, pancytopenia ( aplastic anemia) demyelinating Dz, new onset psoriasis **Notes:** Refrigerate prefilled syringe, rotate Inj sites, OK w/ other DMARDs

**Adapalene (Differin) Uses:** *Acne vulgaris* **Acts:** Retinoid-like, modulates cell differentiation/keratinization/inflammation **Dose:** Adults & Peds > 12 y. Apply 1×/d to clean/dry skin QHS w/ P: [C, ?/–] products w/ sulfur/resorcinol/salicylic acid ↑ irritation **CI:** Component hypersens

**Disp:** Top lotion, gel, cream 0.1%; gel 0.3% **SE:** Skin redness, dryness, burning, stinging, scaling, itching, sunburn **Notes:** Avoid exposure to sunlight/sunlamps; wear sunscreen

**Adapalene & Benzoyl Peroxide (Epideru) Uses:** *Acne vulgaris* **Acts:** Retinoid-like, modulates cell differentiation, keratinization, and inflammation w/ antibacterial **Dose:** Adults & Peds > 12 y.
Apply 1 × daily to clean/dry skin w/ P: [C, ?/–] Bleaching effects, photosensitivity CI: Component hypersens Disp: Topical gel: adapalene 0.1% and benzoyl peroxide 2.5% (45g) SE: Local irritation, dryness Notes: Vit A may ↑ SE

Adefovir (Hepsera) BOX: Acute exacerbations of hep B seen after D/C Rx (monitor LFTs); nephrotoxic w/ underlying renal impair w/ chronic use (monitor renal Fxn); HIV resistance/untreated may emerge; lactic acidosis & severe hepatomegaly w/ steatosis reported Uses: *Chronic active hep B* Acts: Nucleotide analog Dose: CrCl > 50 mL/min: 10 mg PO daily; CrCl 20–49 mL/min: 10 mg PO q48h; CrCl 10–19 mL/min: 10 mg PO q72h; HD: 10 mg PO q7d postdialysis; w/ P: [C, ?/–] Disp: Tabs 10 mg SE: Asthenia, HA, D, hematuria Abd pain; see Box Notes: *HIV status before use

Adenosine Adenosine (Adenocard, Adenoscan) Uses: Adenocard *PSVT*; including w/ WPW; Adenoscan (pharmacologic stress testing) Acts: Class IV anti-arrhythmic; slows AV node conduction Dose: Stress test. 140 mcg/kg/min × 6 min cont Inf Adults. ECC 2010. 6-mg rapid IV push, then 20-mL NS bolus. Elevate extremity; repeat 12 mg in 1–2 min PRN Peds. ECC 2010. Symptomatic SVT: 0.1 mg/kg rapid IV/IO push (max dose 6 mg); can follow w/ 0.2 mg/kg rapid IV/IO push (max dose 12 mg); follow each dose w/ ≥ 5 mL NS flush w/ P: [C, ?] Hx bronchospasm CI: 2nd-/3rd-degree AV block or SSS (w/ o pacemaker); Afib/flutter w/ WPW, V tachycardia, recent MI or CNS bleed, asthma Disp: Inj 3 mg/mL SE: Facial flushing, HA, dyspnea, chest pressure, ↓ BP, pro-arrhythmic Notes: Doses > 12 mg not OK; can cause momentary asystole w/ use; caffeine, theophylline antagonize effects

Aflibercept (Eylea) Uses: *Neovascular age-related macular degeneration* Acts: Binds VGEF-A & placental growth factor; ↓ neovascularization & vascular permeability Dose: Adults. 2 mg (0.05 mL) intravitreal Inj q4wk × 3 mo, then q8wk w/ P: [C, ?] may cause endophthalmitis or retinal detachment CI: Ocular or periocular Infxn, active intraocular inflammation, hypersens Disp: Inj 40 mg/mL/vial SE: Blurred vision, eye pain, conjunctival hemorrhage, cataract, ↑ IOP, vitreous detachment, floaters, arterial thrombosis Notes: For ophthalmic intravit-real Inj only

Albumin (Albuked, Albuminar 20, AlbuRx 25, Albutein, Buminate, Kedbumin, Plasbumin) Uses: *Plasma vol expansion for shock (eg, burns, hemorrhage),* others based on specific product label: ovarian hyperstimulation synd, CABG support, hypoalbuminemia Acts: ↑ intravascular oncotic pressure Dose: Adults. Initial 25 g IV; then based on response; 250 g/48 h max Peds. 0.5–1 g/kg/dose; max 6 g/kg/d w/ P: [C, ?] Severe anemia; cardiac, renal, or hepatic Insuff d/t protein load & hypervolemia avoid 25% albumin in pre-term infants CI: CHF, severe anemia Disp: Soln 5%, vials 20%, 25% SE: Chills, fever, CHF, tachycardia, ↑↓ BP, hypervolemia Notes: Contains 130–160 mEq Na+/L; may cause pulm edema; max Inf rates: 25% vial: 2–3 mL/min; 5% soln: 5–10 mL/min

Albuterol (Proventil, Ventolin, ProAir) Uses: *Asthma, COPD, prevent exercise-induced bronchospasm* Acts: β-Adrenergic sympathomimetic bronchodilator; relaxes bronchial smooth muscle Dose: Adults. Inhaler: 2 Inh q4–6h PRN; q4–6h PO: 2–4 mg PO tid-qid Nebulizer: 1.25–5 mg (0.25–1 mL of 0.5% soln in 2–3 mL of NS) q4–8h PRN Prevent exercise-induced asthma: 2 puffs 5–30 min prior to activity Peds. Inhaler: 2 Inh q4–6h PO: 0.1–0.2 mg/kg/dose PO; max 2–4 mg PO tid Nebulizer: 0.63–5 mg in 2–3 mL of NS q4–8h PRN w/ P: [C, ?] Disp: Tabs 2, 4 mg; XR tabs 4, 8 mg; syrup 2 mg/5 mL; 90 mcg/dose metered-dose inhaler; soln for nebulizer 0.083, 0.5% SE: Palpitations, tachycardia, nervousness, GI upset

Albuterol & Ipratropium (Combivent, DuoNeb) Uses: *COPD* Acts: Combo of β-adrenergic
Bronchodilator & quaternary anticholinergic **Dose**: 2 inh qid; nebulizer 3 mL q6h; max 3 mL q4h w/ **P**: [C, ?] **CI**: Peanut/soybean allergy **Disp**: Metered-dose inhaler, 18 mcg ipratropium & 90 mcg albuterol/puff (contains ozone-depleting CFCs; will be gradually removed from US market); nebulization soln (DuoNeb) ipratropium 0.5 mg & albuterol 2.5 mg/3 mL **SE**: Palpitations, tachycardia, nervousness, GI upset, dizziness, blurred vision

**Alcalfadine (Lastacaft)** Uses: *Allergic conjunctivitis* **Acts**: Histamine H₁-receptor antag **Dose**: 1 gtt in eye(s) daily w/ **P**: [B, ?] **Disp**: Ophth soln 0.25% **SE**: Eye irritation **Notes**: Remove contacts before use

**Aldesleukin [IL-2] (Proleukin)** BOX: Restrict to pts w/ nl cardiac/pulmonary Fxns as defined by formal testing. Caution w/ Hx of cardiac/pulmonary Dz. Administer in hospital setting w/ physician experienced w/ anticancer agents. Assoc w/ capillary leak syndrome (CLS) characterized by ↓ BP and organ perfusion w/ potential for cardiac/respiratory tox, GI bleed/infarction, renal insufficiency, edema, and mental status changes. Increased risk of sepsis and bacterial endocarditis. Treat bacterial Infxn before use. Pts w/ central lines are at ↑ risk for Infxn. Prophylaxis w/ oxacillin, nafcillin, ciprofloxacin, or vancomycin may reduce staphylococcal Infxn. Hold w/ mod–severe severe lethargy or somnolence; continued use may result in coma **Uses**: *Met RCC & melanoma* **Acts**: Acts via IL-2 receptor; many immunomodulatory effects **Dose**: 600,000 Int units/kg q8h × max 14 doses d 1–5 and d 15–19 of 28-d cycle (FDA-dose/schedule for RCC); other schedules (eg, “high dose” 720,000 Int units/kg IV q8h up to 12 doses, repeat 10–15 d later) w/ **P**: [C, ?/--] **CI**: Organ allografts; abnormal thallium stress test or PFT **Disp**: Powder for recons 22 × 10⁶ Int units, when reconstituted 18 mill Int units/mL = 1.1 mg/mL **SE**: Flu-like synd (malaise, fever, chills), N/V/D, ↑ bili; capillary leak synd; ↓ BP, tachycardia, pulm & periph edema, fluid retention, & Wt gain; renal & mild hematologic tox (↓ Hgb, plt, WBC), eosinophilia; cardiac tox (isch emia, atrial arrhythmias); neurotox (CNS depression, somnolence, delirium, rare coma); pruritic rashes, urticaria, & erythroderma common

**Alefacept (Amevive)** Uses: *Mod-severe chronic plaque psoriasis* **Acts**: Binds CD2, ↓ T-lymphocyte activation **Dose**: 7.5 mg IV or 15 mg IM once/wk × 12 wk; may repeat course 12 wk later if CD4 OK w/ **P**: [B, ?/] **PRG registry; associated w/ serious Infxn; √ CD4 before each dose; w/ hold if < 250; D/C if < 250 × 1 mo **CI**: HIV **Disp**: 15-mg powder vial **SE**: Pharyngitis, myalgia, Inj site Rxn, malignancy, Infxn, ↑ LFT (monitor for liver damage) **Notes**: Immunizations up to date before use

**Alemtuzumab (Campath relaunch as Lemtrada)** BOX: Serious, including fatal, cytopenias, Inf Rxns, and Infxns can occur; limit dose to 30 mg (single) & 90 mg (weekly), higher doses ↑ risk of pancytopenia; ↑ dose gradually & monitor during Inf, D/C for Grade 3 or 4 Inf Rxns; give prophylaxis for PCP & herpes virus Infxn **Uses**: *B-cell CLL* **Acts**: CD52-directed cytolytic Ab **Dose**: Adults. 3 mg d 1, then ↑ dose to 30 mg/d IV 3x/wk for 12 wk (see label for escalation strategy); infuse over 2 h; premedicate w/ oral antihistamine & APAP w/ **P**: [C, ?/–] Do not give live vaccines; D/C for autoimmune/severe hematologic Rxns **Disp**: Inj 30 mq/mL (1 mL) **SE**: Cytopenias, Infxns, Inf Rxns, ↓/↑ BP, Inj site Rxn N/V/D, insomnia, anxiety **Notes**: √ CBC & plt weekly & CD4 counts after Rx until > 200 cells/μL

**Alendronate (Fosamax, Fosamax Plus D)** Uses: *Rx & prevent osteoporosis male & postmenopausal female, Rx steroid-induced osteoporosis, Paget Dz* **Acts**: ↓ Nl & abnormal bone resorption, ↓ osteoclast action **Dose**: **Osteoporosis**: Rx: 10 mg/d PO or 70 mg qwk; Fosamax plus D 1 tab qwk **Steroid-induced osteoporosis**: Rx: 5 mg/d PO, 10 mg/d postmenopausal not on estrogen
Prevention: 5 mg/d PO or 35 mg qwk Paget Dz: 40 mg/d PO × 6 mo w: P: [C, ?] Not OK if CrCl < 35 mL/min, w/ NSAID use CI: Esophageal anomalies, inability to sit/stand upright for 30 min, ↓ Ca²⁺ Disp: Tabs 5, 10, 35, 40, 70 mg, Fosamax plus D: Alendronate 70 mg w/ cholecalciferol (vit D₃) 2800 or 5600 Int units SE: Abd pain, acid regurgitation, constipation, D/N, dyspepsia, musculoskeletal pain, jaw osteonecrosis (w/ dental procedures, chemo) Notes: Take 1st thing in am w/ H₂O (8 oz) > 30 min before 1st food/beverage of day; do not lie down for 30 min after. Use Ca²⁺ & vit D suppl w/ regular tab; may ↑ atypical subtrochanteric femur fractures

Alfentanil (Alfenta) [C–II] Uses: *Adjunct in maint of anesthesia; analgesia* Acts: Short-acting narcotic analgesic Dose: *Adults & Peds > 12 y* 3–75 mcg/kg (IBW) IV Inf; total depends on duration of procedure w: P: [C, –] ↑ ICP, resp depression Disp: Inj 500 mcg/mL SE: ↓ HR, ↓ BP arrhythmias, peripheral vasodilation, ↑ ICP, drowsiness, resp depression, N/V/constipation, ADH release

Alfuzosin (Uroxatral) Uses: *Symptomatic BPH* Acts: α-Blocker Dose: 10 mg PO daily immediately after the same meal w: P: [B, ?/–] w/ any Hx ↓ BP; use w/ PDE5 inhibitors may ↓ BP; may ↑ QTc interval; IFIS during cataract surgery CI: w/ CYP3A4 inhib; mod–severe hepatic impair; protease inhibitors for HIV Disp: Tabs 10 mg ER SE: Postural ↓ BP, dizziness, HA, fatigue

Alginic Acid + Aluminum Hydroxide & Magnesium Trisilicate (Gaviscon) [OTC] Uses: *Heartburn* Acts: Protective layer blocks gastric acid Dose: Chew 2–4 tabs or 15–30 mL PO qid followed by H₂O w: P: [C, ?] Avoid w/ renal impair or Na⁺-restricted diet

Alglucosidase Alfa (Lumizyme, Myozyme) BOX: Life-threatening anaphylactic Rxns seen w/ Inf; medical support measures should be immediately available caution w/ ↓ CV/resp Fxn Uses: *Rx Pompe DZ* Acts: Recombinant acid α-glucosidase; degrades glycogen in lysosomes Dose: *Peds 1 mo–3.5 y* 20 mg/kg IV q2wk over 4 h (see PI) w: P: [B, ?/–] Illness at time of Inf may ↑ Inf Rxns Disp: Powder 50 mg/vial limited distribution SE: Hypersens, fever, rash, D, V, gastroenteritis, pneumonia, URI, cough, resp distress/failure, Infxns, cardiac arrhythmia, ↑/↓ HR, flushing, anemia, pain, constipation

Aliskiren (Tekturna) BOX: May cause injury and death to a developing fetus; D/C immediately when PRG detected Uses: *HTN* Acts: 1st direct renin inhib Dose: 150–300 mg/d PO w: P: [D, ?/–]; Avoid w/ CrCl < 30 mL/min; ketoconazole and other CYP3A4 inhib may ↑ aliskiren levels CI: Anuria, sulfur sensitivity Disp: Tabs 150, 300 mg SE: D, Abd pain, dyspepsia, GERD, cough, ↑ K⁺, angioedema, ↓ BP, dizziness, ↑ BUN, ↑ SCr

Aliskiren & Amlodipine (Tekamlo) BOX: May cause fetal injury & death; D/C immediately when PRG detected Uses: *HTN* Acts: Renin inhib w/ dihydropyridine CCB Dose: Adult. 150/5 mg PO 1×/d; max 300/10 mg/d); max effect in 2 wk w: P: [D, ?/–] do not use w/ cyclosporine/itraconazole avoid CrCl < 30 mL/min Disp: Tabs (aliskiren mg/amlodipine mg) 150/5, 150/10, 300/5, 300/10 SE: ↓ BP, ↑ K⁺, angioedema, peripheral edema, D, dizziness, angina, MI, ↑ SCr, ↑ BUN

Aliskiren, Amlodipine, Hydrochlorothiazide (Amturnide) BOX: May cause fetal injury & death; D/C immediately when PRG detected Uses: *HTN* Acts: Renin inhib w/ dihydropyridine CCB, & thiazide diuretic Dose: Adult. Titrate q2wk PRN to 300/10/25 mg PO max/d w: P: [D, ?/–] Avoid w/ CrCl < 30 mL/min; do not use w/ cyclosporine/itraconazole; ↓ BP in salt/volume depleted pts; HCTZ may exacerbate/activate SLE; D/C if myopia or NAG CI: Anuria, sulfonamide allergy Disp: Tabs
Aliskiren/Amlodipine/HCTZ (Tekturna HCT) BOX: May cause injury and death to a developing fetus; D/C immediately when PRG detected

Uses: *HTN*  

Acts: Renin inhib w/ thiazide diuretic

**Dose:** 150 mg/12.5 mg PO q day; may ↑ after 2–4 wk up to max 300 mg/25 mg w/ P: [D, –] Avoid w/ CrCl ≤ 30 mL/min; avoid w/ CYP3A4 inhib (Li, ketoconazole, etc) may ↑ aliskiren levels; ↓ BP in salt/volume depleted pts sulfonamide allergy HCTZ may exacerbate/activate SLE

Disp: Tabs (aliskiren mg/HCTZ mg) 150/12.5, 150/25, 300/12.5, 300/25 SE: Dizziness, influenza, D, cough, vertigo, asthenia, arthralgia, angioedema, ↑ BUN

Alogliptin (Nesina) Uses: *Monotherapy type 2 DM*  

Acts: DDP-4 inhib, ↑ insulin synth/release  

Dose: Max daily 25 mg alogliptin, 2000 mg metformin w/ P: [B, M] may cause lactic acidosis, pancreatitis, hepatic failure, hypersens Rxn  

CI: Hypersens

Disp: Tabs (alogliptin mg/metformin mg): 12.5/500, 12.5/1000 SE: ↓ glucose, HA, nasopharyngitis, URI  

Notes: Warn against excessive EtOH intake, may ↑ metformin lactate effect; temp D/C w/ surgery or w/ iodinated contrast studies
max w/ strong CYP2C8 inhibit; may ↑ bladder CA risk (∼↑3/10,000)

**Alosetron (Lotronex)** BOX: Serious GI SEs, some fatal, including ischemic colitis reported. Prescribed only through participation in the prescribing program Uses: *Severe D/predominant IBS in women who fail conventional Rx* Acts: Selective 5-HT₃ receptor antagonist Dose: **Adults.** 0.5 mg PO bid; ↑ to 1 mg bid max after 4 wk; D/C after 8 wk not controlled w/ P: [B, ?–] CI: Hx chronic/severe constipation, GI obst, strictures, toxic megacolon, GI perforation, adhesions, ischemic/UC, Crohn Dz, diverticulitis, thrombophlebitis, hypercoagulability Disp: Tabs 0.5, 1 mg SE: Constipation, Abd pain, N, fatigue, HA Notes: D/C immediately if constipation or Sxs of ischemic colitis develop; informed consent prior to use

**Alpha-1-Protease Inhibitor (Glassia, Prolastin C)** Uses: *α₁-Antitrypsin deficiency* Acts: Replace human α₁-protease inhib Dose: 60 mg/kg IV once/wk w/ P: [C, ?] CI: Selective IgA deficiencies w/ IgA antibodies Disp: Inj 500, 1000 mg powder; 1000 mg soln vial for Inj SE: HA, CP, edema, MS discomfort, fever, dizziness, flu-like Sxs, allergic Rxns, ↑ AST/ALT Notes: Avoid abrupt D/C after prolonged use

**Alprazolam (Xanax, Niravam)** [C-IV] Uses: *Anxiety & panic disorders*, anxiety w/ depression* Acts: Benzodiazepine; antianxiety agent Dose: Anxiety: Initial, 0.25–0.5 mg tid; ↑ to 4 mg/d max ÷ doses Panic: Initial, 0.5 mg tid; may gradually ↑ to response; ↓ in elderly, debilitated, & hepatic impair w/ P: [D, –] CI: NAG, concomitant itra-/ketoconazole Disp: Tabs 0.25, 0.5, 1, 2 mg; Xanax XR 0.5, 1, 2, 3 mg; Niravam (ODTs) 0.25, 0.5, 1, 2 mg; soln 1 mg/mL SE: Drowsiness, fatigue, irritability, memory impairment, sexual dysfunction, paradoxical Rxns Notes: Avoid abrupt D/C after prolonged use

**Alprostadil [Prostaglandin E₁] (Prostin VR)** BOX: Apnea in up to 12% of neonates especially <2 kg at birth Uses: *Conditions where ductus arteriosus flow must be maintained*, sustain pulm/systemic circulation until OR (eg, pulm atresia/stenosis, transposition) Acts: Vasodilator (ductus arteriosus very sensitive), plt inhib Dose: 0.05–0.1 mcg/kg/min IV; ↓ to response **ECC 2010:** Maintain ductus patency: 0.01–0.4 mcg/kg/min w/ P: [X, –] CI: Neonatal resp distress synd Disp: Inj 500 mcg/mL SE: Cutaneous vasodilation, Sz-like activity, jitteriness, ↑ temp, ↓ K⁺, thrombocytopenia, ↓ BP; may cause apnea Notes: Keep intubation kit at bedside

**Alprostadil, Intracavernosal (Caverject, Edex)** Uses: *ED* Acts: Relaxes smooth muscles, dilates cavernosal arteries, ↑ lacunar spaces w/ blood entrapment Dose: 2.5–60 mcg intracavernosal; titrate in office w/ P: [X, –] CI: ↑ risk of priapism (eg, sickle cell); penile deformities/implants; men in whom sexual activity inadvisable Disp: Caverject: 5-, 10-, 20-, 40-mcg powder for Inj vials ± diluent syringes 10-, 20-, 40-mcg amp Caverject Impulse: Self-contained syringe (29 gauge) 10 & 20 mcg Edex: 10-, 20-, 40-mcg cartridges SE: Local pain w/ Inj Notes: Counsel about priapism, penile fibrosis, & hematoma risks, titrate dose in office

**Alprostadil, Urethral Suppository (Muse)** Uses: *ED* Acts: Urethral absorption; vasodilator, relaxes smooth muscle of corpus cavernosa Dose: 125–250 mcg PRN to achieve erection (max 2 systems/24 h) duration 30–60 min w/ P: [X, –] CI: ↑ Priapism risk (especially sickle cell, myeloma, leukemia) penile deformities/implants; men in whom sex inadvisable Disp: 125, 250, 500, 1000 mcg w/ transurethral system SE: ↓ BP, dizziness, syncope, penile/testicular pain, urethral burning/bleeding, priapism Notes: Titrate dose in office

**Alteplase, Recombinant [tPA] (Activase)** Uses: *AMI, PE, acute ischemic stroke, & CV cath
STEMI: 15-mg bolus; then 0.75 mg/kg over 30 min (50 mg max); then 0.50 mg/kg over next 60 min (35 mg max; max total dose 100 mg) Acute ischemic stroke: 0.9 mg/kg IV (max 90 mg) over 60 min; give 10% of total dose over 1 min; remaining 90% over 1 h (or 3-h Inf) PE: 100 mg over 2 h (submassive PE: can administer 10-mg bolus, then 90 mg over 2 h) Cath occlusion: 10–29 kg 1 mg/mL; ≥ 30 kg 2 mg/L w/ P: [C, ?] CI: Active internal bleeding; uncontrolled HTN (SBP > 185 mm Hg, DBP > 110 mm Hg); recent (w/ in 3 mo) CVA, GI bleed, trauma; intracranial or intraspinal surgery or Dzs (AVM/aneurysm/subarachnoid hemorrhage/neoplasm), prolonged cardiac massage; suspected aortic dissection, w/ anticoagulants or INR > 1.7, heparin w/ in 48 h, plt ≤ 100,000, Sz at the time of stroke, significant closed head/facial trauma Disp: Powder for Inj 2, 50, 100 mg SE: Bleeding, bruising (eg, venipuncture sites), ↓ BP Notes: Give heparin to prevent reocclusion; in AMI, doses of > 150 mg associated w/ intracranial bleeding

Altretamine (Hexalen) BOX: BM suppression, neurotox common should be administered by experienced chemo MD Uses: *Palliative Rx persistent or recurrent ovarian CA* Acts: Unknown; ? cytotoxic/alkylating agent; ↓ nucleotide incorporation Dose: 260 mg/m²/d in 4 ÷ doses for 14–21 d of a 28-d Rx cycle; after meals and hs w/ P: [D, ?–] CI: Preexisting BM depression or neurologic tox Disp: Gel caps 50 mg SE: N/V/D, cramps; neurotox (neuropathy, CNS depression); myelosuppression, anemia, ↓ PLT, ↓ WBC Notes: CBC, routine neurologic exams

Aluminum Hydroxide (Amphojel, AlternGEL, Dermagran) [OTC] Uses: *Heartburn, upset or sour stomach, or acid indigestion*; supl to Rx of ↑ PO Acts: Neutralizes gastric acid; binds PO₄²⁻ Dose: *Adults.* 10–30 mL or 300–1200 mg PO q4–6h PEDS. 5–15 mL PO q4–6h or 50–150 mg/kg/24 h PO ÷ q4–6h (hyperphosphatemia) w/ P: [C, ?] Disp: Tabs 300, 600 mg; susp 320, 600 mg/5 mL; oint 0.275% (Dermagran) SE: Constipation Notes: OK w/ renal failure; topical ointment for cuts/burns

Aluminum Hydroxide + Alginic Acid + Magnesium Carbonate (Gaviscon Extra Strength, Liquid) [OTC] Uses: *Hyperacidity* (peptic ulcer, hiatal hernia, etc) Acts: Neutralizes gastric acid & defoaming Dose: *Adults.* 10–20 mL or 1–2 tabs PO qid or PRN w/ P: [C, ?] Disp: Chew tabs, susp SE: May ↑ Mg²⁺ w/ renal Insuff, constipation, D Notes: Qid doses best pc & hs; may ↑ absorption of some drugs, take 2–3 h apart to ↓ effect

Aluminum Hydroxide + Magnesium Hydroxide (Maalox, Mylanta Ultimate Strength) [OTC] Uses: *Heartburn, acid indigestion*; supl to Rx of ↑ PO Acts: Neutralizes gastric acid Dose: *Adults.* 10–20 mL or 1–2 tabs PO qid or PRN w/ P: [C, ?] Disp: Chew tabs, susp SE: May ↑ Mg²⁺ w/ renal Insuff, constipation, D Notes: Qid doses best pc & hs

Aluminum Hydroxide + Magnesium Trisilicate (Gaviscon, Regular Strength) [OTC] Uses: *Relief of heartburn, upset or sour stomach, or acid indigestion* Acts: Neutralizes gastric acid Dose:
Chew 1–2 tabs qid; avoid in renal impair w/ P; CI: Mg²⁺, sensitivity Disp: ALOH 80 mg/Mg trisilicate 20 mg/tab SE: ↑ Mg²⁺ in renal Insuff, constipation, D Notes: May affect absorption of some drugs

**Alvimopan (Entereg) BOX:** For short-term hospital use only (max 15 doses) Uses: *↓ Time to GI recovery w/ bowel resection and primary anastomosis* Acts: Opioid (μ) receptor antagonist; selectively binds GI receptors, antagonizes effects of opioids on GI motility/secretion Dose: 12 mg 30 min–5 h preop PO, then 12 mg bid up to 7 d; max 15 doses w/ P: [B, ?/–] Not rec in complete bowel obstruction surgery, hepatic/renal impair CI: Therapeutic opioids > 7 consecutive days prior Disp: Caps 12 mg SE: ↓ K⁺ in renal Insuff, dyspepsia, urinary retention, anemia, back pain Notes: May affect absorption of some drugs

**Amantadine (Symmetrel) Uses:** *Rx/prophylaxis influenza A (no longer recommended d/t resistance), Parkinsonism, & drug-induced EPS* Acts: Prevents infectious viral nucleic acid release into host cell; releases dopamine and blocks reuptake of dopamine in presynaptic nerves Dose: Adults. Influenza A: 200 mg/d PO or 100 mg PO bid w/ in 48 h of Sx EPS: 100 mg PO bid (up to 300 mg/d ÷ doses) Parkinsonism: 100 mg PO daily-bid (up to 400 mg/d) Peds 1–9 y. 4.4–8.8 mg/kg/24 h to 150 mg/24 h max ÷ doses daily-bid 10–12 y. 100–200 mg/d in 2 ÷ doses; ↓ in renal impair w/ P: [C, ?/–] Disp: Caps 100 mg; tabs 100 mg; soln 50 mg/5 mL SE: Orthostatic ↓ BP, edema, insomnia, depression, irritability, hallucinations, dream abnormalities, N/D, dry mouth Notes: Not for influenza use in US d/t resistance including H1N1

**Ambrisentan (Letairis) BOX:** CI in PRG; monthly PRG tests; limited access program Uses: *Pulm arterial HTN* Acts: Endothelin receptor antagonist Dose: Adults. 5 mg PO/d, max 10 mg/d; not OK w/ hepatic impair w/ P: [X, –] w/ Cyclosporine, strong CYP3A or 2C19 inhib, inducers of P-glycoprotein, CYPs and UGTs CI: PRG Disp: Tabs 5, 10 mg SE: Edema, ↓ Hct/Hgb nasal congestion, sinusitis, dyspnea, flushing, constipation, HA, palpitations, hepatotoxic Notes: Available only through the Letairis Education and Access Program (LEAP); D/C AST/ALT > 5× ULN or bili > 2× ULN or S/Sx of liver dysfunction; childbearing females must use 2 methods of contraception

**Amifostine (Ethyol) Uses:** *Xerostomia prophylaxis during RT (head, neck, etc) where parotid is in radiation field; ↓ renal tox w/ repeated cisplatin* Acts: Prodrug, dephosphorylated to active thiol metabolite, free radical scavenger binds cisplatin metabolites Dose: Chemo prevent: 910 mg/m²/d 15-min IV Inf 30 min pre-chemo; Xerostomia Px: 200 mg/m² over 2 min 1×/d 15 min pre-rad w/ P: [C, ?/–] Disp: 500-mg vials powder, reconstitute in NS SE: Transient ↓ BP (> 60%), N/V, flushing w/ hot or cold chills, dizziness, ↓ Ca²⁺, somnolence, sneezing, serious skin Infxn Notes: Does not ↓ effectiveness of cyclophosphamide + cisplatin chemotherapy

**Amikacin (Amikin) BOX:** May cause nephrotoxicity, neuromuscular blockade, & respiratory paralysis Uses: *Serious gram(–) bacterial Infxns* & mycobacteria Acts: Aminoglycoside; ↓ protein synth Spectrum: Good gram(–) bacterial coverage: *Pseudomonas & Mycobacterium* sp Dose: Adults & Peds. Conventional: 5–7.5 mg/kg/dose q8h; once daily; 15–20 mg/kg q24h; ↑ interval w/ renal impair Neonates < 1200 g, 0–4 wk: 7.5 mg/kg/dose q18h–24h Age < 7 d, 1200–2000 g: 7.5 mg/kg/dose q12h > 2000 g: 7.5–10 mg/kg/dose q12h Age > 7 d, 1200–2000 g: 7.5–10 mg/kg/dose q8–12h > 2000 g: 7.5–10 mg/kg/dose q8h w/ P: [O, +/–] Avoid w/ diuretics Disp: Inj 50 & 250 mg/mL SE: Renal impairment, oto Notes: May be effective in gram(–) resistance to gentamicin & tobramycin; follow Cr; Levels: Peak: 30 min after Inf Trough < 0.5 h before next dose Therapeutic:
Peak 20–30 mcg/mL, Trough: < 8 mcg/mL. Toxic peak > 35 mcg/mL; half-life: 2 h

Amiloride (Midamor) BOX: ↑ K⁺ esp renal Dz DM, elderly Uses: *HTN, CHF, & thiazide or loop diuretic induced ↓ K⁺* Acts: K⁺-sparking diuretic; interferes w/ K⁺/Na⁺ exchange in distal tubule & collecting duct Dose: Adults. 5–10 mg PO daily (max 20 mg/d) Peds. 0.4–0.625 mg/kg/d; ↓ w/ renal impair w/ P: [B, ?] avoid CrCl < 10 mL/min CI: ↑ K⁺, acute or chronic renal Dz, diabetic neuropathy, w/ other K⁺-sparking diuretics Disp: Tabs 5 mg SE: ↑ K⁺; HA, dizziness, dehydration, impotence Notes: 🍗 K⁺

Aminocaproic Acid (Amicar) Uses: *Excessive bleeding from systemic hyperfibrinolysis & urinary fibrinolysis* Acts: ↓ Fibrinolysis; inhibits TPA, inhibits conversion of plasminogen to plasmin Dose: Adults. 4–5 g IV or PO (1st h) then 1 g/h IV or 1.25 g/h PO × 8 h or until bleeding controlled; 30 g/d max Peds. 100 mg/kg IV (1st h) then 1 g/m²/h; max 18 g/m²/d; ↓ w/ renal Insuff w/ P: [C, ?] Not for upper urinary tract bleeding CI: DIC Disp: Tabs 500 mg, syrup 1.25 g/5 mL; Inj 250 mg/mL SE: ↓ BP, ↓ HR, dizziness, HA, fatigue, rash, GI disturbance, skeletal muscle weakness, ↓ plt Fxn Notes: Administer × 8 h or until bleeding controlled

Aminoglutethimide (Cytadren) Uses: *Cushing synd*, adrenocortical carcinoma, breast CA & PCa Acts: ↓ Adrenal steroidogenesis & conversion of androgens to estrogens; 1st gen aromatase inhib Dose: Initial 250 mg PO 4× d, titrate q1–2wk max 2 g/d; w/ hydrocortisone 20–40 mg/d; ↓ w/ renal Insuff w/ P: [D, ?] Disp: Tabs 250 mg SE: Adrenal Insuff (“medical adrenalectomy”), hypothyroidism, masculinization, ↓ BP, N/V, rare hepatotox, rash, myalgia, fever, drowsiness, lethargy, anorexia Notes: Give q6h to ↓ N

Aminophylline (Generic) Uses: *Asthma, COPD*, & bronchospasm Acts: Relaxes smooth muscle (bronchi, pulm vessels); stimulates diaphragm Dose: Adults. Acute asthma: Load 5.7 mg/kg IV, then 0.38–0.51 mg/kg/h (900 mg/d max) Chronic asthma: 380 mg/d PO ÷ q6–8h; maint ↑ 760 mg/d Peds. Load 5.7 mg/kg/dose IV; 1 ≤ 9 y: 1.01 mg/kg/h; 9 ≤ 12 y: 0.89 mg/kg/h; w/ hepatic Insuff & w/ some drugs (macrolide & quinolone antib, cimetidine, propranolol) w/ P: [C, +] Uncontrolled arrhythmias, HTN, Sz disorder, hyperthyroidism, peptic ulcers Disp: Tabs 100, 200 mg; PR tabs 100, 200 mg, soln 105 mg/5 mL, Inj 25 mg/mL SE: N/V, irritability, tachycardia, ventricular arrhythmias, Szs Notes: Individualize dosage Level: 10–20 mcg/mL, toxic > 20 mcg/mL; aminophylline 85% theophyl-line; erratic rectal absorption

Amiodarone (Cordarone, Nexterone, Pacerone) BOX: Liver tox, exacerbation of arrhythmias and lung damage reported Uses: *Recurrent VF or unstable VT*, supraventricular arrhythmias, AF Acts: Class III antiarrhythmic inhibits alpha/beta adrenergic system (Table 9, p 318) Dose: Adults. Ventricular arrhythmias: IV: 15 mg/min × 10 min, then 1 mg/min × 6 h, maint 0.5-mg/min cont Inf or PO: Load: 800–1600 mg/d PO ÷ q6–8h; maint ↑ 760 mg/d Peds. Load 5.7 mg/kg/dose IV; 1 ≤ 9 y: 1.01 mg/kg/h; 9 ≤ 12 y: 0.89 mg/kg/h; w/ hepatic Insuff & w/ some drugs (macrolide & quinolone antib, cimetidine, propranolol) w/ P: [C, +] Uncontrolled arrhythmias, HTN, Sz disorder, hyperthyroidism, peptic ulcers Disp: Tabs 100, 200 mg; PR tabs 100, 200 mg, soln 105 mg/5 mL, Inj 25 mg/mL SE: N/V, irritability, tachycardia, ventricular arrhythmias, Szs Notes: Individualize dosage Level: 10–20 mcg/mL, toxic > 20 mcg/mL; aminophylline 85% theophyl-line; erratic rectal absorption

Amitriptyline (Endep) Uses: *Depression*, anxiety, neuralgia & fibromyalgia Acts: ↑ Norepinephrine & dopamine Dose: Adults. 75–250 mg PO daily; ↑ w/ response; ↓ w/ toxicity CI: ↑ BP, ↓ AUC or renal Dz, liver Dz, hepatic Insuff w/ P: [C, ?] Not for children or infants Disp: Tabs 75, 100, 125, 250 mg SE: ↑ BP, ↓ HR, dizziness, HA, somnolence, retinal hemorrhage, respiratory depression, lactation, breast engorge, increased bleeding, ↑ INR, ↑ BUN, ↑ Cr Notes: Give q6h to ↓ N
h; max single dose 300 mg; *Perfusing SVT/Ventricular arrhythmias:* 5 mg/kg IV/IO load over 20–60 min; repeat PRN to 15 mg/kg (2.2 g in adolescents)/24h w/ P: [D, –] May require ↓ digoxin/warfarin dose, ↓ w/ liver Insuff; many drug interactions CI: Sinus node dys-function, 2nd-/3rd-degree AV block, sinus brady (w/ o pacemaker), iodine sensitivity *Disp:* Tabs 100, 200, 400 mg; Inj 50 mg/mL; Premixed Inf 150, 360 mg SE: Pulm fibrosis, exacerbation of arrhythmias, ↑ QT interval; CHF, hyper/hyperthyroidism, ↑ LFTs, liver failure, ↓ BP/↓ HR (Inf related) dizziness, HA, corneal microdeposits, optic neuropathy/neuritis, peripheral neuropathy, photosens; blue skin Notes: IV conc > 2.0 mg/mL central line only Levels: *Therapeutic:* 0.5–2.5 mcg/mL Toxic: > 2.5 mcg/mL *Half-life:* 40–55 d (↓ peds) Amitriptyline (Elavil) *BOX:* Antidepressants may ↑ suicide risk; consider risks/benefits of use. Monitor pts closely *Uses:* *Depression (not bipolar depression)* peripheral neuropathy, chronic pain, tension HAs, migraine HA prophylaxis PTSD *Acts:* TCA; ↓ reuptake of serotonin & norepinephrine by presynaptic neurons *Dose:* Adults. *Initial:* 25–150 mg PO hs; may ↑ to 300 mg hs *Peds.* Not OK < 12 y unless for chronic pain *Initial:* 0.1 mg/kg PO hs, ↑ over 2–3 wk to 0.5–2 mg/kg PO hs; taper to D/C w/ P: CV Dz, Szs [D,+/–] NAG, hepatic impair CI: w/ MAOIs or w/ in 14 d of use, during AMI recovery *Disp:* Tabs 10, 25, 50, 75, 100, 150 mg; Inj 10 mg/mL *SE:* Strong anticholinergic SEs; OD may be fatal; urine retention, sedation, ECG changes BM suppression, orthostatic ↓ BP, photosens Notes: Levels: *Therapeutic:* 100–250 ng/mL Toxic: > 500 ng/mL; levels may not correlate w/ effect Amlodipine (Norvasc) *Uses:* *HTN, stable or unstable angina* *Acts:* CCB; relaxes coronary vascular smooth muscle *Dose:* 2.5–10 mg/d PO; ↓ w/ hepatic impair w/ P: [C, ?] *Disp:* Tabs 2.5, 5, 10 mg SE: Edema, HA, palpitations, flushing, dizziness Notes: Take w/o regard to meals Amlodipine/Atorvastatin Amlodipine/Atorvastatin (Caduet) *Uses:* *HTN, chronic stable/vaso-spastic angina,* control cholesterol & triglycerides* *Acts:* CCB & HMG-CoA reductase inhib *Dose:* Amlodipine 2.5–10 mg w/ atorvastatin 10–80 mg PO daily w/ P: [X, –] CI: Active liver Dz, ↑ LFTs *Disp:* Tabs amlodipine/atorvastatin: 2.5/10, 2.5/20, 2.5/40, 5/10, 5/20, 5/40, 5/80, 10/10, 10/40, 10/80 mg SE: Edema, HA, palpitations, flushing, myopathy, arthralgia, myalgia, GI upset, liver failure Notes: ↗ LFTs; instruct pt to report muscle pain/weakness Amlodipine/Olmesartan (Azor) *BOX:* Use of renin-angiotensin agents in PRG can cause injury and death to fetus, D/C immediately when PRG detected *Uses:* *Hypertension* *Acts:* CCB, angiotensin II receptor blocker *Dose:* Adults. *Initial* 5 mg/20 mg, max 10 mg/40 mg q day w/ P: [D, –] w/ K+ supl or K+-sparing diuretics, renal impair, RAS, severe CAD, AS CI: PRG *Disp:* Tabs amlodipine/olmesartan 5 mg/20 mg, 10 mg/20 mg, 10/40, 10/80 mg SE: Edema, vertigo, dizziness, ↓ BP Amlodipine/Valsartan (HA Exforge) *BOX:* Use of renin-angiotensin agents in PRG can cause fetal injury and death, D/C immediately when PRG detected *Uses:* *HTN* *Acts:* CCB w/ angiotensin II receptor blocker *Dose:* Adults. Initial 5 mg/20 mg, may ↑ after 1–2 wk, max 10 mg/320 mg q day, start elderly at 1/2 initial dose w/ P: [D–] w/ K+ supl or K+-sparing diuretics, renal impair, RAS, severe CAD CI: PRG, *Disp:* Tabs amlodipine/valsartan 5/160, 10/160, 5/320, 10 mg/320 mg SE: Edema, vertigo, nasopharyngitis, URI, dizziness, ↓ BP Amlodipine/Valsartan/HCTZ (Exforge HCT) *BOX:* Use of renin-angiotensin agents in PRG can cause fetal injury and death, D/C immediately when PRG detected *Uses:* *Hypertension (not initial Rx)* *Acts:* CCB, angiotensin II receptor blocker, & thiazide diuretic *Dose:* 5–10/160–320/12.5–25
Amphotericin B (Fungizone) Uses: *Severe, systemic fungal Infections; oral & cutaneous candidiasis* 

**Acts:** Binds ergosterol in the fungal membrane to alter permeability  

**Dose:** **Adults & Peds.** 0.25–1.5 mg/kg/24 h IV over 2–6 h (25–50 mg/d or q other day). Total varies w/ indication ↑ PR, N/V w/ P: [B, ?]  

**Disp:** Powder (Inj) 50 mg/vial  

**SE:** ↓ K+/Mg2+ from renal wasting; anaphylaxis, HA, fever, chills, nephrotoxic, ↓ BP, anemia, rigors **Notes:** Cr/LFTs/K+Mg2+; ↓ in renal impair; pretreatment w/ APAP & diphenhydramine ± hydrocortisone, ↓ SE

Amphotericin B Cholesteryl (Amphotec) Uses: *Aspergillosis if intolerant/refractory to conventional amphotericin B*, systemic candidiasis  

**Acts:** Binds ergosterol in fungal membrane, alters permeability  

**Dose:** **Adults & Peds.** 3–4 mg/kg/d; 1 mg/kg/h Inf, 7.5 mg/kg/d max; ↓ w/ renal Insuff w/ P: [B, ?]  

**Disp:** Powder for Inj 50, 100 mg/vial SE: Anaphylaxis; fever, chills, HA, ↓ PLT, N/V, ↑ HR, ↓ K+, ↓ Mg2+, nephrotoxic, ↓ BP, infusion Rxns, anemia **Notes:** Do not use in-line filter; LFTs/lytes

Amphotericin B Lipid Complex (Abelcet) Uses: *Refractory invasive fungal Infection in pts intolerant to conventional amphotericin B*  

**Acts:** Binds ergosterol in fungal membrane, alters permeability  

**Dose:** **Adults & Peds.** 2.5–5 mg/kg/d IV × 1 daily w/ P: [B, ?]  

**Disp:** Inj 5 mg/mL SE: Anaphylaxis;
Amphotericin B Liposomal (Ambisome) Uses: *Refractory invasive fungal Infxn w/ intolerance to conventional amphotericin B; cryptococcal meningitis in HIV; empiric for febrile neutropenia; visceral leishmaniasis* Acts: Binds ergosterol in fungal membrane, alters membrane permeability

**Dose:** Adults & Peds. 3–6 mg/kg/d, Inf 60–120 min; varies by indication; ↓ in renal Insuff w/ P:

- **Disp:** Powder Inj 50 mg

**SE:** Anaphylaxis, fever, chills, HA, ↓ K+, ↓ Mg2+ peripheral edema, insomnia, rash, ↑ LFTs, nephrotox, ↓ BP, anemia

Notes: Filter w/ 5-micron needle; do not mix in electrolyte containing solns; if Inf > 2 h, manually mix bag

**Ampicillin Uses:** *Resp, GU, or GI tract Infxns, meningitis d/t gram(–) & (+) bacteria; SBE prophylaxis* Acts: β-Lactam antibiotic; ↓ cell wall synth Spectrum: Gram(+) (Streptococcus sp, Staphylococcus sp, Listeria); gram(–) (Klebsiella sp, E. coli, H. influenzae, P. mirabilis, Shigella sp, Salmonella sp)

**Dose:**

- **Adults & Peds.** 1000 mg–2 g IM or IV q4–6h or 250–500 mg PO q6h; varies by indication
- **Neonates < 7 d.** 50–100 mg/kg/d IV ÷ q8h
- **Term infants.** 75–150 mg/kg/d ÷ q6–8h IV or PO
- **Children > 1 mo.** 200 mg/kg/d ÷ q6h IM or IV; 50–100 mg/kg/d ÷ q6h PO up to 250 mg/dose

**Meningitis:** 200–400 mg/kg/d; ↓ w/ renal impair; take on empty stomach w/ P:

- **Disp:** Caps 250, 500 mg; susp, 125 mg/5 mL, 250 mg/5 mL; powder (Inj) 125, 250, 500 mg, 1, 2, 10 g/vial

**SE:** D, rash, allergic Rxn

Notes: Many E. coli resistant

**Ampicillin-Sulbactam (Unasyn) Uses:** *Gynecologic, intra-Abd, skin Infxns d/t β-lactamase–producing S. aureus, Enterococcus, H. influenzae, P. mirabilis, & Bacteroides sp*

**Acts:** β-Lactam antibiotic & β-lactamase inhib

**Spectrum:** Gram(+) & (–) as for amp alone; also Enterobacter, Acinetobacter, Bacteroides

**Dose:**

- **Adults.** 1.5–3 g IM or IV q6h
- **Peds.** 100–400 mg ampicillin/kg/d (150–300 mg Unasyn) q6h; ↓ w/ renal Insuff w/ P:

- **Disp:** Powder for Inj 1.5, 3 g/vial, 15 g bulk package

**SE:** Allergic Rxns, rash, D, Inj site pain

Notes: A 2:1 ratio ampicillin:sulbactam

**Anakinra (Kineret) Uses:** *Reduce S/Sxs of mod–severe active RA, failed 1 or more DMARDs*

**Acts:** Human IL-1 receptor antagonist

**Dose:** 100 mg SQ daily; w/ CrCl < 30 mL/min, q other day w/ P:

- **Disp:** 100-mg prefilled syringes; 100 mg (0.67 mL/vial) SE: ↓ WBC especially w/ TNF-blockers, Inj site Rxn (may last up to 28 d), Infxn, N/D, Abd pain, flu-like sx, HA

Notes: immunization up to date prior to starting Rx

**Anastrozole (Arimidex) Uses:** *Breast CA: postmenopausal w/ metastatic breast CA, adjuvant Rx postmenopausal early hormone-receptor(+) breast CA*

**Acts:** Selective nonsteroidal aromatase inhib, ↓ circulatory estradiol

**Dose:** 1 mg/d w/ P:

- **Disp:** Tabs 1 mg

**SE:** May ↑ cholesterol; N/V/D, HTN, flushing, ↑ bone/tumor pain, HA, somnolence, mood disturbance, depression, rash, fatigue, weakness

Notes: No effect on adrenal steroids or aldosterone

**Anidulafungin (Eraxis) Uses:** *Candidemia, esophageal candidiasis, other Candida Infxn (peritonitis, intra-Abd abscess)*

**Acts:** Echinocandin; ↓ cell wall synth

**Spectrum:** C. albicans, C. glabrata, C. parapsilosis, C. tropicalis

**Dose:**

- **Candidemia:** 100 mg IV × 1, then 100 mg IV daily [Tx ≥ 14 d after last (+)culture]
- **Esophageal candidiasis:** 100 mg IV × 1, then 50 mg IV daily (Tx > 14 d and 7 d after resolution of Sx);

**Disp:** Powder 50, 100 mg/vial SE: Histamine-mediated Inf Rxns (urticaria, flushing, ↓ BP, dyspnea, etc), fever, N/V/D, ↓ K+, HA, ↑ LFTs, hep, worsening hepatic failure

Notes: ↓ Inf rate to < 1.1 mg/min w/ Inf Rxns

**Anthralin (Dritho, Zithranol, Zithranol-RR) Uses:** *Psoriasis* Acts: Keratolytic

**Dose:** Apply daily
Acutely inflamed psoriatic eruptions, erythroderma

**Antihemophilic Factor [AHF, Factor VIII] (Monoclate) Uses:** *Classic hemophilia A*
**Acts:** Provides factor VIII needed to convert prothrombin to thrombin

**Dose:** Adults & Peds. 1 AHF unit/kg ↑ factor VIII level by 2 Int unit/dL; units required = (Wt in kg) (desired factor VIII ↑ as % nl) × (0.5); minor hemorrhage = 20–40% nl; mod hemorrhage/minor surgery = 30–50% nl; major surgery, life-threatening hemorrhage = 80–100% nl

**Disp:** each vial for units contained, powder for recons

**SE:** Irritation; hair/finger-nails/skin discoloration, erythema

**Notes:** Determine % nl factor VIII before dosing

**Antihemophilic Factor (Recombinant) (Advate, Helixate FS, Kogenate FS, Recombinate, Xyntha) Uses:** *Control/prevent bleeding & surgical prophylaxis in hemophilia A*

**Acts:** ↑ Levels of factor VIII

**Dose:** Adults. Required units = body Wt (kg) × desired factor VIII rise (Int units/dL or % of nl) × 0.5 (Int units/kg per Int units/dL); frequency/duration determined by type of bleed (see PI)

**Disp:** Powder 1750 Int units/vial

**SE:** HA, fever, N/V/D, weakness, allergic Rxn

**Notes:** Monitor for the development of factor VIII neutralizing antibodies

**Antithrombin, Recombinant (Atryn) Uses:** *Prevent periop/peripartum thromboembolic events w/ hereditary antithrombin (AT) deficiency*

**Acts:** Inhibits thrombin and factor Xa

**Dose:** Adults. Based on pre-Rx AT level, BW (kg) and drug monitoring; see package. Goal AT levels 0.8–1.2 Int units/mL

**Disp:** Powder

**SE:** Bleeding, infusion site Rxn

**Notes:** aPTT and anti-factor Xa; monitor for bleeding or thrombosis

**Antithymocyte Globulin (See Lymphocyte Immune Globulin, p 181)**

**Apixaban (Eliquis) BOX:** ↑ Risk of spinal/epidural hematoma w/ paralysis & ↑ thrombotic events w/ D/C in afib pts; monitor closely

**Uses:** *Prevent CVA/TE in nonvalvular afib*

**Acts:** Factor Xa inhib

**Dose:** 5 mg bid; 2.5 mg w/ 2 of the following: > 80 y, Wt < 60 kg, SCr ≥ 1.5; 2.5 mg w/ strong dual inhib of CYP3A4 and P-glycoprotein; if on 2.5 mg do NOT use w/ strong dual inhib of CYP3A4 and P-glycoprotein

**Disp:** Tabs 2.5, 5 mg

**SE:** Bleeding

**Notes:** If missed dose, do NOT double next dose; no antidote to reverse; anticoagulant effect can last 24 h after dose

**Apomorphine (Apokyn) Uses:** *Acute, intermittent hypomobility (“off”) episodes of Parkinson Dz*

**Acts:** Dopamine agonist

**Dose:** Adults. 0.2 mL SQ supervised test dose; if BP OK, initial 0.2 mL (2 mg) SQ during “off” periods; only 1 dose per “off” period; titrate dose; 0.6 mL (6 mg) max single doses; use w/ anti-emetic; ↓ in renal impair w/ P: [C, ?] Avoid EtOH; antihypertensives, vasodilators, cardio-/cerebrovascular Dz, hepatic impair

**Disp:** Inj 10 mg/mL, 3-mL pen cartridges

**SE:** Emesis, syncope, ↑ QT, orthostatic ↓ BP, somnolence, ischemia, Inj site Rxn, edema, N/V, hallucination abuse potential, dyskinesia, fibrotic conditions, priapism, CP/angina, yawning, rhinorrhea

**Notes:** Daytime somnolence may limit activities; trimethobenzamide 300 mg tid PO or other non–5-HT₃ antagonist anticiemetric given 3 d prior to & up to 2 mo following initiation

**Apraclonidine (Iopidine) Uses:** *Control, postop intraocular HTN*

**Acts:** α₂-Adrenergic agonist

**Dose:** 1–2 gtt of 0.5% tid; 1 gtt of 1% before and after surgical procedure w/ P: [C, ?] CI: w/ in 14 d or w/ MAOI

**Disp:** 0.5, 1% soln

**SE:** Ocular irritation, lethargy, xerostomia, blurred vision
Aprepitant (Emend, Oral) Uses: *Prevents N/V associated w/ emetogenic CA chemotherapy (eg, cisplatin) (use in combo w/ other antiemetics)*, postop N/V* Acts: Substance P/neurokinin 1 (NK₁) receptor antagonist Dose: 125 mg PO day 1, 1 h before chemotherapy, then 80 mg PO qam days 2 & 3; postop N/V: 40 mg w/ in 3 h of induction w/ P: [B, ?/–]; substrate & mod CYP3A4 inhib; CYP2C9 inducer (Table 10, p 319); ↓ Effect OCP and warfarin CI: Use w/ pimozide or cisapride Disp: Caps 40, 80, 125 mg SE: Fatigue, asthenia, hiccups Notes: See also fosaprepitant (Emend, Injection)

Arformoterol (Brovana) BOX: Long-acting β₂-adrenergic agonists may increase the risk of asthma-related death. Use only for pts not adequately controlled on other asthma-controller meds; safety + efficacy in asthma not established Uses: *Maint in COPD* Acts: Selective LA β₂-adrenergic agonist Dose: Adults. 15 mcg bid nebulization w/ P: [C, ?] CI: Hypersens Disp: Soln 15 mcg/2 mL SE: Pain, back pain, CP, D, sinusitis, nervousness, palpitations, allergic Rxn, peripheral edema, rash, leg Notes: Not for acute bronchospasm. Refrigerate, use immediately after opening

Argatroban (Generic) Uses: *Prevent/Tx thrombosis in HIT, PCI in pts w/ HIT risk* Acts: Anticoagulant, direct thrombin inhib Dose: 2 mcg/kg/min IV; adjust until aPTT 1.5–3 × baseline not to exceed 100 s; 10 mcg/kg/min max; ↓ w/ hepatic impair w/ P: [B, ?] Avoid PO anticoagulants, ↑ bleeding risk; avoid use w/ thrombolytics in critically ill pts CI: Overt major bleed Disp: Inj 100 mg/mL; Premixed Inf* 50, 125 mg SE: AF, cardiac arrest, cerebrovascular disorder, ↓ BP, VT, N/V/D, sepsis, cough, renal tox, ↓ Hgb Notes: Steady state in 1–3 h; aPTT w/ Inf start and after each dose change

Aripiprazole (Abilify, Abilify Discmelt) BOX: Increased mortality in elderly w/ dementia-related psychosis; ↑ suicidal thinking in children, adolescents, and young adults w/ MDD Uses: *Schizophrenia adults and peds 13–17 y, mania or mixed episodes associated w/ bipolar disorder, MDD in adults, agitation w/ schizophrenia* Acts: Dopamine & serotonin antagonist Dose: Adults. Schizophrenia: 10–15 mg PO/d Acute agitation: 9.75 mg/1.3 mL IM Bipolar: 15 mg/d; MDD adjunct w/ other antidepressants initial 2 mg/d Peds. Schizophrenia: 13–17 y: Start 2 mg/d, usual 10 mg/d; max 30 mg/d for all adult and peds uses; ↓ dose w/ CYP3A4/CYP2D6 inhib (Table 10, p 319); ↑ dose w/ CYP3A4 inducer w/ P: [C, –] w/ Low WBC, CV Dz Disp: Tabs 2, 5, 10, 15, 20, 30 mg; Discmelt (disintegrating tabs 10, 15 mg), soln 1 mg/mL, Inj 7.5 mg/mL SE: Neuroleptic malignant synd, tardive dyskinesia, orthostatic ↓ BP, cognitive & motor impair, ↑ glucose, leukopenia, neutropenia, and agranulocytosis Notes: Disc-melt contains phenylalanine; monitor CBC

Armodafinil (Nuvigil) Uses: *Narcolepsy, SWSD, and OSAHS* Acts: ?, binds dopamine receptor, ↓ dopamine reuptake Dose: Adults. OSAHS/narcolepsy: 150 or 250 mg PO daily in a.m. SWSD: 150 mg PO q day 1 h prior to start of shift; ↓ w/ hepatic impair; monitor for interactions w/ substrates CYP3A4/5, CYP7C19 w/ P: [C, ?] CI: Hypersens to modafinil/armodafinil Disp: Tabs 50, 150, 250 mg SE: HA, N, dizziness, insomnia, xerostomia, rash including SJS, angioedema, anaphylactoid Rxns, multiorgan hypersens Rxns

Artemether & Lumefantrine (Coartem) Uses: *Acute, uncomplicated malaria (P. falciparum)* Acts: Antiprotozoal/Antimalarial Dose: Adults > 16 y. 25–< 35 kg: 3 tabs hour 0 & 8 day 1, then 3 tabs bid day 2 & 3 (18 tabs/course) ≥ 35 kg: 4 tabs hour 0 & 8 day 1, then 4 tabs bid day 2 & 3 (24 tabs/course) Peds 2 mo–16 y. 5–< 15 kg: 1 tab at hour 0 & 8 day 1, then 1 tab bid day 2 & 3 (6 tabs/course) 15–< 25 kg: 2 tabs hour 0 & 8 day 1, then 2 tabs bid day 2 & 3 (12 tabs/course) 25–< 35 kg: 3 tabs at hour 0 & 8 day 1, then 3 tabs bid on day 2 & 3 (18 tabs/course) ≥ 35 kg: See Adult dose
Asenapine Maleate (Saphris) BOX: ↑Mortality in elderly w/ dementia-related psychosis

Uses: *Schizophrenia; manic/mixed bipolar disorder*

Acts: Dopamine/serotonin antagonist

Dose: *Adults.*

Schizophrenia: 5 mg twice daily; max 20 mg/d

Bipolar disorder: 5–10 mg twice daily

Disp: SL tabs 5, 10 mg

SE: Dizziness, insomnia, ↑ TG, edema, ↑/↓ BP, somnolence, akathisia, oral hypoesthesia, EPS, ↑ weight, ↑ glucose, ↑ QT interval, hyperprolactinemia, ↓ WBC, neuroleptic malignant syndrome, severe allergic Rxns

Notes: Do not swallow/crush/chew tab; avoid eating/drinking 10 min after dose

Aspirin (Bayer, Ecotrin, St. Joseph's) [OTC]

Uses: *CABG, PTCA, carotid endarterectomy, ischemic stroke, TIA, ACS/MI, arthritis, pain, HA, fever, inflammation*, Kawasaki Dz

Acts: Prostaglandin inhib by COX-2 inhib

Dose: *Adults.*

Pain, fever: 325–650 mg q4–6h PO or PR (4 g/d max)

Plt inhib: 81–325 mg PO daily; Prevent MI: 81 (preferred)–325 mg PO daily; *ECC 2010.* ACS: 160–325 mg nonenteric coated PO ASAP (chewing preferred at ACS onset)

Peds. Antipyretic: 10–15 mg/kg/dose PO or PR q4–6h; Kawasaki Dz: 80–100 mg/kg/d ÷ q6h, 3–5 mg/kg/d after fever resolves for at least 48 h or total 14 d; for all uses 4 g/d max; avoid w/ CrCl < 10 mL/min, severe liver Dz w/ P: [C, M] linked to Reye synd; avoid w/ viral illness in peds < 16 y

CI: ASA allergy, chickenpox/flu Sxs, synd of nasal polyps, angioedema, & bronchospasm to NSAIDs, bleeding disorder

Disp: Tabs 325, 500 mg; chew tabs 81 mg; EC tabs 81, 162, 325, 500 mg, effervescent tabs 500 mg; supp 300, 600 mg; caplets 81, 375, 500 mg

SE: GI upset, erosion, & bleeding

Notes: D/C 1 wk preop; avoid/limit EtOH; Salicylate levels: *Therapeutic:* 100–250 mcg/mL *Toxic:* > 300 mcg/mL

Aspirin, Butalbital & Caffeine Compound (Fiorinal) [C-III]

Uses: *Complex tension HA*

Acts: Sedative and narcotic analgesic

Dose: 1–2 tabs/caps PO q4h PRN, max 6 tabs/d

CI: Allergy to ASA and codeine; synd of nasal polyps, angioedema, & bronchospasm to NSAIDs

Disp: Caps-tabs ASA 325 mg/butalbital 50 mg/caffeine 40 mg

SE: Drowsiness, dizziness, GI upset, ulceration, bleeding, light-headedness, heartburn, confusion, HA

Notes: Butalbital habit-forming; D/C 1 wk prior to surgery, avoid or limit EtOH

Aspirin + Butalbital, Caffeine, & Codeine (Fiorinal + Codeine) [C-III]

Uses: *Complex tension HAs*

Acts: Sedative and narcotic analgesic

Dose: 1–2 tabs/caps PO q4h PRN, max 6/d

CI: Allergy to ASA and codeine; synd of nasal polyps, angioedema, & bronchospasm to NSAIDs, bleeding diathesis, peptic ulcer or sig GI lesions, porphyria

Disp: Caps contain 325 mg ASA, 40 mg
Ativan (Flavastatin) BOX: Avoid abrupt withdrawal (esp CAD pts), gradual taper to ↓, acute ↑ HR, HTN +/- ischemia Uses: *HTN, angina, post-MI* Acts: selective β-adrenergic receptor blocker Dose: HTN & angina: 25–100 mg/d PO ECC 2010. AMI: 5 mg IV over 5 min; in 10 min, 5 mg slow IV; if tolerated in 10 min, start 50 mg PO, titrate; ↓ in renal impair w/ P: [D, M] DM, bronchospasm; abrupt D/C can exacerbate angina & ↑ MI risk CI: ↓ HR, cardiogenic shock, cardiac failure, 2nd-/3rd-degree AV block, sinus node dysfunction, pulm edema Disp: Tabs 25, 50, 100 mg SE: ↓ HR, ↓ BP, 2nd-/3rd-degree AV block, dizziness, fatigue

Auranofin (Plasdone) BOX: Frequency of suicidal thinking; monitor closely especially in peds pts. Uses: *ADHD* Acts: Selective norepinephrine reuptake inhib Dose: Adults & Peds > 70 kg. 40 mg PO/d, after 3 d minimum, ↑ to 80–100 mg ÷ daily-bid Peds < 70 kg. 0.5 mg/kg × 3 d, then ↑ 1.2 mg/kg daily or bid (max 1.4 mg/kg or 100 mg); ↓ dose w/ hepatic Insuff or in combo w/ CYP2D6 inhibit (Table 10, p 319) w/ P: [C, ?/–] w/ Known structural cardiac anomalies, cardiac Hx hepatotoxicity CI: NAG, w/ in 2 wk of D/C an MAOI Disp: Caps 10, 18, 25, 40, 60, 80, 100 mg SE: HA, insomnia, dry mouth, Abd pain, N/V, anorexia ↑ BP, tachycardia, Wt loss, somnolence, sexual dysfunction, jaundice, ↑ LFTs Notes: AHA rec: All children receiving stimulants for ADHD receive CV assessment before Rx initiated; D/C immediately w/ jaundice

Atorvastatin (Lipitor) Uses: dyslipidemia, primary prevention CV Dz Acts: HMG-CoA reductase inhibit Dose: Initial 10–20 mg/d, may ↑ to 80 mg/d w/ P: [X, –] CI: Active liver Dz, unexplained ↑ LFTs Disp: Tabs 10, 20, 40, 80 mg SE: Myopathy, HA, arthralgia, myalgia, GI upset, CP, edema, insomnia dizziness, liver failure Notes: Monitor LFTs, instruct pt to report unusual muscle pain or weakness

Atovaquone (Mepron) Uses: *Rx & prevention PCP*; Toxoplasma gondii encephalitis, babesiosis (w/ azithromycin) Acts: ↓ Nucleic acid & ATP synth Dose: Rx: 750 mg PO bid for 21 d Prevention:
**Atovaquone/Proguanil (Malarone) Uses:** *Prevention or Rx P. falciparum malaria*  
*Acts:* Antimalarial  
**Dose:**  
- **Adults. Prevention:** 1 tab PO 1–2 d before, during, & 7 d after leaving endemic region  
- **Rx:** 4 tabs PO single dose daily × 3 d  
**Ped:** See PI  
**CI:** Prophylactic use when CrCl < 30 mL/min  
**Disp:** Tabs atovaquone 250 mg/proguanil 100 mg; peds 62.5/25 mg  
**SE:** HA, fever, myalgia, Abd pain dizziness, weakness N/V, ↑ LFTs  
**Notes:** Pt must be intubated & on controlled ventilation; use adequate amounts of sedation & analgesia

**Atracurium (Tracrium) Uses:** *Anesthesia adjunct to facilitate ET intubation, facilitate ventilation in ICU pts*  
*Acts:* Nondepolarizing neuromuscular blocker  
**Dose:**  
- **Adults & Peds > 2 y:** 0.4–0.5 mg/kg IV bolus, then 0.08–0.1 mg/kg q20–45min PRN; ICU: 0.4–0.5 mg/kg/min titrated  
**CI:** NAG, adhesions between iris and lens  
**Disp:** Inj 10 mg/mL  
**SE:** Flushing  
**Notes:** Pt must be intubated & on controlled ventilation; use adequate amounts of sedation & analgesia

**Atropine, Ophthalmic (Isopto Atropine, Generic) Uses:** *Mydriasis, cycloplegia, uveitis*  
*Acts:* Antimuscarinic; cycloplegic, dilates pupils  
**Dose:**  
- **Adults. Refraction:** 1–2 gtt 1 h before  
- **Uveitis:** 1–2 gtt daily-qid  
**CI:** NAG, adhesions between iris and lens  
**Disp:** 1% ophthal soln, 1% oint  
**SE:** Local irritation, burning, blurred vision, light sensitivity  
**Notes:** Compress lacrimal sac 2–3 min after instillation; effects can last 1–2 wk

**Atropine, Systemic (AtroPen Auto-Injector) Uses:** *Preanesthetic; symptomatic ↓ HR & asystole, AV block, organophosphate (insecticide) and acetylcholinesterase (nerve gas) inhib antidote; cycloplegic*  
*Acts:* Antimuscarinic; blocks acetylcholine at parasympathetic sites, cycloplegic  
**Dose:**  
- **Adults. ECC 2010. Asystole or PEA:** Routine use for asystole or PEA no longer recommended;  
- **Bradycardia:** 0.5 mg IV q3–5min as needed; max 3 mg or 0.04 mg/kg Preanesthetic: 0.4–0.6 mg IM/IV  
- **Poisoning:** 1–2 mg IV bolus, repeat q3–5min PRN to reverse effects  
**Ped. ECC 2010. Symptomatic bradycardia:** 0.02 mg/kg IV/IO (min dose 0.1 mg, max single dose 0.5 mg); repeat PRN X1; max total dose 1 mg or 0.04 mg/kg child, 3 mg adolescent  
**CI:** NAG, adhesions between iris and lens, pyloric stenosis, prostatic hypertrophy  
**Disp:** Inj 0.05, 0.1, 0.4, 1 mg/mL AtroPen Auto-injector: 0.25, 0.5, 1, 2 mg/dose  
**SE:** Flushing, mydriasis, tachycardia, dry mouth & nose, blurred vision, urinary retention, constipation, psychosis  
**Notes:** SLUDGE are Sx of organophosphate poisoning; Auto-injector limited distribution; see ophthal forms below

**Atropine/Pralidoxime (DuoDote) Uses:** *Nerve agent (tabun, sarin, others), or organophosphate insecticide poisoning*  
*Acts:* Atropine blocks effects of excess acetylcholine; pralidoxime reactivates acetylcholinesterase inactivated by poisoning  
**Dose:** 1 Inj midlateral thigh; 10–15 min for effect; w/ severe Sx, give 2 additional Inj; if alert/oriented no more doses  
**CI:** NAG, adhesions between iris and lens  
**Disp:** Auto-injector 2.1 mg atropan/600 mg pralidoxime  
**SE:** Dry mouth, blurred vision, dry eyes, photo-phobia, confusion, HA, tachycardia, ↑ BP, flushing, urinary retention, constipation, Abd pain N, V, emesis  
**Notes:** See “SLUDGE” under Atropine, Systemic; limited distribution; for use by personnel w/ appropriate training; wear protective garments; do not rely solely on medication; evacuation and decontamination ASAP

**Avanafil (Stendra) Uses:** *ED*  
*Acts:* ↓ Phosphodiesterase type 5 (PDE5) (responsible for cGMP breakdown); ↑ cGMP activity to relax smooth muscles to ↑ flow to corpus cavernosum  
**Dose:** (men only) 100 mg PO 30 min before sex activity, no more than 1X/d; ↑/↓ dose 50–200 mg based on effect; do not use w/ strong CYP3A4 inhib; use 50 mg w/ mod CYP3A4 inhib; w/ or w/o food  
**CI:** [C, ?]
Priapism risk; hypotension w/ BP meds or substantial alcohol; seek immediate attention w/ hearing loss or acute vision loss (may be NAION; w/ CYP3A4 inhib (eg. ketoconazole, ritonavir, erythromycin) ↑ effects; do not use w/ severe renal/hepatic impair CI: w/ Nitrates or if sex not advised Disp: Tabs 50, 100, 200 mg SE: HA, flushing, nasal congestion, nasopharyngitis back pain Notes: More rapid onset than sildenafil (15–30 min)

Axitinib (Inlyta) Uses: *Advanced RCC* Acts: TKI inhibitor Dose: Adults. 5 mg PO q12h; if tolerated > 2 wk, ↑ to 7 mg q12h, then 10 mg q12h; w/ or w/o food; swallow whole; ↓ dose by ½ w/ moderate hepatic impair; avoid w/ or ↓ dose by ½ if used w/ strong CYP3A4/5 inhib w/ P: [D, ?] w/ brain mets, recent GI bleed Disp: Tabs 1, 5 mg SE: N/V/D/C, HTN, fatigue, asthenia, ↓ appetite, ↓ Wt, ↑ LFTs, hand-foot synd, venous/arterial thrombosis; hemorrhage, ↓ thyroid, GI perf/fistula, proteinuria, hypertensive crisis, impaired wound healing, reversible posterior leukoencephalopathy synd Notes: Hold 24 h prior to surgery

Azathioprine (Imuran, Azasan) BOX: May ↑ neoplasia w/ chronic use; mutagenic and hematologic tox possible Uses: *Adjunct to prevent renal transplant rejection, RA*, SLE, Crohn Dz, UC Acts: Immunosuppressive; antagonizes purine metabolism Dose: Adults. Crohn and UC: Start 50 mg/d, ↑ 25 mg/d q1–2wk, target dose 2–3 mg/kg/d Adults & Peds. Renal transplant: 3–5 mg/kg/d IV/PO single daily dose, then 1–3 mg/kg/d maint; RA: 1 mg/kg/d once daily or ÷ bid × 6–8 wk, ↑ 0.5 mg/kg/d q4wk to 2.5 mg/kg/d; ↓ w/ renal Insuff w/ P: [D, ?/–] CI: PRG Disp: Tabs 50, 75, 100 mg; powder for Inj 100 mg SE: GI intolerance, fever, chills, leukopenia, ↑ LFTs, bilirubin, ↑ risk Infxns, thrombocytopenia Notes: Handle Inj w/ cytotoxic precautions; interaction w/ allopurinol; do not administer live vaccines on drug; CBC and LFTs; dose per local transplant protocol, usually start 1–3 d pretransplant

Azelastine (Astelin, Astepro, Optivar) Uses: *Allergic rhinitis (rhinor-rhea, sneezing, nasal pruritus), vasomotor rhinitis; allergic conjunctivitis* Acts: Histamine H₁-receptor antagonist Dose: Adults & Peds > 12 y. Nasal: 1–2 sprays/nostril bid Ophth: 1 gtt in each affected eye bid Peds 5–11 y. 1 spray/nostril 1 × d w/ P: [C, ?/–] CI: Component sensitivity Disp: Nasal 137 mcg/spray; ophthal soln 0.05% SE: Somnolence, bitter taste, HA, colds Sx (rhinitis, cough)

Azilsartan (Edarbi) BOX: Use in 2nd/3rd trimester can cause fetal injury and death; D/C when PRG detected Uses: *HTN* Acts: ARB Dose: Adults. 80 mg PO 1 × d; consider 40 mg PO 1 × d if on high dose diuretic w/ P: [D, ?] correct vol/salt depletion before Disp: Tabs 40, 80 mg SE: D, ↓ BP, N, asthenia, fatigue, dizziness, cough

Azilsartan & Chlorthalidone (Edarbyclor) BOX: Use in 2nd/3rd trimester can cause fetal injury and death; D/C when PRG detected Uses: *HTN* Acts: ARB w/ thiazide diuretic Dose: Adults. 40/12.5 mg–40/25 mg PO 1 × d w/ P: [D, ?] Correct vol/salt depletion prior to use; use w/ lithium, NSAIDs CI: Anuria Disp: Tabs (azilsartan/chlorthalidone) 40/12.5, 40/25 mg SE: N/D, ↓ BP, asthenia, fatigue, dizziness, cough, ↓ K⁺, hyperuricemia, photosens, ↑ glucose

Azithromycin (Zithromax) Uses: *Community-acquired pneumonia, pharyngitis, otitis media, skin Infxns, nongonococcal (chlamydial) urethritis, chancroid & PID; Rx & prevention of MAC in HIV* Acts: Macrolide antibiotic; bacteriostatic; ↓ protein synth Spectrum: Chlamydia, H. ducreyi, H. influenzae, Legionella, M. catarrhalis, M. pneumoniae, M. hominis, N. gonorrhoeae, S. aureus, S. agalactiae, S. pneumoniae, S. pyogenes Dose: Adults. Resp tract Infxns: PO: Caps 500 mg day 1, then 250 mg/d PO × 4 d Sinusitis: 500 mg/d PO × 3 d IV: 500 mg × 2 d, then 500 mg PO × 7–10 d
Nongonococcal urethritis: 1 g PO × 1
Gonorrhea, uncomplicated: 2 g PO × 1
Prevent MAC: 1200 mg PO once/wk
Peds. Otitis media: 10 mg/kg PO day 1, then 5 mg/kg/d days 2–5
Pharyngitis (≥ 2 y): 12 mg/kg/d PO × 5 d; take susp on empty stomach; tabs OK w/ or w/o food; ↓ w/ CrCl < 10 mL/mg
P: [B, +] May ↑ QTc w/ arrhythmias
Disp: Tabs 250, 500, 600 mg; Z-Pack (5-d, 250 mg); Tri-Pack (500-mg tabs × 3); susp 2 g; single-dose packet (Zmax) ER susp (2 g); susp 100, 200 mg/5 mL; Inj powder 500 mg; 2.5 mL SE: GI upset, metallic taste
Azithromycin Ophthalmic 1% (AzaSite) Uses: *Bacterial conjunctivitis* Acts: Bacteriostatic
Dose: Adults & Peds ≥ 1 y. 1 gtt bid, q8–12 h × 2 d, then 1 gtt q day × 5 d w/ P: [↑ B, ?] CI: None
Disp: 1% in 2.5-mL bottle SE: Irritation, burning, stinging, contact dermatitis, corneal erosion, dry eye, dysgeusia, nasal congestion, sinusitis, ocular discharge, keratitis
Aztreonam (Azactam) Uses: *Aerobic gram(–) UTIs, lower resp, intraAbd, skin, gynecologic Infxns & septicemia* Acts: Monobactam: ↓ Cell wall synth Spectrum: Gram(–) (Pseudomonas, E. coli, Klebsiella, H. influenzae, Serra-tia, Proteus, Enterobacter, Citrobacter) Dose: Adults. 1–2 g IV/IM q6–12h UTI: 500 mg–1 g IV q8–12h Meningitis: 2 g IV q6–8h Peds. 90–120 mg/kg/d ÷ q6–8h ↓ in renal impair w/ P: [B, +] Disp: Inj (soln), 1 g, 2 g/50 mL Inj powder for recons 1 g, 2 g SE: N/V/D, rash, pain at Inj site Notes: No gram(+) or anaerobic activity; OK in PCN-allergic pts
Aztreonam, Inhaled (Cayston) Uses: *Improve respiratory Sx in CF pts w/ P. aeruginosa* Acts: Monobactam: ↓ cell wall synth Dose: Adults & Peds ≥ 7 y. One dose 3×/d × 28 d (space doses q4h) w/ P: [B, +] w/ Beta-lactam allergy CI: Allergy to aztreonam Disp: Lyophilized SE: Allergic Rxn, bronchospasm, cough, nasal congestion, wheezing, pharyngolaryngeal pain, V, Abd pain, chest discomfort, pyrexia, rash Notes: Use immediately after reconstitution, use only w/ Altera Nebulizer System; bronchodilator prior to use
Bacitracin & Polymyxin B, Ophthalmic (AK-Poly-Bac Ophthalmic, Polysporin Ophthalmic); Bacitracin, Neomycin, & Polymyxin B, Ophthalmic (Neo-Polycin Neosporin Ophthalmic); Bacitracin, Neomycin, Polymyxin B, & Hydrocortisone, Ophthalmic (Neopolycin HC Cortisporin Ophthalmic) Uses: *Steroid-responsive inflammatory ocular conditions* Acts: Topical antibiotic w/ anti-inflammatory Dose: Apply q3–4h into conjunctival sac w/ P: [C, ?] CI: Viral, mycobacterial, fungal eye Infxn Disp: See Bacitracin, topical equivalents, next listing
Bacitracin, Topical (Baciguent); Bacitracin & Polymyxin B, Topical (Polysporin); Bacitracin, Neomycin, & Polymyxin B, Topical (Neosporin); Bacitracin, Neomycin, Polymyxin B, & Hydrocortisone, Topical (Cortisporin) Uses: Prevent/Rx of *minor skin Infxns* Acts: Topical antibiotic w/ added components (anti-inflammatory & analgesic) Dose: Apply sparingly bid-qid w/ P: [C, ?] Not for deep wounds, puncture, or animal bites Disp: Bacitracin 500 units/g oint; bacitracin 500 units/polymyxin B sulfate 10,000 units/g oint & powder; bacitracin 400 units/neomycin 3.5 mg/polymyxin B 5000 units/g oint; bacitracin 400 units/neomycin 3.5 mg/polymyxin B 5000 units/hydrocortisone 10 mg/g oint; Bacitracin 500 units/neomycin 3.5 mg/polymyxin B 5000 units/lidocaine 40 mg/g oint Notes: Ophthal, systemic, & irrigation forms available, not generally used d/t potential tox
Baclofen (Lioresal Intrathecal, Gablofen) BOX: Abrupt discontinuation especially IT use can lead to organ failure, rhabdomyolysis, and death Uses: *Spasticity d/t severe chronic disorders (eg, MS, amyotrophic lateral sclerosis, or spinal cord lesions)*, trigeminal neuralgia, intractable hiccups Acts: Centrally acting skeletal muscle relaxant; ↓ transmission of monosynaptic & polysynaptic cord
reflexes **Dose**: *Adults*. Initial, 5 mg PO tid; ↑ q3d to effect; max 80 mg/d. *IT*: Via implantable pump (see PI). *Peds* 2–7 y. 20–30 mg q8h (max 60 mg) > 8 y: 120 mg/d. *IT*: Via implantable pump (see PI); ↓ in renal impair; take w/ food or milk w/ P: [C, +] Epilepsy, neuropsychological disturbances. **Disp**: Tabs 10, 20 mg; IT Inj 50, 500, 1000, 2000 mcg/mL. **SE**: Dizziness, drowsiness, insomnia, rash, fatigue, ataxia, weakness, ↓ BP

**Balsalazide (Colazal)** **Uses**: *Ulcerative colitis*. 2.25 g (3 caps) tid × 8–12 wk. **Acts**: 5-ASA derivative, anti-inflammatory. **Dose**: *Adults & Peds > 35 kg*. 20 mg IV 2 h before transplant, then 20 mg IV 4 d posttransplant. *Peds < 35 kg*. 10 mg 2 h prior to transplant; same dose IV 4 d posttransplant w/ P: [B, ?/–] CI: Hypersens to murine proteins. **Disp**: Inj powder 10, 20 mg. **SE**: Edema, ↓ BP, HTN, HA, dizziness, fever, pain, Infxn, GI effects, electrolyte disturbances. **Notes**: A murine/human MoAb

**BCG [Bacillus Calmette-Guérin] (TheraCys, Tice BCG)** **Uses**: *Bladder CA (superficial)*, TB prophylaxis: Routine US adult BCG immunization not recommended. Children who are PPD(–) and continually exposed to untreated/ineffectively treated adults or whose TB strain is INH/rifampin resistant. Healthcare workers in high-risk environments. **Acts**: Attenuated live BCG culture, immunomodulator. **Dose**: Bladder CA, 1 vial prepared & instilled in bladder for 2 h. Repeat once/wk × 6 wk; then 1 Tx at 3, 6, 12, 18, & 24 mo after w/ P: [C, ?] CI: Asthma w/ TB immunization. **Disp**: Powder 81 mg (*TheraCys*), 50 mg (*Tice BCG*). **SE**: Intravesical: Hematuria, urinary frequency, dysuria, bacterial UTI, rare BCG sepsis malaise, fever, chills, pain, N/V, anorexia, anemia. **Notes**: PPD is not CI in BCG vaccinated persons; intravesical use, dispose/void in toilet w/ chlorine bleach

**Becaplermin (Regranex Gel)** **Uses**: Local wound care adjunct w/ *diabetic foot ulcers*. **Acts**: Recombinant PDGF, enhances granulation tissue. **Dose**: *Adults*. Based on lesion: Calculate the length of gel, measure the greatest length of ulcer by the greatest width; tube size and measured result determine the formula used in the calculation. Recalculate q1–2wk based on change in lesion size. 15-g tube: [length × width] × 0.6 = length of gel (in inches) or for 2-g tube: [length × width] × 1.3 = length of gel (in inches). *Peds*. See PI w/ P: [C, ?] CI: Neoplastic site. **Disp**: 0.01% gel in 2-, 15-g tubes. **SE**: Rash. **Notes**: Use w/ good wound care; wound must be vascularized; reassess after 10 wk if ulcer not ↓ by 30% or not healed by 20 wk

**Beclohexol (QVAR)** **Uses**: *Chronic asthma*. **Acts**: Inhaled corticosteroid. **Dose**: *Adults & Peds 5–11 y*. 40–160 mcg 1–4 Inhs bid; initial 40–80 mcg Inh bid if on bronchodilators alone; 40–160 mcg bid w/ other inhaled steroids; 320 mcg bid max; taper to lowest effective dose bid; rinse mouth/throat after w/ P: [C, ?] CI: Acute asthma. **Disp**: PO metered-dose inhaler; 40, 80 mcg/Inh. **SE**: HA, cough, hoarseness, oral candidiasis. **Notes**: Not effective for acute asthma; effect in 1–2 d or as long as 2 wk; rinse mouth after use
Beclomethasone Nasal (Beconase AQ) **Uses:** *Allergic rhinitis, nasal polyps*  
**Acts:** Inhaled  
**Dose:** *Adults & Peds.* *Aqueous inhaler: 1–2 sprays/nostril bid w/ P: [C, ?]*  
**Disp:** Nasal metered-dose inhaler 42 mcg/spray  
**SE:** Local irritation, burning, epistaxis  
**Notes:** Effect in days to 2 wk

**Bedaquiline Fumarate (Sirturo) **  
**BOX:** ↑ QT can occur and may be additive w/ other QT-prolonging drugs; ↑ risk of death vs placebo, only use when an effective TB regimen cannot be provided  
**Uses:** *Tx of MDR TB*  
**Acts:** Diarylquinoline antimycobacterial  
**Dose:** 400 mg/d × 2 wk, then 200 mg 3 ×/wk for 22 wk w/ P: [B, –] ↑ QT, ECG freq; D/C if ventricular arrhythmias or QTc > 500 ms; hepatic Rxn, LFTs, D/C w/ AST/ALT > 8× ULN, T bili > 2× ULN or LFTs persist > 2 wk; w/ renal failure  
**CI:** w/ drugs that ↑ QTc  
**Disp:** Tabs 100 mg SE: HA, N, arthralgias, hemoptysis, CP  
**Notes:** Frequent ECG; LFTs; avoid use of potent CYP3A4 inducers; avoid w/ in < 14 d use of CYP3A4 inhib

**Belatacept (Nulojix) **  
**BOX:** May ↑ risk of posttransplant lymphoproliferative disorder (PTLD) mostly CNS; ↑ risk of Infxn; for use by physicians experienced in immunosuppressive therapy; ↑ risk of malignancies; not for liver transplant  
**Uses:** *Prevention rejection in EBV positive kidney transplant recipients*  
**Acts:** T-cell costimulation blocker  
**Dose:** Day 1 (transplant day, preop) & day 5 10 mg/kg; end of wk 2, wk 4, wk 8, wk 12 after transplant 10 mg/kg; Maint: End of wk 16 after transplant 4 wk 5 mg/kg  
**Disp:** 250 mg Inj SE: anemia, N/V/D, UTI, edema, constipation, ↑ BP, pyrexia, graft dysfunction, cough, HA, ↑↓ K⁺, ↓ WBC  
**Notes:** REMS; use in combo w/ basiliximab, mycophenolate mofetil (MMF), & steroids; PML w/ excess belatacept dosing

**Belimumab (Benlysta) **  
**Uses:** *SLE*  
**Acts:** B-lymphocyte inhib  
**Dose:** Adults. 10 mg/kg IV q2wk × 3 doses, then q4wk; Inf over 1 h; premed against Inf & hypersens Rxns w/ P: [C, ?/–] h/o active or chronic Infxns; possible ↑ mortality  
**CI:** Live vaccines, hypersens  
**Disp:** Inj powder 120, 400 mg/vial  
**SE:** N/D, bronchitis, nasopharyngitis, pharyngitis, insomnia, extremity pain, pyrexia, depression, migraine, serious/fatal, hypersens, anaphylaxis  
**Notes:** Not for severe active lupus nephritis or CNS lupus or w/ other biologics or IV cyclophosphamide

**Belladonna & Opium Suppositories (Generic) [C-II] **  
**Uses:** *Mod–severe pain associated w/ bladder spasms*  
**Acts:** Antispasmodic, analgesic  
**Dose:** 1 supp PR 1–2/d (up to 4 doses/d) w/ P: [C, ?]  
**CI:** Glaucoma, resp depression, severe renal or hepatic dz, convulsive disorder, acute alcoholism  
**Disp:** 30 mg opium/16.2 mg belladonna extract; 60 mg opium/16.2 mg belladonna extract  
**SE:** Anticholinergic (eg, sedation, urinary retention, constipation)  
**Notes:** Consider use of allopurinol to prevent

**Benazepril (Lotensin) **  
**BOX:** PRG avoid use  
**Uses:** *HTN*  
**Acts:** ACE inhib  
**Dose:** 10–80 mg/d PO w/ P: [D, –]  
**CI:** Angioedema  
**Disp:** Tabs 5, 10, 20, 40 mg  
**SE:** Symptomatic ↑ BP w/ diuretics; dizziness, HA, ↑ K⁺, nonproductive cough, ↑ SCr

**Bendamustine (Treanda) **  
**Uses:** *CLL B-cell NHL*  
**Acts:** Mechloretha-mine derivative; alkylating agent  
**Dose:** *Adults.* 100 mg/m² IV over 30 min on days 1 & 2 of 28-d cycle, up to 6 cycles (w/ tox see PI for dose changes); NHL: 120 mg/m² IV over 30 min d 1 & 2 of 21-d tx cycle up to 8 cycles; do not use w/ CrCl < 40 mL/min, severe hepatic impair w/ P: [D, ?/–] Do not use w/ CrCl < 40 mL/min, severe hepatic impair  
**CI:** Hypersens to bendamustine or mannitol  
**Disp:** Inj powder, 25 mg, 100 mg  
**SE:** Pyrexia, N/V, dry mouth, fatigue, cough, stomatitis, rash, myelosuppression, Infxn, Inf Rxns & anaphylaxis, tumor lysis synd, skin Rxns, extravasation  
**Notes:** Consider use of allopurinol to prevent
**Tumor Lysis Syndrome**

**Benzocaine (Americaine, Hurricane Lanacane, Various [OTC]) Uses:** *Topical anesthetic, lubricant on ET tubes, catheters, etc; pain relief in external Benzoicaine & Antipyrin otitis, cerumen removal, skin conditions, sunburn, insect bites, mouth and gum irritation, hemorrhoids*  
**Acts:** Topical local anesthetic  
**Dose:** Adults & Peds > 1 y. Anesthetic lubricant: Apply evenly to tube/instrument; other uses per manufacturer instructions w/ P: [C, –] Do not use on broken skin; see provider if condition does not respond; avoid in infants and those w/ pulmonary Dzs

**Disp:** Many site-specific OTC forms creams, gels, liquids, sprays, 2–20%  
**SE:** Itching, irritation, burning, edema, erythema, pruritus, rash, stinging, tenderness, urticaria; methemoglobinemia (infants or in COPD)  
**Notes:** Use minimum amount to obtain effect; methemoglobinemia S/Sxs: HA, lightheadedness, SOB, anxiety, fatigue, pale, gray or blue colored skin, and tachycardia

**Benzocaine & Antipyrine (Auralgan) Uses:** *Analgesia in severe otitis media*  
**Acts:** Anesthetic w/ local decongestant  
**Dose:** Fill ear & insert a moist cotton plug; repeat 1–2 h PRN w/ P: [C, ?]  
**Disp:** Soln 5.4% antipyrine, 1.4% benzocaine  
**SE:** Local irritation, methemoglobinemia, ear discharge

**Benzonatate (Tessalon, Zonatuss) Uses:** Symptomatic relief of *nonproductive cough*  
**Acts:** Anesthetizes the stretch receptors in the resp passages  
**Dose:** Adults & Peds > 10 y. 100 mg PO tid (max 600 mg/d) w/ P: [C, ?]  
**Disp:** Caps 100, 150, 200 mg  
**SE:** Sedation, dizziness, GI upset  
**Notes:** Do not chew or puncture the caps; deaths reported in peds < 10 y w/ ingestion

**Benztropine (Cogentin) Uses:** *Parkinsonism & drug-induced extrapyramidal disorders*  
**Acts:** Anticholinergic & antihistaminic effects  
**Dose:** Adults. Parkinsonism: initial 0.5–1 mg PO/IM/IV qhs, ↑ q 5–6 d PRN by 0.5 mg, usual dose 1–2 mg/d, 6 mg/d max. Extrapyramidal: 1–4 mg PO/IV/IM q day-bid. Peds > 3 y. 0.02–0.05 mg/kg/dose 1–2/d w/ P: [C, ?] w/ Urinary Sxs, NAG, hot environments, CNS or mental disorders, other phenothiazines or TCA  
**CI:** < 3 y pyloric/duodenal obstruction, myasthenia gravis  
**Disp:** Tabs 0.5, 1, 2 mg; Inj 1 mg/mL  
**SE:** Anticholinergic (tachycardia, ileus, N/V, etc), anhidrosis, heat stroke

**Benzyl Alcohol (Ulesfia) Uses:** *Head lice*  
**Acts:** Pediculicide  
**Dose:** Apply volume for hair length to dry hair; saturate the scalp; leave on 10 min; rinse w/ water; repeat in 7 d; Hair length 0–2 in: 4 – 6 oz; 2–4 in: 6 – 8 oz; 4–8 in: 8 –12 oz; 8–16 in: 12–24 oz; 16–22 in: 24 –32 oz; > 22 in: 32–48 oz w/ P: [B, ?] Avoid eyes  
**Disp:** 5% lotion 4-, 8-oz bottles  
**SE:** Pruritus, erythema, irritation (local, eyes)  
**Notes:** Use fine-tooth/nit comb to remove nits and dead lice; no ovicidal activity.

**Bepotastine Besilate (Bepreve) Uses:** *Allergic conjunctivitis*  
**Acts:** H₁-receptor antagonist  
**Dose:** Adults. 1 gtt into affected eye(s) twice daily w/ P: [C, ?/–] Do not use while wearing contacts  
**Disp:** Soln 1.5%  
**SE:** Mild taste, eye irritation, HA, nasopharyngitis

**Beractant (Survanta) Uses:** *Prevention & Rx RDS in premature infants*  
**Acts:** Replaces pulm surfactant  
**Dose:** 100 mg/kg via ET tube; repeat q6h PRN; max 4 doses  
**Disp:** Susp 25 mg of phospholipid/mL  
**SE:** Transient ↓ HR, desaturation, apnea

**Besifloxacin (Besivance) Uses:** *Bacterial conjunctivitis*  
**Acts:** Inhibits DNA gyrase & topoisomerase IV.  
**Dose:** Adults & Peds > 1 y. 1 gtt into eye(s) tid 4–12 h apart × 7 d w/ P: [C, ?] Remove contacts during Tx  
**CI:** None  
**Disp:** 0.6% susp  
**SE:** HA, redness, blurred vision, irritation

**Betaxolol (Kerlone) Uses:** *HTN*  
**Acts:** Competitively blocks β-adrenergic receptors, β₁  
**Dose:** 1 gtt into affected eye(s) twice daily w/ P: [C,
Betaxolol, Ophthalmic (Betoptic) Uses: Open-angle glaucoma Acts: Competitively blocks β₁-adrenergic receptors, Dose: 1–2 gtt bid w/ P: [C, ?–] Disp: Soln 0.5%; susp 0.25% SE: Local irritation, photophobia

Betanechol (Urecholine) Uses: *Acute postop/postpartum nonobstructive urinary retention; neurogenic bladder w/ retention* Acts: Stimulates cholinergic smooth muscle in bladder & GI tract Dose: Adults. Initial 5–10 mg PO, then repeat qh until response or 50 mg, typical 10–50 mg tid-qid, 200 mg/d max tid-qid; 2.5–5 mg SQ tid-qid & PRN. Peds. 0.3–0.6 mg/kg/24 h PO ÷ tid-qid; take on empty stomach w/ P: [C, –] CI: BOO, PUD, epilepsy, hyperthyroidism, ↓ HR, COPD, AV conduction defects, Parkinsonism, ↓ BP, vasomotor instability Disp: Tabs 5, 10, 25, 50 mg SE: Abd cramps, D, salivation, ↓ BP

Bevacizumab (Avastin) BOX: Associated w/ GI perforation, wound dehiscence, & fatal hemoptysis Uses: *Met colorectal CA w/ 5-FU, NSCLC w/ paclitaxel and carboplatin; glioblastoma; metastatic RCC w/ IFN-alpha* Acts: Vascular endothelial GF inhibitor Dose: Adults. Colon: 5 mg/kg or 10 mg/kg IV q14d; NSCLC: 15 mg/kg q21d; 1st dose over 90 min; 2nd over 60 min, 3rd over 30 min if tolerated; RCC: 10 mg/kg IV q2wk w/ IFN-α w/ P: [C, –] Do not use w/ in 28 d of surgery if time for separation of drug & anticipated surgical procedures is unknown; D/C w/ serious adverse effects CI: None Disp: 100 mg/4 mL, 400 mg/16 mL vials SE: Wound dehiscence, GI perforation, tracheoesophageal fistula, arterial thrombosis, hemoptysis, hemorrhage, HTN, proteinuria, CHF, Inf Rxns, D, leukopenia Notes: Monitor for ↑ BP & proteinuria

Bicalutamide (Casodex) Uses: *Advanced PCa w/ GnRH agonists (eg, leuprolide, goserelin)* Acts: Nonsteroidal antiandrogen Dose: 50 mg/d w/ P: [X, ?] CI: Women Disp: Caps 50 mg SE: Hot flashes, ↓ loss of libido, impotence, edema, pain, D/N/V, gynecomastia, ↑ LFTs

Bicarbonate (See Sodium Bicarbonate, p 256)

Bisacodyl (Dulcolax) [OTC] Uses: *Constipation; preop bowel prep* Acts: Stimulates peristalsis Dose: Adults. 5–15 mg PO or 10 mg PR PRN. Peds < 2 y: 5 mg PR PRN, > 2 y: 5 mg PO or 10 mg PR PRN (do not chew tabs or give w/ in 1 h of antacids or milk) w/ P: [C, ?] CI: Abd pain or obstruction; N/V Disp: EC tabs 5, 10 mg supp 10 mg, enema soln 10 mg/30 mL SE: Abd cramps, proctitis, & inflammation w/ supps

Bismuth Subcitrate/Metronidazole/Tetracycline (Pylera) Uses: *H. pylori Infxn w/ omeprazole* Acts: Eradicates H. pylori, see agents Dose: 3 caps qid w/ omeprazole 20 mg bid for × 10 d w/ P: [D, –] CI: PRG, peds < 8 y (tetracycline during tooth development causes teeth discoloration), w/ renal/hepatic impair, component hypersens Disp: Caps w/ 140-mg bismuth subcitrate potassium, 125-mg metronidazole, & 125-mg tetracycline hydrochloride SE: Stool abnormality, N, anorexia, D, dyspepsia, Abd pain, HA, flu-like synd, taste perversion, vaginitis, dizziness; see SE for each component Notes: Metronidazole carcinogenic in animals

Bismuth Subsalicylate (Pepto-Bismol) [OTC] Uses: Indigestion, N, & *D*, combo for Rx of *H. pylori Infxn* Acts: Antisecretory & anti-inflammatory Dose: Adults. 2 tabs or 30 mL PO PRN (max 8 doses/24 h). Peds. (For all max 8 doses/24 h). 3–6 y: 1/3 tab or 5 mL PO PRN. 6–9 y: 2/3 tab or 10 mL PO PRN. 9–12 y: 1 tab or 15 mL PO PRN w/ P: [C, D (3rd tri), –] Avoid w/ renal failure; Hx severe GI bleed; influenza or chickenpox (↑ risk of Reye synd) CI: h/o severe Gl bleeding or

Betaxolol, Ophthalmic (Betoptic) Uses: Open-angle glaucoma Acts: Competitively blocks β₁-adrenergic receptors, Dose: 1–2 gtt bid w/ P: [C, ?–] Disp: Soln 0.5%; susp 0.25% SE: Dizziness, HA, ↓ HR, edema, CHF, fatigue, lethargy Dose: 5–20 mg/d Disp: Tabs 10, 20 mg SE: Dizziness, HA, ↓ HR, edema, CHF, fatigue, lethargy

Betanechol (Urecholine) Uses: *Acute postop/postpartum nonobstructive urinary retention; neurogenic bladder w/ retention* Acts: Stimulates cholinergic smooth muscle in bladder & GI tract Dose: Adults. Initial 5–10 mg PO, then repeat qh until response or 50 mg, typical 10–50 mg tid-qid, 200 mg/d max tid-qid; 2.5–5 mg SQ tid-qid & PRN. Peds. 0.3–0.6 mg/kg/24 h PO ÷ tid-qid; take on empty stomach w/ P: [C, –] CI: BOO, PUD, epilepsy, hyperthyroidism, ↓ HR, COPD, AV conduction defects, Parkinsonism, ↓ BP, vasomotor instability Disp: Tabs 5, 10, 25, 50 mg SE: Abd cramps, D, salivation, ↓ BP

Bevacizumab (Avastin) BOX: Associated w/ GI perforation, wound dehiscence, & fatal hemoptysis Uses: *Met colorectal CA w/ 5-FU, NSCLC w/ paclitaxel and carboplatin; glioblastoma; metastatic RCC w/ IFN-alpha* Acts: Vascular endothelial GF inhibitor Dose: Adults. Colon: 5 mg/kg or 10 mg/kg IV q14d; NSCLC: 15 mg/kg q21d; 1st dose over 90 min; 2nd over 60 min, 3rd over 30 min if tolerated; RCC: 10 mg/kg IV q2wk w/ IFN-α w/ P: [C, –] Do not use w/ in 28 d of surgery if time for separation of drug & anticipated surgical procedures is unknown; D/C w/ serious adverse effects CI: None Disp: 100 mg/4 mL, 400 mg/16 mL vials SE: Wound dehiscence, GI perforation, tracheoesophageal fistula, arterial thrombosis, hemoptysis, hemorrhage, HTN, proteinuria, CHF, Inf Rxns, D, leukopenia Notes: Monitor for ↑ BP & proteinuria

Bicalutamide (Casodex) Uses: *Advanced PCa w/ GnRH agonists (eg, leuprolide, goserelin)* Acts: Nonsteroidal antiandrogen Dose: 50 mg/d w/ P: [X, ?] CI: Women Disp: Caps 50 mg SE: Hot flashes, ↓ loss of libido, impotence, edema, pain, D/N/V, gynecomastia, ↑ LFTs

Bicarbonate (See Sodium Bicarbonate, p 256)

Bisacodyl (Dulcolax) [OTC] Uses: *Constipation; preop bowel prep* Acts: Stimulates peristalsis Dose: Adults. 5–15 mg PO or 10 mg PR PRN. Peds < 2 y: 5 mg PR PRN, > 2 y: 5 mg PO or 10 mg PR PRN (do not chew tabs or give w/ in 1 h of antacids or milk) w/ P: [C, ?] CI: Abd pain or obstruction; N/V Disp: EC tabs 5, 10 mg supp 10 mg, enema soln 10 mg/30 mL SE: Abd cramps, proctitis, & inflammation w/ supps

Bismuth Subcitrate/Metronidazole/Tetracycline (Pylera) Uses: *H. pylori Infxn w/ omeprazole* Acts: Eradicates H. pylori, see agents Dose: 3 caps qid w/ omeprazole 20 mg bid for × 10 d w/ P: [D, –] CI: PRG, peds < 8 y (tetracycline during tooth development causes teeth discoloration), w/ renal/hepatic impair, component hypersens Disp: Caps w/ 140-mg bismuth subcitrate potassium, 125-mg metronidazole, & 125-mg tetracycline hydrochloride SE: Stool abnormality, N, anorexia, D, dyspepsia, Abd pain, HA, flu-like synd, taste perversion, vaginitis, dizziness; see SE for each component Notes: Metronidazole carcinogenic in animals

Bismuth Subsalicylate (Pepto-Bismol) [OTC] Uses: Indigestion, N, & *D*, combo for Rx of *H. pylori Infxn* Acts: Antisecretory & anti-inflammatory Dose: Adults. 2 tabs or 30 mL PO PRN (max 8 doses/24 h). Peds. (For all max 8 doses/24 h). 3–6 y: 1/3 tab or 5 mL PO PRN. 6–9 y: 2/3 tab or 10 mL PO PRN. 9–12 y: 1 tab or 15 mL PO PRN w/ P: [C, D (3rd tri), –] Avoid w/ renal failure; Hx severe GI bleed; influenza or chickenpox (↑ risk of Reye synd) CI: h/o severe Gl bleeding or
coagulopathy, ASA allergy
Disp: Chew tabs, caplets 262 mg; liq 262, 525 mg/15 mL; susp 262 mg/15 mL
SE: May turn tongue & stools black

**Bisoprolol (Zebeta) Uses:** *HTN*  
**Acts:** Competitively blocks β₁-adrenergic receptors  
**Dose:** 2.5–10 mg/d (max dose 20 mg/d); ↓ w/ renal impair **w/ P:** [C, ?/–]  
**CI:** Sinus bradycardia, AV conduction abnormalities, uncompensated cardiac failure  
Disp: Tabs 5, 10 mg
SE: Fatigue, lethargy, HA, ↓ HR, edema, CHF  
**Notes:** Not dialyzed

**Bivalirudin (Angiomax) Uses:** *Anticoagulant w/ ASA in unstable angina undergoing PTCA, PCI, or in pts undergoing PCI w/ or at risk for HIT/HITTS*  
**Acts:** Anticoagulant, thrombin inhib  
**Dose:** 0.75 mg/kg IV bolus, then 1.75 mg/kg/h for duration of procedure and up to 4 h postprocedure; ✓ ACT 5 min after bolus, may repeat 0.3 mg/kg bolus if necessary (give w/ aspirin ASA 300–325 mg/d; start pre-PTCA)  
**w/ P:** [B, ?]  
**CI:** Major bleeding  
Disp: Powder 250 mg for Inj
SE: ↓ BP, bleeding, back pain, N, HA

**Bleomycin Sulfate (Generic) BOX:** Idiopathic Rxn (↓ BP, fever, chills, wheezing) in lymphoma pts; pulm fibrosis; should be administered by chemo-experienced physician  
**Uses:** *Testis CA; Hodgkin Dz & NHLs; cutaneous lymphomas; & squamous cell CA (head & neck, larynx, cervix, skin, penis); malignant pleural effusion sclerosing agent*  
**Acts:** Induces DNA breakage (scission)  
**Dose:** (per protocols); ↓ w/ renal impair **w/ P:** [D, ?]  
**CI:** w/ Hypersens, idiosyncratic Rxn  
Disp: Powder (Inj) 15, 30 units  
SE: Hyperpigmentation & allergy (rash to anaphylaxis); fever in 50%; lung tox (idiosyncratic & dose related); pneumonitis w/ fibrosis; Raynaud phenomenon, N/V  
**Notes:** Test dose 1 unit, especially in lymphoma pts; lung tox w/ total dose > 400 units or single dose > 30 units; avoid high FiO₂ in general anesthesia to ↓ tox

**Boceprevir (Victrelis) Uses:** *Chronic hep C, genotype 1, w/ compensated liver Dz, including naive to Tx or failed Tx w/ peginterferon and ribavirin*  
**Acts:** Hep C antiviral  
**Dose:** Adults. After 4 wk of peginterferon and ribavirin, then 800 mg tid w/ food for 44 wk w/ peginterferon and ribavirin; must be used w/ peginterferon and ribavirin  
**w/ P:** [B, X w/ peginterferon and ribavirin, –] (X because must be used w/ peginterferon and ribavirin, class B by itself)  
**CI:** All CIs to peginterferon and ribavirin; men if PRG female partner; drugs highly dependent on CYP3A4/5 including alfuzosin, sildenafil, tadalaflil, lovastatin, simvastatin, ergota-mines, triazolam, midazolam, rifampin, St. John’s wort, phenytoin, carbamazepine, phenobarbital, droperidone strong inhib CYP3A4/5  
Disp: Caps 200 mg  
SE: Anemia, ↓ WBCs, neutrophils, fatigue, insomnia, HA, anorexia, N/V/D, dysgeusia, alopecia  
**Notes:** (NS3/4A protease inhib); ✓ HCV-RNA levels wk 4, 8, 12, 24, end of Tx; WBC w/ diff at wk 4, 8, 12

**Bortezomib (Velcade) Uses:** *Rx multiple myeloma or mantel cell lymphoma w/ one failed previous Rx*  
**Acts:** Proteasome inhib  
**Dose:** Per protocol or PI, ↓ dose w/ hematologic tox, neuropathy **w/ P:** [D, ?/–]  
**w/ Drugs CYP450 metabolized (Table 10, p 319)**  
**Disp:** 3.5 mg vial Inj powder  
SE: Asthenia, GI upset, anorexia, dyspnea, HA, orthostatic ↓ BP, edema, insomnia, dizziness, rash, pyrexia, arthralgia, neuropathy

**Bosutinib Monohydrate (Bosulif) Uses:** *Ph⁺ CML intol/resist to prior therapy*  
**Acts:** TKI  
**Dose:** 500 mg/d, ↑ dose to 600 mg/d by wk 8 w/ incomplete reponse, or by wk 12 w/ cytogenetic incomplete response and no grade 3/greater adverse Rxn; w/ hepatic impair 200 mg/d **w/ P:** [D, –]  
**CI:** GI toxicity; ↓ BM, ✓ CBC/LFTs q mo; fluid retention; hold/↓ dose or D/C w/ toxicity  
**Disp:** Tabs 100, 500 mg  
SE: N, V, D, Abd pain, fever, rash, fatigue, anemia, ↓ plts  
**Notes:** Avoid w/
mod/strong CYP3A inhibit & inducers; avoid use of PPIs

**Botulinum Toxin Type A [abobotulinumtoxinA] (Dysport)**

*Effects may spread beyond Tx area leading to swallowing and breathing difficulties (may be fatal); Sxs may occur hours to weeks after Inj*

**Uses:** *Cervical dystonia (adults), glabellar lines (cosmetic)*

**Acts:** Neurotoxin, ↓ ACH release from nerve endings, ↓ neuromuscular transmission

**Dose:** *Cervical dystonia: 500 units IM ÷ dose units into muscles; retreat no less than 12–16 wk PRN dose range 250–100 units based on response. Glabellar lines: 50 units ÷ in 10 units/Inj into muscles, do not administer at intervals < q3mo repeat no less than q3mo w/ P: [C, ?] Sedentary pt to resume activity slowly after Inj; aminoglycosides and nondepolarizing muscle blockers may ↑↑ effects; do not exceed dosing

**CI:** Hypersens to components (cow milk), Infxn at Inj site

**Disp:** 300, 500 units, Inj

**SE:** Anaphylaxis, erythema multiforme, dysphagia, dyspnea, syncope, HA, NAG, Inj site pain

**Notes:** Botulinum toxin products not interchangeable

**Botulinum Toxin Type A [incobotulinumtoxinA] (Xeomin)**

*Effects may spread beyond Tx area leading to swallowing and breathing difficulties (may be fatal); Sxs may occur hours to weeks after Inj*

**Uses:** *Cervical dystonia (adults), glabellar lines*

**Acts:** Neurotoxin, ↓ ACH release from nerve endings, ↓ neuromuscular transmission

**Dose:** *Cervical dystonia: 120 units IM ÷ dose into Botulinum Toxin Type A muscles; Glabellar lines: 4 units into each of the 5 sites (total = 20 units) do not administer at intervals < q3mo w/ P: [C, ?] Sedentary pt to resume activity slowly after Inj; aminoglycosides and nondepolarizing muscle blockers may ↑↑ effects; do not exceed dosing

**CI:** Hypersens to components (cow milk), infect at Inj site

**Disp:** 50, 100 units, Inj

**SE:** Dysphagia, neck/musculoskeletal pain, muscle weakness, Inj site pain

**Notes:** Botulinum toxin products not interchangeable

**Botulinum Toxin Type A [onabotulinumtoxinA] (Botox, Botox Cosmetic)**

*Effects may spread beyond Tx area leading to swallowing/breathing difficulties (may be fatal); Sxs may occur hours to weeks after Inj*

**Uses:** *Glabellar lines (cosmetic) < 65 y, blepharospasm, cervical dystonia, axillary hyperhidrosis, strabismus, chronic migraine, upper limb spasticity, incontinence in OAB due to neurologic Dz*

**Acts:** Neurotoxin, ↓ ACH release from nerve endings; denervates sweat glands/muscles

**Dose:** *Adults. Glabellar lines (cosmetic): 0.1 mL IM × 5 sites q3–4mo; Blepharospasm: 1.25–2.5 units IM/site q3mo; max 200 units/30 d total; Cervical dystonia: 198–300 units IM ÷ < 100 units into muscle; Hyperhidrosis: 50 units intradermal/each axilla; Strabismus: 1.25–2.5 units IM/site q3mo; inject eye muscles w/ EMG guidance; Chronic migraine: 155 units total, 0.1 mL (5 unit) Inj ÷ into 7 head/neck muscles; Upper limb spasticity: Dose based on Hx use EMG guidance w/ P: [C, ?] w/ Neurologic Dz; do not exceed rec doses; sedentary pt to resume activity slowly after Inj; aminoglycosides and nondepolarizing muscle blockers may ↑↑ effects; do not exceed dosing

**CI:** Hypersens to components, Infxn at Inj site

**Disp:** Inj powder, single-use vial (dilute w/ NS); *(Botox cosmetic) 50, 100 units; (Botox) 100, 200 unit vials; store 2–8°C

**SE:** Anaphylaxis, erythema multiforme, dysphagia, dyspnea, syncope, HA, NAG, Inj site pain

**Notes:** Botulinum toxin products not interchangeable; do not exceed total dose of 360 units q12–16wk

**Botulinum Toxin Type B [rimabotulinumtoxinB] (Myobloc)**

*Effects may spread beyond Tx area leading to swallowing and breathing difficulties (may be fatal); Sxs may occur hours to weeks after Inj*

**Uses:** *Cervical dystonia (adults)*

**Acts:** Neurotoxin, ↓ ACH release from nerve endings, ↓ neuromuscular transmission

**Dose:** *Cervical dystonia: 2500–5000 units IM ÷ dose units into muscles; lower dose if näive w/ P: [C, ?] Sedentary pt to resume activity slowly after Inj; amino-glycosides
and nondepolarizing muscle blockers may ↑↑ effects; do not exceed dosing CI: Hypersens to components, Infxn at Inj site Disp: Inj 5000 units/mL SE: Anaphylaxis, erythema multiforme, dysphagia, dyspnea, syncope, HA, NAG, Inj site pain Notes: Effect 12–16 wk w/ 5000–10,000 units; botulinum toxin products not interchangeable

Brentuximab Vedotin (Adcetris) BOX: JC virus Infxn leading to PML and death may occur Uses: *Hodgkin lymphoma, systemic anaplastic large cell lymphoma* Acts: CD30-directed antibody-drug conjugate Dose: Adults. 1.8 mg/kg IV over 30 min q 3 wk; max 16 cycles; pts > 100 kg, dose based on Wt of 100 kg; ↓ dose w/ periph neuropathy & neutropenia (see label) w/ P: [D, ?/–] w/ Strong CYP3A4 inhib/inducers CI: w/ Bleomycin Disp: Inj (powder) 50 mg/vial SE: Periph neuropathy, ↓ WBC/Hgb/plt, N/V/D, HA, dizziness, pain, arthralgia, myalgia, insomnia, anxiety, alopecia, night sweats, URI, fatigue, pyrexia, rash, cough, dyspnea, Inf Rxns, tumor lysis synd, PML, SJS, pulmonary tox

Brimonidine (Alphagan P) Uses: *Open-angle glaucoma, ocular HTN* Acts: α₂-Adrenergic agonist Dose: 1 gtt in eye(s) tid (wait 15 min to insert contacts) w/ P: [B, ?] CI: MAOI Rx Disp: 0.15, 0.1, 0.2%, soln SE: Local irritation, HA, fatigue

Brimonidine/Timolol (Combigan) Uses: *↓ IOP in glaucoma or ocular HTN* Acts: Selective α₂-adrenergic agonist and nonselective β-adrenergic antagonist Dose: Adults & Peds ≥ 2 y. 1 gtt bid w/ P: [C, –] CI: Asthma, severe COPD, sinus brady, 2nd-/3rd-degree AV block, CHF cardiac failure, cardiogenic shock, component hypersens Disp: Soln: (2 mg/mL brimonidine, 5 mg/mL timolol) 5, 10, 15 mL SE: Allergic conjunctivitis, conjunctival folliculosis, conjunctival hyperemia, eye pruritus, ocular burning & stinging Notes: Instill other ophthal products 5 min apart

Brinzolamide (Azopt) Uses: *Open-angle glaucoma, ocular HTN* Acts: Carbonic anhydrase inhib Dose: 1 gtt in eye(s) tid w/ P: [C, ?/–] CI: Sulfonamide allergy Disp: 1% susp SE: Blurred vision, dry eye, blepharitis, taste disturbance, HA

Bromocriptine (Parlodel) Uses: *Parkinson Dz, hyperprolactinemia, acromegaly, pituitary tumors* Acts: Agonist to striatal dopamine receptors; ↓ prolactin secretion Dose: Initial, 1.25 mg PO bid; titrate to effect, w/ food w/ P: [B, –] CI: uncontrolled HTN, PRG, severe CAD or CVS Dz Disp: Tabs 2.5 mg; caps 5 mg SE: ↓ BP, Raynaud phenomenon, dizziness, N, GI upset, hallucinations

Bromocriptine Mesylate (Cycloset) Uses: *Improve glycemic control in adults w/ type 2 DM* Acts: Dopamine receptor agonist; ? DM mechanism Dose: Initial: 0.8 mg PO daily, ↑ weekly by 1 tab; usual dose 1.6–4.8 mg 1×/d; w/ in 2 h after waking w/ food w/ P: [B, –] CI: Hypersens to ergots drugs, w/ syncopal migraine, nursing mothers Disp: Tabs 0.8 mg SE: N/V, fatigue, HA, dizziness, somnolence

Budesonide (Rhinocort Aqua, Pulmicort) Uses: *Allergic & nonallergic rhinitis, asthma* Acts: Steroid Dose: Adults. Rhinocort Aqua: 1 spray each nostril/d Pulmicort Flexhaler: 1–2 Inh bid Peds. Rhinocort Aqua intranasal: 1 spray each nostril/d; Pulmicort flexhaler 1–2 Inh bid; Respules: 0.25–0.5 mg daily or bid (rinse mouth after PO use) w/ P: [B, ?/–] CI: w/ Acute asthma Disp: Flexhaler: 90, 180 mcg/Inh; Respules: 0.25, 0.5,1 mg/2 mL; Rhinocort Aqua: 32 mcg/spray SE: HA, N, cough, hoarseness, Candida Infxn, epistaxis

Budesonide, Oral (Entocort EC) Uses: *Mild–mod Crohn Dz* Acts: Steroid, anti-inflammatory Dose: Adults. Initial: 9 mg PO q a.m. to 8 wk max: maint 6 mg PO q a.m. taper by 3 mo; avoid
grapefruit juice **CI**: Hypersens w/ P: [C, ?,–] Budesonide/Formoterol DM, glaucoma, cataracts, HTN, CHF **Disp**: Caps 3 mg ER **SE**: HA, N, ↑ Wt, mood change, *Candida* Infxn, epistaxis **Notes**: Do not cut/crush/chew; taper on D/C

**Budesonide/Formoterol (Symbicort)** **BOX**: Long-acting β₂-adrenergic agonists may ↑ risk of asthma-related death. Use only for pts not adequately controlled on other meds **Uses**: *Rx of asthma, main in COPD (chronic bronchitis and emphysema)* **Acts**: Steroid w/ LA β₂-adrenergic agonist **Dose**: Adults & Peds > 12 y. 2 Inh bid (use lowest effective dose), 640/18 mcg/d max w/ P: [C, ?,–] **CI**: Status asthmaticus/acute asthma **Disp**: Inh (budesonide/formoterol): 80/4.5 mcg, 160/4.5 mcg **SE**: HA, GI discomfort, nasopharyngitis, palpitations, tremor, nervousness, URI, paradoxical bronchospasm, hypokalemia, cataracts, glaucoma **Notes**: Not for acute bronchospasm; not for transferring pt from chronic systemic steroids; rinse & spit w/ water after each dose

**Bumetanide (Bumex)** **BOX**: Potent diuretic, may result in profound fluid & electrolyte loss **Uses**: *Edema from CHF, hepatic cirrhosis, & renal Dz* **Acts**: Loop diuretic; ↓ reabsorption of Na⁺ & Cl⁻, in ascending loop of Henle & the distal tubule **Dose**: Adults. 0.5–2 mg/d PO; 0.5–1 mg IV/IM q8–24h (max 10 mg/d). Peds. 0.015–0.1 mg/kg PO q6–24h (max 10 mg/d) w/ P: [C, ?,–] CI: Anuria, hepatic coma, severe electrolyte depletion **Disp**: Tabs 0.5, 1, 2 mg; Inj 0.25 mg/mL **SE**: ↓ K⁺, ↓ Na⁺, ↑ Cr, ↑ uric acid, dizziness, ototox **Notes**: Monitor fluid & lytes

**Bupivacaine (Marcaine)** **BOX**: Avoid 0.75% for OB anesthesis d/t reports of cardiac arrest and death **Uses**: *Local, regional, & spinal anesthesia, obstetrical procedures* local & regional analgesia **Acts**: Local anesthetic **Dose**: Adults & Peds. Dose dependent on procedure (tissue vascularity, depth of anesthesia, etc) (Table 1, p 300) w/ P: [C, –] Severe bleeding, ↓ BP, shock & arrhythmias, local Infxns at site, septicemia CI: Obstetrical paracervical block anesthesia **Disp**: Inj 0.25, 0.5, 0.75% **SE**: ↓ BP, ↓ HR, dizziness, anxiety

**Buprenorphine (Buprenex) [C-III]** **Uses**: *Mod–severe pain* **Acts**: Opiate agonist-antagonist **Dose**: 0.3–0.6 mg IM or slow IV push q6h PRN w/ P: [C, –] **Disp**: 0.3 mg/mL **SE**: Sedation, ↓ BP, resp depression **Notes**: Withdrawal if opioid-dependent

**Buprenorphine & Naloxone (Suboxone) [C-III] Uses**: *Maint opioid withdrawal* **Acts**: Opioid agonist-antagonist + opioid antagonist **Dose**: Usual: 4–24 mg/d SL; ↑/↓ by 2/0.5 mg or 4/1 mg to effect of S/Sxs w/ P: [C, +/-] CI: Hypersens **Disp**: SL film buprenorphine/naloxone: 2/0.5, 8/2 mg **SE**: Oral hypoparesthesia, HA, V, pain, constipation, diaphoresis **Notes**: Not for analgesia

**Buprenorphine, Transdermal (Butrans) [C-III]** **BOX**: Limit use to severe around-the-clock chronic pain; assess for opioid abuse/addiction before use; 20 mcg/h max due to ↑ QTc; avoid heat on patch, may result in OD **Uses**: *Mod–severe chronic pain requiring around-the-clock opioid analgesic* **Acts**: Opiate agonist-antagonist **Dose**: Wear patch ×7/d; if opioid naïve, start 5 mcg/h; see label for conversion from opioid; wait 72 h before [Δ] dose; wait 3 wk before using same application site w/ P: [C, –] CI: Resp depression, severe asthma, ileus, component hypersens, short-term opioid need, postop/mild/intermittent pain **Disp**: Transdermal patch 5, 10, 20 mcg/h **SE**: N/V, HA, site Rxns pruritus, dizziness, constipation, somnolence, dry mouth **Notes**: Taper on D/C

**Bupropion (Aplenzin XR, Wellbutrin, Wellbutrin SR, Wellbutrin XL, Zyban)** **BOX**: All pts being treated w/ bupropion for smoking cessation Tx should be observed for neuropsychiatric S/Sxs (hostility, agitation, depressed mood, and suicide-related events; most during/after Zyban; Sxs may...
persist following D/C; closely monitor for worsening depression or emergence of suicidality, increased suicidal behavior in young adults. *Depression, smoking cessation adjunct*, ADHD, not for peds use. **Acts**: Weak inhib of neuronal uptake of serotonin & norepinephrine; ↓ neuronal dopamine reuptake. **Dose**: Depression: 100–450 mg/d ÷ bid-tid; SR 150–200 mg bid; XL 150–450 mg daily. *Smoking cessation (Zyban, Wellbutrin XR)*: 150 mg/d × 3 d, then 150 mg bid × 8–12 wk, last dose before 6 p.m.; ↓ dose w/ renal/hepatic impair w/ P: [C, ?/–] CI: Sz disorder, Hx anorexia nervosa or bulimia, MAOI w/ in 14 d; abrupt D/C of EtOH or sedatives; inhibitors/inducers of CYP2B6 (Table 10, p 319). **Disp**: Tabs 75, 100 mg; SR tabs 100, 150, 200 mg; XL tabs 150, 300 mg; Zyban tabs 150 mg; Aplenzin XR tabs: 175, 348, 522 mg. **SE**: Xerostomia, dizziness, Szs, agitation, insomnia, HA, tachycardia, ↓ Wt. **Notes**: Avoid EtOH & other CNS depressants, SR & XR do not cut/chew/crush, may ↑ adverse events including Szs.

**Buspirone Uses**: *Generalized anxiety disorder*. **Acts**: Antianxiety; antagonizes CNS serotonin and dopamine receptors. **Dose**: Initial: 7.5 mg PO bid; ↑ by 5 mg q2–3d to effect; usual 20–30 mg/d; max 60 mg/d. CI: Hypersens w/ P: [B, ?/–] Avoid w/ severe hepatic/renal Insuff w/ MAOI. **Disp**: Tabs 5, 7.5, 10, 15, 30 mg. **SE**: Drowsiness, dizziness, HA, N, EPS, serotonin synd, hostility, depression. **Notes**: No abuse potential or physical/psychological dependence.

**Busulfan (Myleran, Busulfex)** BOX: Can cause severe bone marrow suppression, should be administered by an experienced physician. **Uses**: *CML*, preparative regimens for allogeneic & ABMT in high doses. **Acts**: Alkylating agent. **Dose**: (per protocol) w/ P: [D, ?] **Disp**: Tabs 2 mg. Inj 60 mg/10 mL. **SE**: Bone marrow suppression, ↑ BP, pulm fibrosis, N (w/ high dose), gynecomastia, adrenal Insuff, skin hyperpigmentation, ↑ HR, rash, weakness. **Notes**: No abuse potential or physical/psychological dependence.

**Butabarbital, Hyoscyamine Hydrobromide, Phenazopyridine (Pyridium Plus)** Uses: *Relieve urinary tract pain w/ UTI, procedures, trauma*. **Acts**: Phenazopyridine (topical anesthetic), hyoscyamine (parasympatholytic, ↓ spasm), & butabarbital (sedative). **Dose**: 1 PO qid, pc & hs; w/ antibiotic for UTI, 2 d max w/ P: [C, ?]. **Disp**: Tab butabarbital/hyoscyamine/phenazopyridine, 15 mg/0.3 mg/150 mg. **SE**: HA, rash, itching, GI distress, methemoglobinemia, hemolytic anemia, anaphylactoid-like Rxs, dry mouth, dizziness, drowsiness, blurred vision. **Notes**: Colors urine orange, may tint skin, sclera; stains clothing/contacts.
Butorphanol (Stadol) [C-IV] Uses: *Anesthesia adjunct, pain & migraine HA* Acts: Opiate agonist-antagonist w/ central analgesic actions Dose: 0.5–4 mg IM or IV q3–4h PRN. Migraine: 1 spray in 1 nostril, repeat × 1 60–90 min, then q3–4h; ↓ in renal impair w/ P: [C, +] Disp: Inj 1, 2 mg/mL; nasal 1 mg/spray (10 mg/mL) SE: Drowsiness, dizziness, nasal congestion Notes: May induce withdrawal in opioid dependency

C1 Esterase Inhibitor [Human] (Berinert, Cinryze) Uses: *Berinert*: Rx acute Abd or facial attacks of HAE*, *Cinryze*: Prophylaxis of HAE* Acts: ↓ complement system by ↓ factor XIIa and kallikrein activation Dose: Adults & Adolescents. Berinert: 20 units/kg IV × 1; Cinryze: 1000 units IV q3–4d w/ P: [C, +/–] Hypersens Rxns, monitor for thrombotic events, may contain infectious agents CI: Hypersens Rxns to C1 esterase inhibitor preparations Disp: 500 units/vial SE: HA, Abd pain, N/V/D, muscle spasms, pain, subsequent HAE attack, anaphylaxis, thromboembolism

Cabazitaxel (Jevtana) BOX: Neutropenic deaths reported; CBCs, CI w/ ANC ≤ 1500 cells/mm³; severe hypersens (rash/erythema, ↓ BP, bronchospasm) may occur, D/C drug & Tx; CI w/ Hx of hypersens to cabazitaxel or others formulated w/ polysorbate 80 Uses: *Hormone refractory metastatic PCa after taxotere* Acts: Microtubule inhib Dose: 25 mg/m² IV Inf (over 1 h) q3wk w/ prednisone 10 mg PO daily; premed w/ antihistamine, corticosteroid, H₂ antagonist; do not use w/ bili > ULN, AST/ALT > 1.5 × ULN w/ P: [D, –] D/C w/ arterial thromboembolic events; dehiscence; ↑ BP, ONJ; palmar-plantar erythrodysesthesia synd; proteinuria; reversible posterior leukoencephalopathy CI: w/ Severe bleed Disp: Caps 20, 80 mg SE: N, V, Abd pain, constipation, oral pain, dysgeusia, fatigue, ↓ Wt, anorexia, ↑ BP, ↑ AST/ALT, ↑ alk phos, ↑ bili, ↓ Ca, ↓ PO₄, ↓ plts, ↓ lymphocytes, ↓ neutrophils Notes: A CYP3A4 subs, w/ strong CYP3A4 induc ↓ cabazantinib exposure, w/ strong CYP3A4 inhib ↑ cabozantinib exposure; for hemorrhage

Cabozanitinib (Cometriq) BOX: GI perf/fistulas, severe and sometimes fatal hemorrhage (3%) including GI bleed/hemoptysis Uses: *Metastatic medullary thyroid CA* Acts: Multi TKI Dose: 140 mg/d, do NOT eat 2 h ac or 1 h pc w/ P: [D, –] D/C w/ arterial thromboembolic events; dehiscence; ↑ BP, ONJ; palmar-plantar erythrodysesthesia synd; proteinuria; reversible posterior leukoencephalopathy CI: w/ Severe bleed Disp: Caps 20, 80 mg SE: N, V, Abd pain, constipation, stomatitis, oral pain, dysgeusia, fatigue, ↓ Wt, anorexia, ↑ BP, ↑ AST/ALT, ↑ alk phos, ↑ bili, ↓ Ca, ↓ PO₄, ↓ plts, ↓ lymphocytes, ↓ neutrophils Notes: A CYP3A4 subs, w/ strong CYP3A4 induc ↓ cabozantinib exposure, w/ strong CYP3A4 inhib ↑ cabozantinib exposure; for hemorrhage

Calcipotriene (Dovonex) Uses: *Plaque psoriasis* Acts: Synthetic vitamin D₃ analog Dose: Apply bid w/ P: [C, ?] CI: ↑ Ca²⁺; vit D tox; do not apply to face Disp: Cream; foam oint; soln 0.005% SE: Skin irritation, dermatitis

Calcitonin (Fortical, Miacalcin) Uses: Miacalcin: *Paget Dz, emergent Rx hypercalcemia, postmenopausal osteoporosis*; Fortical: *Postmenopausal osteoporosis* Acts: Polypeptide hormone (salmon derived), inhibits osteoclasts Dose: Paget Dz: 100 units/d IM/SQ initial, 50 units/d or 50–100 units q1–3d maint. Hypercalcemia: 4 units/kg IM/SQ q12h; ↑ to 8 units/kg q12h, max q6h. Osteoporosis: 100 units/q other day IM/SQ; intranasal 200 units = 1 nasal spray/d w/ P: [C, ?] Disp: Fortical, Miacalcin nasal spray 200 Int units/activation; Inj, Miacalcin 200 units/mL (2 mL) SE: Facial flushing, N, Inj site edema, nasal irritation, polyuria, may ↑ granular casts in urine Notes: For nasal spray alternate nostrils daily; ensure adequate calcium and vit D intake; Fortical is rDNA derived from salmon

Calcitriol (Rocaltrol, Calcijex) Uses: *Predialysis reduction of ↑ PTH levels to treat bone Dz; ↑ Ca²⁺ on dialysis* Acts: 1,25-Dihydroxycholecalci-ferol (vit D analog); ↑ Ca²⁺ and phosphorus
absorption; ↑ bone mineralization Dose: Adults. Renal failure: 0.25 mcg/d PO, ↑ 0.25 mcg/d q4–8wk PRN; 0.5–4 mcg 3×/wk IV, ↑ PRN Hypoparathyroidism: 0.5–2 mcg/d. Peds. Renal failure: 15 ng/kg/d, ↑ PRN; maint 30–60 ng/kg/d. Hypoparathyroidism: < 5 y: 0.25–0.75 mcg/d. > 6 y: 0.5–2 mcg/d w/ P: [C, ?] ↑ Mg2+ possible w/ antacids CI: ↑ Ca2+; vit D tox Disp: Inj 1 mcg/mL (in 1 mL); caps 0.25, 0.5 mcg; soln 1 mcg/mL SE: ↑ Ca2+ possible Notes: To keep Ca2+ WNL; use nonaluminum phosphate binders and low-phosphate diet to control serum phosphate
Calcitriol, Ointment (Vectical) Uses: *Mild–moderate plaque psoriasis* Acts: Vitamin D3 analog Dose: Adults. Apply to area BID; max 200 g/wk w/ P: [C, ?/–] Avoid excess sunlight CI: None Disp: Oint 3 mcg/g (5-, 100-g tube) SE: Hypercalcemia, hypercalciuria, nephrolithiasis, worsening psoriasis, pruritus, skin discomfort
Calcium Acetate (PhosLo) Uses: *ESRD-associated hyperphosphatemia* Acts: Ca2+ supl w/o aluminum to ↓ PO42– absorption Dose: 2–4 tabs PO w/ meals usual 2001–2668 mg PO w/ meals w/ P: [C, +] CI: ↑ Ca2+ renal calculi Disp: GelCap 667 mg SE: Can ↑ Ca2+, hypophosphatemia, constipation Notes: Monitor Ca2+
Calcium Carbonate (Tums, Alka-Mints) [OTC] Uses: *Hyperacidity-associated w/ peptic ulcer Dz, hiatal hernia, etc* Acts: Neutralizes gastric acid Dose: 500 mg–2 g PO PRN, 7 g/d max; ↓ w/ renal impair w/ P: [C, ?] CI: ↑ CA, ↓ phos, renal calculi, suspected digoxin tox Disp: Chew tabs 350, 420, 500, 550, 750, 850 mg; susp SE: ↑ Ca2+, ↓ PO4–, constipation
Calcium Glubionate (Calcionate) [OTC] Uses: *Rx & prevent calcium deficiency* Acts: Ca2+ supl Dose: Adults. Replacement: 1–2 g/d PO. Tetany: 1 g CaCl over 10–30 min; repeat in 6 h PRN; ECC 2010. Hyperkalemia/hypermagnesemia/CCB OD: 500–1000 mg (5–10 mL of 10% soln) IV; repeat PRN; comparable dose of 10% calcium gluconate is 15–30 mL Peds. Tetany: 10 mg/kg CaCl over 5–10 min; repeat in 6–8 h or use Inf (200 mg/kg/d max). ECC 2010. Hypocalcemia/hyperkalemia/hypermagnesemia/CCB OD: Calcium chloride or gluconate 20 mg/kg (0.2 mL/kg) slow IV/IO, repeat PRN; central venous route preferred Adults & Peds. ↓ Ca2+ d/t citrated blood Inf: 0.45 mEq Ca/100 mL citrated blood Inf (↓ in renal impair) w/ P: [C, ?] CI: ↑ Ca2+, suspected digoxin tox Disp: CaCl Inj 10% = 100 mg/mL = Ca 27.2 mg/mL = 10-mL amp; Ca gluconate Inj 10% = 100 mg/mL = Ca 9 mg/mL; tabs 500 mg = 45-mg Ca, 650 mg = 58.5-mg Ca, 975 mg = 87.75-mg Ca, 1 g = 90-mg Ca; Ca gluceptate Inj 220 mg/mL = 18-mg/mL Ca SE: ↓ HR, cardiac arrhythmias, ↑ Ca2+, constipation Notes: CaCl 270 mg (13.6 mEq) elemental Ca/g & calcium gluconate 90 mg (4.5 mEq) Ca/g. RDA for Ca intake: Peds < 6 mo. 200 mg/d; 6 mo–1 y: 260 mg/d; 1–3 y: 700 mg/d; 4–8 y: 1000 mg/d; 10–18 y: 1300 mg/d. Adults. 1000 mg/d; > 50 y: 1200 mg/d
Calfactant (Infasurf) Uses: *Prevention & Rx of RSD in infants* Acts: Exogenous pulm surfactant Dose: 3 mL/kg instilled into lungs. Can repeat 3 total doses given 12 h apart w/ P: [?, ?] Disp: Intratracheal susp 35 mg/mL SE: Monitor for cyanosis, airway obst, ↓ HR during administration
Canagliflozin (Invokana) Uses: *Type 2 DM* Acts: Sodium-glucose co-transporter 2 (SGLT2) inhibit Dose: Adults. Start 100 mg/d; ↑ to 300 mg PRN w/ GFR > 60 mL/min w/ P: [C, –] ↓ BP from ↓
vol from glucosuria; ↑ K⁺; ↑ Cr, renal Fxn; genital mycotic infections; hypoglycemia lower risk than insulin & sulfonylureas; hypersens CI: Hypersens reaction, severe renal impairment (GFR < 45 mL/min) Disp: Tabs 100, 300 mg SE: UTI, genital mycotic infections (3–15%) less likely to occur in circumcised males, polyuria, ↑ K⁺, ↑ PO₄³⁻, ↑ Mg²⁺, ↑ creat, ↑ LDL-cholesterol

Notes: First in class w/ FDA approval; may ↑ CV morbidity in first 30 d of Tx; CrCl 45–60 mL/min 100 mg/d max, do NOT use w/ CrCl < 45 mL/min; Wt loss likely; do not use w/ severe liver Dz; ↑ adverse events in geriatric pop; metabolized by UDP-glucuronosyltransferase 1A9 & 2B4, concomitant rifampin, phenytoin, or ritonavir use reduces exposure, may need to ↑ dose; may need to ↓ digoxin dose

Candesartan (Atacand) BOX: w/ PRG D/C immediately Uses: *HTN, CHF* Acts: Angiotensin II receptor antagonist Dose: 4–32 mg/d (usual 16 mg/d) w/ P: [C(1st tri), D (2nd tri), ?/–] w/ renal Dz CI: Component hypersens Disp: Tabs 4, 8, 16, 32 mg SE: UTI, genital mycotic infections (3–15%) less likely to occur in circumcised males, polyuria, ↑ K⁺, ↑ PO₄³⁻, ↑ Mg²⁺, ↑ creat, ↑ LDL-cholesterol

Notes: First in class w/ FDA approval; may ↑ CV morbidity in first 30 d of Tx; CrCl 45–60 mL/min 100 mg/d max, do NOT use w/ CrCl < 45 mL/min; Wt loss likely; do not use w/ severe liver Dz; ↑ adverse events in geriatric pop; metabolized by UDP-glucuronosyltransferase 1A9 & 2B4, concomitant rifampin, phenytoin, or ritonavir use reduces exposure, may need to ↑ dose; may need to ↓ digoxin dose

Captopril (Capoten, Others) Uses: *HTN, CHF, MI*, LVD, diabetic nephropathy, *minor pain of muscles & joints* EtOH withdrawal Acts: ACE inhib Dose: Adults. HTN: Initial, 25 mg PO bid-tid; ↑ to maint q1–2wk by 25-mg increments/dose (max 450 mg/d) to effect. CHF: Initial, 6.25–12.5 mg PO tid; titrate PRN LVD: 50 mg PO tid. DN: 25 mg PO tid. Peds infants 0.15–0.3 mg/kg/dose PO ÷ 1–4 doses Children: Initial, 0.3–0.5 mg/kg/dose PO; ↑ to 6 mg/kg/d max in 2–4 ÷ doses; 1 h ac; ↓ dose renal impairment w/ P: [D, –] CI: Hx angioedema Disp: Tabs 12.5, 25, 50, 100 mg SE: Rash, proteinuria, cough, ↑ K⁺

Carbamazepine (Tegretol XR, Carbatrol, Epitol, Equetro) BOX: Aplastic anemia & agranulocytosis have been reported w/ carbamazepine; pts w/ Asian ancestry should be tested to determine potential for skin Rxns Uses: *Epilepsy, trigeminal neuralgia*, acute mania w/ bipolar disorder (Equetro)* EtOH withdrawal Acts: Anticonvulsant Dose: Adults. Initial: 200 mg PO bid or 100 mg 4 ×/d as susp; ↑ by 200 mg/d; usual 800–1200 mg/d ÷ doses. Acute Mania (Equetro): 400 mg/d, ÷ bid, adjust by 200 mg/d to response 1600 mg/d max. Peds < 6 y: 10–20 mg/kg ÷ bid-tid or qid (susps) 6–12 y: Initial: 200 mg/d bid (tab) or qid (susp), ↑ 100 mg/d, usual: 400–800 mg/d, max 1000 mg/d; ↓ in renal impair; take w/ food w/ P: [D, M] CI: w/ in 14 d, w/ nefazodone, MAOI use, Hx BM suppression Disp: Tabs 200 mg; chew tabs 100 mg, XR tabs 100, 200,400 mg; Equetro Caps ER 100, 200, 300 mg; susp 100 mg/5 mL SE: Drowsiness, dizziness, blurred vision, N/V, rash, SJS/toxic epidermal necrolysis (TEN), ↓ Na⁺, leukopenia, agranulocytosis Notes: Monitor CBC & levels: Trough: Just before next dose; Therapeutic: Peak: 8–12 mcg/mL (monotherapy), 4–8 mcg/mL (polytherapy); Toxic Trough: > 15 mcg/mL; Half-life: 15–20 h; generic products not interchangeable, many drug interactions, administer susp in 3–4 ÷ doses daily; skin tox (SJS/TEN) ↑ w/ HLA-B*1502 allele

Carbidopa/Levodopa (Sinemet, Parcopa) Uses: *Parkinson Dz* Acts: ↑ CNS dopamine levels Dose: 25/100 mg tid, ↑ as needed (max 200/2000 mg/d) w/ P: [C, ?] CI: NAG, suspicious skin lesion (may activate melanoma), melanoma, MAOI use (w/ in 14 d) Disp: Tabs (mg carbidopa/mg levodopa) 10/100, 25/100, 25/250; tabs SR (mg carbidopa/mg levodopa) 25/100, 50/200; ODT 10/100, 25/100, 25/250 SE: Psych disturbances, orthostatic ↓ BP, dyskinesias, cardiac arrhythmias
Carboplatin (Paraplatin) **BOX:** Administration only by physician experienced in CA chemotherapy; ↓ PLT, anemia, ↑ Infxn; BM suppression possible; anaphylaxis and V may occur  

**Uses:** *Ovarian*, lung, head & neck, testicular, urothelial, & brain CA, NHL & allogeneic & ABMT in high doses  

**Acts:** DNA cross-linker; forms DNA-platinum adducts  

**Dose:** Per protocols based on target (Calvert formula: mg = AUC × [25 + calculated GFR]); adjust based on plt count, CrCl, & BSA (Egorin formula); up to 1500 mg/m² used in ABMT setting (per protocols) w/ P: [D, ?] severe hepatic tox  

**CI:** None  

**Disp:** Inj 50-, 150-, 450-, 650-mg vial (10 mg/mL)  

**SE:** Pain, ↓ Na⁺/Mg²⁺/Ca²⁺/K⁺, anaphylaxis, ↓ BM, N/V/D, nephrotox, hematuria, neurotox, ↑ LFTs  

**Notes:** Physiologic dosing based on Calvert or Egorin formula allows ↑ doses w/ ↓ tox  

Carfilzomib (Kyprolis)  

**Uses:** *Multiple myeloma w/ > 2 prior therapies and prog w/ in 60 d*  

**Acts:** Proteasome inhib  

**Dose:** 20 mg/m²/d, if tolerated ↑ to 27 mg/m²/d; IV over 2–10 min; cycle = 2 consecutive d/wk × 3 wk, then 12-d rest; hydrate before and after admin, premedicate w/ dexamethasone first cycle, dose escalation or if infusion reactions w/ P: [D, –] CHF, cardiac ischemia; pulm HTN, Carisoprodol dyspnea; tumor lysis synd; ↓ plts, hepatic toxicity, LFTs  

**CI:** None  

**Disp:** Vial, 60 mg powder  

**SE:** N, D, fever, fatigue, dyspnea, ARF, anemia, ↓ plts, ↓ lymphocytes, ↑ LFTs, peripheral neuropathy  

Carisoprodol (Soma)  

**Uses:** *Acute (limit 2–3 wk) painful musculoskeletal conditions*  

**Acts:** Centrally acting muscle relaxant  

**Dose:** 250–350 mg PO tid-qid w/ P: [C, M] Tolerance may result; w/ renal/hepatic impair, w/ CYP219 poor metabolizers  

**CI:** Allergy to meprobamate; acute intermittent porphyria  

**Disp:** Tabs 250, 350 mg  

**SE:** CNS depression, drowsiness, dizziness, HA, tachycardia, weakness, rare Sz  

**Notes:** Avoid EtOH & other CNS depressants; avoid abrupt D/C; available in combo w/ ASA or codeine.  

Carmustine [BCNU] (BiCNU, Gliadel) **BOX:** BM suppression, dose-related pulm tox possible; administer under direct supervision of experienced physician  

**Uses:** *Primary or adjunct brain tumors, multiple myeloma, Hodgkin and non-Hodgkin lymphomas*, induction for autologous stem cell or BMT (off label) surgery & RT adjunct high-grade glioma and recurrent glioblastoma (Gliadel implant)  

**Acts:** Alkylating agent; nitrosourea forms DNA cross-links to inhibit DNA  

**Dose:** 150–200 mg/m² q6–8wk single or ÷ dose daily Inj over 2 d; 20–65 mg/m² q4–6wk; 300–600 mg/m² in BMT (per protocols); up to 8 implants in CNS op site; ↓ w/ hepatic & renal impair w/ P: [D, ?/–] ↓ WBC, RBC, plt counts, renal/hepatic impair  

**CI:** ↓ BM, PRG  

**Disp:** Inj 100 mg/vial; Gliadel wafer 7.7 mg  

**SE:** Inf Rxn, ↓ BP, N/V, ↓ WBC & plt, phlebitis, facial flushing, hepatic/renal dysfunction, pulm fibrosis (may occur years after), optic neuroretinitis; heme tox may persist 4–6 wk after dose  

**Notes:** Do not give course more frequently than q6wk (cumulative tox); baseline PFTs, monitor pulm status  

Carteolol Ophthalmic (Generic)  

**Uses:** *↑ IOP pressure, chronic open-angle glaucoma*  

**Acts:** Blocks β-adrenergic receptors (β₁, β₂), mild ISA  

**Dose:** Ophthalm 1 gtt in eye(s) bid w/ P: [C, ?/–]  

**CI:** Sinus brady-cardia; heart block > 1st degree; bronchospasm  

**Disp:** Ophthalm soln 1%  

**SE:** Conjunctival hyperemia, anisocoria, keratitis, eye pain  

**Notes:** Oral forms no longer available in US  

Carvedilol (Coreg, Coreg CR)  

**Uses:** *HTN, mild–severe CHF, LVD post-MI*  

**Acts:** Blocks adrenergic receptors, β₁, β₂, α₁  

**Dose:** HTN: 6.25–12.5 mg bid or CR 20–80 mg PO daily. CHF: 3.125–50 mg bid; w/ food to minimize orthostatic ↓ BP w/ P: [C, ?/–] asthma, DM  

**CI:** Decompensated CHF, 2nd-/3rd-degree heart block, SSS, severe ↓ HR w/o pacemaker, acute asthma,
severe hepatic impair Disp: Tabs 3.125, 6.25, 12.5, 25 mg; CR tabs 10, 20, 40, 80 mg SE: Dizziness, fatigue, hyperglycemia, may mask/potentiate hypoglycemia, ↓ HR, edema, hyper-cholesterolemia Notes: Do not D/C abruptly; ↑ digoxin levels

Caspofungin (Cancidas) Uses: *Invasive aspergillosis refractory/intolerant to standard Rx, candidemia & other candida Inf*, empiric Rx in febrile neutropenia w/ presumed fungal Infxn Acts: Echinocandin; ↓ fungal cell wall synth; highest activity in regions of active cell growth Dose: 70 mg IV load day 1, 50 mg/d IV; slow Inf over 1 h; ↓ in hepatic impair w/ P: [C, ?/–] Do not use w/ cyclosporine CI: Allergy to any component Disp: Inj 50, 70 mg powder for recons SE: Fever, HA, N/V, thrombophlebitis at site, ↑ LFTs ↓ BP, edema, ↑ HR, rash, ↓ K, D, Inf Rxn Notes: Monitor during Inf; limited experience beyond 2 wk of Rx

Cefaclor (Ceclor, Raniclor) Uses: *Bacterial Infxs of the upper & lower resp tract, skin, bone, urinary tract* Acts: 2nd-gen cephalosporin; ↓ cell wall synth. Spectrum: More gram(–) activity than 1st-gen cephalosporins; effective against gram(+) (Streptococcus sp, S. aureus); good gram(–) against H. influenzae, E. coli, Klebsiella, Proteus Dose: Adults. 250–500 mg PO > q8h. Peds. 20–40 mg/kg/d PO ÷ 8–12 h; ↓ renal impair w/ P: [B, M] CI: Cephalosporin/PCN allergy Disp: Caps 250, 500 mg; tabs ER 500 mg; susp, 125, 250, 375 mg/5 mL SE: N/D, rash, eosinophilia, ↑ LFTs, HA, rhinitis, vaginitis

Cefadroxil (Duricef) Uses: *Infxs of skin, bone, upper & lower resp tract, urinary tract* Acts: 1st-gen cephalosporin; ↓ cell wall synth. Spectrum: Good gram(+) (group A β-hemolytic Streptococcus, Staphylococcus); gram(–) (E. coli, Proteus, Klebsiella) Dose: Adults. 1–2 g/d PO, 2 ÷ doses Peds. 30 mg/kg/d ÷ bid; ↓ in renal impair w/ P: [B, M] CI: Cephalosporin/PCN allergy Disp: Caps 500 mg; tabs 1 g; susp, 250, 500 mg/5 mL SE: N/V/D, rash, eosinophilia, ↑ LFTs

Cefazolin (Ancef, Kefzol) Uses: *Infxs of skin, bone, upper & lower resp tract, urinary tract* Acts: 1st-gen cephalosporin; β-lactam ↓ cell wall synth. Spectrum: Good gram(+) bacilli & cocci (Streptococcus, Staphylococcus [except Enterococcus]); some anaerobes Dose: Adults. 1–2 g IV q8h Peds. 25–100 mg/kg/d IV ÷ q6–8h; ↓ in renal impair w/ P: [B, M] CI: Cephalosporin/PCN allergy Disp: Inj SE: D, rash, eosinophilia, ↑ LFTs, Inj site pain Notes: Widely used for surgical prophylaxis

Cefdinir (Omnicef) Uses: *Infxs of the resp tract, skin, and skin structure* Acts: 3rd-gen cephalosporin; ↓ cell wall synth Spectrum: Many gram(+) & (–) organisms; more active than cefaclor & cephalaxin against Streptococcus, Staphylococcus; some anaerobes Dose: Adults. 300 mg PO bid or 600 mg/d PO. Peds. 7 mg/kg PO bid or 14 mg/kg/d PO; ↓ in renal impair w/ P: [B, M] w/ PCN-sensitive pts CI: Hypersens to cephalosporins Disp: Caps 300 mg; susp 125, 250, 375 mg/5 mL SE: Anaphylaxis, D, rare pseudodemembranous colitis, HA

Cefditoren (Spectracef) Uses: *Acute exacerbations of chronic bronchitis, pharyngitis, tonsillitis; skin Infxs* Acts: 3rd-gen cephalosporin; ↓ cell wall synth Spectrum: Many gram(+) & (–) organisms; more active than cefaclor & cephalaxin against Streptococcus, Staphylococcus; some anaerobes Dose: Adults & Peds > 12 y. Skin also pharyngitis, tonsillitis: 200 mg PO bid × 10 d. Chronic bronchitis: 400 mg PO bid × 10 d; avoid antacids w/ in 2 h; take w/ meals; ↓ in renal impair w/ P: [B, ?] Renal/hepatic impair CI: Cephalosporin/PCN allergy, milk protein, or carnitine deficiency Disp: Tabs 200, 400 mg SE: HA, N/V/D, colitis, nephrotox, hepatic dysfunction, SJS, toxic epidermal necrolysis, allergic Rxns Notes: Causes renal excretion of carnitine; tabs contain milk protein
Cefepime (Maxipime) Uses: *Comp/uncomp UTI, pneumonia, empiric febrile neutropenia, skin/soft-tissue Infxns, comp intra-Abd Infxns* **Acts:** 4th-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Gram(+) *S. pneumoniae, S. aureus,* gram(–) *K. pneumoniae, E. coli, P. aeruginosa,* & *Enterobacter* sp **Dose:** **Adults.** 1–2 g IV q8–12h. **Peds.** 50 mg/kg q8h for febrile neutropenia; 50 mg/kg bid for skin/soft-tissue Infxns; ↓ in renal impair w/ P: [B, +]; Sz risk w/ CrCl < 60 mL/min; adjust dose w/ renal Insuff **CI:** Cephalosporin/PCN allergy **Disp:** Inj 500 mg, 1, 2 g **SE:** Rash, pruritus, N/V/D, fever, HA, (+) Coombs test w/o hemolysis **Notes:** Can give IM or IV; concern over ↑ death rates not confirmed by FDA

Cefixime (Suprax) Uses: *Resp tract, skin, bone, & urinary tract Infxns* **Acts:** 3rd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** *S. pneumoniae, S. pyogenes, H. influenzae,* & enterobacteria **Dose:** **Adults.** 400 mg PO ÷ daily-bid. **Peds.** 8 mg/kg/d PO ÷ daily-bid; ↓ w/ renal impair w/ P: [B, ?] **CI:** Cephalosporin/PCN allergy **Disp:** Tabs 400 mg, 100, 200 mg chew tab, susp 100, 200 mg/5 mL **SE:** N/V/D, flatulence, & Abd pain **Notes:** Renal & hepatic Fxn; use susp for otitis media

Cefotaxime (Claforan) Uses: *Infxns of lower resp tract, skin, bone & jt, urinary tract, meningitis, PID, GC* **Acts:** 3rd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Most gram(–) (not *Pseudomonas*), some gram(+) cocci *S. pneumoniae, S. aureus* (penicillinase/nonpenicillinase producing), *H. influenzae* (including ampicillin-resistant), not *Enterococcus*; many PCN-resistant pneumococci **Dose:** **Adults.** Uncomplicated Infxn: 1 g IV/IM q12h; Mod–severe Infxn: 1–2 g IV/IM q 8–12 h; Severe/septicemia: 2 g IV/IM q4–8h; *GC urethritis, cervicitis, rectal in female:* 0.5 g IM × 1; rectal GC men 1 g IM × 1; **Peds.** 50–200 mg/kg/d IV ÷ q6–8h; ↓ w/ renal/hepatic impair w/ P: [B, +] **CI:** Cephalosporin/PCN allergy **Disp:** Powder for Inj 500 mg, 1, 2, 10 g, premixed Inf 20 mg/mL, 40 mg/mL **SE:** D, rash, pruritus, colitis, eosinophilia, ↑ transaminases

Cefotetan Uses: *Infxns of the upper & lower resp tract, skin, bone, urinary tract, Abd, & gynecologic system* **Acts:** 2nd-gen cephalosporin; ↓ cell wall synth **Spectrum:** Less active against gram(+) anaerobes including *B. fragilis;* gram(–), including *E. coli, Klebsiella,* & *Proteus* **Dose:** **Adults.** 1–3 g IV q12h. **Peds.** 20–40 mg/kg/dose IV ÷ q12h (6 g/d max) ↓ w/ renal impair w/ P: [B, +] **CI:** Cephalosporin/PCN allergy **Disp:** Powder for Inj 500 mg, 1, 2, 10 g, premixed Inf 20 mg/mL, 40 mg/mL **SE:** D, rash, pruritus, colitis, eosinophilia, ↑ transaminases, hypoprothrombinemia, & bleeding (d/t MTT side chain) **Notes:** May interfere w/ warfarin

Cefoxitin (Mefoxin) Uses: *Infxns of the upper & lower resp tract, skin, bone, urinary tract, Abd,* & gynecologic system* **Acts:** 2nd-gen cephalosporin; ↓ cell wall synth **Spectrum:** Good gram(–) against enteric bacilli (i.e., *E. coli, Klebsiella,* & *Proteus*); anaerobic: *B. fragilis* **Dose:** **Adults.** 1–2 g IV q6–8h. **Peds.** 80–160 mg/kg/d ÷ q4–6h (12 g/d max); ↓ w/ renal impair w/ P: [B, M] **CI:** Cephalosporin/PCN allergy **Disp:** Powder for Inj 1, 2, 10 g **SE:** D, rash, eosinophilia, ↑ transaminases

Cefpodoxime (Vantin) Uses: *Rx resp, skin, & urinary tract Infxns* **Acts:** 3rd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** *S. pneumoniae* or non–β-lactamase–producing *H. influenzae*; acute uncomplicated *N. gonorrhoeae;* some uncomplicated gram(–) (*E. coli, Klebsiella, Proteus*) **Dose:** **Adults.** 100–400 mg PO q12h. **Peds.** 10 mg/kg/d PO ÷ bid; ↓ in renal impair, w/ food w/ P: [B, M] **CI:** Cephalosporin/PCN allergy **Disp:** Tabs 100, 200 mg; susp 50, 100 mg/5 mL **SE:** D, rash, HA,
**Cefprozil (Cefzil) Uses:** *Rx resp tract, skin, & urinary tract Infxns*  
**Acts:** 2nd-gen cephalosporin; ↓ cell wall synth.  
**Spectrum:** Active against MSSA, *Streptococcus*, & gram(−) bacilli (*E. coli, Klebsiella, P. mirabilis, H. influenzae, Moraxella*)  
**Dose:**  
- **Adults:** 250–500 mg PO daily-bid.  
- **Peds:** 7.5–15 mg/kg/d PO ÷ bid; ↓ in renal impair w/ P: [B, M] CI: Cephalosporin/PCN allergy  
**Disp:** Tabs 250, 500 mg; susp 125, 250 mg/5 mL  
**SE:** D, dizziness, rash, eosinophilia, ↑ transaminases  
**Notes:** Use higher doses for otitis & pneumonia

**Ceftraroline (Teflaro) Uses:** *Tx skin/skin structure Infxn & CAP*  
**Acts:** Unclassified (“5th gen”) cephalosporin; ↓ cell wall synthesis;  
**Spectrum:** Gram(+) *Staph aureus* (MSSA/MRSA), *Strep pyogenes, Strep agalactiae, Strep pneu—niae*; Gram(−) *E. coli, K. pneumoniae, K. oxytoca, H. influenzae*  
**Dose:**  
- **Adults:** 600 mg IV q12h; CrCl 30–50 mL/min: 400 mg IV q12h; CrCl 15–29 mL/min: 300 mg IV q12h; CrCl < 15 mL/min: 200 mg IV q12h; Inf over 1 h w/ P: [B, ?/–] monitor for C. difficile-associated D  
**CI:** Cephalsporin sensitivity  
**Disp:** Inj 600 mg  
**SE:** Hyper-sens Rxn, D/N, rash, constipation, ↓ K +, phlebitis, ↑ LFTs

**Ceftibuten (Cedax) Uses:** *Rx resp tract, skin, urinary tract Infxns, & otitis media*  
**Acts:** 3rd-gen cephalosporin; ↓ cell wall synth.  
**Spectrum:** *H. influenzae & M. catarrhalis*; weak against S. *pneumoniae*  
**Dose:**  
- **Adults:** 400 mg/d PO.  
- **Peds:** 9 mg/kg/d PO; ↓ in renal impair; take on empty stomach (susp) w/ P: [B, +/–] CI: Cephalosporin/PCN allergy  
**Disp:** Caps 400 mg; susp 90 mg/5 mL  
**SE:** D, rash, eosinophilia, ↑ transaminases  
**Notes:** Use only for proven or strongly suspected Infxn to ↓ development of drug resistance

**Ceftriaxone (Rocephin) BOX:** Avoid in hyperbilirubinemic neonates or co-infusion w/ calcium-containing products  
**Uses:**  
- Resp tract (pneumonia), skin, bone, Abd & urinary tract Infxns, meningitis, septicemia*  
- GC, PID, perioperative*  
**Acts:** 3rd-gen cephalosporin; ↓ cell wall synth.  
**Spectrum:**  
- Mod gram(+); excellent β-lactamase producers  
**Dose:**  
- **Adults:** 1–2 g IV/IM q12–24h.  
- **Peds:** 50–100 mg/kg/d PO ÷ q12–24h w/ P: [B, +] CI: Cephalosporin allergy; hyperbilirubinemic Cefuroxime neonates  
**Disp:** Powder for Inj 250 mg, 500 mg, 1, 2, 10 g; premixed 20, 40 mg/mL  
**SE:** D, rash, eosinophilia, ↑ WBC, thrombocytosis, ↑ LFTs

**Cefuroxime (Ceftin [PO], Zinacef [Parenteral]) Uses:**  
- Upper & lower resp tract, skin, bone, urinary tract, Abd, gynecologic Infxns*  
- GC, PID, perioperative*  
**Acts:** 2nd-gen cephalosporin; ↓ cell wall synth  
**Spectrum:**  
- Staphylococci, group B streptococci, *H. influenzae, E. coli, Enterobacter, Salmonella, & Klebsiella*  
**Dose:**  
- **Adults:** 750 mg—1.5 g IV q8h or 250–500 mg PO bid  
- **Peds:** 75–150 mg/kg/d IV ÷ q8h or 20–30 mg/kg/d PO ÷ bid; ↓ w/ renal impair; take PO w/ food w/ P: [B, +] CI: Cephalosporin/PCN allergy  
**Disp:** Tabs 250, 500 mg; susp 125, 250 mg/5 mL; powder for Inj 750 mg, 1.5, 7.5 g  
**SE:** D, rash, eosinophilia, ↑ LFTs  
**Notes:** Cefuroxime film-coated tabs & susp not bioequivalent; do not substitute on a mg/mg basis; IV crosses blood–brain barrier

**Celecoxib (Celebrex) BOX:** ↑ Risk of serious CV thrombotic events, MI, & stroke; can be fatal; ↑ risk of serious GI adverse events including bleeding, ulceration, & perforation of the stomach or
**Centruroides (Scorpion) Immune F(ab’)_2 (Anascorp)**

**Uses:** *Antivenom for scorpion envenomation w/ symptoms*  
**Acts:** IgG, bind/neutralize *Centruroides sculpturatus* toxin  
**Dose:**  
3 vials, recons w/ 5 mL NS, combine all 3, dilute to 50 mL, Inf IV over 10 min; 1 vial q 30–60 min PRN Sx  
**P:** [C, M] hypersens, especially w/ Hx equine protein Rxn  
**CI:** None  
**Disp:** Vial  
**SE:** Fever, N, V, pruritus, rash, myalgias, serum sickness  
**Notes:** Use only w/ important symptoms (loss of muscle control, abn eye movements, slurred speech, resp distress, salivation, vomiting); may contain infectious agents

**Ceftazidime (Zinacef, Generic)**

**Uses:** *Skin, bone, upper/lower resp tract (streptococcal pharyngitis), otitis media, uncomp cystitis Infxns*  
**Acts:** 1st-gen cephalosporin; ↓ cell wall synth.  
**Dose:**  
*Adults & Pediatrics* > 15 y. 250–1000 mg PO qid; Rx cystitis 7–14 d (4 g/d max).  
Peds < 15 y. 25–100 mg/kg/d PO ÷ bid-qid; ↓ in renal impair; w/ or w/o food  
**P:** [B, +]  
**CI:** Cephalosporin/PCN allergy  
**Disp:** Caps 250, 500 mg; susp, 125, 250 mg; susp 125, 250 mg/5 mL  
**SE:** D, rash, eosinophilia, gastritis, dyspepsia, ↑ LFTs, *C. difficile* colitis, vaginitis

**Certolizumab Pegol (Cimzia)**

**BOX:** Serious Infxns (bacterial, fungal, TB, opportunistic) possible. D/C w/ severe Infxn/sepsis, test and monitor for TB w/ Tx; lymphoma/other CA possible in children/adolescents  
**Uses:** *Crohn Dz w/ inadequate response to conventional Tx; mod–severe RA*  
**Acts:** TNF-α blocker  
**Dose:** Crohn: *Initial:* 400 mg SQ, repeat 2 & 4 wk after; *Maint:* 400 mg SQ q4wk.  
RA: *Initial:* 400 mg SQ, repeat 2 & 4 wk after; *Maint:* 200 mg SQ q other wk or 400 mg SQ q4wk.  
**P:** [B, ?] Infxn, TB, autoimmune Dz, demyelinating CNS Dz, hep B reactivation  
**CI:** None  
**Disp:** Inj, powder for reconstitution 200 mg; Inj, soln: 200 mg/mL (1 mL)  
**SE:** HA, N, URI, serious Infxns, TB, opportunistic Infxns, malignancies, demyelinating Dz, CHF, pancytopenia, lupus-like synd, new-onset psoriasis  
**Notes:** 400 mg dose 2 Inj of 200 mg each. Monitor for Infxn. Do not give live/attenuated vaccines during Rx; avoid use w/ anakinra

**Cetirizine (Zyrtec, Zyrtec D) [OTC]**

**Uses:** *Allergic rhinitis & other allergic Sxs including urticaria*  
**Acts:** Nonsedating antihistamine; *Zyrtec D* contains decongestant  
**Dose:**  
*Adults & Children > 6 y:* 5–10 mg/d; *Zyrtec D* 5/120 mg PO bid whole  
Peds 6–11 mo. 2.5 mg daily.  
12 mo–5 y: 2.5 mg daily-bid; ↓ to q day in renal/hepatic impair  
**P:** [C, ?/–] w/ HTN, BPH, rare CNS stimulation, DM, heart Dz  
**CI:** Allergy to cetirizine, hydroxyzine  
**Disp:** Tabs 5, 10 mg; chew tabs 5, 10 mg; syrup 5 mg/5 mL; *Zyrtec D:* Tabs 5/120 mg (cetirizine/pseudoephedrine)  
**SE:** HA, drowsiness, xerostomia  
**Notes:** Can cause sedation; swallow ER tabs whole

**Cetuximab (Erbitux)**

**BOX:** Severe Inf Rxns including rapid onset of airway obst (bronchospasm, stridor, hoarseness), urticaria, & ↓ BP; permanent D/C required; ↑ risk sudden death and cardiopulmonary arrest  
**Uses:** *EGFR + meta-static colorectal CA w/ or w/o irinotecan, unresectable head/neck small cell carcinoma w/ RT; monotherapy in metastatic head/neck CA*  
**Acts:** Human/mouse recombinant MoAb; binds EGFR, ↓ tumor cell growth  
**Dose:** Per protocol; load 400
mg/m² IV over 2 h; 250 mg/m² given over 1 h weekly w/ P: [C, –] Disp: Inj 100 mg/50 mL SE:
Acneform rash, asthenia/malaise, N/V/D, Abd pain, alopecia, Inf Rxn, derrn tox, interstitial lung Dz,
fever, sepsis, dehydration, kidney failure, PE Notes: Assess tumor for EGFR before Rx; pretreatment
w/ diphenhydramine; w/ mild SE ↓ Inf rate by 50%; limit sun exposure

Charcoal, Activated (Actidose-Aqua, CharcoCaps, EZ Char, Kerr Insta-Char, Requa Activated
Charcoal) Uses: *Emergency poisoning by most drugs & chemicals (see CI)* Acts: Adsorbent
detoxicant Dose: Give w/ 70% sorbitol (2 mL/kg); repeated use of sorbitol not OK Adults. Acute
intoxication: 25–100 g/dose. GI dialysis: 20–50 g q6h for 1–2 d. Peds 1–12 y. Acute intoxication:
1–2 g/kg/dose. GI dialysis: 5–10 g/dose q4–8h w/ P: [C, –] May cause V (hazardous w/ petroleum &
caustic ingestions); do not mix w/ dairy CI: Not effective for cyanide, mineral acids, caustic alkalis,
organic solvents, iron, EtOH, methanol poisoning, Li; do not use sorbitol in pts w/ fructose
intolerance, intestinal obst, nonintact GI tracts Disp: Powder, liq, caps, tabs SE: Some liq dosage
forms in sorbitol base (a cathartic); V/D, black stools, constipation Notes: Charcoal w/ sorbitol not
OK in children < 1 y; monitor for ↓ K⁺ & Mg²⁺; protect airway in lethargic/comatose pts

Chlorambucil (Leukeran) BOX: Myelosuppressive, carcinogenic, teratogenic, associated w/
(nitrogen mustard) Dose: (per protocol) 0.1–0.2 mg/kg/d for 3–6 wk or 0.4 mg/kg/dose q2wk; ↓ w/
renal impair w/ P: [D, ?] Sz disorder & BM suppression; affects human fertility CI: Previous
resistance; alkylating agent allergy; w/ live vaccines Disp: Tabs 2 mg SE: ↓ BM, CNS stimulation,
N/V, drug fever, rash, secondary leukemias, alveolar dysplasia, pulm fibrosis, hepatotoxic Notes:
Monitor LFTs, CBC, plts, serum uric acid; ↓ dose if pt has received radiation

Chlordiazepoxide (Librium, Mitran, Libritabs) [C-IV] Uses: *Anxiety, tension, EtOH
withdrawal*, & preop apprehension Acts: Benzodiazepine; anti-anxiety agent Dose: Adults. Mild
anxiety: 5–10 mg PO tid-qid or PRN. Severe anxiety: 25–50 mg PO q6–8h or PRN Peds > 6 y: 5 mg
PO q6–8h; ↓ in renal impair, elderly w/ P: [D, ?] Resp depression, CNS impair, Hx of drug
dependence; avoid in hepatic impair CI: Preexisting CNS depression, NAG Disp: Caps 5, 10, 25 mg
SE: Drowsiness, CP, rash, fatigue, memory impair, xerostomia, Wt gain Notes: Erratic IM
absorption

Chlorothiazide (Diuril) Uses: *HTN, edema* Acts: Thiazide diuretic Dose: Adults. 500 mg–1 g
PO daily-bid; 500–1000 mg/d IV (for edema only). Peds > 6 mo. 10–20 mg/kg/24 h PO ÷ bid; 4
mg/kg ÷ daily bio IV; OK w/ food w/ P: [C, +] CI: Sensitivity to thiazides/sulfonamides, anuria Disp:
Tabs 250, 500 mg; susp 250 mg/5 mL; Inj 500 mg/vial SE: ↓ K⁺, Na⁺, dizziness, hyperglycemia,
hyperuricemia, hyperlipidemia, photosens Notes: Do not use IM/SQ; take early in the day to avoid
nocturia; use sunblock; monitor lytes

Chlorpheniramine (Chlor-Trimeton, Others) [OTC] BOX: OTC meds w/ chlorpheniramine should
not be used in peds < 2 y Uses: *Allergic rhinitis*, common cold Acts: Antihistamine Dose: Adults.
4 mg PO q4–6h or 8–12 mg PO bid of SR 24 mg/d max Peds. 0.35 mg/kg/24 h PO ÷ q4–6h or 0.2
mg/kg/24 h SR w/ P: [C, –] BOO; NAG; hepatic Insuff CI: Allergy Disp: Tabs 4 mg; SR tabs 12 mg
SE: Anticholinergic SE & sedation common, postural ↓ BP, QT changes, extrapyramidal Rxns,
photosens Notes: Do not cut/crush/chew ER forms; deaths in pts < 2 y associated w/ cough and cold
meds [MMWR 2007;56(01):1–4]

Chlorpromazine (Thorazine) Uses: *Psychotic disorders, N/V*, apprehension, intractable hiccups
**Acts:** Phenothiazine antipsychotic; antiemetic  
**Dose:** **Adults.** Psychosis: 30–800 mg/d in 1–4 ÷ doses, start low dose, ↑ PRN; typical 200–600 mg/d; 1–2 g/d may be needed in some cases. Severe Sxs: 25 mg IM/IV initial; may repeat in 1–4 h; then 25–50 mg PO or PR tid. Hiccups: 25–50 mg PO tid-qid.  
**Children > 6 mo:** Psychosis & N/V: 0.5–1 mg/kg/dose PO q4–6h or IM/IV q6–8h; w/ P: [C, ?/–] Safety in children < 6 mo not established; Szs, avoid w/ hepatic impair, BM suppression  
**CI:** Sensitivity w/ phenothiazines; NAG  
**Disp:** Tabs 10, 25, 50, 100, 200 mg; Inj 25 mg/mL  
**SE:** Extrapyramidal SE & sedation; α-adrenergic blocking properties; ↓ BP; ↑ QT interval  
**Notes:** Do not D/C abruptly  

**Chlorpropamide (Diabinese) Uses:** *Type 2 DM*  
**Acts:** Sulfonylurea; ↑ pancreatic insulin release; ↑ peripheral insulin sensitivity; ↓ hepatic glucose output  
**Dose:** Adults. 100–500 mg/d; w/ food, ↓ hepatic impair w/ P: [C, ?/–] CrCl < 50 mL/min; ↓ in hepatic impair  
**CI:** Cross-sensitivity w/ sulfonamides  
**Disp:** Tabs 100, 250 mg SE: HA, dizziness, rash, photosens, hypoglycemia, SIADH  
**Notes:** Avoid EtOH (disulfiram-like Rxn)  

**Chlorthalidone Uses:** *HTN*  
**Acts:** Thiazide diuretic  
**Dose:** **Adults.** 25–100 mg PO daily. **Peds.** (Not approved) 0.3–2 mg/kg/dose PO 3×/wk or 1–2 mg/kg/d PO; ↓ in renal impair; OK w/ food, milk  
**w/ P:** [B, +]  
**CI:** Cross-sensitivity w/ thiazides or sulfonamides; anuria  
**Disp:** Tabs 25, 50, 100 mg SE: ↓ K⁺, dizziness, photosens, ↑ glucose, hyperuricemia, sexual dysfunction  

**Chlorzoxazone (Parafon Forte DSC, Others) Uses:** *Adjunct to rest & physical therapy Rx to relieve discomfort associated w/ acute, painful musculo-skeletal conditions*  
**Acts:** Centrally acting skeletal muscle relaxant  
**Dose:** **Adults.** 500–750 mg PO tid–qid. **Peds.** 20 mg/kg/d in 3–4 ÷ doses w/ P: [C, ?]  
**CI:** Severe liver Dz  
**Disp:** Tabs 250, 500, 750 mg SE: Drowsiness, tachycardia, dizziness, hepatotox, angioedema  

**Cholecalciferol [Vitamin D₃] (Delta D) Uses:** Dietary supl to Rx vit D deficiency  
**Acts:** ↑ intestinal Ca²⁺ absorption  
**Dose:** 400–1000 Int units/d PO w/ P: [A (D doses above the RDA), +]  
**CI:** ↑ Ca²⁺, hypervitaminosis, allergy  
**Disp:** Tabs 400, 1000 Int units SE: Vit D tox (renal failure, HTN, psychosis)  
**Notes:** 1 mg cholecalciferol = 40,000 Int units vit D activity  

**Cholestyramine (Questran, Questran Light, Prevalite) Uses:** *Hypercholesterolemia; hyperlipidemia, pruritus associated w/ partial biliary obst; D associated w/ excess fecal bile acids*  
**Acts:** Binds intestinal bile acids, forms insoluble complexes  
**Dose:** **Adults.** Titrate: 4 g/d-bid ↑ to max 24 g/d ÷ 1–6 doses/d. **Peds.** 240 mg/kg/d in 2–3 ÷ doses max 8 g/d w/ P: [C, ?] Constipation, phenylketonuria, may interfere w/ other drug absorption; consider supl w/ fat-soluble vits  
**CI:** Complete biliary or bowel obst; w/ mycophenolate hyperlipoproteinemia types III, IV, V  
**Disp:** (Questran) 4 g cholestyramine resin/9 g powder; (Prevalite) w/ aspartame: 4 g resin/5.5 g powder; (Questran Light) 4 g resin/5 g powder SE: Constipation, Abd pain, bloating, HA, rash, vit K deficiency  
**Notes:** OD may cause GI obst; mix 4 g in 2–6 oz of noncarbonated beverage; take other meds 1–2 h before or 6 h after; √ lipids  

**Ciclesonide, Inhalation (Alvesco) Uses:** *Asthma maint*  
**Acts:** Inhaled steroid  
**Dose:** **Adults & Peds > 12 y.** On bronchodilators alone: 80 mcg bid (320 mcg/d max). Inhaled corticosteroids: 80 mcg bid (640 mcg/d max). On oral corticosteroids: 320 mcg bid, (640 mcg/d max) w/ P: [C, ?]  
**CI:** Status asthmaticus or other acute episodes of asthma, hypersens  
**Disp:** Inh 80, 160 mcg/actuation 60 doses SE: HA, nasopharyngitis, sinusitis, pharyngolaryngeal pain, URI, arthralgia, nasal congestion  
**Notes:** Oral Candida risk, rinse mouth and spit after, taper systemic steroids slowly when
transferring to ciclesonide, monitor growth in pediatric pts, counsel on use of device, clean mouthpiece weekly

**Ciclesonide, Nasal (Omnaris, Zettona) Uses**: Allergic rhinitis **Acts**: Nasal corticosteroid **Dose**: Adults/Peds > 12 y. Omnaris 2 sprays, Zettona 1 spray each nostril 1 ×/d; w/ P: [C, ?–] w/ ketoconazole; monitor peds for growth ↓ CI: Component allergy **Disp**: Intranasal spray, Omnaris 50 mcg/spray (120 doses); Zettona 37 mcg/spray (60 doses) **SE**: Adrenal suppression, delayed nasal wound healing, URI, HA, ear pain, epistaxis ↑ risk viral Dz (eg, chickenpox), delayed growth in children

**Ciclopirox (Ciclodan, CNL8, Loprox, Pedipirox-4 Nail Kit, Penlac) Uses**: *Tinea pedis, tinea cruris, tinea corporis, cutaneous candidiasis, tinea versicolor, tinea rubrum* **Acts**: Antifungal antibiotic; cellular depletion of essential substrates &/or ions **Dose**: Adults & Peds > 10 y. Massage into affected area bid. Onychomycosis: Apply to nails daily, w/ removal q7d w/ P: [B, ?] CI: Component sensitivity **Disp**: Cream 0.77%, gel 0.77%, topical susp 0.77%, shampoo 1%, nail lacquer 8% **SE**: Pruritus, local irritation, burning **Notes**: D/C w/ irritation; avoid dressings; gel best for athlete’s foot

**Cidofovir (Vistide) BOX**: Renal impair is the major tox. Neutropenia possible, √ CBC before dose. Follow administration instructions. Possible carcinogenic, teratogenic **Uses**: *CMV retinitis w/ HIV* **Acts**: Selective inhib viral DNA synth **Dose**: Rx: 5 mg/kg IV over 1 h once/wk × 2 wk w/ probenecid. Maint: 5 mg/kg IV once/2 wk w/ probenecid (2 g PO 3 h prior to cidofovir, then 1 g PO at 2 h & 8 h after cidofovir); ↓ w/ renal impair w/ P: [C, –] SCr > 1.5 mg/dL or CrCl < 55 mL/min or urine protein ≥ 100 mg/dL; w/ other nephrotoxic drugs CI: Probenecid/sulfa allergy **Disp**: Inj 75 mg/mL **SE**: Renal tox, chills, fever, HA, N/V/D, ↓ plt, ↓ WBC **Notes**: Hydrate w/ NS prior to each Inf

**Cilostazol (Pletal) BOX**: PDE III inhib have ↓ survival w/ class III/IV heart failure **Uses**: *↓ Sxs of intermittent claudication* **Acts**: Phosphodiesterase III inhib; ↑ cAMP in plts & blood vessels, vasodilation & inhibit plt aggregation **Dose**: 100 mg PO bid, 1/2 h before or 2 h after breakfast & dinner w/ P: [C, ?] ↓ dose w/ drugs that inhibit CYP3A4 & CYP2C19 (Table 10, p 319) CI: CHF, hemostatic disorders, active bleeding **Disp**: Tabs 50, 100 mg **SE**: HA, palpitation, D

**Cimetidine (Tagamet, Tagamet HB 200 [OTC]) Uses**: *Duodenal ulcer; ulcer prophylaxis in hypersecretory states (eg, trauma, burns); & GERD* **Acts**: H₂-receptor antagonist **Dose**: Adults. Active ulcer: 2400 mg/d IV cont Inf or 300 mg IV q6h; 400 mg PO bid or 800 mg hs. Maint: 400 mg PO hs. GERD: 300–600 mg PO q6h; maint 800 mg PO hs Peds Infants. 10–20 mg/kg/24 h PO or IV ÷ q6–12h. Children: 20–40 mg/kg/24 h PO or IV ÷ q6h; ↓ w/ renal Insuff & in elderly w/ P: [B, +] Many drug interactions (P-450 system); do not use w/ clopidogrel (↓ effect) CI: Component sensitivity **Disp**: Tabs 200 (OTC), 300, 400, 800 mg; liq 300 mg/5 mL; Inj 300 mg/2 mL **SE**: Dizziness, HA, agitation, ↓ plt, gynecomastia **Notes**: 1 h before or 2 h after antacids; avoid EtOH

**Cinacalcet (Sensipar) Uses**: *Secondary hyperparathyroidism in CRF; ↑ Ca²⁺ in parathyroid carcinoma* **Acts**: ↓ PTH by ↑ calcium-sensing receptor sensitivity **Dose**: Secondary hyperparathyroidism: 30 mg PO daily. Parathyroid carcinoma: 30 mg PO bid; titrate q2–4wk based on calcium & PTH levels; swallow whole; take w/ food w/ P: [C, ?–] w/ Szs, adjust w/ CYP3A4 inhib (Table 10, p 319) **Disp**: Tabs 30, 60, 90 mg **SE**: N/V/D, myalgia, dizziness, ↓ Ca²⁺ **Notes**: Monitor Ca²⁺, PO₄²⁻, PTH
Ciprofloxacin (Cipro, Cipro XR) BOX: ↑ risk of tendonitis and tendon rupture; ↑ risk w/ age > 60, transplant pts may worsen MG Sxs

Uses: *Rx lower resp tract, sinuses, skin & skin structure, bone/joints, complex intra-Abd Infxn (w/ metro-nidazole), typhoid, infectious D, uncomp GC, inhal anthrax UT Infxns, including prostatitis*

Acts: Quinolone antibiotic; ↓ DNA gyrase.

Spectrum: Broad gram(+) & (–) aerobics; little Streptococcus; good Pseudomonas, E. coli, B. fragilis, P. mirabilis, K. pneumoniae, C. jejuni, or Shigella

Dose: Adults. 250–750 mg PO q12h; XR 500–1000 mg PO q24h; or 200–400 mg IV q12h; ↓ in renal impair w/ P: [C, ?/–] Children < 18 y; avoid in MG

CI: Component sensitivity; w/ tizanidine

Disp: Tabs 100, 250, 500, 750 mg; tabs XR 500, 1000 mg; susp 5 g/100 mL, 10 g/100 mL; Inj 200, 400 mg; premixed piggyback 200, 400 mg/100 mL

SE: Restlessness, N/V/D, rash, ruptured tendons, ↑ LFTs, peripheral neuropathy risk

Notes: Avoid antacids; reduce/restrict caffeine intake; interactions w/ theophylline, caffeine, sucralfate, warfarin, antacids, most tendon problems in Achilles, rare shoulder and hand

Ciprofloxacin, Ophthalmic (Ciloxan) Uses: *Rx & prevention of ocular Infxns (conjunctivitis, blepharitis, corneal abrasions)*

Acts: Quinolone antibiotic; ↓ DNA gyrase

Dose: 1–2 gtt in eye(s) q2h while awake for 2 d, then 1–2 gtt q4h while awake for 5 d, oint 1/2-in ribbon in eye tid × 2 d, then bid × 5 d w/ P: [C, ?/–] CI: Component sensitivity

Disp: Soln 3.5 mg/mL; oint 0.3%, 3.5 g

SE: Local irritation

Ciprofloxacin, Otic (Cetraxal) Uses: *Otitis externa*

Acts: Quinolone antibiotic; ↓ DNA gyrase.

Spectrum: P. aeruginosa, S. aureus

Dose: Adults & Peds > 1 y. 0.25 mL in ear(s) q 12 h × 7 d w/ P: [C, ?/–] CI: Viral ear Infxns

Disp: Susp ciprofloxacin 0.3% & dexamethasone 1%

SE: Hypersens Rxn, ear pruritus/pain, HA, fungal superinfection

Ciprofloxacin & Dexamethasone, Otic (Ciprodex Otic) Uses: *Otitis externa, otitis media peds*

Acts: Quinolone antibiotic; ↓ DNA gyrase; w/ steroid

Dose: Adults. 4 gtt in ear(s) bid × 7 d. Peds > 6 mo. 4 gtt in ear(s) bid for 7 d w/ P: [C, ?/–] CI: Perforated tympanic membrane, viral Infxns of the external canal

Disp: Susp ciprofloxacin 0.2% & hydro-cortisone 1%

SE: HA, pruritus

Ciprofloxacin & Hydrocortisone, Otic (Cipro HC Otic) Uses: *Otitis externa*

Acts: Quinolone antibiotic; ↓ DNA gyrase; w/ steroid

Dose: Adults & Peds > 1 y. 3 gtt in ear(s) bid × 7 d w/ P: [C, ?/–] CI: Perforated tympanic membrane, viral Infxns of the external canal

Disp: Susp ciprofloxacin 0.2% & hydro-cortisone 1%

SE: HA, pruritus

Notes: OK w/ tympanostomy tubes

Cisplatin (Platinol, Platinol AQ) BOX: Anaphylactic-like Rxn, ototox, cumulative renal tox; doses > 100 mg/m² q3–4wk rarely used, do not confuse w/ carboplatin

Uses: *Testicular, bladder, ovarian*, SCLC, NSCLC, breast, head & Citalopram neck, & penile CAs; osteosarcoma; peds brain tumors

Acts: DNA-binding; denatures double helix; intrastrand cross-linking

Dose: 10–20 mg/m²/d for 5 d q3wk; 50–120 mg/m² q3–4wk (per protocols); ↓ w/ renal impair w/ P: [D, –] Cumulative renal tox may be severe; ↓ BM, hearing impair, preexisting renal Insuff CI: w/ Anthrax or live vaccines, platinum-containing compound allergy; w/ cidovir

Disp: Inj 1 mg/mL SE: Allergic Rxns, N/V, nephrotox (↑ w/ administration of other nephrotoxic drugs; minimize by NS Inf & mannitol diuresis), high-frequency hearing loss in 30%, peripheral “stocking glove”-type neuropathy, cardiotox (ST, T-wave changes), ↓ Mg²⁺, mild ↓ BM, hepatotox; renal impair dose-related & cumulative

Notes: Give taxanes before platinum derivatives; Mg²⁺, lytes before & w/ in 48 h after cisplatin

Citalopram (Celexa) BOX: Closely monitor for worsening depression or emergence of suicidality, particularly in pts < 24 y; not for peds

Uses: *Depression*

Acts: SSRI

Dose: Initial 20 mg/d, may ↑
to 40 mg/d max dose; ↓ 20 mg/d max > 60 y, w/ cimetidine, or hepatic/renal Insuff w/ P: [C, +/-] Hx of mania, Szs & pts at risk for suicide, ↑ risk serotonin synd (p 321) w/ triptans, linezolid, lithium, tramadol, St. John’s wort; use w/ other SSRIs, SNRIs, or tryptophan not rec CI: MAOI or w/ in 14 d of MAOI use Disp: Tabs 10, 20, 40 mg; soln 10 mg/5 mL SE: Somnolence, insomnia, anxiety, xerostomia, N, diaphoresis, sexual dysfunction; may ↑ Qt interval and cause arrhythmias; ↓ Na+/SIADH

Citric Acid/Magnesium Oxide/Sodium Picosulfate (Prepopik) Uses: *Colonoscopy colon prep* Acts: Stimulant/osmotic laxative Dose: Powder recons w/ 5-oz cold water; “Split Dose”: 1st dose night before and 2nd dose morning of procedure; OR “Day Before”: 1st dose afternoon/early eve day before and 2nd dose later evening; clear liquids after dose w/ P: [B, ?] Fluid/electrolyte abnormalities, arrhythmias, seizures; ↑ risk in renal Insuff or w/ nephrotox drugs; mucosal ulcerations; aspiration risk CI: CrCl < 30 mL/min; GI perf/obstr/ileus/gastric retention/toxic colitis/megacolon Disp: Packets, 16.1 g powder (10 mg sodium picosulfate, 3.5 g mag oxide, 12 g anhyd citric acid) w/ dosing cup SE: N, V, D, HA, Abd pain, cramping, bloating Notes: Meds taken 1 h w/ in dose might not be absorbed

Cladribine (Leustatin) BOX: Dose-dependent reversible myelosuppression; neurotox, nephrotox, administer by physician w/ experience in chemotherapy regimens Uses: *HCL, CLL, NHLs, progressive MS* Acts: Induces DNA strand breakage; interferes w/ DNA repair/synth; purine nucleoside analog Dose: 0.09–0.1 mg/kg/d cont IV Inf for 1–7 d (per protocols); ↓ w/ renal impair w/ P: [D, ?/–] Causes neutropenia & Infxn CI: Component sensitivity Disp: Inj 1 mg/mL SE: ↓ BM, T lymphocyte ↓ may be prolonged (26–34 wk), fever in 46%, tumor lysis synd, Infxns (especially lung & IV sites), rash (50%), HA, fatigue, N/V Notes: Consider prophylactic allopurinol; monitor CBC

Clarithromycin (Biaxin, Biaxin XL) Uses: *Upper/lower resp tract, skin/skin structure Infxns, H. pylori Infxns,* & Infxns caused by nontuberculosis (atypical) Mycobacterium; prevention of MAC Infxns in HIV Infxn* Acts: Macrolide antibiotic, ↓ protein synth. Spectrum: H. influenzae, M. catarrhalis, S. pneumoniae, M. pneumoniae, & H. pylori Dose: Adults. 250–500 mg PO bid or 1000 mg (2 × 500 mg XL tab)/d. Mycobacterium: 500 mg PO bid. Peds > 6 mo. 7.5 mg/kg/dose PO bid; ↓ w/ renal impair w/ P: [C, ?] Antibiotic-associated colitis; rare ↑ QT & ventricular arrhythmias; not rec w/ PDE5 inhib CI: Macrolide allergy; w/ Hx jaundice w/ Biaxin; w/ cisapride, pimozide, astemizole, terfenadine, ergotamines; w/ colchicine & renal impair; w/ statins; w/ ↑ QT or ventricular arrhythmias Disp: Tabs 250, 500 mg; susp 125, 250 mg/5 mL; 500 mg XL tab SE: ↑ QT interval, causes metallic taste, N/D, Abd pain, cramping, bloating Notes: Multiple drug interactions, ↑ theophylline & carbamazepine levels; do not refrigerate susp

Clemastine Fumarate (Tavist, Dayhist, Antihist-1) [OTC] Uses: *Allergic rhinitis & Sxs of urticaria* Acts: Antihistamine Dose: Adults & Peds > 12 y. 1.34 mg bid–2.68 mg tid; max 8.04 mg/d, 6–12 y: 0.67–1.34 mg bid (max 4.02/d), < 6 y: 0.335–0.67 mg/d ÷ into 2–3 doses (max 1.34 mg/d), w/ P: [B, M] BOO; Do not take w/ MAOI CI: NAG Disp: Tabs 1.34, 2.68 mg; syrup 0.67 mg/5 mL SE: Drowsiness, dyscoordination, epigastric distress, urinary retention Notes: Avoid EtOH

Clevidipine (Cleviprex) Uses: *HTN when PO not available/desirable* Acts: Dihydropyridine CCB, potent arterial vasodilator Dose: 1–2 mg/h IV then maint 4–6 mg/h; 21 mg/h max w/ P: [C, ?] ↓ BP, syncope, rebound HTN, reflex tachycardia, CHF CI: Hypersens: component or formulation (soy, egg products); impaired lipid metabolism; severe aortic stenosis Disp: Inj 0.5 mg/mL (50 mL, 100
Clindamycin (Cleocin, Cleocin-T, Others) BOX: Pseudomembranous colitis may range from mild to lifethreatening Uses: *Rx aerobic & anaerobic Infxns; topical for severe acne & Vag Infxns* Acts: Bacteriostatic; interferes w/ protein synth. Spectrum: Streptococci (eg, pneumococci), staphylococci, & gram(+) & (−) anaerobes; no activity against gram(−) aerobes Dose: Adults. PO: 150–450 mg PO q6–8h. IV: 300–600 mg IV q6h or 900 mg IV q8h. Vag cream: 1 applicator hs × 7 d. Vag supp: Insert 1 qhs × 3 d Topical: Apply 1% gel, lotion, or soln bid. Peds Neonates. (Avoid use; contains benzyl alcohol) 10–15 mg/kg/24 h ÷ q8–12h. Children > 1 mo: 10–30 mg/kg/24 h ÷ q6–8h, to a max of 1.8 g/d PO or 4.8 g/d IV. Topical: Apply 1%, gel, lotion, or soln bid; ↓ in severe hepatic impair w/ P: [B, +] Can cause fatal colitis CI: Hx pseudomembranous colitis Disp: Caps 75, 150, 300 mg; susp 75 mg/5 mL; Inj 300 mg/2 mL; Vag cream 2%, topical soln 1%, gel 1%, lotion 1%, Vag supp 100 mg SE: D may be C. difficile pseudomembranous colitis, rash, ↑ LFTs Notes: D/C drug w/ D, evaluate for C. difficile

Clindamycin/Benzoyl Peroxide (Benzaclin) Uses: *Topical for acne vulgaris* Acts: Bacteriostatic antibiotic w/ keratolytic Dose: Apply bid (A.M. & P.M.) w/ P: [C, ?] Pseudomembranous colitis reported CI: Component sensitivity, Hx UC/antib-assoc colitis Disp: Gel 10 mg (clindamycin [1%] and benzoyl peroxide [5%]) SE: Dry skin, pruritus, peeling, erythema, sunburn, allergic Rxns Notes: May bleach hair/fabrics; not approved in peds

Clindamycin/Tretinoin (Veltin Gel, Ziana) Uses: *Acne vulgaris* Acts: Lincosamide abx (↓ protein synthesis) w/ a retinoid; Spectrum: P. acnes Dose: Adults (> 12 y). Apply pea-size amount to area qd w/ P: [C, ?/−] do not use w/ erythromycin products CI: Hx regional enteritis/UC/abx-assoc colitis Disp: Top Gel (clindamycin 1.2%/tretinoin 0.025%) SE: Dryness, irritation, erythema, pruritis, exfoliation, dermatitis, sunburn Notes: Avoid eyes, lips, mucous membranes

Clobazam (Onfi)[C IV] Uses: *Szs assoc w/ Lennox-Gastaut synd* Acts: Potentiates GABA neurotransmission; binds to benzodiazepine GABA_A receptor Dose: Adults & Peds ≥ 2y. ≤ 30 kg: 5 mg PO/d, titrate weekly 20 mg/d max; > 30 kg: 10 mg daily, titrate weekly 40 mg/d max; divide dose bid if > 5 mg/d; may crush & mix w/ applesauce; ↓ dose in geriatric pts, CYP2C19 poor metabolizers, & mild–mod hepatic impair; ↓ dose weekly by 5–10 mg/d w/ D/C w/ P: [C, ±] physical/psychological dependence & suicidal ideation/behavior; withdrawal Sxs w/ rapid dose ↓; alcohol ↑ clobazam levels by 50%; adjust w/ CYP2C19 inhib, ↓ dose of drugs metabolized by CYP2D6; may ↓ contraceptive effect Disp: Tabs 5, 10, 20 mg; susp 2.5 mg/mL SE: Somnolence, sedation, cough, V, constipation, drooling, UTI, aggression, dysarthria, fatigue, insomnia, ataxia, pyrexia, lethargy, ↑/↓ appetite

Clofarabine (Clolar) Uses: Rx relapsed/refractory ALL after at least 2 regimens in children 1–21 y Acts: Antimetabolite; ↓ ribonucleotide reductase w/ false nucleotide base-inhibiting DNA synth Dose: 52 mg/m^2^ IV over 2 h daily × 5 d (repeat q2–6wk); per protocol; ↓ w/ renal impair w/ P: [D, −] Disp: Inj 20 mg/20 mL SE: N/V/D, anemia, leukopenia, thrombocytopenia, neutropenia, Infxn, ↑ AST/ALT Notes: Monitor for tumor lysis synd & SIRS/capillary leak synd; hydrate well

Clomiphene (Clomid, Serophene) Uses: *Tx ovulatory dysfunction in women desiring PRG* Acts: Nonsteroidal ovulatory stimulant; estrogen antagonist Dose: 50 mg × 5 d; if no ovulation ↑ to 100 mg × 5 d @ 30 d later; ovulation usually 5–10 d postcourse, time coitus w/ expected ovulation time w/ P: [X, ?/−] r/o PRG & ovarian enlargement CI: Hypersens, uterine bleed, PRG, ovarian cysts (not due to
Clomipramine (Anafranil) BOX: Closely monitor for suicidal ideation or unusual behavior changes Uses: *OCD*, depression, chronic pain, panic attacks Acts: TCA; ↑ synaptic serotonin & norepinephrine Dose: Adults. Initial 25 mg/d PO in 3 doses; ↑ over few wk 250 mg/d max QHS. Peds > 10 y. Initial 25 mg/d PO in 3 doses; ↑ over few wk 200 mg/d or 3 mg/kg/d max given hs w/ P: [C, +/-] CI: w/ MAOI, linezolid, IV methylene blue (risk serotonin synd), TCA allergy, during AMI recovery Disp: Tabs 50 mg SE: Ovarian enlargement, vasomotor flushes Clonazepam (Klonopin) [C-IV] Uses: *Lennox-Gastaut synd, akinetic & myoclonic Szs, absence Szs, panic attacks*, RLS, neuralgia, parkinsonian dysarthria, bipolar disorder Acts: Benzodiazepine; anticonvulsant Dose: Adults. 1.5 mg/d PO in 3 doses; ↑ by 0.5–1 mg/d q3d PRN up to 20 mg/d. Peds. 0.01–0.03 mg/kg/24 h PO ÷ tid; ↑ to 0.1–0.2 mg/kg/24 h ÷ tid; 0.2 mg/kg/d max; avoid abrupt D/C w/ P: [D, M] Elderly pts, resp Dz, CNS depression, severe hepatic impair, NAG CI: Severe liver Dz, acute NAG Disp: Tabs 0.5, 1, 2 mg, oral disintegrating tabs 0.125, 0.25, 0.5, 1, 2 mg SE: CNS (drowsiness, dizziness, ataxia, memory impair) Notes: Can cause retrograde amnesia; a CYP3A4 substrate Clonidine, Epidural (Duraclon) BOX: Dilute 500 mcg/mL before use; not rec for OB, postpartum or periop pain management due to ↓ BP/HR Uses: *w/ Opiates for severe pain in cancer patients uncontrolled by opiates alone* Acts: Centrally acting analgesic Dose: 30 mcg/h by epidural Inf w/ P: [C, ?/M] May ↓ HR/resp CI: See Box; clonidine sens, Inj site Infxn, anticoagulants, bleed diathesis, use above C4 dermatome Disp: 500 mcg/mL; dilute to 100 mcg/mL w/ NS (preservative free) SE: ↓ BP, dry mouth, N/V, somnolence, dizziness, confusion, sweating, confusion, hallucinations, tinnitus Notes: Avoid abrupt D/C; may cause nervousness, rebound ↑ BP Clonidine, Oral (Catapres) Uses: *HTN*; opioid, EtOH, & tobacco withdrawal, ADHD Acts: Centrally α-adrenergic stimulant Dose: Adults. 0.1 mg PO bid, adjust daily by 0.1–0.2-mg increments (max 2.4 mg/d). Peds. 5–10 mcg/kg/d ÷ q8–12h (max 0.9 mg/d); ↓ in renal impair w/ P: [C, +/-] Avoid w/ β-blocker, elderly, severe CV Dz, renal impair; use w/ agents that affect sinus node may cause severe ↓ HR CI: Component sensitivity Disp: Tabs 0.1, 0.2, 0.3 mg SE: drowsiness, orthostatic ↓ BP, xerostomia, constipation, ↓ HR, dizziness Notes: More effective for HTN if combined w/ diuretics; withdraw slowly, rebound HTN w/ abrupt D/C of doses > 0.2 mg bid; ADHD use in peds needs CV assessment before starting epidural clonidine (Duraclon) used for chronic CA pain Clonidine, Oral, Extended-Release (Kapvay) Uses: *ADHD alone or as adjunct* Acts: Central α-adrenergic stimulant Dose: Adults, Peds > 6 y. initial 0.1 mg qhs, then adjust weekly to bid; split dose based on table; do not crush/chew; do not substitute other products as mg dosing differs; > 0.4 mg/d not rec w/ P: [C, +/-] May cause severe ↓ HR and ↓ BP; w/ BP meds CI: Component sensitivity Disp: Tabs ER 0.1, 0.2 mg SE: Somnolence, fatigue, URI, irritability, sore throat, insomnia, nightmares, emotional disorder, constipation, congestion, ↑ temperature, dry mouth, ear pain Notes: On D/C, ↓ no more than 0.1 mg q3–7d
Clonidine, Transdermal (Catapres TTS) Uses: *HTN* Acts: Centrally acting α-adrenergic stimulant Dose: 1 patch q7d to hairless area (upper arm/torso); titrate to effect; ↓ w/ severe renal impair; w/ P: [C, +/-] Avoid w/ β-blocker, withdraw slowly, in elderly, severe CV Dz and w/ renal impair; use w/ agents that affect sinus node may cause severe ↓ HR CI: Component sensitivity Disp: TTS-1, TTS-2, TTS-3 (delivers 0.1, 0.2, 0.3 mg, respectively, of clonidine/d for 1 wk) SE: Drowsiness, orthostatic ↓ BP, xerostomia, constipation, ↓ HR Notes: Do not D/C abruptly (rebound HTN); doses > 2 TTS-3 usually not associated w/ ↑ efficacy; steady state in 2–3 d

Clopidogrel (Plavix, Generic) Uses: *Reduce atherosclerotic events*, administer ASAP in ECC setting w/ high-risk ST depression or T-wave inversion Acts: ↓ Plt aggregation Dose: 75 mg/d; ECC 2010. ACS: 300–600 mg PO loading dose, then 75 mg/d PO; full effects take several days w/ P: [B, ?] Active bleeding; risk of bleeding from trauma & other; TTP; liver Dz; other CYP2C19 (eg, fluconazole); OK w/ ranitidine, famotidine CI: Coagulation disorders, active/intracranial bleeding; CABG planned w/ in 5–7 d Disp: Tabs 75, 300 mg SE: ↑ bleeding time, GI intolerance, HA, dizziness, rash, thrombocytopenia, ↓ WBC Notes: Plt aggregation to baseline ~ 5 d after D/C, plt transfusion to reverse acutely; clinical response highly variable

Clorazepate (Tranxene) [C-IV] Uses: *Acute anxiety disorders, acute EtOH withdrawal Sxs, adjunctive therapy Rx partial Szs* Acts: Benzodiazepine; antianxiety agent Dose: Adults. 15–60 mg/d PO single or ↓ doses. Elderly & debilitated pts: Initial 7.5–15 mg/d in ↓ doses. EtOH withdrawal: Day 1: Initial 30 mg; then 30–60 mg ↓ doses; Day 2: 45–90 mg ↓ doses; Day 3: 22.5–45 mg ↓ doses; Day 4: 15–30 mg ↓ doses. After day 4: 15–30 mg ↓ doses, then 7.5–15 mg/d ↓ doses Peds. 3.75–7.5 mg/dose bid to 60 mg/d max ↓ bid-tid w/ P: [D, ?/-] Elderly; Hx depression CI: NAG; Not OK < 9 y of age Disp: Tabs 3.75, 7.5, 15 mg SE: CNS depressant effects (drowsiness, dizziness, ataxia, memory impair), ↓ BP Notes: Monitor pts w/ renal/hepatic impair (drug may accumulate); avoid abrupt D/C; may cause dependence

Clotrimazole (Lotrimin, Mycelex, Others) [OTC] Uses: *Candidiasis & tinea Infxns* Acts: Antifungal; alters cell wall permeability. Spectrum: Oropharyngeal candidiasis, dermatophytoses, superficial mycoses, cutaneous candidiasis, & vulvovaginal candidiasis Dose: PO: Prophylaxis: 1 troche dissolved in mouth tid Rx: 1 troche dissolved in mouth 5×/d for 14 d. Vag 1% cream: 1 applicator-full hs for 7 d. 2% cream: 1 applicator-full hs for 3 d Tabs: 100 mg vaginally hs for 7 d or
200 mg (2 tabs) vaginally hs for 3 d or 500-mg tabs vaginally hs once. **Topical**: Apply bid 10–14 d w/ P: [B (C if PO), ?] Not for systemic fungal Infxn; safety in children < 3 y not established **CI**: Component allergy **Disp**: 1% cream; soln; troche 10 mg; vag cream 1%, 2% **SE**: **Topical**: Local irritation; PO: N/V, ↑ LFTs **Notes**: PO prophylaxis immunosuppressed pts

**Clotrimazole & Betamethasone (Lotrisone) Uses**: *Fungal skin Infxns* **Acts**: Imidazole antifungal & anti-inflammatory. **Spectrum**: Tinea pedis, cruris, & corporis **Dose**: **Children ≥ 17 y**: Apply & massage into area bid for 2–4 wk w/ P: [C, ?] Varicella Infxn **CI**: Children < 12 y **Disp**: Cream 1/0.05% 15, 45 g; lotion 1/0.05% 30 mL **SE**: Local irritation, rash **Notes**: Not for diaper dermatitis or under occlusive dressings

**Clozapine (Clozaril, FazaClo, Versacloz) BOX**: Myocarditis, agranulocytosis, Szs, & orthostatic ↓ BP associated w/ clozapine; ↑ mortality in elderly w/ dementia-related psychosis **Uses**: *Refractory severe schizophrenia*; childhood psychosis, obsessive-compulsive disorder (OCD), bipolar disorder **Acts**: “Atypical” TCA **Dose**: 12.5 mg daily or bid initial; ↑ to 300–450 mg/d over 2 wk; maintain lowest dose possible; do not D/C abruptly w/ P: [B, +/-] Monitor for psychosis & cholinergic rebound **CI**: Uncontrolled epilepsy; comatose state; WBC < 3500 cells/mm³ and ANC < 2000 cells/mm³ before Rx or < 3000 cells/mm³ during Rx; Eos > 4000/mm³ **Disp**: Orally disintegrating tabs (ODTs) 12.5, 25, 100, 150, 200 mg; tabs 25, 100 mg; susp 50 mg/mL **SE**: Sialorrhea, tachycardia, drowsiness, ↑ Wt, constipation, incontinence, rash, Szs, CNS stimulation, hyperglycemia **Notes**: Avoid activities where sudden loss of consciousness could cause harm; benign temperature ↑ may occur during the 1st 3 wk of Rx, weekly CBC mandatory 1st 6 mo, then q other wk

**Cocaine [C-II]** **Uses**: *Topical anesthetic for mucous membranes* **Acts**: Narcotic analgesic, local vasoconstrictor **Dose**: Lowest topical amount that provides relief; 3 mg/kg max w/ P: [C, ?] **CI**: PRG, ocular anesthesia **Disp**: Topical soln & viscous preparations 4–10%; powder **SE**: CNS stimulation, nervousness, loss of taste/smell, chronic rhinitis, CV tox, abuse potential **Notes**: Use only on PO, laryngeal, & nasal mucosa; do not use on extensive areas of broken skin

**Codeine [C-II]** **Uses**: *Mild–mod pain; symptomatic relief of cough* **Acts**: Narcotic analgesic; ↓ cough reflex **Dose**: **Adults. Analgesic**: 15–60 mg PO or IM q4h PRN; 360 mg max/24 h. **Antitussive**: 10–20 mg PO q4h PRN; max 120 mg/d. **Peds. Analgesic**: 0.5–1 mg/kg/dose PO q4–6h PRN. **Antitussive**: 1–1.5 mg/kg/24 h PO ÷ q4h; max 30 mg/24 h; ↓ in renal/hepatic impair w/ P: [C (D if prolonged use or high dose at term), +] CNS depression, Hx drug abuse, severe hepatic impair **CI**: Component sensitivity **Disp**: Tabs 15, 30, 60 mg; soln 30 mg/5 mL; Inj 15, 30 mg/mL **SE**: Drowsiness, constipation, ↓ BP **Notes**: Usually combined w/ APAP for pain or w/ agents (eg, terpin hydrate) as an antitussive; 120 mg IM = 10 mg IM morphine

**Colchicine (Colcrys) Uses**: *Acute gouty arthritis & prevention of recurrences; familial Mediterranean fever*; primary biliary cirrhosis **Acts**: ↓ migration of leukocytes; ↓ leukocyte lactic acid production **Dose**: **Acute gout**: 1.2 mg load, 0.6 mg 1 h later, then prophylactic 0.6 mg/qd-bid **FMF**: **Adult** 1.2–2.4 mg/d **Peds > 4 y see label** w/ P: [C, +] w/ P-glycoprotein or CYP3A4 inhib in pt w/ renal or hepatic impair, ↓ dose or avoid in elderly or w/ indinavir **CI**: Serious renal, GI, hepatic, or cardiac disorders; blood dyscrasias **Disp**: Tabs 0.6 mg **SE**: N/V/D, Abd pain, BM suppression, hepatotox

**Colesevelam (Welchol) Uses**: *↓ LDL & total cholesterol alone or in combo w/ an HMG-CoA reductase inhib, improve glycemic control in type 2 DM* **Acts**: Bile acid sequestrant **Dose**: 3 tabs
PO bid or 6 tabs daily w/ meals w/ P: [B, ?] Severe GI motility disorders; in pts w/ triglycerides > 300 mg/dL (may ↑ levels); use not established in peds CI: Bowel obst, serum triglycerides > 500; Hx hypertriglyceridemia-pancreatitis Disp: Tabs 625 mg; oral susp 1.875, 3.75 g SE: Constipation, dyspepsia, myalgia, weakness Notes: May ↓ absorption of fat-soluble vits

Colestipol (Colestid) Uses: *Adjunct to ↓ serum cholesterol in primary hypercholesterolemia, relieve pruritus associated w/ ↑ bile acids* Acts: Binds intestinal bile acids to form insoluble complex Dose: Granules: 5–30 g/d ÷ 2–4 doses; tabs: 2–16 g/d ÷ daily-bid w/ P: [C, ?] Avoid w/ high triglycerides, GI dys-function CI: Bowel obst Disp: Tabs 1 g; granules 5 g/pack or scoop SE: Constipation, dyspepsia, myalgia, weakness Notes: May ↓ absorption of other meds and fat-soluble vits

Conivaptan HCL (Vaprisol) Uses: Euvolemic & hypervolemic hyponatremia Acts: Dual arginine vasopressin V_{1A}/V_{2} receptor antagonist Dose: 20 mg IV × 1 over 30 min, then 20 mg cont IV Inf over 24 h; 20 mg/d cont IV Inf for 1–3 more d; may ↑ to 40 mg/d if Na^{+} not responding; 4 d max use; use large vein, change site q24h w/ P: [C, ?/–] Rapid ↑ Na^{+} (> 12 mEq/L/24 h) may cause osmotic demyelination synd; impaired renal/hepatic Fxn; may ↑ digoxin levels; CYP3A4 inhib (Table 10, p 319) CI: Hypovolemic hyponatremia; w/ CYP3A4 inhib; anuria Disp: Inj 20 mg/100 mL SE: Inf site Rxns, HA, N/V/D, constipation, ↓ K^{+}, orthostatic ↓ BP, thirst, dry mouth, pyrexia, pollakiuria, polyuria, Infxn Notes: Monitor Na^{+}, vol and neurologic status; D/C w/ very rapid ↑ Na^{+}; mix only w/ 5% dextrose

Copper IUD Contraceptive (ParaGard T 380A) Uses: *Contraception, long-term (up to 10 y)* Acts: ?, interfere w/ sperm survival/transport Dose: Insert any time during menstrual cycle; replace at 10 y max w/ P: [C, ?] Remove w/ intrauterine PRG, increased risk of comps w/ PRG and device in place CI: Acute PID or in high-risk behavior, postpartum endometritis, cervicitis Disp: 309 mg IUD SE: PRG, ectopic PRG, pelvic Infxn w/ or w/o immunocompromised, embedment, perforation, expulsion, Wilson Dz, fainting w/ insert, Vag bleeding, expulsion Notes: Counsel pt does not protect against STD/HIV; see PI for detailed instructions; 99% effective

Cortisone, Systemic and Topical See Steroids pp 259 & 260, and Tables 2 & 3 pp 301 & 302

Crizotinib (Xalkori) Uses: *Locally advanced/metastatic NSCLC anaplastic lymphoma kinase (ALK)-positive* Acts: TKI Dose: Adult. 250 mg PO bid; swallow whole; see label for tox adjustments w/ P: [D, ?/–] w/ Hepatic impair & CrCl < 30 mL/min; may cause ↑ QT (monitor); ↓ dose w/ CYP3A substrates; avoid w/ strong CYP3A inducers/inhib & CYP3A substrates w/ narrow therapeutic index Disp: Caps 200, 250 mg SE: N/V/D, constipation, Abd pain, stomatitis, edema, vision disorder, hepatotox, pneumonitis, pneumonia, PE, neutropenia, thrombocytopenia, lymphopenia, HA, dizziness, fatigue, cough, dyspnea, URI, fever, arthralgia, ↓ appetite, rash, neuropathy Notes: √ CBC & LFTs monthly

Crofelemer (Fulyzaq) Uses: *Noninfectious diarrhea w/ HIV on anti- retrovirals* Acts: Inhibits cAMP-stimulated CF transmembrane conductance regulator Cl^{−} channel and Ca-activated Cl^{−} channels of intestinal epithelial cells, controls Cl^{−} and fluid secretion Dose: 125 mg bid w/ P: [C, –] CI: None Disp: Tab 125 mg DR SE: Flatulence, cough, bronchitis, URI, ↑ bili Notes: r/o infectious D before; do not crush/chew tabs; minimal absorb, drug interact unlikely

Cromolyn Sodium (Intal, NasalCrom, Opticrom, Others) Uses: *Adjunct to the Rx of asthma; prevent exercise-induced asthma; allergic rhinitis; ophthal allergic manifestations*; food allergy,
systemic mastocytosis, IBD Acts: Antiasthmatic; mast cell stabilizer Dose: Adults & Children > 12 y. Inh: 20 mg (as powder in caps) inhaled qid PO: 200 mg qid 15–20 min ac, up to 400 mg qid. Nasal instillation: Spray once in each nostril 2–6×/d. Ophthal: 1–2 gtt in each eye 4–6 × d. Peds. Inh: 2 puffs qid of metered-dose inhaler. PO: Infants < 2 y: (not OK) 20 mg/kg/d in 4 ⊳ doses. 2–12 y: 100 mg qid ac w/ P: [B, ?] w/ Renal/hepatic impair CI: Acute asthmatic attacks Disp: PO conc 100 mg/5 mL; soln for nebulizer 20 mg/2 mL; nasal soln 40 mg/mL; ophthal soln 4% SE: Unpleasant taste, hoarseness, coughing Notes: No benefit in acute Rx; 2–4 wk for maximal effect in perennial allergic disorders

Cyanocobalamin [Vitamin B\textsubscript{12}] (Nascobal) Uses: *Pernicious anemia & other vit B\textsubscript{12} deficiency states; ↑ requirements d/t PRG; thyrotoxicosis; liver or kidney Dz* Acts: Dietary vit B\textsubscript{12} supl Dose: Adults. 30 mcg/d × 5–10 d intranasal: 500 mcg once/wk for pts in remission, 100 mcg IM or SQ daily for 5–10 d, then 100 mcg IM 2×/wk for 1 mo, then 100 mcg IM monthly. Peds. Use 0.2 mcg/kg × 2 d test dose; if OK 30–50 mcg/d for 2 or more wk (total 1000 mcg) then maint: 100 mcg/mo. w/ P: [A (C if dose exceeds RDA), +] CI: Allergy to cobalt; hereditary optic nerve atrophy; Leber Dz Disp: Tabs 50, 100, 250, 500, 1000, 2500, 5000 mcg; Inj 1000 mcg/mL; intranasal (Nascobal) gel 500 mcg/0.1 mL SE: Itching, D, HA, anxiety Notes: PO absorption erratic; OK for use w/ hyperalimentation

Cyclobenzaprine (Flexeril) Uses: *Relief of muscle spasm* Acts: Centrally acting skeletal muscle relaxant; reduces tonic somatic motor activity Dose: 5–10 mg PO bid-qid (2–3 wk max) w/ P: [B, ?] Shares the toxic potential of the TCAs; urinary hesitancy, NAG CI: Do not use concomitantly or w/ in 14 d of MAOIs; hyperthyroidism; heart failure; arrhythmias Disp: Caps 15, 30 mg daily 2–3 wk; 30 mg/d max w/ P: [B, ?/–] w/ Urinary retention, NAG, w/ EtOH/CNS depressant CI: MAOI w/ in 14 d, elderly, arrhythmias, heart block, CHF, MI recovery phase, ↑ thyroidDisp: Tabs 5, 10 mg SE: Sedation & anticholinergic effects Notes: May inhibit mental alertness or physical coordination

Cyclobenzaprine, Extended-Release (Amrix) Uses: *Muscle spasm* Acts: ? Centrally acting long-term muscle relaxant Dose: 15–30 mg PO daily 2–3 wk; 30 mg/d max w/ P: [B, ?/] w/ Urinary retention, NAG, w/ EtOH/CNS depressant CI: MAOI w/ in 14 d, elderly, arrhythmias, heart block, CHF, MI recovery phase, ↑ thyroid CI: NAG Disp: Caps ER 15, 30 mg SE: Dry mouth, drowsiness, dizziness, HA, N, blurred vision, dysgeusia Notes: Avoid abrupt D/C w/ long-term use

Cyclopentolate (Cyclogyl, Cylate) Uses: *Cycloplegia, mydriasis* Acts: Cycloplegic mydriatic, anticholinergic inhibits iris sphincter and ciliary body Dose: Adults. 1 gtt in eye 40–50 min preprocedure, may repeat × 1 in 5–10 min Peds. As adult, children 0.5%; infants use 0.5% w/ P: [C (may cause late-term fetal anoxia/↓ HR), +/-], w/ premature infants, HTN, Down synd, elderly, CI: NAG Disp: Ophthal soln 0.5, 1, 2% SE: Tearing, HA, irritation, eye pain, photophobia, arrhythmia, tremor, ↑ IOP, confusion Notes: Compress lacrimal sac for several min after dose; heavily pigmented irises may require ↑ strength; peak 25–75 min, cycloplegia 6–24 h, mydriasis up to 24 h; 2% soln may result in psychotic Rxns and behavioral disturbances in peds

Cyclopentolate With Phenylephrine (Cyclomydril) Uses: *Mydriasis greater than cyclopentolate alone* Acts: Cycloplegic mydriatic, α-adrenergic agonist w/ anticholinergic to inhibit iris sphincter Dose: 1 gtt in eye q 5–10 min (max 3 doses) 40–50 min preprocedure w/ P: [C (may cause late-term fetal anoxia/↓ HR), +/-] HTN, w/ elderly w/ CAD CI: NAG Disp: Ophthal soln cyclopentolate 0.2%/phenylephrine 1% (2, 5 mL) SE: Tearing, HA, irritation, eye pain, photophobia, arrhythmia, tremor Notes: Compress lacrimal sac for several min after dose; heavily pigmented irises may require ↑ strength; peak 25–75 min, cycloplegia 6–24 h, mydriasis up to 24 h
Cyclophosphamide (Cytoxan, Neosar) Uses: *Hodgkin Dz & NHLs; multiple myeloma; small cell lung, breast, & ovarian CAs; mycosis fungoides; neuroblastoma; retinoblastoma; acute leukemias; allogeneic & ABMT in high doses; severe rheumatologic disorders (SLE, JRA, Wegner granulomatosis)*

Acts: Alkylating agent

Dose: Adults. (per protocol) 500–1500 mg/m²; single dose at 2- to 4-wk intervals; 1.8 g/m² 160 mg/kg (or at 12 g/m² in 75-kg individual) in the BMT setting (per protocols).

Peds. SLE: 500 mg–1g/m² q mo. JRA: 10 mg/kg q 2 wk; ↓ w/ renal impair w/ P: [D, –] w/ BM suppression, hepatic Insuff

CI: Component sensitivity

Disp: Tabs 25, 50 mg; Inj 500 mg, 1 g, 2 g

SE: ↓ BM; hemorrhagic cystitis, SIADH, alopecia, anorexia; N/V; hepatotox; rare interstitial pneumonitis; irreversible testicular atrophy possible; cardiotox rare; 2nd malignancies (bladder, ALL), risk 3.5% at 8 y, 10.7% at 12 y

Notes: Hemorrhagic cystitis prophylaxis: cont bladder irrigation & MESNA uroprotection; encourage hydration, long-term bladder CA screening

Cyclosporine (Gengraf, Neoral, Sandimmune) BOX: ↑ risk neoplasm, ↑ risk skin malignancies, ↑ risk HTN and nephrotox

Uses: *Organ rejection in kidney, liver, heart, & BMT w/ steroids; RA; psoriasis*

Acts: Immunosuppressant; reversible inhibition of immunocompetent lymphocytes

Dose: Adults & Peds. PO: 15 mg/kg/12h pretransplant; after 2 wk, taper by 5 mg/wk to 5–10 mg/kg/d. IV: If NPO, give 1/3 PO dose IV; ↓ in renal/hepatic impair w/ P: [C, –]

CI: Renal impair; uncontrolled HTN; w/ lovastatin, simvastatin

Disp: Caps 25, 100 mg; PO soln 100 mg/mL; Inj 50 mg/mL

SE: May ↑ BUN & Cr & mimic transplant rejection; HTN; HA; hirsutism

Notes: Administer in glass container; Neoral & Sandimmune not interchangeable; monitor BP, Cr, CBC, LFTs, interaction w/ St. John’s wort; Levels: Trough: Just before next dose: Therapeutic: Variable 150–300 ng/mL RIA

Cyclosporine, Ophthalmic (Restasis) Uses: *↑ Tear production suppressed d/t ocular inflammation*

Acts: Immune modulator, anti-inflammatory

Dose: 1 gtt bid each eye 12 h apart; OK w/ artificial tears, allow 15 min between w/ P: [C, –]

CI: Ocular Infxn, component allergy

Disp: Single-use vial 0.05%

SE: Ocular burning/hyperemia

Notes: Mix vial well

Cyproheptadine (Periactin) Uses: *Allergic Rxns; itching*

Acts: Phenothiazine antihistamine; serotonin antagonist

Dose: Adults. 4–20 mg PO ÷ q8h; max 0.5 mg/kg/d. Peds 2–6 y. 2 mg bid-tid (max 12 mg/24 h). 7–14 y: 4 mg bid-tid; ↓ in hepatic impair w/ P: [B, ?] Elderly, CV Dz, asthma, thyroid Dz, BPH

CI: Neonates or < 2 y; NAG; BOO; acute asthma; GI obst; w/ MAOI

Disp: Tabs 4 mg; syrup 2 mg/5 mL

SE: Anticholinergic, drowsiness

Notes: May stimulate appetite

Cytarabine [ARA-C] (Cytosar-U) BOX: Administration by experienced physician in properly equipped facility; potent myelosuppressive agent

Uses: *Acute leukemias, CML, NHL; IT for leukemic meningitis or prophylaxis*

Acts: Antimetabolite; interferes w/ DNA synth

Dose: 100–150 mg/m²/d for 5–10 d (low dose); 3 g/m² q12h for 6–12 doses (high dose); 1 mg/kg 1–2/wk (SQ maint); 5–75 mg/m² up to 3/wk IT (per protocols); ↓ in renal/hepatic impair w/ P: [D, ?] in elderly, w/ marked BM suppression, ↓ dosage by ↓ the number of days of administration

CI: Component sensitivity

Disp: Inj 100, 500 mg, 1, 2 g, also 20, 100 mg/mL

SE: ↓ BM, N/V/D, stomatitis, flu-like synd, rash on palms/soles, hepatic/cerebellar dysfunction w/ high doses, noncardiogenic pulm edema, neuropathy, fever

Notes: Little use in solid tumors; high-dose tox limited by corticosteroid ophthal soln

Cytarabine Liposome (DepoCyt) BOX: Can cause chemical arachnoiditis (N/V/HA, fever)

Cytarabine (ara-C) (Cytosar-U) BOX: Administration by experienced physician in properly equipped facility; potent myelosuppressive agent

Uses: *Acute leukemias, CML, NHL; IT for leukemic meningitis or prophylaxis*

Acts: Antimetabolite; interferes w/ DNA synth

Dose: 100–150 mg/m²/d for 5–10 d (low dose); 3 g/m² q12h for 6–12 doses (high dose); 1 mg/kg 1–2/wk (SQ maint); 5–75 mg/m² up to 3/wk IT (per protocols); ↓ in renal/hepatic impair w/ P: [D, ?] in elderly, w/ marked BM suppression, ↓ dosage by ↓ the number of days of administration

CI: Component sensitivity

Disp: Inj 100, 500 mg, 1, 2 g, also 20, 100 mg/mL

SE: ↓ BM, N/V/D, stomatitis, flu-like synd, rash on palms/soles, hepatic/cerebellar dysfunction w/ high doses, noncardiogenic pulm edema, neuropathy, fever

Notes: Little use in solid tumors; high-dose tox limited by corticosteroid ophthal soln
Severity w/ dexamethasone. Administer by experienced physician in properly equipped facility.

*Lymphomatous meningitis*  
*Acts*: Antimetabolite; interferes w/ DNA synth  
*Dose*: 50 mg IT q14d for 5 doses, then 50 mg IT q28d × 4 doses; use dexamethasone prophylaxis w/ P: [D, ?] May cause neurotox; blockage to CSF flow may ↑ the risk of neurotox; use in peds not established  

**CI**: Active meningeal Infxn

**Disp**: IT Inj 50 mg/5 mL

**SE**: Neck pain/rigidity, HA, confusion, somnolence, fever, back pain, N/V, edema, neutropenia, ↓ plt, anemia

**Notes**: Cytarabine liposomes are similar in microscopic appearance to WBCs; caution in interpreting CSF studies

**Cytomegalovirus Immune Globulin [CMV-IG IV] (CytoGam)**  
*Uses*: *Prophylaxis/attenuation CMV Dz w/ transplantation*  
*Acts*: IgG antibodies to CMV  
*Dose*: 150 mg/kg/dose w/ in 72 h of transplant and wk 2, 4, 6, 8: 100–150 mg/kg/dose wk 12, 16 posttransplant; 50–100 mg/kg/dose w/ P: [C, ?] Anaphylactic Rxns; renal dysfunction  

**CI**: Allergy to immunoglobulins; IgA deficiency

**Disp**: Inj 50–150 mg/mL

**SE**: Flushing, N/V, muscle cramps, wheezing, HA, fever, non-cardiogenic pulm edema, aseptic meningitis

**Notes**: IV only in separate line; do not shake

**Dabigatran (Pradaxa)**  
*BOX*: Pradaxa D/C w/o adequate anticoagulation ↑ stroke risk

*Uses*: *↓ Risk stroke/systemic embolism w/ nonvalvular afib*  
*Acts*: Thrombin inhibitor  
*C*lr > 30 mL/min: 150 mg PO bid; C*lr 15–30 mL/min: 75 mg PO bid; do not chew/ break/open caps w/ P: [C, ?/–] Avoid w/ P-glycoprotein inducers (i.e., rifampin)  

**CI**: Active bleeding, prosthetic valve

**Disp**: Caps 75, 150 mg

**SE**: Bleeding, gastritis, dyspepsia

**Notes**: See label to convert between anticoagulants; caps sensitive to humidity (30-d life after opening bottle); routine coags not needed; ↑ PTT/INR/TT; w/ nl TT, no drug activity; ½ life 12–17 h

**Dacarbazine (DTIC)**  
*BOX*: Causes hematopoietic depression, hepatic necrosis, may be carcinogenic, teratogenic

*Uses*: *Melanoma, Hodgkin Dz, sarcoma*  
*Acts*: Alkylating agent; antimetabolite as a purine precursor; ↓ protein synth, RNA, & especially DNA  

*Dose*: 2–4.5 mg/kg/d for 10 consecutive d or 250 mg/m²/d for 5 d (per protocols); ↓ in renal impair w/ P: [C, -] In BM suppression; renal/hepatic impair  

**CI**: Component sensitivity

**Disp**: Inj 100, 200 mg

**SE**: ↓ BM, N/V, hepatotox, flu-like synd, ↓ BP, photosens, alopecia, facial flushing, facial paresthesias, urticaria, phlebitis at Inj site

**Notes**: Avoid extrav, CBC, plt

**Daclizumab (Zenapax)**  
*BOX*: Administer under skilled supervision in properly equipped facility

*Uses*: *Prevent acute organ rejection*  
*Acts*: IL-2 receptor antagonist  
*Dose*: 1 mg/kg/dose IV; 1st dose pretransplant, then 1 mg/kg q14d × 4 doses w/ P: [C, ?] CI: Component sensitivity  

**Disp**: Inj 5 mg/mL

**SE**: Hyperglycemia, edema, HTN, ↓ BP, constipation, HA, dizziness, anxiety, nephrotox, pulm edema, pain, anaphylaxis/hypersens

**Notes**: Administer w/ in 4 h of prep

**Dactinomycin (Cosmegen)**  
*BOX*: Administer under skilled supervision in properly equipped facility; powder and soln toxic, corrosive, mutagenic, carcinogenic, and teratogenic; avoid exposure and use precautions

*Uses*: *Choriocarcinoma, Wilms tumor, Kaposi and Ewing sarcomas, rhabdomyosarcoma, uterine and testicular CA*  
*Acts*: DNA-intercalating agent  

**Dose**: Adults: 15 mcg/kg/d for 5 d q3–6 wk or 400–600 mcg/m² for 5d q3–6 wk  

**Peds**: Sarcoma (per protocols); ↓ in renal impair w/ P: [D, ?] CI: Concurrent/recent chickenpox or herpes zoster; infants < 6 mo  

**Disp**: Inj 0.5 mg SE: Myelo-/immunosuppression, severe N/V/D, alopecia, acne, hyperpigmentation, radiation recall phenomenon, tissue damage w/ extrav, hepatotox  

**Notes**: Classified as antibiotic but not used as antimicrobial

**Dalfampridine (Ampyra)**  
*Uses*: *Improve walking w/ MS*  
*Acts*: K⁺ channel blocker  
*Dose*: 10 mg
PO q12h max dose/d 20 mg w/ P: [C, ?/–] Not w/ other 4-aminopyridines CI: Hx Sz; w/ CrCl ≤ 50 mL/min Disp: Tab ER 10 mg w/ P: [C, ?/–] Not w/ other 4-aminopyridines CI: Hx Sz; w/ CrCl ≤ 50 mL/min Disp: Tab ER 10 mg

Dalteparin (Fragmin) BOX: ↑ Risk of spinal/epidural hematoma w/ LP Uses: *Unstable angina, non–Q-wave MI, prevent & Rx DVT following surgery (hip, Abd), pt w/ restricted mobility, extended therapy Rx for PE DVT in CA pt* Acts: LMW heparin Dose: Angina/MI: 120 units/kg (max 10,000 units) SQ q12h w/ ASA. DVT prophylaxis: 2500–5000 units SQ 1–2 h preop, then daily for 5–10 d. Systemic anticoagulation: 200 units/kg/d SQ or 100 units/kg bid SQ. CA: 200 Int units/kg (max 18,000 Int units) SQ q24h × 30 d, mo 2–6 150 Int units/kg SQ q24h (max 18,000 Int units) w/ P: [B, ?] In renal/hepatic impair, active hemorrhage, cerebrovascular Dz, cerebral aneurysm, severe HTN CI: HIT; pork product allergy; w/ mifepristone Disp: Inj multiple ranging from 2500 units (16 mg/0.2 mL) to 25,000 units/mL (3.8 mL) prefilled vials SE: Bleeding, pain at site, ↓ plt Notes: Predictable effects eliminates lab monitoring; not for IM/IV use

Dantrolene (Dantrium, Revonto) BOX: Hepatotox reported; D/C after 45 d if no benefit observed Uses: *Rx spasticity d/t upper motor neuron disorders (eg, spinal cord injuries, stroke, CP, MS); malignant hyperthermia* Acts: Skeletal muscle relaxant Dose: Adults. Spasticity: 25 mg PO daily; ↑ 25 mg to effect to 100 mg PO q8h (400 mg/d max). Peds. 0.5 mg/kg/dose/d; ↑ by 0.5 mg/kg dose tid to 2 mg/kg/dose tid (max 400 mg/d) Adults & Peds. Malignant hyperthermia: Rx: Cont rapid IV, start 1 mg/kg until Sxs subside or 10 mg/kg is reached. Postcrisis follow-up: 4–8 mg/kg/d in 3–4 ÷ doses for 1–3 d to prevent recurrence w/ P: [C, ?] Impaired cardiac/pulm/hepatic Fxn CI: Active hepatic Dz; where spasticity needed to maintain posture or balance Disp: Caps 25, 50, 100 mg; powder for Inj 20 mg/vial SE: Hepatotox, ↑ LFTs, drowsiness, dizziness, rash, muscle weakness, D/N/V, pleural effusion w/ pericarditis, blurred vision, hep, photosens Notes: Monitor LFTs; avoid sunlight/EtOH/CNS depressants

Dapsone, Oral Uses: *Rx & prevent PCP; toxoplasmosis prophylaxis; leprosy* Acts: Unknown; bactericidal Dose: Adults. PCP prophylaxis 50–100 mg/d PO; Rx PCP 100 mg/d PO w/ TMP 15–20 mg/kg/d for 21 d. Peds. PCP prophylaxis alternated dose: (> 1 mo) 4 mg/kg/dose once/wk (max 200 mg); Rx PCP: 1–2 mg/kg/24 h PO daily; max 100 mg/d w/ P: [C, +] G6PD deficiency; severe anemia CI: Component sensitivity Disp: Tabs 25, 100 mg SE: Hemolysis, methemoglobinemia, agranulocytosis, rash, cholestatic jaundice Notes: Absorption ↑ by an acidic environment; for leprosy, combine w/ rifampin & other agents

Dapsone, Topical (Aczone) Uses: *Topical for acne vulgaris* Acts: Unknown; bactericidal Dose: Apply pea-size amount and rub into areas bid; wash hands after w/ P: [C, +] G6PD deficiency; severe anemia CI: Component sensitivity Disp: 5% gel SE: Skin oiliness/peeling, dryness erythema Notes: Not for oral, ophthal, or intravag use; check G6PD levels before use; follow CBC if G6PD deficient

Daptomycin (Cubicin) Uses: *Complicated skin/skin structure Infxns d/t gram(+) organisms* Acts: Cyclic lipo-peptide; rapid membrane depolarization & bacterial death. Spectrum: S. aureus (including MRSA), S. pyogenes, S. agalactiae, S. dysgalactiae subsp Equisimilis, & E. faecalis (vancomycin-susceptible strains only) Dose: Skin: 4 mg/kg IV daily × 7–14 d (over 2 min); Bacteremia & Endocarditis: 6 mg/kg q24h; ↓ w/ CrCl < 30 mL/min or dialysis: q48h w/ P: [B, ?] w/ HMG-CoA inhib Disp: Inj 500 mg/10 mL SE: Anemia,
constipation, N/V/D, HA, rash, site Rxn, muscle pain/weakness, edema, cellulitis, hypo/ hyperglycemia, ↑ alkaline phosphatase, cough, back pain, Abd pain, ↓ K⁺, anxiety, CP, sore throat, cardiac failure, confusion, Candida Infxns Notes: CPK baseline & weekly; consider D/C HMG-CoA reductase inhib to ↓ myopathy risk; not for Rx PNA

Darbepoetin Alfa (Aranesp) BOX: Associated w/ ↑ CV, thromboembolic events and/or mortality; D/C if Hgb > 12 g/dL; may increase tumor progression and death in CA pts Uses: *Anemia associated w/ CRF*, anemia in nonmyeloid malignancy w/ concurrent chemotherapy Acts: ↑ Erythropoiesis, recombinant erythropoietin variant Dose: 0.45 mcg/kg single IV or SQ qwk; titrate, do not exceed target Hgb of 12 g/dL; use lowest doses possible, see PI to convert from Epogen w/ P: [C, ?] May ↑ risk of CV &/or neurologic SE in renal failure; HTN; w/ Hx Szs CI: Uncontrolled HTN, component allergy Disp: 6, 10, 50, 100, 300 mcg/mL, 150 mcg/0.75 mL in polysorbate or albumin excipient SE: May ↑ cardiac risk, CP, hypo-/hypertension, N/V/D, myalgia, arthralgia, dizziness, edema, fatigue, fever, ↑ risk Infxn Notes: Longer half-life than Epogen; weekly CBC until stable

Darifenacin (Enablex) Uses: *OAB* Urinary antispasmodic Acts: Muscarinic receptor antagonist Dose: 7.5 mg/d PO; 15 mg/d max (7.5 mg/d w/ mod hepatic impair or w/ CYP3A4 inhib); w/ drugs metabolized by CYP2D (Table 10, p 319); swallow whole w/ P: [C, ?/–] w/ Hepatic impair CI: Urinary/gastric retention, uncontrolled NAG, paralytic ileus Disp: Tabs ER 7.5, 15 mg SE: Xerostomia/eyes, constipation, dyspepsia, Abd pain, retention, abnormal vision, dizziness, asthenia

Darunavir (Prezista) Uses: *Rx HIV w/ resistance to multiple protease inhibit* Acts: HIV-1 protease inhibit Dose: Adults. Rx-naïve and w/o darunavir resistance substitutions: 800 mg w/ ritonavir 100 mg qd. Rx experienced w/ 1 darunavir resistance: 600 mg w/ ritonavir 100 mg BID w/ food. Peds 6–18 y and > 20 kg. Dose based on body weight (see label); do not exceed the Rx experienced adult dose. Do not use qd dosing in peds; w/ food w/ P: [C, ?/–] Hx sulfâ allergy, CYP3A4 substrate, changes levels of many meds (↑ amiodarone, ↑ dihydropyri-dine, ↑ HMG-CoA reductase inhib [statins], ↓ SSRIs, ↓ methadone); do not use w/ salmeterol, colchicine (w/ renal impair; do not use w/ severe hepatic impair); adjust dose w/ bosentan, tadalaafil for PAH CI: w/ Astemizole, rifampin, St. John’s Wort, terfenadine, ergotamines, lovastatin, simvastatin, methylgeronovine, pimozone, midazolom, triazolam, alpha 1-adrenoreceptor antagonist (alfuzosin), PDE5 inhibitors (eg, sildenaafil) Supplied: Tabs 75, 150, 400, 600 mg SE: ↑ glucose, cholesterol, triglycerides, central redistribution of fat (metabolic synd), N, ↓ neutrophils, ↑ amylase

Dasatinib (Sprycel) Uses: CML, Ph + ALL Acts: Multi-TKI Dose: 100–140 mg PO day; adjust w/ CYP3A4 inhib/inducers (Table 10, p 319) w/ P: [D, ?/–] CI: None Disp: Tabs 20, 50, 70, 80, 100, 140 mg SE: ↓ BM, edema, fluid retention, pleural effusions, N/V/D, Abd pain, bleeding, fever, ↑ QT Notes: Replace K⁺, Mg²⁺ before Rx

Daunorubicin (Cerubidine) BOX: Cardiac Fxn should be monitored d/t potential risk for cardiac tox & CHF, renal/hepatic dysfunction Uses: *Acute leukemias* Acts: DNA-intercalating agent; ↓ topoisomerase II; generates oxygen free radicals Dose: 45–60 mg/m²/d for 3 consecutive d; 25 mg/m²/wk (per protocols); ↓ w/ renal/hepatic impair w/ P: [D, ?] CI: Component sens Disp: Inj 20, 50 mg SE: ↓ BM, mucositis, N/V, orange urine, alopecia, radiation recall phenomenon, hepatotox (↑ bili), tissue necrosis w/ extrav, cardiotox (1–2% CHF w/ 550 mg/m² cumulative dose) Notes: Prevent cardiotox w/ dexrazoxane (w/ > 300 mg/m² daunorubicin cum dose); IV use only; allopurinol
prior to ↓ hyperuricemia

**Decitabine (Dacogen) Uses:** *MDS*  *Acts:* Inhibits DNA methyltransferase  *Dose:* 15 mg/m² cont Inf over 3 h; repeat q8h × 3 d; repeat cycle q6wk, min 4 cycles; delay Tx and ↓ dose if inadequate hematologic recovery at 6 wk (see PI); delay Tx w/ Cr > 2 mg/dL or bili > 2× ULN w/ P: [D, ?/–]; avoid PRG; males should not father a child during or 2 mo after; renal/hepatic impair  *Disp:* Powder 50 mg/vial  *SE:* ↓ WBC, ↓ HgB, ↓ plt, febrile neutropenia, edema, petechiae, N/V/D, constipation, stomatitis, dyspepsia, cough, fever, fatigue, ↑ LFTs/bili, hyperglycemia, Infxn, HA  *Notes:* CBC & plt before cycle and PRN; premedicate w/ antiemetic

**Deferasirox (Exjade) BOX:** May cause renal and hepatic tox/failure, GI bleed; follow labs  *Uses:* *Chronic iron overload d/t transfusion in pts > 2 y*  *Acts:* Oral iron chelator  *Dose:* 20 mg/kg PO/d; adjust by 5–10 mg/kg q3–6mo based on monthly ferritin; 40 mg/kg/d max; on empty stomach 30 min ac; hold dose w/ ferritin < 500 mcg/L; dissolve in water/orange/apple juice (< 1 g/3.5 oz; > 1 g in 7 oz) drink immediately; resuspend residue and swallow; do not chew, swallow whole tabs or take w/ Al-containing antacids w/ P: [B, ?/–] Elderly, renal impair, heme disorders; ↑ MDS in pt 60 y  *Disp:* Tabs for oral susp 125, 250, 500 mg  *SE:* N/V/D, Abd pain, skin rash, HA, fever, cough, ↑ Cr & LFTs, Infxn, hearing loss, dizziness, cataracts, retinal disorders, ↑ IOP  *Notes:* ARF, cytopenias possible;  *Cr* weekly 1st mo then q mo, CBC, urine protein, LFTs; do not use w/ other iron-chelator therapies; dose to nearest whole tab; initial auditory/ophthal testing and q12mo

**Deferiprone (Ferriprox) BOX:** May cause neutropenia & agranulocytosis w/ Infxn & death. Monitor baseline ANC & weekly. D/C if Infxn develops. Advise pts to report any Sx of Infxn.  *Uses:* *Transfusion iron overload in thalassemia synds*  *Acts:* Iron chelator  *Dose:* 25 mg/kg PO 3 × d (75 mg/kg/d); 33 mg/kg PO 3 × d (99 mg/kg/d) max round dose to nearest 1/2 tab w/ P: [D, -] D/C w/ ANC < 1.5 × 10⁹/L  *CI:* Hypersens  *Disp:* Tabs (scored) 500 mg SE: N/V, Abd pain, skin rash, HA, fever, cough, ↑ Cr & LFTs, Infxn, hearing loss, dizziness, cataracts, retinal disorders, ↑ IOP  *Notes:* Separate by 4 h antacids & mineral supplements w/ polyvalent cations;  *plasma zinc*

**Degarelix (Firmagon) Uses:** *Advanced PCa*  *Acts:* Reversible LHRH antagonist, ↓ LH and testosterone w/o flare seen w/ LHRH agonists (transient ↑ in testosterone)  *Dose:* Initial 240 mg SQ in two 120 mg doses (40 mg/mL); maint 80 mg SQ (20 mg/mL) q28d w/ P: [Not for women]  *CI:* Women  *Supplied:* Inj vial 120 mg (initial); 80 mg (maint)  *SE:* Inj site Rxns, hot flashes, ↑ Wt, ↑ serum GGT  *Notes:* Requires 2 Inj initial (volume); 44% testosterone castrate (< 50 ng/dL) at day 1, 96% day 3

**Delavirdine (Rescriptor) Uses:** *HIV Infxn*  *Acts:* Nonnucleoside RT inhib  *Dose:* 400 mg PO tid w/ P: [C, ?] CDC rec: HIV-infected mothers not breast-feed (transmission risk); w/ renal/hepatic impair  *CI:* w/ Drugs dependent on CYP3A (Table 10, p 319)  *Disp:* Tabs 100, 200 mg SE: Fat redistribution, immune reconstitution synd, HA, fatigue, rash, ↑ transaminases, N/V/D  *Notes:* Avoid antacids; ↓ cytochrome P-450 enzymes; numerous drug interactions; monitor LFTs

**Demeclocycline (Declomycin) Uses:** *SIADH*  *Acts:* Antibiotic, antagonizes ADH action on renal tubules  *Dose:* 600–1200 mg/d PO on empty stomach; ↓ in renal failure; avoid antacids w/ P: [D, ?/–] Avoid in hepatic/renal impair & children  *CI:* Tetracycline allergy  *Disp:* Tabs 150, 300 mg SE: D, Abd cramps, photosens, DI  *Notes:* Avoid sunlight, numerous drug interactions; not for peds < 8 y

**Denosumab (Prolia, Xgeva) Uses:** *Tx osteoporosis postmenopausal women ↑ BMD in men on ADT (Prolia); prevent skeletal events w/ bone mets from solid tumors (Xgeva)*  *Acts:* RANK ligand (RANKL) inhibitor (human IgG2 MoAb); inhibits osteoclasts  *Dose:* Prolia: 60 mg SQ q6mo; Xgeva:
120 mg SQ q4wk; in upper arm, thigh, Abd w/ P: [X (Xgeva), D (Prolia), ?/–] CI: Hypocalcemia
**Disp**: Inj Prolia 60 mg/mL; Xgeva 70 mg/mL SE: ↓ Ca\(^{2+}\), hypophosphatemia, serious Infxns, dermatitis, rashes, eczema, jaw osteonecrosis, pancreatitis, pain (musculoskeletal, back), fatigue, asthenia, dyspnea, N, Abd pain, flatulence, hypercholesterolemia, anemia, cystitis **Notes**: Give w/ calcium 1000 mg & vit D 400 Int units/d

**Desipramine (Norpramin)**
**Box**: Closely monitor for worsening depression or emergence of suicidality
**Uses**: *Endogenous depression*, chronic pain, peripheral neuropathy
**Acts**: TCA; ↑ synaptic serotonin or norepinephrine in CNS
**Dose**: **Adults**. 100–200 mg/d single or ÷ dose; usually single hs dose (max 300 mg/d); ↓ dose in elderly **Peds 6–12 y**. 1–3 mg/kg/d ÷ dose, 5 mg/kg/d max w/ P: [C, ?/–] w/ CV Dz, Sz disorder, hypothyroidism, elderly, liver impair CI: MAOIs w/ in 14 d; during AMI recovery phase w/ linezolid or IV methylene blue (↑ risk serotonin synd) **Disp**: Tabs 10, 25, 50, 75, 100, 150 mg
**SE**: Anticholinergic (blurred vision, urinary retention, xerostomia); orthostatic ↓ BP; ↑ QT, arrhythmias **Notes**: Numerous drug interactions; blue-green urine; avoid sunlight

**Desirudin (Iprivask)**
**Box**: Recent/planned epidural/spinal anesthesia, ↑ epidural/spinal hematoma risk w/ paralysis; consider risk vs benefit before neuraxial intervention
**Uses**: *DVT Px in hip replacement*
**Acts**: Thrombin inhibitor
**Dose**: **Adults**. 15 mg SQ q12h, initial 5–15 min prior to surgery; CrCl 31–60 mL/min: 5 mg SQ q12h; CrCl < 31 mL/min: 1.7 mg SQ q12h; aPTT & SCr daily for dosage mod w/ P: [C, ?/–] CI: Active bleeding, irreversible coags, hypersens to hirudins
**Disp**: Inj 15 mg
**SE**: Hemorrhage, N/V, Inj site mass, wound secretion, anemia, thrombophlebitis, ↓ BP, dizziness, anaphylactic Rxn, fever

**Desloratadine (Clarinex)**
**Uses**: *Seasonal & perennial allergic rhinitis; chronic idiopathic urticaria*
**Acts**: Active metabolite of Claritin, H\(_1\)-antihistamine, blocks inflammatory mediators
**Dose**: **Adults & Peds > 12 y**. 5 mg PO daily; 5 mg PO q other day w/ hepatic/renal impair w/ P: [C, ?/–] RediTabs contain phenylala-nine **Disp**: Tabs 5 mg; RediTabs (rapid dissolving) 2.5, 5 mg, syrup 0.5 mg/mL
**SE**: Allergy, anaphylaxis, somnolence, HA, dizziness, fatigue, pharyngitis, xerostomia, N, dyspepsia, myalgia

**Desmopressin (DDAVP, Stimate)**
**Box**: Not for hemophilia B or w/ factor VIII antibody; not for hemophilia A w/ factor VIII levels < 5%
**Uses**: *DI; bleeding d/t uremia, hemophilia A, & type I von Willebrand Dz (parenteral), nocturnal enuresis*
**Acts**: Synthetic analog of vasopressin (human ADH); ↑ factor VIII
**Dose**: **DI: Intransansal**: **Adults**. 0.1–0.4 mL (10–40 mcg/d in 1–3 ÷ doses). **Peds 3 mo–12 y**. 0.05–0.3 mL/d (5 mcg/d) in 1 or 2 doses. **Parenteral**: **Adults**. 0.5–1 mL (2–4 mcg/d in 2 ÷ doses); converting from nasal to parenteral, use 1/10 nasal dose. **PO**: **Adults**. 0.05 mg bid; ↑ to max of 1.2 mg. **Hemophilia A & von Willebrand Dz (type I)**: **Adults & Peds > 10 kg**. 0.3 mcg/kg in 50 mL NS, Inf over 15–30 min **Peds < 10 kg**. As above w/ dilution to 10 mL w/ NS. **Nocturnal enuresis**: **Peds > 6 y**. 20 mcg intranasally hs w/ P: [B, M] Avoid overhydration CI: Hemophilia B; CrCl < 50 mL/min, severe classic von Willebrand Dz; pts w/ factor VIII antibodies; hyponatremia
**Disp**: Tabs 0.1, 0.2 mg; Inj 4 mcg/mL; nasal spray 0.1 mg/mL (10 mcg)/spray 1.5 mg/mL (150 mcg/spray)
**SE**: Facial flushing, HA, dizziness, vulval pain, nasal congestion, pain at Inj site, ↓ Na\(^+\), H\(_2\)O intoxication **Notes**: In very young & old pts, ↓ fluid intake to avoid H\(_2\)O intoxication & ↓ Na\(^+\); ↓ urine output, ↑ urine osm, ↓ plasma osm

**Desvenlafaxine (Pristiq)**
**Box**: Monitor for worsening or emergence of suicidality, particularly in
Dexamethasone, Ophthalmic (AK-Dex Ophthalmic, Decadron Ophthalmic, Maxidex) Uses:  
*Inflammatory or allergic conjunctivitis*  
**Acts:** Anti-inflammatory corticosteroid  
**Dose:** Instill 1–2 gtt tid-qid w/ P: [C, ?–]  
**CI:** Active untreated bacterial, viral, & fungal eye Infxns  
**Disp:** Susp & soln 0.1%  
**SE:** Long-term use associated w/ cataracts

Dexamethasone, Systemic, Topical (Decadron)  
**Peds. ECC 2010.**  
**Group:** 0.6 mg/kg IV/IM/PO once; max dose 16 mg  
**Asthma:** 0.6 mg/kg IV/IM/PO q24h; max dose 16 mg

Dexlansoprazole (Dexilant, Kapidex) Uses:  
*Heal and maint of erosive esophagitis (EE), GERD*  
**PUD Acts:** PPI, delayed release  
**Dose:** EE: 60 mg qd up to 8 wk; maint healed EE: 30 mg qd up to 6 mo; GERD 30 mg/QD × 4 wk; ↓ w/ hepatic impair w/ P: [B, +/–] do not use w/ clopidogrel/atazanavir or drugs w/ pH based absorption (eg, ampicillin, iron salts, ketoconazole); may alter warfarin and tacrolimus levels  
**CI:** Component hypersensitivity  
**Disp:** Caps 30, 60 mg  
**SE:** N/V/D, flatulence, Abd pain, URI  
**Notes:** w/ or w/o food; take whole or sprinkle on tsp applesauce; clinical response does not r/o gastric malignancy; see also lansoprazole; ? ↑ risk of fractures w/ all PPI; risk of hypomagnesemia w/ long-term use, monitor

Dexmedetomidine (Precedex) Uses:  
*Sedation in intubated & nonintubated pts*  
**Acts:** Sedative; selective α₂-agonist  
**Dose:**  
**Adults. ICU Sedation:** 1 mcg/kg IV over 10 min then 0.2–0.7 mcg/kg/h;  
**Procedural sedation:** 0.5–1 mcg/kg IV over 10 min then 0.2–1 mcg/kg/h; ↓ in elderly, liver Dz w/ P: [C, ?–]  
**CI:** None  
**Disp:** Inj 200 mcg/2 mL  
**SE:** Hypotension, bradycardia  
**Notes:** Tachyphylaxis & tolerance assoc w/ exposure > 24 h

Dexmethylphenidate (Focalin, Focalin XR) [C-II] BOX:  
Caution w/ Hx drug dependence/alcoholism. Chronic abuse may lead to tolerance, psychological dependence & abnormal behavior; monitor closely during withdrawal  
**Uses:** *ADHD*  
**Acts:** CNS stimulant, blocks reuptake of norepinephrine & DA  
**Dose:**  
**Adults. Focalin:** 2.5 mg PO twice daily, ↑ by 2.5–5 mg weekly; max 20 mg/d  
**Focalin XR:** 10 mg PO daily, ↑ 10 mg weekly; max 40 mg/d  
**Peds ≥ 6 y. Focalin:** 2.5 mg PO bid, ↑ 2.5–5 mg weekly; max 20 mg/d  
**Focalin XR:** 5 mg PO daily, ↑ 5 mg weekly; max 30 mg/d; if already on methylphenidate, start w/ half of current total daily dose w/ P: [C, ?–]  
Avoid w/ known cardiac abnorm; may ↓ metabolism of warfarin/anticonvulsants/antidepressants  
**CI:** Agitation, anxiety, tension, glaucoma, Hx motor tic, fam Hx/dx Tourette’s w/ in 14 d of MAOI; hyper-sens to methylphenidate  
**Disp:** Tabs 2.5, 5, 10 mg; caps ER 5, 10, 15, 20, 25, 30, 35, 40 mg  
**SE:** HA, anxiety, dyspepsia, ↓ appetite, Wt loss, dry mouth, visual disturbances, ↑ HR, HTN, MI, stroke, sudden death, Szs, growth suppression, aggression, mania, psychosis  
**Notes:**CBC w/ prolonged use; swallow ER caps whole or sprinkle contents on applesauce (do not crush/chew)

Dexpanthenol (Ilopan-Choline [Oral], Ilopan) Uses: *Minimize paralytic ileus, Rx postop distention*  
**Acts:** Cholinergic agent  
**Dose:**  
**Adults. Relief of gas:** 2–3 tabs PO tid.  
**Prevent postop ileus:** 250–500 mg IM stat, repeat in 2 h, then q6h PRN.  
**Ileus:** 500 mg IM stat, repeat in 2 h, then q6h, PRN w/ P: [C, ?]  
**CI:** Hemophilia, mechanical bowel obst  
**Disp:** Inj 250 mg/mL; cream 2%
**Dexrazoxane (Zinecard, Totect) Uses:** *Prevent anthracycline-induced (eg, doxorubicin) cardiomyopathy (Zinecard), extrav of anthracycline chemotherapy (Totect)* **Acts:** Chelates heavy metals; binds intracellular iron & prevents anthracycline-induced free radicals **Dose:** *Systemic for cardiomyopathy (Zinecard):* 10:1 ratio dexrazoxane: doxorubicin 30 min before each dose, 5:1 ratio w/ CrCl < 40 mL/min *Extrav (Totect):* IV Inf over 1–2 h q day × 3 d, w/ in 6 h of extrav. **Day 1:** 1000 mg/m² (max 2000 mg); **Day 2:** 1000 mg/m² (max 2000 mg); **Day 3:** 500 mg/m² (max: 1000 mg); w/ CrCl < 40 mL/min, ↓ dose by 50% w/ P: [D, –] **CI:** Component sensitivity **Disp:** Inj powder 250, 500 mg (10 mg/mL) **SE:** ↓ BM, fever, Infxn, stomatitis, alopecia, N/V/D; ↑ LFTs, Inj site pain

**Dextran 40 (Gentran 40, Rheomacrodex) Uses:** *Shock, prophylaxis of DVT & thromboembolism, adjunct in peripheral vascular surgery* **Acts:** Expands plasma vol; ↓ blood viscosity **Dose:** *Shock:* 10 mL/kg Inf rapidly; 20 mL/kg max 1st 24 h; beyond 24 h 10 mL/kg max; D/C after 5 d. *Prophylaxis of DVT & thromboembolism:* 10 mL/kg IV day of surgery, then 500 mL/d IV for 2–3 d, then 500 mL IV q2–3d based on risk for up to 2 wk w/ P: [C, ?] Inf Rxns; w/ corticosteroids **CI:** Major hemostatic defects; cardiac decompensation; renal Dz w/ severe oliguria/anuria **Disp:** 10% dextran 40 in 0.9% NaCl or 5% dextrose **SE:** Allergy/anaphylactoid Rxn (observe during 1st min of Inf), arthralgia, cutaneous Rxns, ↓ BP, fever **Notes:** Monitor Cr & lytes; keep well hydrated

**Dextroamphetamine (Dexedrine, Procentra) [C-II] BOX:** Amphetamines have a high potential for abuse. Long-term use may lead to dependence. Serious CV events, including death, w/ preexisting cardiac cond. **Uses:** *ADHD, narcolepsy* **Acts:** CNS stimulant; ↑ DA & norepinephrine release **Dose:** *ADHD ≥ 6 y:* 5 mg daily-bid, ↑ by 5 mg/d weekly PRN, max 60 mg/d ÷ bid-tid; *Peds 3–5 y:* 2.5 mg PO daily, ↑ 2.5 mg/d weekly PRN to response; *Peds < 3 y:* Not recommended; *Narcolepsy 6–12 y:* 5 mg daily, ↑ by 5 mg/d weekly PRN max 60 mg/d ÷ bid-tid; ≥ 12 y: 10-60 mg/d ÷ bid-tid; ER caps once daily w/ P: [C, +/–] Hx drug abuse; separate 14 d from MAOIs **CI:** Advanced arteriosclerosis, CVD, mod–severe HTN, hyperthyroidism, glaucoma **Disp:** Tabs 5, 10 mg; ER capsules 5, 10, 15 mg; soln 5 mg/5 mL **SE:** HTN, ↓ appetite, insomnia **Notes:** May open ER capsules, do not crush beads

**Dextromethorphan (Benylin DM, Delsym, Mediquell, PediaCare 1, Others) [OTC] Uses:** *Control nonproductive cough* **Acts:** Suppresses medullary cough center **Dose:** *Adults.* 10–30 mg PO q4h PRN (max 120 mg/24 h). *Peds 4–6 y:* 2.5–7.5 mg q4–8h (max 30 mg/24 h). 7–12 y: 5–10 mg q4–8h (max 60 mg/24 h) w/ P: [C, ?–/] Not for persistent or chronic cough **CI:** < 2 y **Disp:** Caps 30 mg; lozenges 2.5, 5, 7.5, 15 mg; syrup 15 mg/15 mL, 10 mg/5 mL; liq 10 mg/15 mL, 3.5, 7.5, 15 mg/5 mL; sustained-action liq 30 mg/5 mL **SE:** GI disturbances **Notes:** Found in combo OTC products w/ guaifenesin; deaths reported in pts < 2 y; no longer OTC for < 4 y; abuse potential; efficacy in children debated; do not use w/ in 14 d of D/C MAOI

**Dextrose 50%/25% Uses:** Hypoglycemia, insulin OD **Acts:** Sugar source in the form of D-glucose **Dose:** *Adults.* One 50-mL amp of 50% soln IV *Peds. ECC 2010.* Hypoglycemia: 0.5–1 g/kg (25% max IV/IO conc); 50% Dextrose (0.5 g/mL): 1–2 mL/kg; 25% Dextrose (0.25 g/mL): 2–5 mL/kg; 10% Dextrose (0.1 g/mL): 5–10 mL/kg; 5% Dextrose (0.95 g/mL): 10–20 mL/kg if volume tolerated w/ P: [C, M] w/ Suspected intracranial bleeding can ↑ ICP **CI:** None if used w/ documented hypoglycemia **Disp:** Inj forms **SE:** Burning at IV site, local tissue necrosis w/ extravasation; neurologic Sxs (Wernicke encephalopathy) if pt thiamine deficient **Notes:** If pt well enough to protect airway, use oral glucose first; do not routinely use in altered mental status w/o low glucose, can worsen outcome
**Diazepam (Valium, Diastat) [C-IV] Uses:** *Anxiety, EtOH withdrawal, muscle spasm, status epilepticus, panic disorders, amnesia, preop sedation*  
**Acts:** Benzodiazepine  
**Dose:** Adults. Status epilepticus: 5–10 mg q5–10min to 30 mg max in 8-h period. Anxiety, muscle spasm: 2–10 mg PO bid-qid or IM/IV q3–4h PRN. Preop: 5–10 mg PO or IM 20–30 min or IV just prior to procedure. 
**EtOH withdrawal:** 10 mg q3–4h × 24 h, then 5 mg PO q3–4h PRN or 5–10 mg IV q10–15min for CIWA withdrawal score ≥ 8, 100 mg/h max; titrate to agitation; avoid excessive sedation; may lead to aspiration or resp arrest.  
**Peds. Status epilepticus:** < 5 y: 0.05–0.3 mg/kg/dose IV q15–30min up to a max of 5 mg. > 5 y: to max of 10 mg. **Sedation, muscle relaxation:** 0.04–0.3 mg/kg/dose q2–4h IM or IV to max of 0.6 mg/kg in 8 h, or 0.12–0.8 mg/kg/24 h PO ÷ tid-qid; ↓ w/ hepatic impair w/ P: [D, ?/–] CI: Coma, CNS depression, resp depression, NAG, severe uncontrolled pain, PRG 
**Disp:** Tabs 2, 5, 10 mg; soln 5 mg/mL; Inj 5 mg/mL; rectal gel 2.5, 5, 10, 20 mg/mL. 
**SE:** Sedation, amnesia, ↓ HR, ↓ BP, rash, ↓ resp rate Notes: 5 mg/min IV max in adults or 1–2 mg/min in peds (resp arrest possible); IM absorption erratic; avoid abrupt D/C

**Diazoxide (Proglycem) Uses:** *Hypoglycemia d/t hyperinsulinism*  
**Acts:** ↓ Pancretic insulin release; antihypertensive  
**Dose:** Repeat in 5–15 min until BP controlled; repeat q4–24h; monitor BP closely. **Hypoglycemia:** Adults & Peds. 3–8 mg/kg/24 h PO ÷ q8–12h. Neonates. 8–10 mg/kg/24 h PO in 2–3 equal doses w/ P: [C, ?] ↓ Effect w/ phenytoin; ↑ effect w/ diuretics, warfarin CI: Allergy to thiazides or other sulfonamide-containing products; HTN associated w/ aortic coarctation, AV shunt, or pheochromocytoma 
**Disp:** PO susp 50 mg/mL. 
**SE:** Hyperglycemia, ↓ BP, dizziness, Na⁺ & H₂O retention, N/V, weakness Notes: Can give false(–) insulin response to glucagons

**Dibucaine (Nupercainal) Uses:** *Hemorrhoids & minor skin conditions*  
**Acts:** Topical anesthetic  
**Dose:** Insert PR w/ applicator bid & after each bowel movement; apply sparingly to skin w/ P: [C, ?] Topical use only CI: Component sensitivity 
**Disp:** 1% oint w/ rectal applicator. 
**SE:** Local irritation, rash

**Diclofenac & Misoprostol (Arthrotec) BOX:** May induce abortion, birth defects; do not take if PRG; may ↑ risk of CV events & GI bleeding; CI in postop CABG  
**Uses:** *OA and RA w/ ↑ risk GI bleed*  
**Acts:** NSAID w/ GI protective PGE₁  
**Dose:** OA: 50–75 mg PO bid-tid; RA 50 mg bid-qid or 75 mg bid; w/ food or milk w/ P: [X, ?] CHF, HTN, renal/hepatic dysfunction, & Hx PUD, asthma; avoid w/ porphyria CI: PRG; GI bleed; renal/hepatic failure; severe CHF; NSAID/aspirin ASA allergy; following CABG 
**Disp:** Tabs Arthrotec 50: 50 mg diclofenac w/ 200 mcg misoprostol; Arthrotec: 75 mg diclofenac w/ 200 mcg misoprostol. 
**SE:** Oral: Abd cramps, heartburn, GI ulcers, rash, interstitial nephritis Notes: Do not crush tabs; watch for GI bleed; CBC, LFTs; PRG test females before use

**Diclofenac, Ophthalmic (Voltaren Ophthalmic) Uses:** *Inflammation postcataract or pain/photophobia post corneal refractive surgery*  
**Acts:** NSAID  
**Dose:** Postop cataract: 1 gtt qid, start 24 h postop × 2 wk. Postop refractive: 1–2 gtt w/ in 1 h preop and w/ in 15 min postop then qid up to 3 d w/ P: [C, ?] May ↑ bleed risk in ocular tissues CI: NSAID/ASA allergy 
**Disp:** Ophthal soln 0.1% 2.5-mL bottle. 
**SE:** Burning/stinging/itching, keratitis, ↑ IOP, lacrimation, abnormal vision, conjunctivitis, lid swelling, discharge, iritis

**Diclofenac, Oral (Cataflam, Voltaren, Voltaren-XR) BOX:** May ↑ risk of CV events & GI bleeding; CI in postop CABG  
**Uses:** *Arthritis (RA/OA) & pain, oral and topical, actinic keratosis*
**Acts**: NSAID Dose: RA/OA: 150–200 mg/d ÷ 2–4 doses DR; 100 mg/d XR; w/ food or milk w/ P: [C (avoid after 30 wk), ?] CHF, HTN, renal/hepatic dysfunction, & Hx PUD, asthma CI: NSAID/aspirin ASA allergy; porphyria; following CABG Disp: Tabs 50 mg; tabs DR 25, 50, 75, 100 mg; XR tabs 100 mg SE: Oral: Abd cramps, heartburn, GI ulceration, rash, interstitial nephritis Notes: Do not crush tabs; watch for GI bleed; CBC, LFTs periodically
Diclofenac, Topical (Flector Patch, Pennsaid, Solaraze, Voltaren Gel) BOX: May ↑ risk of CV events & GI bleeding; CI in postop CABG Uses: *Arthritis of the knee (Pennsaid); arthritis of knee/hands (Voltaren Gel); pain due to strain, sprain, and contusions (Flector Patch); actinic keratosis (Solaraze)* Acts: NSAID Dose: Flector Patch: 1 patch to painful area bid Pennsaid: 10 drops spread around knee; repeat until 40 drops applied. Usual dose: 40 drops/knee qid; wash hands; wait until dry before dressing. Solaraze: 0.5 g to each 5 x 5 cm lesion 60–90 d; apply bid; Voltaren Gel: upper extremity 2 g qid (max 8 g/d); lower extremity 4 g qid (max 16 g/d) w/ P: [C < 30 wk gest; D > 30 wk; ?] avoid nonintact skin; CV events possible w/ CHF, ↑ BP, renal/hepatic dysfunct, w/ Hx PUD, asthma; avoid w/ PO NSAID CI: NSAID/ASA allergy; following CABG; component allergy Disp: Flector Patch: 180 mg (10 x 14 cm); Voltaren Gel 1%; Solaraze 3%; Pennsaid 1.5% soln SE: Pruritus, dermatitis, burning, dry skin, N, HA Notes: Do not apply patch/gel to damaged skin or while bathing; CBC, LFTs periodically; no box warning on Solaraze

Dicloxacillin (Dynapen, Dycill) Uses: *Rx of pneumonia, skin, & soft-tissue Infxns, & osteomyelitis caused by penicillinase-producing staphylococci* Acts: Bactericidal; ↓ cell wall synth. Spectrum: S. aureus & Streptococcus Dose: Adults. 150–500 mg qid (2 g/d max) Peds < 40 kg. 12.5–100 mg/kg/d ÷ qid; take on empty stomach w/ P: [B, ?] CI: Component or PCN sensitivity Disp: Caps 125, 250, 500 mg SE: N/D, Abd pain Notes: Monitor PTT if pt on warfarin

Dicyclomine (Bentyl) Uses: *Functional IBS* Acts: Smooth-muscle relaxant Dose: Adults. 20 mg PO qid; ↑ to 160 mg/d max or 20 mg IM q6h, 80 mg/d ÷ qid then ↑ to 160 mg/d, max 2 wk w/ P: [B, –] CI: Infants < 6 mo, NAG, MyG, severe UC, BOO, GI obst, reflux esophagitis Disp: Caps 10 mg; tabs 20 mg; syrup 10 mg/5 mL; Inj 10 mg/mL SE: Anticholinergic SEs may limit dose Notes: Take 30–60 min ac; avoid EtOH, do not administer IV

Didanosine [ddl] (Videx) BOX: Allergy manifested as fever, rash, fatigue, GI/resp Sxs reported; stop drug immediately & do not rechallenge; lactic acidosis & hepatomegaly/steatosis reported Uses: *HIV Infxn in zidovudine-intolerant pts* Acts: NRTI Dose: Adults. > 60 kg: 400 mg/d PO or 200 mg PO bid. < 60 kg: 250 mg/d PO or 125 mg PO bid; adults should take 2 tabs/administration. Peds 2 wk–8 mo. 100 mg/m² bid > 8 mo: 120 mg/m² PO bid; on empty stomach; ↓ w/ renal impair w/ P: [B, –] CDC rec: HIV-infected mothers not breast-feed CI: Component sensitivity Disp: Chew tabs 100, 150, 200 mg; DR caps 125, 200, 250, 400 mg; powder for soln 2, 4 g SE: Pancreatitis, peripheral neuropathy, D, HA Notes: Do not take w/ meals; thoroughly chew tabs, do not mix w/ fruit juice or acidic beverages; reconstitute powder w/ H₂O, many drug interactions

Diflunisal (Dolobid) BOX: May ↑ risk of CV events & GI bleeding; CI in postop CABG Uses: *Mild–mod pain; OA* Acts: NSAID Dose: Pain: 500 mg PO bid. OA: 500–1000/mg/d PO bid (max 1.5 g/d); ↓ in renal impair, take w/ food/milk w/ P: [C (D 3rd tri or near delivery), ?] CHF, HTN, renal/hepatic dysfunction, & Hx PUD CI: Allergy to NSAIDs or ASA, active GI bleed, post-CABG Disp: Tabs 500 mg SE: May ↑ bleeding time; HA, Abd cramps, heartburn, GI ulceration, rash, interstitial nephritis, fluid retention

Digoxin (Digitek, Lanoxin) Uses: *CHF, AF & A flutter, & PAT* Acts: Positive inotrope; AV node refractory period Dose: Adults. PO digitalization: 0.5–0.75 mg PO, then 0.25 mg PO q6–8h to total 1–1.5 mg. IV or IM digitalization: 0.25–0.5 mg IM or IV, then 0.25 mg q4–6h to total 0.125–0.5 mg/d PO, IM, or IV (average daily dose 0.125–0.25 mg). Peds. Preterm infants: Digitalization: 30 mcg/kg PO or 25 mcg/kg IV; give 1/2 of dose initial, then 1/4 of dose at 8–12 h intervals for 2 doses.
**Maint:** 5–7.5 mcg/kg/24 h PO or 4–6 mcg/kg/24 h IV ÷ q12h. **Term infants:** Digitalization: 25–35 mcg/kg PO or 20–30 mcg/kg IV; give 1/2 the initial dose, then 1/3 of dose at 8–12 h.

**2–5 yo:** Digitalization: 30–40 mcg/kg PO or 25–35 mcg/kg IV; give 1/2 the initial dose, then 1/3 of dose at 8–12 h.

**5–10 y:** Digitalization: 25–35 mcg/kg PO or 15–30 mcg/kg IV; give 1/2 the initial dose, then 1/3 of dose at 8–12 h.

**>10 y:** 10–15 mcg/kg PO or 8–12 mcg/kg IV. Maint: 2.5–5 mcg/kg PO or 2–3 mcg/kg IV q 24 h; ↓ in renal impair w/ P: [C, +] w/ K+, Mg2+, renal failure CI: AV block; IHSS; constrictive pericarditis

Disp: Tabs 0.125, 0.25 mg; elixir 0.05 mg/mL; Inj 0.1, 0.25 mg/mL

SE: Can cause heart block; ↓ K+ potentiates tox; N/V, HA, fatigue, visual disturbances (yellow-green halos around lights), cardiac arrhythmias

Notes: Multiple drug interactions; IM Inj painful, has erratic absorption & should not be used.

Levels: Trough: Just before next dose. Therapeutic: 0.8–2 ng/mL; Toxic: > 2 ng/mL; Half-life: 36 h

Digoxin Immune Fab (DigiFab) Uses: *Life-threatening digoxin intoxication* Acts: Antigen-binding fragments bind & inactivate digoxin Dose: **Adults & Peds**. Based on serum level & pt’s Wt; see charts provided w/ drug w/ P: [C, ?] CI: Sheep product allergy Disp: Inj 40 mg/vial

SE: Worsening of cardiac output or CHF, ↓ K+, facial swelling, & redness

Notes: Each vial binds ∼ 0.5 mg of digoxin; renal failure may require redosing in several days

Diltiazem (Cardizem, Cardizem CD, Cardizem LA, Cardizem SR, Cartia XT, Dilacor XR, Diltiazem XT, Taztia XT, Tiazac) Uses: *Angina, prevention of reinfarction, HTN, AF or A flutter, & PAT* Acts: CCB

**Dose:** Stable angina PO: Initial, 30 mg PO qid; ↑ to 120–320 mg/d in 3–4 ÷ doses PRN; XR 120 mg/d (540 mg/d max), LA: 180–360 mg/d. HTN: SR: 60–120 mg PO bid; ↑ to 360 mg/d max. CD or XR: 120–360 mg/d (max 540 mg/d) or LA 180–360 mg/d. A-Fib, A-Flutter, PSVT: 0.25 mg/kg IV bolus over 2 min; may repeat in 15 min at 0.35 mg/kg; begin Inf 5–15 mg/h. ECC 2010. Acute rate control: 0.25 mg/kg (15–20 mg) over 2 min, followed in 15 min by 0.35 mg/kg (20–25 mg) over 2 min; maint Inf 5–15 mg/h w/ P: [C, +] ↑ Effect w/ amiodarone, cimetidine, fentanyl, Li, cyclosporine, digoxin, β-blockers, theophylline CI: SSS, AV block, ↓ BP, AMI, pulm congestion

Disp: Cardizem CD: Caps 120, 180, 240, 300, 360 mg; Cardizem LA: Tabs 120, 180, 240, 300, 360, 420 mg; Cardizem SR: Caps 60, 90, 120 mg; Cardizem: Tabs 30, 60, 90, 120 mg; Cartia XT: Caps 120, 180, 240, 300 mg; Dilacor XR: Caps 120, 180, 240 mg; Diltiazem XT: Caps 120, 180, 240 mg; Tiazac: Caps 120, 180, 240, 300, 360 mg SE: Gingival hyperplasia, ↓ HR, AV block, ECG abnormalities, peripheral edema, dizziness, HA

Notes: Cardizem CD, Dilacor XR, & Tiazac not interchangeable

Dimenhydrinate (Dramamine, Others) Uses: *Prevention & Rx of N/V, dizziness, or vertigo of motion sickness* Acts: Antiemetic, action unknown Dose: **Adults.** 50–100 mg PO q4–6h, max 400 mg/d; 50 mg IM/IV PRN. **Peds 2–6 y.** 12.5–25 mg q6–8h max 75 mg/d. **6–12 y:** 25–50 mg q6–8h max 150 mg/d w/ P: [B, ?] CI: Component sensitivity Disp: Tabs 25, 50 mg; chew tabs 50 mg; Inj: 50 mg/mL SE: Anticholinergic SE Notes: Take 30 min before travel for motion sickness

Dimethyl Sulfoxide [DMSO] (Rimso-50) Uses: *Interstitial cystitis* Acts: Unknown Dose: Intravesical, 50 mL, retain for 15 min; repeat q2wk until relief w/ P: [C, ?] CI: Component sensitivity Disp: 50% soln SE: Cystitis, eosinophilia, GI, & taste disturbance

Dinoprostone (Cervidil Vaginal Insert, Prepidil Vaginal Gel, Prostin E2) BOX: Should only be used by trained personnel in an appropriate hospital setting Uses: *Induce labor; terminate PRG (12–20 wk); evacuate uterus in missed abortion or fetal death* Acts: Prostaglandin, changes consistency,
dilatation, & effacement of the cervix; induces uterine contraction **Dose:** *Gel:* 0.5 mg; if no cervical/uterine response, repeat 0.5 mg q6h (max 24-h dose 1.5 mg). *Vag insert:* 1 insert (10 mg = 0.3 mg dinoprostone/h over 12 h); remove w/ onset of labor or 12 h after insertion. *Vag supp:* 20 mg repeated q3–5h; adjust PRN supp: 1 high in vagina, repeat at 3–5-h intervals until abortion (240 mg max) w/ P: [X, ?] CI: Ruptured membranes, allergy to prostaglandins, placenta previa or AUB, when oxytocic drugs CI or if prolonged uterine contractions are inappropriate (Hx C-section, cephalopelvic disproportion, etc) **Disp:** Endocervical gel: 0.5 mg in 3-g syringes (w/ 10- & 20-mm shielded catheter). *Vag gel:* 1 mg/3 g, 2 mg/3 g. *Vag supp:* 20 mg. *Vag insert, CR:* 10 mg SE: N/V/D, dizziness, flushing, HA, fever, abnormal uterine contractions

**Diphenhydramine (Benadryl) [OTC]** **Uses:** *Rx & prevent allergic Rxns, motion sickness, potentiate narcotics, sedation, cough suppression, & Rx of extra-pyramidal Rxns* **Acts:** Antihistamine, antiemetic **Dose:** *Adults:* 25–50 mg PO, IV, or IM tid-qid. *Peds > 2 y:* 5 mg/kg/24 h PO or IM ÷ q6h (max 300 mg/d); ↑ dosing interval w/ mod–severe renal Insuff w/ P: [B, –] Elderly, NAG, BPH, w/ MAOI CI: acute asthma **Disp:** Tabs & caps 25, 50 mg; chew tabs 12.5 mg; elixir 12.5 mg/5 mL; syrup 12.5 mg/5 mL; Inj 50 mg/mL, cream, gel, liq 2% SE: Anticholinergic (xerostomia, urinary retention, sedation)

**Diphenoxylate + Atropine (Lomotil, Lonox) [C-V]** **Uses:** *D* **Acts:** Constipating meperidine congener, ↓ GI motility **Dose:** *Adults:* Initial, 5 mg PO tid-qid until controlled, then 2.5–5 mg PO bid; 20 mg/d max *Peds > 2 y:* 0.3–0.4 mg/kg/24 h (of diphenoxylate) bid-qid, 10 mg/d max w/ P: [C, ?/] Elderly, w/ renal impair CI: Obstructive jaundice, D d/t bacterial Infxn; children < 2 y **Disp:** Tabs 2.5 mg diphenoxylate/0.025 mg atropine; liq 2.5 mg diphenoxylate/0.025 mg atropine/5 mL SE: Drowsiness, dizziness, xerostomia, blurred vision, urinary retention, constipation

**Diphtheria & Tetanus Toxoids (Td) (Decavac, Tenivac—for > 7 y)** **Uses:** Primary immunization, booster (peds 7–9 y; peds 11–12 y if 5 y since last shot then q10y); tetanus protection after wound. **Acts:** Active immunization **Dose:** 0.5 mL IM × 1 w/ P: [C, ?/] CI: Component sensitivity **Disp:** Single-dose syringes 0.5 mL SE: Inj site pain, redness, swelling; fever, fatigue, HA, malaise, neurological disorders rare **Notes:** If IM, use only preservative-free Inj; Use DTaP (Adacel) rather than TT or Td for all adults 19–64 y who have not previously received 1 dose of DTaP (protection adult pertussis) and Tdap for ages 10–18 y (Boostrix); do not confuse Td (for adults) w/ DT (for children < 7 y)

**Diphtheria & Tetanus Toxoids (DT) (Generic Only for < 7 y)** **Uses:** Primary immunization ages < 7 y (DTaP is recommended vaccine) **Acts:** Active immunization **Dose:** 0.5 mL IM ×1, 5 dose series for primary immunization if DTaP CI w/ P: [C, N/A] CI: Component sensitivity **Disp:** Single-dose syringes 0.5 mL SE: Inj site pain, redness, swelling; fever, fatigue, myalgias/arthritis, N/V, Sz, other neurological SE rare; syncope, apnea in preemies **Notes:** If IM, use only preservative-free Inj. Do not confuse DT (for children < 7 y) w/ Td (for adults); DTaP is recommended for primary immunization

**Diphtheria, Tetanus Toxoids, & Acellular Pertussis Adsorbed (Tdap) (Ages > 10–11 y)** **Boosters: Adacel, Boostrix** **Acts:** Active immunization, ages > 10–11 y **Uses:** “Catch-up” vaccination if 1 or more of the 5 childhood doses of DTP or DTaP missed; all adults 19–64 y who have not received 1 dose previously (adult pertussis protection) or if around infants < 12 mo; booster q10y; tetanus protection after fresh wound. **Actions:** Active immunization **Dose:** 0.5 mL IM ×1 w/ P: [C, ?/] w/ Latex allergy CI: Component sensitivity; if previous pertussis vaccine caused progressive neurologic disorder/encephalopathy w/ in 7 d of shot **Disp:** Single-dose vials 0.5 mL SE: Inj site
pain, redness, swelling; Abd pain, arthralgias/myalgias, fatigue, fever, HA, N/V/D, rash, tiredness

Notes: If IM, use only preservative-free Inj; ACIP rec: Tdap for ages 10–18 y (Boostrix) or 11–64 y (Adacel); Td should be used in children 7–9 y; CDC rec pts > age 65 who have close contact w/ infants get a dose of Tdap (protection against pertussis).

Diphtheria, Tetanus Toxoids, & Acellular Pertussis, Adsorbed (DTaP) (Ages < 7 y) (Daptacel, Infanrix, Tripedia) Uses: Primary vaccination; 5 Inj at 2, 4, 6, 15–18 mo and 4–6 y Acts: Active immunization Dose: 0.5 mL IM ×1 as in previous above w/ P: [C, N/A] CI: Component sensitivity; if previous pertussis vaccine caused progressive neurologic disorder/encephalopathy w/ in 7 d of shot Disp: Single-dose vials 0.5 mL SE: Inj site nodule/pain/swelling/redness; drowsiness, fatigue, fever, fussiness, irritability, lethargy, V, prolonged crying; rare ITP and neurologic disorders Notes: If IM, use only preservative-free Inj; DTaP recommended for primary immunization age < 7 y, if age 7–9 y use Td, ages > 10–11 y use Tdap; if encephalopathy or other neurologic disorder w/ in 7 d of previous dose DO NOT USE DTaP, use DT or Td depending on age

Diphtheria, Tetanus Toxoids, Acellular Pertussis Adsorbed, Inactivated Poliovirus Vaccine [IPV], & Haemophilus b Conjugate Vaccine Combined (Pentacel) Uses: *Immunization against diphtheria, tetanus, pertussis, poliomyelitis and invasive Dz due to Haemophilus influenzae type b*
Acts: Active immunization Dose: Infants: 0.5 mL IM at 2, 4, 6 and 15–18 mo of age w/ P: [C, N/A] w/ Fever > 40.5°C (105°F), hypotonic-hyporesponsive episode (HHE) or persistent, inconsolable crying > 3 h w/ in 48 h after a previous pertussis-containing vaccine; Sz w/ in 3 d after a previous pertussis-containing vaccine; Guillain-Barré w/ in 6 wk of previous tetanus toxoid vaccine; w/ Hx Sz antipyretic may be administered w/ vaccine × 24 h w/ bleeding disorders CI: Allergy to any components; encephalopathy w/ in 7 d of previous pertussis vaccine; w/ progressive neurologic disorders Disp: Single-dose vials 0.5 mL SE: Fussiness/irritability and inconsolable crying; fever > 38.0°C Inj site Rxn

Diphtheria, Tetanus Toxoids, & Acellular Pertussis Adsorbed, Hep B (Recombinant), & Inactivated Poliovirus Vaccine [IPV], Combined (Pediarix) Uses: *Vaccine against diphtheria, tetanus, pertussis, HBV, polio (types 1, 2, 3) as a 3-dose primary series in infants & children < 7 y, born to HBsAg(–) mothers* Acts: Active immunization Dose: Infants: Three 0.5-mL doses IM, at 6–8-wk intervals, start at 2 mo; child given 1 dose of hep B vaccine, same; previously vaccinated w/ 1 or more doses inactivated poliovirus vaccine, use to complete series w/ P: [C, N/A] w/ Bleeding disorders CI: HBsAg(+) mother, adults, children > 7 y, immunosuppressed, component sensitivity or allergy to yeast/neomycin/polymyxin B; encephalopathy, or progressive neurologic disorders Disp: Single-dose syringes 0.5 mL SE: Drowsiness, restlessness, fever, fussiness, ↓ appetite, Inj site pain/swelling/nodule/redness Notes: If IM, use only preservative-free Inj

Dipivefrin (Propine) Uses: *Open-angle glaucoma* Acts: α-Adrenergic agonist Dose: 1 gtt in eye q12h w/ P: [B, ?] CI: NAG Disp: 0.1% soln SE: HA, local irritation, blurred vision, photophobia, HTN

Dipyridamole (Persantine) Uses: *Prevent postop thromboembolic disorders, often in combo w/ ASA or warfarin (eg, CABG, vascular graft); w/ warfarin after artificial heart valve; chronic angina; w/ ASA to prevent coronary artery thrombosis; dipyridamole IV used in place of exercise stress test for CAD* Acts: Anti-plt activity; coronary vasodilator Dose: Adults. 75–100 mg PO qid; stress test 0.14 mg/kg/min (max 60 mg over 4 min). Ped > 12 y. 3–6 mg/kg/d ÷ tid (safety/efficacy not established) w/ P: [B, ?/–] w/ Other drugs that affect coagulation CI: Component sensitivity Disp:
**Tabs** 25, 50, 75 mg; **Inj** 5 mg/mL **SE**: HA, ↓ BP, N, Abd distress, flushing rash, dizziness, dyspnea **Notes**: IV use can worsen angina

**Dipyridamole & Aspirin (Aggrenox) Uses**: *↓ Reinfarction after MI; prevent occlusion after CABG; ↓ risk of stroke* **Acts**: ↓ Plt aggregation (both agents) **Dose**: 1 cap PO bid w/ P: [D, ?] CI: Ulcers, bleeding diathesis **Disp**: Dipyridamole (XR) 200 mg/ASA 25 mg **SE**: ASA component: allergic Rxns, skin Rxns, ulcers/GI bleed, bronchospasm; dipyridamole component: dizziness, HA, rash **Notes**: Swallow caps whole

**Dipyridamole (Norpace, Norpace CR, NAPAmide, Rythmodan) BOX**: Excessive mortality or nonfatal cardiac arrest rate w/ use in asymptomatic non–life-threatening ventricular arrhythmias w/ MI 6 d–2 y prior. Restrict use to life-threatening arrhythmias only **Uses**: *Suppression & prevention of VT* **Acts**: Class IA antiarrhythmic; stabilizes membranes, ↓ action potential **Dose**: **Adults.** Immediate < 50 kg 200 mg, > 50 kg 300 mg, maint 400–800 mg/d ÷ q6h or q12h for CR, max 1600 mg/d. **Peds** < 1 y: 10–30 mg/kg/24 h PO (÷ qid). **1–4 y**: 10–20 mg/kg/24 h PO (÷ qid). **4–12 y**: 10–15 mg/kg/24 h PO (÷ qid). **12–18 y**: 6–15 mg/kg/24 h PO (÷ qid); ↓ in renal/hepatic impair w/ P: [C, +] Elderly, w/ abnormal ECG, lytes, liver/renal impair, NAG CI: AV block, cardiogenic shock, ↓ BP, CHF **Disp**: Caps 100, 150 mg; CR caps 100, 150 mg **SE**: Anticholinergic SEs; negative inotrope, may induce CHF **Notes**: Levels: Trough: just before next dose; **Therapeutic**: 2–5 mcg/mL; **Toxic**: > 7 mcg/mL; half-life: 4–10 h

**Dobutamine (Dobutrex) Uses**: *Short-term in cardiac decompensation secondary to ↓ contractility* **Acts**: Positive inotrope **Dose**: **Adults. ECC 2010.** 2.5–20 mcg/kg/min; titrate to HR not > 10% of baseline. **Peds. ECC 2010.** Shock w/ high SVR: 2–20 mcg/kg/min; titrate w/ P: [B, ?/–] w/ Arrhythmia, MI, severe CAD, ↓ vol CI: Sensitivity to sulfites, IHSS **Disp**: Inj 250 mg/20 mL, 500 mg/40 mL **SE**: CP, HTN, dyspnea **Notes**: Monitor PWP & cardiac output if possible; → ECG for ↑ HR, ectopic activity; follow BP

**Docetaxel (Taxotere) BOX**: Do not administer if neutrophil count < 1500 cells/mm³; severe Rxns possible in hepatic dysfunction **Uses**: *Breast (anthracycline-resistant), ovarian, lung, & prostate CA* **Acts**: Antimitotic agent; promotes microtubular aggregation; semisynthetic taxoid **Dose**: 100 mg/m² over 1 h IV q3wk (per protocols); dexamethasone 8 mg bid prior & continue for 3–4 d; ↓ dose w/ ↑ bili levels w/ P: [D, –] CI: Sensitivity to meds w/ polysorbate 80, component sensitivity **Disp**: Inj 20 mg/0.5 mL, 80 mg/2 mL **SE**: ↓ BM, neuropathy, N/V, alopecia, fluid retention synd; cumulative doses of 300–400 mg/m² w/o steroid prep & post-Tx & 600–800 mg/m² w/ steroid prep; allergy possible (rare w/ steroid prep) **Notes**: → Bili/SGOT/SGPT prior to each cycle; frequent CBC during Rx

**Docusate Calcium (Surfak)/Docusate Potassium (Dialose)/Docusate Sodium (DOSS, Colace) Uses**: *Constipation; adjunct to painful anorectal conditions (hemorrhoids)* **Acts**: Stool softener **Dose**: **Adults.** 50–500 mg PO ÷ daily-qid. **Peds Infants–3 y.** 10–40 mg/24 h ÷ daily-qid. **3–6 y**: 20–60 mg/24 h ÷ daily-qid. **6–12 y**: 40–150 mg/24 h ÷ daily-qid w/ P: [C, ?] CI: Use w/ mineral oil; intestinal obst, acute Abd pain, N/V **Disp**: Ca: Caps 50, 240 mg. K: Caps 100, 240 mg. Na: Caps 50, 100 mg; syrup 50, 60 mg/15 mL; liq 150 mg/15 mL; soln 50 mg/mL; enema 283 mg/mL **SE**: Rare Abd cramping, D **Notes**: Take w/ full glass of water; no laxative action; do not use > 1 wk

**Dofetilide (Tikosyn) BOX**: To minimize the risk of induced arrhythmia, hospitalize for minimum of 3 d to provide calculations of CrCl, cont ECG monitoring, & cardiac resuscitation **Uses**: *Maintain nl
sinus rhythm in AF/A flutter after conversion* **Acts**: Class III antiarrhythmic, prolongs action potential **Dose**: Based on CrCl & QTc; CrCl > 60 mL/min 500 mcg PO q12h, † QTc 2–3 h after, if QTc > 15% over baseline or > 500 ms, ↓ to 250 mcg q12h, † after each dose; if CrCl < 60 mL/min, see PI; D/C if QTc > 500 ms after dosing adjustments w/ P: [C, –] w/ AV block, renal Dz, electrolyte imbalance **CI**: Baseline QTc > 440 ms, CrCl < 20 mL/min; w/ verapamil, cimetidine, trimethoprim, ketoconazole, quinolones, ACE inhib/HCTZ combo **Disp**: Caps 125, 250, 500 mcg **SE**: Ventricular arrhythmias, QT ↑, torsades de pointes, rash, HA, CP, dizziness **Notes**: Avoid w/ other drugs that ↑ QT interval; hold class I/III antiarrhythmics for 3 half-lives prior to dosing; amiodarone level should be < 0.3 mg/L before use, do not initiate if HR < 60 BPM; restricted to participating prescribers; correct K\(^+\) and Mg\(^2+\) before use

**Dolasetron (Anzemet) Uses**: *Prevent chemotherapy and postop-associated N/V* **Acts**: 5-HT\(_3\) receptor antagonist **Dose**: **Adults**. PO: 100 mg PO as a single dose 1 h prior to chemotherapy. **Postop**: 12.5 mg IV, or 100 mg PO 2 h preop **Peds 2–16 y**: 1.8 mg/kg PO (max 100 mg) as single dose. **Postop**: 0.35 mg/kg IV or 1.2 mg/kg PO w/ P: [B, ?] w/ Cardiac conduction problems **CI**: IV use w/ chemo component sensitivity **Disp**: Tabs 50, 100 mg; Inj 20 mg/mL **SE**: ↑ QT interval, D, HTN, HA, Abd pain, urinary retention, transient ↑ LFTs **Notes**: IV form no longer approved for chemo-induced N&V due to heart rhythm abnormalities.

**Donepezil (Aricept) Uses**: *Severe Alzheimer dementia*; ADHD; behavioral synds in dementia; dementia w/ Parkinson Dz; Lewy-body dementia **Acts**: ACH inhib **Dose**: **Adults**. 5 mg qhs, ↑ to 10 mg PO qhs after 4–6 wk **Peds. ADHD**: 5 mg/d w/ P: [C, ?] Risk for ↓ HR w/ preexisting conduction abnormalities, may exaggerate succinylcholine-type muscle relaxation w/ anesthesia, ↑ gastric acid secretion **CI**: Hypersens **Disp**: Tabs 5, 10, 23 mg; ODT tab 5, 10 mg **SE**: N/V/D, insomnia, Infxn, muscle cramp, fatigue, anorexia **Notes**: N/V/D dose-related & resolves in 1–3 wk

**Dopamine (Intropin)** **BOX**: Tissue vesicant, give phentolamine w/ extrav **Uses**: *Short-term use in cardiac decompensation secondary to ↓ contractility; ↑ organ perfusion (at low dose)* **Acts**: Positive inotropic agent w/ dose response: 1–10 mcg/kg/min β effects (↑ CO); 10–20 mcg/kg/min β-effects (peripheral vasoconstriction, pressor); > 20 mcg/kg/min peripheral & renal vasoconstriction **Dose**: **Adults**. 5 mcg/kg/min by cont Inf, ↑ by 5 mcg/kg/min to 50 mcg/kg/min max to effect; **ECC 2010**. 2–20 mcg/kg/min **Peds. ECC 2010**. Shock w/ adequate intravascular volume and stable rhythm: 2–20 mcg/kg/min; titrate, if > 20 mcg/kg/min needed, consider alternative adrenergic w/ P: [C, ?] ↓ Dose/MAOI **CI**: Pheochromocytoma, VF, sulfite sensitivity **Disp**: Inj 40, 80, 160 mg/mL, premixed 0.8, 1.6, 3.2 mg/mL **SE**: Tachycardia, vasoconstriction, ↓ BP, HA, N/V, dyspnea **Notes**: > 10 mcg/kg/min ↓ renal perfusion; monitor urinary output & ECG for ↑ HR, BP, ectopy; monitor PCWP & cardiac output if possible, phentolamine used for extrav 10–15 mL NS w/ 5–10 mg of phentolamine

**Doripenem (Doribax) Uses**: *Complicated intra-Abd Infxn and UTI including pyelo* **Acts**: Carbapenem, ↓ cell wall synth, a β-lactam **Spectrum**: Excel-lent gram(+) (except MRSA and Enterococcus sp), excellent gram(–) coverage including β-lactamase producers, good anaerobic **Dose**: 500 mg IV q8h, ↓ w/ renal impair w/ P: [B, ?] **CI**: Carbapenem β-lactams hypersens **Disp**: 250, 500 mg vial **SE**: HA, N/D, rash, phlebitis **Notes**: May ↓ valproic acid levels; overuse may ↑ bacterial resistance; monitor for *C. difficile*-associated D

**Dornase Alfa (Pulmozyme, DNase) Uses**: *↓ Frequency of resp Infxns in CF* **Acts**: Enzyme cleaves extracellular DNA, ↓ mucous viscosity **Dose**: **Adults**. Inh 2.5 mg/bid dosing w/ FVC > 85%
w/ recommended nebulizer, *Peds > 5 y*. Inh 2.5 mg/daily-bid if forced vital capacity > 85% w/ P: [B, ?] *CI*: Chinese hamster product allergy *Disp*: Soln for Inh 1 mg/mL *SE*: Pharyngitis, voice alteration, CP, rash

**Dorzolamide (Trusopt) Uses**: *Open-angle glaucoma, ocular hypertension* *Acts*: Carbonic anhydrase inhib *Dose*: 1 gtt in eye(s) tid w/ P: [C, ?] w/ NAG, CrCl < 30 mL/min *CI*: Component sensitivity *Disp*: 2% soln *SE*: Irritation, bitter taste, punctate keratitis, ocular allergic Rxn

**Dorzolamide & Timolol (Cosopt) Uses**: *Open-angle glaucoma, ocular hypertension* *Acts*: Carbonic anhydrase inhib w/ β-adrenergic blocker *Dose*: 1 gtt in eye(s) bid w/ P: [C, ?] CrCl < 30 mL/min *CI*: Component sensitivity, asthma, severe COPD, sinus bradycardia, AV block *Disp*: Soln dorzolamide 2% & timolol 0.5% *SE*: Irritation, bitter taste, superficial keratitis, ocular allergic Rxn

**Doxazosin (Cardura, Cardura XL) Uses**: *HTN & symptomatic BPH* *Acts*: α₁-Adrenergic blocker; relaxes bladder neck smooth muscle *Dose*: *HTN*: Initial 1 mg/d PO; may be ↑ to 16 mg/d PO. *BPH*: Initial 1 mg/d PO, may ↑ to 8 mg/d; XL 4–8 mg q A.M. w/ P: [C, ?] w/ Liver impair *CI*: Component sensitivity; use w/ PDE5 inhib (eg, sildenafil) can cause ↓ BP *Disp*: Tabs 1, 2, 4, 8 mg; XL 4, 8 mg *SE*: Dizziness, HA, drowsiness, fatigue, malaise, sexual dysfunction, doses > 4 mg ↑ postural ↓ BP risk; intraoperative floppy iris synd *Notes*: 1st dose hs; syncope may occur w/ in 90 min of initial dose

**Doxepin (Adapin) BOX**: Closely monitor for worsening depression or emergence of suicidality *Uses*: *Depression, anxiety, chronic pain* *Acts*: TCA; ↑ synaptic CNS serotonin or norepinephrine *Dose*: 25–150 mg/d PO, usually hs but can ÷ doses; up to 300 mg/d for depression; ↓ in hepatic impair w/ P: [C, ?/–] w/ EtOH abuse, elderly, w/ MAOI *CI*: NAG, urinary retention, MAOI use w/ in 14 d, in recovery phase of MI *Disp*: Caps 10, 25, 50, 75, 100, 150 mg; PO conc 10 mg/mL *SE*: Anticholinergic SEs, ↓ BP, tachycardia, drowsiness, photosens

**Doxepin (Silenor) Uses**: *Insomnia* *Acts*: TCA *Dose*: Take w/ in 30 min HS 6 mg qd; 3 mg in elderly; 6 mg/d max; not w/ in 3 h of a meal w/ P: [C, ?/–] w/ EtOH abuse/elderly/sleep apnea/CNS depressants; may cause abnormal thinking and hallucinations; may worsen depression *CI*: NAG, urinary retention, MAOI w/ in 14 d *Disp*: Tabs 3, 6 mg *SE*: Somnolence/sedation, N, URI

**Doxepin, Topical (Prudoxin, Zonalon) Uses**: *Short-term Rx pruritus (atopic dermatitis or lichen simplex chronicus)* *Acts*: Antipruritic; H₁- & H₂-receptor antagonism *Dose*: Apply thin coating tid-qid, 8 d max w/ P: [B, ?/–] *CI*: Component sensitivity *Disp*: 5% cream *SE*: ↓ BP, tachycardia, drowsiness, photosens *Notes*: Limit application area to avoid systemic tox

**Doxorubicin (Adriamycin, Rubex) Uses**: *Acute leukemias; Hodgkin Dz & NHLs; soft tissue, osteo- & Ewing sarcoma; Wilms tumor; neuroblastoma; bladder, breast, ovarian, gastric, thyroid, & lung CAs* *Acts*: Intercalates DNA; ↓ DNA topoisomerase I & II *Dose*: 60–75 mg/m² q3wk; ↓ w/ hepatic impair; IV use only ↓ cardiotox w/ weekly (20 mg/m²/wk) or cont Inf (60–90 mg/m² over 96 h); (per protocols) w/ P: [D, ?] *CI*: Severe CHF, cardiomyopathy, preexisting ↓ BM, previous Rx w/ total cumulative doses of doxorubicin, idarubicin, daunorubicin *Disp*: Inj 10, 20, 50, 150, 200 mg *SE*: ↓ BM, venous streaking & phlebitis, N/V/D, mucositis, radiation recall phenomenon, cardiomyopathy rare (dose-related) *Notes*: Limit of 550 mg/m² cumulative dose (400 mg/m² w/ prior mediastinal irradiation); dexrazoxane may limit cardiac tox; tissue damage w/ extrav; red/orange urine; tissue vesicant w/ extrav, Rx w/ dexrazoxane
Doxycycline (Adoxa, Periostat, Oracea, Vibramycin, Vibra-Tabs) Uses: *Broad-spectrum antibiotic* acne vulgaris, uncomplicated GC, chlamydia, PID, Lyme Dz, skin Infxns, anthrax, malaria prophylaxis Acts: Tetracycline; bacteriostatic; ↓ protein synth. Spectrum: Limited gram(+) and (–), Rickettsia sp, Chlamydia, M. pneumoniae, B. anthracis Dose: Adults. 100 mg PO q12h on 1st d, then 100 mg PO daily-bid or 100 mg IV q12h; acne q day, chlamydia × 7 d, Lyme × 21 d, PID × 14 d Peds > 8 y. 5 mg/kg/24 h PO, 200 mg/d max ÷ daily-bid w/ P: [D, –] hepatic impair CI: Children < 8 y, severe hepatic dysfunction Disp: Tabs 20, 50, 75, 100, 150 mg; caps 50, 75, 100, 150 mg; Oracea 40 mg caps (30 mg timed release, 10 mg DR); syrup 50 mg/5 mL; susp 25 mg/5 mL; Inj 100/vial SE: D, GI disturbance, photosens Notes: ↓ Effect w/ antacids; tetracycline of choice w/ in renal impair; for inhalational anthrax use w/ 1–2 additional antibiotics, not for CNS anthrax

Dronabinol (Marinol) [C-III] Uses: *N/V associated w/ CA chemotherapy; appetite stimulation* Acts: Antiemetic; ↓ V center in the medulla Dose: Adults & Peds. Antiemetic: 5–15 mg/m²/dose q4–6h PRN. Adults. Appetite stimulant: 2.5 mg PO before lunch & dinner; max 20 mg/d w/ P: [C, ?] Elderly, Hx psychological disorder, Sz disorder, substance abuse CI: Hx schizophrenia, sesame oil hypersens Disp: Caps 2.5, 5, 10 mg SE: Drowsiness, dizziness, anxiety, mood change, hallucinations, depersonalization, orthostatic ↓ BP, tachycardia Notes: Principal psychoactive substance present in marijuana

Dronedarone (Multaq) BOX: CI w/ NYHA Class IV HF or NYHA Class II-III HF w/ decompensation; CI in A Fib if cannot be converted to NSR Uses: *A Fib/A flutter* Acts: Antiarrhythmic Dose: 400 mg PO bid w/ A.M. and P.M. meal w/ P: [X, –] w/ Other drugs (see PI); increased risk of death and serious CV events CI: See Box; 2nd-/3rd-degree AV block or SSS (unless w/ pacemaker), HR < 50 BPM, w/ strong CYP3A inhib, w/ drugs/herbals that ↑ QT interval, QTc interval ≥ 500 ms, severe hepatic impair, PRG Disp: Tabs 400 mg SE: N/V/D, Abd pain, asthenia, heart failure, ↑ K+, ↑ Mg²⁺, ↑ QTc, ↓ HR, ↑ SCr, rash Notes: Avoid grapefruit juice

Droperidol (Inapsine) BOX: Cases of QT interval prolongation and torsades de pointes (some fatal) reported Uses: *N/V; anesthetic premedication* Acts: Tranquilizer, sedation, antiemetic Dose: Adults. N: initial max 2.5 mg IV/IM, may repeat 1.25 mg based on response. Peds. Premed: 0.01–0.15 mg/kg/dose (max 1.25 mg); N Tx 0.1 mg/kg/dose (max 2.5 mg) w/ P: [C, ?] w/ Hepatic/renal impair CI: Component sensitivity Disp: Inj 2.5 mg/mL SE: Drowsiness, ↓ BP, occasional tachycardia & extrapyramidal Rxns, ↑ QT interval, arrhythmias Notes: Give IV push slowly over 2–5 min

Duloxetine (Cymbalta) BOX: Antidepressants may ↑ risk of suicidality; consider risks/benefits of use. Closely monitor for clinical worsening, suicidality, or behavior changes Uses: *Depression, DM peripheral neuropathic pain, generalized anxiety disorder (GAD), fibromyalgia, chronic OA & back pain* Acts: Selective serotonin & norepinephrine reuptake inhib (SSNRI) Dose: Depression: 40–60 mg/d PO ÷ bid. DM neuropathy: 60 mg/d PO; GAD: 60 mg/d, max 120 mg/d; Fibromyalgia, OA/back pain: 30–60 mg/d, 60 mg/d max w/ P: [C, ?/–]; use in 3rd tri; avoid if CrCl < 30 mL/min, NAG, w/ fluvoxamine, inhib of CYP2D6 (Table 10, p 319), TCAs, phenothiazines, type class 1C anti-arrhythmics (Table 9, p 318) CI: ↑ risk serotonin synd w/ MAOIs [linezolid or IV meth blue] MAOI use w/ in 14 d, w/ thioridazine, NAG, hepatic Insuff Disp: Caps delayed-release 20, 30, 60 mg SE: N, dry mouth, somnolence, fatigue, constipation, ↓ appetite, hyperhydrosis Notes: Swallow whole; monitor BP; avoid abrupt D/C

Dutasteride (Avodart) Uses: *Symptomatic BPH to improve Sxs, ↓ risk of retention and BPH
surgery alone or in combo w/ tamsulosin* **Acts**: 5α-Reductase inhib; ↓ intracellular dihydrotestosterone (DHT) **Dose**: Monotherapy: 0.5 mg PO/d. Combo: 0.5 mg PO q day w/ tamsulosin 0.4 mg q day w/ P: [X, –] Hepatic impair; pregnant women should not handle pills; R/O CA before starting CI: Women, peds **Disp**: Caps 0.5 mg SE: ↑ Testosterone, ↑ TSH, impotence, ↓ libido, gynecomastia, ejaculatory disturbance, may ↑ risk of high-grade prostate CA Notes: No blood donation until 6 mo after D/C; ↓ PSA, √ new baseline PSA at 6 mo (corrected PSA × 2); any PSA rise on dutasteride suspicious for CA; now available in fixed dose combination w/ tamsulosin (see Jalyn)

**Dutasteride & Tamsulosin (Jalyn) Uses**: *Symptomatic BPH to improve Sxs* **Acts**: 5α-Reductase inhib (↓ intracellular DHT) w/ α-blocker **Dose**: 1 capsule daily after same meal w/ P: [X, –] w/ CYP3A4 and CYP2D6 inhib may ↑ SEs; pregnant women should not handle pills; R/O CA before starting; IFIS (tamsulosin) discuss w/ ophthalmologist before cataract surgery; rare priapism; w/ warfarin; may ↑ risk of high-grade prostate CA CI: Women, peds, component sens **Disp**: Caps 0.5 mg dutasteride w/ 0.4 mg tamsulosin SE: Impotence, decreased libido, ejaculation disorders, and breast disorders Notes: No blood donation until 6 mo after D/C; ↓ PSA, √ new baseline PSA at 6 mo (corrected PSA × 2); any PSA rise on dutasteride suspicious for CA (see also dutasteride and tamsulosin)

**Ecallantide (Kalbitor) BOX**: Anaphylaxis reported, administer in a setting able to manage anaphylaxis and HAE, monitor closely **Uses**: *Acute attacks of hereditary angioedema (HAE)* **Acts**: Plasma kallikrein inhibitor **Dose**: Adult & > 16 y. 30 mg SC in three 10-mg injections; if attack persists may repeat 30-mg dose w/ in 24 h w/ P: [C, ?/–] Hypersens Rxns CI: Hypersens to ecallantide **Disp**: Inj 10 mg/mL SE: HA, N/V/D, pyrexia, Inj site Rxn, nasopharyngitis, fatigue, Abd pain

**Echothiophate Iodine (Phospholine Ophthalmic) Uses**: *Glaucoma* **Acts**: Cholinesterase inhib **Dose**: 1 gtt eye(s) bid w/ 1 dose hs w/ P: [C, ?] CI: Active uveal inflammation, inflammatory Dz of iris/ciliary body, glaucoma iridocyclitis **Disp**: Powder for reconstitution 6.25 mg/5 mL (0.125%) SE: Local irritation, myopia, blurred vision, ↓ BP, ↓ HR

**Econazole (Spectazole) Uses**: *Tinea, cutaneous Candida, & tinea versicolor Infxns* **Acts**: Topical antifungal **Dose**: Apply to areas bid Candida; (daily for tinea versicolor) for 2–4 wk w/ P: [C, ?] CI: Component sensitivity **Disp**: Topical cream 1% SE: Local irritation, pruritus, erythema Notes: Early Sx/clinical improvement; complete course to avoid recurrence

**Eculizumab (Soliris) BOX**: ↑ Risk of meningococcal Infxns (give meningococcal vaccine 2 wk prior to 1st dose and revaccinate per guidelines) **Uses**: *Rx paroxysmal nocturnal hemoglobinuria* **Acts**: Complement inhib **Dose**: 600 mg IV q7d × 4 wk, then 900 mg IV 5th dose 7 d later, then 900 mg IV q14d w/ P: [C, ?] CI: Active N. meningitidis Infxn; if not vaccinated against N. meningitidis **Disp**: 300-mg vial SE: Meningococcal Infxn, HA, nasopharyngitis, N, back pain, Infxns, fatigue, severe hemolysis on D/C Notes: IV over 35 min (2-h max Inf time); monitor for 1 h for S/Sx of Inf Rxn

**Edrophonium (Enlon) Uses**: *Diagnosis of MyG; acute MyG crisis; curare antagonist, reverse of nondepolarizing neuromuscular blockers* **Acts**: Anticholinesterase **Dose**: Adults. Test for MyG: 2 mg IV in 1 min; if tolerated, give 8 mg IV; (+) test is brief ↑ in strength. Peds. See label w/ P: [C, ?] CI: GI or GU obst; allergy to sulfite **Disp**: Inj 10 mg/mL SE: N/V/D, excessive salivation, stomach cramps, ↑ aminotransferases Notes: Can cause severe cholinergic effects; keep atropine available, 0.4–0.5 mg IV to Rx muscarinic SE (fasciculations, muscle weakness)
**Efavirenz (Sustiva) Uses:** *HIV Infxns*  
Acts: Antiretroviral; nonnucleoside RT inhib  
Dose:  
- **Adults.** 600 mg/d PO q hs  
- **Peds ≥ 3 y**  
  - 10–< 15 kg: 200 mg PO q day;  
  - 15–< 20 kg: 250 mg PO q day;  
  - 20–< 25 kg: 300 mg PO q day;  
  - 25–< 32.5 kg: 350 mg PO q day;  
  - 32.5–< 40 kg: 400 mg PO q day ≥ 40 kg: 600 mg PO q day;  
  - on empty stomach w/ P: [D, ?] CDC rec: HIV-infected mothers not breast-feed  
CI: w/ Astemizole, bepridil, cisapride, midazolam, pimozide, triazolam, ergot derivatives, voriconazole  
Disp: Caps 50, 200; 600 mg tab  
SE: Somnolence, vivid dreams, depression, CNS Sxs, dizziness, rash, N/V/D  
Notes: LFTs (especially w/ underlying liver Dz), cholesterol; not for monotherapy  

**Efavirenz, Emtricitabine, Tenofovir (Atripla) BOX:** Lactic acidosis and severe hepatomegaly w/ steatosis, including fatal cases, reported w/ nucleoside analogs alone or combo w/ other antiretrovirals  
Uses: *HIV Infxns*  
Acts: Triple fixed-dose combo nonnucleoside RT inhib/nucleoside analog  
Dose:  
- **Adults.** 1 tab q day on empty stomach; hs dose may ↓ CNS SE w/ P: [D, ?] CDC rec: HIV-infected mothers not breast-feed  
CI: < 12 y or < 40 kg, w/ astemizole, midazolam, triazolam, or ergot derivatives (CYP3A4 competition by efavirenz could cause serious/life-threatening SE)  
Disp: Tab (efavirenz 600 mg/emtricitabine 200 mg/tenofovir 300 mg)  
SE: Somnolence, vivid dreams, HA, dizziness, rash, N/V/D, ↓ BMD  
Notes: Monitor LFTs, cholesterol; see individual agents for additional info, not for HIV/hep B coinfection  

**Eletriptan (Relpax) Uses:** *Acute Rx of migraine*  
Acts: Selective serotonin receptor (5-HT1B/1D) agonist  
Dose: 20–40 mg PO, may repeat in 2 h; 80 mg/24 h max w/ P: [C, +/–] CI: Hx ischemic heart Dz, coronary artery spasm, stroke or TIA, peripheral vascular Dz, IBD, uncontrolled HTN, hemiplegic or basilar migraine, severe hepatic impair, w/ in 24 h of another 5-HT1 agonist or ergot, w/ in 72 h of CYP3A4 inhibit  
Disp: Tabs 20, 40 mg  
SE: Dizziness, somnolence, N, asthenia, xerostomia, paresthesias; pain, pressure, or tightness in chest, jaw, or neck; serious cardiac events  

**Eltrombopag (Promacta) BOX:** May cause hepatotox √ baseline ALT/AST/bili, q2wk w/ dosage adjustment, then monthly. D/C if ALT is > 3× ULN w/ ↑ bili, or Sx of liver injury  
Uses: *Tx ↑ plt in idiopathic thrombocytopenia refractory to steroids, immune globulins, splenectomy*  
Acts: Thrombopoietin receptor agonist  
Dose: 50 mg PO daily, adjust to keep plt ≥ 50,000 cells/mm³; 75 mg/d max; start 25 mg/d if East-Asian or w/ hepatic impair; on an empty stomach; not w/ in 4 h of product w/ polyvalent cations w/ P: [C, ?/–] Risk for BM reticulin fiber deposition, heme malignancies, rebound ↓ plt on D/C, thromboembolism CI: None  
Disp: Tabs 12.5, 25, 50, 75 mg SE: Rash, bruising, menorrhagia, N/V, dyspepsia, ↓ plt, ↑ ALT/AST, limb pain, myalgia, paresthesia, cataract, conjunctival hemorrhage  
Notes: D/C if no ↑ plt count after 4 wk; restricted distribution  

**Emedastine (Emadine) Uses:** *Allergic conjunctivitis*  
Acts: Antihistamine; selective H1-antagonist  
Dose: 1 gtt in eye(s) up to qid w/ P: [B, ?] CI: Allergy to ingredients (preservatives benzalkonium, tromethamine)  
Disp: 0.05% soln SE: HA, blurred vision, burning/stinging, corneal infiltrates/staining, dry eyes, foreign body sensation, hyperemia, keratitis, tearing, pruritus, rhinitis, sinusitis, asthenia, bad taste, dermatitis, discomfort  
Notes: Do not use contact lenses if eyes are red  

**Emtricitabine (Emtriva) BOX:** Lactic acidosis & severe hepatomegaly w/ steatosis reported; not for HBV Infxn  
Uses: HIV-1 Infxn  
Acts: NRTI  
Dose: 200 mg caps or 240 mg soln PO daily; ↓ w/ renal impair w/ P: [B, –] Risk of liver Dz CI: Component sensitivity  
Disp: Soln 10 mg/mL, caps 200 mg SE: HA, N/D, rash, rare hyperpigmentation of feet & hands, posttreatment exacerbation of hep  
Notes: 1st once-daily NRTI; caps/soln not equivalent; not OK as monotherapy; screen for hep B, do not use
Enalapril (Vasotec) BOX: ACE inhib used during PRG can cause fetal injury & death Uses: *HTN, CHF, LVD*, DN Acts: ACE inhib Dose: Adults. 2.5–40 mg/d PO; 1.25 mg IV q6h. Peds. 0.05–0.08 mg/kg/d PO q12–24h; ↓ w/ renal impair w/ P: [C (1st tri; D 2nd & 3rd tri), +] D/C immediately w/ PRG, w/ NSAIDs, K+ supplements CI: Bilateral RAS, angioedema Disp: Tabs 2.5, 5, 10, 20 mg; IV 1.25 mg/mL (1, 2 mL) SE: ↓ BP w/ initial dose (especially w/ diuretics), ↑ K+, ↑ Cr nonproductive cough, angioedema Notes: Monitor Cr; D/C diuretic for 2–3 d prior to start

Enfuvirtide (Fuzeon) BOX: Rarely causes allergy; never rechallenge Uses: *w/ Antiretroviral agents for HIV-1 in Tx-experienced pts w/ viral replication despite ongoing Rx* Acts: Viral fusion inhib Dose: Adults. 90 mg (1 mL) SQ bid in upper arm, anterior thigh, or Abd; rotate site Peds. See PI w/ P: [B, –] CI: Previous allergy to drug Disp: 90 mg/mL recons; pt kit w/ supplies × 1 mo SE: Inj site Rxns; pneumonia, D, N, fatigue, insomnia, peripheral neuropathy Notes: Available via restricted distribution system; use immediately on recons or refrigerate(24 h max)

Enoxaparin (Lovenox) BOX: Recent or anticipated epidural/spinal anesthesia, ↑ risk of spinal/epidural hematoma w/ subsequent paralysis Uses: *Prevention & Rx of DVT; Rx PE; unstable angina & non–Q-wave MI* Acts: LMW heparin; inhibit thrombin by complexing w/ antithrombin III Dose: Adults. Prevention: 30 mg SQ bid or 40 mg SQ q24h. DVT/PE Rx: 1 mg/kg SQ q12h or 1.5 mg/kg SQ q24h. Angina: 1 mg/kg SQ q12h; Ancillary to AMI fibrinolysis: 30 mg IV bolus, then 1 mg/kg SQ bid; CrCl < 30 mL/min ↓ to 1 mg/kg SQ q day Peds. Prevention: 0.5 mg/kg SQ q12h. DVT/PE Rx: 1 mg/kg SQ q12h; ↓ dose w/ CrCl < 30 mL/min w/ P: [B, ?] Not for prophylaxis in prosthetic heart valves CI: Active bleeding, HIT Ab, heparin, pork sens Disp: Inj 10 mg/0.1 mL (30-, 40-, 60-, 80-, 100-, 120-, 150-mg syringes); 300-mg/mL multi-dose vial SE: Bleeding, hemorrhage, bruising, thrombocytopenia, fever, pain/hematoma at site, ↑ AST/ALT Notes: No effect on bleeding time, plt Fxn, PT, or aPTT; monitor plt for HIT, clinical bleeding; may monitor antifactor Xa; not for IM

Entacapone (Comtan) Uses: *Parkinson Dz* Acts: Selective & reversible catechol-O-methyltransferase inhib Dose: 200 mg w/ each levodopa/carbidopa dose; max 1600 mg/d; ↓ levodopa/carbidopa dose 25% w/ levodopa dose > 800 mg w/ P: [C, ?] Hepatic impair CI: Use w/ MAOI Disp: Tabs 200 mg SE: Dyskinesia, hyperkinesia, N, D, dizziness, hallucinations, orthostatic ↓ BP, brown-orange urine Notes: LFTs; do not D/C abruptly

Enzalutamide (Xtandi) Uses: *Metastatic castration-resistant prostate cancer w/ previous docetaxel* Acts: Androgen receptor inhibitor Dose (men only): 160 mg daily, do not chew/ open caps w/ P: [X, –] Sz risk CI: PRG Disp: Caps 40 mg SE: HA, dizziness, insomnia, fatigue, anxiety, MS pain, muscle weakness, paresthesia, back pain, spinal cord compression, cauda equina synd, arthralgias, edema, URI, lower resp Infxn, hematuria, ↑ BP Notes: Avoid w/ strong CYP2C8 inhib, strong/mod CYP3A4 or CYP2C8 induc, avoid CPY3A4, CYP2C9, CYP2C19 substrates w/ narrow therapeutic index; if on warfarin INR

Ephedrine Uses: *Acute bronchospasm, bronchial asthma, nasal congestion*, ↓ BP, narcolepsy, enuresis, & MyG Acts: Sympathomimetic; stimulates alpha- & beta-receptors; bronchodilator Dose: Adults. Congestion: 12.5–25 mg PO q4h PRN w/ expectorant; ↓ BP: 25–50 mg IV q5–10min, 150 mg/d max. Peds. 0.2–0.3 mg/kg/dose IV q4–6h PRN w/ P: [C, ?/–] CI: Arrhythmias; NAG Disp: Caps 25 mg; Inj 50 mg/mL; nasal spray 0.25% SE: CNS stimulation (nervousness, anxiety,
trembling), tachycardia, arrhythmia, HTN, xerostomia, dysuria.

**Notes:** Protect from light; monitor BP, HR, urinary output; can cause false(+) amphetamine EMIT; take last dose 4–6 h before hs; abuse potential, OTC sales mostly banned/restricted

**Epinastine (Elestat) Uses:** Itching w/ allergic conjunctivitis  
**Acts:** Antihistamine  
**Dose:** 1 gtt bid w/ P: [C, ?/–]  
**Disp:** Soln 0.05% SE: Burning, folliculosis, hyperemia, pruritus, URI, HA, rhinitis, sinusitis, cough, pharyngitis  
**Notes:** Remove contacts before, reinsert in 10 min

**Epinephrine (Adrenalin, EpiPen, EpiPen Jr., Others) Uses:**  
*Cardiac arrest, anaphylactic Rxn, bronchospasm, open-angle glaucoma*  
**Acts:** Beta-adrenergic agonist, some alpha-effects  
**Dose:**  
**Adults. ECC 2010.** 1-mg (10 mL of 1:1000 soln) IV/IO push, repeat q3–5min (0.2 mg/kg max) if 1-mg dose fails. Inf: 0.1–0.5 mcg/kg/min, titrate. ET 2–2.5 mg in 5–10 mL NS.  
**Profound bradycardia/hypotension:** 2–10 mcg/min (1 mg in 250 mL D5W).  
**Allergic Rxn:** 0.3–0.5 mg (0.3–0.5 mL of 1:1000 soln) SQ.  
**Anaphylaxis:** 0.3–0.5 (0.3–0.5 mL of 1:1000 soln) IV.  
**Asthma:** 0.1–0.5 mL SQ of 1:1000 dilution, repeat q20min to 4 h, or 1 Inh (metered-dose) repeat in 1–2 min, or susp 0.1–0.3 mL SQ for extended effect.  
**Peds. ECC 2010.** Pulseless arrest: (0.01 mL/kg 1:1000) IV/IO q3–5min; max dose 1 mg; OK via ET tube (0.01 mL/kg 1:1000) until IV/IO access.  
**Symptomatic bradycardia:** 0.01 mg/kg (0.1 mL/kg 1:1000) cont Inf: typical 0.1–1 mcg/kg/min, titrate.  
**Anaphylaxis/status asthmaticus:** 0.01 mg/kg (0.01 ml/kg 1:1000) IM, repeat PRN; max single dose 0.3 mg w/ P: [C, ?] ↓ bronchodilation w/ β-blockers  
**CI:** Cardiac arrhythmias, NAG  
**Disp:** Inj 1:1000, 1:2000, 1:10,000; nasal inhal 0.1%; oral inhal 2.25% soln; EpiPen Autoinjector 1 dose = 0.30 mg; EpiPen Jr. 1 dose = 0.15 mg  
**SE:** CV (tachycardia, HTN, vasoconstriction), CNS stimulation (nervousness, anxiety, trembling), ↓ renal blood flow  
**Notes:** Can give via ET tube if no central line (use 2–2.5 × IV dose); EpiPen for pt self-use (www.EpiPen.com)

**Epirubicin (Ellence) BOX:** Do not give IM or SQ. Extrav causes tissue necrosis; potential cardiotox; severe myelosuppression; ↓ dose w/ hepatic impair  
**Uses:** *Adjuvant Rx for (+) axillary nodes after resection of primary breast CA secondary AML*  
**Acts:** Anthracycline cytotoxic agent  
**Dose:** Per protocols; ↓ dose w/ hepatic impair w/ P: [D, –]  
**CI:** Baseline neutrophil count < 1500 cells/mm³, severe cardiac Insuff, recent MI, severe arrhythmias, severe hepatic dysfunction, previous anthracyclines Rx to max cumulative dose  
**Disp:** Inj 50 mg/25 mL, 200 mg/100 mL SE: Mucositis, N/V/D, alopecia, ↓ BM, cardiotox, secondary AML, tissue necrosis w/ extrav (see Adriamycin for Rx), lethargy  
**Notes:** CBC, bili, AST, Cr, cardiac Fxn before/during each cycle

**Eplerenone (Inspra) Uses:** *HTN, ↑ survival after MI w/ LVEF < 40% and CHF*  
**Acts:** Selective aldosterone antagonist  
**Dose:**  
**Adults.** 50 mg PO daily-bid, doses > 100 mg/d no benefit w/ ↑ K⁺; ↓ to 25 mg PO daily if giving w/ CYP3A4 inhib w/ P: [B, +/–] w/ CYP3A4 inhib (Table 10, p 319); monitor K⁺ w/ ACE inhibit, ARBs, NSAIDs, K⁺-sparing diuretics; grapefruit juice, St. John’s Wort  
**CI:** K⁺ > 5.5 mEq/L; non–insulin-dependent diabetes mellitus (NIDDM) w/ microalbuminuria; SCr > 2 mg/dL (males), > 1.8 mg/dL (females); CrCl < 30 mL/min; w/ K⁺ supls/K⁺-sparing diuretics, ketoconazole  
**Disp:** Tabs 25, 50 mg SE: ↑ cholesterol/triglycerides, ↑ K⁺, HA, dizziness, gynecomastia, D, orthostatic ↓ BP  
**Notes:** May take 4 wk for full effect

**Epoetin Alfa [Erythropoietin, EPO] (Epogen, Procrit) BOX:**  
**Uses:** *Erythropoiesis-stimulating agents (ESAs) to target Hgb levels 11 g/dL. Maintain Hgb 10–12 g/dL. In CA pt, ESAs ↓ survival/time to progression in some CA when dosed Hgb ≥ 12*  
**Notes:** Protect from light; monitor BP, HR, urinary output; can cause false(+) amphetamine EMIT; take last dose 4–6 h before hs; abuse potential, OTC sales mostly banned/restricted
Use lowest dose needed. Use only for myelosuppressive chemotherapy. D/C following chemotherapy. Preop ESA ↑ DVT. Consider DVT prophylaxis Uses: *CRF-associated anemia, zidovudine Rx in HIV-infected pts, CA chemotherapy; ↓ transfusions associated w/ surgery* Acts: Induces erythropoiesis Dose: Adults & Peds. 50–150 units/kg IV/SQ 3×/wk; adjust dose q4–6wk PRN. Surgery: 300 units/kg/d × 10 d before to 4 d after; ↓ dose if Hct ~36% or Hgb, ↑ > 12 g/dL or Hgb ↑ > 1 g/dL in 2-wk period; hold dose if Hgb > 12 g/dL w/ P: [C, ?/–] CI: Uncontrolled HTN Disp: Inj 2000, 3000, 4000, 10,000, 20,000, 40,000 units/mL SE: HTN, HA, fatigue, fever, tachycardia, N/V/A Notes: Refrigerate; monitor baseline & posttreatment Hct/Hgb, BP, ferritin

Epoprostenol (Flolan, Veletri) Uses: *Pulm HTN* Acts: Dilates pulm/systemic arterial vascular beds; ↓ plt aggregation Dose: Initial 2 ng/kg/min; ↑ by 2 ng/kg/min q15min until dose-limiting SE (CP, dizziness, N/V, HA, ↓ BP, flushing); IV cont Inf 4 ng/kg/min < max tolerated rate; adjust based on response; see PI w/ P: [B, ?] ↑ tox w/ diuretics, vasodilators, acetate in dialysis fluids, anticoagulants CI: Chronic use in CHF 2nd degree, if pt develops pulm edema w/ dose initiation, severe LVSD Disp: Inj 0.5, 1.5 mg SE: Flushing, tachycardia, CHF, fever, chills, nervousness, HA, N/V/D, jaw pain, flu-like Sxs Notes: Abrupt D/C can cause rebound pulm HTN; monitor bleeding w/ other antiplatelet/anticoagulants; watch ↓ BP w/ other vasodilators/diuretics

Eprosartan (Teveten) Uses: *HTN*, DN, CHF Acts: ARB Dose: 400–800 mg/d single dose or bid w/ P: [C (1st tri); D (2nd & 3rd tri), D/C immediately when PRG detected] w/ Li, ↑ K+ w/ K+-sparing diuretics/supls/high-dose trimethoprim CI: Bilateral RAS, 1st-degree aldosteronism Disp: Tabs 400, 600 mg SE: Fatigue, depression, URI, UTI, Abd pain, rhinitis/pharyngitis/cough, hypertriglyceridemia

Eptifibatide (Integrilin) Uses: *ACS, PCI* Acts: Glycoprotein IIb/IIIa inhib Dose: 180 mcg/kg IV bolus, then 2 mcg/kg/min cont Inf; ↓ in renal impair (CrCl < 50 mL/min: 180 mcg/kg, then 1 mcg/kg/min); ECC 2010. ACS: 180 mcg/kg/min IV bolus over 1–2 min, then 2 mcg/kg/min, then repeat bolus in 10 min; continue infusion 18–24 h post-PCI w/ P: [B, ?] Monitor bleeding w/ other anticoagulants CI: Other glycoprotein IIb/IIIa inhib, Hx abnormal bleeding, hemorrhagic stroke (w/ in 30 d), severe HTN, major surgery (w/ in 6 wk), plt count < 100,000 cells/mm³, renal dialysis Disp: Inj 0.5, 0.75, 2 mg/mL SE: Bleeding, ↓ BP, Inj site Rxn, thrombocytopenia Notes: Monitor bleeding, coagulants, plts, SCr, activated coagulation time (ACT) w/ prothrombin consumption index (keep ACT 200–300 s)

Eribulin (Halaven) Uses: *Met breast CA after 2 chemo regimens (including anthracycline & taxane)* Acts: Microtubule inhibitor Dose: Adults. 1.4 mg/m² IV (over 2–5 min) days 1 & 8 of 21-d cycle; ↓ dose w/ hepatic & mod renal impair; delay/↓ for tox (see label) w/ P: [D, –] CI: None Disp: Inj 0.5 mg/mL SE: ↓ WBC/Hct/plt, fatigue/asthenia, neuropathy, N/V/D, constipation, pyrexia, alopecia, ↑ QT, arthralgia/myalgia, back/pain, cough, dyspnea, UTI Notes: CBC & monitor for neuropathy prior to dosing

Erlotinib (Tarceva) Uses: *NSCLC after failing 1 chemotherapy; maint NSCLC who have not progressed after 4 cycles cisplatin-based therapy, CA pancreas* Acts: HER2/EGFR TKI Dose: CA pancreas 100 mg, others 150 mg/d PO 1 h ac or 2 h pc; ↓ (in 50-mg decrements) w/ severe Rxn or w/ CYP3A4 inhib (Table 10, p 319); per protocols w/ P: [D, ?/–] Avoid pregnancy; w/ CYP3A4 inhib (Table 10, p 319) Disp: Tabs 25, 100, 150 mg SE: Rash, N/V/D, anorexia, Abd pain, fatigue, cough, dyspnea, edema, stomatitis, conjunctivitis, pruritus, skin/nail changes, Infxn, ↑ LFTs, interstitial lung
**Dz Notes:** May ↑ INR w/ warfarin, monitor INR

**Ertapenem (Invanz) Uses:** *Complicated intra-Abd, acute pelvic, & skin Infxns, pyelonephritis, CAP*  
*Acts:* α-carbapenem; β-lactam antibiotic, ↓ cell wall synth.  
*Spectrum:* Good gram(+/–) & anaerobic coverage, not *Pseudomonas*, PCN-resistant pneumococci, MRSA, *Enterococcus*, β-lactamase (+) *H. influenzae*, *Mycoplasma*, *Chlamydia*  
**Dose:**  
**Adults:** 1 g IM/IV daily; 500 mg/d in CrCl < 30 mL/min  
**Peds 3 mo–12 y:** 15 mg/kg bid IM/IV, max 1 g/d w/ P: [B, ?/–] Sz Hx, CNS disorders, β-lactam & multiple allergies, probenecid ↓ renal clearance  
**CI:** component hypersens or amide anesthetics  
**Disp:** Inj 1 g/vial  
**SE:** HA, N/V/D, Inj site Rxns, thrombocytosis, ↑ LFTs  
**Notes:** Can give IM × 7 d, IV × 14 d; 137 mg Na+(6 mEq)/g ertapenem

**Erythromycin (E-Mycin, E.E.S., Ery-Tab, EryPed, Ilotycin) Uses:** *Bacterial Infxns; bowel prep*;  
*Acts:* Bacteriostatic; interferes w/ protein synth.  
*Spectrum:* Group A streptococci (*S. pyogenes*), *S. pneumoniae*, *N. gonorrhoeae* (if PCN-allergic), *Legionella*, *M. pneumoniae*  
**Dose:**  
**Adults:** Base 250–500 mg PO q6–12h or ethylsuccinate 400–800 mg q6–12h; 500 mg–1 g IV q6h.  
**Prokinetic:** 250 mg PO tid 30 min ac.  
**Peds.** 30–50 mg/kg/d PO ÷ q6–8h or 20–40 mg/kg/d IV ÷ q6h, max 2 g/d w/ P: [B, +] Pseudomembranous colitis risk, ↑ tox of carbamaze-pine, cyclosporine, digoxin, methylprednisolone, theophylline, felodipine, warfarin, simvastatin/lovastatin; ↓ sildenafil dose w/ use  
**CI:** Hepatic impair, preexisting liver Dz (estolate), use w/ pimozide ergotamine dihydroergotamine  
**Disp:** Lactobionate (Ilotycin): Powder for Inj 500 mg, 1 g.  
**Base:** Tabs 250, 333, 500 mg; caps 250 mg.  
**Stearate (Erythrocin):** Tabs 250, 500 mg.  
**Ethylsuccinate (EES, EryPed):** Chew tabs 200 mg; tabs 400 mg; susp 200, 400 mg/5 mL.  
**SE:** HA, Abd pain, N/V/D; ↑ QT, torsades de pointes, ventricular arrhythmias/tachycardias (rarely); cholestatic jaundice (estolate)  
**Notes:** 400 mg ethylsuccinate = 250 mg base/estolate; w/ food minimizes GI upset; lactobionate contains benzyl alcohol (caution in neonates)

**Erythromycin, Ophthalmic (Ilotycin Ophthalmic) Uses:** *Conjunctival/corneal Infxns*  
*Acts:* Macrolide antibiotic  
**Dose:** 1/2 in 2–6×/d w/ P: [B, +]  
**CI:** Erythromycin hypersens  
**Disp:** 0.5% oint  
**SE:** Local irritation

**Erythromycin, Topical (Akne-Mycin, Ery, Erythra-Derm, Generic) Uses:** *Acne vulgaris*  
*Acts:* Macrolide antibiotic  
**Dose:** Wash & dry area, apply 2% product over area bid w/ P: [C, ?]  
**CI:** Component sensitivity  
**Disp:** Soln 1.5%, 2%; gel 2%; pads & swabs 2%  
**SE:** Local irritation

**Erythromycin/Benzoyl Peroxide (Benzamycin) Uses:** *Topical for acne vulgaris*  
*Acts:* Macrolide antibiotic w/ keratolytic  
**Dose:** Apply bid (A.M. & P.M.) w/ P: [C, ?]  
**CI:** Component sensitivity  
**Disp:** Gel erythromycin 30 mg/benzoyl peroxide 50 mg/g  
**SE:** Local irritation, dryness

**Erythromycin/Sulfisoxazole (E.S.P.) Uses:** *Upper & lower resp tract; bacterial Infxns; H. influenzae otitis media in children*; Infxns in PCN-allergic pts  
*Acts:* Macrolide antibiotic w/ sulfonamide  
**Dose:**  
**Adults:** Based on erythromycin content; 400 mg erythromycin/1200 mg sulfisoxazole PO q6h.  
**Peds > 2 mo:** 40–50 mg/kg/d erythromycin & 150 mg/kg/d sulfisoxazole PO ÷ q6h; max 2 g/d erythromycin or 6 g/d sulfisoxazole × 10 d; ↓ in renal impair w/ P: [C (D if near term), +] w/ PO anticoagulants, hypoglycemics, phenytoin, cyclosporine  
**CI:** Infants < 2 mo  
**Disp:** Susp erythromycin ethysuccinate 200 mg/sulfisoxazole 600 mg/5 mL (100, 150, 200 mL)  
**SE:** GI upset

**Escitalopram (Lexapro, Generic) BOX:** Closely monitor for worsening depression or emergence of
**Uses**: Depression, anxiety  
**Acts**: SSRI  
**Dose**: Adults. 10–20 mg PO daily; 10 mg/d in elderly & hepatic impair w/ P: [C, +/−] Serotonin synd (Table 11, p 321); use of escitalopram, w/ NSAID, ASA, or other drugs affecting coagulation associated w/ ↑ bleeding risk  
**CI**: w/ in 14 d of MAOI  
**Disp**: Tabs 5, 10, 20 mg; soln 1 mg/mL  
**SE**: N/V/D, sweating, insomnia, dizziness, xerostomia, sexual dysfunction  
**Note**: Full effects may take 3 wk

**Esmolol (Brevibloc, Generic)**  
**Uses**: *SVT & noncompensatory sinus tachycardia, AF/A flutter*  
**Acts**: β1-Adrenergic blocker; class II antiarrhythmic  
**Dose**: Adults & Peds. ECC 2010. 0.5 mg/kg (500 mcg/kg) over 1 min, then 0.05 mg/kg/min (50 mcg/kg/min) Inf; if inadequate response after 5 min, repeat 0.5 mg/kg bolus, then titrate Inf up to 0.2 mg/kg/min (200 mcg/kg/min); max 0.3 mg/kg/min (300 mcg/kg/min) w/ P: [C (1st tri; D 2nd or 3rd tri), ?]  
**CI**: Sinus bradycardia, heart block, uncompensated CHF, cardiogenic shock, ↓ BP  
**Disp**: Inj 10, 20, 250 mg/mL; premix Inf 10 mg/mL  
**SE**: ↓ BP; ↓ HR, diaphoresis, dizziness, pain on Inf  
**Notes**: Hemodynamic effects back to baseline w/ in 30 min after D/C Inf

**Esomeprazole (Nexium)**  
**Uses**: *Short-term (4–8 wk) for erosive esophagitis/GERD; H. pylori Infxn in combo w/ antibiotics*  
**Acts**: Proton pump inhib, ↓ gastric acid  
**Dose**: Adults. GERD/erosive gastritis: 20–40 mg/d PO × 4–8 wk; 20–40 mg IV 10–30 min Inf or > 3 min IV push, 10 d max; Maint: 20 mg/d PO. H. pylori Infxn: 40 mg/d PO, plus clarithromycin 500 mg PO bid & amoxicillin 1000 mg/bid for 10 d; w/ P: [B, ?/−]  
**CI**: Component sensitivity; do not use w/ clopidogrel (↓ effect)  
**Disp**: Caps 20, 40 mg; IV 20, 40 mg SE: HA, D, Abd pain  
**Notes**: Do not chew; may open caps & sprinkle on applesauce; ↑ risk of fractures w/ all PPI; risk of hypomagnesemia w/ long-term use, monitor

**Estazolam (ProSom, Generic) [C-IV]**  
**Uses**: *Short-term management of insomnia*  
**Acts**: Benzodiazepine  
**Dose**: 1–2 mg PO qhs PRN; ↓ in hepatic impair/elderly/debilitated w/ P: [X, –]  
**Effects w/ CNS depressants; cross-sensitivity w/ other benzodiazepines**  
**CI**: PRG, component hypersens, w/ itraconazole or ketoconazole  
**Disp**: Tabs 1, 2 mg  
**SE**: Somnolence, weakness, palpitations, anaphylaxis, angioedema, amnesia  
**Notes**: May cause psychological/physical dependence; avoid abrupt D/C after prolonged use

**Esterified Estrogens (Menest)**  
**BOX**: ↑ Risk endometrial CA. Do not use in the prevention of CV Dz or dementia; ↑ risk of MI, stroke, breast CA, PE, DVT, in postmenopausal  
**Uses**: *Vasomotor Sxs or vulvar/Vag atrophy w/ menopause; female hypogonadism, PCa*  
**Acts**: Estrogen supl  
**Dose**: Menopausal vasomotor Sx: 0.3–1.25 mg/d, cyclically 3 wk on, 1 wk off; add progestin 10–14 d w/ 28-d cycle w/ uterus intact; Vulvovaginal atrophy: Same regimen except use 0.3–1.25 mg; Hypogonadism: 2.5–7.5 mg/d PO × 20 d, off × 10 d; add progestin 10–14 d w/ 28-d cycle w/ uterus intact w/ P: [X, –]  
**CI**: Undiagnosed genital bleeding, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombophlebitis, recent MI, PRG, severe hepatic Dz  
**Disp**: Tabs 0.3, 0.625, 1.25, 2.5 mg SE: N, HA, bloating, breast enlargement/tenderness, edema, venous thromboembolism, hypertriglyceridemia, gallbladder Dz  
**Notes**: Use lowest dose for shortest time (see WHI data [www.whi.org])

**Estradiol, Gel (Divigel)**  
**BOX**: ↑ Risk endometrial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y), ↑ Dementia risk in postmenopausal (≥ 65 y)  
**Uses**: *Vasomotor Sx in menopause*  
**Acts**: Estrogen Dose: 0.25 g q day on right or left upper thigh (alternate) w/ P: [X, +/−] May ↑ thyroid binding globulin (TBD) w/ thyroid Dz  
**CI**: Undiagnosed genital bleeding, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombophlebitis, recent MI, PRG, severe hepatic Dz  
**Disp**: Tubs 0.3, 0.625, 1.25, 2.5 mg SE: N, HA, bloating, breast enlargement/tenderness, edema, venous thromboembolism, hypertriglyceridemia, gallbladder Dz  
**Notes**: Use lowest dose for shortest time (see WHI data [www.whi.org])
disorders, thrombophlebitis, recent MI, PRG, severe hepatic Dz

Disp: 0.1% gel 0.25/0.5/1 g single-dose foil packets w/ 0.25-, 0.5-, 1-mg estradiol, respectively

SE: N, HA, bloating, breast enlargement/tenderness, edema, venous thromboembolism, ↑ BP, hypertriglyceridemia, gallbladder Dz

Notes: If person other than pt applies, glove should be used, keep dry immediately after, rotate site; contains alcohol, caution around flames until dry, not for Vag use

Estradiol, Metered Gel (Elestrin, Estrogel) BOX: ↑ Risk endometrial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in postmenopausal (≥ 65 y)

Uses: *Postmenopausal vasomotor Sxs*  
Acts: Estrogen

Dose: Apply 0.87–1.7 g to upper arm skin q day; add progestin × 10–14 d/28-d cycle w/ intact uterus; use lowest effective estrogen dose w/ P: [X, ?]

CI: AUB, breast CA, estrogen-dependent tumors, hereditary angioedema, thromboembolic disorders, recent MI, PRG, severe hepatic Dz

Disp: Gel 0.06%; metered dose/activation SE: Thromboembolic events, MI, stroke, ↑ BP, breast/ovarian/endometrial CA, site Rxns, Vag spotting, breast changes, Abd bloating, cramps, HA, fluid retention

Notes: Wait > 25 min before sunscreen; avoid concomitant use for > 7 d; BP, breast exams

Estradiol, Oral (Delestrogen, Estrace, Femtrace) BOX: ↑ Risk endometrial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in postmenopausal (≥ 65 y)

Uses: *Atrophic vaginitis, menopausal vasomotor Sxs, prevent osteoporosis, ↑ low estrogen levels, palliation breast and PCa*

Acts: Estrogen

Dose: PO: 1–2 mg/d, adjust PRN to control Sxs. Vag cream: 2–4 g/d × 2 wk, then 1 g 1–3×/wk. Vasomotor Sx/Vag atrophy: 10–20 mg IM q4wk, D/C or taper at 3- to 6-mo intervals. Hypoestrogenism: 10–20 mg IM q4wk. PCa: 30 mg IM q12wk w/ P: [X, –]

CI: Genital bleeding of unknown cause, breast CA, porphyria, estrogen-dependent tumors, thromboembolic disorders, recent MI; hepatic impair

Disp: Tabs 0.5, 1, 2 mg; depot Inj (Delestrogen) 10, 20, 40 mg/mL SE: N, HA, bloating, breast enlargement/tenderness, edema, ↑ triglycerides, venous thromboembolism, gallbladder Dz

Notes: When estrogen used in postmenopausal w/ uterus, use w/ progestin

Estradiol, Spray (Evamist) BOX: ↑ Risk endometrial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in postmenopausal (≥ 65 y)

Uses: *Vaso-motor Sx in menopause*

Acts: Estrogen supl

Dose: 1 spray on inner surface of forearm w/ P: [X, +/-] May ↑ PT/PTT/plt aggregation w/ thyroid Dz

CI: Undiagnosed genital bleeding, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombophlebitis; recent MI; hepatic impair

Disp: Tabs 0.5, 1, 2 mg; depot Inj (Delestrogen) 10, 20, 40 mg/mL SE: N, HA, bloating, breast enlargement/tenderness, edema, ↑ triglycerides, venous thromboembolism, ↑ BP, hypertriglyceridemia, gallbladder Dz

Notes: Contains alcohol, caution around flames until dry; not for Vag use

Estradiol, Transdermal (Alora, Climara, Estraderm, Vivelle Dot) BOX: ↑ Risk endometrial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in postmenopausal (≥ 65 y)

Uses: *Severe menopausal vasomotor Sxs; female hypogonadism*

Acts: Estrogen supl

Dose: Start 0.0375–0.05 mg/d patch 1–2×/wk based on product (Climara 1×/wk; Alora 2×wk) adjust PRN to control Sxs; w/ intact uterus cycle 3 wk on 1 wk off or use cyclic progestin 10–14 d w/ P: [X, –] See estradiol CI: PRG, AUB, porphyria, breast CA, estrogen-dependent tumors, Hx thrombophlebitis, thrombosis

Disp: Transdermal patches (mg/24 h) 0.025, 0.0375, 0.05, 0.06, 0.075, 0.1 SE: N, bloating, breast enlargement/tenderness, edema, HA, hypertriglyceridemia, gallbladder Dz

Notes: Do not apply to
Estradiol, Vaginal (Estring, Femring, Vagifem) BOX: ↑ Risk endome-trial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in postmenopausal (≥ 65 y) Uses: *Postmenopausal Vag atrophy (Estring)* *vasomotor Sxs and vulvar/Vag atrophy associated w/ menopause (Femring)* *atrophic vaginitis (Vagifem)* Acts: Estrogen supl Dose: Estring: Insert ring into upper third of Vag vault; remove and replace after 90 d; reassess 3–6 mo; Femring: Use lowest effective dose, insert vaginally, replace q3mo; Vagifem: 1 tab vaginally q day × 2 wk, then maint 1 tab 2×/wk, D/C or taper at 3–6 mo w/ P: [X, –] May ↑ PT/PTT/plt aggregation w/ thyroid Dz, toxic shock reported CI: Undiagnosed genital bleeding, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombophlebitis, recent MI, PRG, severe hepatic Dz Disp: Estring ring: 0.0075 mg/24 h; Femring ring: 0.05 and 0.1 mg/d Vagifem tab (Vag): 10 mcg SE: HA, leukorrhea, back pain, candidiasis, vaginitis, Vag discomfort/hemorrhage, arthralgia, insomnia, Abd pain; see estradiol, oral notes Estradiol/Levonorgestrel, Transdermal (Climara Pro) BOX: ↑ Risk endome-trial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in post-menopausal (≥ 65 y) Uses: *Menopausal vasomotor Sxs; prevent osteoporosis* Acts: Estrogen & progesterone Dose: 1 patch 1×/wk w/ P: [X, –] w/ ↓ Thyroid CI: AUB, estrogen-sensitive tumors, Hx thromboembolism, liver impair, PRG, hysterectomy Disp: Estradiol 0.045 mg/levonorgestrel 0.015 mg day patch SE: Site Rxn, Vag bleed/spotting, breast changes, Abd bloating/cramps, HA, retention fluid, edema, ↑ BP Notes: Apply lower Abd; for osteoporosis give Ca$^{2+}$/vit D supl; follow breast exams Estradiol/Norethindrone (Activella, Generic) BOX: ↑ Risk endome-trial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in postmenopausal (≥ 65 y) Uses: *Menopause vasomotor Sxs; prevent osteoporosis* Acts: Estrogen/progestin; plant derived Dose: 1 tab/d start w/ lowest dose combo w/ P: [X, –] w/ ↓ Ca$^{2+}$/thyroid CI: PRG; Hx breast CA; estrogen-dependent tumor; abnormal genital bleeding; Hx DVT, PE, or related disorders; recent (w/ in past year) arterial thromboembolic Dz (CVA, MI) Disp: Femhrt: Tabs 2.5/0.5, 5 mcg/1 mg; Activella: Tabs 1/0.5, 0.5 mg/0.1 mg SE: Thrombosis, dizziness, HA, libido changes, insomnia, emotional instability, breast pain Notes: Use in women w/ intact uterus; caution in heavy smokers; combo also used as OCP Estramustine Phosphate (Emcyt) Uses: *Advanced PCa* Acts: Estradiol w/ nitrogen mustard; exact mechanism unknown Dose: 14 mg/kg/d in 3–4 ÷ doses; on empty stomach, no dairy products w/ P: [NA, not used in females] CI: Active thromboembolitis or thromboembolic disorders Disp: Caps 140 mg SE: N/V, exacerbation of preexisting CHF, edema, hepatic disturbances, thrombophlebitis, MI, PE, gynecomastia in 20–100% Notes: Low-dose breast irradiation before may ↓ gynecomastia Estrogen, Conjugated (Premarin) BOX: ↑ Risk endometrial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in postmenopausal (≥ 65 y) Uses: *Mod–severe menopausal vasomotor Sxs; atrophic vaginitis, dyspareunia*; palliative advanced CAP; prevention & Tx of estrogen deficiency osteoporosis Acts: Estrogen replacement Dose: 0.3–1.25 mg/d PO; intravaginal cream 0.5–2g × 21 d, then off × 7 d or 0.5 mg twice weekly w/ P: [X, –] CI: Severe hepatic impair, genital bleeding of unknown cause, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombosis, thrombophlebitis, recent MI Disp: Tabs 0.3, 0.45, 0.625, 0.9, 1.25 mg; Vag cream 0.625 mg/g SE: ↑ Risk of endometrial
CA, gallbladder Dz, thromboembolism, HA, & possibly breast CA Notes: Generic products not equivalent

**Estrogen, Conjugated + Medroxyprogesterone (Prempro, Prem-phase) BOX:** ↑ Risk endometrial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in postmenopausal (≥ 65 y) Uses: *Mod–severe menopausal vasomotor Sxs; atrophic vaginitis; prevent postmenopausal osteoporosis* Acts: Hormonal replacement Dose: Prempro 1 tab PO daily; Premphase 1 tab PO daily w/ P: [X, –] CI: Severe hepatic impair, genital bleeding of unknown cause, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombosis, thrombophlebitis Disp: (As estrogen/medroxyprogesterone) Prempro: Tabs 0.3/1.5, 0.45/1.5, 0.625/2.5, 0.625/5 mg; Premphase: Tabs 0.625/0 (d 1–14) & 0.625/5 mg (d 15–28) SE: Gallbladder Dz, thromboembolism, HA, breast tenderness Notes: See WHI (www.whi.org); use lowest dose/shortest time possible

**Estrogen, Conjugated Synthetic (Cenestin, Enjuvia) BOX:** ↑ Risk endometrial CA. Do not use to prevent CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, and DVT in postmenopausal (50–79 y). ↑ Dementia risk in post-menopausal (≥ 65 y) Uses: *Vasomotor menopausal Sxs, vulvovaginalatrophy* Acts: Multiple estrogen replacement Dose: For all w/ intact uterus progestin × 10–14 d/28-d cycle; Vasomotor: 0.3–1.25 mg (Enjuvia) 0.625–1.25 mg (Cenestin) PO daily; Vag atrophy: 0.3 mg/d; Osteoporosis: (Cenestin) 0.625 mg/d w/ P: [X, –] CI: See Estrogen, conjugated Disp: Tabs, Cenestin, 0.3, 0.45, 0.625, 0.9, 1.25 mg; Enjuvia ER 0.3, 0.45, 0.625, 0.9, 1.25 mg SE: ↑ Risk endometrial/breast CA, gallbladder Dz, thromboembolism

**Eszopiclone (Lunesta) [C-IV]** Uses: *Insomnia* Acts: Nonbenzodiazepine hypnotic Dose: 2–3 mg/d hs Elderly: 1–2 mg/d hs; w/ hepatic impair use w/ CYP3A4 inhib (Table 10, p 319): 1 mg/d hs w/ P: [C, ?–] Disp: Tabs 1, 2, 3 mg SE: HA, xerostomia, dizziness, somnolence, hallucinations, rash, Infxn, unpleasant taste, anaphylaxis, angioedema Notes: High-fat meals ↓ absorption

**Etanercept (Enbrel) BOX:** Serious Infxns (bacterial sepsis, TB, reported); D/C w/ severe Infxn. Evaluate for TB risk; test for TB before use; lymphoma/other CA possible in children/adolescents possible Uses: *↓ Sxs of RA in pts who fail other DMARD* Crohn Dz Acts: TNF-receptor blocker Dose: Adults. RA 50 mg SQ weekly or 25 mg SQ 2×/wk (separated by at least 72–96 h). Peds 4–17 y. 0.8 mg/kg/wk (max 50 mg/wk) or 0.4 mg/kg (max 25 mg/dose) 2×/wk 72–96 h apart w/ P: [B, ?] w/ Predisposition to Infxn (ie, DM); may ↑ risk of malignancy in peds and young adults CI: Active Infxn Disp: Inj 25 mg/vial, 50 mg/mL syringe SE: HA, rhinitis, Inj site Rxn, URI, new-onset psoriasis Notes: Rotate Inj sites

**Ethambutol (Myambutol, Generic) Uses:** *Pulm TB* & other mycobacterial Infxns, MAC Acts: ↓ RNA synth Dose: Adults & Peds > 12 y. 15–25 mg/kg/d PO single dose; ↓ in renal impair, take w/ food, avoid antacids w/ P: [C, +] CI: Unconscious pts, optic neuritis Disp: Tabs 100, 400 mg SE: HA, hyperuricemia, acute gout, Abd pain, ↑ LFTs, optic neuritis, GI upset

**Ethinyl Estradiol & Norelgestromin (Ortho Evra) BOX:** Cigarette smoking ↑ risk of serious CV events. ↑ Risk w/ age & no. of cigarettes smoked. Hormonal contraceptives should not be used by women who are > 35 y and smoke. Different from OCP pharmacokinetics Uses: *Contraceptive patch* Acts: Estrogen & progestin Dose: Apply patch to Abd, buttocks, upper torso (not breasts), or upper outer arm at the beginning of the menstrual cycle; new patch is applied weekly for 3 wk; wk 4 is patch-free w/ P: [X, +/-] CI: PRG, Hx or current DVT/PE, stroke, MI, CV Dz, CAD; SBP ≥ 160
systolic mm Hg or DBP ≥ 100 diastolic mm Hg severe HTN; severe HA w/ focal neurologic Sx; breast/endometrial CA; estrogen-dependent neoplasms; hepatic dysfunction; jaundice; major surgery w/ prolonged immobilization; heavy smoking if > 35 y

Disp: 20 cm² patch (6-mg norelgestromin [active metabolite norgestimate] & 0.75 mg of ethinyl estradiol) SE: Breast discomfort, HA, site Rxns, N, menstrual cramps; thrombosis risks similar to OCP

Notes: Less effective in women > 90 kg; instruct pt does not protect against STD/HIV; discourage smoking

**Ethosuximide (Zarontin, Generic) Uses:** *Absence (petit mal) Sz*s* **Acts:** Anticonvulsant; ↑ Sz threshold **Dose:** *Adults & ped* > 6 y Initial, 500 mg PO ÷ bid; ↑ by 250 mg/d q4–7d PRN (max 1500 mg/d) usual maint 20–30 mg/kg. *Peds 3–6 y.* 250 mg/d; ↑ by 250 mg/d q4–7d PRN; maint 20–30 mg/kg/d ÷ bid; max 1500 mg/d w/ P: [D, +] In renal/hepatic impair; antiepileptics may ↑ risk of suicidal behavior or ideation **CI:** Component sensitivity **Disp:** Caps 250 mg; syrup 250 mg/5 mL **SE:** Blood dyscrasias, GI upset, drowsiness, dizziness, irritability **Notes:** Levels: *Trough:* just before next dose; *Therapeutic:* Peak: 40–100 mcg/mL; *Toxic Trough:* > 100 mcg/mL; *Half-life:* 25–60 h

**Etidronate Disodium (Didronel, Generic) Uses:** *↑ Ca²⁺ of malignancy, Paget Dz, & heterotopic ossification* **Acts:** ↓ Nl & abnormal bone resorption **Dose:** *Paget Dz:* 5–10 mg/kg/d PO ÷ doses (for 3–6 mo). ↑ Ca²⁺: 20 mg/kg/d IV × 30–90 d w/ P: [B PO (C parenteral), ?] Bisphosphonates may cause severe musculoskeletal pain **CI:** Overt osteomalacia, SCr > 5 mg/dL **Disp:** Tabs 200, 400 mg **SE:** GI intolerance (↓ by ÷ daily doses); hyperphosphatemia, hypomagnesemia, bone pain, abnormal taste, fever, convulsions, nephrotox **Notes:** Take PO on empty stomach 2 h before or 2 h pc

**Etidolac BOX:** May ↑ risk of CV events & GI bleeding; may worsen ↑ BP **Uses:** *OA & pain*, RA **Acts:** NSAID **Dose:** 200–400 mg PO bid-qid (max 1200 mg/d) w/ P: [C (D 3rd tri), ?] ↑ Bleeding risk w/ ASA, warfarin; ↑ nephrotox w/ cyclosporine; Hx CHF, HTN, renal/hepatic impair, PUD **CI:** Active GI ulcer **Disp:** Tabs 400, 500 mg; ER tabs 400, 500, 600 mg; caps 200, 300 mg **SE:** N/V/D, gastritis, Abd cramps, dizziness, HA, depression, edema, renal impair **Notes:** Do not crush tabs

**Etomidate (Amidate, Generic) Uses:** *Induce general or short-procedure anesthesia* **Acts:** Short-acting hypnotic **Dose:** *Adults & Peds* > 10 y Induce anesthesia 0.2–0.6 mg/kg IV over 30–60 s; *Peds* < 10 y. Not recommended *Peds. ECC 2010.* Rapid sedation: 0.2–0.4 mg/kg IV/IO over 30–60 s; max dose 20 mg w/ P: [C, ?] **CI:** Hypersens **Disp:** Inj 2 mg/mL **SE:** Inj site pain, myoclonus

**Etonogestrel Implant (Implanon) Uses:** *Contraception* **Acts:** Transforms endometrium from proliferative to secretory **Dose:** 1 implant subdermally q3y w/ P: [X, +] Exclude PRG before implant **CI:** PRG, hormonally responsive tumors, breast CA, AUB, hepatic tumor, active liver Dz, Hx thromboembolic Dz **Disp:** 68-mg implant 4 cm long **SE:** Spotting, irregular periods, amenorrhea, dysmenorrhea, HA, tender breasts, N, Wt gain, acne, ectopic PRG, PE, ovarian cysts, stroke, ↑ BP **Notes:** 99% effective; remove implant and replace; restricted distribution; physician must register and train; does not protect against STDs; site nondominant arm 8–10 cm above medial epicondyle of humerus; implant must be palpable after placement

**Etonogestrel/Ethinyl Estradiol Vaginal Insert (NuvaRing) BOX:** Cigarette smoking ↑ risk of serious CV events. ↑ Risk w/ age & # cigarettes smoked. Hormonal contraceptives should not be used by women who are > 35 y and smoke. Different from OCP pharmacokinetics **Uses:** *Contraceptive* **Acts:** Estrogen & progestin combo **Dose:** Rule out PRG first; insert ring vaginally for 3 wk, remove for 1 wk; insert new ring 7 d after last removed (even if bleeding) at same time of day ring removed. 1st day of menses is day 1, insert before day 5 even if bleeding. Use other contraception for first 7 d
of starting Rx. See PI if converting from other contraceptive; after delivery or 2nd tri Ab, insert 4 wk postpartum (if not breast-feeding) w/ P: [X, ?–] HTN, gallbladder Dz, ↑ lipids, migraines, sudden HA CI: PRG, heavy smokers > 35 y, DVT, PE, cerebro-/CV Dz, estrogen-dependent neoplasm, undiagnosed abnormal genital bleeding, hepatic tumors, cholestatic jaundice Disp: Intravag ring: ethinyl estradiol 0.015 mg/d & etonogestrel 0.12 mg/d Notes: If ring removed, rinse w/ cool/lukewarm H₂O (not hot) & reinsert ASAP; if not reinserted w/ in 3 h, effectiveness ↓; do not use w/ diaphragm

Etoposide [VP-16] (Etopophos, Toposar, Vepesid, Generic) Uses: *Testicular, NSCLC, Hodgkin Dz, & NHLs, pedis ALL, & allogeneic/autologous BMT in high doses* Acts: Topoisomerase II inhib Dose: 50 mg/m²/d IV for 3–5 d; 50 mg/m²/d PO for 21 d (PO availability = 50% of IV); 2–6 g/m² or 25–70 mg/kg in BMT (per protocols); ↓ in renal/hepatic impair w/ P: [D, –] CI: IT administration Disp: Caps 50 mg; Inj 20 mg/mL SE: N/V (emesis in 10–30%), ↓ BM, alopecia, ↓ BP w/ rapid IV, anorexia, anemia, leukopenia, ↑ risk secondary leukemias


Everolimus (Afinitor, Affinitor Disperz) Uses: *Advanced RCC w/ sunitinib or sorafenib failure, subependymal giant cell astrocytoma and PNET in nonsurgical candidates w/ tuberous sclerosis*, renal angiomyolipoma w/ tuberous sclerosis Acts: mTOR inhib Dose: 10 mg PO daily, ↓ to 5 mg w/ SE or hepatic impair; avoid w/ high fat meal w/ P: [D, ?] Avoid w/ or if received live vaccines; w/ CYP3A4 inhib CI: Compound/rapamycin derivative hypersens Disp: Tabs 2.5, 5, 7.5, 10 mg; Disperz for suspen 2, 3, 5 mg SE: Noninfectious pneumonitis, ↑ Infxn risk, oral ulcers, asthenia, cough, fatigue, diarrhea, ↑ glucose/SCr/lipids; ↓ hemoglobin/WBC/plt Notes: Follow CBC, LFT, glucose, lipids; see also everolimus (Zortress)

Everolimus (Zortress) Uses: *Prevent renal and liver transplant rejection; combo w/ basiliximab w/ ↓ dose of steroids and cyclosporine* Acts: mTOR inhib (mammalian rapamycin target) Dose: 0.75 mg PO bid, adjust to trough levels 3–8 ng/mL w/ P: [D, ?] CI: Compound/rapamycin-derivative hypersens Disp: Tabs 0.25, 0.5, 0.75 mg SE: Peripheral edema, constipation, ↑ BP, N, ↓ Hct, UTI, ↑ lipids Notes: Follow CBC, LFT, glucose, lipids; see also everolimus (Afinitor); trough level 3–8 ng/mL w/ cyclosporine

Exemestane (Aromasin, Generic) Uses: *Advanced breast CA in post-menopausal women w/ progression after tamoxifen* Acts: Irreversible, steroidal aromatase inhib; ↓ estrogens Dose: 25 mg PO daily after a meal w/ P: [D, ?–] CI: PRG, component sensitivity Disp: Tabs 25 mg SE: Hot flashes, N, fatigue, ↑ alkaline phosphate

Exenatide (Byetta) Uses: Type 2 DM combined w/ metformin &/or sulfonylurea Acts: Incretin mimetic: ↑ insulin release, ↓ glucagon secretion, ↓ gastric emptying, promotes satiety Dose: 5 mcg SQ bid w/ in 60 min before A.M. & P.M. meals; ↑ to 10 mcg SQ bid after 1 mo PRN; do not give pc w/ P: [C, ?–] May ↓ absorption of other drugs (take antibiotics/contraceptives 1 h before) CI: CrCl < 30 mL/min Disp: Soln 5, 10 mcg/dose in prefilled pen SE: Hypoglycemia, N/V/D, dizziness, HA,
Ezetimibe (Zetia) Uses: *Hypercholesterolemia alone or w/ a HMG-CoA reductase inhib*  
**Acts:** ↓ Absorption of cholesterol & phytosterols w/ HMG-CoA-reductase inhib  
**Dose:** *Adults & Peds* > 10 y. 10 mg/d PO w/ P: [C, +/–]  
\[\text{Bile acid sequestrants} \downarrow \text{bioavailability}\]  
**Cl:** Hepatic impair  
**Disp:** Tabs 10 mg SE: HA, D, Abd pain, ↑ transaminases w/ HMG-CoA reductase inh, erythema multiforme  
**Notes:** See ezetimibe/simvastatin

Ezetimibe/Simvastatin (Vytorin) Uses: *Hypercholesterolemia*  
**Acts:** ↓ Absorption of cholesterol & phytosterols w/ HMG-CoA-reductase inhib  
**Dose:** 10/10–10/80 mg/d PO; w/ cyclosporine/or danazol: 10/10 mg/d max;  
\[\text{w/ diltiazem/amiodarone or verapamil: 10/10 mg/d max; } \downarrow \text{w/ severe renal Insuff; give 2 h before or 4 h after bile acid sequestrants} \]  
\[w/ CYP3A4 inhib (Table 10, p 319), gemfibrozil, niacin > 1 g/d, danazol, amiodarone, verapamil; avoid high dose w/ diltiazem; w/ Chinese pt on lipid-modifying meds} \]  
\[\text{CI: PRG/lactation; w/ cyclosporine & danazol; liver Dz, ↑ LFTs}\]  
**Disp:** Tabs (mg simvastatin/mg ezetimibe) 10/10, 10/20, 10/40, 10/80  
**SE:** HA, GI upset, myalgia, myopathy (muscle pain, weakness, or tenderness w/ creatine kinase 10 × ULN, rhabdomyolysis), hep, Infxn  
**Notes:** Monitor LFTs, lipids; ezetimibe/simvastatin combo lowered LDL more than simvastatin alone in ENHANCE study, but was no difference in carotid-intima media thickness; pts to report muscle pain

Ezogabine (Potiga) Uses: *Partial-onset Szs*  
**Acts:** ↑ Transmembrane K+ currents & augment GABA mediated currents  
**Dose:** *Adult.* 100 mg PO 3 × d; ↑ dose by 50 mg 3 × d qwk, max dose 400 mg 3 × d (1200 mg/d); ↓ dosage in elderly, renal/hepatic impair (see labeling); swallow whole w/ P: [C, ?,/–] May need to ↑ dose when used w/ phenytoin & carbamazepine; monitor digoxin levels  
**Disp:** Tabs 50, 200, 300, 400 mg SE: Dizziness, somnolence, fatigue, abnormal coordination, gait disturbance, confusion, psychotic Sxs, hallucinations, attention disturbance, memory impair, vertigo, tremor, blurred vision, aphasia, dysarthria, urinary retention, ↑ QT interval, suicidal ideation/behavior, withdrawal Szs  
**Notes:** Withdraw over min. of 3 wk

Famiclovir (Famvir, Generic) Uses: *Acute herpes zoster (shingles) & genital herpes*  
**Acts:** ↓ Viral DNA synth  
**Dose:** *Zoster:* 500 mg PO q8h × 7 d. *Simplex:* 125–250 mg PO bid;  
**Cl:** Component sensitivity  
**Disp:** Tabs 125, 250, 500 mg SE: Fatigue, dizziness, HA, pruritus, N/D  
**Notes:** Best w/ in 72 h of initial lesion

Famotidine (Fluid, Pepcid, Pepcid AC, Generic) [OTC] Uses: *Short-term Tx of duodenal ulcer & benign gastric ulcer; maint for duodenal ulcer, hyper-secretory conditions, GERD, & heartburn*  
**Acts:** H₂-antagonist; ↓ gastric acid  
**Dose:** *Adults.* *Ulcer:* 20 mg IV q12h or 20–40 mg PO qhs × 4–8 wk. *Hypersecretion:* 20–160 mg PO q6h. *GERD:* 20 mg PO bid × 6 wk; maint: 20 mg PO hs. *Heartburn:* 10 mg PO PRN q12h. *Peds.* 0.5–1 mg/kg/d; ↓ in severe renal Insuff w/ P: [B, M]  
**Cl:** Component sensitivity  
**Disp:** Tabs 10, 20, 40 mg; chew tabs 10 mg; susp 40 mg/5 mL; gelatin caps 10
mg; *Fluxid ODT 20 mg; Inj 10 mg/2 mL SE: Dizziness, HA, constipation, N/V/D, ↓ plt, hepatitis
Notes: Chew tabs contain phenylalanine

Febuxostat (Uloric) Uses: *Hyperuricemia and gout* Acts: Xanthine oxidase inhib (enzyme that converts hypoxanthine to xanthine to uric acid) Dose: 40 mg PO 1 × d, ↑ 80 mg if uric acid not < 6 mg/dL after 2 wk w/ P: [C, ?–] CI: Use w/ azathioprine, mercaptopurine, theophylline Supplied: Tabs 40, 80 mg SE: Dizziness, HA, constipation, N/V/D, ↓ plt, hepatitis

Felodipine (Plendil) Uses: *HTN & CHF* Acts: CCB Dose: 2.5–10 mg PO daily; swallow whole; ↓ in hepatic impair w/ P: [C, ?] ↑ Effect w/ azole antifungals, erythromycin, grapefruit juice CI: Component sensitivity Disp: ER tabs 2.5, 5, 10 mg SE: ↑ LFTs, rash, myalgia Notes: OK to continue w/ gouty flare or use w/ NSAIDs

Fenofibrate (Antara, Lipofen, Lofibra, TriCor, Triglide, Generic) Uses: *Hypertriglyceridemia, hypercholesteremia* Acts: ↓ Triglyceride synth Dose: 43–160 mg/d; ↓ w/ renal impair; take w/ meals w/ P: [C, ?] CI: Hepatic/severe renal Insuff, primary biliary cirrhosis, unexplained ↑ LFTs, gallbladder Dz Disp: Caps 35, 40, 43, 48, 50, 54, 67, 105, 107, 130, 134, 145, 160, 200 mg SE: GI disturbances, cholecystitis, arthralgia, myalgia, dizziness, ↑ LFTs Notes: Monitor LFTs

Fenofibric Acid (Fibricor, Trilipix) Uses: *Adjunct to diet for ↑ triglycerides, to ↓ LDL-C, cholesterol, triglycerides, and apo B, to ↑ HDL-C in hypercholesterolemia/mixed dyslipidemia; adjunct to diet w/ a statin to ↓ triglycerides and ↑ HDL-C w/ CHD or w/ CHD risk* Acts: Agonist of peroxisome proliferator-activated receptor-alpha (PPAR-α), causes ↑ VLDL catabolism, fatty acid oxidation, and clearing of triglyceride-rich particles w/ ↓ VL DL, triglycerides; ↑ HDL in some Dose: Mixed dyslipidemia w/ a statin: 135 mg PO × 1 d; Hypertriglyceridaemia: 45–135 mg 1 × d; maint based on response; Primary hypercholesterolemia/mixed dyslipidemia: 135 mg PO 1 × d; 135 mg/d max; 35 mg w/ renal impair w/ P: [C, –] Multiple interactions, ↑ embolic phenomenon CI: Severe renal impair, pt on dialysis, active liver/gall bladder Dz, nursing Disp: DR Caps 35, 45, 105, 135 mg SE: HA, back pain, nasopharyngitis, URI, N/D, myalgia, gall stones, ↓ CBC (usually stabilizes), rare myositis/rhabdomyolysis Notes: CBC, lipid panel, LFTs; D/C if LFT > 3× ULN

Fenoldopam (Corlopam, Generic) Uses: *Hypertensive emergency* Acts: Rapid vasodilator Dose: Initial 0.03–0.1 mcg/kg/min IV Inf, titrate q15min by 0.05–0.1 mcg/kg/min to max 1.6 mcg/kg/min w/ P: [B, ?–] ↓ BP w/ β-blockers CI: Allergy to sulfites Disp: Inj 10 mg/mL SE: ↓ BP, edema, facial flushing, N/V/D, atrial flutter/fibrillation, ↑ IOP Notes: Avoid concurrent β-blockers

Fenoprofen (Nalfon, Generic) BOX: May ↑ risk of CV events and GI bleeding Uses: *Arthritis & pain* Acts: NSAID Dose: 200–600 mg q4–8h, to 3200 mg/d max; w/ food w/ P: [B (D 3rd tri), +/–] CHF, HTN, renal/hepatic impair, Hx PUD CI: NSAID sensitivity Disp: Caps 200, 400, 600 mg SE: GI disturbance, dizziness, HA, rash, edema, renal impair, hep Notes: Swallow whole

Fentanyl (Sublimaze, Generic) [C-II] Uses: *Short-acting analgesic* in anesthesia & PCA Acts: Narco tic analgesic Dose: Adults. 1–2 mcg/kg or 25–100 mcg/dose IV/IM titrated; Anesthesia: 5–15 mcg/kg; Pain: 200 mcg over 15 min, titrate to effect Peds. 1–2 mcg/kg IV/IM q1–4h titrate; ↓ in renal impair w/ P: [B, +] CI: Paralytic ileus ↑ ICP, resp depression, severe renal/hepatic impair Disp: Inj 0.05 mg/mL SE: Sedation, ↓ BP, ↓ HR, constipation, N, resp depression, miosis Notes: 0.1 mg fentanyl = 10 mg morphine IM

Fentanyl, Transdermal (Duragesic, Generic) [C-II] BOX: Potential for abuse and fatal OD Uses: *Persistent mod–severe chronic pain in pts already tolerant to opioids* Acts: Narcotic Dose: Apply
patch to upper torso q72h; dose based on narcotic requirements in previous 24 h; start 25 mcg/h patch q72h; ↓ in renal impair w/ P: [B, +] w/ CYP3A4 inhib (Table 10, p 319) may ↑ fentanyl effect, w/ Hx substance abuse CI: Not opioid tolerant, short-term pain management, postop outpatient pain in outpatient surgery, mild pain, PRN use, ↑ ICP, resp depression, severe renal/hepatic impair, peds < 2 y Disp: Patches 12.5, 25, 50, 75, 100 mcg/h SE: Resp depression (fatal), sedation, ↓ BP, ↓ HR, constipation, N, miosis Notes: 0.1 mg fentanyl = 10 mg morphine IM; do not cut patch; peak level in PRG 24–72 h

Fentanyl, Transmucosal (Abstral, Actiq, Fentora, Lazanda, Onsolis, Generic) [C-II] BOX: Potential for abuse and fatal OD; use only in pts w/ chronic pain who are opioid tolerant; CI in acute/postop pain; do not substitute for other fentanyl products; fentanyl can be fatal to children, keep away; use w/ strong CYP3A4 inhib may ↑ fentanyl levels. Abstral, Onsolis restricted distribution

Uses: *Breakthrough CA pain w/ tolerance to opioids* Acts: Narcotic analgesic, transmucosal absorption

Dose: Titrate to effect

- **Abstral**: Start 100 mcg SL, 2 doses max per pain breakthrough episode; wait 2 h for next breakthrough dose; limit to < 4 breakthrough doses w/ successful baseline dosing
- **Actiq**: Start 200 mcg PO × 1, may repeat × 1 after 30 min
- **Fentora**: Start 100 mcg buccal tab × 1, may repeat in 30 min, 4 tabs/dose max
- **Lazanda**: Through TIRF REMS Access Program; initial 1 × 100 mcg spray; if no relief, titrate for breakthrough pain as follows: 2 × 100 mcg spray (1 in each nostril); 1 × 400 mcg; 2 × 400 mcg (1 in each nostril); wait 2 h before another dose; max 4 doses/24h
- **Onsolis**: Start 200 mcg film, ↑ 200 mcg increments to max four 200-mcg films or single 1200-mcg film

W/P: [B, +] resp/CNS depression possible; CNS depressants/CYP3A4 inhib may ↑ effect; may impair tasks (driving, machinery); w/ severe renal/hepatic impair CI: Opioid intolerant pt, acute/postop pain

Disp:

- **Abstral**: SL tabs 100, 200, 300, 400, 600, 800 mcg
- **Actiq**: Lozenges on stick 200, 400, 600, 800, 1200, 1600 mcg
- **Fentora**: Buccal tabs 100, 200, 400, 600, 800 mcg
- **Lazanda**: Nasal spray metered dose audible and visual counter, 8 doses/bottle, 100/400 mcg/spray
- **Onsolis**: Buccal soluble film 200, 400, 600, 800, 1200 mcg

SE: Sedation, ↓ BP, ↓ HR, constipation, N/V, ↓ resp, dyspnea, HA, miosis, anxiety, confusion, depression, rash dizziness Notes: 0.1 mg fentanyl = 10 mg IM morphine

Ferrous Gluconate (Fergon [OTC], Others) BOX: Accidental OD of iron-containing products is a leading cause of fatal poisoning in children < 6 y. Keep out of reach of children

Uses: *Iron-deficiency anemia* & Fe supl

Acts: Dietary supl

Dose: Adults. 100–200 mg of elemental Fe/d ÷ doses. Peds. 4–6 mg/kg/d ÷ doses; on empty stomach (OK w/ meals if GI upset occurs); avoid antacids w/ P: [A, ?] CI: Hemochromatosis, hemolytic anemia

Disp: Tabs Fergon 240 (27 mg Fe), 246 (28 mg Fe), 300 (34 mg Fe), 324 mg (38 mg Fe) SE: GI upset, constipation, dark stools, discoloration of urine, may stain teeth Notes: 12% Elemental Fe; false(+) stool guaiac; keep away from children; severe tox in OD
Ferrous Gluconate Complex (Ferrlecit) Uses: *Iron-deficiency anemia or supl to erythropoietin Rx therapy*  
**Acts:** Fe suppl  
**Dose:** Test dose: 2 mL (25 mg Fe) IV over 1 h, if OK, 125 mg (10 mL) IV over 1 h. *Usual cumulative dose:* 1 g Fe over 8 sessions (until favorable Hct) w/ P: [B, ?] CI: Non–Fe-deficiency anemia; CHF; Fe overload  
**Disp:** Inj 12.5 mg/mL Fe  
**SE:** ↓ BP, serious allergic Rxns, GI disturbance, Inj site Rxn  
**Notes:** Dose expressed as mg Fe; may infuse during dialysis

Ferrous Sulfate (OTC) Uses: *Fe-deficiency anemia & Fe suppl*  
**Acts:** Dietary suppl  
**Dose:**  
**Adults.** 100–200 mg elemental Fe/d in ÷ doses.  
**Peds.** 1–6 mg/kg/d ÷ daily–tid; on empty stomach (OK w/ meals if GI upset occurs); avoid antacids w/ P: [A, ?] ↑ Absorption w/ vit C; ↓ absorption w/ tetracycline, fluoroquinolones, antacids, H₂ blockers, proton pump inhib  
**CI:** Hemochromatosis, hemolytic anemia  
**Disp:** Tabs 187 (60 mg Fe), 200 (65 mg Fe), 324 (65 mg Fe), 325 mg (65 mg Fe); SR caplets & tabs 160 (50 mg Fe), 200 mg (65 mg Fe); gtt 75 mg/0.6 mL (15 mg Fe/0.6 mL); elixir 220 mg/5 mL (44 mg Fe/5 mL); syrup 90 mg/5 mL (18 mg Fe/5 mL)  
**SE:** GI upset, constipation, dark stools, discolored urine

Ferumoxytol (Feraheme) Uses: *Iron-deficiency anemia in chronic kidney Dz*  
**Acts:** Fe replacement  
**Dose:**  
**Adults.** 510 mg IV × 1, then 510 mg IV × 1 3–8 d later; give 1 mL/s w/ P: [C, ?/–]  
Monitor for hypersens & ↓ BP for 30 mins after dose, may alter MRI studies  
**CI:** Iron overload; hypersens to ferumoxytol  
**Disp:** IV soln 30 mg/mL (510 mg elemental Fe/17 mL)  
**SE:** N/D, constipation, dizziness, hypotension, peripheral edema, hypersens Rxn  
**Notes:** hematologic response 1 month after 2nd dose

Fesoterodine (Toviaz) Uses: * OAB w/ urge urinary incontinence, urgency, frequency*  
**Acts:** Competitive muscarinic receptor antagonist, ↓ bladder muscle contractions  
**Dose:**  
**4 mg PO qd, ↑ to 8 mg PO daily PRN w/ P: [C, ?/–] Avoid > 4 mg w/ severe renal Insuff or w/ CYP3A4 inhib (eg, ketoconazole, clarithromycin); w/ BOO, ↓ GI motility/constipation, NAG, MyG  
**CI:** Urinary/gastric retention, or uncontrolled NAG, hypersens to class  
**Disp:** Tabs 4, 8 mg  
**SE:** Dry mouth, constipation, ↓ sweating can cause heat prostration

Fexofenadine (Allegra, Allegra-D, Generic) Uses: *Allergic rhinitis; chronic idiopathic urticaria*  
**Acts:** Selective antihistamine, antagonizes H₁-receptors; Allegra-D contains w/ pseudoephedrine  
**Dose:**  
**Adults & Peds > 12 y.** 60 mg PO bid or 180 mg/d; 12-h ER form bid, 24-h ER form qd.  
**Peds 2–11 y.** 30 mg PO bid; ↓ in renal impair w/ P: [C, +] w/ Nevirapine  
**CI:** Component sensitivity  
**Disp:** Tabs, 30, 60, 180 mg; susp 6 mg/mL; Allegra-D 12-h ER tab (60 mg fexofenadine/120 mg pseudoephedrine), Allegra-D 24-h ER (180 mg fexofenadine/240 mg pseudoephedrine)  
**SE:** Drowsiness (rare), HA, ischemic colitis

Fidaxomicin (Dificid) Uses: *Clostridium difficile-associated diarrhea*  
**Acts:** Macrolide antibiotic  
**Dose:** 200 mg PO bid × 10 d w/ P: [B, +/–] Not for systemic Infxn or < 18 y; to ↓ resistance, use only when diagnosis suspected/proven  
**Disp:** Tabs 200 mg SE: N/V, Abd pain, GI bleed, anemia, neutropenia

Filgrastim [G-CSF] (Neupogen) Uses: *↓ Incidence of Infxn in febrile neutropenic pts; Rx chronic neutropenia*  
**Acts:** Recombinant G-CSF  
**Dose:**  
**Adults & Peds.** 5 mcg/kg/d SQ or IV single daily dose; D/C when ANC > 10,000 cells/mm³ w/ P: [C, ?] w/ Drugs that potentiate release of neutrophils (eg, Li)  
**CI:** Allergy to E. coli-derived proteins or G-CSF  
**Disp:** Inj 300 mcg/mL, 480 mg/1.6 mL SE: Fever, alopecia, N/V/D, splenomegaly, bone pain, HA, rash  
**Notes:** CBC & plt; monitor for cardiac events; no benefit w/ ANC > 10,000 cells/mm³
Finasteride (Proscar [Generic], Propecia) Uses: *BPH & androgenetic alopecia*  
**Acts:** ↓ 5-alpha-reductase  
**Dose:**  
- **BPH:** 5 mg/d PO.  
- **Alopecia:** 1 mg/d PO; food ↓ absorption w/ P: [X, –]  

Hepatic impair CI: Pregnant women should avoid handling pills, teratogen to male fetus  
**Disp:** Tabs 1 mg (Propecia), 5 mg (Proscar) SE: ↓ Libido, vol ejaculate, ED, gynecomastia; may slightly ↑ risk of high grade prostate CA  
**Notes:** Both ↓ PSA by ~50%; reestablish PSA baseline 6 mo (double PSA for “true” reading); 3–6 mo for effect on urinary Sxs; continue to maintain new hair, not for use in women

Fingolimod (Gilenya) Uses: *Relapsing MS*  
**Acts:** Sphingosine 1-phosphate receptor modulator; ↓ lymphocyte migration into CNS  
**Dose:**  
- **Adults:** 0.5 mg PO 1 × d; monitor for 6 h after 1st dose for bradycardia; monitor w/ P: [C, –]  

Monitor w/ severe hepatic impair and if on Class 1a or III antiarrhythmics/beta-blockers/CCBs (rhythm disturbances); avoid live vaccines during & 2 mo after D/C; ketoconazole ↑ level  
**Disp:** Caps 0.5 mg SE: HA, D, back pain, dizziness, bradycardia, AV block, HTN, Infxns, macular edema, ↑ LFTs, cough, dyspnea  
**Notes:** Obtain baseline ECG, CBC, LFTs & eye exam; women of childbearing potential should use contraception during & 2 mo after D/C

Flavoxate (Generic) Uses: *Relief of Sx of dysuria, urgency, nocturia, suprapubic pain, urinary frequency, incontinence*  
**Acts:** Antispasmodic  
**Dose:**  
- **Adults:** 100–200 mg PO tid-qid w/ P: [B, ?]  

CI: GI obst, GI hemorrhage, ileus, achalasia, BPH  
**Disp:** Tabs 100 mg SE: Drowsiness, blurred vision, xerostomia

Flecainide (Tambocor) BOX: ↑ Mortality in pts w/ ventricular arrhythmias and recent MI; pulm effects reported; ventricular proarrhythmic effects in AF/A flutter, not OK for chronic AF  
**Uses:** Prevent AF/A flutter & PSVT, *prevent/suppress life-threatening ventricular arrhythmias*  
**Acts:** Class 1C antiarrhythmic  
**Dose:**  
- **Adults:** Start 50 mg PO q12h; ↑ by 50 mg q12h q4d, to max 400 mg/d max  
- **Peds:** 3–6 mg/kg/d in 3 ÷ doses; ↓ w/ renal impair, w/ P: [C, +]  

Monitor w/ hepatic impair, ↑ conc w/ amiodarone, digoxin, quinidine, ritonavir/amprenavir, β-blockers, vera-pamil; may worsen arrhythmias CI: 2nd-/3rd-degree AV block, right BBB w/ bifascicular or trifascicular block, cardiogenic shock, CAD, ritonavir/amprenavir, alkalinizing agents  
**Disp:** Tabs 50, 100, 150 mg SE: Dizziness, visual disturbances, dyspnea, palpitations, edema, CP, tachycardia, CHF, HA, fatigue, rash, N  
**Notes:** Initiate Rx in hospital; dose q8h if pt is intolerant/uncontrolled at q12h; Levels: Trough: Just before next dose; Therapeutic: 0.2–1 mcg/mL; Toxic: > 1 mcg/mL; half-life: 11–14 h

Flouxuridine (Generic) BOX: Administration by experienced physician only; pts should be hospitalized for 1st course d/t risk for severe Rxn  
**Uses:** *GI adenoma, liver, renal CAs*; colon & pancreatic CAs  
**Acts:** Converted to 5-FU; inhibits thymidylate synthase; ↓ DNA synthase (S-phase specific)  
**Dose:**  
- **Adults:** 0.1–0.6 mg/kg/d for 1–6 wk (per protocols) usually intraarterial for liver mets w/ P: [D, –]  

Interaction w/ vaccines CI: BM suppression, poor nutritional status, serious Infxn, PRG, component sensitivity  
**Disp:** Inj 500 mg SE: ↓ BM, anorexia, Abd cramps, N/V/D, mucositis, alopecia, skin rash, & hyperpigmentation; rare neurotox (blurred vision, depression, nyctagmus, vertigo, & lethargy); intraarterial catheter-related problems (ischemia, thrombosis, bleeding, & Infxn)  
**Notes:** Need effective birth control; palliative Rx for inoperable/incurable pts

Fluconazole (Diflucan, Generic) Uses: *Candidiasis (esophageal, oropharyngeal, urinary tract, Vag, prophylaxis); cryptococcal meningitis, prophylaxis w/ BMT*  
**Acts:** Antifungal; ↓ cytochrome P-450 sterol demethylation.  
**Spectrum:** All Candida sp except C. krusei  
**Dose:**  
- **Adults:** 100–400 mg/d PO or IV.  
- **Vaginitis:** 150 mg PO daily.  
- **Crypto:** Doses up to 800 mg/d reported; 400 mg d 1, then 200 mg × 10–12 wk after CSF (–).  
- **Peds:** 3–6 mg/kg/d PO or IV; 12 mg/kg/d/systemic Infxn; ↓ in renal impair
Fludarabine (Generic) BOX: Administer only under supervision of qualified physician experienced in chemotherapy. Can ↓ BM and cause severe CNS effects (blindness, coma, and death). Severe/fatal autoimmune hemolytic anemia reported; monitor for hemolysis. Use w/ pentostatin not OK (fatal pulm tox) Uses: *Autoimmune hemolytic anemia, CLL, cold agglutinin hemolysis*, low-grade lymphoma, mycosis fungoides Acts: ↓ Ribonucleotide reductase; blocks DNA polymerase-induced DNA repair

Dose: 18–30 mg/m²/d for 5 d, as a 30-min Inf (per protocols); ↓ w/ renal impair w/ P: [D, –] Give cytarabine before fludarabine (↓ its metabolism) CI: w/ Pentostatin, severe Infxns, CrCl < 30 mL/min, hemolytic anemia Disp: Inj 50 mg SE: ↓ BM, N/V/D, ↑ LFTs, edema, CHF, fever, chills, fatigue, dyspnea, nonproductive cough, pneumonitis, severe CNS tox rare in leukemia, autoimmune hemolytic anemia

Fludrocortisone Acetate (Florinef, Generic) Uses: *Adrenocortical Insuff, Addison Dz, salt-wasting synd* Acts: Mineralocorticoid Dose: Adults. 0.1–0.2 mg/d PO. Peds. 0.05–0.1 mg/d PO w/ P: [C, ?] CI: Systemic fungal Infxns; known allergy Disp: Tabs 0.1 mg SE: HTN, edema, CHF, HA, dizziness, convulsions, acne, rash, bruising, hyperglycemia, hypothalamic-pituitary-adrenal suppression, cataracts Notes: For adrenal Insuff, use w/ glucocorticoid; dose changes based on plasma renin activity

Flumazenil (Romazicon, Generic) Uses: *Reverse sedative effects of benzodiazepines & general anesethia* Acts: Benzodiazepine receptor antagonist Dose: Adults. 0.2 mg IV over 15 s; repeat PRN, to 1 mg max (5 mg max in benzodiazepine OD). Peds. 0.01 mg/kg (0.2 mg/dose max) IV over 15 s; repeat 0.005 mg/kg at 1-min intervals to max 1 mg total; ↓ in hepatic impair w/ P: [C, ?] CI: TCA OD; if pts given benzodiazepines to control life-threatening conditions (ICP/status epilepticus) Disp: Inj 0.1 mg/mL SE: N/V, palpitations, HA, anxiety, nervousness, hot flashes, tremor, blurred vision, dyspnea, hyperventilation, withdrawal synd Notes: Does not reverse narcotic Sx or amnesia, use associated w/ Szs

Fluorouracil, Injection [5-FU] (Generic) BOX: Administration by experienced chemotherapy physician only; pts should be hospitalized for 1st course d/t risk for severe Rxn Uses: *Colorectal, gastric, pancreatic, breast, basal cell*, head, neck, bladder CAs Acts: Inhibits thymidylate synthetase (↓ DNA synth, S-phase specific) Dose: 370–1000 mg/m²/d × 1–5 d IV push to 24-h cont Inf; protracted venous Inf of 200–300 mg/m²/d (per protocol); 800 mg/d max w/ P: [D, ?] ↑ Tox w/ allopurinol; do not give live vaccine before 5-FU CI: Poor nutritional status, depressed BM Fxn, thrombocytopenia, major surgery w/ in past mo, G6PD enzyme deficiency, PRG, serious Infxn, bili > 5 mg/dL Disp: Inj 50 mg/mL SE: Stomatitis, esophago-pharyngitis, N/V/D, anorexia, ↓ BM, rash/dry skin/photosens, tingling in hands/feet w/ pain (palmar-plantar erythrodysesthesia), phlebitis/discoloration at Inj sites Notes: ↑ Thiamine intake; contraception OK

Fluorouracil, Topical [5-FU] (Carac, Efudex, Fluoroplex, Generic) Uses: *Basal cell carcinoma (when standard therapy impractical); actinic/solar keratosis* Acts: Inhibits thymidylate synthetase (↓ DNA synth, S-phase specific) Dose: 5% cream bid × 2–6 wk w/ P: [D, ?] Irritant chemotherapy CI: Component sensitivity Disp: Cream 0.5, 1, 5%; soln 1, 2, 5% SE: Rash, dry skin, photosens Notes: Healing may not be evident for 1–2 mo; wash hands thoroughly; avoid occlusive dressings; do not
overuse

### Fluoxetine (Gaboxtine, Prozac, Prozac Weekly, Sarafem, Generic) BOX: Closely monitor for worsening depression or emergence of suicidality, particularly in ped pt

**Uses:** 
- Depression, OCD, panic disorder, bulimia (Prozac)*
- PMDD (Sarafem)*

**Acts:** SSRI

**Dose:**
- 20 mg/d PO (max 80 mg/d) or 20 mg or 20 mg intermittently, start 14 d prior to menses, repeat w/ each cycle; ↓ in hepatic failure w/ P: [C, ?/–]
- Serotonin synd w/ MAOI, SSRI, serotonin agonists, linezolid; QT prolongation w/ phenothiazines; do not use w/ clopidogrel (↓ effect)

**CI:** w/ MAOI/thioridazine (wait 5 wk after D/C before MAOI)

**Disp:**
- Prozac: Caps 10, 20, 40 mg; scored tabs 10, 20 mg; SR weekly caps 90 mg; soln 20 mg/5 mL.
- Sarafem: Caps 10, 15, 20 mg

**SE:** N, nervousness, Wt loss, HA, insomnia

### Fluoxymesterone (Androxy) [C-III]

**Uses:** Androgen-responsive *breast CA, hypogonadism*

**Acts:** ↓ Secretion of LH & FSH (feedback inhibition)

**Dose:**
- Breast CA: 10–40 mg/d ÷ × 1–3 mo.
- Hypogonadism: 5–20 mg/d w/ P: [X, ?/–] ↑ Effect w/ anticoagulants, cyclosporine, insulin, Li, narcotics

**CI:** Serious cardiac, liver, or kidney Dz; PRG

**Disp:** Tabs 10 mg

**SE:** Priapism, edema, virilization, amenorrhea & menstrual irregularities, hirsutism, alopecia, acne, N, cholestasis; suppression of factors II, V, VII, & X, & polycythemia; ↑ libido, HA, anxiety

**Notes:** Radiographic exam of hand/wrist q6mo in prepubertal children; ↓ total T

### Flurazepam (Dalmane, Generic) [C-IV]

**Uses:** *Insomnia*

**Acts:** Benzodiazepine

**Dose:**
- Adults & Peds > 15 y. 15–30 mg PO qhs PRN; ↓ in elderly w/ P: [X, ?/–]

**CI:** NAG; PRG

**Disp:** Caps 15, 30 mg

**SE:** “Hangover” d/t accumulation of metabolites, apnea, anaphylaxis, angioedema, amnesia

**Notes:** May cause dependency

### Flurbiprofen (Ansaid, Ocuften, Generic) BOX: May ↑ risk of CV events and GI bleeding

**Uses:** *Arthritis, ocular surgery*

**Acts:** NSAID

**Dose:**
- Ansaid 50–300 mg/d ÷ bid-qid, max 300 mg/d w/ food;
- Ocuften: Ocular 1 gtt q30 min × 4, beginning 2 h preop w/ P: [C (D in 3rd tri), ?/–]

**CI:** ASA allergy

**Disp:** Tabs 50, 100 mg; Ocuften 0.03% opthal soln

**SE:** Dizziness, GI upset, peptic ulcer Dz, ocular irritation

### Flutamide (Generic) BOX: Liver failure & death reported. Measure LFTs before, monthly, & periodically after; D/C immediately if ALT 2 × ULN or jaundice develops

**Uses:** Advanced *PCa* (w/ LHRH agonists, eg, leuprolide or goserelin); w/ radiation & GnRH for localized CAP

**Acts:** Nonsteroidal antiandrogen

**Dose:** 250 mg PO tid (750 mg total) w/ P: [D, ?]

**CI:** Severe hepatic impairment

**Disp:** Caps 125 mg

**SE:** Hot flashes, loss of libido, impotence, N/V/D, gynecomastia, hepatic failure

**Notes:** Avoid EtOH

### Fluticasone Furoate, Nasal (Veramyst)

**Uses:** *Seasonal allergic rhinitis*

**Acts:** Topical steroid

**Dose:**
- Adults & Peds > 12 y. 2 sprays/nostril/d, then 1 spray/d maint.
- Peds 2–11 y. 1–2 sprays/nostril/d w/ P: [C, M]

**CI:** Avoid w/ ritonavir, other steroids, recent nasal surgery/trauma

**Disp:** Nasal spray 27.5 mcg/actuation

**SE:** HA, epistaxis, nasopharyngitis, pyrexia, pharyngolaryngeal pain, cough, nasal ulcers, back pain, anaphylaxis

### Fluticasone Propionate, Inhalation (Flovent HFA, Flovent Diskus)

**Uses:** *Chronic asthma*

**Acts:** Topical steroid

**Dose:**
- Adults & Peds > 12 y. 2–4 puffs bid.
- Peds 4–11 y. 44 or 50 mcg bid w/ P: [C, M]

**CI:** Status asthmaticus

**Disp:** Diskus dry powder: 50, 100, 250 mcg/action; HFA; MDI 44/110/220 mcg/Inh

**SE:** HA, dysphonia, oral candidiasis

**Notes:** Risk of thrush, rinse mouth after;
counsel on use of devices

**Fluticasone Propionate, Nasal (Flonase, Generic) Uses**: *Seasonal allergic rhinitis*  
**Acts**: Topical steroid  
**Dose**: **Adults & Peds > 12 y**: 2 sprays/nostril/d; **Peds 4–11 y**: 1–2 sprays/nostril/d  
**w/ P**: [C, M]  
**CI**: Primary Rx of status asthmaticus  
**Disp**: Nasal spray 50 mcg/actuation  
**SE**: HA, dysphonia, oral candidiasis

**Fluticasone Propionate & Salmeterol Xinafoate (Advair Diskus, Advair HFA) BOX**: ↑ Risk of worsening wheezing or asthma-related death w/ long-acting β₂-adrenergic agonists; use only if asthma not controlled on agent such as inhaled steroid  
**Uses**: *Maint Rx for asthma & COPD*  
**Acts**: Corticosteroid w/ LA bronchodilator β₂ agonist  
**Dose**: **Adults & Peds > 12 y**: 1 Inh bid q12h; titrate to lowest effective dose (4 Inh or 920/84 mcg/d max)  
**w/ P**: [C, M]  
**CI**: Acute asthma attack; conversion from PO steroids; w/ phenothiazines  
**Disp**: Diskus = metered-dose Inh powder (fluticasone/salmeterol in mcg) 100/50, 250/50, 500/50; HFA = aerosol 45/21, 115/21, 230/21 mg  
**SE**: URI, pharyngitis, HA  
**Notes**: Combo of Flovent & Serevent; do not wash mouthpiece, do not exhale into device; Advair HFA for pts not controlled on other meds (eg, low-medium dose Inh steroids) or whose Dz severity warrants 2 maint therapies

**Fluvastatin (Lescol, Generic) Uses**: *Atherosclerosis, primary hypercholesterolemia, heterozygous familial hypercholesterolemia, hypertriglyceridemia*  
**Acts**: HMG-CoA reductase inhib  
**Dose**: 20–40 mg bid PO or XL 80 mg/d ↓ w/ hepatic impair  
**w/ P**: [X, –]  
**CI**: Active liver Dz, ↑ LFTs, PRG, breast-feeding  
**Disp**: Caps 20, 40 mg; XL 80 mg  
**SE**: HA, dyspepsia, N/D, Abd pain  
**Notes**: Dose no longer limited to hs; LFTs; OK w/ grapefruit

**Fluvoxamine (Luvox CR, Generic) BOX**: Closely monitor for worsening depression or emergence of suicidality, particularly in ped pts  
**Uses**: *OCD, SAD*  
**Acts**: SSRI  
**Dose**: Initial 50-mg single qhs dose, ↑ to 300 mg/d in ÷ doses; CR: 100–300 mg PO qhs, may ↑ by 50 mg/d qwk, max 300 mg/d ↓ in elderly/hepatic impair, titrate slowly; ÷ doses > 100 mg  
**w/ P**: [C, ?/–]  
**CI**: Multiple interactions (see PI: MAOIs, phenothiazines, SSRIs, serotonin agonists, others); do not use w/ clopidogrel  
**Disp**: Tabs 25, 50, 100 mg; caps ER 100, 150 mg  
**SE**: HA, N/D, somnolence, insomnia, ↓ Na⁺  
**Notes**: Gradual taper to D/C

**Folic Acid, Injectable, Oral (Generic) Uses**: *Megaloblastic anemia; folate deficiency*  
**Acts**: Dietary supl  
**Dose**: **Adults**. Supl: 0.4 mg/d PO. **PRG**: 0.8 mg/d PO. **Folate deficiency**: 1 mg PO daily–tíd.  
**Peds. Supl**: 0.04–0.4 mg/24 h PO, IM, IV, or SQ. **Folate deficiency**: 0.5–1 mg/24 h PO, IM, IV, or SQ  
**w/ P**: [A, +]  
**CI**: Pernicious, aplastic, normocytic anemias  
**Disp**: Tabs 0.4, 0.8, 1 mg; Inj 5 mg/mL  
**SE**: Well tolerated  
**Notes**: OK for all women of childbearing age; ↓ fetal neural tube defects by 50%; no effect on normocytic anemias

**Fondaparinux (Arixtra) BOX**: When epidural/spinal anesthesia or spinal puncture is used, pts anticoagulated or scheduled to be anticoagulated w/ LMW heparins, heparinoids, or fondaparinux are at risk for epidural or spinal hematoma, which can result in long-term or permanent paralysis  
**Uses**: *DVT prophylaxis* w/ hip fracture, hip or knee replacement, Abd surgery; w/ DVT or PE in combo w/ warfarin  
**Acts**: Synth inhib of activated factor X; a pentasaccharide  
**Dose**: **Prophylaxis**: 2.5 mg SQ daily, up to 5–9 d; start > 6 h postop; Tx: 7.5 mg SQ daily (< 50 kg: 5 mg SQ daily; > 100 kg: 10 mg SQ daily); ↓ w/ renal impair  
**w/ P**: [B, ?]  
**CI**: Bleeding risk w/ anticoagulants, anti-plts, drotrecogin alfa, NSAIDs  
**Disp**: Pre-filled syringes w/ 27-gauge needle: 2.5/0.5, 5/0.4, 7.5/0.6, 10/0.8 mg/mL
Thrombocytopenia, anemia, fever, Notes: D/C if plts < 100,000 cells/mcL; only give SQ; may monitor antifactor Xa levels

**Formoterol Fumarate (Foradil, Perforomist)** BOX: May ↑ risk of asthma-related death

*Long-term Rx of bronchoconstriction in COPD, EIB (only Foradil)*

**Acts:** LA β₂-agonist

**Dose:**

**Adults. Perforomist:** 20-mcg Inh q12h; **Foradil:** 12-mcg Inh q12h, 24 mcg/d max; **EIB:** 12 mcg 15 min before exercise

**Peds > 5y.** (Foradil) See Adults w/ P: [C, M] Not for acute Sx, w/ CV Dz, w/ adrenergic meds, xanthine derivatives meds that ↑ QT; β-blockers may ↓ effect, D/C w/ ECG change

**CI:** None

**Disp:** Foradil caps 12 mcg for Aerolizer inhaler (12 & 60 doses), Perforomist: 20 mcg/2 mL for inhaler

**SE:** N/D, nasopharyngitis, dry mouth, angina, HTN, ↓ BP, tachycardia, arrhythmias, nervousness, HA, tremor, muscle cramps, palpitations, dizziness

Notes: Excess use may ↑ CV risks; not for oral use

**Fosamprenavir (Lexiva)** BOX: Do not use w/ severe liver dysfunction, reduce dose w/ mild–mod liver impair (fosamprenavir 700 mg bid w/o ritonavir)

**Uses:** HIV Infxn

**Acts:** Protease inhib

**Dose:** 1400 mg bid w/o ritonavir; w/ ritonavir, fosamprenavir 1400 mg + ritonavir 200 mg daily or fosamprenavir 700 mg + ritonavir 100 mg bid; w/ efavirenz & ritonavir: fosamprenavir 1400 mg + ritonavir 300 mg daily

**P:** [C, ?/–] Do not use w/ salmeterol, colchicine (w/ renal/hepatic failure); adjust dose w/ bosentan, tadalafil for PAH

**CI:** w/ CYP3A4 drugs (Table 10, p 319) such as w/ rifampin, lovastatin, simvastatin, delavirdine, ergot alkaloids, midazolam, triazolam, or pimozone; sulfa allergy; w/ alpha 1-adrenoceptor antagonist (alfuzosin); w/ PDE5 inhibitor sildenafil

**Disp:** Tabs 700 mg; susp 50 mg/mL

**SE:** N/V/D, HA, fatigue, rash

Notes: Numerous drug interactions because of hepatic metabolism; replaced amprenavir

**Fosaprepitant (Emend, Injection)** Uses: *Prevent chemotherapy-associated N/V*

**Acts:** Substance P/neurokinin 1 receptor antagonist

**Dose:** Chemotherapy: 150 mg IV 30 min before chemotherapy on d 1 (followed by aprepitant [Emend, Oral] 80 mg PO days 2 and 3) in combo w/ other antiemetics w/ P: [B, ?/–] Potential for drug interactions, substrate and mod CYP3A4 inhib (dose-dependent); ↓ effect of OCP and warfarin CI: w/ Pimozide, terfenadine, astemizole, or cisapride

**Disp:** Inj 115 mg

**SE:** N/D, weakness, hiccups, dizziness, HA, dehydration, hot flushing, dyspepsia, Abd pain, neutropenia, ↑ LFTs, Inj site discomfort

Notes: See also aprepitant (Emend, Oral)

**Foscarnet (Foscavir, Generic)** Uses: *CMV retinitis*; acyclovir-resistant *herpes Infxns*  

**Acts:** ↓ Viral DNA polymerase & RT

**Spectrum:** gram(+) Enterococcus, staphylococci, pneumococci; gram(–) (E. coli, Salmonella, Shigella, H. influenzae, Neisseria, indole(–) Proteus, Providencia); B. fragilis & anaerobic gram(–) cocci are resistant

**Dose:** 3 g PO in 90–120 mL of H₂O single dose; ↓ in renal impair w/ P: [C, –] ↑ Sz potential w/ fluoroquinolones; avoid nephrotoxic Rx (cyclosporine, aminoglycosides, amphotericin B, protease inhibit) CI: CrCl < 0.4 mL/min/kg

**Disp:** Inj 24 mg/mL

**SE:** Nephrotox, electrolyte abnormalities

Notes: Sodium loading (500 mL 0.9% NaCl) before & after helps minimize nephrotox; monitor-ionized Ca²⁺

**Fosfomycin (Monurol, Generic)** Uses: *Uncomplicated UTI*

**Acts:** ↓ Cell wall synth  

**Spectrum:** gram(+) Enterococcus, staphylococci, pneumococci; gram(–) (E. coli, Salmonella, Shigella, H. influenzae, Neisseria, indole(–) Proteus, Providencia); B. fragilis & anaerobic gram(–) cocci are resistant

**Dose:** 3 g PO in 90–120 mL of H₂O single dose; ↓ in renal impair w/ P: [B, ?] ↓ Absorption w/ antacids/Ca salts CI: Component sensitivity

**Disp:** Granule packets 3 g

Notes: May take 2–3 d for Sxs to improve
Fosinopril (Monopril, Generic) Uses: *HTN, CHF*, DN Acts: ACE inhib Dose: 10 mg/d PO initial; max 40 mg/d PO; ↓ in elderly; ↓ in renal impair W/P: [D, +] ↑ K+ w/ K+-sporing diuretics; ↑ renal after effects w/ NSAIDs, diuretics, hypovolemia CI: Hereditary/idiopathic angioedema or angioedema w/ ACE inhib, bilateral RAS Disp: Tabs 10, 20, 40 mg SE: Cough, dizziness, angioedema, ↑ K+

Fosphenytoin (Cerebyx, Generic) Uses: *Status epilepticus* Acts: ↓ Sz spread in motor cortex Dose: As phenytoin equivalents (PE). Load: 15–20 mg PE/kg. Maint: 4–6 mg PE/kg/d; ↓ dosage, monitor levels in hepatic impair w/ P: [D, +] May ↑ phenobarbital CI: Sinus bradycardia, SA block, 2nd-/3rd-degree AV block, Adams-Stokes synd, rash during Rx Disp: Inj 75 mg/mL SE: ↓ BP, dizziness, ataxia, pruritus, nystagmus Notes: 15 min to convert fosphenytoin to phenytoin; administer < 150 mg PE/min to prevent ↓ BP; administer w/ BP monitoring

Frovatriptan (Frova) Uses: *Rx acute migraine* Acts: Vascular serotonin receptor agonist Dose: 2.5 mg PO repeat in 2 h PRN; max 7.5 mg/d w/ P: [C, ?/–] CI: Angina, ischemic heart Dz, coronary artery vasospasm, hemiplegic or basilar migraine, uncontrolled HTN, ergot use, MAOI use w/ in 14 d Supplied: Tabs 2.5 mg SE: N, V, dizziness, hot flashes, paresthesias, dyspepsia, dry mouth, hot/cold sensation, CP, skeletal pain, flushing, weakness, numbness, coronary vasospasm, HTN

Fulvestrant (Faslodex) Uses: *HR(+) metastatic breast CA in postmenopausal women w/ progression following antiestrogen Rx therapy* Acts: Estrogen receptor antagonist Dose: 500 mg days 1, 15, & 29; maint 500 mg IM mo Inj in buttocks w/ P: [X, ?/–] ↑ Effects w/ CYP3A4 inhib (Table 10, p 319); w/ hepatic impair CI: PRG Disp: Prefilled syringes 50 mg/mL (single 5 mL, dual 2.5 mL) SE: N/V/D, constipation, Abd pain, HA, back pain, hot flushes, pharyngitis, Inj site Rxns Notes: Only use IM

Furosemide (Lasix, Generic) Uses: *CHF, HTN, edema*, ascites Acts: Loop diuretic; ↓ Na & Cl reabsorption in ascending loop of Henle & distal tubule Dose: *Adults* 20–80 mg PO or IV bid. *Peds.* 1 mg/kg/dose IV q6–12h; 2 mg/kg/dose PO q12–24h (max 6 mg/kg/dose); ↑ doses w/ renal impair w/ P: [C, +] ↓ K+, ↑ risk digoxin tox & ototoxic w/ aminoglycosides, cisplatin (especially in renal dysfunction) CI: Sulfonylurea allergy; anuria; hepatic coma; electrolyte depletion Disp: Tabs 20, 40, 80 mg; soln 10 mg/mL, 40 mg/5 mL; Inj 10 mg/mL SE: ↓ BP, hyperglycemia, ↓ K+ Notes: Lytes, renal Fxn; high doses IV may cause ototoxic

Gabapentin (Neurontin, Generic) Uses: Adjunct in *partial Szs; postherpetic neuralgia (PHN)*; chronic pain synds Acts: Anticonvulsant; GABA analog Dose: *Adults & Peds > 12 y.* Anticonvulsant: 300 mg PO tid, ↑ max 3600 mg/d. PHN: 300 mg day 1, 300 mg bid day 2, 300 mg tid day 3, titrate (1800–3600 mg/d); *Peds 3–12 y.* 10–15 mg/kg/d ÷ tid, ↑ over 3 d: 3–4 y: 40 mg/kg/d given tid ≥ 5 y: 25–35 mg/kg/d ÷ tid, 50 mg/kg/d max; ↓ w/ renal impair w/ P: [C, ?] Use in peds 3–12 y w/ epilepsy may ↑ CNS-related adverse events CI: Component sensitivity Disp: Caps 100, 300, 400 mg; soln 250 mg/5 mL; scored tab 600, 800 mg SE: Somnolence, dizziness, ataxia, fatigue Notes: Not necessary to monitor levels; taper ↑ or ↓ over 1 wk

Gabapentin Enacarbil (Horizant) Uses: *RLS* Acts: GABA analog; ? mechanism Dose: Adult. CrCl > 60 mL/min: 600 mg PO 1 × d; 30–59 mL/min: 300 mg 1 × d (max 600 mg/d); 15–29 mL/min: 300 mg 1 × d; < 15 mL/min: 300 mg q other day; not recommended w/ hemodialysis; take w/ food at 5 P.M.; swallow whole w/ P: [C, ?/–] Disp: Tabs ER 300, 600 mg SE: Somnolence, sedation, fatigue, dizziness, HA, blurred vision, feeling drunk, disorientation, ↓ libido, depression, suicidal
thoughts/behaviors, multiorgan hypersens

**Galantamine (Razadyne, Razadyne ER, Generic) Uses:** *Mild–mod Alzheimer Dz*  
**Acts:** Acetylcholinesterase inhib  
**Dose:** Razadyne 4 mg PO bid, ↑ to 8 mg bid after 4 wk; may ↑ to 16 mg bid in 4 wk; target 16–24 mg/d ÷ bid. Razadyne ER Start 8 mg/d, ↑ to 16 mg/d after 4 wk, then to 24 mg/d after 4 more wk; give q A.M. w/ food w/ P: [B, ?] w/ Heart block, ↑ effect w/ succinylcholine, bethanechol, amiodarone, diltiazem, verapamil, NSAIDs, digoxin; ↓ effect w/ anticholinergics; ↑ risk of death w/ mild impair CI: Severe renal/hepatic impair

**Disp:** Razadyne Tabs 4, 8, 12 mg; soln 4 mg/mL. Razadyne ER Caps 8, 16, 24 mg

**SE:** GI disturbances, ↓ Wt, sleep disturbances, dizziness, HA

**Notes:** Caution w/ urinary outflow obst, Parkinson Dz, severe asthma/COPD, severe heart Dz or ↓ BP

**Gallium Nitrate (Ganite) BOX:** ↑ Risk of severe renal Insuff w/ concurrent use of nephrotoxic drugs (eg, aminoglycosides, amphotericin B). D/C if use of potentially nephrotoxic drug is indicated; hydrate several d after administration. D/C w/ SCr > 2.5 mg/dL

**Uses:** *↑ Ca

2+ of malignancy*; bladder CA

**Acts:** ↓ Bone resorption of Ca

2+

**Dose:** ↑ Ca

2+: 100–200 mg/m

2/d × 5 d. CA: 350 mg/m

2 cont Inf × 5 d to 700 mg/m

2 rapid IV Inf q2wk in antineoplastic settings (per protocols), Inf over 24 h w/ P: [C, ?] Do not give w/ live or rotavirus vaccine CI: SCr > 2.5 mg/dL

**Disp:** Inj 25 mg/mL

**SE:** Renal Insuff, ↓ Ca

2+, hypophosphatemia, ↓ bicarb, < 1% acute optic neuritis

**Notes:** Bladder CA, use in combo w/ vinblastine & ifosfamide

**Ganciclovir (Cytovene, Vitrasert, Generic) Uses:** *Rx & prevent CMV retinitis, prevent CMV Dz* in transplant recipients

**Acts:** ↓ viral DNA synth

**Dose:** Adults & Peds.  
**IV:** 5 mg/kg IV q12h for 14–21 d, then maint 5 mg/kg/d IV × 7 d/wk or 6 mg/kg/d IV × 5 d/wk. Ocular implant: 1 implant q5–8mo. Adults.  
**PO:** Following induction, 1000 mg PO tid. Prevention: 1000 mg PO tid; w/ food; ↓ in renal impair w/ P: [C, –] ↑ Effect w/ immunosuppressives, imipenem/cilastatin, zidovudine, didanosine, other nephrotoxic Rx CI: ANC < 500 cells/mm

3, plt < 25,000 cells/mm

3, intravitreal implant

**Disp:** Caps 250, 500 mg; Inj 500 mg, ocular implant 4.5 mg

**SE:** Granulocytopenia & thrombocytopenia, fever, rash, GI upset

**Notes:** Not a cure for CMV; handle Inj w/ cytotoxic cautions; no systemic benefit w/ implant

**Ganciclovir, Ophthalmic Gel (Zirgan) Uses:** *Acute herpetic keratitis (dendritic ulcers)*

**Acts:** ↓ Viral DNA synth

**Dose:** Adult & Peds ≥ 2 y. 1 gtt affected eye/s 5 × d (q3h while awake) until ulcer heals, then 1 gtt tid × 7 d w/ P: [C, ?/–] Remove contacts during therapy CI: None

**Disp:** Gel, 5-g tube

**SE:** Blurred vision, eye irritation, punctate keratitis, conjunctival hyperemia

**Notes:** Correct ↓ Ca

2+ before use; √ Ca

2+

**Gemcitabine (Gemzar, Generic) Uses:** *Pancreatic CA (single agent), breast CA w/ paclitaxel, NSCLC w/ cisplatin, ovarian CA w/ carboplatin*, gastric CA

**Acts:** Antimetabolite; nucleoside metabolic inhibitor; ↓ ribonucleotide reductase; produces false nucleotide base-inhibiting DNA synth

**Dose:** 1000–1250 mg/m

2 over 30 min–1 h IV Inf/wk × 3–4 wk or 6–8 wk; modify dose based on hematologic Fxn (per protocol) w/ P: [D, ?/–] CI: PRG

**Disp:** Inj 200 mg, 1 g SE: ↓ BM, N/V/D, drug fever, skin rash

**Notes:** Reconstituted soln 38 mg/mL; monitor hepatic/renal Fxn

**Gemfibrozil (Lopid, Generic) Uses:** *Hypertriglyceridemia, coronary heart Dz*  
**Acts:** Fibric acid

**Dose:** 1200 mg/d PO ÷ bid 30 min ac A.M. & P.M. w/ P: [C, ?] ↑ Warfarin effect, sulfonylureas; ↑ risk of myopathy w/ HMG-CoA reductase inhib; ↓ effects w/ cyclosporine CI: Renal/hepatic impair (SCr > 2.0 mg/dL), gallbladder Dz, primary biliary cirrhosis, use w/ repaglinide (↓ glucose)

**Disp:** Tabs
Gemifloxacin (Factive) Uses: *CAP, acute exacerbation of chronic bronchitis* Acts: ↓ DNA gyrase & topoisomerase IV; Spectrum: *S. pneumoniae* (including multidrug-resistant strains), *H. influenzae, H. parainfluenzae, M. catarrhalis, M. pneumoniae, C. pneumoniae, K. pneumoniae* Dose: 320 mg PO daily × 5–7 d; CrCl < 40 mL/min: 160 mg PO/d w/ P: [C, ?/−]; Peds < 18 y; Hx of ↑ QTc interval, electrolyte disorders, w/ class IA/III antiarrhythmics, erythromycin, TCAs, antipsychotics, ↑ INR and bleeding risk w/ warfarin CI: Fluoroquinolone allergy Disp: Tab 320 mg SE: Rash, N/V/D, *C. difficile* enterocolitis, ↑ risk of Achilles tendon rupture, tendonitis, Abd pain, dizziness, xerostomia, arthralgia, allergy/anaphylactic Rxns, peripheral neuropathy, tendon rupture Notes: Take 3 h before or 2 h after Al/Mg antacids, Fe$^{2+}$, Zn$^{2+}$ or other metal cations; ↑ rash risk w/ ↑ duration of Rx
Gentamicin, Injectable (Generic) Uses: *Septicemia, serious bacterial Infxn of CNS, urinary tract, resp tract, GI tract, including peritonitis, skin, bone, soft tissue, including burns; severe Infxn P. aeruginosa w/ carbenicillin; group D streptococci endocarditis w/ PCN-type drug; serious staphylococcal Infxns, but not the antibiotic of 1st choice; mixed Infxn w/ P. aeruginosa w/ carbenicillin; group D streptococci endocarditis w/ PCN-type drug; serious staphylococcal Infxns, but not the antibiotic of 1st choice; mixed Infxn w/ staphylococci and gram(-)*

Acts: Aminoglycoside, bactericidal; ↓ protein synth Spectrum: gram(-) (not Neisseria, Legionella, Acinetobacter); weaker gram(+) but synergy w/ PCNs

Dose: Adults. Standard: 1–2 mg/kg IV q8–12h or daily dosing 4–7 mg/kg q24h IV. Gram(+) Synergy: 1 mg/kg q8h

Peds. Infants < 7 d < 1200 g. 2.5 mg/kg/dose q18–24h. Infants > 1200 g: 2.5 mg/kg/dose q12–18h. Infants > 7 d: 2.5 mg/kg/dose IV q8–12h. Children: 2.5 mg/kg/dose IV q8–12h. ↓ w/ renal Insuff; if obese, dose based on IBW w/ P: [C, +/–] Avoid other nephrotoxics

CI: Aminoglycoside sensitivity

Disp: Premixed Inf 40, 60, 70, 80, 90, 100, 120 mg; ADD-Vantage Inj vials 10 mg/mL; Inj 40 mg/mL; IT preservative-free 2 mg/mL

SE: Nephro-/oto-/neurotox

Gentamicin, Ophthalmic (Garamycin, Genoptic, Gentak, Generic) Uses: *Conjunctival Infxns*

Acts: Bactericidal; ↓ protein synth

Dose: Oint: Apply 1/2 in bid-tid. Soln: 1–2 gtt q2–4h, up to 2 gtt/h for severe Infxn w/ P: [C, ?] CI: Aminoglycoside sensitivity

Disp: Soln & oint 0.1% and 0.3%

SE: Local irritation

Gentamicin, Topical (Generic) Uses: *Skin Infxns* caused by susceptible organisms

Acts: Bactericidal; ↓ protein synth

Dose: Adults & Peds > 1 y. Apply tid-qid w/ P: [C, ?] CI: Aminoglycoside sensitivity

Disp: Cream & oint 0.1%

SE: Irritation

Gentamicin/Prednisolone, Ophthalmic (Pred-G Ophthalmic) Uses: *Steroid-responsive ocular & conjunctival Infxns* sensitive to gentamicin


Dose: Oint: 1/2 in in conjunctival sac daily-tid. Susp: 1 gtt bid-qid, up to 1 gtt/h for severe Infxns

CI: Aminoglycoside sensitivity w/ P: [C, ?] Disp: Oint, ophthal: Prednisolone acetate 0.6% & gentamicin sulfate 0.3% (3.5 g). Susp, ophthal: Predniso-lone acetate 1% & gentamicin sulfate 0.3% (2, 5, 10 mL)

SE: Local irritation

Glimepiride (Amaryl, Generic) Uses: *Type 2 DM*

Acts: Sulfonylurea; ↑ pancreatic insulin release; ↑ peripheral insulin sensitivity; ↓ hepatic glucose output/production

Dose: 1–4 mg/d, max 8 mg w/ P: [C, –] CI: DKA

Disp: Tabs 1, 2, 4 mg SE: HA, N, hypoglycemia

Notes: Give w/ 1st meal of day

Glimepiride/Pioglitazone (Duetact) BOX: Thiazolidinediones, including pioglitazone, cause or exacerbate CHF. Not recommended in pts w/ symptomatic heart failure. CI w/ NYHA Class III or IV heart failure Uses: *Adjunct to exercise type 2 DM not controlled by single agent*

Acts: Sulfonylurea (↓ glucose) w/ agent that ↑ insulin sensitivity & ↓ gluconeogenesis

Dose: Initial 30 mg/2 mg PO q A.M.; 45 mg pioglitazone/8 mg glimepiride/d max; w/ food w/ P: [C, ?/–] w/ Liver impair, elderly, w/ Hx bladder CA CI: Component hypersens, DKA

Disp: Tabs 30/2, 30 mg/4 mg SE: Hct, ↑ ALT, ↓ glucose, URI, ↑ Wt, edema, HA, N/D, may ↑ CV mortality

Notes: Monitor CBC, ALT, Cr, Wt

Glipizide (Glucotrol, Glucotrol XL, Generic) Uses: *Type 2 DM*

Acts: Sulfonylurea; ↑ pancreatic insulin release; ↑ peripheral insulin sensitivity; ↓ hepatic glucose output/production; ↓ intestinal
Glucose absorption

Dose: 5 mg initial, ↑ by 2.5–5 mg/d, max 40 mg/d; XL max 20 mg; 30 min ac; hold if NPO w/ P: [C, ?/–] Severe liver Dz CI: DKA, type 1 DM, sulfonamide sensitivity Disp: Tabs 5, 10 mg; XL tabs 2.5, 5, 10 mg SE: HA, anorexia, N/V/D, constipation, fullness, rash, urticaria, photosens Notes: Counsel about DM management; wait several days before adjusting dose; monitor glucose

Glucagon, Recombinant (Glucagen) Uses: Severe *hypoglycemic Rxns in DM*, radiologic GI tract diagnostic aid; β-blocker/CCB OD Acts: Accelerates liver gluconeogenesis Dose: Adults. 0.5–1 mg SQ, IM, or IV; repeat in 20 min PRN. ECCC 2010. β-Blocker or CCB overdose: 3–10 mg slow IV over 3–5 min; follow w/ Inf of 3–5 mg/h; Hypoglycemia: 1 mg IV, IM, or SQ. Peds. Neonates: 30 mcg/kg/dose SQ, IM, or IV q4h PRN. Children: 0.025–0.1 mg/kg/dose SQ, IM, or IV; repeat in 20 min PRN w/ P: [B, M] CI: Pheochromocytoma Disp: Inj 1 mg SE: N/V/D, HA, ↓ BP Notes: Administration of dextrose IV necessary; ineffective in starvation, adrenal Insuff, or chronic hypoglycemia

Glucarpidase (Voraxaze) Uses: *Tx toxic plasma MTX conc (> 1 micromole/L) in pts w/ ↓ clearance* Acts: Carboxypeptidase enzyme converts MTX to inactive metabolites Dose: 50 units/kg IV over 5 min x 1 w/ P: [C, ?/–] serious allergic/anaphylactic Rxns; do not administer leucovorin w/ in 2 h before/after dose Disp: Inj (powder) 1000 units/vial SE: N/V, ↓ BP, flushing, paraesthesias, hypersens, blurred vision, rash, tremor, throat irritation Notes: Mea-sure MTX conc by chromatographic method w/ in 48 h of admin; continue leucovorin until methotrexate conc below leucovorin Tx threshold × 3 d; hydrate & alkalinize urine

Glyburide (DiaBeta, Glynase, Generic) Uses: *Type 2 DM* Acts: Sulfonylurea; ↑ pancreatic insulin release; ↑ peripheral insulin sensitivity; ↓ hepatic glucose output/production; ↓ intestinal glucose absorption Dose: 1.25–10 mg daily-bid, max 20 mg/d. Micronized: 0.75–6 mg daily or bid, max 12 mg/d w/ P: [C, ?] Renal impair, sulfonamide allergy, ? ↑ CV risk CI: DKA, type 1 DM Disp: Tabs 1.25, 2.5, 5 mg; micronized tabs (Glynase) 1.5, 3, 6 mg SE: HA, hypoglycemia, cholestatic jaundice, and hepatitis may cause liver failure Notes: Not OK for CrCl < 50 mL/min; hold dose if NPO; hypoglycemia may be difficult to recognize; many medications can enhance hypoglycemic effects

Glyburide/Metformin (Glucovance, Generic) Uses: *Type 2 DM* Acts: Sulfonylurea: ↑ Pancreatic insulin release. Metformin: ↑ Peripheral insulin sensitivity; ↓ hepatic glucose output/production; ↓ intestinal glucose absorption Dose: 1st line (naïve pts), 1.25/250 mg PO daily-bid; 2nd line, 2.5/500 or 5/500 mg bid (max 20/2000 mg); take w/ meals, slowly ↑ dose; hold before & 48 h after ionic contrast media w/ P: [C, –] CI: SCr > 1.4 mg/dL in females or > 1.5 mg/dL in males; hypoxic conditions (sepsis, recent MI); alcoholism; metabolic acidosis; liver Dz; Disp: Tabs (glyburide/metformin) 1.25/250, 2.5/500, 5/500 mg SE: HA, hypoglycemia, lactic acidosis, anorexia, N/V, rash Notes: Avoid EtOH; hold dose if NPO; monitor folate levels (megaloblastic anemia)

Glycerin Suppository Uses: *Constipation* Acts: Hyperosmolar laxative Dose: Adults. 1 Adult supp PR PRN. Peds. 1 Infant supp PR daily-bid PRN w/ P: [C, ?] Disp: Supp (adult, infant); liq 4 mL/applicator full SE: D

Golimumab (Simponi) BOX: Serious Infxns (bacterial, fungal, TB, opportunistic) possible. D/C w/ severe Infxn/sepsis, test and monitor for TB w/ Tx; lymphoma/other CA possible in children/adolescents Uses: *Mod–severe RA w/ methotrexate, psoriatic arthritis w/ or w/o methotrexate, ankylosing spondylitis* Acts: TNF blocker Dose: 50 mg SQ 1 × mo w/ P: [B, ?/–] Do
use w/ active Infxn; w/ malignancies, CHF, demyelinating Dz; do use w/ abatacept, anakinra, live vaccines CI: None Disp: Prefilled syringe & SmartJect auto-injector 50 mg/0.5 mL SE: URI, nasopharyngitis, Inj site Rxn, ↑ LFTs, Infxn, hep B reactivation, new-onset psoriasis

Goserelin (Zoladex) Uses: *Advanced CA prostate & w/ radiation and flutamide for localized high-risk Dz,*endometriosis, breast CA Acts: LHRH agonist, transient ↑ then ↓ in LH, w/ ↓ testosterone Dose: 3.6 mg SQ (implant) q28d or 10.8 mg SQ q3mo; usually upper Abd wall w/ P: [X, –] CI: PRG, breast-feeding, 10.8-mg implant not for women Disp: SQ implant 3.6 (1 mo), 10.8 mg (3 mo) SE: Hot flashes, ↓ libido, gynecomastia, & transient exacerbation of CA-related bone pain (“flare Rxn” 7–10 d after 1st dose) Notes: Inject SQ into fat in Abd wall; do not aspirate; females must use contraception

Granisetron (Generic) Uses: *Rx and Prevention of N/V (chemo/radiation/postoperation)* Acts: Serotonin (5-HT3) receptor antagonist Dose: Adults & Peds. Chemotherapy: 10 mcg/kg/dose IV 30 min prior to chemotherapy Adults. Chemo-therapy: 2 mg PO qd 1 h before chemotherapy, then 12 h later. Postop N/V: 1 mg IV over 30 s before end of case w/ P: [B, –/+] CI: Liver Dz, children < 2 y Disp: Tabs 1 mg; Inj 1 mg/mL; soln 2 mg/10 mL SE: HA, asthenia, somnolence, D, constipation, Abd pain, dizziness, insomnia, ↑ LFTs

Guaifenesin (Robitussin, Others, Generic) Uses: *Relief of dry, non-productive cough* Acts: Expectorant Dose: Adults. 200–400 mg (10–20 mL) PO q4h SR 600–1200 mg PO bid (max 2.4 g/d). Peds 2–5 y. 50–100 mg (2.5–5 mL) PO q4h (max 600 mg/d). 6–11 y: 100–200 mg (5–10 mL) PO q4h (max 1.2 g/d) w/ P: [C, +/–] Disp: Tabs 1 mg; Inj 1 mg/mL; soln 2 mg/10 mL SE: GI upset Notes Give w/ large amount of water; some dosage forms contain EtOH

Guaifenesin/Codeine (Robafen AC, Others, Generic) [C-V] Uses: *Relief of dry cough* Acts: Antitussive w/ expectorant Dose: Adults. 5–10 mL or 1 tab PO q6–8h (max 60 mL/24 h). Peds > 6 y. 1–1.5 mg/kg codeine/d ÷ dose q4–6h (max 30 mg/24 h). 6–12 y: 5 mL q4h (max 30 mL/24 h) w/ P: [C, +] Disp: Brontex tab 10 mg codeine/300 mg guaifenesin; liq 2.5 mg codeine/75 mg guaifenesin/5 mL; others 10 mg codeine/100 mg guaifenesin/5 mL SE: Somnolence, constipation Notes: Not recommended for children < 6 y

Guanfacine (Intuniv, Tenex, Generic) Uses: *ADHD (peds > 6 y)*; *HTN (adults)* Acts: Central α2a-adrenergic agonist Dose: Adults. 1–3 mg/d IR PO h (Tenex), ↑ by 1 mg q3–4wk PRN 3 mg/d max; Peds. 1–4 mg/d XR PO (Intuniv), ↑ by 1 mg q1wk PRN 4 mg/d max w/ P: [B, +/–] Disp: Tabs IR 1, 2 mg; tabs XR 1, 2, 3, 4 mg SE: Somnolence, dizziness, HA, fatigue, constipation, Abd pain, xerostomia, hypotension, bradycardia, syncope Notes: Rebound ↑ BP, anxiety, nervousness w/ abrupt D/C; metabolized by CYP3A4

Haemophilus B Conjugate Vaccine (ActHIB, HibTITER, Hiberix, PedvaxHIB, Others) Uses: *Immunize children against H. influenzae type B Dzs* Acts: Active immunization Dose: Peds. 0.5 mL (25 mg) IM (deltoid or vastus lateralis muscle) 2 doses 2 and 4 mo; booster 12–15 mo or 2, 4,
Haloperidol (Haldol, Generic) BOX: ↑ Mortality in elderly w/ dementia-related psychosis. Risk for
torsade de pointes and QT prolongation, death w/ IV administration at higher doses Uses: *Psychotic
disorders, agitation, Tourette disorders, hyperactivity in children* Acts: Butyrophenone;
antipsychotic, neuroleptic Dose: Adults. Mod Sxs: 0.5–2 mg PO bid-tid. Severe Sxs/ agitation: 3–5
mg PO bid-tid or 1–5 mg IM q4h PRN (max 100 mg/d). ICU psychosis: 2–10 mg IV q 30 min to
effect, the 25% max dose q6h Peds 3–6 y. 0.01–0.03 mg/kg/24 h PO daily. 6–12 y: Initial, 0.5–1.5
mg/24 h PO; ↑ by 0.5 mg/24 h to maint of 2–4 mg/24 h (0.05–0.1 mg/kg/24 h) or 1–3 mg/dose IM q4–
8h to 0.1 mg/kg/24 h max; Tourette Dz may require up to 15 mg/24 h PO; ↓ in elderly w/ P: [C, ?] ↑
effects w/ SSRIs, CNS depressants, TCA, indomethacin, metoclopramide; avoid levodopa (↓
antiparkinsonian effects) CI: NAG, severe CNS depression, coma, Parkinson Dz, ↓ BM suppression,
severe cardiac/hepatic Dz Disp: Tabs 0.5, 1, 2, 5, 10, 20 mg; conc liq 2 mg/mL; Inj 5 mg/mL;
decanoate Inj 50, 100 mg/mL SE: Extrapyramidal Sxs (EPS), tardive dyskinesia, neuroleptic
malignant synd, ↓ BP, anxiety, dystonias, risk for torsades de pointes and QT prolongation;
leukopenia, neutropenia and agranulocytosis Notes: Do not give decanoate IV; dilute PO conc liq w/
H2O/juice; monitor for EPS; ECG monitoring w/ off-label IV use; follow CBC if WBC counts
decreased

Heparin (Generic) Uses: *Rx & prevention of DVT & PE*, unstable angina, AF w/ emboli, & acute
arterial occlusion Acts: Acts w/ antithrombin III to inactivate Hepatitis A Vaccine thrombin & ↓
thromboplastin formation Dose: Adults. Prophylaxis: 3000–5000 units SQ q8–12h. DVT/PE Rx:
Load 50–80 units/kg IV (max 10,000 units), then 10–20 units/kg IV qh (adjust based on PTT); ECC
2010. STEMI: Bolus 60 units/kg (max 4000 units); then 12 units/kg/h (max 1000 units/h) round to
nearest 50 units; keep aPTT 1.5–2 × control 48 h or until angiography. Peds Infants. Load 50
units/kg IV bolus, then 20 units/kg/h IV by cont Inf. Children: Load 50 units/kg IV, then 15–25
units/kg cont Inf or 100 units/kg/dose q4h IV intermittent bolus (adjust based on PTT) w/ P: [C, +] ↑
Risk of hemorrhage w/ anticoagulants, ASA, anti-plt, cephalosporins w/ MTT side chain CI:
Uncontrolled bleeding, severe thrombocytopenia, suspected ICH Disp: Unfractionated Inj 10, 100,
1000, 2000, 2500, 5000, 7500, 10,000, 20,000, 40,000 units/mL SE: Bruising, bleeding,
thrombocytopenia Notes: Follow PTT, thrombin time, or activated clotting time; little PT effect;
therapeutic PTT 1.5–2 control for most conditions; monitor for HIT w/ plt counts; new “USP”
formulation heparin is approximately 10% less effective than older formulations

Hepatitis A (Inactivated) & Hepatitis B (Recombinant) Vaccine (Twinrix) Uses: *Active
immunization against hep A/B in pts > 18 y* Acts: Active immunity Dose: 1 mL IM at 0, 1, & 6 mo;
accelerated regimen 1 mL IM day 0, 7 and 21–30 then booster at 12 mo; 720 ELISA EL.U. units hep
A antigen, 20 mcg/mL hep B surface antigen w/ P: [C, +/–] CI: Component sensitivity Disp: Single-
dose vials, syringes SE: Fever, fatigue, HA, pain/redness at site Notes: Booster OK 6–12 mo after
vaccination; report SAE to Vaccine Adverse Events Reporting System (VAERS: 1-800-822-7967)
Hepatitis A Vaccine (HAVRIX, VAQTA) Uses: *Prevent hep A* in high-risk individuals (eg, travelers, certain professions, day-care workers if 1 or more children or workers are infected, high-risk behaviors, children at ↑ risk); in chronic liver Dz Acts: Active immunity Dose: Adults. HAVRIX 1.0-mL IM w/ 1.0-mL booster 6–12 mo later; VAQTA: 1.0 mL IM w/ 1.0 mL IM booster 6–18 mo later Peds > 12 mo. HAVRIX 0.5-mL IM, w/ 0.5-mL booster 6–18 mo later; VAQTA 0.5 mL IM w/ booster 0.5 mL 6–18 mo later W/ P: [C, +] CI: Component sensitivity; syringes contain latex Disp: HAVRIX: Inj 720 EL.U./0.5 mL, 1440 EL.U./1 mL; VAQTA 50 units/mL SE: Fever, fatigue, HA, Inj site pain Notes: Give primary at least 2 wk before anticipated exposure; do not give HAVRIX in gluteal region; report SAE to VAERS (1-800-822-7967)

Hepatitis B Immune Globulin (HyperHep, HepaGam B, Nabi-HB, H-BIG) Uses: *Exposure to HBsAg(+) material (eg, blood, accidental needlestick, mucous membrane contact, PO or sexual contact), prevent hep B in HBsAg(+) liver Tx pt* Acts: Passive immunization Dose: Adults & Peds. 0.06 mL/kg IM 5 mL max; w/ in 24 h of exposure; w/ in 14 d of sexual contact; repeat 1 mo if nonresponder or refused initialTx; liver Tx per protocols W/ P: [C, ?] CI: Allergies to γ-globulin, anti-immunoglobulin Ab, or thimerosal; IgA deficiency Disp: Inj SE: Inj site pain, dizziness, HA, myalgias, arthralgias, anaphylaxis Notes: IM in gluteal or deltoid; w/ continued exposure, give hep B vaccine; not for active hep B; ineffective for chronic hep B

Hepatitis B Vaccine (Engerix-B, Recombivax HB) Uses: *Prevent hep B*: men who have sex w/ men, people who inject street drugs; chronic renal/liver Dz, healthcare workers exposed to blood, body fluids; sexually active not in monogamous relationship, people seeking evaluation for or w/ STDs, household contacts and partners of hep B infected persons, travelers to countries w/ ↑ hep B prevalence, clients/staff working w/ people w/ developmental disabilities Acts: Active immunization; recombinant DNA Dose: Adults. 3 IM doses 1 mL each; first 2 doses 1 mo apart; the third 6 mo after the first. Peds. 0.5 mL IM adult schedule W/ P: [C, +] ↓ Effect w/ immunosuppressives CI: Yeast allergy, component sensitivity Disp: Engerix-B: Inj 20 mcg/mL; peds Inj 10 mcg/0.5 mL. Recombivax HB: Inj 10 & 40 mcg/mL; peds Inj 5 mcg/0.5 mL SE: Fever, HA, Inj site pain Notes: Deltoid IM Inj adults/older peds; younger peds, use anterolateral thigh

Hetastarch (Hespan) Uses: *Plasma vol expansion* adjunct for leukapheresis Acts: Synthetic colloid; acts similar to albumin Dose: Vol expansion: 500–1000 mL (1500 mL/d max) IV (20 mL/kg/h max rate). Leukapheresis: 250–700 mL; ↓ in renal failure W/ P: [C, +] CI: Severe bleeding disorders, CHF, oliguric/anuric renal failure Disp: Inj 6 g/100 mL SE: Bleeding (↑ PT, PTT, bleeding time) Notes: Not blood or plasma substitute

Histrelin Acetate (Supprelin LA, Vantas) Uses: *Advanced PCa, precocious puberty* Acts: GNRH agonist; paradoxically ↑ release of GnRH w/ ↓ LH from anterior pituitary; in men ↓ testosterone Dose: Vantas: 50 mg SQ implant q12mo inner aspect of the upper arm; Supprelin LA: 1 implant q12mo W/ P: [X, –] Transient “flare Rxn” at 7–14 d after 1st dose [LH/testosterone surge before suppression]; w/ impending cord compression or urinary tract obstruction; ↑ risk DM, CV Dz, MI CI: GNRH sensitivity, PRG Disp: 50 mg 12-mo SQ implant SE: Hot flashes, fatigue, implant site Rxn, testis atrophy, gynecomastia Notes: Nonsteroidal antiandrogen (eg, bicalutamide) may block flare in men w/ PCa

Human Papillomavirus Recombinant Vaccine (Cervarix [Types 16, 18], Gardasil [Types 6, 11, 16, 18]) Uses: *Prevent cervical CA, precancerous genital lesions (Cervarix and Gardasil), genital warts, anal CA and oral CA (Gardasil) d/t to HPV types 16, 18 (Cervarix) and types 6, 11, 16, 18
Gardasil* in females 9–26 y; prevent genital warts, anal CA, and anal intraepithelial neoplasia in males 9–26 y (Gardasil)*. **Acts:** Recombinant vaccine, passive immunity **Dose:** 0.5 mL IM, then 1 and 6 mo (Cervarix), or 2 and 6 mo (Gardasil) (upper thigh or deltoid) w/ P: [B, ?/–] **Disp:** Single-dose vial & prefilled syringe: 0.5 mL **SE:** Erythema, pain at Inj site, fever, syncope, venous thromboembolism **Notes:** 1st CA prevention vaccine, 90% effective in preventing CIN 2 or more severe Dz in HPV naive populations; report adverse events to Vaccine Adverse Events Reporting System (VAERS: 1-800-822-7967); continue cervical CA screening. Hx of genital warts, abn Pap smear, or + HPV DNA test is **not** CI to vaccination.

**Hydralazine** (Apresoline, Others, Generic) **Uses:** *Mod–severe HTN; CHF* (w/ Isordil) **Acts:** Peripheral vasodilator **Dose:** **Adults.** Initial 10 mg PO 3–4×/d, ↑ to 25 mg 3–4×/d, 300 mg/d max. **Peds.** 0.75–3 mg/kg/24 h PO ÷ q6–12h; ↓ in renal impair; √ CBC & ANA before w/ P: [C, +] ↓ Hepatic Fxn & CAD; ↑ tox w/ MAOI, indomethacin, β-blockers **CI:** Dissecting aortic aneurysm, mitral valve/rheumatic heart Dz **Disp:** Tabs 10, 25, 50, 100 mg; Inj 20 mg/mL **SE:** SLE-like synd w/ chronic high doses; SVT following IM route; peripheral neuropathy **Notes:** Compensatory sinus tachycardia eliminated w/ β-blocker

**Hydrochlorothiazide** (HydroDIURIL, Esidrix, Others, Generic) **Uses:** *Edema, HTN* prevent stones in hypercalcuria **Acts:** Thiazide diuretic; ↓ distal tubule Na⁺ reabsorption **Dose:** **Adults.** 25–100 mg/d PO single or ÷ doses; 200 mg/d max. **Peds < 6 mo.** 2–3 mg/kg/d in 2 ÷ doses. **> 6 mo:** 2 mg/kg/d in 2 ÷ doses w/ P: [D, +] ↓ Hepatic Fxn & CAD; ↑ tox w/ MAOI, indomethacin, β-blockers **CI:** Anuria, sulfonamide allergy, renal Insuff **Disp:** Tabs (amiloride/HCTZ) 5 mg/50 mg SE: ↓ BP, photosens, ↑ K⁺/↓ K⁺, hyperglycemia, hyperuricemia, ↓ Na⁺; sun sensitivity **Notes:** Follow K⁺, may need supplementation

**Hydrochlorothiazide/Amiloride** (Moduretic, Generic) **Uses:** *HTN* **Acts:** Combined thiazide & K⁺-sparing diuretic **Dose:** 1–2 tabs/d PO w/ P: [D, +] CI: Sulfonamide allergy **Disp:** Tabs (HCTZ/spironolactone) 25/25, 50/50 mg SE: Photosens, ↓ BP, ↑ or ↓ K⁺, ↓ Na⁺, hyperglycemia, hyperlipidemia, hyperuricemia

**Hydrochlorothiazide/Triamterene** (Dyazide, Maxzide, Generic) **Uses:** *Edema & HTN* **Acts:** Combo thiazide & K⁺-sparing diuretic **Dose:** **Dyazide:** 1–2 caps PO daily-bid. **Maxzide:** 1 tab/d PO w/ P: [D,?/–] CI: Sulfonamide allergy **Disp:** (Triamterene/HCTZ) 37.5/25, 75/50 mg SE: Photosens, ↓ BP, ↑ or ↓ K⁺, ↓ Na⁺, hyperglycemia, hyperlipidemia, hyperuricemia **Notes:** HCTZ component in Maxzide more bioavailable than in Dyazide

**Hydrocodone/Acetaminophen** (Hycet, Lor cet, Vicodin, Others) [C-III] **Uses:** *Mod–severe pain* **Acts:** Narcotic analgesic w/ nonnarcotic anal-gesic **Dose:** **Adults.** 1–2 caps or tabs PO q4–6h PRN; soln 15 mL q4–6h **Peds.** Soln (Hycet) 0.27 mL/kg q4–6h w/ P: [C, M] CI: CNS depression, severe resp depression **Disp:** Many formulations; specify hydrocodone/APAP dose; caps 5/500 mg; tabs 2.5/500, 5/300, 5/325, 5/500, 7.5/300, 7.5/325, 7.5/500, 7.5/650, 7.5/750, 10/300, 10/325, 10/500, 10/650, 10/660, 10/750 mg; soln Hycet (fruit punch) 7.5 mg hydrocodone/325 mg acetaminophen/15 mL SE: GI upset, sedation, fatigue **Notes:** Do not exceed > 4 g APAP/d; see Acetaminophen note p 36
Hydrocodone & Homatropine (Hycodan, Hydromet, Generic) [C-III] Uses: *Relief of cough*

Acts: Combo antitussive Dose: (Based on hydrocodone) Adults. 5–10 mg q4–6h. Peds. 0.6 mg/kg/d ÷ tid-qid w/ P: [C, M] CI: NAG, ↑ ICP, depressed ventilation Disp: Syrup 5 mg hydrocodone/5 mL; tabs 5 mg hydrocodone SE: Sedation, fatigue, GI upset Notes: Do not give < q4h; see individual drugs

Hydrocodone & Ibuprofen (Vicoprofen, Generic) [C-III] Uses: *Mod–severe pain (< 10 d)*

Acts: Narcotic w/ NSAID Dose: 1–2 tabs q4–6h PRN w/ P: [C, M] Renal Insuff; ↓ effect w/ ACE inhib & diuretics; ↑ effect w/ CNS depressants, EtOH, MAOI, ASA, TCA, anticoagulants CI: Component sensitivity Disp: Tabs 7.5 mg hydrocodone/200 mg ibuprofen SE: Sedation, fatigue, GI upset

Hydrocodone & Pseudoephedrine (Detussin, Histussin-D, Others, Generic) [C-III] Uses: *Cough & nasal congestion*

Acts: Narcotic cough suppressant w/ decongestant Dose: 5 mL qid, PRN w/ P: [C, M] CI: MAOIs Disp: hydrocodone/pseudoephedrine 5/60, 3/15 mg 5 mL; tab 5/60 mg SE: ↑ BP, GI upset, sedation, fatigue

Hydrocortisone, Rectal (Anusol-HC Suppository, Cortifoam Rectal, Proctocort, Others, Generic) Uses: *Painful anorectal conditions*, radiation proctitis, UC

Acts: Anti-inflammatory steroid Dose: Adults. UC: 10–100 mg PR daily-bid for 2–3 wk w/ P: [B, ?/–] CI: Component sensitivity Disp: Hydrocortisone acetate: Rectal aerosol 90 mg/applicator; supp 25 mg. Hydrocortisone base: Rectal 0.5%, 1%, 2.5%; rectal susp 100 mg/60 mL SE: Minimal systemic effect

Hydrocortisone, Topical & Systemic (Cortef, Solu-Cortef, Generic) See Steroids Systemic p 259 and Topical p 260 Peds. ECC 2010. Adrenal insufficiency: 2 mg/kg IV/IO bolus; max dose 100 mg w/ P: [B, –] CI: Viral, fungal, or tubercular skin lesions; serious Infxns (except septic shock or TB meningitis) SE: Systemic: ↑ Appetite, insomnia, hyperglycemia, bruising Notes: May cause hypothalamic-pituitary-adrenal axis suppression

Hydromorphone (Dilaudid, Dilaudid HP, Generic) [C–II] BOX: A potent Schedule II opioid agonist; highest potential for abuse and risk of resp depression. HP formula is highly concentrated; do not confuse w/ standard formulations, OD and death could result. Alcohol, other opioids, CNS depressants ↑ resp depressant effects Uses: *Mod–severe pain* Acts: Narcotic analgesic Dose: 1–4 mg PO, IM, IV, or PR q4–6h PRN; 3 mg PR q6–8h PRN; ↓ w/ hepatic failure w/ P: [B (D if prolonged use or high doses near term), ?] ↑ Resp depression and CNS effects, CNS depressants, phenothiazines, TCA CI: CNS lesion w/ ↑ ICP, COPD, cor pulmonary, emphysema, kyphoscoliosis, status asthmaticus; HP-Inj form in OB analgesia Disp: Tabs 2, 4, 8 mg scored; liq 5 mg/5 mL or 1 mg/mL; Inj 1, 2, 4 mg, Dilaudid HP is 10 mg/mL; supp 3 mg SE: Sedation, dizziness, GI upset Notes: Morphine 10 mg IM = hydromorphone 1.5 mg IM

Hydromorphone, Extended-Release (Exalgo) [C–II] BOX: Use in opioid tolerant only; high potential for abuse, criminal diversion and resp depression. Not for postop pain or PRN use. OD and death especially in children. Do not break/crush/chew tabs, may result in OD Uses: *Mod–severe chronic pain requiring around-the-clock opioid analgesic* Acts: Narcotic analgesic Dose: 8–64 mg PO/d titrate to effect; ↓ w/ hepatic/renal impair and elderly w/ P: [C, –] Abuse potential; ↑ resp depression and CNS effects, w/ CNS depressants, pts susceptible to intracranial effects of CO₂ retention CI: Opioid-intolerant pts, ↓ pulmonary function, ileus, GI tract narrowing/obstr, component hypersens; w/ in 14 d of MAOI; anticholinergics may ↑ SE Disp: Tabs 8, 12, 16 mg SE: constipation, N/V, somnolence, HA, dizziness Notes: See label for opioid conversion
Hydroxocobalamin (Cyanokit) Uses: *Cyanide poisoning* Acts: Binds cyanide to form nontoxic cyanocobalamin excreted in urine Dose: 5 g IV over 15 min, repeat PRN 5 g IV over 15 min–2 h, total dose 10 g w/ P: [C, ?] CI: None known Disp: Kit- 2- to 2.5-g vials w/ Inf set SE: ↑ BP (can be severe) anaphylaxis, chest tightness, edema, urticaria, rash, chromaturia, N, HA, Inj site Rxns

Hydroxychloroquine (Plaquenil, Generic) BOX: Physicians should completely familiarize themselves w/ the complete contents of the FDA package insert before prescribing Uses: *Malaria: Plasmodium vivax, malariae, ovale, and falciparum (NOT all strains of falciparum); malaria prophylaxis; discoid lupus, SLE, RA* Acts: Unknown/antimalarial Dose: Acute Malaria: Adults. 800 mg, 600 mg 6–8 h later then 400 mg daily × 2 d Peds. 25 mg base/kg over 3 d (200 mg = 155 mg base) 10 mg/kg day 1 (max 620 mg), then 5 mg/kg 6 h after 1st dose (max 310 mg), then 5 mg/kg 18 h after 2nd dose and then 5 mg/kg 24 h after 3rd dose. Suppression Malaria: Adults. 400 mg daily same day of wk, 2 wk before arrival through 8 wk leaving endemic area Peds. 5 mg base/kg, same dosing schedule; Lupus, 400 mg daily or bid, reevaluate at 4–12 wk, then 200–400 mg daily RA: Adults. 400–600 mg daily, reevaluate at 4–12 wk, reduce by 50%; take w/ milk or food w/ P: [D, ?/] CI: Hx eye changes from any 4-aminoquinoline, hypersens Disp: Tabs 200 mg SE: HA, dizziness, N/V/D, Abd pain, anorexia, irritability, mood changes, psychosis, Szs, myopathy, blurred vision, corneal changes, visual field defects, retinopathy, aplastic anemia, leukopenia, derm Rxns including SJS Notes: Do not use long-term in children; cardiomyopathy rare

Hydroxyurea (Droxia, Hydrea, Generic) Uses: *CML, head & neck, ovarian & colon CA, melanoma, ALL, sickle cell anemia, polycythemia vera, HIV* Acts: ↓ Ribonucleotide reductase Dose: (per protocol) 50–75 mg/kg for WBC > 100,000 cells/mL; 20–30 mg/kg in refractory CML. HIV: 1000–1500 mg/d in single or ÷ doses; ↓ in renal Insuff w/ P: [D, –] ↑ Effects w/ zidovudine, zalcitabine, didanosine, stavudine, fluorouracil CI: Severe anemia, BM suppression, WBC < 2500 cells/mL or plt < 100,000 cells/mm³, PRG Disp: Caps 200, 300, 400, 500 mg SE: ↓ BM (mostly leukopenia), N/V, rashes, facial erythema, radiation recall Rxns, renal impair Notes: Empty caps into H₂O

Hydroxyzine (Atarax, Vistaril, Generic) Uses: *Anxiety, sedation, itching* Acts: Antihistamine, antianxiety Dose: Adults. Anxiety/sedation: 50–100 mg PO or IM qid or PRN (max 600 mg/d). Itching: 25–50 mg PO or IM tid-qid. Peds. 0.5–1.0 mg/kg/24 h PO or IM q6h; ↓ w/ hepatic impair w/ P: [C, +/–] ↑ Effects w/ CNS depressants, anticholinergics, EtOH CI: Component sensitivity Disp: Tabs 10, 25, 50 mg; caps 25, 50 mg; syrup 10 mg/5 mL; susp 25 mg/5 mL; Inj 25, 50 mg/mL SE: Drowsiness, anticholinergic effects Notes: Used to potentiate narcotic effects; not for IV/SQ (thrombosis & digital gangrene possible)

Hyoscyamine, Atropine, Scopolamine, & Phenobarbital (Donnatal, Others, Generic) Uses: *Spasm w/ GI & bladder disorders* Acts: Anticholinergic Dose: Adults. 0.125–0.25 mg (1–2 tabs) SL/PO tid-qid, ac & hs; 1 SR caps q12h w/ P: [C, +] ↑ Effects w/ amantadine, antihistamines, antimuscarinics, haloperidol, phenothiazines, TCA, MAOI CI: BOO, GI obst, NAG, MyG, paralytic ileus, UC, MI Disp: (Cystospaz-M, Levsinex) time-release caps 0.375 mg; elixir (EtOH); soln 0.125 mg/5 mL; Inj 0.5 mg/mL; tab 0.125 mg; tab (Cystospaz) 0.15 mg; XR tab (Levbid) 0.375 mg; SL (Levsin SL) 0.125 mg SE: Dry skin, xerostomia, constipation, anticholinergic SE, heat prostration w/ hot weather Notes: Administer tabs ac

Hyoscymine, Atropine, Scopolamine, & Phenobarbital (Donnatal, Others, Generic) Uses:
*Irritable bowel, spastic colitis, peptic ulcer, spastic bladder*  
**Acts:** Anticholinergic, antispasmodic  
**Dose:** 0.125–0.25 mg (1–2 tabs) tid-qid, 1 caps q12h (SR), 5–10 mL elixir tid-qid or q8h  
**w/ P:** [D, M]  
**CI:** NAG  
**Disp:** Many combos/manufacturers. Caps (*Donnatal, others*): Hyoscyamine 0.1037 mg/atropine 0.0194 mg/scopolamine 0.0065 mg/phenobarbital 16.2 mg. Tabs (*Donnatal, others*): Hyoscyamine 0.1037 mg/atropine 0.0194 mg/scopolamine 0.0065 mg/phenobarbital 16.2 mg. LA (*Donnatal*): Hyoscyamine 0.311 mg/atropine 0.0582 mg/scopolamine 0.0195 mg/phenobarbital 48.6 mg. Elixirs (*Don-natal, others*): Hyoscyamine 0.1037 mg/atropine 0.0194 mg/scopolamine 0.0065 mg/phenobarbital 16.2 mg/5 mL  
**SE:** Sedation, xerostomia, constipation

**Ibandronate (Boniva, Generic)**  
**Uses:** *Rx & prevent osteoporosis in postmenopausal women*  
**Acts:** Bisphosphonate, ↓ osteoclast-mediated bone resorption  
**Dose:** 2.5 mg PO daily or 150 mg 1 × mo on same day (do not lie down for 60 min after); 3 mg IV over 15–30 s q3mo  
**w/ P:** [C, ?/–]  
**CI:** Uncorrected ↓ Ca$^{2+}$; inability to stand/sit upright for 60 min (PO)  
**Disp:** Tabs 2.5, 150 mg, Inj IV 3 mg/3 mL  
**SE:** Jaw osteonecrosis (avoid extensive dental procedures) N/D, HA, dizziness, asthenia, HTN, Infxn, dysphagia, esophagitis, esophageal/gastric ulcer, musculoskeletal pain  
**Notes:** Take 1st thing in A.M. w/ water (6–8 oz) > 60 min before 1st food/beverage & any meds w/ multivalent cations; give adequate Ca$^{2+}$ & vit D supls; possible association between bisphosphonates & severe muscle/bone/joint pain; may ↑ atypical subtrochanteric femur fractures

**Ibuprofen, Oral (Advil, Motrin, Motrin IB, Rufen, Others, Generic) [OTC]**  
**BOX:** May ↑ risk of CV events & GI bleeding  
**Uses:** *Arthritis, pain, fever*  
**Acts:** NSAID  
**Dose:** Adults. 200–800 mg PO bid-qid (max 2.4 g/d). *Peds.* 30–40 mg/kg/d in 3–4 ÷ doses (max 40 mg/kg/d); w/ food  
**w/ P:** [C (D ≥ 30 wk gestation), +] May interfere w/ ASAs anti-plt effect if given < 8 h before ASA  
**CI:** 3rd-tri PRG, severe hepatic impair, allergy, use w/ other NSAIDs, upper GI bleeding, ulcers  
**Disp:** Tabs 100, 200, 400, 600, 800 mg; chew tabs 50, 100 mg; caps 200 mg; susp 50 mg/1.25 mL, 100 mg/2.5 mL, 100 mg/5 mL, 40 mg/mL (Motrin IB & Advil OTC 200 mg are the OTC forms)  
**SE:** Dizziness, peptic ulcer, plt inhibition, worsening of renal Insuff

**Ibuprofen, Parenteral (Caldolor)**  
**BOX:** May ↑ risk of CV events & GI bleeding  
**Uses:** *Mild–mod pain, as adjunct to opioids, ↓ fever*  
**Acts:** NSAID  
**Dose:** Pain: 400–800 mg IV over 30 min q6h PRN; Fever: 400 mg IV over 30 min, the 400 mg q4–6h or 100–200 mg q4–6h PRN  
**w/ P:** [C < 30 wk, D after 30 wk, ?/–] May ↓ ACE effects; avoid w/ ASA, and < 17 y  
**CI:** Hypersens NSAIDs; asthma, urticaria, or allergic Rxns w/ NSAIDs, periop CABG  
**Disp:** Vials 400 mg/4 mL, 800 mg/8 mL  
**SE:** N/V, HA, flatulence, hemorrhage, dizziness  
**Notes:** Make sure pt well hydrated; use lowest dose/shortest duration possible

**Ibutilide (Corvert, Generic)**  
**Uses:** *Rapid conversion of AF/A flutter*  
**Acts:** Class III antiarrhythmic  
**Dose:** Adults > 60 kg. 1 mg IV over 10 min; may repeat × 1; < 60 kg use 0.01 mg/kg  
**ECC 2010. SVT (AFib and AFlutter):** Adults > 60 kg. 1 mg (10 mL) over 10 min; a 2nd dose may be used; < 60 kg 0.01 mg/kg over 10 min. Consider DC cardioversion w/ P: [C, –]  
**CI:** w/ Class I/III antiarrhythmics (Table 9, p 318); QTc > 440 ms  
**Disp:** Inj 0.1 mg/mL  
**SE:** Arrhythmias, HA

**Icatibant (Firazyr)**  
**Uses:** *Hereditary angioedema*  
**Acts:** Bradykinin B$_2$ receptor antag  
**Dose:** Adult. 30 mg SQ in Abd; repeat q6h × 3 doses/max/24 h w/ P: [C, ?/–] Seek medical attn after Tx of laryngeal attack  
**Disp:** Inj 0.1 mg/mL (30 mg/syringe)  
**SE:** Inj site Rxns, pyrexia, ↑ LFTs, dizziness,
**Icosapent Ethyl (Vascepa)** *Uses:* Hypertriglyceridemia w/ triglycerides > 500 mg/dL *Acts:* ↓ Hepatic VLDL-triglyceride synth/secretion & ↑ triglyceride clearance *Dose:* Adults. 2 caps bid w/ food w/ P: [C, M] If hepatic Dx ↓ ALT/AST; caution w/ fish/shellfish allergy; may ↑ bleeding time *CI:* Component hyper-sens *Disp:* Caps 1g *SE:* Arthralgias *Notes:* (Ethyl ester of eicosapentaenoic); ↓ risk of pancreatitis or CV morbidity/mortality not proven

**Idarubicin (Idamycin, Generic)** *BOX:* Administer only under supervision of an MD experienced in leukemia and in an institution w/ resources to maintain a pt compromised by drug tox *Uses:* Acute leukemias* (AML, ALL), *CML in blast crisis, breast CA* *Acts:* DNA-intercalating agent; ↓ DNA topoisomerase I & II *Dose:* (Per protocol) 10–12 mg/m²/d for 3–4 d; ↓ in renal/hepatic impair w/ P: [D, –] *CI:* Bilirubin > 5 mg/dL, PRG *Disp:* Inj 1 mg/mL (5-, 10-, 20-mg vials) *SE:* ↓ BM, cardiotox, N/V, mucositis, alopecia, & IV site Rxns, rarely ↓ renal/hepatic Fxn *Notes:* Avoid extrav, potent vesicant; IV only

**Ifosfamide (Ifex, Generic)** *BOX:* Administer only under supervision by an MD experienced in chemotherapy; hemorrhagic cystitis, myelosupp; confusion, coma possible *Uses:* Testis*, lung, breast, pancreatic, & gastric CA, Hodgkin lymphoma/NHL, soft-tissue sarcoma *Acts:* Alkylating agent *Dose:* (Per protocol) 1.2 g/m²/d for 5-d bolus or cont Inf; 2.4 g/m²/d for 3 d; w/ mesna uroprotection; ↓ in renal/hepatic impair w/ P: [D, M] ↑ Effect w/ phenobarbital, carbamazepine, phenytoin; St. John’s wort may ↓ levels *CI:* ↓ BM Fxn, PRG *Disp:* Inj 1, 3 g *SE:* Hemorrhagic cystitis, nephrotox, N/V, mild–mod leukopenia, lethargy & confusion, alopecia, ↑ LFT *Notes:* Administer w/ mesna to prevent hemorrhagic cystitis; WBC nadir 10–14 d; recovery 21–28 d

**Iloperidone (Fanapt)** *BOX:* Risk for torsades de pointes and ↑ QT. Elderly pts at ↑ risk of death, CVA *Uses:* Acute schizophrenia* *Acts:* Atypical antipsychotic *Dose:* Initial: 1 mg PO bid then ↑ daily to goal 6–12 mg bid, max titration 4 mg/d w/ P: [?/–] *CI:* Component hypersens *Disp:* Tabs 1, 2, 4, 6, 8, 10, 12 mg *SE:* Orthostatic ↓ BP, dizziness, dry mouth, ↑ Wt *Notes:* Titrate to ↓ BP risk. Monitor QT interval

**Iloprost (Ventavis)** *BOX:* Associated w/ syncope; may require dosage adjustment *Uses:* NYHA class III/IV pulm arterial HTN* *Acts:* Prostaglandin analog *Dose:* Initial 2.5 mcg; if tolerated, ↑ to 5 mcg Inh 6–9×/d at least 2 h apart while awake w/ P: [C, ?/–] Anti-plt effects, ↑ bleeding risk w/ anticoagulants; additive hypotensive effects *CI:* SBP < 85 mm Hg *Disp:* Inh soln 10, 20 mcg/mL *SE:* Syncope, ↓ BP, vasodilation, cough, HA, trismus, D, dysgeusia, rash, oral irritation *Notes:* Requires Pro-Dose AAD or I-neb ADD system nebulizer; counsel on syncope risk; do not mix w/ other drugs; monitor vitals during initial Rx

**Imatinib (Gleevec)** *Uses:* Rx CML Ph (+), CML blast crisis, ALL Ph(+), myelodysplastic/myeloproliferative Dz, aggressive systemic mastocytosis, chronic eosinophilic leukemia, GIST, dermatofibrosarcoma protuberans* *Acts:* ↓ BCLABL; TKI *Dose:* Adults. Typical dose 400–600 mg PO daily; w/ meal Peds. CML Ph(+) newly diagnosed 340 mg/m²/d, 600 mg/d max; recurrent 260 mg/m²/d PO ÷ daily-bid, to 340 mg/m²/d max w/ P: [D, ?/–] w/ CYP3A4 meds (Table 10, p 319), warfarin *CI:* Component sensitivity *Disp:* Tab 100, 400 mg SE: GI upset, fluid retention, muscle cramps, musculoskeletal pain, arthralgia, rash, HA, neutropenia, thrombocytopenia *Notes:* Follow CBCs & LFTs baseline & monthly; w/ large glass of H₂O & food to ↓ GI irritation

**Imipenem/Cilastatin (Primaxin, Generic)** *Uses:* Serious Infxns d/t susceptible bacteria *Acts:*
**Imipenem (Cepaclov) Uses:** Bactericidal; ↓ cell wall synth. Spectrum: Gram(+) (S. aureus, group A & B streptococci), gram(–) (not Legionella), anaerobes **Dose:** Adults. 250–1000 mg (imipenem) IV q6–8h, 500–750 mg IM. **Peds.** 60–100 mg/kg/24 h IV ÷ q6h; ↓ if CrCl is < 70 mL/min w/ P: [C, +/-] Probencid ↑ tox CI:

- Peds pts w/ CNS Infxn (↑ Sz risk) & < 30 kg w/ renal impair
- Disp: Inj (imipenem/cilastatin) 250/250, 500/500 mg
  SE: Szs if drug accumulates, GI upset, thrombocytopenia

**Imipramine (Tofranil, Generic) BOX:** Close observation for suicidal thinking or unusual changes in behavior **Uses:** *Depression, enuresis*, panic attack, chronic pain **Acts:** TCA; ↑ CNS synaptic serotonin or norepinephrine **Dose:** Adults. Hospitalized: Initial 100 mg/24 h PO in ÷ doses; ↑ over several wk 300 mg/d max. **Outpatient:** Maint 50–150 mg PO hs, 300 mg/24 h max. **Peds.**

- Antidepressant: 1.5–5 mg/kg/24 h ÷ daily-qid. **Enuresis:** > 6 y: 10–25 mg PO qhs; ↑ by 10–25 mg at 1- to 2-wk intervals (max 50 mg for 6–12 y, 75 mg for > 12 y); Rx for 2–3 mo, then taper w/ P: [D, +/-] CI: Use w/ MAOIs, NAG, recovery from AMI, PRG, CHF, angina, CV Dz, arrhythmias **Disp:** Tabs 10, 25, 50 mg; caps 75, 100, 125, 150 mg
  SE: CV Sxs, dizziness, xerostomia, discolored urine
  Notes: Less sedation than amitriptyline

**Imiquimod Cream (Aldara, Zyclara) Uses:** *Anogenital warts, HPV, condylomata acuminata (Aldara, Zyclara); actinic keratosis (Zyclara); basal cell carcinoma (Aldara)* **Acts:** Unknown; ? cytokine induction **Dose:** Adults/Peds > 12 yr. Warts: 1 × day up to 8 wk (Zyclara); apply 3×/wk, leave on 6–10 h & wash off w/ soap & water, continue 16 wk max (Aldara); Actinic keratosis: apply daily two 2 × wk cycle separate by 2 wk; Basal cell: apply 5 d/wk × 6 wk, dose based on lesion size (see label) w/ P: [B, ?] Topical only, not intravaginal or intra-anal CI: Component sensitivity **Disp:** 2.5% packet, 3.75% packet or pump (Zyclara); single-dose packets 5% (250-mg cream Aldara) **SE:** Local skin Rxns, flu-like synd **Notes:** Not a cure; may weaken condoms/Vag diaphragms, wash hands before & after use

**Immune Globulin, IV (Gamimune N, Gammaplex, Gammar IV, Sandoglobulin, Others) Uses:** *IgG deficiency Dz states, B-cell CLL, CIDP, HIV, hep A prophylaxis, ITP*, Kawasaki Dz, travel to ↑ prevalence area, and hep A vaccination w/ in 2 wk of travel **Acts:** IgG supl **Dose:** Adults & Peds. Immunodeficiency: 200-(300 Gammaplex)-800 mg/kg/mo IV at 0.01–0.04 (0.08 Gammaplex) mL/kg/min; initial dose 0.01 mL/kg/min. **B-cell CLL:** 400 mg/kg/dose IV q3wk, **CIDP:** 2000 mg/kg ÷ doses over 2–4 d **ITP:** 400 mg/kg/dose IV daily × 5 d. **BMT:** 500 mg/kg/wk; ↓ in renal Insuff w/ P: [C, ?] Separate live vaccines by 3 mo CI: IgA deficiency w/ Abs to IgA, severe ↓ plt, coag disorders **Disp:** Inj **SE:** Associated mostly w/ Inf rate; GI upset, thrombotic events, hemolysis, renal failure/dysfun, TRALI **Notes:** Monitor vitals during Inf; do not give if volume depleted; hep A prophylaxis w/ immunoglobulin is no better than w/ vaccination; advantages to using vaccination, cost similar

**Immune Globulin, Subcutaneous (Hizentra) Uses:** *Primary immuno-deficiency* **Acts:** IgG supl **Dose:** See label for dosage calculation/adjustment; for SQ Inf only w/ P: [C, ?] CI: Hx anaphylaxis to immune globulin; some IgA deficiency **Disp:** Soln for SQ Inf 0.2 g/mL (20%) **SE:** Inj site Rxns, HA, GI complaint, fatigue, fever, N, D, rash, sore throat **Notes:** May instruct in home administration; keep refrigerated; discard unused drug; use up to 4 Inj sites, max flow rate not > 50 mL/h for all sites combined

**Inamrinone [Amrinone] (Inocor) Uses:** *Acute CHF, ischemic cardiomyopathy* **Acts:** Inotrope w/ vasodilator **Dose:** Adults. IV bolus 0.75 mg/kg over 2–3 min; maint 5–10 mcg/kg/min, 10 mg/kg/d
max; ↓ if CrCl < 30 mL/min. CHF in postop CV surg pts, shock w/ ↑ SVR: 0.75–1 mg/kg IV/IO load over 5 min; repeat × 2 PRN; max 3 mg/kg; cont Inf 5–10 mcg/kg/min w/ P: [C, ?] CI: Bisulfite allergy Disp: Inj 5 mg/mL SE: Monitor fluid, lyte, & renal changes Notes: Incompatible w/ dextrose solns, ↓ LFTs, observe for arrhythmias

Indacaterol Inhalation Powder (Arcapta Neohaler) BOX: LABA increase risk of asthma related deaths. Considered a class effect of all LABA. Uses: *Daily maint of COPD (chronic bronchitis/emphysema)* Acts: Long-acting β2-adrenergic agonist (LABA) Dose: 75-mcg capsule inhaled 1×/day w/ Neohaler inhaler only w/ P: [C, ?–] Not for acute deterioration of COPD or asthma; paradoxical bronchospasm possible; excessive use or use w/ other LABA can cause cardiac effects and can be fatal; caution w/ Sz disorders, thyrotoxicosis or sympathomimetic sensitivity; w/ meds that can ↓ K+ or ↑ QTc; β-blockers may ↓ effect CI: All LABA CI in asthma w/o use of long term asthma control med; not indicated for asthma Disp: Inhal hard cap 75 mcg (30 blister pack w/ 1 Neo-haler) SE: Cough, oropharyngeal pain, nasopharyngitis, HA, N/V Notes: Inform patient not to swallow caps

Indapamide (Lozol, Generic) Uses: *HTN, edema, CHF* Acts: Thiazide diuretic; ↑ Na, Cl, & H2O excretion in distal tubule Dose: 1.25–5 mg/d PO w/ P: [D, ?] ↑ Effect w/ loop diuretics, ACE inhib, cyclosporine, digoxin, Li CI: Anuria, thiazide/sulfonamide allergy, renal Insuff, PRG Disp: Tabs 1.25, 2.5 mg SE: ↓ BP, dizziness, photosens Notes: No additional effects w/ doses > 5 mg; take early to avoid nocturia; use sunscreen; OK w/ food/milk

Indinavir (Crixivan) Uses: *HIV Infxn* Acts: Protease inhib; ↓ maturation of noninfectious virions to mature infectious virus Dose: Typical 800 mg PO q8h in combo w/ other antiretrovirals (dose varies); on empty stomach; ↓ w/ hepatic impair w/ P: [C, ?] Numerous interactions, especially CYP3A4 inhib (Table 10, p 319) CI: w/ Triazolam, midazolam, pimozide, ergot alkaloids, simvastatin, lovastatin, sildenafil, St. John’s wort, amiodarone, cyclosporine, digoxin, Li, PDE5 inhib, alpha 1-adrenoreceptor antagonist (alfuzosin); colchicine Disp: Caps 200, 400 mg SE: Nephrolithiasis, dyslipidemia, lipodystrophy, N/V, ↑ bili Notes: Drink six 8-oz glasses of water/d

Indomethacin (Indocin, Generic) BOX: May ↑ risk of CV events & GI bleeding Uses: *Arthritis; close ductus arteriosus; ankylosing spondylitis* Acts: ↓ Prostaglandins Dose: Adults. 25–50 mg PO bid-tid, max 200 mg/d Infants: 0.2–0.25 mg/kg/dose IV; may repeat in 12–24 h max 3 doses; w/ food w/ P: [C, +] CI: ASA/NSAID sensitivity, peptic ulcer/active GI bleed, precipitation of asthma/urticaria/rhinitis by NSAIDs/ASA, premature neonates w/ NEC, ↓ renal Fxn, active bleeding, thrombocytopenia, 3rd tri PRG Disp: Inj 1 mg/vial; caps 25, 50 mg; SR caps 75 mg; susp 25 mg/5 mL SE: GI bleeding or upset, dizziness, edema Notes: Monitor renal Fxn

Infliximab (Remicade) BOX: TB, invasive fungal Infxns, & other opportunistic Infxns reported, some fatal; perform TB skin testing prior to use; possible association w/ rare lymphoma Uses: *Mod–severe Crohn Dz; fistulizing Crohn Dz; UC; RA (w/ MTX) psoriasis, ankylosing spondylitis* Acts: IgG1K neutralizes TNF-α Dose: Adults. Crohn Dz: Induction: 5 mg/kg IV Inf, w/ doses 2 & 6 wk after. Maint: 5 mg/kg IV Inf q8wk. RA: 3 mg/kg IV Inf at 0, 2, 6 wk, then q8wk. Peds > 6 y. 5 mg/kg IV q8wk w/ P: [B, ?–] Active Infxn, hepatic impair, Hx or risk of TB, hep B CI: Murine allergy, mod–severe CHF, w/ live vaccines (eg, smallpox) Disp: 100-mg Inj SE: Allergic Rxns; HA, fatigue, GI upset, Inf Rxns; hepatotox; reactivation hep B, pneumonia, BM suppression, systemic vasculitis, pericardial effusion, new psoriasis Notes: Monitor LFTs, PPD at baseline, monitor hep B
Influenza Vaccine, Inactivated, Quadrivalent (IIV₄) (Fluarix Quadrivalent, Fluzone Quadrivalent) See Table 13, p 324 Uses: *Prevent influenza* all > 6 mo Acts: Active immunization Dose: Adults and Peds > 9 y. 0.5 mL/dose IM annually Peds 6–35 mo. (Fluzone) 0.25 mL IM annually; 0.25 mL × 2 doses 4 wk apart for 1st vaccination; give 2 doses in 2nd vaccination year if only 1 dose given in 1st year. 3–8 y. 0.5 mL IM annually; 0.5 mL IM × 2 doses 4 wk apart for 1st vaccination w/ P: [C, +] Hx Guillain-Barré synd w/ in 6 wk of previous flu vaccine; syncope may occur w/ admin; immunocompromised w/ ↓ immune response CI: Hx allergy to egg protein, latex (Fluarix); egg protein (Fluzone) Disp: Based on manufacturer, 0.25-, 0.5-mL prefilled syringe, single-dose vial SE: Inj site soreness, fever, chills, HA, insomnia, myalgia, malaise, rash, urticaria, anaphylactoid Rxns, Guillain-Barré synd Notes: US Oct-Nov best, protection 1–2 wk after, lasts up to 6 mo; given yearly, vaccines based on predictions of flu season (Nov-April in US, w/ sporadic cases all year); refer to ACIP annual recs (www.cdc.gov/vaccines/acip)

Influenza Vaccine, Inactivated, Trivalent (IIV₃) (Afluria, Fluarix, Flucelvax, FluLaval, Fluvirin, Fluzone, Fluzone High Dose, Fluzone Intradermal) See Table 13, p 324 Uses: *Prevent influenza* all persons > 6 mo Acts: Active immunization Dose: Adult/Peds > 9 y. 0.5 mL/dose IM annually; or 0.1 mL intradermal Inj annually (Fluzone Intradermal for adults 18–64 y). Peds 6–35 mo. 0.25 mL IM annually; 0.25 mL IM × 2 doses 4 wk apart for 1st vaccination; give 2 doses in 2nd vaccination year if only 1 dose given in 1st year. 3–8 y. 0.5 mL IM annually; 0.5 mL IM × 2 doses 4 wk apart for 1st vaccination w/ P: [B, +] Hx Guillain-Barré synd w/ in 6 wk of previous influenza vaccine; syncope may occur w/ admin; immunocompromised w/ ↓ immune response CI: Hx allergy to egg protein, neomycin, polymyxin (Afluria); egg protein, latex, gentamicin (Fluarix); latex (Flucelvax); egg protein (FluLaval); egg protein, latex, polymyxin, neomycin (Fluvirin); egg protein, latex (Fluzone); thimerosal allergy (FluLaval, Fluvirin, & multi-dose Afluria, Fluzone); single-/multi-dose vials latex free; acute resp or febrile illness Disp: Based on manufacturer, 0.25-, 0.5-mL prefilled syringe, single-/multi-dose vial SE: Inj site soreness, fever, chills, HA, insomnia, myalgia, malaise, rash, urticaria, anaphylactoid Rxns, Guillain-Barré synd Notes: US Oct-Nov best, protection 1–2 wk after, lasts up to 6 mo; given yearly, vaccines based on predictions of flu season (Nov-April in US, w/ sporadic cases all year); refer to ACIP annual recs (www.cdc.gov/vaccines/acip)

Influenza Vaccine, Live Attenuated, Quadrivalent (LAIV₄) (FluMist) See Table 13, p 324 Uses: *Prevent influenza* Acts: Live attenuated vaccine Dose: Adults and Peds 9–49 y. 0.1 mL each nostril annually Peds 2–8 y. 0.1 mL each nostril annually; initial 0.1 mL each nostril × 2 doses 4 wk apart in 1st vaccination year w/ P: [B, ?/–] Hx Guillain-Barré synd w/ in 6 wk of previous influenza vaccine; ↑ risk of wheezing w/ asthma; use w/ influenza A/B antiviral drugs may ↓ efficacy CI: Hx allergy to egg protein, gentamicin, gelatin, or arginine; peds 2–17 y on ASA, PRG, known/suspected immune deficiency, asthma/reactive airway Dz, acute febrile illness Disp: Single-dose, nasal sprayer 0.2 mL; shipped frozen, store 35–46°F SE: Runny nose, nasal congestion, HA, cough, fever, sore throat Notes: Do not give w/ other vaccines; avoid contact w/ immunocompromised individuals for 21 d; live influenza vaccine more effective in children than inactivated flu vaccine; refer to ACIP annual recs (www.cdc.gov/vaccines/acip)

Influenza Vaccine, Recombinant, Trivalent (RIV₃) (FluBlok) See Table 13, p 324 Uses: *Prevent
influenza* Acts: Active immunization Dose: Adults 18–49 y. 0.5 mL/dose IM annually w/ P: [B, ?/–] Hx Guillain-Barré synd w/ in 6 wk of previous flu vaccine; immunocompromised w/ ↓ immune response CI: Hx component allergy (contains no egg protein, antibiotics, preservatives, latex) Disp: 0.5-mL single-dose vial SE: Inj site soreness, HA, fatigue, myalgia Notes: US Oct-Nov best, protection 1–2 wk after, lasts up to 6 mo; given yearly, vaccines based on predictions of flu season (Nov-April in US, w/ sporadic cases all year); refer to ACIP annual recs (www.cdc.gov/vaccines/acip)

Ingenol Mebutate (Picato) Uses: *Actinic keratosis* Acts: Necrosis by neutrophil activation Dose: Adults. 25 cm² area (1 tube), evenly spread; 0.015% to face daily × 3 d; 0.05% to trunk/neck daily × 2 d w/ P: [ C, ?/–] CI: None Disp: Gel; 0.015%, 0.25 g/tube × 3 tubes; 0.05% 0.25 g/tube × 2 tubes SE: Local skin reactions Notes: From plant sap Euphorbia peplus; allow to dry × 15 min; do not wash/touch × 6 h; avoid eye contact

Insulin, Injectable (See Table 4, p 305) Uses: *Type 1 or type 2 DM refractory to diet or PO hypoglycemic agents; acute life-threatening ↑ K+* Acts: Insulin supl Dose: Based on serum glucose; usually SQ (upper arms, Abd wall [most rapid absorption site], upper legs, buttocks); can give IV (only regular)/IM; type 1 typical start dose 0.5–1 units/kg/d; type 2 0.3–0.4 units/kg/d; renal failure ↓ insulin needs w/ P: [B, +] CI: Hypoglycemia Disp: Table 4, p 305. Some can dispensed w/ preloaded insulin cartridge pens w/ 29-, 30-, or 31-gauge needles and dosing adjustments. SE: Hypoglycemia. Highly purified insulins ↑ free insulin; monitor for several weeks when changing doses/agents Notes: Specific agent/regimen based on pt and physician choices that maintain glycemic control. Typical type 1 regimens use a basal daily insulin w/ premeal Inj of rapidly acting insulins. Insulin pumps may achieve basal insulin levels. ↑ malignancy risk w/ glargine controversial

Interferon Alfa-2b (Intron-A) BOX: Can cause or aggravate fatal or life-threatening neuropsychiatric autoimmune, ischemic, and infectious disorders. Monitor closely Uses: *HCL, Kaposi sarcoma, melanoma, CML, chronic hep B & C, follicular NHL, condylomata acuminata* Acts: Antiproliferative; modulates host immune response; ↓ viral replication in infected cells Dose: Per protocols. Adults. Per protocols. HCL: 2 mill units/m² IM/SQ 3×/wk for 2–6 mo. Chronic hep B: 5 mill units/d or 10 mill units 3×/wk IM/SQ × 16 wk. Follicular NHL: 5 mill units SQ 3×/wk × 18 mo. Melanoma: 20 mill units/m² IV × 5 d/wk × 4 wk, then 10 mill units/m² SQ 3×/wk × 48 wk. Kaposi sarcoma: 30 mill units/m² IM/SQ 3×/wk until Dz progression or maximal response achieved. Chronic hep C (Intron-A): 3 mill units IM/SQ 3×/wk × 16 wk (continue 18–24 mo if response). Condyloma: 1 mill units/lesion (max 5 lesions) 3×/wk (on alternate days) for 3 wk. Peds. Chronic hep B: 3 mill units/m² SQ 3×/wk × 1 wk, then 6 mill units/m² max 10 mill units/dose 3×/wk × 16–24 wk. CI: Benzyl alcohol sensitivity, decompensated liver Dz, autoimmune hep immunosuppressed, PRG, CrCl < 50 mL/min in combo w/ ribavirin Disp: Inj forms: powder 10/18/50 mill Int units; soln 6/10 mill Int units/mL (see also polyethylene glycol [PEG]-interferon) SE: Flu-like Sxs, fatigue, anorexia, neurotox at high doses; up to 40% neutralizing Ab w/ Rx

Interferon Alfacon-1 (Infergen) BOX: Can cause or aggravate fatal or life-threatening neuropsychiatric autoimmune, ischemic, and infectious disorders. Monitor closely Uses: *Chronic hep C* Acts: Biologic response modifier Dose: Monotherapy: 9 mcg 3 × wk × 24 wk (initial Rx) or 15 mcg 3×/wk up to 48 wk (retreatment). Combo: 15 mcg/d w/ ribavirin 1000 or 1200 mg (Wt < 75 kg and ≥ 75 kg) qd up to 48 wk (retreatment); ↓ dose w/ SAE w/ P: [C, M] CI:
**E. coli** product allergy, decompensated liver Dz, autoimmune hep **Disp**: Inj 30 mcg/mL SE: Flu-like synd, depression, blood dyscrasias, colitis, pancreatitis, hepatic decompensation, ↑ SCr, eye disorders, ↓ thyroid **Notes**: Allow > 48 h between Inj; monitor CBC, plt, SCr, TFT

**Interferon Beta-1a (Avonex, Rebif) Uses**: *MS, relapsing* **Acts**: Biologic response modifier **Dose**: (Re bif) Give SQ for target dose 44 mcg 3×/wk: start 8.8 mcg 3×/wk × 2 wk then 22 mcg 3×/wk × 2 wk then 44 mcg 3×/wk × 2 wk; target dose 22 mcg: 4.4 mcg 3×/wk × 2 wk then 11 mcg 3×/wk × 2 wk then 22 mcg SQ 3×/wk; (Avonex) 30 mcg SQ 1×/wk w/ P: [C, ?/–] w/ Hepatic impair, depression, Sz disorder, thyroid Dz **Disp**: 0.5-mL prefilled syringes w/ 29-gauge needle **Titrate Pak** 8.8 and 22 mcg; 22 or 44 mcg SE: Inj site Rxn, HA, flu-like Sx, malaise, fatigue, rigors, myalgia, depression w/ suicidal ideation, hepatotox, ↓ BM **Notes**: Dose > 48 h apart; CBC 1, 3, 6 mo; TFTs q6mo w/ Hx thyroid Dz

**Interferon Beta-1b (Betaseron, Extavia) Uses**: *MS, relapsing/remitting/secondary progressive* **Acts**: Biologic response modifier **Dose**: 0.0625 mg (2 mill units) (0.25 mL) q other day SQ, ↑ by 0.0625 mg q2wk to target dose 0.25 mg (1 mL) q other day w/ P: [C, –] CI: Human albumin sensitivity **Disp**: Powder for Inj 0.3 mg (9.6 mill units interferon [IFN]) SE: Flu-like synd, depression, suicide, blood dyscrasias, ↑ AST/ALT/GGT, Inj site necrosis, anaphylaxis **Notes**: Teach pt self-injection, rotate sites; LFTs, CBC 1, 3, 6 mo; TFT q6mo; consider stopping w/ depression

**Interferon Gamma-1b (Actimmune) Uses**: *↓ Incidence of serious Infxns in chronic granulomatous Dz (CGD), severe malignant osteopetrosis* **Acts**: Biologic response modifier **Dose**: 50 mcg/m$^2$ SQ (1.5 mill units/m$^2$) BSA > 0.5 m$^2$; if BSA < 0.5 m$^2$, give 1.5 mcg/kg/dose; given 3×/wk w/ P: [C, –] CI: Allergy to E. coli-derived products **Disp**: Inj 100 mcg (2 mill units) SE: Flu-like synd, depression, blood dyscrasias, dizziness, altered mental status, gait disturbance, hepatic tox **Notes**: may ↑ deaths in interstitial pulm fibrosis

**Ipilimumab (Yervoy) BOX**: Severe fatal immune Rxns possible; D/C and Tx w/ high-dose steroids w/ severe Rxn; assess for enterocolitis, dermatitis, neuropathy, endocrinopathy before each dose **Uses**: *Unresectable/metastatic melanoma* **Acts**: Human cytotoxic T-lymphocyte antigen 4 (CTLA-4)-blocking Ab; ↑ T cell proliferation/activation **Dose**: 3 mg/kg IV q3wk × 4 doses; Inf over 90 min w/ P: [C, –] Can cause immune-mediated adverse Rxns; endocrinopathies may require Rx; hep dermatologic tox, heuramuscular tox, opthalmic tox CI: None **Disp**: IV 50 mg/10 mL, 200 mg/40 mL SE: Fatigue, D, pruritus, rash, colitis **Notes**: LFTs, CBC 1, 3, 6 mo; TFT q6mo; consider stopping w/ depression

**Ipratropium (Atrovent HFA, Atrovent Nasal) Uses**: *Bronchospasm w/ COPD, rhinitis, rhinorrhea* **Acts**: Synthetic anticholinergic similar to atropine; antagonizes acetylcholine receptors, inhibits mucous gland secretions **Dose**: Adults & Peds > 12 y. 2–4 puffs qid, max 12 Inh/d Nasal: 2 sprays/nostril bidtid; Nebulization: 500 mcg 3–4 ×/d; ECC 2010. Asthma: 250–500 mcg by neb/MDI q20min × 3 w/ P: [B, ?/M] w/ Inhaled insulin CI: Allergy to soya lecithin-related foods **Disp**: HFA Metered-dose inhaler 17 mcg/dose; Inh soln 0.02%; nasal spray 0.03, 0.06% SE: Nervousness, dizziness, HA, cough, bitter taste, nasal dryness, URI, epistaxis **Notes**: Not for acute bronchospasm unless used w/ inhaled β-agonist

**Irbesartan (Avapro) BOX**: D/C immediately if PRG detected **Uses**: *HTN, DN*, CHF **Acts**: Angiotensin II receptor antagonist **Dose**: 150 mg/d PO, may ↑ to 300 mg/d w/ P: [C (1st tri; D 2nd/3rd tri), ?/–] CI: PRG, component sensitivity **Disp**: Tabs 75, 150, 300 mg SE: Fatigue, ↓ BP, ↑ K

**Irinotecan (Camptosar, Generic) BOX**: D & myelosuppression administered by experienced
physician

**Uses**: *Colorectal* & lung CA  
**Acts**: Topoisomerase I inhib; ↓ DNA synth  
**Dose**: Per protocol; 125–350 mg/m² qwk–q3wk (↓ hepatic dysfunction, as tolerated per tox) w/ P: [D, −]  
**Cl**: Allergy to component  
**Disp**: Inj 20 mg/mL  
**SE**: ↓ BM, N/V/D, Abd cramping, alopecia; D is dose limiting; Rx acute D w/ atropine; Rx subacute D w/ loperamide

**Notes**: D correlated to levels of metabolite SN-38

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**Iron Dextran (Dexferrum, INFeD) BOX**: Anaphylactic Rxn w/ death reported; proper personnel and equipment should be available. Use test dose on only if PO iron not possible  
**Uses**: *Iron-deficiency anemia where PO administration not possible*  
**Dose**: See also label for tables/formula to calculate dose. Estimate Fe deficiency; total dose (mL) = \(0.0442 \times (\text{desired Hgb} – \text{observed Hgb}) \times \text{lean body Wt} + (0.26 \times \text{lean body Wt})\); Fe replacement, blood loss: total dose (mg) = blood loss (mL) \(\times\) Hct (as decimal fraction) max 100 mg/d.  
**IV use**: Test dose: 0.5 mL IV over 30 s, if OK, 2 mL or less daily IV over 1 mL/min to calculated total dose IM use: Test dose 0.5 mL deep IM in buttock. Administer calculated total dose not to exceed daily doses as follows: Infants < 5 kg: 1.0 mL; children < 10 kg; all others 2.0 mL (100 mg of iron). w/ P: [C, M] w/ Hx allergy/asthma. Keep Epi available (1:1000) for acute Rxn  
**Cl**: Component hypersens, non–Fe-deficiency anemia  
**Disp**: Inj 50 mg Fe/mL in 2 mL vials (INFeD) and 1 & 2 mL vials (Dexferrum)  
**Notes**: Not rec in infants < 4 mo.

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**Iron Sucrose (Venofer) BOX**: Severe & sometimes fatal hep may occur usually w/ in 1st 3 mo of Tx, although may develop after mo of Tx  
**Uses**: *Rx & prophylaxis of TB*  
**Acts**: Bactericidal; interferes w/ mycolic acid synth, disrupts cell wall  
**Dose**: Adults. Active TB: 5 mg/kg/24 h PO or IM (usually 300 mg/d) or DOT: 15 mg/kg (max 900 mg) 3×/wk. Prophylaxis: 300 mg/d PO for 6–12 mo or 900 mg 2×/wk. Peds. Active TB: 10–15 mg/kg/d daily PO or IM 300 mg/d max. Prophylaxis: 10 mg/kg/24 h PO; ↓ in hepatic/renal dysfunction w/ P: [C,+] Liver Dz, dialysis; avoid EtOH  
**Cl**: Acute liver Dz, Hx INH hep  
**Disp**: Tabs 100, 300 mg; syrup 50 mg/5 mL; Inj 100 mg/mL  
**SE**: Hep, peripheral neuropathy, GI upset, anorexia, dizziness, skin Rxn  
**Notes**: Use w/ 2–3 other drugs for active TB, based on INH resistance patterns when TB acquired & sensitivity results; prophylaxis usually w/ INH alone. IM rarely used. ↓ Peripheral neuropathy w/ pyridoxine 50–100 mg/d. See CDC guidelines (http://www.cdc.gov/tb/) for current TB recommendations

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**Isoniazid (INH) BOX**: Severe & sometimes fatal hep may occur usually w/ in 1st 3 mo of Tx, although may develop after mo of Tx  
**Uses**: *Rx & prophylaxis of TB*  
**Acts**: Bactericidal; interferes w/ mycolic acid synth, disrupts cell wall  
**Dose**: Adults. Active TB: 5 mg/kg/24 h PO or IM (usually 300 mg/d) or DOT: 15 mg/kg (max 900 mg) 3×/wk. Prophylaxis: 300 mg/d PO for 6–12 mo or 900 mg 2×/wk. Peds. Active TB: 10–15 mg/kg/d daily PO or IM 300 mg/d max. Prophylaxis: 10 mg/kg/24 h PO; ↓ in hepatic/renal dysfunction w/ P: [C,+] Liver Dz, dialysis; avoid EtOH  
**Cl**: Acute liver Dz, Hx INH hep  
**Disp**: Tabs 100, 300 mg; syrup 50 mg/5 mL; Inj 100 mg/mL  
**SE**: Hep, peripheral neuropathy, GI upset, anorexia, dizziness, skin Rxn  
**Notes**: Use w/ 2–3 other drugs for active TB, based on INH resistance patterns when TB acquired & sensitivity results; prophylaxis usually w/ INH alone. IM rarely used. ↓ Peripheral neuropathy w/ pyridoxine 50–100 mg/d. See CDC guidelines (http://www.cdc.gov/tb/) for current TB recommendations

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**Isoproterenol (Isuprel) Uses**: *Shock, cardiac arrest, AV nodal block*  
**Acts**: β₁- & β₂-receptor stimulants  
**Dose**: Adults. 2–10 mcg/min IV Inf; titrate; 2–10 mcg/min titrate (ECC 2005)  
**Peds.** 0.2–2 mcg/kg/min IV Inf; titrate w/ P: [C,?]  
**CI**: Angina, tachyarrhythmias (digitalis-induced or others)  
**Disp**: 0.02 mg/mL, 0.2 mg/mL  
**SE**: Insomnia, arrhythmias, HA, trembling, dizziness  
**Notes**: Pulse > 130 BPM may induce arrhythmias

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**Isosorbide Dinitrate (Dilatrate-SR, Isordil, Sorbitrate, Generic) Uses**: *Rx & prevent angina*, CHF (w/ hydralazine)  
**Acts**: Relaxes vascular smooth muscle  
**Dose**: Acute angina: 5–10 mg PO
(chew tabs) q2–3h or 2.5–10 mg SL PRN q5–10 min; do not give > 3 doses in a 15- to 30-min period. **Angina prophylaxis**: 5–40 mg PO q6h; do not give nitrates on a chronic q6h or qid basis > 7–10 d; tolerance may develop; provide 10- to 12-h drug-free intervals; **dose in CHF**: initial 20 mg 3–4×/d, target 120–160 mg/d w/ P: [C, ?] CI: Severe anemia, NAG, postural ↓ BP, cerebral hemorrhage, head trauma (can ↑ ICP), w/ sildenafil, tadalafil, vardenafil **Disp**: Tabs 5, 10, 20, 30; SR tabs 40 mg; SL tabs 2.5, 5 mg; SR caps 40 mg SE: HA, ↓ BP, flushing, tachycardia, dizziness **Notes**: Higher PO dose needed for same results as SL forms

**Isosorbide Mononitrate (Ismo, Imdur, Monoket) Uses**: *Prevention/Rx of angina pectoris* **Acts**: Relaxes vascular smooth muscle **Dose**: 5–20 mg PO bid, w/ doses 7 h apart or XR (Imdur) 30–60 mg/d PO, max 240 mg w/ P: [B, ?] Severe hypotension w/ paradoxical bradycardia, hypertrophic cardiomyopathy; head trauma/cerebral hemorrhage (can ↑ ICP) CI: w/ Sildenafil, tadalafil, vardenafil **Disp**: Tabs 10, 20, 20 mg; XR 30, 60, 120 mg SE: HA, dizziness, ↓ BP

**Isotretinoin (Amnesteem, Claravis, Myorisan, Sotret, Zentane, Generic) BOX**: Do not use in pts who are/may become PRG; ↑ risk severe birth defects; available only through iPLEDGE restricted distribution program; pts, prescribers, pharmacies, and distributors must enroll **Uses**: *Severe nodular acne resistant to other Tx* **Acts**: Inhib sebaceous gland Fxn & keratinization **Dose**: Adults and Peds > 12 y. 0.5–1 mg/kg/d 2 ÷ doses × 15–20 wk, do NOT take only 1×/d; PRG test prior to Rx each mo, end of Tx, and 1 mo after D/C w/ P: [X, –] Micro-dosed progesterone BCPs NOT an acceptable method of birth control; depression, suicidal thoughts and behaviors, psychosis/aggressive/violent behavior; pseudotumor cerbri; TEN, SJS; ↓ hearing, corneal opacities, ↓ night vision; IBD, pancreatitis, hepatic toxicity, ✓ lipids/LFTs regularly; back/joint pain, osteopenia, premature epiphyseal closure; ↑ chol, ↑ triglycerides, ↓ HDL; ↑ CK; ↑ glu CI: PRG, hypersens **Disp**: Caps 10, 20, 30, 40 mg SE: Dry/chapped lips, cheilitis, dry skin, dermatitis, dry eye, ↓ vision, HA, epistaxis, nasopharyngitis, URI, back pain **Notes**: ✓ Lipids/LFTs before; vit A may ↑ adverse events; avoid tetracyclines and any meds that may interfere w/ BCP effectiveness

**Isradipine (DynaCirc) Uses**: *HTN* **Acts**: CCB **Dose**: 2.5–5 mg PO bid; IR 2.5–10 mg bid; CR 5–20 qd w/ P: [C, ?/–] CI: Severe heart block, sinus bradycardia, CHF, dosing w/ in several hours of IV β-blockers CI: Hypotension < 90 mm Hg systolic **Disp**: Caps 2.5, 5 mg; tabs CR 5, 10 mg SE: HA, edema, flushing, fatigue, dizziness, palpitations

**Itraconazole (Onmel, Sporanox, Generic)** BOX: CI w/ cisapride, pimozide, quinidine, dofetilide, or levacetylmethadol. Serious CV events (eg, ↑ QT, torsades de pointes, VT, cardiac arrest, and/or sudden death) reported w/ these meds and other CYP3A4 inhib. Do not use for onychomycosis w/ ventricular dys-function. Negative inotropic effects have been observed following IV administration D/C/reasses use if S/Sxs of HF occur during Tx **Uses**: *Fungal Infxns (aspergillosis, blastomycosis, histoplasmosis, candidiasis, onychomycosis)* **Acts**: Azole antifungal, ↓ ergosterol synth **Dose**: Dose based on indication. 200 mg PO daily-tid (caps w/ meals or cola/grapefruit juice); PO soln on empty stomach; avoid antacids w/ P: [C, –] Numerous interactions CI: See Box; PRG or considering PRG; ventricular dysfunction CHF **Disp**: Caps 100 mg; soln 10 mg/mL SE: N/V, rash, hepatotoxic, ↓ K⁺, CHF, ↑ BP, neuropathy **Notes**: Soln & caps not interchangeable; useful in pts who cannot take amphotericin B; follow LFTs

**Ivacaftor (Kalydeco) Uses**: *Cystic fibrosis w/ G551D mutation transmembrane conductance regulator (CFTR) gene* **Acts**: ↑ Chloride transport **Dose**: Adult & Peds > 6 y. 150 mg bid; w/ fatty meal; ↓ hepatic impair or w CYP3A inhib w/ P: [B, ?/–] w/ CYP3A inhib (ketoconazole,
itraconazole, clarithromycin); may ↑ digoxin, cyclosporin, tacrolimus, benzodiazepine levels; w/ hepatic impair Child-Pugh Class C; severe renal impair CI: None Disp: Tabs 150 mg SE: HA, URI, oropharyngeal pain, Abd pain, N/D Notes: LFTs q3mo × 4, then yearly; D/C if AST/ALT 5 × ULN

**Ivermectin, Oral (Stromectol) Uses:** *Strongyloidiasis (intestinal), onchocerciasis* Acts: Binds glutamate-gated chloride channels in nerve and muscle cells, paralysis and death of nematodes Dose: Adults & Peds. Based on Wt and condition: intestinal strongyloidiasis 1 tab 15–24 kg, 2 tabs 25–35 kg, 3 tabs 36–50 kg, 4 tabs 51–65 kg, 5 tabs 66–79 kg, 80 or > 200 mcg/kg; onchocerciasis repeat dose × 1 in 2 wk, 1 tab 15–25 kg, 2 tabs 26–44 kg, 3 tabs 45–64 kg, 4 tabs 65–84 kg, 85 or > 150/mcg/kg; on empty stomach w/ P: [C, ?/–] Potential severe allergic/inflammatory Rxn Tx of onchocerciasis CI: Hypersensitivity Disp: Tabs 3 mg SE: N/V/D, dizziness, pruritus ↑ AST/ALT; ↓ WBC, RBC Notes: From fermented Streptomyces avermitilis; does not kill adult onchocerca, requires redosing

**Ivermectin, Topical (Sklice) Uses:** *Head lice* Acts: Binds to glutamate-gated chloride channels in nerve and muscle cells, paralysis and death of lice Dose: Adult & Peds > 6 mo. Coat hair/scalp w/ P: [C, ?/–] CI: None Disp: Lotion 0.5%, 4-oz tube SE: Conjunctivitis, red eye, dry skin Notes: From fermented Streptomyces avermitilis; coat dry hair and scalp thoroughly; avoid eye contact; use w/ lice management plan

**Ixabepilone Kit (Ixempra) BOX:** CI in combo w/ capecitabine w/ AST/ALT > 2.5 × ULN or bili > 1× ULN d/t tox and neutropenia-related death Uses: *Metastatic/locally advanced breast CA after failure of an anthracycline, a taxane, and capecitabine* Acts: Microtubule inhib Dose: 40 mg/m² IV over 3 h q3wk 88 mg max w/ P: [D, ?/–] CI: Hypersens to Cremophor EL; baseline ANC < 1500 cells/mm³ or plt < 100,000 cells/mm³; AST/or ALT > 2.5 × ULN, bili > 1 × ULN capecitabine Disp: Inj 15, 45 mg (use supplied diluent) SE: Neutropenia, leukopenia, anemia, thrombocytopenia, peripheral sensory neuropathy, fatigue/asthenia, myalgia/arthritis, alopecia, N/V, D, stomatitis/mucositis Notes: Substrate CYP3A4, adjust dose w/ strong CYP3A4 inhib/inducers

**Japanese Encephalitis Vaccine, Inactivated, Adsorbed (Ixiaro, Je-Vax) Uses:** *Prevent Japanese encephalitis* Acts: Inactivated vaccine Dose: Adults. 0.5 mL IM, repeat 28 d later given at least 1 wk prior to exposure Peds. Use Je-Vax, 1–3 y: Three 0.5 mL SQ doses day 0, 7, 30; > 3 y: Three 1 mL SQ doses on day 0, 7, 30 w/ P: [B (Ixiaro)/?] Severe urticaria or angio edema may occur up to 10 d after vaccination SE: HA, fatigue, Inj site pain, flu-like syndrome, hypersens Rxns Notes: Abbrev admin schedules of 3 doses on day 0, 7, and 14; booster dose recommended after 2 y. Avoid EtOH 48 h after dose, use is not recommended for all travelling to Asia

**Ketamine (Ketalar, Generic) [C-III] Uses:** *Induction/maintenance of anesthesia* (in combo w/ sedatives), sedation, analgesia Acts: Dissociative anesthesia; IV onset 30 s, duration 5–10 min Dose: Adults. 1–4.5 mg/kg IV, typical 2 mg/kg; 3–8 mg/kg IM Peds. 0.5–2 mg/kg IV; 0.5–1 mg/kg for minor procedures (also IM/PO regimens) w/ P: w/ CAD, ↑ BP, tachycardia, EtOH use/abuse [C, ?/–] CI: When ↑ BP hazardous Disp: Soln 10, 50, 100 mg/mL SE: Arrhythmia, ↑/↓ HR, ↑/↓ BP, N/V, resp depression, emergence Rxn, ↑ CSF pressure. CYP2B6 inhibs w/ ↓ metabolism Notes: Used in RSI protocols; street drug of abuse

**Ketoconazole (Nizoral, Generic) BOX:** (Oral use) Risk of fatal hepatotox. Concomitant terfenadine, astemizole, and cisapride are CI d/t serious CV adverse events Uses: *Systemic fungal Infxns (Candida, blastomycosis, histoplasmosis, etc); refractory topical dermatophyte Infxn*; PCa when
rapid ↓ testosterone needed or hormone refractory Acts: Azole, ↓ fungal cell wall synth; high dose blocks P450, to ↓ testosterone production Dose: PO: 200 mg PO daily; ↑ to 400 mg PO daily for serious Infxn. PCA: 400 mg PO tid; best on empty stomach w/ P: [C, –/–] w/ Any agent that ↑ gastric pH (↓ absorption); may enhance anticoagulants; w/ EtOH (disulfiram-like Rxn); numerous interactions including statins, niacin; do not use w/ clopidogrel (↓ effect) CI: CNS fungal Infxns, w/ astemizole, triazolam Disp: Tabs 200 mg SE: N, rashes, hair loss, HA, ↑ Wt gain, dizziness, disorientation, fatigue, impotence, hepatox, adrenal suppression, acquired cutaneous adherence (“sticky skin synd”) Notes: Monitor LFTs; can rapidly ↓ testosterone levels

Ketoconazole, Topical (Extina, Nizoral A-D Shampoo, Xolegel) [Shampoo—OTC] Uses: *Topical for seborrheic dermatitis, shampoo for dandruff* local fungal Infxns d/t dermatophytes & yeast Acts: Azole, ↓ fungal cell wall synth Dose: Topical: Apply qd-bid w/ P: [C, +/–] Disp: Topical cream 2%; (Xolegel) gel 2%, (Extina) foam 2%, shampoo 2% SE: Irritation, pruritus, stinging Notes: Do not dispense foam into hands

Ketoprofen (Orudis, Oruvail) BOX: May ↑ risk of fatal CV events & GI bleeding; CI for perioperative pain in CABG surgery Uses: *Arthritis (RA/OA), pain* Acts: NSAID; ↓ prostaglandins Dose: Adults: 25–75 mg PO tid-qid, 300 mg/d/max; SR 200 mg/d; w/ food; ↓ w/ hepatic/renal impair, elderly w/ P: [C (D 3rd tri), –] w/ ACE, diuretics; ↑ warfarin, Li, MTX, avoid EtOH CI: NSAID/ASA sensitivity Disp: Caps 50, 75 mg; caps, SR 200 mg SE: GI upset, peptic ulcers, dizziness, edema, rash, ↑ BP, ↑ LFTs, renal dysfunction

Ketorolac (Toradol) BOX: For short-term (≤ 5 d) Rx of mod–severe acute pain; CI w/ PUD, GI bleed, post CABG, anticipated major surgery, severe renal Insuff, bleeding diathesis, L&D, nursing, and w/ ASA/NSAIDs. NSAIDs may cause ↑ risk of CV/thrombotic events (MI, stroke). PO CI in peds < 16 y, dose adjustments for < 50 kg Uses: *Pain* Acts: NSAID; ↓ prostaglandins Dose: Adults: 15–30 mg IV/IM q6h; 10 mg PO qid only as continuation of IM/IV; max IV/IM 120 mg/d, max PO 40 mg/d. Peds 2–16 y. 1 mg/kg IM × 1 dose; 30 mg max; IV. 0.5 mg/kg, 15 mg max; do not use for > 5 d; ↓ if > 65 y, elderly, w/ renal impair, < 50 kg w/ P: [C (D 3rd tri), –] w/ ACE inhib, diuretics, BP meds, warfarin CI: See Box Disp: Tabs 10 mg; Inj 15 mg/mL, 30 mg/mL SE: Bleeding, peptic ulcer Dz, ↑ Cr & LFTs, renal dysfunction

Ketorolac, Nasal (Sprix) BOX: For short-term (< 5 d) Rx pain requiring opioid level analgesia* Acts: NSAID; ↓ prostaglandins Dose: < 65 y. 31.5 mg (one 15.75-mg spray each nostril) q6–8h; max 126 mg/d. ≥ 65 y, w/ renal impair or < 50 kg. 15.75 mg (one 15.75-mg spray in only 1 nostril) q6–8h; max 63 mg/d w/ P: [C (D 3rd tri), –] Do not use w/ other NSAIDs; can cause severe skin Rxns; do not use w/ critical bleeding risk; w/ CHF CI: See Box; prophylactic to major surgery/L&D, w/ Hx allergy to other NSAIDs recent or Hx of GI bleed or perforation Disp: Nasal spray 15.75-mg ketorolac/100-mcL spray (8 sprays/bottle) SE: Nasal discomfort/rhinitis, ↑ lacrimation, throat irritation, oliguria, rash, ↓ HR, ↓ urine output, ↑ ALT/AST, ↑ BP Notes: Discard open bottle after 24 h

Ketorolac Ophthalmic (Acular, Acular LS, Acular PF, Acuvail) Uses: *Ocular itching w/ seasonal allergies; inflammation w/ cataract extraction*; pain/photophobia w/ incisional refractive surgery (Acular PF); pain w/ corneal refractive surgery (Acular LS) Acts: NSAID Dose: 1 gtt qid w/ P: [C, +] Possible cross-sensitivity to NSAIDs, ASA CI: Hypersens Disp: Acular LS: 0.4% 5 mL; Acular:
Acular PF: Soln 0.5% Acuvail soln 0.45% SE: Local irritation, ↑ bleeding ocular tissues, hyphemas, slow healing, keratitis Notes: Do not use w/ contacts

Ketotifen (Alaway, Claritin Eye, Zaditor, Zyrtec Itchy Eye) [OTC] Uses: *Allergic conjunctivitis* Acts: Antihistamine H₁-receptor antagonist, mast cell stabilizer Dose: Adults & Peds > 3 y. 1 gtt in eye(s) q8–12h w/ P: [C, ?/] Disp: Soln 0.025%/5 & 10 mL SE: Local irritation, HA, rhinitis, keratitis, mydriasis Notes: Wait 10 min before inserting contacts

Kunecatechins [Sinecatechins] (Veregen) Uses: *External genital/perianal warts* Acts: Unknown; green tea extract Dose: Apply 0.5-cm ribbon to each wart 3×/d until all warts clear; not > 16 wk w/ P: [C, ?] Disp: Oint 15% SE: Erythema, pruritus, burning, pain, erosion/ulceration, edema, induration, rash, phimosis Notes: Wash hands before/after use; not necessary to wipe off prior to next use; avoid on open wounds, may weaken condoms & Vag diaphragms, use in combo is not recommended

Labetalol (Trandate) Uses: *HTN* & hypertensive emergencies (IV) Acts: α- & β-Adrenergic blockers Dose: Adults. HTN: Initial, 100 mg PO bid, then 200–400 mg PO bid. Hypertensive emergency: 20–80 mg IV bolus, then 2 mg/min IV Inf, titrate up to 300 mg; ECC 2010. 10 mg IV over 1–2 min; repeat or double dose q10min (150 mg max); or initial bolus, then 2–8 mg/min Peds. PO: 1–3 mg/kg/d in ÷ doses, 1200 mg/d max. Hypertensive emergency: 0.4–1.5 mg/kg/h IV cont Inf w/ P: [C (D in 2nd or 3rd tri), +] CI: Asthma/COPD, cardiogenic shock, uncompensated CHF, heart block, sinus brady Disp: Tabs 100, 200, 300 mg; Inj 5 mg/mL SE: Dizziness, N, ↓ BP, fatigue, CV effects

Lacosamide (Vimpat) Uses: *Adjunct in partial-onset Szs* Acts: Anti-convulsant Dose: Initial: 50 mg IV or PO bid, ↑ weekly; Maint: 200–400 mg/d; 300 mg/d max if CrCl < 30 mL/min or mild–mod hepatic Dz w/ P: [C, ?] DRESS ↑ PR [C–V] Antiepileptics associated w/ ↑ risk of suicide ideation CI: None Disp: IV: 200 mg/20 mL; Tabs: 50, 100, 150, 200 mg; oral soln 10 mg/mL SE: Dizziness, N/V, ataxia Notes: ECG before dosing

Lactic Acid & Ammonium Hydroxide [Ammonium Lactate] (LacHydrin) [OTC] Uses: *Severe xerosis & ichthyosis* Acts: Emollient moisturizer, humectant Dose: Apply bid w/ P: [B, ?] Disp: Cream, lotion, lactic acid 12% w/ ammonium hydroxide SE: Local irritation, photosens Notes: Shake well before use

Lactobacillus (Lactinex Granules) [OTC] Uses: *Control of D*, especially after antibiotic Rx Acts: Replaces nl intestinal flora, lactase production; Lactobacillus acidophilus and Lactobacillus helveticus. Dose: Adults & Peds > 3 y. 1 packet, 1–2 caps, or 4 tabs qd-qid w/ P: [A, +] Some products may contain whey CI: Milk/lactose allergy Disp: Tabs, caps; granules in packets (all OTC) SE: Flatulence Notes: May take granules on food

Lactulose (Constulose, Generlac, Enulose, Others) Uses: *Hepatic encephalopathy; constipation* Acts: Acidifies the colon, allows ammonia to diffuse into colon; osmotic effect to ↑ peristalsis Dose: Acute hepatic encephalopathy: 30–45 mL PO q1h until soft stools, then tid-qid, adjust 2–3 stool/d. Constipation: 15–30 mL/d, ↑ to 60 mL/d 1–2 ÷ doses, adjust to 2–3 stools. Rectally: 200 g in 700 mL of H₂O PR, retain 30–60 min q4–6h Peds Infants. 2.5–10 mL/24 h ÷ tid-qid Other Peds. 40–90 mL/24 h ÷ tid-qid. Peds constipation: 1–3 mL/kg/d ÷ doses (max 60 mL/d) PO after breakfast w/ P: [B, ?] CI: Galactosemia Disp: Syrup 10 g/15 mL, soln 10, 20 g/packet SE: Severe D, N/V, cramping, flatulence; life-threatening lyte disturbances

Lamivudine (Epivir, Epivir-HBV, 3TC [Many Combo Regimens]) BOX: Lactic acidosis & severe
Hepatomegaly w/ steatosis reported w/ nucleoside analogs do not use Epivir-HBV for Tx of HIV, monitor pts closely following D/C of therapy for hep B USES: *HIV Infxn, chronic hep B* ACTS: NRTI, ↓ HIV RT & hep B viral polymerase, causes viral DNA chain termination DOSE: HIV: Adults & Peds > 16 y. 150 mg PO bid or 300 mg PO daily Peds able to swallow pills. 14–21 kg: 75 mg PO bid; 22–29 kg: 75 mg q A.M., 150 mg q P.M. > 30 kg: 150 mg bid Neonates < 30 d: 2 mg/kg bid; infants 1–3 mo 4 mg/kg/dose > 3 mo & child < 16 y 4 mg/kg/dose bid (max 150 mg bid) Epivir-HBV: Adults. 100 mg/d PO. Peds 2–17 y. 3 mg/kg/d PO, 100 mg max; ↓ w/ CrCl < 50 mL/min w/ P: [C, ?] w/ Interferon-α and ribavirin may cause liver failure; do not use w/ zalcitabine or w/ ganciclovir/valganciclovir DISP: Tabs 100 mg (Epivir-HBV) 150 mg, 300 mg; soln 5 mg/mL (Epivir-HBV), 10 mg/mL SE: Malaise, fatigue, N/V/D, HA, pancreatitis, lactic acidosis, peripheral neuropathy, fat redistribution, rhabdomyolysis hyperglycemia, nasal Sxs NOTES: Differences in formulations; do not use Epivir-HBV for hep in pt w/ unrecognized HIV d/t rapid emergence of HIV resistance

Lamotrigine (Lamictal) BOX: Life-threatening rashes, including Stevens-Johnson synd and toxic epidermal necrolysis, and/or rash-related death reported; D/C at 1st sign of rash USES: *Epilepsy adjunct > 2 y or monoRx > 16 y old; bipolar disorder > 18 y old* ACTS: Phenyltriazine antiepileptic, ↓ glutamate, stabilize neuronal membrane DOSE: Adults. Szs: Initial 50 mg/d PO, then 50 mg PO bid x 1–2 wk, maint 300–500 mg/d in 2 ÷ doses. Bipolar: Initial 25 mg/d PO x 1–2 wk, 50 mg PO daily for 2 wk, 100 mg PO daily for 1 wk, maint 200 mg/d. Peds. 0.6 mg/kg in 2 ÷ doses for wk 1 & 2, then 1.2 mg/kg for wk 3 & 4, q1–2wk to maint 5–15 mg/kg/d (max 400 mg/d) in 1–2 ÷ doses; ↓ hepatic Dz or w/ enzyme inducers or valproic acid w/ P: [C, –] ↑ suicide risk, higher for those w/ epilepsy vs psych use. Interact w/ other antiepileptics, estrogen, rifampin DISP: (color-coded for use w/ interacting meds); starter titrate kits; tabs 25, 100, 150, 200 mg; chew tabs 2, 5, 25 mg; ODT 25, 50, 100, 200 mg SE: Photosens, HA, GI upset, dizziness, diplopia, blurred vision, blood dyscrasias, ataxia, rash (more lifethreatening in peds vs adults), aseptic meningitis NOTES: Value of therapeutic monitoring uncertain, taper w/ D/C

Lamotrigine, Extended-Release (Lamictal XR) BOX: Life-threatening rashes, including Stevens-Johnson synd and toxic epidermal necrolysis, and/or rash-related death reported; D/C at 1st sign of rash USES: *Adjunct primary generalized tonic-clonic Sz, conversion to monoRx in pt > 13 y w/ partial Szs* ACTS: Phenyltriazine antiepileptic, ↓ glutamate, stabilize neuronal membrane DOSE: Adjunct target 200–600 mg/d; monoRx conversion target dose 250–300 mg/d Adults. w/ Valproate: wk 1–2 25 mg qod, wk 3–4 25 mg qd, wk 5 50 mg qd, wk 6 100 mg qd, wk 7 150 mg qd, then maint 200–250 mg qd. w/ o Carbamazepine, phenytoin, phenobarbital, primidone, or valproate: wk 1–2 25 mg qd, wk 3–4 50 mg qd, wk 5 100 mg qd, wk 6 150 mg qd, wk 7 200 mg qd, then maint 300–400 mg qd. Convert IR to ER tabs: Initial dose = total daily dose of IR. Convert adjunctive to monoRx: Maint: 250–300 mg qd. See label. w/ OCP: See insert. Peds > 13 y. See adult w/ P: [C, –] Interacts w/ other antiepileptics, estrogen (OCP), rifampin; valproic acid ↑ levels at least 2×; ↑ suicidal ideation; withdrawal Szs CI: Component hyper-sens (see Box) DISP: Tabs 25, 100, 150, 200 mg SE: Dizziness, tremor/intention tremor, V, diplopia, rash (more lifethreatening in peds than adults), aseptic meningitis, blood dyscrasias NOTES: Taper over 2 wk w/ D/C

Lansoprazole (Prevacid, Prevacid 24HR [OTC]) USES: *Duodenal ulcers, prevent & Rx NSAID gastric ulcers, active gastric ulcers, H. pylori Infxn, erosive esophagitis, & hypersecretory conditions, GERD* ACTS: Proton pump inhib DOSE: 15–30 mg/d PO; NSAID ulcer prevention: 15
mg/d PO = 12 wk. NSAID ulcers: 30 mg/d PO × 8 wk; hypersecretory condition: 60 mg/d before food doses of 90 mg bid have been used; ↓ w/ severe hepatic impair w/ P: [B, ?/–] w/ Clopidogrel

Disp: 
- Prevacid: DR caps 15, 30 mg; Prevacid 24HR [OTC] 15 mg; Prevacid SoluTab (ODT) 15 mg (contains phenylalanine)
- SE: N/V, Abd pain, HA, fatigue

Notes: Do not crush/chew; granules can be given w/ applesauce or apple juice (NG tube) only; ↑ risk of fractures w/ all PPI; caution w/ ODT in feeding tubes; risk of hypomagnesemia w/ long-term use; monitor

Lanthanum Carbonate (Fosrenol) Uses: *Hyperphosphatemia in end-stage renal Dz*

Acts: Phosphate binder

Dose: 750–1500 mg PO daily in ÷ doses, w/ or immediately after meal; titrate q2–3wk based on PO₄²⁻ levels w/ P: [C, ?/–] No data in GI dz; not for peds CI

Disp: Chew tabs 500, 750, 1000 mg

SE: N/V, graft occlusion, HA, ↓ BP

Notes: Chew tabs before swallowing; separate from meds that interact w/ antacids by 2 h

Lapatinib (Tykerb) BOX: Hepatotox has been reported (severe or fatal)

Uses: *Advanced breast CA w/ Her2 over express & failed w/ anthracycline, taxane, & trastuzumab* and in combo w/ letrozole in postmenopausal women

Acts: TKI

Dose: Per protocol, 1250 mg PO days 1–21 w/ capecitabine 2000 mg/m²/d ÷ 2 doses/d on days 1–14; 1500 mg PO daily in combo w/ letrozole ↓ w/ severe cardiac or hepatic impair w/ P: [D, ?/+] Avoid CYP3A4 inhibit/inducers

CI: Component hypersens

Disp: Tabs 250 mg

SE: N/V/D, anemia, ↓ plt, neutropenia, ↑ QT interval, hand-foot synd, ↑ LFTs, rash, ↓ left ventricular ejection fraction, interstitial lung dz and pneumonitis

Notes: Consider baseline LVEF & periodic ECG: LFTs at baseline & during Tx

Latanoprost (Xalatan) Uses: *Open-angle glaucoma, ocular HTN*

Acts: Prostaglandin, ↑ outflow of aqueous humor

Dose: 1 gtt eye(s) hs w/ P: [C, M]

Disp: 0.005% soln

SE: May darken light irides; blurred vision, ocular stinging, & itching, ↑ number & length of eyelashes

Notes: Wait 15 min before using contacts; separate from other eye products by 5 min

Leflunomide (Arava) BOX: PRG must be excluded prior to start of Rx; hepatotox; Tx should not be initiated in pts w/ acute or chronic liver dz

Uses: *Active RA, orphan drug for organ rejection*

Acts: DMARD, ↓ pyrimidine synth

Dose: Initial 100 mg/d PO for 3 d, then 10–20 mg/d w/ P: [X, –] w/ bile acid sequestrants, warfarin, rifampin, MTX; not rec in pts w/ preexisting liver dz

CI: PRG

Disp: Tabs 10, 20 mg

SE: D, Infxn, HTN, alopecia, rash, N, jt pain, hep, interstitial lung dZ, immunosuppression peripheral neuropathy

Notes: Monitor monthly & @ baseline LFTs, D/C therapy if ALT > 3 × ULN & begin drug elimination procedure, CBC, PO during initial Rx; vaccine should be up-to-date, do not give w/ live vaccines

Lenalidomide (Revlimid) BOX: Significant teratogen; pt must be enrolled in RevAssist risk-reduction program; hematologic tox, DVT & PE risk

Uses: *MDS, combo w/ dexamethasone in multiple myeloma in pt failing one prior Rx*

Acts: Thalidomide analog, immune modulator

Dose: 
- Adults. MDS: 10 mg PO daily; swallow whole w/ water; multiple myeloma 25 mg/d days 1–21 of 28-d cycle w/ protocol dose of dexamethasone w/ P: [X, –] w/ Renal impair CI: PRG

Disp: Caps 5, 10, 15, 25 mg

SE: D, pruritus, rash, fatigue, night sweats, edema, nasopharyngitis, ↓ BM (plt, WBC), ↑ K⁺, ↑ LFTs, thromboembolism

Notes: Monitor CBC and for thromboembolism, hepatotox; routine PRG tests required; Rx only in 1-mo increments; limited distribution network; males must use condom and not donate sperm; use at least 2 forms contraception > 4 wk beyond D/C; see pkg insert for dose adjustments based on nonhematologic & hematologic tox

Lepirudin (Refludan) Uses: *HIT*

Acts: Direct thrombin inhib

Dose: Bolus: 0.4 mg/kg IV push then
0.15 mg/kg/h Inf; if > 110 kg 44 mg of Inf 16.5 mg/h max; ↓ dose & Inf rate w/ if CrCl < 60 mL/min or if used w/ thrombolytics w/ P: [B, ?/–] Hemorrhagic event or severe HTN CI: Active bleeding Disp: Inf 50 mg SE: Bleeding, anemia, hematoma, anaphylaxis Notes: Adjust based on aPTT ratio, maintain aPTT 1.5–2.5 × control; S/Sxs of bleeding

Letrozole (Femara) Uses: *Breast CA: Adjuvant w/ postmenopausal hormone receptor positive early Dz; adjuvant in postmenopausal women w/ early breast CA w/ prior adjuvant tamoxifen therapy; 1st/2ndline in postmenopausal w/ hormone receptor positive or unknown* Acts: Nonsteroidal aromatase inhib Dose: 2.5 mg/d PO; q other day w/ severe liver Dz or cirrhosis w/ P: [D, ?] [X, ?/–] CI: PRG, women who may become pregnant Disp: Tabs 2.5 mg SE: Anemia, N, hot flashes, arthralgia, hypercholesterolemia, decreased BMD, CNS depression Notes: Monitor CBC, thyroid Fxn, lytes, LFTs, SCr, BP, bone density, cholesterol

Leucovorin (Generic) Uses: *OD of folic acid antagonist; megaloblastic anemia, augment 5-FU, impaired MTX elimination; w/ 5-FU in colon CA* Acts: Reduced folate source; circumvents action of folate reductase inhib (eg, MTX) Dose: Leucovorin rescue: 10 mg/m² IM/IV q6h; start w/ in 24 h after dose or 15 mg PO/IM/IV q6h, for 10 doses until MTX level < 0.05 micromole/L Folate antagonist OD (eg, Pemetrexed) 100 mg/m² IM/IV × 1 then 50 mg/m² IM/IV q6h × 8 d; 5-FU adjuvant Tx, colon CA per protocol; low dose: 20 mg/m²/d IV × 5 d w/ 5-FU 425 mg/m²/d IV × 5 d, repeat q4–5wk × 6; high dose: 200 mg/m² in combo w/ 5-FU 370 mg/m² Megaloblastic anemia: 1 mg IM/IV daily w/ P: [C, ?/–] CI: Pernicious anemia or vit B₁₂ deficient megaloblastic anemias Disp: Tabs 5, 10, 15, 25 mg; Inj 50, 100, 200, 350, 500 mg SE: Allergic Rxn, N/V/D, fatigue, wheezing, ↑ plt Notes: Monitor Cr, methotrexate levels q24h w/ leucovorin rescue; do not use intrathecally/intraventricularly; w/ 5-FU CBC w/ diff, plt, LFTs, lytes

Leuprolide (Eligard, Lupron, Lupron DEPOT, Lupron DEPOT-Ped, Generic) Uses: *Advanced PCa (all except Depot-Ped), endometriosis (Lupron), uterine fibroids (Lupron), & precocious puberty (Lupron-Ped)* Acts: LHRH agonist; paradoxically ↓ release of GnRH w/ ↓ LH from anterior pituitary; in men ↓ testosterone, in women ↓ estrogen Dose: Adults. PCa: Lupron DEPOT: 7.5 mg IM q28d or 22.5 mg IM q3mo or 30 mg IM q4mo or 45 mg IM q6mo. Eligard: 7.5 mg SQ q28d or 22.5 mg SQ q3mo or 30 mg SQ q4mo or 45 mg SQ q6 mo. Endometriosis (Lupron DEPOT): 3.75 mg IM qmo × 6 or 11.25 IM q3mo × 2. Fibroids: 3.75 mg IM qmo × 3 or 11.25 mg IM × 1. Peds. CPP (Lupron DEPOT-Ped): 50 mcg/kg/d SQ Inj; ↑ by 10 mcg/kg/d until total downregulation achieved. Lupron DEPOT: < 25 kg: 7.5 mg IM q4wk; > 25–37.5 kg: 11.25 mg IM q4wk; > 37.5 kg: 15 mg IM q4wk, ↑ by 3.75 mg q4wk until response w/ P: [X, –] w/ Impending cord compression in PCa, ↑ QT w/ meds or preexisting CV Dz CI: AUB, implant in women/peds; PRG Disp: Inj 5 mg/mL; Lupron DEPOT: 3.75 mg (1 mo for fibroids, endometriosis); Lupron DEPOT for PCa: 7.5 mg (1 mo), 11.25 (3 mo), 22.5 (3 mo), 30 (4 mo), 45 mg (6 mo); Eligard depot for PCA: 7.5 (1 mo); 22.5 (3 mo), 30 (4 mo), 45 mg (6 mo); Lupron DEPOT-Ped: 7.5, 11.25, 15, 30 mg SE: Hot flashes, gynecomastia, N/V, alopecia, anorexia, dizziness, HA, insomnia, paresthesias, depression exacerbation, peripheral edema, & bone pain (transient “flare Rxn” at 7–14 d after the 1st dose [LH/testosterone surge before suppression]); ↓ BMD w/ > 6 mo use, bone loss possible, abnormal menses, hyperglycemia Notes: Nonsteroidal antiandrogen (eg, bicalutamide) may block flare in men w/ PCa; Viadur unavail to new Rx

Levalbuterol (Xopenex, Xopenex HFA) Uses: *Asthma (Rx & prevention of bronchospasm)* Acts:
Sympathomimetic bronchodilator; R-isomer of albuterol β2-agonist  
**Dose:** Based on NIH Guidelines 2007  
**Adults.** Acute–severe exacerbation Xopenex HFA 4–8 puffs q20min up to 4 h, the q1–4h PRN or nebulizer 1.25–2.5 mg q20min × 3, then 1.25–5 mg q1–4h PRN; **Peds < 5 y.** Quick relief 0.31–1.25 mg q4–6h PRN, severe 1.25 mg q20min × 3, then 0.075–0.15 mg/kg q1–4h PRN, 5 mg max. **5–11 y:** Acute–severe exacerbation 1.25 mg q20min × 3, then 0.075–0.15 mg/kg q1–4h PRN, 5 mg max, quick relief: 0.31–0.63 q8h PRN. **> 12 y:** 0.63–1.25 mg nebulizer q8h w/ P: [C, M] w/ Non–K+-sparking diuretics, CAD, HTN, arrhythmias, ↓ K+, hyperthyroidism, glaucoma, diabetes  
**CI:** Component hypersens  
**Disp:** Multidose inhaler (Xopenex HFA) 45 mcg/puff (15 g); soln nebulizer Inh 0.31, 0.63, 1.25 mg/3 mL; concentrate 1.25 mg/0.5 mL  
**SE:** Paradox bronchospasm, anaphylaxis, angioedema, tachycardia, nervousness, V, ↓ K+  
**Notes:** May ↓ CV SEs compared w/ albuterol; do not mix w/ other nebs or dilute

**Levetiracetam (Keppra, Keppra XR) Uses:** *Adjunctive PO Rx in partial onset Sz (adults & peds ≥ 4 y), myoclonic Szs (adults & peds ≥ 12 y) w/ juvenile myoclonic epilepsy (JME), primary generalized tonic-clonic (PGTC) Szs (adults & peds ≥ 6 y) w/ idiopathic generalized epilepsy. Adjunctive Inj Rx partial-onset Szs in adults w/ epilepsy; myoclonic Szs in adults w/ JME. Inj alternative for adults (≥ 16 y) when PO not possible*  
**Acts:** Unknown  
**Dose:** **Adults & Peds > 16 y.** 500 mg PO bid, titrate q2wk, may ↑ 3000 mg/d max. **Peds 4–15 y.** 10 mg/kg/d ÷ in 2 doses to max 60 mg/kg/d (↓ in renal Insuff) w/ P: [C, ?/–] Elderly, w/ renal impair, psychological disorders; ↑ suicidality risk for antiepileptic drugs, higher for those w/ epilepsy vs those using drug for psychological indications; Inj not for < 16 y  
**CI:** Component allergy  
**Disp:** Tabs 250, 500, 750, 1000 mg, ER 500, 750 mg soln 100 mg/mL; Inj 100 mg/mL  
**SE:** Dizziness, somnolence, HA, N/V, hostility, aggression, hallucinations, hematologic abnormalities, impaired coordination  
**Notes:** Do not D/C abruptly; postmarket hepatic failure and pancytopenia reported

**Levobunolol (A-K Beta, Betagan) Uses:** *Open-angle glaucoma, ocular HTN*  
**Acts:** β-Adrenergic blocker  
**Dose:** 1 gtt daily-bid w/ P: [C, M] w/ Vera-pamil or systemic β-blockers  
**CI:** Asthma, COPD, sinus bradycardia, heart block (2nd-, 3rd-degree) CHF  
**Disp:** Soln 0.25, 0.5%  
**SE:** Ocular stinging/burning, ↓ HR, ↓ BP  
**Notes:** Possible systemic effects if absorbed

**Levocetirizine (Xyzal) Uses:** *Perennial/seasonal allergic rhinitis, chronic urticaria*  
**Acts:** Antihistamine  
**Dose:** **Adults.** 5 mg qd **Peds.** 6 mo–5 y: 1.25 mg once daily 6–11 y 2.5 mg qd w/ P: [B, ?/–] ↓ Adult dose w/ renal impair, CrCl 50–80 mL/min 2.5 mg daily, 30–50 mL/min 2.5 mg q other day, 10–30 mL/min 2.5 mg 2×/wk  
**CI:** Peds 6–11 y, w/ renal impair, adults w/ ESRD  
**Disp:** Tab 5 mg, soln 0.5 mL/mL (150 mL)  
**SE:** CNS depression, drowsiness, fatigue, xerostomia  
**Notes:** Take in evening

**Levofloxacin (Levaquin, Generic) BOX:** ↑ Risk Achilles tendon rupture and tendonitis, may exacerbate muscle weakness related to myastheria gravis  
**Uses:** *Skin/skin structure Infxn (SSSI), UTI, chronic bacterial prostatitis, acute pyelo, acute bacterial sinusitis, acute bacterial exacerbation of chronic bronchitis, CAP, including multidrug-resistant S. pneumoniae, nosocomial pneumonia; Rx inhalational anthrax in adults & peds ≥ 6 mo*  
**Acts:** Quinolone, ↓ DNA gyrase.  
**Spectrum:** Excellent gram(+) except MRSA & E. faecium; excellent gram(–) except Stenotrophomonas maltophilia & Acinetobacter sp; poor anaerobic  
**Dose:** **Adults ≥ 18 y.** IV/PO: Bronchitis: 500 mg qd × 7 d. CAP: 500 mg qd × 7–14 d or 750 mg qd × 5 d. Sinusitis: 500 mg qd × 10–14 d or 750 mg qd × 5 d. Prostatitis: 500 mg qd × 28 d. Uncomp SSSI: 500 mg qd × 7–10 d. Comp SSSI/nosocomial
pneumonia: 750 mg qd × 7–14 d. Anthrax: 500 mg qd × 60 d; Uncomp UTI: 250 mg qd × 3 d. Comp UTI/acute pyelo: 250 mg qd × 10 d or 750 mg qd × 5 d. CrCl 10–19 mL/min: 500 mg then 250 mg q other day or 750 mg, then 500 mg q48h. Hemodialysis: 750 mg, then 500 mg q48h. Peds ≥ 6 mo. Anthrax > 50 kg: 500 mg q 24h × 60 d, < 50 kg 8 mg/kg (250 mg/dose max) q12h for 60 d ↓ w/ renal impair avoid antacids w/ PO; oral soln 1 h before, 2 h after meals CAP: ≥ 6 mo–≤ 4 y 8 mg/kg/dose q12h (max 750 mg/d), 5–16 y 8 mg/kg/dose once daily (750 mg/d) w/ P: [C, –] w/ Cation-containing products (eg, antacids), w/ drugs that ↑ QT interval CI: Quinolone sensitivityDisp: Tabs 250, 500, 750 mg; premixed IV 250, 500, 750 mg, Inj 25 mg/mL; Leva-Pak 750 mg × 5 d SE: N/D, dizziness, rash, GI upset, photosens, CNS stimulant w/ IV use, C. difficile enterocolitis; rare fatal hepatox, peripheral neuropathy risk Notes: Use w/ steroids ↑ tendon risk; only for anthrax in peds Levofloxacin Ophthalmic (Quixin, Iquix) Uses: *Bacterial conjunctivitis* Acts: See levofloxacin Dose: Ophthal: 1–2 gtt in eye(s) q2h while awake up to 8×/d × 2 d, then q4h while awake × 5 d w/ P: [C, –] CI: Quinolone sensitivity Disp: 25 mg/mL ophthal soln 0.5% (Quixin), 1.5% (Iquix) SE: Ocular burning/pain, ↓ vision, fever, foreign body sensation, HA, pharyngitis, photophobia Levonorgestrel (Next Choice, Plan B One-Step, Generic [OTC]) Uses: *Emergency contraceptive (“morning-after pill”)* Acts: Prevents PRG if taken < 72 h after unprotected sex/contraceptive failure; progestin, alters tubal transport & endometrium to implantation Dose: Adults & Peds (postmenarche ♀) w/ in 72 h of unprotected intercourse: Next Choice 0.75 mg q12h × 2; Plan B One-Step 1.5 mg × 1 w/ P: [X, M] w/ AUB; may ↑ ectopic PRG risk CI: Known/suspected PRG Disp: Next Choice tab, 0.75 mg, 2 blister packs; Plan B One-Step tab, 1.5 mg, 1 blister pack SE: N/V/D, Abd pain, fatigue, HA, menstrual changes, dizziness, breast changes Notes: Will not induce Ab w/ PRG; federal court ruling in 2013 made these emergency contraceptives OTC w/o age or point-of-sale restrictions (label update pending) Levonorgestrel IUD (Mirena) Uses: *Contraception, long-term* Acts: Progestin, alters endometrium, thicken cervical mucus, inhibits ovulation and implantation Dose: Up to 5 y, insert w/ in 7 d menses onset or immediately after 1st-tri Ab; wait 6 wk if postpartum; replace any time during menstrual cycle w/ P: [X, M] CI: PRG, w/ active hepatic Dz or tumor, uterine anomaly, breast CA, acute/Hx of PID, postpartum endometriosis, infected Ab last 3 mo, gynecological neoplasia, abnormal Pap, AUB, untreated cervicitis/vaginitis, multiple sex partners, ↑ susceptibility to Infxn Disp: 52 mg IUD SE: Failed insertion, ectopic PRG, sepsis, PID, infertility, PRG comps w/ IUD left in place, Ab, embedment, ovarian cysts, perforation uterus/cervix, intestinal obst/perforation, peritonitis, N, Abd pain, ↑ BP, acne, HA Notes: Inform pt does not protect against STD/HIV; see PI for insertion instructions; reexamine placement after 1st menses; 80% PRG w/ in 12 mo of removal Levorphanol (Levo-Dromoran) [C-II] Uses: *Mod–severe pain; chronic pain* Acts: Narcotic analgesic, morphine derivative Dose: 2–4 mg PO PRN q6–8h; ↓ in hepatic impair w/ P: [B/D (prolonged use/high doses at term), ?/–] w/ ↑ ICP, head trauma, adrenal Insuff CI: Component allergy, PRG Disp: Tabs 2 mg SE: Tachycardia, ↑ BP, drowsiness, GI upset, constipation, resp depression, pruritus Levothyroxine (Synthroid, Levoxyl, Others) BOX: Not for obesity or Wt loss; tox w/ high doses, especially when combined w/ sympathomimetic amines Uses: *Hypothyroidism, pituitary thyroid-stimulating hormone (TSH) suppression, myxedema coma* Acts: T₄ supl l-thyroxine Dose: Adults. Hypothyroid titrate until euthyroid > 50 y w/o heart Dz or < 50 w/ heart Dz 25–50 mcg/d, ↑ q6–8wk;
> 50 y w/ heart Dz 12.5–25 mcg/d, ↑ q6–8wk; usual 100–200 mcg/d. Myxedema: 1–3 mo: 10–15 mcg/kg/24 h PO; 3–6 mo: 8–10 mcg/kg/d PO; 6–12 mo: 6–8 mcg/kg/d PO; 1–5 y: 5–6 mcg/kg/d PO; 6–12 y: 4–5 mcg/kg/d PO; > 12 y: 2–3 mcg/kg/d PO; if growth and puberty complete 1.7 mcg/kg/d; ↓ dose by 50% if IV; titrate based on response & thyroid tests; dose can ↑ rapidly in young/middle-aged; best on empty stomach w/ P: [A, M] Many drug interactions; in elderly w/ CV Dz; thyrotoxicosis; w/ warfarin monitor INR CI: Recent MI, uncorrected adrenal Insuff; Disp: Tabs 25, 50, 75, 88, 100, 112, 125, 137, 150, 175, 200, 300 mcg; Inj 100, 500 mcg SE: Insomnia, Wt loss, N/V/D, ↑ LFTs, irregular periods, ↓ BMD, alopecia, arrhythmia Notes: Take w/ full glass of water (prevents choking); PRG may ↑ need for higher doses; takes 6 wk to see effect on TSH; wait 6 wk before checking TSH after dose change Linagliptin (Tradjenta) Uses: *Type 2 DM * Acts: Dipeptidyl peptidase-4 (DPP-4) inhibitor; ↑ active incretin hormones (↑ insulin release, ↓ glucagon) Dose: Adults. 5 mg daily w/ P: [B, ?/–] CI: Hypersensitivity Disp: Tabs 5 mg SE: Hypoglycemia w/ sulfonylurea; nasopharyngitis, pancreatitis Notes: Inhibitor of CYP3A4 Lidocaine, Systemic (Xylocaine, Others) Uses: *Rx cardiac arrhythmias* Acts: Class IB antiarrhythmic Dose: Adults. Antiarrhythmic, ET: 5 mg/kg; follow w/ 0.5 mg/kg in 10 min if effective. IV load: 1 mg/kg/dose bolus over 2–3 min; repeat in 5–10 min; 200–300 mcg/h max; cont Inf 20–50 mcg/kg/min or 1–4 mg/min; ECC 2010. Cardiac arrest from VF/VT refractory VF: Initial: 1–1.5 mg/kg IV/IO, additional 0.5–0.75 mg/kg IV push, repeat in 5–10 min, max total 3 mg/kg. ET: 2–4 mg/kg as last resort. Reperfusing stable VT, wide complex tachycardia, or ectopy: Doses of 0.5–0.75 mg/kg to 1–1.5 mg/kg may be used initially; repeat 0.5–0.75 mg/kg q5–10min; max dose 3 mg/kg. Peds. ECC 2010. VF/pulseless VT, wide-complex tach (w/ pulses): 1 mg/kg IV/IO, then maint 20–50 mcg/kg/min (repeat bolus if Inf started > 15 min after initial dose); RSI: 1–2 mg/kg IV/IO w/ P: [B, M] ↓ Dose in severe hepatic impairment CI: Adams-Stokes synd; heart block; corn allergy Disp: Inj IV: 1% (10 mg/mL), 2% (20 mg/mL); admixture 4, 10, 20%. IV Inf: 0.2, 0.4% SE: Dizziness, paresthesias, & convulsions associated w/ tox Notes: 2nd line to amiodarone in ECC; dilute ET dose 1–2 mL w/ NS; for IV forms, or CHF; Systemic levels: steady state 6–12 h; Therapeutic: 1.2–5 mcg/mL; Toxic: > 6 mcg/mL; half-life: 1.5 h; constant ECG monitoring is necessary during IV admin Lidocaine; Lidocaine w/ Epinephrine (Anestacon Topical, Xylo-caine, Xylocaine Viscous, Xylocaine MPF, Others) Uses: *Local anesthetic, epidural/caudal anesthesia, regional nerve blocks, topical on mucous membranes (mouth/pharynx/urethra)* Acts: Anesthetic; stabilizes neuronal membranes; inhibits ionic fluxes required for initiation and conduction Dose: Adults. Local Inj anesthetic: 4.5 mg/kg max total dose or 300 mg; w/ epi 7 mg/kg or total 500 mg max dose. Oral: 15 mL viscous swish and spit or pharyngeal gargle and swallow, do not use < 3-h intervals or > 8 × in 24 h. Urethra: Jelly 5–30 mL (200–300 mg) jelly in men, 3–5 mL female urethra; 600 mg/24 h max. Peds. Topical: Apply max 3 mg/kg/dose. Local Inj anesthetic: Max 4.5 mg/kg (Table 1, p 300) w/ P: [B, +] Epi-containing soln may interact w/ TCA or MAOI and cause severe ↑ BP CI: Do not use lidocaine w/ epi on digits, ears, or nose (vasoconstriction & necrosis) Disp: Inj local: 0.5, 1, 1.5, 2, 4, 10, 20%; Inj w/ epi 0.5%/1:200,000, 1%/1:100,000, 2%/1:100,000; (MPF) 1%/1:200,000, 1.5%/1:200,000, 2%/1:200,000; Dental formulations: 2%/1:50,000, 2%/1:100,000; cream 2, 3, 4%, lotion 30%, jelly 2%, gel 2, 2.5, 4, 5%; oint 5%; liq 2.5%; soln 2, 4%; viscous 2% topical spray 9.6% SE: Dizziness, paresthesias, & convulsions associated w/ tox Notes: See Table 1, p 300
Lidocaine/Prilocaine (EMLA, Oraq IX) Uses: *Topical anesthetic for intact skin or genital mucous membranes*; adjunct to phlebotomy or dermal procedures Acts: Amide local anesthetics Dose: Adults. EMLA cream, thick layer 2–2.5 g to intact skin over 20–25 cm² of skin surface, cover w/ occlusive dressing (eg, Tegaderm) for at least 1 h. Anesthetic disc: 1 g/10 cm² for at least 1 h. Peds. Max dose: < 3 mo or < 5 kg: 1 g/10 cm² for 1 h. 3–12 mo & > 5 kg: 2 g/20 cm² for 4 h. 1–6 y & > 10 kg: 10 g/100 cm² for 4 h. 7–12 y & > 20 kg: 20 g/200 cm² for 4 h w/ P: [B, +] CI: Methemoglobinemia use on mucous membranes, broken skin, eyes; allergy to amide-type anesthetics Disp: Cream 2.5% lidocaine/2.5% prilocaine; anesthetic disc (1 g); periodontal gel 2.5/2.5% SE: Burning, stinging, methemoglobinemia Notes: Longer contact time ↑ effect

Lidocaine/Tetracaine, Transdermal (Synera) Uses: Topical anesthetic; adjunct to phlebotomy or dermal procedures Acts: Topical anesthetic Dose: Adults & Children > 3 y. Phlebotomy: Apply to intact skin 20–30 min prior to venipuncture Dermal procedures: Apply to intact skin 30 min prior to procedure w/ P: [B, ±] w/ liver Dz CI: Allergy to lidocaine/tetracaine/amide & ester-type anesthetics; corn allergy, use on mucous membranes, broken skin, eyes; pts w/ PABA hypersens Disp: TD patch: lidocaine 70 mg/tetracaine 70 mg SE: Erythema, blanching, edema, rash, burning, dizziness, HA, paresthesias

Linaclotide (Linzess) BOX: CI peds < 6 y; avoid in peds 6–17 y; death in juvenile mice Uses: *IBS w/ constipation, chronic idiopathic constipation* Acts: Guanylate cyclase-C agonist Dose: IBS-C: 290 mcg PO daily; CIC: 145 mcg PO daily; on empty stomach 30 min prior to 1st meal of the day; swallow whole w/ P: [C, ?–] CI: Pts < 6 y; GI obstruction Disp: Caps 145, 290 mcg SE: D, Abd pain/distention, flatulence

Lindane (Generic) BOX: Only for pts intolerant/failed 1st-line Rx w/ safer agents. Szs and deaths reported w/ repeated/prolonged use. Caution d/t increased risk of neurotoxicity in infants, children, elderly, w/ other skin conditions, and if < 50 kg. Instruct pts on proper use and inform that itching occurs after successful killing of scabies or lice Uses: *Head lice, pubic “crab” lice, body lice, scabies* Acts: Ectoparasiticide & ovicide Dose: Adults & Peds. Cream or lotion: Thin layer to dry skin after bathing, leave for 8–12 h, rinse; also use on laundry. Shampoo: Apply 30 mL to dry hair, develop a lather w/ warm water for 4 min, comb out nits w/ P: [C, –] CI: Premature infants, uncontrolled Sz disorders, norwegian scabies open wounds Disp: Lotion 1%; shampoo 1% SE: Arrhythmias, Szs, local irritation, GI upset, ataxia, alopecia, N/V, aplastic anemia Notes: Caution w/ overuse (may be absorbed); caution w/ hepatic in pts may repeat Rx in 7 d; try OTC first w/ pyrethrins (Pronto, Rid, others)

Linezolid (Zyvox) Uses: *Infxns caused by gram(+) bacteria (including VRE), pneumonia, skin Infxns* Acts: Unique, binds ribosomal bacterial RNA; bacteriocidal for streptococci, bacteriostatic for enterococci & staphylococci. Spectrum: Excellent gram(+) including VRE & MRSA Dose: Adults. 600 mg IV or PO q12h. Peds ≤ 11 y. 10 mg/kg IV or PO q8h (q12h in preterm neonates) w/ P: [C, ?–] CI: Concurrent MAOI use or w/ in 2 wk, uncontrolled HTN, thyrotoxicosis, vasopressive agents, carcinoid tumor, SSRIs, tricyclics, w/ MAOI (may cause serotonin syndrome when used w/ these psych meds), avoid foods w/ tyra-mine & cough/cold products w/ pseudoephedrine; w/ ↓ BM Disp: Inj 200, 600 mg; tabs 600 mg; susp 100 mg/5 mL SE: Lactic acidosis, peripheral/optic neuropathy, HTN, N/D, HA, insomnia, GI upset, ↓ BM, tongue discoloration prolonged use-C. diff Infxn Notes: Weekly CBC; not for gram(–) Infxn, ↑ deaths in catheter-related Infxns; MAOI activity
Liothyronine (Cytomel, Triostat, T₃) **BOX**: Not for obesity or Wt loss  
**Uses**: *Hypothyroidism, nontoxic goiter, myxedema coma*  
**Acts**: T₃ replacement  
**Dose**:  
- **Adults**: Initial 25 mcg/24 h, titrate q1–2wk to response & TFT; maint of 25–100 mcg/d PO.  
- **Myxedema coma**: 25–50 mcg IV.  
- **Myxedema**: 5 mcg/d, PO ↑ 5–10 mcg/d q1–2wk; maint 50–100 mcg/d.  
- **Nontoxic goiter**: 5 mcg/d PO, ↑ 5–10 mcg/d q1–2wk, usual dose 75 mcg/d.  
- **T₃ suppression test**: 75–100 mcg/d × 7d; ↓ in elderly & CV Dz  
**Peds**: Initial 5 mcg/24 h, titrate by 50-mcg/24-h increments at q3–4d intervals; maint.  
- **Infants–12 mo**: 20 mcg/d  
- **Peds 1–3 yr**: 50 mcg/d > 3 yr: Adult dose w/ P: [A, +]  
**CI**: Recent MI, uncorrected adrenal Insuff, uncontrolled HTN, thyrotoxicosis, artificial rewarming  
**Disp**: Tabs 5, 25, 50 mcg; Inj 10 mcg/mL  
**SE**: Alopecia, arrhythmias, CP, HA, sweating, twitching, ↑ HR, ↑ BP, MI, CHF, fever  
**Notes**: Monitor TFT; separate antacids by 4 h; monitor glucose w/ DM meds; when switching from IV to PO, taper IV slowly

Liraglutide, Recombinant (Victoza) **BOX**: CI w/ personal or fam Hx of medullary thyroid CA (MTC) or w/ multiple endocrine neoplasia synd type 2 (MEN2)  
**Uses**: *Type 2 DM*  
**Acts**: Glucagon-like peptide-1 receptor agonist  
**Dose**: 1.8 mg/d; begin 0.6 mg/d any time of day SQ (Abd/thigh/upper arm), ↑ to 1.2 mg after 1 wk, may ↑ to 1.8 mg after w/ P: [C, ?/–]  
**CI**: See Box  
**Disp**: Multidose pens, 0.6, 1.2, 1.8 mg/dose, 6 mg/mL  
**SE**: Pancreatitis, MTC, ↓ glucose w/ sulfonylurea, HA, N/D, Wt loss  
**Notes**: Delays gastric emptying
Lisdexamfetamine Dimesylate (Vyvanse) [C-II] BOX: Amphetamines have ↑ potential for abuse; prolonged administration may lead to dependence; may cause sudden death and serious CV events in pts w/ preexisting structure cardiac abnormalities Uses: *ADHD* Acts: CNS stimulant Dose: Adults & Peds 6–12 y. 30 mg daily, ↑ qwk 10–20 mg/d, 70 mg/d max w/ P: [C, ?/–] w/ Potential for drug dependency in pt w/ psychological or Sz disorder, Tourette synd, HTN CI: Severe arteriosclerotic CV Dz, mod–severe ↑ BP, ↑ thyroid, sensitivity to sympathomimetic amines, NAG, agitated states, Hx drug abuse, w/ or w/ in 14 d of MAOI Disp: Caps 20, 30, 40, 50, 60, 70 mg SE: HA, insomnia, decreased appetite Notes: AHA statement April 2008: All children diagnosed w/ ADHD who are candidates for stimulant meds should undergo CV assessment prior to use; may be inappropriate for geriatric use

Lisinopril (Prinivil, Zestril) BOX: ACE inhib can cause fetal injury/death in 2nd/3rd tri; D/C w/ PRG Uses: *HTN, CHF, prevent DN & AMI* Acts: ACE inhib Dose: 5–40 mg/24 h PO daily-bid, CHF target 40 mg/d. AMI: 5 mg w/ in 24 h of MI, then 5 mg after 24 h, 10 mg after 48 h, then 10 mg/d; ↓ in renal Insuff; use low dose, ↑ slowly in elderly w/ P: [C (1st tri) D (2nd, 3rd tri), –] w/ Aortic stenosis/cardio-myopathy CI: PRG, ACE inhib sensitivity, idiopathic or hereditary angiodema Disp: Tabs 2.5, 5, 10, 20, 30, 40 mg SE: Dizziness, HA, cough, ↓ BP, angioedema, ↑ K⁺, ↑ Cr, rare ↓ BM Notes: To prevent DN, start when urinary microalbuminuria begins; △ BUN, Cr, K⁺, WBC

Lisinopril & Hydrochlorothiazide (Prinzide, Zestoretic, Generic) BOX: ACE inhib can cause fetal injury/death in 2nd/3rd tri; D/C w/ PRG Uses: *HTN* Acts: ACE inhib w/ diuretic (HCTZ) Dose: Initial 10 mg lisinopril/12.5mg HCTZ, titrate upward to effect; > 80 mg/d lisinopril or > 50 mg/day HCTZ are not recommended; ↓ in renal Insuff; use low dose, ↑ slowly in elderly w/ P: [C 1st tri, D after, –] w/ Aortic stenosis/cardio-myopathy, bilateral RAS CI: PRG, ACE inhib, idiopathic or hereditary angiodema sensitivity (angioedema) Disp: Tabs (mg lisinopril/mg HCTZ) 10/12.5, 20/12.5; Zestoretic also available as 20/25 SE: Anaphylactoid Rxn (rare), dizziness, HA, cough, fatigue, ↓ BP, angioedema, ↑ K⁺, ↑ Cr, rare ↓ BM/cholestatic jaundice Notes: Use only when monotherapy fails; △ BUN, Cr, K⁺, WBC

Lithium Carbonate, Citrate (Generic) BOX: Li tox related to serum levels and can be seen at close to therapeutic levels Uses: *Manic episodes of bipolar Dz*, augment antidepressants, aggression, PTSD Acts: ?, Effects shift toward intraneuronal metabolism of catecholamines Dose: Adults. Bipolar, acute mania: 1800 mg/d PO in 2–3 ÷ doses (target serum 1–1.5 mEq/L 2×/wk until stable). Bipolar maint: 900–1800/d PO in 2–3 ÷ doses (target serum 0.6–1.2 mEq/L). Peds ≥ 12 y. See Adults; ↓ in renal Insuff, elderly w/ P: [D, –] Many drug interactions; avoid ACE inhib or diuretics; thyroid Dz, caution in pts at risk of suicide CI: Severe renal impair or CV Dz, severe debilitation, dehydration, PRG, sodium depletion Disp: Carbonate: caps 150, 300, 600 mg; tabs 300, 600 mg; SR tabs 300 mg, CR tabs 450 mg; citrate: syrup 300 mg/5 mL SE: Polyuria, polydipsia, nephrogenic DI, long-term may affect renal conc ability and cause fibrosis; tremor; Na⁺ retention or diuretic use may ↑ tox; arrhythmias, dizziness, alopecia, goiter ↓ thyroid, N/V/D, ataxia, nystagmus, ↓ BP Notes: Levels: Trough: Just before next dose: Therapeutic: 0.8–1.2 mEq/mL; Toxic: > 1.5 mEq/mL half-life: 18–20 h. Follow levels q1–2mo on maint, draw concentrations 8–12 h postdose

Lodoxamide (Alomide) Uses: *Vernal conjunctivitis/keratitis* Acts: Stabilizes mast cells Dose: Adults & Peds > 2 y. 1–2 gtt in eye(s) qid = 3 mo w/ P: [B, ?] Disp: Soln 0.1% SE: Ocular burning,
Lomipapide (Juxtapid) BOX: May cause ↑ transaminases and/or hepatic steatosis. Monitor ALT/AST & bili at baseline & regularly; adjust dose if ALT/AST > 3× ULN (see label); D/C w/ significant liver tox Uses: *Homozygous familial hypercholesterolemia* Acts: Microsomal triglyceride transfer protein inhibit Dose: Adults. 5 mg PO daily; ↑ to 10 mg after 2 wk, then at 4-wk intervals to 20, 40 mg; 60 mg max based on safety/tolerability; swallow whole w/ water > 2 h after evening meal; 40 mg max w/ ESRD on dialysis or mild hepatic impair; 30 mg max w/ weak CYP3A4 inhibit (see label) w/ P: [X, –] Avoid grapefruit; adjust w/ warfarin, P-glycoprotein substrates, simvastatin, lovastatin CI: PRG, w/ strong-mod CYP3A4 inhibitors, mod-severe hepatic impair Disp: Caps 5, 10, 20 mg SE: N/V/D, hepatotox, dyspepsia, Abd pain, flatulence, CP, influenza, fatigue, ↓ Wt, ↓ abs fat-soluble vits Notes: Limited distribution JUXTAPID REMS Program; PRG test before; use w/ low-fat diet (< 20% fat energy); take daily vit E, linoleic acid, ALA, EPA, DHA supl

Loperamide (Diamode, Imodium) [OTC] Uses: *D* Acts: Slows intestinal motility Dose: Adults. Initial 4 mg PO, then 2 mg after each loose stool, up to 16 mg/d. Peds 2–5 y, 13–20 kg. 1 mg PO tid; 6–8 y, 20–30 kg: 2 mg PO bid; 8–12 y, > 30 kg: 2 mg PO tid w/ P: [C, –] Not for acute D caused by Salmonella, Shigella, or C. difficile; w/ HIV may cause toxic megacolon CI: Pseudomembranous colitis, bloody D, Abd pain w/o D, < 2 y Disp: Caps 2 mg; tabs 2 mg; liq 1 mg/5 mL, 1 mg/7.5 mL (OTC) SE: Constipation, sedation, dizziness, Abd cramp, N

Lopinavir/Ritonavir (Kaletra) Uses: *HIV Infxn* Acts: Protease inhib Dose: Adults. TX naïve: 800/200 mg PO daily or 400/100 mg PO bid; TX Tx-experienced pt: 400/100 mg PO bid (↑ dose if w/ amprenavir, efavirenz, fosamprenavir, nelfinavir, nevirapine); do not use qd dosing w/ concomitant Rx. Peds 7–15 kg. 12/3 mg/kg PO bid. 15–40 kg: 10/2.5 mg/kg PO bid. > 40 kg: Adult dose; w/ food w/ P: [C, ?/–] Numerous interactions, w/ hepatic impair; do not use w/ salmeterol, colchicine (w/ renal/hepatic failure); adjust dose w/ bosentan, tadalafil for PAH, ↑ QT w/ QT-prolonging drugs, hypokalemia, congenital long QT syndrome, immune reconstitution syndrome CI: w/ Drugs dependent on CYP3A/CYP2D6 (Table 10, p 319), lovastatin, rifampin, statins, St. John’s wort, fluconazole; w/ alpha 1-adrenoreceptor antagonist (alfuzosin); w/ PDE5 inhibitor sildenafil Disp: (mg lopinavir/mg ritonavir) Tab 100/25, 200/50, soln 400/100/5 mL SE: Avoid disulfiram (soln has EtOH), metronidazole; GI upset, asthenia, ↑ cholesterol/triglycerides, pancreatitis; protease metabolic synd

Loratadine (Claritin, Alavert) Uses: *Allergic rhinitis, chronic idiopathic urticaria* Acts: Nonsedating antihistamine Dose: Adults. 10 mg/d PO. Peds 2–5 y. 5 mg PO daily. > 6 y: Adult dose; on empty stomach; ↓ in hepatic Insuff; q other day dose w/ CrCl < 30 mL/min w/ P: [B, +/–] CI: Component allergy Disp: Tabs 10 mg (OTC); rapidly disintegrating RediTabs 10 mg; chew tabs 5 mg; syrup 1 mg/mL SE: HA, somnolence, xerostomia, hyperkinesis in peds

Lorazepam (Ativan, Others) [C-IV] Uses: *Anxiety & anxiety w/ depression; sedation; control status epilepticus*; EtOH withdrawal; antianxiety agent; works via postsynaptic GABA receptors Dose: Adults. Anxiety: 1–10 mg/d PO in 2–3 ÷ doses. Preop: 0.05 mg/kg–4 mg max IM 2 h before or 0.044 mg/kg–2 mg dose max IV 15–20 min before surgery. Insomnia: 2–4 mg PO hs. Status epilepticus: 4 mg/dose slow over 2–5 min IV PRN q10–15min; usual total dose 8 mg. Antiemetic: 0.5–2 mg IV or PO q4–6h PRN. EtOH withdrawal: 1–4 mg IV or 2 mg PO initial depending on severity; titrate. Peds. Status epilepticus: 0.05–0.1 mg/kg/dose IV over
Lorcaserin (Belviq) Uses: *Manage Wt w/ BMI > 30 kg/m² or > 27 kg/m² w/ Wt-related comorbidity* Acts: Serotonin 2C receptor agonist Dose: Adults. 10 mg PO bid; D/C if not 5% Wt loss by wk 12 w/ P: [X, –] √ glucose w/ diabetic meds; monitor for depression/suicidal thoughts, serotonin or neuroleptic malignant synd, cognitive impair, psych disorders, valvular heart Dz, priapism; risk of serotonin synd when used w/ other serotonergic drugs; caution w/ drugs that are CYP2D6 substrates CI: PRG Disp: Tabs 10 mg SE: HA, N, dizziness, fatigue, dry mouth, constipation, back pain, cough, hypoglycemia, euphoria, hallucination, dissociation, ↓ HR, ↑ prolactin Notes: May delay cataract surg healing; avoid use > 10 d; shake before use

Losartan (Cozaar) BOX: Can cause fetal injury and death if used in 2nd & 3rd tri. D/C Rx if PRG detected Uses: *HTN, DN, prevent CVA in HTN and LVH* Acts: Angiotensin II receptor antagonist Dose: Adults. 25–50 mg PO daily-bid, max 100 mg; ↓ in elderly/hepatic impair. Peds ≥ 6 y. HTN: Initial 0.7 mg/kg qd, ↑ to 50 mg/d PRN; 1.4 mg/kg/d or 100 mg/d max w/ P: [C (1st tri, D 2nd & 3rd tri), ?/–] w/ NSAIDs; w/ K⁺-sparing diuretics, supl may cause ↑ K⁺; w/ RAS, hepatic impair CI: PRG, component sensitivity Disp: Tabs 25, 50, 100 mg SE: ↓ BP in pts on diuretics; ↑ K⁺; GI upset, facial/angioedema, dizziness, cough, weakness, ↓ renal Fxn Notes: Maintain cholesterol-lowering diet; LFTs q12wk × 1 y, then q6mo; may alter TFT

Loteprednol (Alrex, Lotemax) Uses: *Lotemax: Steroid responsive inflammatory disorders of conjunctiva/cornea/anterior globe (keratitis, iritis, postop); Alrex: seasonal allergic conjunctivitis* Acts: Anti-inflammatory/steroid Dose: Adults. Lotemax: 1 drop conjunctival sac qid up to every h initially; Alrex 1 drop qid w/ P: [C, ?/–] glaucoma CI: Viral Dz corneal and conjunctiva, varicella, myco-bacterial and fungal Infxns; hypersens Disp: Lotemax 0.5% susp, 2.5, 5, 10, 15 mL; Alrex 0.2% susp, 2.5, 5, 10 mL SE: Glaucoma; ↑ risk Infxn; cornea/sclera thinning; HA, rhinitis Notes: May delay cataract surg healing; avoid use > 10 d; shake before use

Lovastatin (Altoprev, Mevacor) Uses: *Hypercholesterolemia to ↓ risk of MI, angina* Acts: HMG-CoA reductase inhib Dose: Adults. 20 mg/d PO w/ P.M. meal; may ↑ at 4-wk intervals to 80 mg/d max or 60 mg ER tab; take w/ meals. See pkg insert for dose limits w/ concurrent therapy (amiodarone, vera-pamil, diltiazem) Peds 10–17 y (at least 1-y postmenarchal). Familial ↑ cholesterol: 10 mg PO qd, ↑ q4wk PRN to 40 mg/d max (immediate release w/ P.M. meal) w/ P: [X, –] Avoid w/ grapefruit juice, gemfibrozil; use caution, carefully consider doses > 20 mg/d w/ renal impair CI: Active liver Dz, PRG, lactation Disp: Tabs generic 10, 20, 40 mg; Mevacor 20,40 mg; Altoprev ER tabs 20, 40, 60 mg SE: HA & GI intolerance common; promptly report any unexplained muscle pain, tenderness, or weakness (myopathy) Notes: Maintain cholesterol-lowering diet; LFTs q12wk × 1 y, then q6mo; may alter TFT

Lubiprostone (Amitiza) Uses: *Chronic idiopathic constipation in adults, IBS w/ constipation in females > 18 y* Acts: Selective Cl⁻ channel activator; ↑ intestinal motility Dose: Adults. Constipation: 24 mcg PO bid w/ food. IBS: 8 mcg bid w/ food CI: Mechanical GI obst w/ P: [C,
Severe D, ↓ dose mod–severe hepatic impair Disp: Gelcaps 8, 24 mcg SE: N/D, may adjust dose based on tox (N), HA, GI distention, Abd pain Notes: Not approved in males; requires (−) PRG test before; use contraception; periodically reassess drug need; not for chronic use; may experience severe dyspnea w/ in 1 h of dose, usually resolves w/ in 3 h

Lucinactant (Surfaxin) Uses: *Prevention of RDS* Acts: Pulmonary surfactant Dose: Peds. 5.8 mL/kg birth Wt intratracheally no more often than q6h; max 4 doses in first 48 h of life w/ P: [N/A, N/A] Frequent clinical assessments; interrupt w/ adverse Rxns and assess/stabilize infant; not for ARDS CI: None Disp: Susp 8.5 mL/vial SE: ET tube reflux/obstruction, pallor, bradycardia, oxygen desaturation, anemia, jaundice, metabolic/respiratory acidosis, hyperglycemia, ↓ Na, pneumonia, ↓ BP Notes: Warm vial for 15 min; shake prior to use; discard if not used w/ in 2 h of warming

Lurasidone (Latuda) BOX: Elderly w/ dementia-related psychosis at ↑ death risk. Not approved for dementia-related psychosis. Uses: *Schizophrenia* Acts: Atypical antipsychotic: central DA type 2 (D2) and serotonin type 2 (5HT2A) receptor antagonist Dose: 40–80 mg/d PO w/ food; 40 mg max w/ CrCl 10–49 mL/min OR mod–severe hepatic impair w/ P: [B, −] CI: w/ Strong CYP3A4 inhib/inducer Disp: Tabs 20, 40, 80, 120 mg SE: Somnolence, agitation, tardive dyskinesia, akathisia, parkinsonism, stroke, TIAs, Sz, orthostatic hypotension, Sz, orthostatic hypotension, syncope, dysphagia, neuroleptic malignant syndrome, body temp dysregulation, N, ↑ Wt, type 2 DM, ↑ lipids, hyperprolactinemia, ↓ WBC Notes: w/ DM risk glucose

Lymphocyte Immune Globulin [Antithymocyte Globulin, ATG] (Atgam) BOX: Should only be used by physician experienced in immunosuppressive therapy or management of solid-organ and/or BMT pts. Adequate lab and supportive resources must be readily available Uses: *Allograft rejection in renal transplant pts; aplastic anemia if not candidates for BMT*, prevent rejection of other solid-organ transplants, GVHD after BMT Acts: ↓ Circulating antigen-reactive T lymphocytes; human, & equine product Dose: Adults. Prevent rejection: 15 mg/kg/d IV × 14 d, then q other day × 7 d for total 21 doses in 28 d; initial w/ in 24 h before/after transplant. Rx rejection: Same but use 10–15 mg/kg/d; max 21 doses in 28 d, qd first 14 d. Aplastic anemia: 10–20 mg/kg/d × 8–14 d, then q other day × 7 doses for total 21 doses in 28 d. Peds. Prevent renal allograft rejection: 5–25 mg/kg/d IV; aplastic anemia 10–20 mg/kg/day IV 8–14 d then q other day for 7 more doses w/ P: [C, ?/] D/C if severe unremitting thrombocytopenia, leukopenia CI: Hx previous Rxn or Rxn to other equine γ-globulin prep, ↓ plt and WBC Disp: Inj 50 mg/mL SE: D/C w/ severe ↓ plt and WBC; rash, fever, chills, ↓ BP, HA, CP, edema, N/V/D, lightheadedness Notes: Test dose: 0.1 mL 1:1000 dilution in NS, a systemic Rxn precludes use; give via central line; pretreat w/ antipyretic, antihistamine, and steroids; monitor WBC, plt; plt counts usually return to nl w/o D/C Rx 4 h Inf

Magaldrate & Simethicone (Riopan-Plus) [OTC] Uses: *Hyper-acidity associated w/ peptic ulcer, gastritis, & hiatal hernia* Acts: Low-Na+ ant-acid Dose: 5–10 mL PO between meals & hs, on empty stomach w/ P: [C, ?/+] CI: UC, diverticulitis, appendicitis, ileostomy/colostomy, renal Insuff (d/t Mg2+ content) Disp: Susp magaldrate/simethicone 540/20 mg/5 mL (OTC) SE: ↑ Mg2+, ↓ PO4, white-flecked feces, constipation, N/V/D Notes: < 0.3 mg Na1+/tab or tsp

Magnesium Citrate (Citroma, Others) [OTC] Uses: *Vigorous bowel prep*; constipation Acts: Cathartic laxative Dose: Adults. 150–300 mL PO PRN. Peds. < 6 y: 2–4 mL/kg ×/or in ÷ doses 6–12 y: 100–150 mL ×/or in ÷ doses ≥ 12 y: 150–300 mL ×/or in ÷ doses w/ P: [B, +] w/ Neuromuscular Dz & renal impairment CI: Severe renal Dz, heart block, N/V, rectal bleeding, intestinal
obst/perforation/impaction, colostomy, ileostomy, UC, diverticulitis, DM

Disp: soln 290 mg/5 mL (300 mL); 100 mg tabs

SE: Abd cramps, gas, ↓ BP, ↑ Mg²⁺, resp depression

Notes: Only for occasional use w/ constipation

Magnesium Hydroxide (Milk of Magnesia) [OTC] Uses: *Constipation*, hyperacidity, Mg²⁺ replacement

Acts: NS laxative

Dose: Adults. Antacid: 5–15 mL (400 mg/5 mL) or 2–4 tabs (311 mg) PO PRN up to qid. Laxative: 30–60 mL (400 mg/5 mL) or 15–30 mL (800 mg/5 mL) or 8 tabs (311 mg) PO qhs or ÷ doses. Kids. Antacid and < 12 y not OK. Laxative: < 2 y not OK. 2–5 y: 5–15 mL (400 mg/5 mL) PO qhs or ÷ doses. 3–5 y: 2 (311 mg) tabs PO qhs or ÷ doses. 6–11 y: 4 (311 mg) tabs PO ÷ doses w/ P: [B, +] w/ Neuromuscular Dz or renal impair

CI: Component hypersens

Disp: Chew tabs 311, 400 mg; liq 400, 800 mg/5 mL (OTC)

SE: D, Abd cramps

Notes: For occasional use in constipation, different forms may contain Al²⁺

Magnesium Oxide (Mag-Ox 400, Others) [OTC] Uses: *Replace low Mg²⁺ levels*

Acts: Mg²⁺ suppl

Dose: 400–800 mg/d or ÷ w/ food in full glass of H₂O; ↓ w/ renal impair w/ P: [B, +] w/ Neuromuscular Dz & renal impair, w/ bisphosphonates, calcitriol, CCBs, neuromuscular blockers, tetracyclines, quinolones

CI: Component hypersens

Disp: Caps 140, 250, 500, 600 mg; tabs 400 mg (OTC)

SE: D, N

Notes: Different formulation may contain Al²⁺

Magnesium Sulfate (Various) Uses: *Replace low Mg²⁺; preeclampsia, eclampsia, & premature labor, cardiac arrest, AMI arrhythmias, cerebral edema, barium poisoning, Szs, pediatric acute nephritis*; refractory ↓ K⁺ & ↓ Ca²⁺

Acts: Mg²⁺ suppl, bowel evacuation, ↓ acetylcholine in nerve terminals, ↓ rate of sinoatrial node firing

Dose: Adults. 1 gm q6h IM × 4 doses & PRN 1–2 gm q3–6h IV then PRN to correct deficiency. *Preeclampsia/premature labor*: 4-g load then 1–2 g/h IV Inf. *ECC 2010. VF/pulseless VT arrest w/ torsade de pointes*: 1–2 g IV push (2–4 mL 50% soln) in 10 mL D5W. If pulse present, then 1–2 g in 50–100 mL D5W over 5–60 min. *Peds & Neonates*. 25–50 mg/kg/dose IV, repeat PRN; max 2 g single dose *ECC 2010. Pulseless VT w/ torsades*: 25–50 mg/kg IV/IO bolus; max dose 2 g; *Pulseless VT w/ torsades or hypomagnesemia*: 25–50 mg/kg IV/IO over 10–20 min; max dose 2 g; *Status asthmaticus*: 25–50 mg/kg IV/IO over 15–30 min w/ P: [A/C (manufacturer specific), +] w/ Neuromuscular Dz; interactions see Magnesium Oxide and aminoglycosides

CI: Heart block, myocardial damage

Disp: Premix Inj: 10, 20, 40, 80 mg/mL; Inj 125, 500 mg/mL; oral/topical powder 227, 454, 1810, 2720 g

SE: CNS depression, D, flushing, heart block, ↓ BP, vasodilation

Notes: Different formulation may contain Al²⁺, monitor Mg²⁺ levels

Mannitol, Inhalation (Aridol) BOX: Powder for Inh; use may result in severe bronchospasm, testing only done by trained professionals

Uses: *Assess bronchial hyperresponsiveness in pts w/o clinically apparent asthma*

Acts: Bronchoconstrictor, ? mechanism

Dose: Adults, Peds > 6 y. Inhal caps ↑ dose (see disp) until + test (15% ↓ FEV₁ or 10% ↓ FEV₁ between consecutive doses) or all caps inhaled w/ P: [C, ?/M] Pt w/ comorbid cond that may ↑ effects

CI: Mannitol/gelatin hypersens

Disp: Dry powder caps graduated doses: 0, 5, 10, 20, 40 mg SE: HA, pharyngeal pain, irritation, N, cough, rhinorrhea, dyspnea, chest discomfort, wheezing, retching, dizziness

Notes: Not a stand-alone test or screening test for asthma

Mannitol, Intravenous (Generic) Uses: *Cerebral edema, ↑ IOP, renal impair, poisonings*

Acts: Osmotic diuretic

Dose: Test dose: 0.2 g/kg/dose IV over 3–5 min; if no diuresis w/ in 2 h, D/C. *Oliguria*: 50–100 g IV over 90 min ↑ IOP: 0.25–2 g/kg IV over 30 min. *Cerebral edema*: 0.25–1.5
g/kg/dose IV q6–8h PRN, maintain serum osmolarity < 300–320 mOsm/kg w/ P: [C, ?/M] w/ CHF or vol overload, w/ nephrotoxic drugs & lithium CI: Anuria, dehydration, heart failure, PE intracranial bleeding Disp: Inj 5, 10, 15, 20, 25% SE: May exacerbate CHF, N/V/D, ↓/↑ BP, ↑ HR Notes: Monitor for vol depletion

**Maraviroc (Selzentry) BOX:** Possible drug-induced hepatotoxic Uses: *Tx of CCR5-tropic HIV Infxn* Acts: Antiretroviral, CCR5 coreceptor antagonist Dose: 300 mg bid w/ P: [B, –] w/ Concomitant CYP3A inducers/inhib and ↓ renal function, caution in mild–mod hepatic impair CI: Pts w/ severe renal impairment/ESRD taking potent CYP3A4 inhib/inducer Disp: Tab 150, 300 mg SE: May exacerbate CHF, N/V/D, ↓/↑ BP, ↑ HR Notes: Monitor for vol depletion

**Measles, Mumps, Rubella Vaccine Live [MMR] (M-M-R II) Uses:** *Vaccination against measles, mumps, & rubella 12 mo and older* Acts: Active immunization, live attenuated viruses Dose: 1 (0.5-mL) SQ Inj, 1st dose 12 mo 2nd dose 4–6 y, at least 3 mo between doses (28 d if > 12 y), adults born after 1957 unless CI, Hx measles & mumps or documented immunity and childbearing age women w/ rubella immunity documented w/ P: [C, ?/M] Hx of cerebral injury, Szs, fam Hx Szs (febrile Rxn), ↓ plt CI: Component and gelatin sensitivity, Hx anaphylaxis to neomycin, blood dyscrasia, lymphoma, leukemia, malignant neoplasias affecting BM, immunosuppression, fever, PRG, Hx of active untreated TB Disp: Inj, single dose SE: Fever, febrile Szs (5–12 d after vaccination), Inj site Rxn, rash, ↓ plt Notes: Per FDA, CDC ↑ of febrile Sz (2×) w/ MMRV vs MMR and varicella separately; preferable to use 2 separate vaccines; allow 1 mo between Inj & any other measles vaccine or 3 mo between any other varicella vaccine; limited avail of MMRV; avoid those who have not been exposed to varicella for 6 wk post-Inj; may contain albumin or trace egg antigen; avoid salicylates for 6 wk postvaccination; avoid PRG for 3 mo following vaccination; do not give w/ in 3 mo of transfusion or immune globulin

**Measles, Mumps, Rubella, & Varicella Virus Vaccine Live [MMRV] (ProQuad) Uses:** *Vaccination against measles, mumps, rubella, & varicella* Acts: Active immunization, live attenuated viruses Dose: 1 (0.5-mL) vial SQ Inj 12 mo–12 y or for 2nd dose of measles, mumps, & rubella (MMR)*, at least 3 mo between doses (28 d if > 12 y) w/ P: [C, ?/M] Hx of cerebral injury or Szs & fam Hx Szs (febrile Rxn), ↓ plt CI: Component and gelatin sensitivity, Hx anaphylaxis to neomycin, blood dyscrasia, lymphoma, leukemia, malignant neoplasias affecting BM, immunosuppression, fever, active untreated TB, PRG Disp: Inj SE: Fever, febrile Szs (5–12 d after vaccination), Inj site Rxn, rash, ↓ plt Notes: Per FDA, CDC ↑ of febrile Sz (2×) w/ combo vaccine (MMRV) vs MMR and varicella separately; preferable to use 2 separate vaccines; allow 1 mo between Inj & any other measles vaccine or 3 mo between any other varicella vaccine; limited avail of MMRV; substitute MMR II and/or Varivax; avoid those not been exposed to varicella for 6 wk post-Inj; may contain albumin or trace egg antigen; avoid salicylates

**Mecasermin (Increlex, Iplex) Uses:** *Growth failure in severe primary IGF-1 deficiency or human growth hormone (HGH) antibodies* Acts: Human IGF-1 (recombinant DNA origin) Dose: Peds. Increlex ≥ 2 y 0.04–0.08 mg/kg SQ bid; may ↑ by 0.04 mg/kg per dose to 0.12 mg/kg bid; take w/ in 20 min of meal d/t insulin-like hypoglycemic effect; Iplex ≥ 3 y 0.5 mg/kg once daily ↑ to 1–2 mg/kg/day hold if hypoglycemia w/ P: [C, ?/M] Contains benzyl alcohol CI: Closed epiphysis, neoplasia, not for IV Disp: Vial 10 mg/mL (40 mL) SE: Tonsillar hyper-trophy, ↑ AST, ↑ LDH, HA, Inj site Rxn, V, hypoglycemia Notes: Rapid dose ↑ may cause hypoglycemia; initial funduscopic exam and during Tx; consider monitoring glucose until dose stable; limited distribution; rotate Inj site
**Mechlorethamine (Mustargen)** 
**BOX:** Highly toxic, handle w/ care, limit use to experienced physicians; avoid exposure during PRG; vesicant  
**Uses:** *Hodgkin Dz (stages III, IV), cutaneous T-cell lymphoma (mycosis fungoides), lung CA, CML, malignant pleural effusions, CLL, polycythemia vera*, psoriasis  
**Acts:** Alkylating agent, nitrogen analog of sulfur mustard  
**Dose:** Per protocol; 0.4 mg/kg single dose or 0.1 mg/kg/d for 4 d, or 0.2 mg/kg/d for 2 d, repeat at 4- to 6-wk intervals; *MOPP:* 6 mg/m² IV on days 1 & 8 of 28-d cycle; *Intracavitary:* 0.2–0.4 mg/kg × 1, may repeat PRN; *Topical:* 0.01–0.02% soln, lotion, oint w/ P: [D, ?/–] Severe myleosuppression  
**CI:** PRG, known infect Dz  
**Disp:** Inj 10 mg; topical soln, lotion, oint  
**SE:** ↓ BM, thrombosis, thrombophlebitis at site; tissue damage w/ extrav (Na thiosulfate used topically to Rx); N/V/D, skin rash/allergic dermatitis w/ contact, amenorrhea, sterility (especially in men), secondary leukemia if treated for Hodgkin Dz, chromosomal alterations, hepatotox, peripheral neuropathy  
**Notes:** Highly volatile and emetogenic; give w/ in 30–60 min of prep

**Meclizine (Antivert, Generic) (Dramamine [OTC])**  
**Uses:** *Motion sickness, vertigo*  
**Acts:** Antiemetic, anticholinergic, & antihistaminic properties  
**Dose:** *Adults & Peds > 12 y. Motion sickness:* 12.5–25 mg PO 1 h before travel, repeat PRN q12–24h. *Vertigo:* 25–100 mg/d ÷ doses w/ P: [B, ?–] NAG, BPH, BOO, elderly, asthma  
**Disp:** Tabs 12.5, 25, 50 mg; chew tabs 25 mg; caps 12.5 mg (OTC)  
**SE:** Drowsiness, xerostomia, blurred vision, thickens bronchial secretions

**Medroxyprogesterone (Provera, Depo-Provera, Depo-Sub Q Provera, Generic)**  
**BOX:** Do not use in the prevention of CV Dz or dementia; ↑ risk MI, stroke, breast CA, PE, & DVT in postmenopausal women (50–79 y). ↑ Dementia risk in postmenopausal women (≥ 65 y). Risk of sig bone loss; does not prevent against STD or HIV, long-term use > 2 y should be limited to situations where other birth control methods are inadequate  
**Uses:** *Contraception; secondary amenorrhea; endometrial CA, ↓ endometrial hyperplasia* AUB caused by hormonal imbalance  
**Acts:** Progestin  
**Dose:** *Contraception:* 150 mg IM q3mo depo or 104 mg SQ q3mo (depo SQ). *Secondary amenorrhea:* 5–10 mg/d PO for 5–10 d. *AUB:* 5–10 mg/d PO for 5–10 d beginning on the 16th or 21st d of menstrual cycle. *Endometrial CA:* 400–1000 mg/wk IM. *Endometrial hyperplasia:* 5–10 mg/d × 12–14 d on day 1 or 16 of cycle; ↓ in hepatic Insuff w/ P: *Provera [X, –] Depo Provera [X, +] CI:* Thrombophlebitis/embolic disorders, cerebral apoplexy, severe hepatic dysfunction, CA breast/genital organs, undiagnosed Vag bleeding, missed Ab, PRG, as a diagnostic test for PRG  
**Disp:** Provera tabs 2.5, 5, 10 mg; depot Inj 150, 400 mg/mL; depo SQ Inj 104 mg/0.65 mL  
**SE:** Breakthrough bleeding, spotting, altered menstrual flow, breast tenderness, galactorrhea, depression, insomnia, jaundice, N, Wt gain, acne, hirsutism, vision changes  
**Notes:** Perform breast exam & Pap smear before contraceptive Rx; obtain PRG test if last Inj > 3 mo

**Megestrol Acetate (Megace, Megace-ES, Generic)**  
**Uses:** *Breast/endometrial CAs; appetite stimulant in cachexia (CA & HIV)*  
**Acts:** Hormone; anti-leuteinizing; progesterone analog  
**Dose:** CA: 40–320 mg/d PO in ÷ doses. *Appetite:* 800 mg/d PO ÷ dose or Megace-ES 625 mg/d w/ P: [D (tablet)/X (suspension), –] Thromboembolism; handle w/ care CI: PRG  
**Disp:** Tabs 20, 40 mg; susp 40 mg/mL, Megace-ES 125 mg/mL SE: Breackthrough bleeding, spotting, altered menstrual flow, breast tenderness, galactorrhea, depression, insomnia, jaundice, N, Wt gain, acne, hirsutism, vision changes  
**Notes:** Do not D/C abruptly; Megace-ES not equivalent to others mg/mg; MegaceES approved only for anorexia

**Meloxicam (Mobic, Generic)**  
**BOX:** May ↑ risk of CV events & GI bleeding; CI in postop CABG  
**Uses:** *OA, RA, JRA*  
**Acts:** NSAID w/ ↑ COX-2 activity  
**Dose:** *Adults. 7.5–15 mg/d PO. Peds ≥ 2 y. 0.125 mg/kg/d, max 7.5 mg; ↓ in renal Insuff; take w/ food w/ P: [C, D (3rd tri), ?/–] w/ Severe
renal Insuff, CHF, ACE inhib, diuretics, Li^2+, MTX, warfarin, ↑ K^+ CI: Peptic ulcer, NSAID, or ASA sensitivity, PRG, postop CABG Disp: Tabs 7.5, 15 mg; susp. 7.5 mg/5 mL SE: HA, dizziness, GI upset, GI bleeding, edema, ↑ BP, renal impair, rash (SJS), ↑ LFTs

**Melphalan [L-PAM] (Alkeran, Generic) BOX:** Administer under the supervision of a qualified physician experienced in the use of chemotherapy; severe BM depression, leukemogenic, & mutagenic hypersens (including anaphylaxis in ~2%) Uses: *Multiple myeloma, ovarian CAs*, breast & testicular CA, melanoma; allogenic & ABMT (high dose), neuroblastoma, rhabdomyosarcoma

**Acts:** Alkylating agent, nitrogen mustard

**Dose:** *Adults.* Multiple myeloma: 16 mg/m^2 IV q2wk × 4 doses then at 4-wk intervals after tox resolves; w/ renal impair ↓ IV dose 50% or 6 mg PO qd × 2–3 wk, then D/C up to 4 wk, follow counts then 2 mg qd. Ovarian CA: 0.2 mg/kg qd × 5 d, repeat q4–5wk based on counts, ↓ in renal Insuff w/ P: [D, ?/–] w/ Cisplatin, digitalis, live vaccines extravasation, need central line CI: Allergy or resistance Disp: Tabs 2 mg; Inj 50 mg SE: N/V, secondary malignancy, AF, ↓ LVEF, ↓ BM, secondary leukemia, alopecia, dermatitis, stomatitis, pulm fibrosis; rare allergic Rxns, thrombocytopenia Notes: Take PO on empty stomach, false(+) direct Coombs test

**Memantine (Namenda) Uses:** *Mod–severe Alzheimer Dz*, mild–mod vascular dementia, mild cognitive impair

**Acts:** N-methyl-D-aspartate (NMDA) receptor antagonist

**Dose:** *Namenda:* Target 20 mg/d, start 5 mg/d, ↑ 5–20 mg/d, wait > 1 wk before ↑ dose; use bid if > 5 mg/d. *Vascular dementia:* 10 mg PO bid; *Namenda XR* (Alzheimer) 7 mg initial 1× qd, ↑ by 7 mg/wk each week to maint 28 mg/d × 1; ↓ to 14 mg w/ severe renal impair w/ P: [B, ?/m] Hepatic/mod renal impair; Sx disorders, cardiac Dz *Disp: Namenda* tabs 5, 10 mg, combo pack: 5 mg × 28 + 10 mg × 21; soln 2 mg/mL CI: Component hypersens SE: Dizziness, HA, D Notes: Renal clearance ↓ by alkaline urine (↓ 80% at pH 8)

**Meningococcal Conjugate Vaccine [Quadrivalent, MCV4] (Menactra, Menveo) Uses:** *Immunize against N. meningitidis (meningococcus) high-risk 2–10 and 19–55 y and everyone 11–18 y* high-risk (college freshmen, military recruits, travel to endemic areas, terminal complement deficiencies, asplenia); if given age 11–12 y, give booster at 16, should have booster w/ in 5 y of college

**Acts:** Active immunization; *N. meningitidis* A, C, Y, W-135 polysaccharide conjugated to diphtheria toxoid (Menactra) or lyophilized conjugate component (Menveo)

**Dose:** *Adults 18–55 y & Peds > 2 y.* 0.5 mL IM × 1 w/ P: [B/C, (manufacturer dependent) ?/m] w/ Immunosuppression (↓ response) and bleeding disorders, Hx Guillain-Barré CI: Allergy to class/diphtheria toxoid/compound/latex Disp: Inj SE: Inj site Rxs, HA, N/V/D, anorexia, fatigue, irritability, arthralgia, Guillain-Barré Notes: IM only, reported accidental SQ; keep epi available for Rxns; use polysaccharide Menomune (MPSV4) if > 55 y; do not confuse w/Menactra, Menveo; ACIP rec: MCV4 for 2–55 y, ↑ local Rxn compared to Menomune (MPSV4) but ↑ Ab titers; peds 2–10, Ab levels ↓ 3 y w/ MPSV4, revaccinate in 2–3 y, use MCV4 revaccination

**Meningococcal Groups C and Y and Haemophilus b Tetanus Toxoid Conjugate Vaccine (Menhibrix) Uses:** *Prevent meningococcal Dz and Haemophilus influenzae type b (Hib) in infants/young children* *Acts:* Active immunization; antibodies specific to organisms

**Dose:** *Peds 6 wk–18 mo.* 4 doses 0.5 mL IM at 2, 4, 6, and 12–15 mo w/ P: [C, N/A] Apnea in some infants reported; w/ Hx Guillain Barré; fainting may occur CI: Severe allergy to similar vaccines Disp: Inj 40 mg/mL/vial SE: Inj pain, redness; irritability; drowsiness; ↓ appetite; fever Notes: New in 2012

**Meningococcal Polysaccharide Vaccine [MPSV4] (Menomune A/C/Y/W-135) Uses:** *Immunize*
against *N. meningitidis* (meningococcus) in high-risk (college freshmen, military recruits, travel to endemic areas, terminal complement deficiencies, asplenia) **Acts:** Active immunization **Dose:** Adults & Peds > 2 y. 0.5 mL SQ only; Children < 2 y not recommended; 2 doses 3 mo apart may repeat in 3–5 y if high risk; repeat in 2–3 y if 1st dose given 2–4 y w/ P: [C, ?/M] if immuno-compromised (↓ response) **CI:** Thimerosal/latex sensitivity; w/ pertussis or typhoid vaccine, < 2 y **Disp:** Inj SE: Peds 2–10 y: Inj site Rxns, drowsiness, irritability 11–55 y: Inj site Rxns, HA, fatigue, malaise, fever, D **Notes:** Keep epi (1:1000) available for Rxns. Recommended > 55 y, but also alternative to MCV4 in 2–55 y if no MCV4 available (MCV4 is preferred). Active against serotypes A, C, Y, & W-135 but not group B; antibody levels ↓ 3 y; high risk: revaccination q3–5y (use MCV4)

**Meperidine (Demerol, Meperitab, Generic) [C–II] Uses:** *Mod–severe pain*, postoperative shivering, rigors from amphotericin B **Acts:** Narcotic analgesic **Dose:** Adults. 50–150 mg PO or IV/IM/SQ q3–4h PRN. Peds. 1–1.5 mg/kg/dose PO or IM/SQ q3–4h PRN, up to 100 mg/dose; hepatic impair, avoid in renal impair, avoid use in elderly w/ P: [C, –] ↓ Sz threshold, adrenal Insuff, head injury, ↑ ICP, hepatic impair, not OK in sickle cell Dz **CI:** w/ MAOIs **Disp:** Tabs 50, 100 mg; syrup/soln 50 mg/5 mL; Inj 25, 50, 75, 100 mg/mL SE: Resp/CNS depression, Szs, sedation, constipation, ↓ BP, rash N/V, biliary and urethral spasms, dyspnea **Notes:** Analgesic effects potentiated w/ hydroxyzine; 75 mg IM = 10 mg morphine IM; not best in elderly; do not use oral for acute pain; not OK for repetitive use in ICU setting, naloxone does not reverse neurotox, used as analgesic, is not recommended, limit Tx to < 48 h

**Meprobamate (Generic) [C-IV] Uses:** *Short-term relief of anxiety* muscle spasm, TMJ relief **Acts:** Mild tranquilizer; antianxiety **Dose:** Adults. 400 mg PO tid-qid, max 2400 mg/d. Peds 6–12 y. 100–200 mg PO bid-tid; ↓ in renal impair w/ P: [D, +/–] Elderly, Sz Dz, caution w/ depression or suicidal tendencies **CI:** Acute intermittent prophyria **Disp:** Tabs 200, 400 mg SE: Drowsiness, syncope, tachycardia, edema, rash (SJS), N/V/D, ↓ WBC, agranulocytosis **Notes:** Do not abruptly D/C

**Mercaptopurine [6-MP] (Purinethol, Generic) Uses:** *ALL* 2nd-line Rx for CML & NHL, maint ALL in children, immunosuppressant w/ autoimmune Dzs (Crohn Dz, UC) **Acts:** Antimetabolite, mimics hypoxanthine **Dose:** Adults. ALL induction: 1.5–2.5 mg/kg/d; maint 60 mg/m²/d w/ allopurinol use 67–75% ↓ dose of 6-MP (interference w/ xanthine oxidase metabolism). Peds. ALL induction: 1.5–2.5 mg/kg/d maint 1.5–2.5 mg/kg/d PO or 60 mg/m²/d w/ renal/hepatic Insuff; take on empty stomach w/ P: [D, ?] w/ Allopurinol, immunosuppression, TMP-SMX, warfarin, salicylates, severe BM Dz, PRG **CI:** Prior resistance, PRG **Disp:** Tabs 50 mg SE: Mild hematotoxicity, mucositis, stomatitis, D, rash, fever, eosinophilia, jaundice, hep, hyperuricemia, hyperpigmentation, alopecia **Notes:** Handle properly; limit use to experienced physicians; ensure adequate hydration; for ALL, evening dosing may ↓ risk of relapse; low emetogenicity, TPMT deficiency ↑ immunosuppressive effect

**Meropenem (Merrem, Generic) Uses:** *Intra-Abd Infxns, bacterial meningitis, skin Infxn* **Acts:** Carbapenem; ↓ cell wall synth. **Spectrum:** Excellent gram(+) (except MRSA, methicillin-resistant *S. epidermidis* [MRSE] & *E. faecium*); excellent gram(−) including extended-spectrum β-lactamase producers; good anaerobic **Dose:** Adults. Abd Infxn: 1–2 g IV q8h. Skin Infxn: 500 mg IV q8h. Meningitis: 2 g IV q8h. Peds > 3 mo, < 50 kg. Abd Infxn: 20 mg/kg IV q8h. Skin Infxn: 10 mg/kg IV q8h. Meningitis: 40 mg/kg IV q8h; Peds > 50 kg. Use adult dose; max 2 g IV q8h; ↓ in renal Insuff (see PI) w/ P: [B, ?/M] w/ Probenecid, VPA **CI:** β-Lactam anaphylaxis **Disp:** Inj 1 g, 500 mg SE:
Less Sz potential than imipenem; *C. difficile* enterocolitis, D, ↓ plt Notes: Overuse ↑ bacterial resistance

Mesalamine (Apriso, Asacol, Asacol HD, Canasa, Lialda, Pentasa, Rowasa, Generic) Uses:
*Rectal: mild–mod distal UC, proctosigmoiditis, proctitis; oral: treat/maint of mild–mod ulcerative colitis*  
**Acts:** 5-ASA derivative, may inhibit prostaglandins, may ↓ leukotrienes and TNF-α  
**Dose:**  
*Rectal:* 60 mL qhs, retain 8 h (enema), PO: Caps: 1 g PO qid; tab: 1.6–2.4 g/d ÷ doses (tid-qid) × 6 wk; DR 2.4–4.8 g PO daily 8 wk max, do not cut/crush/chew w/ food; ↓ initial dose in elderly, maint: depends on formulation w/ P: [B/C (product specific), M] w/ Digitalis, PUD, pyloric stenosis, renal Insuff, elderly CI: Salicylate sensitivity  
**Disp:** Tabs ER ([Asacol]) 400, ([Asacol HD]) 800 mg; ER caps ([Pentasa]) 250, 500 mg, ([Apriso]) 375 mg; DR tab ([Lialda]) 1.2 g; supp ([Canasa]) 1000 mg; ([Rowasa]) rectal susp 4 g/60 mL  
**SE:** Yellow-brown urine, HA, malaise, Abd pain, flatulence, rash, pancreatitis, pericarditis, dizziness, rectal pain, hair loss, intolerance synd (bloody D) Notes: Retain rectally 1–3 h; √ CBC, Cr, BUN; Sx may ↑ when starting

Mesna (Mesnex [Oral], Generic [Inf]) Uses: *Prevent hemorrhagic cystitis d/t ifosfamide or cyclophosphamide*  
**Acts:** Antidote, reacts w/ acrolein and other metabolites to form stable compounds  
**Dose:** Per protocol; dose as % of ifosfamide or cyclophosphamide dose.  
*IV bolus:* 20% (eg, 10–12 mg/kg) IV at 0, 4, & 8 h;  
*IV Inf:* 20% prechemotherapy, 40% w/ chemotherapy for 12–24 h; Oral: 100% ifosfamide dose given as 20% IV at hour 0 then 40% PO at hours 4 & 8; if PO dose vomited repeat or give dose IV; mix PO w/ juice w/ P: [B; ?/–]  
**CI:** Thiol sensitivity  
**Disp:** Inj 100 mg/mL; ([Mesnex]) tabs 400 mg  
**SE:** ↓ BP, ↓ plt, ↑ HR, ↑ RR allergic Rxns, HA, GI upset, taste perversion Notes: Hydration helps ↓ hemorrhagic cystitis; higher dose for BMT; IV contains benzyl alcohol

Metaproterenol (Generic) Uses: *Asthma & reversible bronchospasm, COPD*  
**Acts:** Sympathomimetic bronchodilator  
**Dose:**  
*Adults.* Nebulized: 5% 2.5 mL q4–6h or PRN. MDI: 1–3 Inh q3–4h, 12 Inh max/24 h; wait 2 min between Inh. PO: 20 mg q6–8h. *Peds ≥ 12 y.* MDI: 2–3 Inh q3–4h, 12 Inh/d max. Nebulizer: 2.5 mL (soln 0.4, 0.6%) tid-qqid, up to q4h. *Peds > 9 y or ≥ 27 kg.* 20 mg PO tid-qid; 6–9 y or < 27 kg. 10 mg PO tid-qid; ↓ in elderly w/ P: [C, ?/–] w/ MAOI, TCA, sympathomimetics; avoid w/ β-blockers CI: Tachycardia, other arrhythmias  
**Disp:** Aerosol 0.65 mg/Inh, soln for Inh 0.4%, 0.6%; tabs 10, 20 mg; syrup 10 mg/5 mL  
**SE:** Nervousness, tremor, tachycardia, HTN, ↑ glucose, ↓ K⁺, ↑ IOP Notes: Fewer β₁ effects than isoproterenol & longer acting, but not a 1st-line β-agonist. Use w/ face mask < 4 y; oral ↑ ADR; contains ozone-depleting CFCs; will be gradually removed from US market

Metaxalone (Skelaxin) Uses: *Painful musculoskeletal conditions*  
**Acts:** Centrally acting skeletal muscle relaxant  
**Dose:** 800 mg PO tid-qid w/ P: [C, ?/–] w/ Elderly, EtOH & CNS depression, anemia CI: Severe hepatic/renal impair; drug-induced, hemolytic, or other anemias  
**Disp:** Tabs 800 mg  
**SE:** N/V, HA, drowsiness, hep

Metformin (Fortmet, Glucophage, Glucophage XR, Glumetza, Riomet, Generic) BOX:  
Associated w/ lactic acidosis, risk ↑ w/ sepsis, dehydration, renal/hepatic impair, ↑ alcohol, acute CHF; Sxs include myalgias, malaise, resp distress, Abd pain, somnolence; Labs: ↓ pH, ↑ anion gap, ↑ blood lactate; D/C immediately & hospitalize if suspected  
**Uses:** *Type 2 DM*, polycystic ovary synd (PCOS), HIV lipodystrophy  
**Acts:** Biguanide; ↓ hepatic glucose production & intestinal absorption of glucose; ↑ insulin sensitivity  
**Dose:**  
*Adults.* Initial: 500 mg PO bid; or 850 mg daily,
titrate 1- to 2-wk intervals may ↑ to 2550 mg/d max; take w/ A.M. & P.M. meals; can convert total daily dose to daily dose of XR. **Peds 10–16 y.** 500 mg PO bid, ↑ 500 mg/wk to 2000 mg/d max in ÷ doses; do not use XR formulation in peds w/ P: [B, +/-] Avoid EtOH; hold dose before & 48 h after ionic imaging contrast; hepatic impair, elderly CI: SCr ≥ 1.4 mg/dL in females or ≥ 1.5 mg/dL in males; hypoxemic conditions (eg, acute CHF/sepsis); metabolic acidosis, abnormal CrCl from any cause (AML, shock) **Disp:** Tabs 500, 850, 1000 mg; XR tabs 500, 750, 1000 mg; (Riomet) soln 100 mg/mL

**Methodone (Dolophine, Methadose, Generic) [C-II] BOX:** Deaths reported during initiation and conversion of pain pts to methadone Rx from Rx w/ other opioids. For PO only; tabs contain excipient. Resp depression and QT prolongation, arrhythmias observed. Only dispensed by certified opioid Tx programs for addiction. Analgesic use must outweigh risks **Uses:** *Severe pain not responsive to non-narcotics; detox w/ maint of narcotic addiction* **Acts:** Narcotic analgesic **Dose:** **Adults.** 2.5 mg IM/IV/SQ q8–12h or PO q8h; titrate as needed; see PI for conversion from other opioids. **Peds.** (Not FDA approved) 0.1 mg/kg q4–12h IV; ↑ slowly to avoid resp depression; ↓ in renal impair w/ P: [C, –] Avoid w/ severe liver Dz CI: Resp depression, acute asthma, ileus w/, selegiline **Disp:** Tabs 5, 10 mg; tab dispersible 40 mg; PO soln 5, 10 mg/5 mL; PO conc 10 mg/mL; Inj 10 mg/mL **SE:** Resp depression, sedation, constipation, urinary retention, ↑ QT interval, arrhythmias, ↓ HR, syncope, ↓ K⁺, ↓ Mg²⁺ **Notes:** Parenteral: oral 1:2; equianalgesic w/ parenteral morphine; longer 1/2; resp depression occurs later and lasts longer than analgesic effect, use w/ caution to avoid iatrogenic OD

**Methenamine Hippurate (Hiprex), Methenamine Mandelate (Urex, Uroquid-Acid No. 2) Uses:** *Suppress recurrent UTI long-term. Use only after Infxn cleared by antibiotics* **Acts:** Converted to formaldehyde & ammonia in acidic urine; nonspecific bactericidal action **Dose:** **Adults.** Hippurate: 1 g PO bid. Mandelate: initial 1 g qid PO pc & hs, maint 1–2 g/d. **Peds 6–12 y.** Hippurate: 50–75 mg/kg/d PO ÷ qid; take w/ food, ascorbic acid w/ hydration w/ P: [C, +] CI: Renal Insuff, severe hepatic Dz, & severe dehydration w/ sulphonamides (may precipitate in urine) **Disp:** Methenamine hippurate: Tabs 1 g. Methenamine mandelate: 500 mg, 1 g EC tabs **SE:** Rash, GI upset, dysuria, ↑ LFTs, super Infxn w/ prolonged use, *C. difficile*-associated diarrhea. **Notes:** Hippurate not indicated in peds < 6 y. Not for pts w/ indwelling catheters as dwell time in bladder required for action; “Urex” used internationally for many meds

**Methenamine, Phenyl Salicylate, Methylene Blue, Benzoic Acid, Hyoscyamine (Prosed) Uses:** *Lower urinary tract discomfit* **Acts:** Methenamine in acid urine releases formaldehyde (antiseptic), phenyl salicylate mild analgesic methylene blue/benzoic acid mild antiseptic, hyoscyamine parasympatholytic ↓ muscle spasm **Dose:** **Adults** **Peds > 12 y.** 1 tab PO qid w/ liberal fluid intake. w/ P: [C, +/-] Avoid w/ sulphonamides, NAG, pyloric/duodenal obst, BOO, coronary artery spasm CI: Component hypersens **Disp:** Tabs **SE:** Rash, dry mouth, flushing, ↑ pulse, dizziness, blurred vision, urine/feces discoloration, voiding difficulty/retention **Notes:** Take w/ plenty of fluid, can cause crystalluria; not rec in peds ≤ 6 y

**Methimazole (Tapazole, Generic) Uses:** *Hyperthyroidism, thyrotoxicosis*, prep for thyroid surgery or radiation **Acts:** Blocks T₃ & T₄ formation, but does not inactivate circulating T₃, T₄ **Dose:** **Adults.** Initial based on severity: 15–60 mg/d PO q8h. **Maint:** 5–15 mg PO daily. **Peds.** **Initial:** 0.4–0.7 mg/kg/24 h PO q8h. **Maint:** 0.2 mg/kg/d ÷ in 3 doses; take w/ food w/ P: [D, –] w/ Other meds
CI: Breast-feeding
Disp: Tabs 5, 10 mg
SE: GI upset, dizziness, blood dyscrasias, dermatitis, fever, hepatic Rxs, lupus-like synd
Notes: Follow clinically & w/ TFT, CBC w/ diff

Methocarbamol (Robaxin, Generic) Uses: *Relief of discomfort associated w/ painful musculoskeletal conditions*
Acts: Centrally acting skeletal muscle relaxant
Dose: Adults & Peds ≥ 16 y. 1.5 g PO qid for 2–3 d, then 1-g PO qid maint. Tetanus: 1–2 g IV q6h × 3 d, then use PO, max dose 24 g/d; < 16 y: 15 mg/kg/dose or 500 mg/m²/dose IV, may repeat PRN (tetanus only), max 1.8 g/m²/d × 3 d w/ P: Sz disorders, hepatic & renal impair [C, ?/M] CI: MyG, renal impair w/ IV
Disp: Tabs 500, 750 mg; Inj 100 mg/mL
SE: Can discolor urine, lightheadedness, drowsiness, GI upset, ↓ HR, ↓ BP
Notes: Tabs can be crushed and added to NG, do not operate heavy machinery; max rate IV = 3 mL/min

Methotrexate (Rheumatrex Dose Pack, Trexall, Generic) BOX: Administration only by experienced physician; do not use in women of childbearing age unless absolutely necessary (teratogenic); impaired elimination w/ impaired renal Fxn, ascites, pleural effusion; severe ↓ BM w/ NSAIDs; hepatotox, occasionally fatal; can induce life-threatening pneumonitis; D and ulcerative stomatitis require D/C; lymphoma risk; may cause tumor lysis synd; can cause severe skin Rxn, opportunistic Infxns; w/ RT can ↑ tissue necrosis risk. Preservatives make this agent unsuitable for intrathecal IT or higher dose use
Uses: *ALL, AML, leukemic meningitis, trophoblastic tumors (choriocarcinoma, hydatidiform mole), breast, lung, head, & neck CAs, Burkitt lymphoma, mycosis fungoides, osteosarcoma, Hodgkin Dz & NHL, psoriasis; RA, JRA, SLE*, chronic Dz
Acts: ↓ Dihydrofolate reductase-mediated prod of tetrahydrofolate, causes ↓ DNA synth
Dose: Adults. CA: Per protocol. RA: 7.5 mg/wk PO 1/wk or 2.5 mg q12h PO for 3 doses/wk. Psoriasis: 2.5–5 mg PO q12h × 3d/wk or 10–25 mg PO/IM qwk. Chronic: 15–25 mg IM/SQ qwk, then 15 mg/wk. Peds. JIA: 10 mg/m² PO/IM qwk, then 5–14 mg/m² × 1 or as 3 divided doses 12 h apart; ↓ elderly, w/ renal/hepatic impair w/ P: [X, –] w/ Other nephro-/hepatotox Meds, multiple interactions, w/ Sz, profound ↓ BM other than CA related CI: Severe renal/hepatic impair, PRG/lactation
Disp: Dose pack 2.5 mg in 8, 12, 16, 20, or 24 doses; tabs 2.5, 5, 7.5, 10, 15 mg; Inj 25 mg/mL; Inj powder 20 mg, 1 g
SE: ↓ BM, N/V/D, anorexia, mucositis, hepatotox (transient & reversible; may progress to atrophy, necrosis, fibrosis, cirrhosis), rashes, dizziness, malaise, blurred vision, alopecia, photosens, renal failure, pneumonitis; rare pulm fibrosis; chemical arachnoiditis & HA w/ IT delivery
Notes: Monitor CBC, LFTs, Cr, MTX levels & CXR; “high dose” > 500 mg/m² requires leucovorin rescue to ↓ tox; w/ IT, use preservative-/alcohol-free soln; systemic levels: Therapeutic: > 0.01 micromole; Toxic: > 10 micromole over 24 h

Methyldopa (Generic) Uses: *HTN*
Acts: Centrally acting antihypertensive, ↓ sympathetic outflow
Dose: Adults. 250–500 mg PO bid-tid (max 2–3 g/d) or 250 mg–1 g IV q6–8h. Peds Neonates. 2.5–5 mg/kg PO/IV q8h. Other peds. 10 mg/kg/24 h PO in 2–3 ÷ doses or 5–10 mg/kg/dose IV q6–8h to max 65 mg/kg/24 h; ↓ in renal Insuff/elderly w/ P: [B, +] CI: Liver Dz, w/ MAOIs, bisulfate allergy
Disp: Tabs 250, 500 mg; Inj 50 mg/mL
SE: Initial transient sedation/drowsiness, edema, hemolytic anemia, hepatic disorders, fevers, nightmares
Notes: Tolerance may occur, false(+) Coombs test; often considered DOC for PRG

Methylene Blue (Urolene Blue, Various) Uses: Methemoglobinemia, vasoplegic synd, ifosfamide-induced encephalopathy, cyanide poisoning, dye in therapeutics/diagnosis
Acts: Low IV dose converts methemoglobin to hemoglobin; excreted, appears in urine as green/green-blue
**Color; MAOI activity**

**Dose:** 1–2 mg/kg or 25–50 mg/m² IV over 5–10 min, repeat q1h; direct instillation into fistulous tract w/ **P:** [X, –] w/ Severe renal impair w/ psych meds such as SSRI, SNRI, TCAs (may cause serotonin synd), w/ G6PD deficiency

**CI:** Intra spinal Inj, severe renal Imp

**Disp:** 1, 10 mL Inj

**SE:** N, Abd, CP, sweating, fecal/urine discoloration, hemolytic anemia

**Notes:** Component of other medications; stains tissue blue, limits repeat use in surgical visualization

**Methylergonovine (Methergine) Uses:** *Postpartum bleeding (atony, hemorrhage)*

**Acts:** Ergotamine derivative, rapid and sustained uterotonic effect

**Dose:** 0.2 mg IM after anterior shoulder delivery or puerperium, may repeat in 2- to 4-h intervals or 0.2–0.4 mg PO q6–12h for 2–7 d w/ **P:** [C, ?] w/ Sepsis, obliterative vascular Dz, hepatic/renal impair, w/ CYP3A4 inhib (Table 10, p 319)

**CI:** HTN, PRG, toxemia

**Disp:** Inj 0.2 mg/mL; tabs 0.2 mg

**SE:** HTN, N/V, CP, ↓ BP, Sz

**Notes:** Give IV only if absolutely necessary over > 1 min w/ BP monitoring

**Methylnaltrexone Bromide (Relistor) Uses:** *Opioid-induced constipation in pt w/ advanced illness such as CA*

**Acts:** Peripheral opioid antagonist

**Dose:** **Adults.** Wt-based < 38 kg: 0.15 mg/kg SQ; 38–61 kg: 8 mg SQ; 62–114 kg: 12 mg SQ > 114 kg: 0.15 mg/kg, round to nearest 0.1 mL, dose q other day PRN, max 1 dose q24h w/ **P:** [B, ?/M] w/ CrCl < 30 mL/min ↓ dose 50%

**Disp:** Inj 12 mg/0.6 mL

**SE:** N/D, Abd pain, dizziness

**Notes:** Does not affect opioid analgesic effects or induce withdrawal

**Methylphenidate, Oral (Concerta, Metadate CD, Metadate SR, Methylin, Ritalin LA, Ritalin SR, Quillivant XR) [C-II] BOX:** w/ Hx of drug or alcohol dependence, avoid abrupt D/C; chronic use can lead to dependence or psychotic behavior; observe closely during withdrawal of drug

**Uses:** *ADHD, narcolepsy*, depression

**Acts:** CNS stimulant, blocks reuptake of norepinephrine and DA

**Dose:** **Adults.** Narcolepsy: 10 mg PO 2–3×/d, 60 mg/d max. Depression: 2.5 mg q A.M.; ↑ slowly, 20 mg/d max, + bid 7 A.M. & 12 P.M.; use regular release only. **Adults & Peds > 6 y.** ADHD: IR: 5 mg PO bid, ↑ 5–10 to 60 mg/d, max (2 mg/kg/d), ER/SR use total IR dose qd. **CD/RA** 20 mg PO qd, ↑ 10–20 mg qwk to 60 mg/d max. **Concerta:** 18 mg PO q A.M. Rx naïve or already on 20 mg/d, 36 mg PO q A.M. if on 30–45 mg/d, 54 mg PO q A.M. if on 40–60 mg/d, 72 mg PO q A.M. w/ **P:** [C, M] w/ Hx EtOH/drug abuse, CV Dz, HTN, bipolar Dz, Sz; separate from MAOIs by 14 d

**Disp:** Chew tabs 2.5, 5, 10 mg; tabs scored IR (Ritalin) 5, 10, 20 mg; **Caps ER (Ritalin LA)** 10, 20, 30, 40 mg **Caps ER (Medetate CD)** 10, 20, 30, 40, 60 mg (Methylin ER) 10, 20, 20 mg. **Tabs SR (Medetate SR, Ritalin SR)** 20 mg; **ER tabs (Concerta)** 18, 27, 36, 54 mg. Oral soln 5, 10 mg/5 mL; (QuilliVant XR) ER Susp 5 mg/mL

**SE:** CV/CNS stimulation, growth retard, GI upset, pancytopenia, ↑ LFTs

**CI:** Marked anxiety, tension, agitation, NAG, motor tics, family Hx or diagnosis of Tourette synd, severe HTN, angina, arrhythmias, CHF, recent MI, ↑ thyroid; w/ or w/ in 14 d of MAOI

**Notes:** See also transdermal form; titrate dose; take 30–45 min ac; do not chew or crush; **Concerta** “ghost tablet” in stool, avoid w/ GI narrowing; Medetate contains sucrose, avoid w/ lactose/galactose problems. Do not use these meds w/ halogenated anesthetics; abuse and diversion concerns; AHA rec: all ADHD peds need CV assessment and consideration for ECG before Rx

**Methylphenidate, Transdermal (Daytrana) [C-II] BOX:** w/ Hx of drug or alcohol dependence; chronic use can lead to dependence or psychotic behavior; observe closely during withdrawal of drug

**Uses:** *ADHD in children 6–17 y* **Acts:** CNS stimulant, blocks reuptake of norepinephrine and DA

**Dose:** **Adults & Peds 6–17 y.** Apply to hip in A.M. (2 h before desired effect), remove 9 h later; titrate 1st wk 10 mg/9 h, 2nd wk 15 mg/9 h, 3rd wk 20 mg/9 h, 4th wk 30 mg/9 h w/ **P:** [C, +/–] See methylphenidate, oral; sensitization may preclude subsequent use of oral forms; abuse and diversion
concerns CI: Significant anxiety, agitation; component allergy; glaucoma; w/ or w/ in 14 d of MAOI;
tics or family Hx Tourette synd Disp: Patches 10, 15, 20, 30 mg SE: Local Rxns, N/V,
nasopharyngitis, ↓ Wt, ↓ appetite, lability, insomnia, tic Notes: Titrate dose weekly; effects last hours
after removal; evaluate BP, HR at baseline and periodically; avoid heat exposure to patch, may cause
OD, AHA rec: all ADHD peds need CV assessment and consideration for ECG before Rx

Methylprednisolone (A-Methapred, Depo-Medrol, Medrol, Medrol Dosepak, Solu-Medrol,
Generic) [See Steroids, p 259 and Table 2 & 3 pp 301 & 302] Uses: *Steroid responsive
conditions (endocrine, rheumatic, collagen, dermatologic, allergic, ophthalmic, respiratory,
hematologic, neo-plastic, edematous, GI, CNS, others)* Acts: Glucocorticoid Dose: See Steroids

Peds. ECC 2010. Status asthmaticus, anaphylactic shock: 2 mg/kg IV/IO/IM (max 60 mg).
Maint: 0.5 mg/kg IV q6h or 1 mg/kg q12h to 120 mg/d w/ P: [C, ?/M] may mask Infx, cataract w/ prolonged
use; avoid vaccines CI: Fungal Infx, component allergy Disp: Oral (Medrol) 4, 8, 16, 32 mg, (Medrol
Dosepak) 21 4-mg tabs taken over 6 d; Inj acetate (Depo-Medrol) 20, 40, 80 mg/mL; Inj succinate
(SoluMedrol) 40, 125, 500 mg, 1, 2 g SE: Fluid and electrolyte disturbances, muscle weakness/loss,
ulcers, impaired wound healing, others (see label) Notes: Taper dose to avoid adrenal Insuff

Metoclopramide (Metozolv, Reglan, Generic) BOX: Chronic use may cause tardive dyskinesia;
D/C if Sxs develop; avoid prolonged use (> 12 wk) Uses: *Diabetic gastroparesis, symptomatic
GERD; chemo & postop N/V, facilitate small-bowel intubation & upper GI radiologic exam*,
*GERD, diabetic gastroparesis (Metozolv) stimulate gut in prolonged postop ileus* Acts: ↑ Upper GI
motility; blocks dopamine in chemoreceptor trigger zone, sensitized tissues to ACH Dose: Adults.
Gastroparesis (Reglan): 10 mg PO 30 min ac & hs for 2–8 wk PRN, or same dose IM/IV for 10 d,
then PO. Reflux: 10–15 mg PO 30 min ac & hs. Chemo antiemtic: 1–2 mg/kg/dose IV 30 min before
chemo, then q2h × 2 doses, then q3h × 3 doses. Postop: 10–20 mg IV/IM q4–6h PRN. Adults & Peds
> 14 y. Intestinal intubation: 10 mg IV × 1 over 1–2 min Peds. Reflux: 0.1–0.2 mg/kg/dose PO 30
min ac & hs. Chemo antiemtic: 1–2 mg/dose IV as adults. Postop: 0.25 mg/kg IV q6–8h PRN.
Peds. Intestinal intubation: 6–14 y: 2.5–5 mg IV × 1 over 1–2 min; < 6 y: Use 0.1 mg/kg IV × 1 w/
P: [B, M] Drugs w/ extrapyramidal ADRs, MAOIs, TCAs, sympathomimetics CI: w/ EPS meds, GI
bleeding, pheochromocytoma, Sz disorders, GI obst Disp: Tabs 5, 10 mg; syrup 5 mg/5 mL; ODT
(Metozolv) 5, 10 mg; Inj 5 mg/mL SE: Dystonic Rxns common w/ high doses (Rx w/ IV
diphenhydramine), fluid retention, restlessness, D, drowsiness Notes: ↓ w/ Renal impair/elderly; ✓
baseline Cr

Metolazone (Zaroxolyn, Generic) Uses: *Mild–mod essential HTN & edema of renal Dz or
cardiac failure* Acts: Thiazide-like diuretic; ↓ distal tubule Na reabsorption Dose: HTN: 2.5–5 mg/d
PO qd Edema: 2.5–20 mg/d PO. w/ P: [B, –] Avoid w/ Li, gout, digitalis, SLE, many interactions CI:
Anuria, hepatic coma or precoma Disp: Tabs 2.5, 5, 10 mg; syrup 5 mg/5 mL; ODT (Metozolv) 5, 10 mg; Inj 5 mg/mL SE: Dystonic Rxns common w/ high doses (Rx w/ IV
diphenhydramine), fluid retention, restlessness, D, drowsiness Notes: ↓ w/ Renal impair/elderly; ✓
baseline Cr

Metoprolol Succinate (Toprol XL, Generic), Metoprolol Tartrate (Lopressor, Generic) BOX:
Do not acutely stop Rx as marked worsening of angina can result; taper over 1–2 wk Uses: *HTN,
mg PO bid max 400 mg/d; ER form dose qd. HTN: 50–200 mg PO bid max 450 mg/d, ER form dose
qd. AMI: 5 mg IV q2min × 3 doses, then 50 mg PO q6h × 48 h, then 100 mg PO bid. CHF: (XL form
preferred) 12.5–25 mg/d PO × 2 wk, ↑ 2-wk intervals, target: 200 mg max, use low dose w/ greatest
severity; ECC 2010. AMI: 5 mg slow IV q5min, total 15 mg; then 50 mg PO, titrate to effect. Peds 1–
**Metronidazole (Flagyl, Flagyl ER, MetroCream, MetroGel, MetroLotion)**

**Uses**: *Bone/joint, endocarditis, intra-Abd, meningitis, skin Infxns; amebiasis & amebic liver abscess; trichomoniashis in pt and partner; bacterial vaginosis; PID; giardiasis; antibiotic associated pseudomembranous colitis (C. difficile), eradicate H. pylori w/ combo Rx, rosacea, prophylactic in postop colorectal surgery*

**Acts**: Interferes w/ DNA synth. ** Spectrum**: Excellent anaerobic, C. difficile

**Dose**: **Adults.** **Anaerobic Infxns**: 500 mg IV q6–8h. **Amebic dysentery**: 500–750 mg/d PO q8h × 5–10 d. **Trichomonas**: 250 mg PO tid for 7 d or 2 g PO × 1 (Rx partner). **C. difficile**: 500 mg PO or IV q8h for 7–10 d (PO preferred; IV only if pt NPO), if no response, change to PO vancomycin. **Vaginosis**: 1 applicator intravag qd or bid × 5 d, or 500 mg PO bid × 7 d or 750 mg PO qd × 7 d. **Acne rosacea/skin**: Apply bid. **Giardia**: 500 mg PO bid × 5–7 d. **H. pylori**: 250–500 mg PO w/ meals & hs × 14 d, combine w/ other antibiotic & a proton pump inhib or H₂ antagonist. **Peds.** **Anaerobic Infxns**: PO: 15–35 mg/kg/d ÷ q8h IV: 30 mg/kg IV/d ÷ q6H, 4 g/d max ÷ dose. **Amebic dysentery**: 35–50 mg/kg/24 h PO in 3 ÷ doses for 5–10 d; **Trichomonas**: 15–30 mg/kg/d PO ÷ q8h × 7 d. **C. difficile**: 30 mg/kg/d PO ÷ q6H × 10 d, max 2 g/d; ↓ w/ severe hepatic/renal impair w/ P: [B, –] Avoid EtOH, w/ warfarin, CYP3A4 substrates (Table 10, p 319), ↑ Li levels CI: 1st tri of PRG

**Disp**: Caps 150, 200, 250 mg

**SE**: Lightheadedness, dizziness, anxiety, incoordination, GI upset, ataxia, hepatic damage, blood dyscrasias, PVCs, N/V, tremor

**Notes**: ↘ LFTs, CBC, false(+) ANA

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**Mexiletine (Generic)**

**Uses**: *Suppress symptomatic vent arrhythmias* DN **Acts**: Class Ib antiarrhythmic (Table 9, p 318) **Dose**: **Adults.** 200–300 mg PO q8h. Initial 200 mg q8h, can load w/ 400 mg if needed, ↑ q2–3d, 1200 mg/d max, ↓ dose w/ hepatic impairment or CHF, administer ATC & w/ food w/ P: [C, +] CHF, may worsen severe arrhythmias; interacts w/ hepatic inducers & suppressors CI: Cardiogenic shock or 2nd-/3rd-degree AV block w/o pacemaker **Disp**: Caps 150, 200, 250 mg

**SE**: N/V/D, HA, pyrexia, Abd

**Notes**:

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**Micafungin (Mycamine)**

**Uses**: *Candidemia, acute dissemin and esophageal candidiasis, Candida peritonitis & abscesses; prophylaxis Candida Infxn w/ HSCT* **Acts**: Echinocandin; ↓ fungal cell wall synth **Dose**: Candidemia, acute disseminated candidiasis, Candida peritonitis & abscesses: 100 mg IV daily; **Esophageal candidiasis**: 150 mg IV daily; **Prophylaxis of Candida Infxn**: 50 mg IV daily over 1 h w/ P: [C, ?/–] Sirolimus, nifedipine, itraconazole dosage adj may be necessary CI: Component or other echinocandin allergy **Disp**: Inj 50, 100 mg vials

**SE**: N/V/D, HA, pyrexia, Abd
pain, ↓ K⁺, ↓ plt, histamine Sxs (rash, pruritus, facial swelling, vasodilatation), anaphylaxis, anaphylactoid Rxn, hemolysis, hemolytic anemia, ↑ LFTs, hepatotox, renal impair

**Miconazole (Monistat 1 Combo, Monistat 3, Monistat 7) [OTC] (Monistat-Derm) Uses:**
*Candidal Infxns, dermatomycoses (tinea pedis/tinea cruris/tinea corporis/tinea versicolor/candidiasis)*

**Acts:** Azole antifungal, alters fungal membrane permeability

**Dose:**

*Intravag:* 100 mg supp or 2% cream intravag qhs × 7 d or 200 mg supp or 4% cream intravag qhs × 3 d.

*Derm:* Apply bid, A.M./P.M.

*Tinea versicolor:* Apply qd.

**Treat tinea pedis and tinea corporis for 1 mo and other Infxns for 2 wk.**

**Peds ≥ 12 y.** 100 mg supp or 2% cream intravag qhs × 7 d or 200 mg supp or 4% cream intravag qhs × 3 d.

Not for OTC use in children < 2 y w/ P: [C, ?] Azole sensitivity

**Disp:** Monistat-Derm: (Rx) Cream 2%; Monistat 1 combo: 2% cream w/ 1200 mg supp, Monistat 3: Vag cream 4%, supp 200 mg; Monistat 7: cream 2%, supp 100 mg; lotion 2%; powder 2%; effervescent tab 2%, oint 2%, spray 2%; Vag supp 100, 200, 1200 mg; Vag cream 2%, 4%; [OTC]

**SE:** Vag burning; on skin contact dermatitis, irritation, burning

**Notes:** May interfere w/ condom and diaphragm, do not use w/ tampons

**Miconazole/Zinc Oxide/Petrolatum (Vusion) Uses:**
*Candidal diaper rash*

**Acts:** Combo antifungal

**Dose:**

**Peds ≥ 4 wk.** Apply at each diaper change × 7 d w/ P: [C, ?] CI: None

**Disp:** Miconazole/zinc oxide/petrolatum oint 0.25/15/81.35%, 50-, 90-g tube

**SE:** None

**Notes:** Keep diaper dry, not for prevention

**Midazolam (Generic) [C-IV] BOX:** Associated w/ resp depression and resp arrest especially when used for sedation in noncritical care settings. Reports of airway obst, desaturation, hypoxia, and apnea w/ other CNS depressants. Cont monitoring required; initial doses in elderly & debilitated should be conservative

**Uses:** *Preop sedation, conscious sedation for short procedures & mechanically ventilated pts, induction of general anesthesia*  

**Acts:** Short-acting benzodiazepine

**Dose:**

*Adults.* 1–5 mg IV or IM or 0.02–0.35 mg/kg based on indication; titrate to effect.

*Peds.*

Preop: > 6 mo: 0.5–0.75 mg/kg PO, 20 mg max. > 6 mo: 0.1–0.15 mg/kg IM × 1 max 10 mg. General anesthesia: 0.025–0.1 mg/kg IV q2min for 1–3 doses PRN to induce anesthesia (↓ in elderly, w/ narcotics or CNS depressants)

**W/P:** [D, M] w/ CYP3A4 substrate (Table 10, p 319), multiple drug interactions

**CI:** NAG; w/ fosamprenavir, atazanavir, nelfinavir, ritonavir, intrathecal/epidural Inj of parenteral forms.

**Disp:** Inj 1, 5 mg/mL; syrup 2 mg/mL

**SE:** Resp depression; ↓ BP w/ conscious sedation, N

**Notes:** Reversal w/ flumazenil; monitor for resp depression

**Midodrine (Proamatine) BOX:** Indicated for pts for whom orthohypotension significantly impairs daily life despite standard care

**Uses:** *Tx orthostatic hypotension*

**Acts:** Vasopressor/antihypotensive; α₁-agonist

**Dose:** 10 mg PO tid when pt plans to be upright w/ P: [C, ?] CI: Pheochromocytoma, renal Dz, thyrotoxicosis, severe heart Dz, urinary retention, supine HTN

**Disp:** Tabs 2.5, 5, 10 mg SE: Supine HTN, paresthesia, urinary retention

**Notes:** SBP ≥ 200 mm Hg in ~13% pts given 10 mg

**Mifepristone (Korlym) BOX:** Antiprogestational; can cause termination of PRG. Exclude PRG before use or Rx is interrupted for > 14 d in of reproductive potential

**Uses:** *Control hyperglycemia w/ Cushing synd and type 2 DM in nonsurgical or failed surgical candidates*

**Acts:** Antiprogestin; glucocorticoid receptor blocker

**Dose:** Start 300 mg PO qd w/ meal, ↑ PRN 1200 mg/d max (20 mg/kg/d); mod renal hepatic impair 600 mg/d max w/ P: [X, –] Do not use w/ severe hepatic impair or w/ OCP; avoid w/ ↑ QT or drugs that ↑ QT; for adrenal insufficiency, K⁺; Vag bleed
or w/ anticoagulants; caution w/ drugs metabolized by CYP3A, CYP2C8/2C9, CYP2B6 (eg, bupropion, efavirenz) CI: PRG, w/ simvastatin, lovastatin, CYP3A substrates, long-term steroids, unexplained uterine bleed, endometrial hyperplasia/cancer Disp: 300 mg tab SE: N/V, fatigue, HA, ↓ K⁺, arthralgia, edema, ↑ BP, dizziness, ↓ appetite, endometrial hypertrophy Notes: RU486 discontinued

Miglitol (Glyset) Uses: *Type 2 DM* Acts: α-Glucosidase inhib; delays carbohydrate digestion Dose: Initial 25 mg PO tid; maint 50–100 mg tid (w/ 1st bite of each meal), titrate over 4–8 wk w/ P: [B, –] w/ Digitalis & digestive enzymes, not rec w/ SCr > 2 mg/dL CI: DKA, obstructive/inflammatory GI disorders; colonic ulceration Disp: Tabs 25, 50, 100 mg SE: Flatulence, D, Abd pain Notes: Use alone or w/ sulfonylureas

Milnacipran (Savella) BOX: Antidepressants associated w/ ↑ risk of suicide ideation in children and young adults Uses: *Fibromyalgia* Acts: Antidepressant, SNRI Dose: 50 mg PO bid, max 200 mg/d; ↓ to 25 mg bid w/ CrCl < 30 mL/min w/ P: [C, ?] Caution w/ hepatic impair, hepatox, serotonin syndrome, ↑ bleeding risk CI: NAG, w/ recent MAOI Disp: Tabs: 12.5, 25, 50 mg SE: HA, N/V, constipation, dizziness, ↑ HR, ↑ BP Notes: Monitor HR and BP

Milrinone (Primacor) Uses: *CHF acutely decompensated*, Ca antagonist intoxication Acts: Phosphodiesterase inhib, (+) inotrope & vasodilator; little chronotropic activity Dose: 50 mcg/kg, IV over 10 min then 0.375–0.75 mcg/kg/min IV Inf; ↓ w/ renal impair w/ P: [C, ?] CI: Allergy to drug; w/ inamrinone Disp: Inj 200 mcg/mL SE: Arrhythmias, ↓ BP, HA Notes: Monitor fluids, lytes, CBC, Mg²⁺, BP, HR; not for long-term use

Mineral Oil [OTC] Uses: *Constipation, bowel irrigation, fecal impaction* Acts: Lubricant laxative Dose: *Adults.* Constipation: 15–45 mL PO/d PRN. Fecal impaction or after barium: 118 mL rectally × 1. *Peds > 6 y.* Constipation: 5–25 mL PO qd. 2–12 y: Fecal impaction: 59 mL rectally × 1. w/ P: [?, ?] w/ N/V, difficulty swallowing, bedridden pts; may ↓ absorption of vits A, D, E, K, warfarin CI: Colostomy/ileostomy, appendicitis, diverticulitis, UC Disp: All [OTC] liq, PO microemulsion 2.5 mL/5 mL, rectal enema 118 mL SE: Lipid pneumonia (aspiration of PO), N/V, temporary anal incontinence Notes: Take PO upright, do not use PO in peds < 6 y

Mineral Oil/Pramoxine HCl/Zinc Oxide (Tucks Ointment [OTC]) Uses: *Temporary relief of anorectal disorders (itching, etc)* Acts: Topical anesthetic Dose: *Adults & Peds ≥ 12 y.* Cleanse, rinse, & dry, apply externally or into anal canal w/ tip 5×/d × 7 d max. w/ P: [?, ?] Do not place into rectum CI: None Disp: Oint 1% 30-g tube SE: Local irritation Notes: D/C w/ or if rectal bleeding occurs or if condition worsens or does not improve w/ in 7 d

Minocycline (Arestin, Dynacin, Minocin, Solodyn, Generic) Uses: *Mod–severe nonnodular acne (Solodyn), anthrax, rickettsiae, skin Infxn, URI, UTI, nongonococcal urethritis, amebic dysentery, asymptomatic meningococcal carrier, Mycobacterium marinum, adjunct to dental scaling for periodontitis (Arestin)* Acts: Tetracycline, bacteriostatic, ↓ protein synth Dose: *Adults & Peds > 12 y.* Usual: 200 mg, then 100 mg q12h or 100–200 mg IV or PO, then 50 mg qid. Gonococcal urethritis, men: 100 mg q12h × 5 d. Syphilis: Usual dose × 10–15 d. Meningococcal carrier: 100 mg q12h × 5 d. M. marinum: 100 mg q12h × 6–8 wk. Uncomp urethral, endocervical, or rectal Infxn: 100 mg q12h × 7 d minimum. *Adults & Peds > 12 y.* Acne: (Solodyn) 1 mg/kg PO qd × 12 wk. > 8 y: 4 mg/kg initially then 2 mg/kg q12h w/ food to ↓ irritation, hydrate well, ↓ dose or extend interval w/ renal impair. w/ P: [D, –] Associated w/ pseudomembranous colitis, w/ renal impair,
may ↓ OCP, or w/ warfarin may ↑ INR CI: Allergy, children < 8 y Disp: Tabs 50, 75, 100 mg; tabs ER (Solodyn) 45, 65, 90, 115, 135 mg, caps (Minocin) 50, 100 mg, susp 50 mg/mL (Arestin) topical power SE: D, HA, fever, rash, joint pain, fatigue, dizziness, photosens, hyperpigmentation, SLE synd, pseudotumor cerebri Notes: Do not cut/crush/chew; keep away from children, tooth discoloration in < 8 y or w/ use last half of PRG

**Minoxidil, Oral (Generic) BOX:** May cause pericardial effusion, occasional tamponade, and angina pectoris may be exacerbated. Only for nonresponders to max doses of 2 other antihypertensives and a diuretic. Administer under supervision w/ a β-blocker and diuretic. Monitor for ↓ BP in those receiving guanethidine w/ malignant HTN Uses: *Severe HTN* Acts: Peripheral vasodilator Dose: **Adults & Peds > 12 y.** 5 mg PO qd, titrate q3d, 100 mg/d max usual range 2.5–80 mg/d in 1–2 ÷ doses. **Peds.** 0.2–1 mg/kg/24 h ÷ PO q12–24h, titrate q3d, max 50 mg/d; ↓ w/ elderly, renal Insuff w/P: [C, –] Caution in renal impairment, CHF CI: Pheochromocytoma, component allergy Disp: Tabs 2.5, 10 mg SE: Pericardial effusion & vol overload w/ PO use; hypertrichosis w/ chronic use, edema, ECG changes, Wt gain Notes: Avoid for 1 mo after MI

**Minoxidil, Topical (Theroxidil, Rogaine) [OTC] Uses:** *Male & female pattern baldness* Acts: Stimulates vertex hair growth Dose: Apply 1 mL bid to area, D/C if no growth in 4 mo. w/ P: [?, ?] CI: Component allergy Disp: Soln & aerosol foam 2, 5% SE: Changes in hair color/texture Notes: Requires chronic use to maintain hair

**Mipomersen (Kynamro) BOX:** May ↑ transaminases and/or cause hepatic steatosis. Monitor ALT/AST and bili baseline & regularly; hold if ALT/AST > 3× ULN (see label; D/C w/ significant liver tox; restricted KYNAMRO REMS distribution Uses: *Homozygous familial hypercholesterolemia* Acts: Oligonucleotide inhib apo B-100 synth Dose: **Adults.** 200 mg SQ 1 × wk w/P: [B, ?/–] CI: Mod–severe hepatic impair, active liver Dz, component allergy Disp: Inj 200 mg/mL (1 mL vial/syringe) SE: Inj site Rxns, flu-like Sxs; hepatotox, N/V, Abd pain, angina, palpitations, fatigue, pyrexia, edema, musculoskeletal pain, HA, insomnia, HTN

**Mirabegron (Myrbetriq) Uses:** *OAB* Acts: β-3 adrenergic agonist; relaxes smooth muscle Dose: **Adults.** 25 mg PO daily; ↑ to 50 mg daily after 8 wk PRN; 25 mg max daily w/ severe renal or mod hepatic impair; swallow whole w/P: [C, –] w/ Severe uncontrolled HTN; urinary retention w/ BOO & antimuscarinic drugs; w/ drugs metabolized by CYP2D6; do not use w/ ESRD or severe hepatic impair CI: None Disp: Tabs ER 25, 50 mg SE: HTN, HA, UTI, nasopharyngitis, N/D, constipation, Abd pain, dizziness, tachycardia, URI, arthralgia, fatigue

**Mirtazapine (Remeron, Remeron SolTab, Generic) BOX:** ↑ Risk of suicidal thinking and behavior in children, adolescents, and young adults w/ major depression and other psychological disorders. Not for peds Uses: *Depression* Acts: α₂-Antagonist antidepressant, ↑ norepinephrine & 5-HT Dose: 15 mg PO hs, up to 45 mg/d hs w/P: [C, M] Has anticholesterol effects, w/ Sz, clonidine, CNS depressant use, CYP1A2, CYP3A4 inducers/inhib w/ hepatic & renal impairment CI: MAOIs w/ in 14 d Disp: Tabs 7.5, 15, 30, 45 mg; rapid dispersion tabs (SolTab) 15, 30, 45 mg SE: Somnolence, ↑ cholesterol, constipation, xerostomia, Wt gain, agranulocytosis, ↓ BP, edema, musculoskeletal pain Notes: Do not ↑ dose < q1–2wk; handle rapid tabs w/ dry hands, do not cut or chew; not FDA approved for Rx of bipolar depression; do not D/C abruptly

**Misoprostol (Cytotec, Generic) BOX:** Use in PRG can cause Ab, premature birth, or birth defects; do not use to ↓ decrease ulcer risk in women of childbearing age; must comply w/ birth control
measures. Uses: Prevent NSAID-induced gastric ulcers; medical termination of PRG < 49 d w/ mifepristone; induce labor (cervical ripening); incomplete & therapeutic Ab. Acts: Prostaglandin (PGE-1); antisecretory & mucosal protection; induces uterine contractions. Dose: Ulcer prevention: 100–200 mcg PO qid w/ meals; in females, start 2nd/3rd d of next nl period. Induction of labor: 25–50 mcg intravag. PRG termination: 400 mcg PO on day 3 of mifepristone; take w/ food w/ P: [X, –] CI: PRG, component allergy. Disp: Tabs 100, 200 mcg. SE: Miscarriage w/ severe bleeding; HA, D, Abd pain, constipation. Notes: Not used for induction of labor w/ previous C-section or major uterine surgery.

Mitomycin (Mitosol [Topical], Generic) BOX: Administer only by physician experienced in chemotherapy; myelosuppressive; can induce hemolytic uremic synd w/ irreversible renal failure. Uses: Stomach, pancreas, breast, colon CA; squamous cell carcinoma of the anus; NSCLC, head & neck, cervical; bladder CA (intravesically). Mitosol for glaucoma surgery. Acts: Alkylating agent; generates oxygen-free radicals w/ DNA strand breaks. Dose: (Per protocol) 20 mg/m² q6–8wk IV or 10 mg/m² combo w/ other myelosuppressive drugs q6–8wk. Bladder CA: 20–40 mg in 40 mL NS via a urethral catheter once/wk; ↓ in renal/hepatic impair w/ P: [D, –] w/ Cr > 1.7 mg/dL/↑ cardiac tox w/ vinca alkaloids/doxorubicin CI: ↓ Plt, coagulation disorders, ↑ bleeding tendency, PRG. Disp: Inj 5, 20, 40 mg; Mitosol 0.2 mg/vial SE: ↓ BM (persists for 3–8 wk, may be cumulative; minimize w/ lifetime dose < 50–60 mg/m²²), N/V, anorexia, stomatitis, renal tox, microangiopathic hemolytic anemia w/ renal failure (hemolytic–uremic synd), venoocclusive liver Dz, interstitial pneumonia, alopecia, extrav Rxns, contact dermatitis; CHF w/ doses > 30 mg/m².

Mitoxantrone (Generic) BOX: Administer only by physician experienced in chemotherapy; except for acute leukemia, do not use w/ ANC count of < 1500 cells/mm³; severe neutropenia can result in Infxn, follow CBC; cardiotoxic (CHF), secondary AML reported. Uses: AML (w/ cytarabine), ALL, CML, PCA, MS, lung CA, breast CA, & NHL. Acts: DNA-intercalating agent; ↓ DNA synth by interacting w/ topoisomerase II. Dose: Per protocol; ↓ w/ hepatic impair, leukopenia, thrombocytopenia w/ P: [D, –] Reports of secondary AML, w/ MS ↑ CV risk, do not treat MS pt w/ low LVEF CI: PRG, sig ↓ in LVEF. Disp: Inj 2 mg/mL SE: ↓ BM, N/V, stomatitis, alopecia (infrequent), cardiotox, urine discoloration, secretions & scleras may be blue-green. Notes: Maintain hydration; baseline CV evaluation w/ ECG & LVEF; cardiac monitoring prior to each dose; not for intrathecal use.

Modafinil (Provigil, Generic) [C-IV] Uses: Improve wakefulness in pts w/ excessive daytime sleepiness (narcolepsy, sleep apnea, shift work sleep disorder). Acts: Alters dopamine & norepinephrine release, ↓ GABA-mediated neurotransmission. Dose: 200 mg PO q A.M.; ↓ dose 50% w/ elderly/hepatic impair w/ P: [C, M] CV Dz; ↑ effects of warfarin, diazepam, phenytoin; ↓ OCP, cyclosporine, & theophylline effects. CI: Component allergy. Disp: Tabs 100, 200 mg SE: Serious rash including SJS, HA, N, D, paresthesias, rhinitis, agitation, psychological Sx. Notes: CV assessment before using.


Mometasone and Formoterol (Dulera) BOX: Increased risk of worsening wheezing or asthama-
related death in pediatric/adolescent pts w/ long-acting $\beta_2$-adrenergic agonists; use only if asthma not controlled on agent such as inhaled steroid

**Uses:** *Maint Rx for asthma*

**Acts:** Corticosteroid (mometasone) w/ LA bronchodilator $\beta_2$ agonist (formoterol)

**Dose:** *Adults & Peds > 12 y.* 2 Inh q12h w/ P: [C, ?/M] w/ P450 3A4 inhibit (eg, ritonavir), adrenergic/beta blockers, meds that ↑ QT interval; candida Infxn of mouth/throat, immunosuppression, adrenal suppression, ↓ bone density, w/ glaucoma/cataracts, may ↑ glucose, ↓ K; other LABA should not be used

**CI:** Acute asthma attack; component hypersensitivity

**Disp:** MDI 120 inhal/canister (mcg mometasone/mcg formoterol) 100/5, 200/5

**SE:** Nasopharyngitis, sinusitis, HA, palpitations, CP, rapid heart rate, tremor or nervousness, oral candidiasis

**Notes:** For pts not controlled on other meds (eg, low-medium dose Inh steroids) or whose Dz severity warrants 2 maint therapies

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**Mometasone, Inhaled (Asmanex Twisthaler)**

**Uses:** *Maint Rx for asthma*

**Acts:** Corticosteroid

**Dose:** *Adults & Peds > 11 y.* On bronchodilators alone or inhaled steroids: 220 mcg $\times$ 1 q P.M. or in $\div$ doses (max 440 mcg/d). *On oral steroids:* 440 mcg bid (max 880 mcg/d) w/ slow oral taper.

**Peds 4–11 y.** 110 mcg $\times$ 1 q P.M. (max 110 mcg/d) w/ P: [C, ?/M] Candida Infxn of mouth/throat; hypersens Rxns possible; may worsen certain Infxns (TB, fungal, etc); monitor for ↑/↓ cortisol Sxs; ↓ bone density; ↓ growth in peds; monitor for NAG or cataracts; monitor for ↑/↓ cortisol Sxs; ↓ bone density; ↓ growth in peds; monitor for NAG or cataracts; may ↑ glucose

**CI:** Acute asthma attack; component hypersens/milk proteins

**Disp:** MDI inhal mometasone 110 mcg Twisthaler delivers 100 mcg/actuation; 220 mcg Twisthaler delivers 200 mcg/actuation

**SE:** HA, allergic rhinitis, pharyngitis, URI, sinusitis, oral candidiasis, dysmenorrhea, musculoskeletal/back pain, dyspepsia

**Notes:** Rinse mouth after use; treat paradoxical bronchospasm w/ inhaled bronchodilator

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**Mometasone, Nasal (Nasonex)**

**Uses:** *Nasal Sx allergic/seasonal rhinitis; prophylaxis of seasonal allergic rhinitis; nasal polyps in adults*

**Acts:** Corticosteroid

**Dose:** *Adults & Peds ≥ 12 y.* Rhinitis: 2 sprays/each nostril qd. *Adults.* Nasal polyps: 2 sprays/each nostril bid *Peds 2–11 y.* 1 spray/each nostril qd w/ P: [C, M] Monitor for adverse effects on nasal mucosa (bleeding, candidal Infxn, ulceration, perf); may worsen existing Infxns; monitor for NAG, cataracts; monitor for ↑/↓ cortisol Sxs; ↓ growth in peds

**CI:** Component hypersens

**Disp:** 50 mcg mometasone/spray

**SE:** Viral Infxn, pharyngitis, epistaxis, HA

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**Montelukast (Singulair, Generic)**

**Uses:** *Prevent/chronic Rx asthma ≥ 12 mo; seasonal allergic rhinitis ≥ 2 y; perennial allergic rhinitis ≥ 6 mo; prevent exercise induced bronchoconstriction (EIB) ≥ 15 y; prophylaxis & Rx of chronic asthma, seasonal allergic rhinitis*

**Acts:** Leukotriene receptor antagonist

**Dose:** *Asthma: Adults & Peds > 15 y.* 10 mg/d PO in P.M. *6–23 mo:* 4-mg pack granules qd. *2–5 y:* 4 mg/d PO q P.M. *6–14 y:* 5 mg/d PO q P.M. w/ P: [B, M] CI: Component allergy

**Disp:** Tabs 10 mg; chew tabs 4, 5 mg; granules 4 mg/pack

**SE:** HA, dizziness, fatigue, rash, GI upset, Churg-Strauss synd, flu, cough, neuropsych events (agitation, restlessness, suicidal ideation)

**Notes:** Not for acute asthma; use w/ in 15 min of opening package

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**Morphine (Avinza XR, Astramorph/PF, Duramorph, Infumorph, MS Contin, Kadian SR, Oramorph SR, Roxanol) [C-II] BOX:** Do not crush/chew SR/CR forms; swallow whole or sprinkle on applesauce. 100 and 200 mg for opioid-tolerant pt only for mod–severe pain when pain control needed for an extended period and not PRN. Be aware of misuse, abuse, diversion. No alcoholic beverages while on therapy

**Uses:** *Rx severe pain*, AMI, acute pulmonary edema

**Acts:** Narcotic analgesic; SR/CR forms for chronic use

**Dose:** *Adults. Short-term use PO:* 5–30 mg q4h PRN; *IV/IM:* 2.5–15 mg q2–6h; *Supp:* 10–30 mg q4h. SR formulations 15–60 mg q8–12h (do not chew/
Morphine and Naltrexone (Embeda) [C-II] BOX: For mod–severe chronic pain; do not use as PRN analgesic; swallow whole or sprinkle contents of cap on applesauce; do not crush/dissolve, chew caps—rapid release & absorption of morphine may be fatal & of naltrexone may lead to withdrawal in opioid-tolerant pts; do not consume EtOH or EtOH-containing products; 100/4 mg caps for opioid-tolerant pts only for use in opioid tolerant pts only, may cause fatal resp. depression; high potential for abuse Uses: *Chronic mod–severe pain* Acts: Mu-opioid receptor agonist & antagonist Dose: Adult. Individualize PO q12–24h; if opioid naive start 20/0.8 mg q24h; titrate q48h; ↓ start dose in elderly, w/ hepatic/renal insuff; taper to D/C w/ P: [C, –] w/ EtOH, CNS depress, muscle relaxants, use w/ in 14 d of D/C of MAOI CI: Resp depression, acute/severe asthma/hypercarbia, ileus, hypersens Disp: Caps ER (morphine mg/naltrexone mg) 20/0.8, 30/1.2, 50/2, 60/2.4, 80/3.2, 100/4 SE: N/V/D, constipation, somnolence, dizziness, HA, ↓ BP, pruritus, insomnia, anxiety, resp depression, Sz, MI, apnea, withdrawal w/ abrupt D/C, anaphylaxis, biliary spasm Moxifloxacin (Avelox) BOX: ↑ Risk of tendon rupture and tendonitis; ↑ risk w/ age > 60, transplant pts; may ↑ Sx of MG Uses: *Acute sinusitis & bronchitis, skin/soft-tissue/intra-Abd Infxsns, conjunctivitis, CAP* TB, anthrax, endocarditis Acts: 4th-gen quinolone; ↓ DNA gyrase. Spectrum: Excellent gram(+) except MRSA & E. faecium; ↓ DNA gyrase. Stenotrophomonas maltophilia, & Acinetobacter sp; good anaerobic Dose: 400 mg/d PO/IV daily; avoid cation products, antacids tid w/ P: [C, –] Quinolone sensitivity; interactions w/ Mg²⁺, Ca²⁺, Al²⁺, Fe²⁺ -containing products, & class IA & III antiarhythmic agents (Table 9, p 318) CI: Quinolone/component sensitivity Disp: Tabs 400 mg, ABC Pak 5 tabs, Inj SE: Dizziness, N, QT prolongation, Szs, photosens, peripheral neuropathy risk Mupirocin (Bactroban, Bactroban Nasal) Uses: *Impetigo (oint); skin lesion infect w/ S. aureus or
S. pyogenes; eradicate MRSA in nasal carriers*  
Acts: ↓ Bacterial protein synth  
Dose: Topical: Apply small amount 3×/d × 5–14 d. Nasal: Apply 1/2 single-use tube bid in nostrils × 5 d w/ P: [B, ?/M] CI: Do not use w/ other nasal products  
Disp: Oint 2%; cream 2%; nasal oint 2% 1-g single-use tubes  
SE: Local irritation, rash  
Notes: Pt to contact healthcare provider if no improvement in 3–5 d

**Mycophenolic Acid (Myfortic, Generic) BOX:** ↑ Risk of Infxns, lymphoma, other CAs, progressive multifocal leukoencephalopathy (PML), risk of PRG loss and malformation, female of childbearing potential must use contraception  
Uses: *Prevent rejection after renal transplant*  
Acts: Cytostatic to lymphocytes  
Dose: **Adults.** 720 mg PO bid. Doses differ based on transplant  
**Peds.** BSA 1.19–1.58 m²: 540 mg bid. BSA > 1.58 m²: Adult dose; used w/ steroids or tacrolimus. ↓ w/ renal Insuff/neutropenia; take on empty stomach w/ P: [D, –] CI: Component allergy  
Disp: Delayed release tabs 180, 360 mg SE: N/V/D, GI bleed, pain, fever, HA, Infxn, HTN, anemia, leukopenia, pure red cell aplasia, edema  
Notes: Cellcept & Myfortic dosage forms should not be used interchangeably

**Mycophenolate Mofetil (CellCept, Generic) BOX:** ↑ Risk of Infxns, lymphoma, other CAs, progressive multifocal leukoencephalopathy (PML); risk of PRG loss and malformation; female of childbearing potential must use contraception  
Uses: *Prevent organ rejection after transplant*  
Acts: Cytostatic to lymphocytes  
Dose: **Adults.** 1 g PO bid, doses differ based on transplant  
**Peds.** BSA 1.2–1.5 m²: 750 mg PO bid. BSA > 1.5 m²: 1 g PO bid; used w/ steroids & cyclosporine or tacrolimus; ↓ in renal Insuff or neutropenia. IV: Infuse over > 2 h. PO: Take on empty stomach, do not open caps w/ P: [C, –] Elderly, HTN, heart failure, w/ psychological illness, substance abuse; high protein binding w/ 1st-pass metabolism may lead to drug interactions  
Disp: Caps 250, 500 mg; susp 200 mg/mL, Inj 500 mg SE: Dizziness, vertigo, xerostomia, euphoria, ataxia, HA, difficulty concentrating, tachycardia, ↓ BP  
Notes: May require initial dose evening before chemotherapy; Rx only quantity for single Tx cycle

**Nabilone (Cesamet) [C-II]** Uses: *Refractory chemotherapy-induced emesis*  
Acts: Synthetic cannabinoid  
Dose: **Adults.** 1–2 mg PO bid 1–3 h before chemotherapy, 6 mg/d max; may continue for 48 h beyond final chemotherapy dose  
**Peds.** ↑ Per protocol; < 18 kg 0.5 mg bid; 18–30 kg 1 mg bid; > 30 kg 1 mg tid w/ P: [C, –] Elderly, HTN, heart failure, w/ psychological illness, substance abuse; high protein binding w/ 1st-pass metabolism may lead to drug interactions  
Disp: Caps 1 mg SE: Nightmares, paresthesias, ↓ BP, ↓ HR, fatigue, ↓ sex function  
Notes: May require initial dose evening before chemotherapy; Rx only quantity for single Tx cycle

**Nabumetone (Relafen, Generic) BOX:** May ↑ risk of CV events & GI bleeding, perforation; CI w/ postop CABG  
Uses: *OA and RA*, pain  
Acts: NSAID; ↓ prostaglandins  
Dose: 1000–2000 mg/d ÷ daily-bid w/ food w/ P: [C, –] Severe hepatic Dz, peptic ulcer Dz, anaphylaxis w/ “ASA triad” CI: NSAID sensitivity, perioperative pain, after CABG surgery  
Disp: Tabs 500, 750 mg SE: Dizziness, rash, GI upset, edema, peptic ulcer, ↑ BP, photosens

**Nadolol (Corgard)** BOX: Do not abruptly withdraw  
Uses: *HTN & angina migraine prophylaxis*, prophylaxis of variceal hemorrhage  
Acts: Competitively blocks β-adrenergic receptors (β₁, β₂)  
Dose: 40–80 mg/d; ↑ to 240 mg/d (angina) or 320 mg/d (HTN) at 3- to 7-d intervals; ↓ in renal Insuff & elderly w/ P: [C +/M] CI: Uncompensated CHF, shock, heart block, asthma  
Disp: Tabs 20, 40, 80 mg SE: Nightmares, paresthesias, ↓ BP, ↓ HR, fatigue, ↓ sex function

**Nafarelin, Metered Spray (SYNAREL)** Uses: *Endometriosis, CPP*  
Acts: GnRH agonist; ↓ gonadal steroids w/ use > 4 wk  
Dose: **Adults:** Endometriosis: 400 mcg/d (1 spray q A.M./P.M. alternate nostril; if no amenorrhea ↑ 2 sprays bid, start d 2–4 of menstrual cycle  
**Peds:** CPP: 1600 mcg/d (2 sprays each nostril q A.M./P.M.), can ↑ to 1800 mcg/d w/ P: [X, –] CI: Component
hypersens, undiagnosed uterine bleeding, PRG, breast-feeding

**Disp:** 0.5-oz bottle 60 sprays (200 mcg/spray)

**SE:** hot flashes, headaches, emotional lability, ↓ libido, vaginal dryness, acne, myalgia, ↓ breast size, ↓ BMD; **Peds:** drug sensitivity Rxn, acne, transient ↑ breast enlargement/pubic hair, Vag bleed, emotional lability, body odor, sebor-rhea

**Notes:** √ PRG test before use; for endometriosis only if > 18 y, and no more than 6 mo; no sig effect w/ rhinitis, if needed, use decongestant 2 h before dose

**Nafcinil (Nallpen, Generic) Uses:** *Infxns d/t susceptible strains of Staphylococcus & Streptococcus* **Acts:** Bactericidal; antistaphylococcal PCN; ↓ cell wall synth **Spectrum:** Good gram(+) except MRSA & enterococcus, no gram(–), poor anaerobe

**Dose:** *Adults.* 1–2 g IV q4–6h.  
**Peds.** 50–200 mg/kg/d ÷ q4–6h w/ **P:** [B, ?]  
**CI:** PCN allergy, allergy to corn-related products

**Disp:** Inj powder l, 2 g

**SE:** Interstitial nephritis, N/D, fever, rash, allergic Rxn

**Notes:** In setting of both hepatic & renal impairment, modification of dose may be necessary

**Naftifine (Naftin) Uses:** *Tinea pedis, cruris, & corporis* **Acts:** Allylamine antifungal, ↓ cell membrane ergosterol synth

**Dose:** Apply daily (cream) or bid (gel) w/ **P:** [B, ?]  
**CI:** Componentsensitivity

**Disp:** 1% cream; gel

**SE:** Local irritation

**Nalbuphine (Generic) Uses:** *Mod–severe pain; preop & obstetric analgesia* **Acts:** Narcotic agonist–antagonist; ↓ ascending pain pathways

**Dose:** *Adults.* Pain: 10 mg/70 kg IV/IM/SQ q3–6h; adjust PRN; 20 mg/dose or 160 mg/d max.  
**Anesthesia: Induction:** 0.3–3 mg/kg IV over 10–15 min; maint 0.25–0.5 mg/kg IV.  
**Peds.** 0.2 mg/kg IV or IM, 20 mg/dose or 160 mg/d max; ↓ w/ renal/in hepatic impair w/ **P:** [B, M] w/ Opiate use

**CI:** Component sensitivity

**Disp:** Inj 10, 20 mg/mL

**SE:** CNS depression, drowsiness; caution, ↓ BP

**Naloxone (Generic) Uses:** *Opioid addiction (diagnosis) & OD* **Acts:** Competitive narcotic antagonist **Dose:** *Adults.* 0.4–2 mg IV, IM, or SQ q2–3 min; total dose 10 mg max.  
**Peds.** 0.01–0.1 mg/kg/dose IV, IM, or SQ; repeat IV q3min × 3 doses PRN; **ECC 2010. Total reversal of narcotic effects:** 0.1 mg/kg q2min PRN; max dose 2 mg; smaller doses (1–5 mcg/kg may be used); cont Inf 2–160 mcg/kg/h w/ **P:** [C, ?]  
May precipitate acute withdrawal in addicts

**Disp:** Inj 0.4, 1 mg/mL

**SE:** ↓ BP, tachycardia, irritability, GI upset, pulm edema

**Notes:** If no response after 10 mg, suspect nonnarcotic cause

**Naltrexone (ReVia, Vivitrol, Generic) BOX:** Can cause hepatic injury, CI w/ active liver Dz

**Uses:** *EtOH & narcotic addiction* **Acts:** Antagonizes opioid receptors **Dose:** *EtOH/narcotic addiction* 50 mg/d PO; must be opioid-free for 7–10 d; *EtOH dependence:* 380 mg IM q4wk (Vivitrol) w/ **P:** [C, M]  
Monitor for Inf site reactions (Vivitrol) **CI:** Acute hep, liver failure, opioid use

**Disp:** Tabs 50 mg; Inj 380 mg (Vivitrol)

**SE:** Hepatotox; insomnia, GI upset, joint pain, HA, fatigue

**Naphazoline (Albalon, Naphcon, Generic), Naphazoline, & Pheniramine (Naphcon A, Visine A) Uses:** *Relieve ocular redness & itching caused by allergy* **Acts:** Sympathomimetic (α-adrenergic vasoconstrictor) & antihistamine (pheniramine)

**Dose:** 1–2 gtt up to q6h, 3 d max w/ **P:** [C, +]  
**CI:** NAG, in children < 6 y, w/ contact lenses, component allergy **SE:** CV stimulation, dizziness, local irritation

**Disp:** Ophthal 0.012, 0.025, 0.1%/15 mL; naphazoline & pheniramine 0.025%/0.3% soln

**Naproxen (Aleve [OTC], Anaprox, Anaprox DS, EC-Naprosyn, Naprelan, Naprosyn, Generic) BOX:** May ↑ risk of CV events & GI bleeding

**Uses:** *Arthritis & pain* **Acts:** NSAID; ↓ prostaglandins **Dose:** *Adults & Peds > 12 y.* 200–500 mg bid-tid to 1500 mg/d max. > 2 y: JRA 5 mg/kg/dose bid; ↓ in hepatic impair w/ **P:** [C, (D 3rd tri), –]  
**CI:** NSAID or ASA triad sensitivity,
Peptic ulcer, post-CABG pain, 3rd-tri PRG Disp: Tabs: 250, 375, 500 mg; DR: 375, 500, 750 mg; CR: 375, 550 mg; susp 25 mg/5 mL (Aleve) 200 mg. Multiple OTC forms SE: Dizziness, pruritus, GI upset, peptic ulcer, edema Notes: Take w/ food to ↓ GI upset; 220 mg naproxen sodium = 200 mg naproxen base.

Naproxen/Esomeprazole (Vimovo) BOX: ↑ Risk MI, stroke, PE; CI, CABG surgery pain; ↑ risk GI bleed, gastric ulcer, gastric/duodenal perforation Uses: *Pain and/or swelling, RA, OA, ankylosing spondylitis, ↓ risk NSAID-assoc gastric ulcers* Acts: NSAID; ↓ prostaglandins & PPI, ↓ gastric acid

Dose: 375/20 mg (naproxen/esomeprazole) to 500/20 mg PO bid w/ P: [C 1st, 2nd tri; D 3rd; –] CI: PRG 3rd tri; asthma, urticaria from ASA or NSAID; mod–severe hepatic/renal Disp: Tabs (naproxen/esomeprazole) DR 375/20 mg; 500/20 mg SE: N/D, Abd pain, gastritis, ulcer, ↑ BP, CHF, edema, serious skin rash (eg, Stevens-Johnson synd, etc), ↓ renal Fxn, papillary necrosis Notes: Risk of GI adverse events elderly; atrophic gastritis w/ long-term PPI use; possible ↑ risk of fractures w/ all PPI; may ↑ Li levels; may cause MTX tox; may ↑ INR on warfarin; may ↓ effect BP meds; may ↓ absorption drugs requiring acid environment

Naratriptan (Amerge, Generic) Uses: *Acute migraine* Acts: Serotonin 5-HT1 receptor agonist

Dose: 1–2.5 mg PO once; repeat PRN in 4 h; 5 mg/24 h max; ↓ in mild renal/hepatic Insuff, take w/ fluids w/ P: [C, M] CI: Severe renal/hepatic impair, avoid w/ angina, ischemic heart Dz, uncontrolled HTN, cerebrovascular synds, & ergot use Disp: Tabs 1, 2.5 mg SE: Dizziness, sedation, GI upset, paresthesias, ECG changes, coronary vasospasm, arrhythmias

Natalizumab (Tysabri) BOX: PML reported Uses: *Relapsing MS to delay disability and ↓ recurrences, Crohn Dz* Acts: Integrin receptor antagonist

Dose: Adults. 300 mg IV q4wk; 2nd-line Tx only CI: PML; immune compromise or w/ immunosuppressant w/ P: [C, ?/–] Baseline MRI to rule out PML Disp: Vial 300 mg SE: Infxn, immunosuppression; Inf Rxn precluding subsequent use; HA, fatigue, arthralgia Notes: Give slowly to ↓ Rxns; limited distribution (TOUCH Prescribing program); D/C immediately w/ signs of PML (weakness, paralysis, vision loss, impaired speech, cognitive ↓); evaluate at 3 and 6 mo, then q6mo thereafter

Nateglinide (Starlix, Generic) Uses: *Type 2 DM* Acts: ↑ Pancreatic insulin release

Dose: Initial 100 mg PO bid; usual 300–600 mg/d in 2–3 div doses w/ P: [C, –] w/ CYP2C9 metabolized drug (Table 10, p 319) CI: DKA, type 1 DM Disp: Tabs 60, 120 mg SE: Hypoglycemia, URI; salicylates, nonselective β-blockers may enhance hypoglycemia Notes: If a meal is skipped, the dose should be held

Nebivolol (Bystolic) Uses: *HTN* Acts: β1-Selective blocker

Dose: Adults. 5 mg PO daily, ↑ q2wk to 40 mg/d max, ↓ w/ CrCl < 30 mL/min w/ P: [D, +/–] w/ Bronchospastic Dz, DM, heart failure, pheochromocytoma, w/ CYP2D6 inhib CI: ↓ HR, cardiogenic shock, decompensated CHF, severe hepatic impair Disp: Tabs 2.5, 5, 10, 20 mg SE: HA, fatigue, dizziness

Nefazodone (Generic) BOX: Fatal hep & liver failure possible, D/C if LFTs > 3× ULN, do not treat; closely monitor for worsening depression or suicidality, particularly in ped pts Uses: *Depression* Acts: ↓ Neuronal uptake of serotonin & norepinephrine

Dose: Initial 100 mg PO bid; usual 300–600 mg/d in 2–3 doses w/ P: [C, M] CI: w/ MAOIs, pimozide, carbamazepine, alprazolam; active liver Dz Disp: Tabs 50, 100, 150, 200, 250 mg SE: Postural ↓ BP & allergic Rxns; HA, drowsiness, xerostomia, constipation, GI upset, liver failure Notes: Monitor LFTs, HR, BP
Nelarabine (Arranon) BOX: Fatal neurotox possible Uses: *T-cell ALL or T-cell lymphoblastic lymphoma unresponsive > 2 other regimens* Acts: Nucleoside (deoxyguanosine) analog Dose: *Adults.* 1500 mg/m² IV over 2 h days 1, 3, 5 of 21-d cycle. *Peds.* 650 mg/m² IV over 1 h days 1–5 of 21-d cycle w/ P: [D, ?/–] Disp: Vial 250 mg SE: Neuropathy, ataxia, Szs, coma, hematologic tox, GI upset, TLS (Tumor lysis syndrome) HA, blurred vision Notes: Prehydration, urinary alkalinization, allopurinol before dose; monitor CBC

Nelfinavir (Viracept) Uses: *HIV Infxn, other agents* Acts: Protease inhib causes immature, noninfectious virion production Dose: *Adults.* 750 mg PO tid or 1250 mg PO bid. *Peds.* 25–35 mg/kg PO tid or 45–55 mg/kg bid; take w/ food w/ P: [B, –] Many drug interactions; do not use w/ salmeterol, colchicine (w/ renal/hepatic failure); adjust dose w/ bosentan, tadalafil for PAH; do not use tid dose w/ PRG CI: Phenylketonuria, w/ triazolam/midazolam use or drug dependent on CYP3A4 (Table 10, p 319); w/ alpha 1-adrenoreceptor antagonist (alfuzosin), PDE5 inhibitor sildenafil Disp: Tabs 250, 625 mg; powder 50 mg/g; SE: Food ↑ absorption; interacts w/ St. John’s wort; dyslipidemia, lipodystrophy, D, rash Notes: PRG registry; tabs can be dissolved in water; monitor LFTs

Neomycin (Neo-Fradin, Generic) BOX: Systemic absorption of oral route may cause neuro-/oto-/nephrotox; resp paralysis possible w/ any route of administration Uses: *Hepatic coma, bowel prep* Acts: Aminoglycoside, poorly absorbed PO; ↓ GI bacterial flora Dose: *Adults.* 3–12 g/24 h PO in 3–4 ÷ doses; 12 g/d max *Peds.* 50–100 mg/kg/24 h PO in 3–4 ÷ doses w/ P: [C, ?/–] Renal failure, neuromuscular disorders, hearing impair CI: Intestinal obst Disp: Tabs 500 mg; PO soln 125 mg/5 mL SE: Hearing loss w/ long-term use; rash, N/V Notes: Do not use parenterally (↑ tox); part of the Condon bowel prep; also topical form

Neomycin, Bacitracin, & Polymyxin B (Neosporin Ointment) (See Bacitracin, Neomycin, & Polymyxin B, Topical, p 61) Neomycin, Colistin, & Hydrocortisone (Cortisporin-TC Otic Drops); Neomycin, Colistin, Hydrocortisone, & Thonzonium (Cortisporin-TC Otic Susp) Uses: *Otitis externa*, Infxns of mastoid/fenestration cavities Acts: Antibiotic w/ anti-inflammatory Dose: *Adults.* 5 gtt in ear(s) q6–8h. *Peds.* 3–4 gtt in ear(s) q6–8h CI: Component allergy; HSV, vaccinia, varicella w/ P: [B, ?] Disp: Otic gtt & susp SE: Local irritation, rash Notes: Shake well, limit use to 10 d to minimize ototox

Neomycin, Polymyxin, & Hydrocortisone Ophthalmic (Generic) Uses: *Ocular bacterial Infxns* Acts: Antibiotic w/ anti-inflammatory Dose: Apply a thin layer to the eye(s) or 1 gtt 1–4×/d w/ P: [C, ?] Disp: Ophthal soln; ophthal oint SE: Local irritation Notes: Do not wear contacts during Tx

Neomycin, Polymyxin, & Hydrocortisone Otic (Cortisporin Otic Solution, Generic Susp) Uses: *Otitis externa and infected mastoidectomy and fenestration cavities* Dose: *Adults.* 3–4 gtt in the ear(s) q6–8 h *Peds.* > 2 y: 3 tt in the ear(s) q6–8 h CI: Viral Infxn, hypersens to components w/ P: [C, ?] Disp: Otic susp (generic); otic soln (Cortisporin) SE: Local irritation

Neomycin, Polymyxin B, & Dexamethasone (Maxitrol) Uses: *Steroid-responsive ocular conditions w/ bacterial Infxn* Acts: Antibiotic w/ anti-inflammatory corticosteroid Dose: 1–2 gtt in eye(s) q3–4h; apply oint in eye(s) q6–8 h CI: Component allergy; viral, fungal, TB eye Dz w/ P: [C, ?] Disp: Oint: neomycin sulfate 3.5 mg/polymyxin B sulfate 10,000 units/dexamethasone 0.1%/g; susp: identical/1 mL, 5mL bottle SE: Local irritation Notes: Use under supervision of
Neomycin, Polymyxin B, & Prednisolone (Poly-Pred Ophthalmic) Uses: *Steroid-responsive ocular conditions w/ bacterial Infxn* Acts: Antibiotic & anti-inflammatory Dose: 1–2 gtt in eye(s) q4–6h; apply oint in eye(s) q6–8 w/ P: [C, ?] Disp: Susp neomycin/polymyxin B/prednisolone 0.5%/mL SE: Irritation Notes: Use under supervision of ophthalmologist; do not wear contacts during Tx

Neomycin & Dexamethasone (AK-Neo-Dex Ophthalmic, NeoDecadron Ophthalmic) Uses: *Steroid-responsive inflammatory conditions of the cornea, conjunctiva, lid, & anterior segment* Acts: Antibiotic w/ anti-inflammatory corticosteroid Dose: 1–2 gtt in eye(s) q3–4h or thin coat q6–8h until response, then ↓ to daily w/ P: [C, ?] CI: Component allergy Disp: Cream: neomycin 0.5%/dexamethasone 0.1%; oint: neomycin 0.35%/dexamethasone 0.05%; soln: neomycin 0.35%/dexamethasone 0.1% SE: Local irritation Notes: Use under ophthalmologist’s supervision; no contacts w/ use

Neomycin-Polymyxin Bladder Irrigant [Neosporin GU Irrigant] Uses: *Cont irrigant prevent bacteriuria & gram(–) bacteremia associated w/ indwelling catheter* Acts: Bactericidal; not for Serratia sp or streptococci Dose: 1 mL irrigant in 1 L of 0.9% NaCl; cont bladder irrigation w/ 1 L of soln/24 h 10 d max w/ P: [D] CI: Component allergy Disp: Soln neomycin sulfate 40 mg & polymyxin B 200,000 units/mL; amp 1, 20 mL SE: Rash, neomycin ototox or nephrotox (rare) Notes: Potential for bacterial/fungal super-Infxn; not for Inj; use only 3-way catheter for irrigation

Nepafenac (Nevanac) Uses: *Inflammation postcataract surgery* Acts: NSAID Dose: 1 gtt in eye(s) tid 1 d before, and continue 14 d after surgery CI: NSAID/ASA sensitivity w/ P: [C, ?/–] May ↑ bleeding time, delay healing, causes keratitis Disp: Susp 0.1% 3 mL SE: Capsular opacity, visual changes, foreign-body sensation, ↑ IOP Notes: Prolonged use ↑ risk of corneal damage; shake well before use; separate from other drops by > 5 min

Nesiritide (Natrecor) Uses: *Acutely decompensated CHF* Acts: Human B-type natriuretic peptide Dose: 2 mcg/kg IV bolus, then 0.01 mcg/kg/min IV w/ P: [C, ?/–] When vasodilators are not appropriate CI: SBP < 100 mm Hg, cardiogenic shock Disp: Vials 1.5 mg SE: ↓ BP, HA, GI upset, arrhythmias, ↑ Cr Notes: Requires cont BP monitoring; some studies indicate ↑ in mortality; 175 kg max dose Wt studied

Nevirapine (Viramune, Viramune XR, Generic) BOX: Reports of fatal hepatotox even w/ short-term use; severe life-threatening skin Rxns (SJS, toxic epidermal necrolysis, & allergic Rxns); monitor closely during first 18 wk of Rx Uses: *HIV Infxn* Acts: Nonnucleoside RT inhib Dose: Adults. Initial 200 mg/d PO × 14 d, then 200 mg bid, 400 mg daily (XR) Peds > 15. 150 mg/m² PO daily × 14 d, then 150 mg/m² PO bid (w/ o regard to food) w/ P: [B, –] OCP Disp: Tabs 200 mg; (Viramune XR) tabs ER 100, 400 mg; susp 50 mg/5 mL SE: Life-threatening rash; HA, fever, D, neutropenia, hep Notes: HIV resistance when used as monotherapy; use in combo w/ at least 2 additional antiretroviral agents. Restart once daily dosing ×14 d if stopped > 7 d. Not recommended if CD4 > 250 mcL in women or > 400 mcL in men unless benefit > risk of hepatotox; always perform lead-in trial w/ IR formulation
Niacin (Nicotinic Acid) (Niaspan, Slo-Niacin, Niacor, Nicolar) [Some OTC Forms] Uses: *Sig hyperlipidemia/hypercholesteremia, nutritional supl* 

**Acts:** Vit B₃; ↓ lipolysis; ↓ esterification of triglycerides; ↑ lipo-protein lipase

**Dose:** Hypercholesterolemia: Start 500 mg PO qhs, ↑ 500 mg q4wk, maint 1–2 g/d; 2 g/d max; qhs w/ low fat snack; do not crush/chew; niacin supl 1 ER tab PO qd or 100 mg PO qd; Pellagra: Up to 500 mg/d w/ P: [C, +] CI: Liver Dz, peptic ulcer, arterial hemorrhage

**Disp:** ER tabs (Niaspan) 500, 750, 1000 mg & (SloNiacin) 250, 500, 750 mg; tab 500 mg (Niacor); many OTC: tab 500 mg, 750 mg, 1000 mg, ER tab 250, 500 mg, elixir 50 mg/5 mL

**SE:** Upper body/facial flushing & warmth; hepatox, GI upset, flatulence, exacerbate peptic ulcer, HA, paresthesias, liver damage, gout, altered glucose control in DM

**Notes:** ASA/NSAID 30–60 min prior to ↓ flushing; cholesterol, LFTs, if on statins (eg, Lipitor, etc) also ↓ CPK and K⁺; RDA adults: male 16 mg/d, female 14 mg/d

Niacin/Lovastatin (Advicor) Uses: *Hypercholesterolemia* 

**Acts:** Combo antilipemic agent, w/ HMG-CoA reductase inhib

**Dose:** Adults. Niacin 500 mg/lovastatin 20 mg, titrate q4wk, max niacin 2000 mg/lovastatin 40 mg w/ P: [X, –] See individual agents, D/C w/ LFTs > 3× ULN CI: PRG

**Disp:** Niacin mg/lovastatin mg: 500/20, 750/20, 1000/20, 1000/40 tabs

**SE:** Flushing, myopathy/rhabdomyolysis, N, Abd pain, ↑ LFTs

**Notes:** ↓ Flushing by taking ASA or NSAID 30 min before

Niacin/Simvastatin (Simcor) Uses: *Hypercholesterolemia* 

**Acts:** Combo antilipemic agent w/ HMG-CoA reductase inhib

**Dose:** Adults. Niacin 500 mg/simvastatin 20 mg, titrate q4wk not to exceed niacin 2000 mg/simvastatin 40 mg; max 1000 mg/20 mg/d w/ amlodipine and ranolazine w/ P: [X, –] See individual agents, discontinue Rx if LFTs > 3× ULN CI: PRG, active liver Dz, PUD, arterial bleeding, w/ strong CYP3A4 inhib, w/ gemfibrozil, cyclosporine, danazol, verapamil, or diliazem, hypersens to components

**Disp:** Niacin mg/simvastatin mg: 500/20, 500/40, 750/20, 1000/20, 1000/40 tabs

**SE:** Flushing, myopathy/rhabdomyolysis, N, Abd pain, ↑ LFTs

**Notes:** ↓ Flushing by taking ASA or NSAID 30 min before

Nicardipine (Cardene, Cardene SR, Generic) Uses: *Chronic stable angina & HTN*; prophylaxis of migraine 

**Acts:** CCB

**Dose:** Adults. PO: 20–40 mg PO tid. SR: 30–60 mg PO bid. IV: 5 mg/h IV cont Inf; ↑ by 2.5 mg/h q15min to max 15 mg/h. Peds. (Not established) PO: 20–30 mg PO q8h. IV: 0.5–5 mcg/kg/min; ↓ in renal/hepatic impair w/ P: [C, ?/–] Heart block, CAD CI: Cardiogenic shock, aortic stenosis

**Disp:** Caps 20, 30 mg; SR caps 30, 45, 60 mg; Inj 2.5 mg/mL

**SE:** Flushing, tachycardia, ↓ BP, edema, HA

**Notes:** PO-to-IV conversion: 20 mg tid = 0.5 mg/h, 30 mg tid = 1.2 mg/h, 40 mg tid = 2.2 mg/h; take w/ food (not high fat)

Nicotine, Gum (Nicorette, Others) [OTC] Uses: *Aid to smoking cessation, relieve nicotine withdrawal* 

**Acts:** Systemic delivery of nicotine 

**Dose:** Wk 1–6 one piece q1–2h PRN; wk 7–9 one piece q2–4h PRN; wk 10–12 one piece q4–8h PRN; max 24 pieces/d w/ P: [C, ?] CI: Life-threatening arrhythmias, unstable angina

**Disp:** 2 mg, 4 mg/piece; mint, orange, original flavors

**SE:** Local irritation, tachycardia, HA, taste perversion

**Notes:** Must stop smoking & perform behavior modification for max effect; use at least 9 pieces first 6 wk; > 25 cigarettes/d use 4 mg; < 25 cigarettes/d use 2 mg

Nicotine, Nasal Spray (Nicotrol NS) Uses: *Aid to smoking cessation, relieve nicotine withdrawal* 

**Acts:** Systemic delivery of nicotine

**Dose:** 0.5 mg/actuation; 1–2 doses/h, 5 doses/h max; 40 doses/d max w/ P: [D, M] CI: Life-threatening arrhythmias, unstable angina

**Disp:** Nasal inhaler 10 mg/mL

**SE:** Local irritation, tachycardia, HA, taste perversion

**Notes:** Must stop smoking & perform
behavior modification for max effect; 1 dose = 1 spray each nostril = 1 mg

**Nicotine, Transdermal (Habitrol, NicoDerm CQ [OTC], Others) Uses:** *Aid to smoking cessation; relief of nicotine withdrawal*

**Acts:** Systemic delivery of nicotine

**Dose:** Individualized; 1 patch (14–21 mg/d) & taper over 6 wk

**P:** [D, M] CI: Life-threatening arrhythmias, unstable angina, adhesive allergy

**Disp:** Habitrol & NicoDerm CQ: 7, 14, 21 mg of nicotine/24 h

**SE:** Insomnia, pruritus, erythema, local site Rxn, tachycardia, vivid dreams

**Notes:** Wear patch 16–24 h; must stop smoking & perform behavior modification for max effect; > 10 cigarettes/d start w/ 21-mg patch; < 10 cigarettes/d 14-mg patch; do not cut patch; rotate site

**Nifedipine (Adalat CC, Afeditab CR, Procardia, Procardia XL, Generic) Uses:** *Vasospastic or chronic stable angina & HTN*; tocolytic

**Acts:** CCB

**Dose:** Adults. SR tabs 30–90 mg/d. Tocolysis: per local protocol. Peds. 0.25–0.5 mg/kg/24 h ÷ 3–4×/d

**P:** [C, +] Heart block, aortic stenosis, cirrhosis CI: IR preparation for urgent or emergent HTN; acute MI

**Disp:** Caps 10, 20 mg; SR tabs 30, 60, 90 mg

**SE:** HA common on initial Rx; reflex tachycardia may occur w/ regular-release dosage forms; peripheral edema, ↓ BP, flushing, dizziness

**Notes:** Adalat CC & Procardia XL not interchangeable; SL administration not OK

**Nilotinib (Tasigna) BOX:** May ↑ QT interval; sudden deaths reported, use w/ caution in hepatic failure; administer on empty stomach

**Uses:** *Ph(+) CML, refractory or at 1st diagnosis*

**Acts:** TKI

**Dose:** Adults. 300 mg bid—newly diagnosed; 400 mg bid—resistant/intolerant on empty stomach 1 h prior or 2 h post meal. w/ P: [D, ?/–] Avoid w/ CYP3A4 inhib/inducers (Table 10, p 319), adjust w/ hepatic impair, heme tox, QT ↑, avoid QT-prolonging agents, w/ Hx pancreatitis, ↓ absorption w/ gastrectomy CI: ↓ K⁺, ↓ Mg²⁺, long QT synd

**Disp:** 200 mg caps

**SE:** ↓ WBC, ↓ plt, anemia, N/V/D, rash, edema, ↑ lipase, tumor lysis synd

**Notes:** Use chemotherapy precautions when handling

**Nilutamide (Nilandron) BOX:** Interstitial pneumonitis possible; most cases in first 3 mo; check CXR before and during Rx

**Uses:** * Combo w/ surgical castration for metastatic PCa*

**Acts:** Nonsteroidal antiandrogen

**Dose:** 300 mg/d PO × 30 d, then 150 mg/d w/ P: [Not used in females] CI: Severe hepatic impair, resp Insuff

**Disp:** Tabs 150 mg

**SE:** Interstitial pneumonitis, hot flashes, ↓ libido, impotence, N/V/D, gynecomastia, hepatic dysfunction

**Notes:** May cause Rxn when taken w/ EtOH, follow LFTs

**Nimodipine (Generic) BOX:** Do not give IV or by other parenteral routes; can cause death

**Uses:** *Prevent vasospasm following subarachnoid hemorrhage*

**Acts:** CCB

**Dose:** 60 mg PO q4h for 21 d; start w/ in 96 h of subarachnoid hemorrhage; ↓ in hepatic failure w/ P: [C, ?] CI: Component allergy

**Disp:** Caps 30 mg

**SE:** ↓ BP, HA, constipation, rash

**Notes:** Give via NG tube if caps cannot be swallowed whole

**Nisoldipine (Sular, Generic) Uses:** *HTN*

**Acts:** CCB

**Dose:** 8.5–34 mg/d PO; take on empty stomach; ↓ start doses w/ elderly or hepatic impair w/ P: [C, –] Disp: ER tabs 8.5, 17, 25.5, 34 mg

**SE:** Edema, HA, flushing, ↓ BP

**Notes:** Nisoldipine Geomatrix (Sular) formulation not equivalent to original formulation (ER)

**Nitazoxanide (Alinia) Uses:** *Cryptosporidium, Giardia lamblia, C. difficile associated D*

**Acts:** Antiprotozoal interferes w/ pyruvate ferredoxin oxidoreductase.

**Spectrum:** Cryptosporidium, Giardia

**Dose:** Adults. 500 mg PO q12h × 3 d; for C. difficile × 10 d. Peds 1–3 y. 100 mg PO q12h × 3 d. 4–11 y: 200 mg PO q12h × 3 d. > 12 y: 500 mg q12h × 3 d; take w/ food w/ P: [B, ?] Not effective in HIV or immunocompromised

**Disp:** 100 mg/5 mL PO susp, 500 tab

**SE:** Abd pain

**Notes:**
Nitrofurantoin (Furadantin, Macrobid, Macroderantin, Generic) Uses: *Prophylaxis & Rx UTI*

**Acts:** Interferes w/ metabolism & cell wall synthesis. Spectrum: Some gram(+) & (-) bacteria; *Pseudomonas, Serratia,* & most Proteus resistant **Dose:** Adults. Prophylaxis: 50–100 mg/d PO. Rx: 50–100 mg PO qid × 7 d; *Macrobid* 100 mg PO bid × 7 d. **Peds.** Prophylaxis: 1–2 mg/kg/d ÷ in 1–2 doses, max 100 mg/d. Rx: 5–7 mg/kg/24 h in 4 ÷ doses (w/ food/milk/antacid) w/ P: [B, +/-] ok if child < 1 mo] Avoid w/ CrCl < 60 mL/min CI: Renal failure, infants < 1 mo, PRG at term **Disp:** Caps 25, 50, 100 mg; (Furadantin) susp 25 mg/5 mL

**SE:** GI effects, dyspnea, various acute/chronic pulm rxns, peripheral neuropathy, hemolytic anemia w/ G6PD deficiency, rare aplastic anemia **Notes:** Macrocrystals (Macroderantin) < N than other forms; not for comp UTI; may turn urine brown; ineffective for pyelonephritis or cystitis

Nitroglycerin (Nitrostat, Nitrolingual, Nitro-Bid Ointment, NitroBid IV, Nitrodisc, Transderm-Nitro, NitroMist, Others) Uses: *Angina pectoris, acute & prophylactic Rx, CHF, BP control*

**Acts:** Relaxes vascular smooth muscle, dilates coronary arteries **Dose:** Adults. SL: 1 tab q5min SL PRN for 3 doses. **Translingual:** 1–2 metered-doses sprayed onto PO mucosa q3–5min, max 3 doses. **PO:** 2.5–9 mg tid. **IV:** 5–20 mcg/min, titrated to effect. **Topical:** Apply 1/2 in of oint to chest wall tid, wipe off at night. **Transdermal:** 0.2–0.4 mg/h/patch daily; **Aerosol:** 1 spray at 5-min intervals, max 3 doses **ECC 2010.** IV bolus: 12.5–25 mcg (if no spray or SL dose given); Inf: Start 10 mcg/min, ↑ by 10 mcg/min q3–5min until desired effect; ceiling dose typically 200 mcg/min. SL: 0.3–0.4 mg, repeat q5min. **Aerosol spray:** Spray 0.5–1 s at 5-min intervals. **Peds.** **ECC 2010.** Heart failure, HTN emergency, pulm HTN: Cont Inf 0.25–0.5 mcg/kg/min initial, titrate 1 mcg/kg/min q15–20min (typical dose 1–5 mcg/kg/min) w/ P: [B, ?] Restrictive cardiomyopathy CI: w/ Sildenafil, tadalafil, vardenafil, head trauma, NAG, pericardial tamponade, constrictive pericarditis. **Disp:** SL tabs 0.3, 0.4, 0.6 mg; translingual spray 0.4 mg/dose; SR caps 2.5, 6.5, 9 mg; Inj 0.1, 0.2, 0.4 mg/mL (premixed); 5 mg/mL Inj soln; oint 2%; transdermal patches 0.1, 0.2, 0.4, 0.6 mg/h; aerosol (NitroMist) 0.4 mg/spray; (Rectiv) intra-anal 0.4% **SE:** HA, ↓ BP, lightheadedness, GI upset **Notes:** Nitrate tolerance w/ chronic use after 1–2 wk; minimize by providing 10–12 h nitrate-free period daily, using shorter-acting nitrates tid, & removing LA patches & oint before sleep to ↓ tolerance

Nitroprusside (Nitropress) BOX: Warning: Cyanide tox & excessive hypotension Uses: *Hypertensive crisis, acute decompensated heart failure, controlled ↓ BP periop (↓ bleeding)*, aortic dissection, pulm edema **Acts:** ↓ Systemic vascular resistance **Dose:** Adults & Peds. 0.25–10 mcg/kg/min IV Inf, titrate; usual dose 3 mcg/kg/min. **ECC 2010.** 0.1 mcg/kg/min start, titrate (max dose 5–10 mcg/kg/min). **Peds. ECC 2010.** Cardiogenic shock, severe HTN: 0.3–1 mcg/kg/min, then titrate to 8 mcg/kg/min PRN w/ P: [C, ?] ↓ Cerebral perfusion CI: High output failure, compensatory HTN **Disp:** Inj 25 mg/mL **SE:** Excessive hypotensive effects, palpitations, HA **Notes:** Thiocyanate (metabolite w/ renal excretion) w/ tox at 5–10 mg/dL, more likely if used for > 2–3 d; w/ aortic dissection use w/ β-blocker; continuous BP monitoring essential

Nizatidine (Axid, Axid AR [OTC], Generic) Uses: *Duodenal ulcers, GERD, heartburn* **Acts:** H₂-receptor antagonist **Dose:** Adults. Active ulcer: 150 mg PO bid or 300 mg PO hs; maint 150 mg PO hs. GERD: 150 mg PO bid. Heartburn: 75 mg PO bid. **Peds.** GERD: 10 mg/kg PO bid, 150 mg bid max; ↓ in renal impair w/ P: [B, ?] CI: H₂-receptor antagonist sensitivity **Disp:** Tab 75 mg [OTC];
Norepinephrine (Levophed) Uses: *Acute ↓ BP, cardiac arrest (adjunct)* Acts: Peripheral vasoconstrictor of arterial/venous beds Dose: Adults. 8–30 mcg/min IV, titrate. Peds. 0.05–0.1 mcg/kg/min IV, titrate w/ P: [C, ?] CI: ↓ BP d/t hypovolemia, vascular thrombosis, do not use w/ cyclopropane/halothane anesthetics Disp: Inj 1 mg/mL SE: ↓ HR, arrhythmia Notes: Correct vol depletion as much as possible before vasopressors; interaction w/ TCAs leads to severe HTN; use large vein to avoid extrav; phentolamine 5–10 mg/10 mL NS injected locally for extrav

Norethindrone Acetate/Ethinyl Estradiol Tablets (FemHRT) (See Estradiol/Norethindrone Acetate)

Norfloxacin (Noroxin, Chibroxin Ophthalmic) BOX: Use associated w/ tendon rupture, tendonitis, & myasthenia gravis exacerbation Uses: *Comp & uncomp UTI d/t gram(–) bacteria, prostatitis, gonorrhea*, infectious D, conjunctivitis Acts: Quinolone, ↓ DNA gyrase, bactericidal Spectrum: Broad gram(+) and (–) E. faecalis, E. coli, K. pneumoniae, P. mirabilis, P. aeruginosa, S. epidermidis, S. saprophyticus Dose: Uncomp UTI (E. coli, K. pneumoniae, P. mirabilis): 400 mg PO bid × 3 d; other uncomp UTI Rx × 7–10 d. Comp UTI: 400 mg PO q12h for 10–21 d. Gonorrhea: 800 mg × 1 dose. Prostatitis: 400 mg PO bid × 28 d. Gastroenteritis, traveler’s D: 400 mg PO bid × 1–3 d; take 1 h ac or 2 h pc. Adults & Peds > 1 y. Ophthal: 1 gtt each eye qid for 7 d; CrCl < 30 mL/min use 400 mg qd w/ P: [C, –] Quinolone sensitivity, w/ some antiarrhythmics ↑ QT CI: Hx allergy or tendon problems Disp: Tabs 400 mg; ophthal 3 mg/mL SE: Photosens, HA, dizziness, asthenia, GI upset, pseudomembranous colitis; ocular burning w/ ophthal, peripheral neuropathy risk w/ PO only Notes: Interactions w/ antacids, theophylline, caffeine; good conc in the kidney & urine, poor blood levels; not for urosepsis; CDC suggests do not use for GC

Nortriptyline (Aventyl, Pamelor) BOX: ↑ Suicide risk in pts < 24 y w/ major depressive/other psychological disorders especially during 1st month of Tx; risk ↓ pts > 65 y; observe all pts for clinical Sxs; not for ped use Uses: *Endogenous depression* Acts: TCA; ↑ synaptic CNS levels of serotonin &/or norepinephrine Dose: Adults. 25 mg PO tid-qid; > 150 mg/d not OK. Elderly: 10–25 mg hs. Peds 6–7 y. 10 mg/d. 8–11 y: 10–20 mg/d. > 11 y: 25–35 mg/d, ↓ w/ hepatic Insuff w/ P: [D, –] NAG, CV Dz CI: TCA allergy, use w/ MAOI Disp: Caps 10, 25, 50, 75 mg; (Aventyl) soln 10 mg/5 mL SE: Anticholinergic (blurred vision, retention, xerostomia, sedation) Notes: Max effect may take > 2–3 wk

Nystatin (Mycostatin, Nilstat, Nystop) Uses: *Mucocutaneous Candida Infxns (oral, skin, Vag)* Acts: Alters membrane permeability. Spectrum: Susceptible Candida sp Dose: Adults & Peds. PO: 400,000–600,000 units PO “swish & swallow” qid. Vag: 1 tab Vag hs × 2 wk. Topical: Apply bid-tid to area. Peds Infants. 200,000 units PO q6h. w/ P: [B (C PO), +] Disp: PO susp 100,000 units/mL; PO tabs 500,000 units; troches 200,000 units; Vag tabs 100,000 units; topical cream/ointment 100,000 units/g, powder 100,000 units/g SE: GI upset, SJS Notes: Not absorbed through mucus membranes/intact skin, poorly absorbed through GI; not for systemic Infxns; see also Triamcinolone/Nystatin

Octreotide (Sandostatin, Sandostatin LAR, Generic) Uses: *↓ Severe D associated w/ carcinoid & neuroendocrine GI tumors (eg, vasoactive intestinal peptide-secreting tumor [VIPoma], ZE synd), acromegaly*; bleeding esophageal varices Acts: LA peptide; mimics natural somatostatin Dose: Adults. 100–600 mcg/d SQ/IV in 2–4 div doses; start 50 mcg daily-bid. Sandostatin LAR (depot): 10–
30 mg IM q4wk. **Peds.** 1–10 mcg/kg/24 h SQ in 2–4 ÷ doses w/ **P:** [B, +] Hepatic/renal impair ***Disp:** Inj 0.05, 0.1, 0.2, 0.5, 1 mg/mL; 10, 20, 30 mg/5 mL LAR depot SE: N/V, Abd discomfort, flushing, edema, fatigue, cholelithiasis, hyper-/hypoglycemia, hep, hypothyroidism **Notes:** Stabilize for at least 2 wk before changing to LAR form

**Ofatumumab (Arzerra) Uses:** *Rx refractory CLL* **Acts:** MoAb, binds CD20 molecule on nl & abnormal B-lymphocytes w/ cell lysis **Dose:** **Adults.** 300 mg (0.3 mg/mL) IV week 1, then 2000 mg (2 mg/mL) weekly × 7 doses, then 2000 mg q4wks × 4 doses. Titrate Inf; start 12 mL/h × 30 min, ↑ 25 mL/h for 30 min, ↑ to 50 mL/h × 30 min, ↑ to 100 mL/h × 30 min, then titrate to max Inf 200 mL/h. **w/ **P: [C, ?] ¥ WBC, screen high risk for hep B, can reactivate, D/C immediately **Disp:** Inj 20 mg/mL (5 mL) **SE:** Infusion Rxns (bronchospasm, pulmonary edema, ↑/↓ BP, syncope, cardiac ischemia, angioedema), ↓ WBC, anemia, fever, fatigue, rash, N/D, pneumonia, Infxns, PML **Notes:** Premed w/ acetaminophen, antihistamine, and IV steroid

**Ofloxacin (Floxin)** **BOX:** Use associated w/ tendon rupture and tendonitis **Uses:** *Lower resp tract, skin, & skin structure, & UTI, prostatitis, uncomp gonorrhea, & Chlamydia Infxns* **Acts:** Bactericidal; ↓ DNA gyrase. **Broad spectrum gram(+) & (–):** *S. pneumoniae, S. aureus, S. pyogenes, H. influenzae, P. mira-bilis, N. gonorrhoeae, C. trachomatis,* **E. coli** **Dose:** **Adults.** 200–400 mg PO bid or IV q12h. ↓ in renal impair, take on empty stomach **w/ **P: [C, –] ↓ Absorption w/ antacids, sucralfate, Al2+, Ca2+, Mg2+, Fe2+, Zn+–containing drugs, Hx Szs CI: Quinolone allergy **Disp:** Tabs 200, 300, 400 mg; Inj 20, 40 mg/mL; ophthal & otic 0.3% **SE:** N/V/D, photosens, insomnia, HA, local irritation, ↑ QTc interval, peripheral neuropathy risk **Notes:** Floxin brand D/C

**Ofloxacin, Ophthalmic (Ocuflox Ophthalmic)** **Uses:** *Bacterial conjunctivitis, corneal ulcer* **Acts:** See Ofloxacin **Dose:** **Adults & Peds > 1 y.** 1–2 gtt in eye(s) q2–4h × 2 d, then qid × 5 more d **w/ **P: [C, +/–] CI: Quinolone allergy **Disp:** Ophthal 0.3% soln **SE:** Burning, hyperemia, bitter taste, chemosis, photophobia

**Ofloxacin, Otic (Floxin Otic, Floxin Otic Singles)** **Uses:** *Otitis externa; chronic suppurative otitis media w/ perforated drums* **Acts:** See Ofloxacin **Dose:** **Adults & Peds > 13 y. Otitis externa:** 10 gtt in ear(s) daily × 7 d. **Peds 1–12 y. Otitis media:** 5 gtt in ear(s) bid × 10 d **w/ **P: [C, –] CI: Quinolone allergy **Disp:** Otic 0.3% soln 5/10 mL bottles; singles 0.25 mL foil pack **SE:** Local irritation **Notes:** OK w/ tubes/perforated drums; 10 gtt = 0.5 mL

**Olanzapine (Zyprexa, Zydis)** **BOX:** ↑ Mortality in elderly w/ dementia-related psychosis **Uses:** *Bipolar mania, schizophrenia*, psychotic disorders, acute agitation in schizophrenia **Acts:** Dopamine & serotonin antagonist; atypical anti-psychotic. **Dose:** **Bipolar/schizophrenia:** 5–10 mg/d, weekly PRN, 20 mg/d max. **Agitation:** atypical antipsychotic 5–10 mg IM q2–4h PRN, 30 mg d/max **w/ **P: [C, –] **Disp:** Tabs 2.5, 5, 7.5, 10, 15, 20 mg; ODT (Zyprexa Zydis) 5, 10, 15, 20 mg; Inj 10 mg SE: HA, somnolence, orthostatic ↓ BP, tachycardia, dystonia, xerostomia, constipation, hyperglycemia; ↑ Wt, ↑ prolactin levels; and sedation may be ↑ in peds **Notes:** Takes wk to titrate dose; smoking ↓ levels; may be confused w/ Zyrtec or Zyprexa Relprevv

**Olanzapine, LA Parenteral (Zyprexa Relprevv)** **BOX:** ↑ Risk for severe sedation/coma following parenteral Inj, observe closely for 3 h in appropriate facility; restricted distribution; ↑ mortality in elderly w/ dementia-related psychosis; not approved for dementia-related psychosis **Uses:** *Schizophrenia* **Acts:** See Olanzapine **Dose:** **IM:** 150 mg/q2 wk, 300 mg/q4wk, 210 mg/q2wk, 405 mg/q4 wk, or 300 mg/q2wk **w/ **P: [C, –] IM only, do not confuse w/ Zyprexa IM; can cause
neuroleptic malignant synd, ↑ glucose/lipids/prolactin, ↓ BP, tardive dyskinesia, cognitive impair, ↓
CBC CI: None Disp: Vials, 210, 300, 405 mg SE: HA, sedation, ↑ Wt, cough, N/V/D, ↑ appetite, dry
mouth, nasopharyngitis, somnolence Notes: Glucose/lipids/CBC baseline and periodically:
establish PO tolerance before Δ to IM

**Olmesartan, Olmesartan, & Hydrochlorothiazide (Benicar, Benicar HCT) BOX:** Use in PRG 2nd/3rd tri can harm fetus; D/C when PRG detected Uses: *Hypertension, alone or in combo* Acts: Benicar angiotensin II receptor blocker (ARB); Benicar HCT ARB w/ diuretic HCTZ Dose: Adults. Benicar 20–40 mg qd; Benicar HCT 20–40 mg olmesartan w/ 12.5–25 mg HCTZ based on effect
**Peds 6–16 y.** Benicar: < 35 kg start 10 mg PO, range 10–20 mg qd; ≥ 35 kg start 20 mg PO qd, target
20–40 mg qd w/ P: [C 1st tri, D 2nd, 3rd, ?/–] Benicar HCT not rec w/ CrCl < 30 mL/min; follow closely if volume depleted w/ start of med CI: Component allergy Disp: (Benicar) Tabs 5, 20, 40 mg; (Benicar HCT) mg olmesartan/mg HCTZ: 20/12.5, 40/12.5, 40/25 SE: Dizziness, ↓ K⁺ w/ HCTZ product (may require replacement)

**Olmesartan/Amlodipine/Hydrochlorothiazide (Tribenzor) Uses:** *Hypertension* Acts: Combo angiotensin II receptor blocker, CCB, thiazide diuretic Dose: Begin w/ 20/5/12.5 olmesartan/amlodipine/HCTZ, ↑ to max 40/10/25 mg w/ P: [C, ?] CI: Anuria; sulfā allergy; PRG, neonate exposure, CrCl < 30 mg/min, age > 75 y, severe liver Dz Disp: Tabs: (olmesartan mg/amlodipine mg/HCTZ mg) 20/5/12.5, 40/5/12.5, 40/5/25, 40/10/12.5, 40/10/25 SE: Edema, HA, fatigue, N/D, muscle spasms, jt swelling, URI, syncope Notes: Avoid w/ vol depletion; thiazide diuretics may exacerbate SLE, associated NA glaucoma; ? ↑ sprue-like entopathy

**Olopatadine, Nasal (Patanase) Uses:** *Seasonal allergic rhinitis* Acts: H₁-receptor antagonist Dose: 2 sprays each nostril bid w/ P: [C, ?] Disp: 0.6% 240-Spray bottle SE: Epistasis, bitter taste somnolence, HA, rhinitis

**Olopatadine, Ophthalmic (Patanol, Pataday) Uses:** *Allergic conjunctivitis* Acts: H₁-receptor antagonist Dose: Patanol: 1 gtt in eye(s) bid; Pataday: 1 gtt in eye(s) qd w/ P: [C, ?] Disp: Patanol: soln 0.1% 5 mL Pataday: 0.2% 2.5 mL SE: Local irritation, HA, rhinitis Notes: Wait 10 min after to insert contacts

**Olsalazine (Dipentum) Uses:** *Maintain remission in UC* Acts: Topical anti-inflammatory Dose: 500 mg PO bid (w/ food) w/ P: [C, –] CI: Salicylate sensitivity Disp: Caps 250 mg SE: D, HA, blood dyscrasias, hep

**Omacetaxine (Synribo) Uses:** *CML w/ resist &/or intol to > 2 TKI* Acts: Inhib protein synthesis Dose: Adults. Induct: 1.25 mg/m² SQ bid × 14 consecutive d 28-d cycle, repeat until hematologic response achieved; Maint: 1.25 mg/m² SQ twice daily × 7 consecutive d 28-d cycle, continue as long as beneficial; adjust based on toxicity (see label) w/ P: [D, –] Severe myelosuppression (CBC q 1–2 wk); severe bleeding (plt); glucose intol (glucose); embryo-fetal tox CI: None Disp: Inj powder 3.5 mg/vial SE: Anemia, neutropenia, ↓ plt/WBC, N/V/D, fatigue, asthenia, Inj site Rxn, pyrexia, Infxn, bleeding, ↑ glucose, constipation, Abd pain, edema, HA, arthralgia, insomnia, cough, epistaxis, alopecia, rash

**Omalizumab (Xolair) BOX:** Reports of anaphylaxis 2–24 h after administration, even in previously treated pts Uses: *Mod–severe asthma in ≥ 12 y w/ reactivity to an allergen & when Sxs inadequately controlled w/ inhaled steroids* Acts: Anti-IgE Ab Dose: 150–375 mg SQ q2–4wk (dose/frequency
based on serum IgE level & body Wt; see PI) w/ P: [B, ?/–] CI: Component allergy, acute bronchospasm Disp: 150-mg single-use 5-mL vial SE: Site Rxn, sinusitis, HA, anaphylaxis reported in 3 pts Notes: Continue other asthma meds as indicated
Omega-3 Fatty Acid [Fish Oil] (Lovaza) Uses: *Rx hypertriglyceridemia* Acts: Omega-3 acid ethyl esters, ↓ thrombus inflammation & triglycerides Dose: Hypertriglyceridemia: 4 g/d ÷ in 1–2 doses W/P: [C, –], Fish hypersens; PRG, risk factor w/ anticoagulant use, w/ bleeding risk CI: Hypersens to components Disp: 1000-mg gel caps SE: Dyspepsia, N, GI pain, rash, flu-like synd Notes: Only FDA-approved fish oil supl; not for exogenous hypertriglyceridemia (type 1 hyperchylomicronemia); many OTC products. D/C after 2 mo if triglyceride levels do not ↓; previously called “Omacor”

Omeprazole (Prilosec, Prilosec [OTC]) Uses: *Duodenal/gastric ulcers (adults), GERD, and erosive gastritis (adults and children)*, prevent NSAID ulcers, ZE synd, H. pylori Infxns Acts: PPI Dose: Adults. 20–40 mg PO daily-bid × 4–8 wk; H. pylori 20 mg PO bid × 10 d w/ amoxicillin & clarithromycin or 40 mg PO × 14 d w/ clarithromycin; pathologic hypersecretory cond 60 mg/d (varies); 80 mg/d max. Peds (1–16 y) 5–10 kg: 5 mg/d; 10–20 kg: 10 mg PO qd > 20 kg: 20 mg PO qd; 40 mg/d max W/P: [C, –/+] w/ Drugs that rely on gastric acid (eg, ampicillin); avoid w/ atazanavir and nelfinavir; caution w/ warfarin, diazepam, phenytoin; do not use w/ clopidogrel (controversial ↓ effect); response does not R/O malignancy Disp: OTC tabs 20 mg; Prilosec DR caps 10, 20, 40 mg; Prilosec DR susp 2.5, 10 mg SE: HA, Abd pain, N/V/D, flatulence Notes: Combo w/ antibiotic Rx for H. pylori; ↑ risk of fractures, C. difficile, CAP w/ all PPI; risk of hypomagnesemia w/ long-term use

Omeprazole, Sodium Bicarbonate (Zegerid, Zegerid OTC) Uses: *Duodenal or gastric ulcer, GERD, maintenance esophagitis* Acts: PPI w/ acid buffering; Dose: 20–40 mg omeprazole daily, empty stomach 1 h pc; Duodenal ulcer, GERD: 20 mg 4–8 wk; Gastric ulcer: 40 mg 4–8 wk; Esophagitis maint: 20 mg W/P: [C, ?/–] w/ Resp alkalosis, ↓ K⁺, ↓ Ca²⁺; ↑ drug levels metabolized by cytochrome P450; may ↑ INR w/ warfarin; may ↓ absorption drugs requiring acid environment CI: ↓ Renal Fxn; Disp: Chew tabs, 20, 40 mg omeprazole; w/ 600 mg NaHCO₃; 700 mg MgOH₂ SE: N, V, D, Abd pain, HA Notes: Atrophic gastritis w/ long-term PPI; ↑ risk of fractures, C. difficile, CAP w/ all PPI; long-term use + Ca²⁺ → milk-alkali syndrome

Ondansetron (Zofran, Zofran ODT, Generic) Uses: *Prevent chemo-therapy-associated & postop N/V* Acts: Serotonin receptor (5-HT₃) antagonist Dose: Adults & Peds. Chemotherapy: 0.15 mg/kg/dose IV prior to chemotherapy, then 4 & 8 h after 1st dose or 4–8 mg PO tid; 1st dose 30 min prior to chemotherapy & give on schedule, not PRN. Adults. Postoperation: 4 mg IV immediately
preanesthesia or postoperation. **Ondansetron**, Orally Soluble Film (Zuplenz) Uses: *Prevent chemotherapy/RT-associated & postop N/V* **Acts:** Serotonin receptor (5-HT3) antagonist **Dose:** **Adults.** Highly emetogenic chemo: 24 mg (8 mg film × 3) 30 min pre-chemo; *RT N & V:* 8 mg film tid. **Adults & Peds > 12 y.** Mod emetogenic chemo: 8 mg film 30 min pre-chemo, then 8 mg in 8 h; 8 mg film bid × 1–2 d after chemo. **Adults.** Postop: 16 mg (8 mg film × 2) 1 h preop; ↓ w/ hepatic impair **W/P:** [B, +/–] CI: w/ Apomorphine (↓ BP, LOC). **Disp:** Oral soluble film 4, 8 mg **SE:** HA, malaise/fatigue, constipation, D **Notes:** Use w/ dry hands, do not chew/swallow; place on tongue, dissolves in 4–20 s; peppermint flavored **Oral Contraceptives (See Table 5, p 306)** BOX: Cigarette smoking ↑ risk of serious CV SEs; ↑ risk w/ > 15 cigarettes/d, > 35 y; strongly advise women on OCP to not smoke. Pt should be counseled that these products do not protect against HIV and other STD **Uses:** *Birth control; regulation of anovulatory bleeding; dysmenorrhea; endometriosis; polycystic ovaries; acne* (Note: FDA approvals vary widely, see PI) **Acts:** *Birth control:* Suppresses LH surge, prevents ovulation; progestins thicken cervical mucus; ↓ fallopian tube cilia, ↓ endometrial thickness to ↓ chances of fertilization. *Anovulatory bleeding:* Cyclic hormones mimic body’s natural cycle & regulate endometrial lining, results in regular bleeding q28d; may ↓ uterine bleeding & dysmenorrhea **Dose:** Start day 1 menstrual cycle or 1st Sunday after onset of menses; 28-d cycle pills take daily; 21-d cycle pills take daily, no pills during last 7 d of cycle (during menses); some available as transdermal patch; Intrauterine ring **W/P:** [X, +] Migraine, HTN, DM, sickle cell Dz, gallbladder Dz; monitor for breast Dz; w/ drospirenone containing OCP ↓ K+ if taking drugs w/ ↑ K+ risk; drospirenone implicated in ↑ VTE risk. **CI:** AUB, PRG, estrogen-dependent malignancy, ↑ hypercoagulation/liver Dz, hemiplegic migraine, smokers > 35 y; drospirenone has mineralocorticoid effect; do not use w/ renal/liver/adrenal problems. **Disp:** See Table 5, p 306. 28-d cycle pills (21 active pills + 7 placebo or Fe or folate supl); 21-d cycle pills (21 active pills) **SE:** Intramenstrual bleeding, oligomenorrhea, amenorrhea, ↑ appetite/Wt gain, ↓ libido, fatigue, depression, mood swings, mastalgia, HA, melasma, ↑ Vag discharge, acne/greasy skin, corneal edema, N; drospirenone containing pills have ↑ blood clots compared to other progestins **Notes:** Taken correctly, up to 99.9% effective for contraception; no STDs prevention instruct in use of condoms to reduce STD use additional barrier contraceptive; long-term, can ↓ risk of ectopic PRG, benign breast Dz, ovarian & uterine CA. Suggestions for OCP prescribing and/or regimen changes are noted below. Listing of other forms of Rx birth control on p 26. **Rx menstrual cycle control:** Start w/ monophasic × 3 mo before switching to another brand; w/ continued bleeding change to pill w/ ↑ estrogen
Rx birth control: Choose pill w/ lowest SE profile for particular pt; SEs numerous; d/t estrogenic excess or progesterone deficiency; each pill’s SE profile can be unique (see PI); newer extended-cycle combos have shorter/fewer hormone-free intervals, ↓ PRG risk; OCP troubleshooting SE w/ suggested OCP.


Acne: Use ↑ estrogen, ↓ androgenic: Brevicon, Ortho-Cyclen, Demulen 1/50, Estrostep, Ortho Tri-Cyclen, Mircette, Modicon, Necon, Ortho Evra, Yasmin, Yaz

Break-through bleed: ↑ Estrogen, ↑ progestin, ↓ androgenic: Demulen 1/50, Desogen, Estrostep, Loestrin 1/20, Ortho-Cept, Ovcon 50, Yasmin, Zovia 1/50

Breast tenderness or ↑ Wt: ↓ Estrogen, ↓ progestin: Use ↓ estrogen pill rather than current; Alesse, Levlite, Loestrin 1/20 Fe, Ortho Evra, Yasmin, Yaz


Endometriosis: ↓ Estrogen, ↑ progestin: Demulen 1/35, Loestrin 1.5/30, Loestrin 1/20 Fe, Lo Ovral, Levora, Nordette, Zovia 1/35; cont w/ o placebo pills or w/ 4 d of placebo pills

HA: ↓ Estrogen, ↓ progestin: Alesse, Levlite, Ortho Evra


Severe menstrual cramping: ↑ Progestin: Demulen 1/50, Desogen, Loestrin 1.5/30, Mircette, Ortho-Cept, Yasmin, Ortho-Novum 1/50, Ovcon 35, Ortho-Cyclen, Ortho Tri-Cyclen, Triphasil, Trivora

Orphenadrine (Norflex, Generic) Uses: *Discomfort associated w/ painful musculoskeletal conditions* Acts: Central atropine-like effect; indirect skeletal muscle relaxation, euphoria, analgesia
Dose: 100 mg PO bid, 60 mg IM/IV q12h W/P: [C, +/–] CI: NAG, GI/or bladder obst, cardiospasm, MyG Disp: SR tabs 100 mg; Inj 30 mg/mL SE: Drowsiness, dizziness, blurred vision, flushing, tachycardia, constipation

Oseltamivir (Tamiflu) Uses: *Prevention & Rx influenza A & B* Acts: ↓ Viral neuraminidase Dose: Adults. Tx: 75 mg PO bid for 5 d w/ in 48 h of Sx onset; Prophylaxis: 75 mg PO daily × 10 d w/ in 48 h of contact Peds. Tx: Dose bid × 5 d: < 15 kg: 30 mg. 15–23 kg: 45 mg. 23–40 kg: 60 mg. > 40 kg: Adult dose. Prophylaxis: Same dosing but once daily for 10 d ↓ w/ renal impair W/P: [C, ?/–] CI: Component allergy Disp: Caps 30, 45, 75 mg, powder 6 mg/mL for suspension (Note: 12 mg/mL dose is being phased out due to dosing concerns) SE: N/V, insomnia, reports of neuropsychological events in children (self-injury, confusion, delirium) Notes: Start w/ in 48 h of Sx onset or exposure; 2009 H1N1 strains susceptible; ✓ CDC updates http://www.cdc.gov/h1n1flu/guidance/

Oxacillin (Generic) Uses: *Infxs d/t susceptible S. aureus, Streptococcus & other organisms* Acts: Bactericidal; ↓ cell wall synth. Spectrum: Excellent gram(+), poor gram(–) Dose: Adults. 250–500 mg (2 g severe) IM/IV q4–6h. Peds. 150–200 mg/kg/d IV ÷ q4–6h W/P: [B, M] CI: PCN sensitivity Disp: Powder for Inj 500 mg, 1, 2, 10 g SE: GI upset, interstitial nephritis, blood dyscrasias, may ↓ OCP effectiveness

Oxaliplatin (Eloxatin) BOX: Administer w/ supervision of physician experienced in chemotherapy.
Appropriate management is possible only with adequate diagnostic & Rx facilities. Anaphylactic-like Rxns reported

Uses: *Adjuvant Rx stage III colon CA (primary resected) & metastatic colon CA w/ 5-FU*

Acts: Metabolized to platinum derivatives, crosslinks DNA

**Dose:** Per protocol; see PI.

**Premedicate:** Antiemetic w/ or w/o dexamethasone

**W/P:** [D, –]

**CI:** Allergy to components or platinum

**Disp:** Inj 50, 100 mg

**SE:** Anaphylaxis, granulocytopenia, paresthesia, N/V/D, stomatitis, fatigue, neuropathy, hepatotoxic, pulm tox

**Notes:** 5-FU & leucovorin are given in combo; epi, corticosteroids, & antihistamines alleviate severe Rxns

**Oxandrolone (Oxandrin, Generic) [C-III] BOX:** Risk of peliosis hepatis, liver cell tumors, may ↑ risk atherosclerosis

**Uses:** *Wt ↑ after Wt ↓ from severe trauma, extensive surgery*

**Acts:** Anabolic steroid; ↑ lean body mass

**Dose:** *Adults.* 2.5–20 mg/d PO ÷ bid-qid

**Peds:** ≤ 0.1 mg/kg/d ÷ bid-qid

**W/P:** [X, ?/–] ↑ INR w/ warfarin

**CI:** PRG, prostate CA, breast CA, breast CA w/ hypercalcemia, nephrosis

**Disp:** Tabs 2.5, 10 mg

**SE:** Acne, hepatotox, dyslipidemia

**Notes:** Use intermittently, 2–4 wk typical

**Oxaprozin (Daypro, Generic) BOX:** May ↑ risk of cardiovascular CV events & GI bleeding

**Uses:** *Arthritis & pain*

**Acts:** NSAID; ↓ prostaglandin synth

**Dose:** *Adults.* 600–1200 mg/daily (÷ dose helps GI tolerance); w/ renal/hepatic impair

**Peds. JRA (Daypro):** 22–31 kg: 600 mg/d. 32–54 kg:

**W/P:** [C (D 3rd tri), ?] Peptic ulcer, bleeding disorders

**CI:** ASA/NSAID sensitivity, perioperative pain w/ CABG

**Disp:** Tabs 600 mg

**SE:** CNS inhibition, sleep disturbance, rash, GI upset, peptic ulcer, edema, renal failure, anaphylactoid Rxn w/ “ASA triad”

**Oxazepam (Generic) [C-IV] Uses:** *Anxiety, acute EtOH withdrawal*, anxiety w/ depressive Sxs

**Acts:** Benzodiazepine; diazepam metabolite

**Dose:** *Adults.* 10–15 mg PO tid-qid; severe anxiety & EtOH withdrawal may require up to 30 mg qid.

**Peds > 6 y.** 1 mg/kg/d ÷ doses

**W/P:** [D, ?/–]

**CI:** Component allergy, NAG

**Disp:** Caps 10, 15, 30 mg; tabs 15 mg

**SE:** Sedation, ataxia, dizziness, rash, blood dyscrasias, dependence

**Notes:** Avoid abrupt D/C

**Oxcarbazepine (Oxtellar XR, Trileptal, Generic) Uses:** *Partial Szs*, bipolar disorders

**Acts:** Blocks voltage-sensitive Na+ channels, stabilization of hyperexcited neural membranes

**Dose:** *Adults.* 300 mg PO bid, ↑ weekly to target maint 1200–2400 mg/d.

**Peds.** 8–10 mg/kg bid, 600 mg/d max, ↑ weekly to target maint dose; w/ renal Insuff

**W/P:** [C, –] Carbamazepine sensitivity

**CI:** Component sensitivity

**Disp:** Tabs 150, 300, 600 mg; (Oxtellar XR) ER tabs 150, 300, 600 mg; susp 300 mg/5 mL

**SE:** ↓ Na+, HA, dizziness, fatigue, somnolence, GI upset, diplopia, concentration difficulties, fatal skin/multiorgan hypersens Rxns

**Notes:** Do not abruptly D/C, Na+ if fatigued; advise about SJS and topic epidermal necrolysis

**Oxiconazole (Oxistat) Uses:** *Tinea cruris, tinea corporis, tinea pedis, tinea versicolor*

**Acts:** ↓ Ergosterols in fungal cell membrane. Spectrum: Most Epidermophyton floccosum, Trichophyton mentagrophytes, Trichophyton rubrum, Malassezia furfur

**Dose:** Apply thin layer daily-bid

**W/P:** [B, M]

**CI:** Component allergy

**Disp:** Cream, lotion 1%

**SE:** Local irritation

**Oxybutynin (Ditropan, Ditropan XL, Generic) Uses:** *Symptomatic relief of urgency, nocturia, incontinence w/ neurogenic or reflex neurogenic bladder*

**Acts:** Anticholinergic, relaxes bladder smooth muscle, ↑ bladder capacity

**Dose:** *Adults.* 5 mg bid-tid, 5 mg 4×/d max. XL 5–10 mg/d, 30 mg/d max. *Peds > 5 y.* 5 mg PO bid-tid; 15 mg/d max. *Peds 1–5 y.* 0.2 mg/kg/dose 2–4×/d (syrup 5 mg/5 mL; 15 mg/d max; ↓ in elderly; periodic drug holidays OK

**W/P:** [B, ?]

**CI:** NAG, MyG, GI/GU
obst, UC, megacolon

Disp: Tabs 5 mg; XL tabs 5, 10, 15 mg; syrup 5 mg/5 mL

SE: Anticholinergic (drowsiness, xerostomia, constipation, tachycardia), ↑ QT interval, memory impair; ER form empty shell expelled in stool

Oxybutynin, Topical (Gelnique) Uses: *OAB* Acts: Anticholinergic, relaxes bladder smooth muscle, ↑ bladder capacity Dose: 1 g sachet qd to dry skin (Abd/shoulders/thighs/upper arms) W/P: [B, ?/–] CI: Gastric or urinary retention; NAG Disp: Gel 10%, 1-g sachets (100 mg oxybutynin) SE: Anticholinergic (lethargy, xerostomia, constipation, blurred vision, ↑ HR); rash, pruritus, redness, pain at site; UTI

Notes: Cover w/ clothing, skin-to-skin transfer can occur; gel is flammable; after applying wait 1 h before showering

Oxybutynin Transdermal System (Oxytrol) Uses: *Rx OAB* Acts: Anticholinergic, relaxes bladder smooth muscle, ↑ bladder capacity Dose: One 3.9 mg/d system apply 2×/wk (q3–4d) to Abd, hip, or buttock W/P: [B, ?/–] CI: GI/GU obst, NAG Disp: 3.9 mg/d transdermal patch SE: Anticholinergic, itching/redness at site

Notes: Do not apply to same site w/ in 7 d

Oxycodone (OxyContin, Roxicodone, Generic) [C-II] BOX: High abuse potential; controlled release only for extended chronic pain, not for PRN use; 60-, 80-mg tab for opioid-tolerant pts; do not crush, break, or chew Uses: *Mod–severe pain, usually in combo w/ nonnarcotic analgesics* Acts: Narcotic analgesic Dose: Adults. 5 mg PO q6h PRN (IR). Mod–severe chronic pain: 10–160 mg PO q12h (ER); can give ER q8h if effect does not last 12 h. Peds 6–12 y. 1.25 mg PO q6h PRN. > 12 y: 2.5 mg q6h PRN; ↓ w/ severe liver/renal Dz, elderly; ↓ w/ food W/P: [B (D if prolonged use/near term), M] CI: Allergy, resp depression, acute asthma, ileus w/ microsomal morphine Disp: IR caps (OxyIR) 5 mg; CR Roxico-done tabs 15, 30 mg; ER (OxyContin) 10, 15, 20, 30, 40, 60, 80 mg; liq 5 mg/5 mL; soln conc 20 mg/mL SE: ↓ BP, sedation, resp depression, dizziness, GI upset, constipation, risk of abuse Notes: OxyContin for chronic CA pain; do not crush/chew/ cut ER product; sought after OxyContin is intended to prevent the opioid medication from being cut, broken, chewed, crushed, or dissolved to release more medication

Oxycodone/Acetaminophen (Percocet, Tylox) [C-II] Uses: *Mod–severe pain* Acts: Narcotic analgesic Dose: Adults. 1–2 tabs/caps PO q4–6h PRN (acetaminophen max dose 4 g/d). Peds. Oxycodone 0.05–0.15 mg/kg/dose q4–6h PRN, 5 mg/dose max W/P: [C (D prolonged use or near term), M] CI: Allergy, paralytic ileus, resp depression Disp: Percocet tabs, mg oxycodone/mg APAP: 2.5/325, 5/325, 7.5/325, 10/325, 7.5/500, 10/650; Tylox caps 5 mg oxycodone, 500 mg APAP; soln 5 mg oxycodone & 325 mg APAP/5 mL SE: ↓ BP, sedation, dizziness, GI upset, constipation Notes: See Acetaminophen note p 36

Oxycodone/Aspirin (Percodan) [C-II] Uses: *Mod–severe pain* Acts: Narcotic analgesic w/ NSAID Dose: Adults. 1–2 tabs/caps PO q4–6h PRN. Peds. Oxycodone 0.05–0.15 mg/kg/dose q4–6h PRN, up to 5 mg/dose; ↓ in severe hepatic failure W/P: [D, –] w/ Peptic ulcer, CNS depression, elderly, Hx Szs CI: Component allergy, children (< 16 y) w/ viral Infxn (Reyes synd), resp depression, ileus, hemophilia Disp: Generics: 4.83 mg oxycodone hydrochloride, 0.38 mg oxycodone terephthalate, 325 mg ASA; Percodan 4.83 mg oxycodone hydrochloride, 325 mg ASA SE: Sedation, dizziness, GI upset/ulcer, constipation, allergy Notes: Monitor for possible drug abuse; max 4 g ASA/d

Oxycodone/Ibuprofen (Combunox) [C-II] BOX: May ↑ risk of serious CV events; CI in perioperative CABG pain; ↑ risk of GI events such as bleeding Uses: *Short-term (not > 7 d)
management of acute mod–severe pain* Acts: Narcotic w/ NSAID Dose: 1 tab q6h PRN 4 tab max/24 h; 7 d max W/P: [C, –] w/ Impaired renal/hepatic Fxn; COPD, CNS depression, avoid in PRG CI: Paralytic ileus, 3rd-tri PRG, allergy to ASA or NSAIDs, where opioids are CI Disp: Tabs 5 mg oxycodone/400 mg ibuprofen SE: N/V, somnolence, dizziness, sweating, flatulence, ↑ LFTs Notes: Renal Fxn; abuse potential w/ oxycodone

Oxymorphone (Opana, Opana ER) [C-II] BOX: (Opana ER) Abuse potential, controlled release only for chronic pain; do not consume EtOH-containing beverages, may cause fatal OD Uses: *Mod–severe pain, sedative* Acts: Narcotic analgesic Dose: 10–20 mg PO q4–6h PRN if opioid-naïve or 1–1.5 mg SQ/IM q4–6h PRN or 0.5 mg IV q4–6h PRN; starting 20 mg/dose max PO; Chronic pain: ER 5 mg PO q12h; if opioid-naïve ↑ PRN 5–10 mg PO q12h q3–7d; take 1 h pc or 2 h ac; ↓ dose w/ elderly, renal/hepatic impair W/P: [B, ?] CI: ↑ ICP, severe resp depression, w/ EtOH or liposomal morphine, severe hepatic impair Disp: Tabs 5, 10 mg; ER 5, 10, 20, 30, 40 mg SE: ↓ BP, sedation, GI upset, constipation, histamine release Notes: Related to hydromorphone

Oxytocin (Pitocin, Generic) BOX: Not rec for elective induction of labor Uses: *Induce labor, control postpartum hemorrhage* Acts: Stimulate muscular contractions of the uterus Dose: 0.0005–0.001 units/min IV Inf; titrate 0.001–0.002 units/min q30–60min W/P: [Uncategorized, +/–] CI: Where Vag delivery not favorable, fetal distress Disp: Inj 10 units/mL SE: Uterine rupture, fetal death; arrhythmias, anaphylaxis, H₂O intoxication Notes: Monitor vital signs; nasal form for breastfeeding only; postpartum bleeding 10–40 units in 1000 mL @ sufficient rate to stop bleeding

Paclitaxel (Abraxane, Taxol, Generic) BOX: Administration only by physician experienced in chemotherapy; fatal anaphylaxis and hypersens possible; severe myelosuppression possible Uses: *Ovarian & breast CA, PCa*, Kaposi sarcoma, NSCLC Acts: Mitotic spindle poison; promotes microtubule assembly & stabilization against depolymerization Dose: Per protocols; use glass or polyolefin containers (eg, nitroglycerin tubing set); PVC sets leach plasticizer; ↓ in hepatic failure W/P: [D, –] CI: Neutropenia ANC < 1500 cells/mm³, < 1000 cells/mm³ in w/ AIDS related kaposis syndrome; solid tumors, component allergy Disp: Inj 6 mg/mL, vial 5, 16.7, 25, 50 mL; (Abraxane) 100 mg/vial SE: ↓ BM, peripheral neuropathy, transient ileus, myalgia, ↓ HR, ↓ BP, mucositis, N/V/D, fever, rash, HA, phlebitis; hematologic tox schedule-dependent; leukopenia dose-limiting by 24-h Inf; neurotox limited w/ short (1–3 h) Inf; allergic Rxns (dyspnea, ↓ BP, urticaria, rash) Notes: Maintain hydration; allergic Rxn usually w/ in 10 min of Inf; minimize w/ corticosteroid, antihistamine pretreatment

Palifermin (Kepivance) Uses: *Oral mucositis w/ BMT* Acts: Synthetic keratinocyte GF Dose: Phase 1: 60 mcg/kg IV daily × 3, 3rd dose 24–48 h before chemotherapy. Phase 2: 60 mcg/kg IV daily × 3, after stem cell Inf (at least 4 d from last dose) W/P: [C, ?/–] CI: Hypersensitivity to palifermin, E. coli–derived proteins, or any component & formulation Disp: Inj 6.25 mg SE: Unusual mouth sensations, tongue thickening, rash, ↑ amylase & lipase Notes: E. coli–derived; separate phases by 4 d; safety unknown w/ nonhematologic malignancies

Paliperidone (Invega, Invega Sustenna) BOX: Not for dementia-related psychosis Uses: *Schizophrenia* Acts: Risperidone metabolite, antagonizes dopamine, and serotonin receptors Dose: Invega: 6 mg PO q A.M., 12 mg/d max; CrCl 50–79 mL/min: 6 mg/d max; CrCl 10–49 mL/min: 3 mg/d max. Invega Sustenna: 234 mg day 1, 156 mg 1 week later IM (deltoid), then 117 mg monthly (deltoid or gluteal); range 39–234 mg/mo W/P: [C, ?/–] w/ ↓ HR, ↓ K⁺/Mg²⁺, renal/hepatic impair;
w/ phenothiazines, ranolazine, ziprasidone, prolonged QT, Hx arrhythmia CI:
Risperidone/paliperidone hypersens **Disp**: Invega: ER tabs 1.5, 3, 6, 9 mg; Invega Sustenna: Prefilled syringes 39, 78, 117, 156, 234 mg **SE**: Impaired temp regulation, ↑ QT & HR, HA, anxiety, dizziness, N, dry mouth, fatigue, EPS **Notes**: Do not chew/ cut/crush pill; determine tolerability to oral risperidone or paliperidone before using injectable

**Palivizumab (Synagis) Uses**: *Prevent RSV Infxn* ** Acts**: MoAb **Dose**: Peds. 15 mg/kg IM monthly, typically Nov–Apr; AAP rec max 3 doses for those born 32–34 6/7 wk w/o significant congenital heart/lung Dz **W/P**: [C, ?] Renal/hepatic dysfunction CI: Component allergy **Disp**: Vials 50, 100 mg **SE**: Hypersens Rxn, URI, rhinitis, cough, ↑ LFTs, local irritation

**Palonosetron (Aloxi) BOX**: May ↑ QTc interval **Uses**: *Prevent acute & delayed N/V w/ emetogenic chemotherapy; prevent postoperative N/V* ** Acts**: 5-HT₃-receptor antagonist **Dose**: Chemotherapy: 0.25 mg IV 30 min prior to chemotherapy. Postoperative N/V: 0.075 mg immediately before induction **W/P**: [B, ?] CI: Component allergy **Disp**: 0.05 mg/mL (1.5 & 5 mL vials) **SE**: HA, constipation, dizziness, Abd pain, anxiety

**Pamidronate (Generic) Uses**: *Hypercalcemia of malignancy, Paget Dz, palliate symptomatic bone metastases* ** Acts**: Bisphosphonate; ↓ nl & abnormal bone resorption **Dose**: Hypercalcemia: 60–90 mg IV over 2–24 h or 90 mg IV over 24 h if severe; may repeat in 7 d. Paget Dz: 30 mg/d IV slow Inf over 4 h × 3 d. Osteolytic bone mets in myeloma: 90 mg IV over 4 h qmo. Osteolytic bone mets breast CA: 90 mg IV over 2 h q3–4wk; 90 mg/max single dose. **W/P**: [D, ?/–] Avoid invasive dental procedures w/ use CI: PRG, bisphosphonate sensitivity **Disp**: Inj 30, 60, 90 mg **SE**: Fever, malaise, convulsions, Inj site Rxn, uveitis, fluid overload, HTN, Abd pain, N/V, constipation, UTI, bone pain, ↓ K⁺, ↓ Ca²⁺, ↓ Mg²⁺, hypophosphatemia; jaw osteonecrosis (mostly CA pts; avoid dental work), renal tox **Notes**: Perform dental exam pretherapy; follow Cr, hold dose if Cr ↑ by 0.5 mg/dL w/ nl baseline or by 1 mg/dL w/ abnormal baseline; restart when Cr returns w/ in 10% of baseline; may ↑ atypical subtrochanteric femur fractures

**Pancrelipase (Creon, Pancreaze, Panakare Plus, Pertzye, Ultresa, Voikace, Zenpep, Generic) Uses**: *Exocrine pancreatic secretion deficiency (eg, CF, chronic pancreatitis, pancreatic Insuff), steatorrhea of malabsorption* ** Acts**: Pancreatic enzyme supl; amylase, lipase, protease **Dose**: 1–3 caps (tabs) w/ meals & snacks; ↑ to 8 caps (tabs); do not crush or chew EC products; dose dependent on digestive requirements of pt; avoid antacids **W/P**: [C, ?/–] CI: Pork product allergy, acute pancreatitis **Disp**: Caps, tabs **SE**: N/V, Abd cramps **Notes**: Individualize Rx; dosing based on lipase component

**Pancuronium (Generic) BOX**: Should only be administered by adequately trained individuals **Uses**: *Paralysis w/ mechanical ventilation* ** Acts**: Nondepolarizing neuromuscular blocker **Dose**: Adults & Peds > 1 mo. Initial 0.06–0.1 mg/kg; maint 0.01 mg/kg 60–100 min after, then 0.01 mg/kg q25–60min PRN; ↓ w/ renal/hepatic impair; intubate pt & keep on controlled ventilation; use adequate sedation and analgesia **W/P**: [C, ?/–] CI: Component or bromide sensitivity **Disp**: Inj 1, 2 mg/mL **SE**: Tachycardia, HTN, pruritus, other histamine/hypersens Rxns **Notes**: Cross-reactivity w/ other neuromuscular blocker possible

**Panitumumab ( Vectibix) BOX**: Derm tox common (89%) and severe in 12%; can be associated w/ Infxn (sepsis, abscesses requiring I&D; w/ severe derm tox, hold or D/C and monitor for Infxn; severe Inf Rxns (anaphylactic Rxn, bronchospasm, fever, chills, hypotension) in 1%; w/ severe Rxns,
immediately D/C Inf and possibly permanent D/C Uses: *Rx EGFR-expressing metastatic colon CA*

Acts: Anti-EGFR MoAb Dose: 6 mg/kg IV Inf over 60 min q14d; doses > 1000 mg over 90 min ↓ Inf rate by 50% w/ grade 1–2 Inf Rxn, D/C permanently w/ grade 3–4 Rxn. For derm tox, hold until < grade 2 tox. If improves < 1 mo, restart 50% original dose. If tox recurs or resolution > 1 mo permanently D/C. If ↓ dose tolerated, ↑ dose by 25% W/P: [C, –] D/C nursing during, 2 mo after

disp: 20 mg/mL vial (5, 10 mL) SE: Rash, acniform dermatitis, pruritus, paronychia, ↓ Mg²⁺, Abd pain, N/V/D, constipation, fatigue, dehydration, photosens, conjunctivitis, ocular hyperemia, ↑ lacrimation, stomatitis, mucositis, pulm fibrosis, severe derm tox, Inf Rxns Notes: May impair female fertility; lytes; wear sunscreen/hats, limit sun exposure

Pantoprazole (Protonix, Generic) Uses: *GERD, erosive gastritis*, ZE synd, PUD Acts: Proton pump inhibit Dose: Adult: 40 mg/d PO; do not crush/chew tabs; 40 mg IV/d (not > 3 mg/min) Peds: 0.5–1 mg/kg/d ages 6–13 y limited data W/P: [B, ?/–] Do not use w/ clopidogrel (↓ effect) Disp: Tabs, DR 20, 40 mg; 40 mg powder for oral susp (mix in applesauce or juice, give immediately); Inj 40 mg SE: CP, anxiety, GI upset, ↑ LFTs Notes: ↑ Risk of fractures w/ all PPI; risk of hypomagnesemia w/ long-term use, monitor; ↑ C. difficile risk

Paregoric [Camphorated Tincture of Opium] [C-III] Uses: *D*, pain & neonatal opiate withdrawal synd Acts: Narcotic Dose: Adults. 5–10 mL PO 1–4×/d PRN. Peds. 0.25–0.5 mL/kg 1–4×/d. W/P: [B (D w/ prolonged use/high dose near term, +] CI: Toxic D; convulsive disorder, morphine sensitivity Disp: Liq 2 mg morphine = 20 mg opium/5 mL SE: ↓ BP, sedation, constipation Notes: Contains anhydrous morphine from opium; do not confuse w/ opium tincture; short-term use only; contains benzoic acid (benzyl alcohol metabolite)

Paroxetine (Brisdelle) BOX: Potential for suicidal thinking/behavior; monitor closely Uses: *Mod–severe menopause vasomotor Sx (not for psych use)* Acts: SSRI, nonhormonal Rx for condition Dose: 7.5 mg PO qhs W/P: [X, ?/M] Serotonin synd, bleed/w NSAID, ↓ Na⁺, ↓ tamoxifen effect, fractures, mania/hypomania activation, Szs, akathisia, NAG, cognitive/motor impair, w/ strong CYP2D6 inhibit CI: w/ or w/ in 14 d of MAOI, w/ thioridazine/pimozole/PRG Disp: Caps 7.5 mg SE: HA, fatigue, N/V Notes: See other paroxetine listings

Paroxetine (Paxil, Paxil CR, Pexeva, Generic) BOX: Closely monitor for worsening depression or emergence of suicidality, particularly in children, adolescents, and young adults; not for use in peds Uses: *Depression, OCD, panic disorder, social anxiety disorder*, PMDD Acts: SSRI Dose: 10–60 mg PO single daily dose in A.M.; CR 25 mg/d PO; ↑ 12.5 mg/wk (max range 26–62.5 mg/d) W/P: [D, ?] ↑ Bleeding risk CI: w/ MAOI, thioridazine, pimozide, linezolid, methylthioninium chloride (methylene blue) Disp: Tabs 10, 20, 30, 40 mg; susp 10 mg/5 mL; CR 12.5, 25, 37.5 mg SE: HA, somnolence, dizziness, GI upset, N/D, ↓ appetite, sweating, xerostomia, tachycardia, ↓ libido, ED, anorgasmsia

Pasireotide (Signifor) Uses: *Cushing Dz* Acts: Somatostatin analogue inhibit ACTH secretion Dose: Adults. 0.6–0.9 mg SQ 2×/d; titrate on response/tolerability; hepatic impair (Child-Pugh B): 0.3–0.6 mg SQ twice daily, (Child-Pugh C): avoid W/P: [C, –] w/ Risk for ↓ HR or ↑ QT; w/ drugs that ↓ HR, ↑ QT, cyclosporine, bromocriptine CI: None Disp: Inj single-dose 0.3, 0.6, 0.9 mg/mL SE: N/V/D; hyperglycemia, HA, Abd pain, cholelithiasis, fatigue, DM, hypocortisolism, ↓ HR, QT prolongation, ↑ glucose, ↑ LFTs, ↓ pituitary hormones, Inj site Rxn, edema, alopecia, asthenia, myalgia, arthralgia Notes: Prior to and periodically (see label), ↓ FPG, HbA1c, LFTs, ECG, gallbladder US
Pazopanib (Votrient) BOX: Administer only by physician experienced in chemotherapy. Severe and fatal hepatotox observed. Uses: *Rx advanced RCC* metastatic soft-tissue sarcoma after chemotherapy Acts: TKI Dose: Adults. 800 mg PO once daily, ↓ to 200 mg daily if moderate hepatic impair, not rec in severe hepatic Dz (bili > 3× ULN) W/P: [D, –] Avoid w/ CYP3A4 inducers/inhib and QTc prolonging drugs, all SSRI. CI: Severe hepatic Dz Disp: 200-mg tablet SE: ↑ BP, N/V/D, GI perf, anorexia, hair depigmentation, ↓ WBC, ↓ plt, ↑ bleeding, ↑ AST/ALT/bili, ↓ Na, CP, ↑ QT Notes: Hold for surgical procedures. Take 1 h ac or 2 h pc

Pegfilgrastim (Neulasta) Uses: *↓ Frequency of Infxn in pts w/ nonmyeloid malignancies receiving myelosuppressive anti-CA drugs that cause febrile neutropenia* Acts: Granulocyte and macrophage-stimulating factor Dose: Adults. 6 mg SQ × 1/chemotherapy cycle W/P: [C, M] w/ Sickle cell CI: Allergy to E. coli-derived proteins or filgrastim Disp: Syringes: 6 mg/0.6 mL SE: Splenic rupture, HA, fever, weakness, fatigue, dizziness, insomnia, edema, N/V/D, stomatitis, anorexia, constipation, taste perversion, dyspepsia, Abp pain, granulocytopenia, neutropenic fever, ↑ LFTs & uric acid, arthralgia, myalgia, bone pain, ARDS, alopecia, worsen sickle cell Dz Notes: Never give between 14 d before & 24 h after dose of cytotoxic chemotherapy

Peginterferon Alfa-2a [Pegylated Interferon] (Pegasys) BOX: Can cause or aggravate fatal or life-threatening neuropsychological, autoimmune, ischemic, and infectious disorders. Monitor pts closely Uses: *Chronic hep C w/ compensated liver Dz* Acts: Immune modulator Dose: 180 mcg (1 mL) SQ see package insert; SQ dosing; ↓ in renal impair W/P: [C, ?/–] CI: Autoimmune hep, decompensated liver Dz Disp: Vials 50, 80, 120, 150 mcg/0.5 mL; Redipen 50, 80, 120, 150 mcg/5 mL; reconstitute w/ 0.7 mL w/ sterile water SE: Depression, insomnia, suicidal behavior, GI upset, ↓ WBC and plt, alopecia, pruritus; do not confuse w/ peginterferon alfa-2b

Peginterferon Alfa-2b [Pegylated Interferon] (PegIntron) BOX: Can cause or aggravate fatal or life-threatening neuropsychological, autoimmune, ischemic, and infectious disorders; monitor pts closely Uses: *Rx hep C* Acts: Immune modulator Dose: Typical dose (see package insert) 1 mcg/kg/wk SQ; 1.5 mcg/kg/wk combo w/ ribavirin W/P: [C, ?/–] CI: Psychological disorder Hx CI: Autoimmune hep, decompensated liver Dz, hemoglobinopathy Disp: Vials 50, 80, 120, 150 mcg/0.5 mL; Redipen 50, 80, 120, 150 mcg/5 mL; reconstitute w/ 0.7 mL w/ sterile water SE: Depression, insomnia, suicidal behavior, GI upset, neutropenia, thrombocytopenia, alopecia, pruritus Notes: Give hs or w/ APAP to ↓ flu-like Sxs; monitor CBC/plt; use immediately or store in refrigerator × 24 h; do not freeze

Pegloticase (Krystexxa) BOX: Anaphylaxis/Inf Rxn reported; admin in settings prepared to manage these Rxns; premed w/ antihistamines and cortico-steroids Uses: *Refractory gout* Acts: PEGylated recombinant urate-oxidase enzyme Dose: 8 mg IV q2wk (in 250 mL NS/½NS over 120 min) premed w/ anti-histamines and corticosteroids W/P: [C, –] CI: G6PD deficiency Disp: Inj 8 mg/mL in 1 mL vial SE: Inf Rxn (anaphylaxis, urticaria, pruritis, erythema, CP, dyspnea); may cause gout flare, N Notes: uric acid level before each Inf, consider D/C if 2 consecutive levels > 6 mg/dL; do not IV push

Pemetrexed (Alimta) Uses: *w/ Cisplatin in nonresectable mesothelioma*, NSCLC Acts: Antifolate antineoplastic Dose: 500 mg/m² IV over 10 min q3wk; hold if CrCl < 45 mL/min; give w/ vit B₁₂ (1000 mcg IM q9wk) & folic acid (350–1000 mcg PO daily); start 1 wk before; dexamethasone 4 mg PO bid × 3, start 1 d before each Rx W/P: [D, –] w/ Renal/hepatic/BM impair CI: Component sensitivity Disp: 500-mg vial SE: Neutropenia, thrombocytopenia, N/V/D, anorexia, stomatitis, renal
failure, neuropathy, fever, fatigue, mood changes, dyspnea, anaphylactic Rxns Notes: Avoid NSAIDs, follow CBC/plt; ↓ dose w/ grade 3–4 mucositis

**Pemirolast (Alamast) Uses:** *Allergic conjunctivitis*  
**Acts:** Mast cell stabilizer  
**Dose:** 1–2 gtt in each eye qid  
**W/P:** [C, ?/–]  
**Disp:** 0.1% (1 mg/mL) in 10-mL bottles  
**SE:** HA, rhinitis, cold/flu Sxs, local irritation  
**Notes:** Avoid NSAIDs,

**Penbutolol (Levatol) Uses:** *HTN*  
**Acts:** β-Adrenergic receptor blocker, β<sub>1</sub>, β<sub>2</sub>  
**Dose:** 20–40 mg/d; ↓ in hepatic Insuff  
**W/P:** [C 1st tri; D if 2nd/3rd tri, M]  
**CI:** Asthma, cardiogenic shock, cardiac failure, heart block, ↓ HR, COPD, pulm edema  
**Disp:** Tabs 20 mg  
**SE:** Flushing, ↓ BP, fatigue, hyperglycemia, GI upset, sexual dysfunction, bronchospasm  
**Notes:** ISA

**Penciclovir (Denavir) Uses:** *Herpes simplex (herpes labialis/cold sores)*  
**Acts:** Competitive inhib of DNA polymerase  
**Dose:** Apply at 1st sign of lesions, then q2h while awake × 4 d  
**W/P:** [B, ?/–]  
**CI:** Allergy, previous Rxn to famciclovir  
**Disp:** Cream 1%  
**SE:** Erythema, HA  
**Notes:** Do not apply to mucous membranes

**Penicillin G, Aqueous (Potassium or Sodium) (Pfizerpen, Pentids) Uses:** *Bacteremia, endocarditis, pericarditis, resp tract Infxns, meningitis, neurosyphilis, skin/skin structure Infxns*  
**Acts:** Bactericidal; ↓ cell wall synth.  
**Spectrum:** Most gram(+) (not staphylococci), streptococci, *N. meningitidis*, syphilis, clostridia, & anaerobes (not *Bacteroides*)  
**Dose:** **Adults.** Based on indication range 0.6–24 mill units/d in ÷ doses q4h.  
**Peds Newborns < 1 wk.** 25,000–50,000 units/kg/dose IV q12h.  
**Infants 1 wk–< 1 mo:** 25,000–50,000 units/kg/dose IV q8h.  
**Children:** 100,000–400,000 units/kg/24h IV ÷ q4h; ↓ in renal impair  
**W/P:** [B, M]  
**CI:** Allergy  
**Disp:** Powder for Inj  
**SE:** Allergic Rxns; interstitial nephritis, D, Szs  
**Notes:** Contains 1.7 mEq of K<sup>+</sup>/mill units

**Penicillin V (Pen-Vee K, Veetids, Others) Uses:** Susceptible streptococcal Infxns, otitis media, URIs, skin/soft-tissue Infxns (PCN-sensitive staphylococci)  
**Acts:** Bactericidal; ↓ cell wall synth.  
**Spectrum:** Most gram(+), including streptococci  
**Dose:** **Adults.** 250–500 mg PO q6h, q8h, q12h.  
**Peds.** 25–50 mg/kg/24 h PO in 3–4 ÷ dose above the age of 12 y, dose can be standardized vs Wt based; ↓ in renal impair; take on empty stomach  
**W/P:** [B, M]  
**CI:** Allergy  
**Disp:** Tabs 125, 250, 500 mg; susp 125, 250 mg/5 mL  
**SE:** GI upset, interstitial nephritis, anaphylaxis, convulsions  
**Notes:** Well-tolerated PO PCN; 250 mg = 400,000 units of PCN G

**Penicillin G Benzathine (Bicillin) Uses:** *Single-dose regimen for streptococcal pharyngitis, rheumatic fever, glomerulonephritis prophylaxis, & syphilis*  
**Acts:** Bactericidal; ↓ cell wall synth.  
**Spectrum:** See Penicillin G  
**Dose:** **Adults.** 1.2–2.4 mill units deep IM Inj q2–4wk.  
**Peds.** 50,000 units/kg/dose, 2.4 mill units/dose max; deep IM Inj q2–4 wk  
**W/P:** [B, M]  
**CI:** Allergy  
**Disp:** Inj 300,000, 600,000 units/mL; Bicillin L-A benzathine salt only; Bicillin C-R combo of benzathine & procaine (300,000 units procaine w/ 300,000 units benzathine/mL or 900,000 units benzathine w/ 300,000 units procaine/2 mL)  
**SE:** Inj site pain, acute interstitial nephritis, anaphylaxis  
**Notes:** LA parenteral PCN; levels up to 4 wk; drug of choice for noncongenital syphilis

**Penicillin G Procaine (Wycillin, Others) Uses:** *Infxns of resp tract, skin/soft tissue, scarlet fever, syphilis*  
**Acts:** Bactericidal; ↓ cell wall synth.  
**Spectrum:** PCN G-sensitive organisms that respond to low, persistent serum levels  
**Dose:** **Adults.** 0.6–4.8 mill units/d in ÷ doses q12–24h; give probenecid at least 30 min prior to PCN to prolong action.  
**Peds.** 25,000–50,000 units/kg/d IM ÷ dailybid  
**W/P:** [B, M]  
**CI:** Allergy  
**Disp:** Inj 300,000, 500,000, 600,000 units/mL  
**SE:** Pain at Inj site, interstitial nephritis, anaphylaxis  
**Notes:** IM use only; sustained action, w/ levels up to 4 wk; drug of choice for noncongenital syphilis
Pentamidine (Pentam 300, NebuPent) Uses: *Rx & prevention of PCP* Acts: ↓ DNA, RNA, phospholipid, & protein synth Dose: Rx: Adults & Peds. 4 mg/kg/24 h IV daily × 14–21 d. Prevention: Adults & Peds > 5 y. 300 mg once q4wk, give via Respirdag II nebulizer; ↓ IV w/ renal impair W/P: [C, ?] CI: Component allergy, use w/ didanosine Disp: Inj 300 mg/vial; aerosol 300 mg SE: Pancreatic cell necrosis w/ hyperglycemia; pancreatitis, CP, fatigue, dizziness, rash, GI upset, renal impair, blood dyscrasias (leukopenia, thrombocytopenia) Notes: Follow CBC, glucose, pancreatic Fxn monthly for first 3 mo; monitor for ↓ BP following IV dose; prolonged use may ↑ Infxn risk

Pentazocine (Talwin, Talwin Compound, Talwin NX) [C-IV] BOX: Oral use only; severe and potentially lethal Rxns from misuse by Inj Uses: *Mod–severe pain* Acts: Partial narcotic agonist–antagonist Dose: Adults. 30 mg IM or IV; 50–100 mg PO q3–4h PRN. Peds 5–8 y. 15 mg IM q4h PRN. 9–14 y: 30 mg IM q4h PRN; ↓ in renal/hepatic impair W/P: [C (1st tri, D w/ prolonged use/high dose near term), +/-] CI: Allergy, ↑ ICP (unless ventilated) Disp: Talwin Compound tab 12.5 mg + 325 mg ASA; Talwin NX 50 mg + 0.5 mg naloxone; Inj 30 mg/mL SE: Considerable dysphoria; drowsiness, GI upset, xerostomia, Szs Notes: 30–60 mg IM = 10 mg of morphine IM; Talwin NX has naloxone to curb abuse by nonoral route

Pentobarbital (Nembutal) [C-II] Uses: *Insomnia (short-term), convulsions*, sedation, induce coma w/ severe head injury Acts: Barbiturate Dose: Adults. Sedative: 150–200 mg IM, 100 mg IV, may repeat up to 500 mg max. Hypnotic: 100–200 mg PO or PR hs PRN. Induced coma: Load 5–10 mg/kg IV, w/ maint 1–3 mg/kg/h IV. Peds. Induced coma: As adult W/P: [D, +/-] Severe hepatic impair CI: Allergy Disp: Caps 50, 100 mg; elixir 18.2 mg/5 mL (= 20 mg pentobarbital); supp 30, 60, 120, 200 mg; Inj 50 mg/mL SE: Resp depression, ↓ BP w/ aggressive IV use for cerebral edema; ↓ HR, ↓ BP, sedation, lethargy, resp ↓, hangover, rash, SJS, blood dyscrasias Notes: Tolerance to sedative–hypnotic effect w/ in 1–2 wk

Pentosan Polysulfate Sodium (Elmiron) Uses: *Relieve pain/discomfort w/ interstitial cystitis* Acts: Bladder wall buffer Dose: 100 mg PO tid; on empty stomach w/ H₂O 1 h ac or 2 h pc W/P: [B, +/-] CI: Hypersensitivity to pentosan or related compounds (LMWH, heparin) Disp: Caps 100 mg SE: Alopecia, N/D, HA, ↑ LFTs, anticoagulant effects, ↓ plts, rectal bleed Notes: Reassess after 3 mo; related to LMWH, heparin

Pentoxifylline (Trental, Generic) Uses: *Rx Sxs of peripheral vascular Dz* Acts: ↓ Blood cell viscosity, restores RBC flexibility Dose: Adults. 400 mg PO tid pc; Rx min 8 wk for effect; ↓ to bid w/ GI/CNS SEs W/P: [C, +/-] CI: Cerebral/retinal hemorrhage, methylxanthine (caffeine) intolerance Disp: Tabs CR 400 mg; Tabs ER 400 mg SE: Dizziness, HA, GI upset

Perampanel (Fycompa) BOX: Serious/life-threatening psychiatric & behavioral Rxns (aggression, hostility, irritability, anger, homicidal threats/ideation) reported; monitor; ↓ dose or D/C if Sxs are severe/worsen Uses: *Adjunct in partial-onset Sz w/ or w/o secondarily generalized Szs* Acts: Noncompetitive AMPA glutamate receptor antag Dose: Adults & Peds > 12 y. 2 mg PO qhs if not on enzyme-inducing AEDs; 4 mg PO qhs if on enzyme-inducing AEDs; ↑ 2 mg qhs weekly; 12 mg qhs max; elderly, ↑ at 2-wk intervals; mild–mod hepatic impair 6 mg max & 4 mg w/ ↑ dose q 2wk; severe hepatic/renal impair or dialysis: avoid W/P: [C, -] √ For suicidal behavior; avoid strong CYP3A inducers; monitor/dose adjust w/ CYP450 inducers; 12-mg daily dose may ↓ effect of OCP w/ levonorgestrel CI: None Disp: Tabs 2, 4, 6, 8, 10, 12 mg SE: N, dizziness, vertigo, ataxia, gait
balance/disturb, falls, somnolence, fatigue, irritability, ↑ Wt, anxiety, aggression, anger, blurred vision

Perindopril Erbumine (Aceon, Generic) BOX: ACE inhib can cause death to developing fetus; D/C immediately w/ PRG Uses: *HTN*, CHF, DN, post-MI Acts: ACE inhib Dose: 2–8 mg/d ÷ dose; 16 mg/d max; avoid w/ food; ↓ w/ elderly/renal impair W/P: [C (1st tri, D 2nd & 3rd tri), ?/–] ACE inhib-induced angioedema CI: Bilateral RAS, primary hyperaldosteronism Disp: Tabs 2, 4, 8 mg

Permethrin (Elimite, Nix, Generic [OTC]) Uses: *Rx lice/scabies* Acts: Pediculicide Dose: Adults & Peds > 2 y. Lice: Saturate hair & scalp; allow 10 min before rinsing. Scabies: Apply cream head to toe; leave for 8–14 h, wash w/ H₂O W/P: [B, ?/–] CI: Allergy > 2 mo Disp: Topical lotion 1%; cream 5% SE: Local irritation Notes: Sprays available (Rid, A200, Nix) to disinfect clothing, bedding, combs, & brushes; lotion not OK in peds < 2 mo; may repeat after 7 d

Perphenazine (Generic) Uses: *Psychotic disorders, severe N* Acts: Phenothiazine, blocks brain dopaminergic receptors Dose: Adults. Antipsychotic: 4–16 mg PO tid; max 64 mg/d. Notes: Starting doses for schizophrenia lower in nonhospitalized pts N/V: 8–16 mg/d in ÷ doses. Peds 1–6 y. 4–6 mg/d PO in ÷ doses. 6–12 y: 6 mg/d PO in ÷ doses. > 12 y: 4–16 mg PO 2–4×/d; ↓ in hepatic Insuff W/P: [C, ?/–] NAG, severe ↑/↓ BP CI: Phenothiazine sensitivity, BM depression, severe liver or cardiac Dz Disp: Tabs 2, 4, 8, 16 mg SE: ↓ BP, ↑/↓ HR, EPS, drowsiness, Szs, photosens, skin discoloration, blood dyscrasias, constipation

Pertuzumab (Perjeta) BOX: Embryo-fetal death & birth defects. Animal studies: oligohydramnios, delayed renal development, & death. Advise pt of risk & need for effective contraception Uses: *HER2-pos metastatic breast CA w/ trastuzumab & docetaxel in pts who have not received prior anti-HER2 therapy or chemo* Acts: HER2 dimerization inhib Dose: Adults. 840 mg 60 min IV Inf × 1; then 420 mg 30–60 min IV Inf q3wk; see label tox dose adjust W/P: [D, –] LV dysfxn (monitor LVEF); Inf Rxn CI: None Disp: Inj vial 420 mg/14 mL SE: N/V/D, alopecia, ↓ RBC/WBC, fatigue, rash, peripheral neuropathy, hypersens, anaphylaxis, pyrexia, asthenia, stomatitis, pruritus, dry skin, paronychia, HA, dysgeusia, dizziness, myalgia, arthralgia, URI, insomnia

Phenazopyridine (Pyridium, Azo-Standard, Urogesic, Many Others) [OTC] Uses: *Lower urinary tract irritation* Acts: Anesthetic on urinary tract mucosa Dose: Adults. 100–200 mg PO tid; 2 d max w/ antibiotics for UTI; ↓ w/ renal Insuff W/P: [B, ?] Hepatic Dz CI: Renal failure, CrCl < 50 mL/min Disp: Tabs (Pyridium) 100, 200 mg [OTC] 45, 97.2, 97.5 mg SE: GI disturbances, red-orange urine color (can stain clothing, contacts), HA, dizziness, acute renal failure, methemoglobinemia, tinting of sclera/skin Notes: Take w/ food

Phenelzine (Nardil) BOX: Antidepressants ↑ risk of suicidal thinking and behavior in children and adolescents w/ major depressive disorder and other psychological disorders; not for peds use Uses: *Depression*, bulimia Acts: MAOI Dose: Adults. 15 mg PO tid, ↑ to 60–90 mg/d ÷ doses. Elderly: 17.5–60 mg/d ÷ doses W/P: [C, –] Interacts w/ SSRI, ergots, triptans CI: CHF, Hx liver Dz, pheochromocytoma Disp: Tabs 15 mg SE: Postural ↓ BP; edema, dizziness, sedation, rash, sexual dysfunction, xerostomia, constipation, urinary retention Notes: 2–4 wk for effect; avoid tyramine-containing foods (eg, cheeses)

Phenobarbital (Generic) [C-IV] Uses: *Sz disorders*, insomnia, anxiety Acts: Barbiturate Dose: Adults. Sedative–hypnotic: 30–120 mg/d PO or IM PRN. Anticonvulsant: Load 10–20 mg/kg × 1 IV
then 1–3 mg/kg/24 h PO or IV. **Peds.** Sedative–hypnotic: 2–3 mg/kg/24 h PO or IM hs PRN.

**Anticonvulsant:** Load 15–20 mg/kg × 1 IV then 3–5 mg/kg/24 h PO ÷ in 2–3 doses; ↓ w/ CrCl < 10 mL/min

**Disp:** Tabs 15, 30, 60, 100 mg; elixir 20 mg/5 mL; Inj 60, 65, 130 mg/mL

**SE:** ↓ HR, ↓ BP, hangover, SJS, blood dyscrasias, resp depression

**Notes:** Tolerance develops to sedation; paradoxic hyperactivity seen in ped pts; long half-life allows single daily dosing.

**Levels:**

- **Trough:** Just before next dose.
- **Therapeutic:** Trough: 15–40 mcg/mL
- **Toxic:** Trough: > 40 mcg/mL

**half-life:** 40–120 h

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**Phentermine (Adipex-P, Suprenza, Generic) Uses:** *Wt loss in exogenous obesity*

**Acts:** Anorectic/sympathomimetic amine

**Dose:** **Adults.** 1 daily in a.m., lowest dose possible; place on tongue, allow to dissolve, then swallow

**W/P:** [X, –] CI: CV Dz, hyperthyroidism, glaucoma, PRG, nursing, w/ in 14 d of MAOI

**Disp:** Tabs 15, 30, 37.5 mg; (Suprenza) ODT 15, 30, 37.5 mg

**SE:** Paresthesia, dizziness, dysgeusia, insomnia, constipation, dry mouth, ↑ HR, ↑ BP, palpitations, HA, restlessness, mood change, memory impair, metabolic acidosis, kidney stones, ↑ Cr, acute myopia, glaucoma, depression, suicidal behavior/ideation

**Notes:** √ PRG baseline & qmo; effective contraception necessary, √ HR/BP/electrolytes REMS restricted distribution

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**Phenylephrine, Nasal (Neo-Synephrine Nasal [OTC]) BOX:** Not for use in peds < 2 y

**Uses:** *Nasal congestion*

**Acts:** α-Adrenergic agonist

**Dose:** **Adults.** 0.25–1% 2–3 sprays/drops in each nostril 94 h PRN. **Peds 2–6 y.** 0.125% 1 drop/nostril q3–4h. **6–12 y:** 1–2 sprays/nostril q4h 0.25% 2–3 drops

**W/P:** [C, +/–] HTN, acute pancreatitis, hep, coronary Dz, NAG, hyperthyroidism

**CI:** ↓ HR, arrhythmias

**Disp:** Nasal spray 0.25, 0.5, 1%; drops: 0.125, 0.25 mg/mL

**SE:** Tearing, HA, irritation, eye pain, photophobia, arrhythmia, tremor

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**Phenylephrine, Ophthalmic (Neo-Synephrine Ophthalmic, AK-Dilate, Zincfrin [OTC])**

**Uses:** *Mydriasis, ocular redness [OTC], peri-operative mydriasis, posterior synechiae, uveitis w/ posterior synechiae*

**Acts:** α-Adrenergic agonist

**Dose:** **Adults.** Redness: 1 gtt 0.12% q3–4h PRN up to qid. **Exam mydriasis:** 1 gtt 2.5% (15 min–1 h for effect). **Preop:** 1 gtt 2.5–10% 30–60 min preop.

**Peds.** As adult, only use 2.5% for exam, preop, and ocular conditions

**W/P:** [C, May cause late-term fetal anoxia/↓ HR, +/–] HTN, w/ elderly w/ CAD

**CI:** NAG

**Disp:** Ophthal soln 0.12% (Zincfrin OTC), 2.5, 10%

**SE:** Tearing, HA, irritation, eye pain, photophobia, arrhythmia, tremor

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**Phenylephrine, Oral (Sudafed, Others [OTC]) BOX:** Not for use in peds < 2 y

**Uses:** *Nasal congestion*

**Acts:** α-Adrenergic agonist

**Dose:** **Adults.** 10–20 mg PO q4h PRN, max 60 mg/d. **Peds.** 4–5 y: 2.5 mg q4h max 6 doses/d; > 6–12: 5 mg q4h, max 30 mg/d ≥ 12: adult dosing

**W/P:** [C, +/–] HTN, acute pancreatitis, hep, coronary Dz, NAG, hyperthyroidism

**CI:** MAOI w/ in 14 d, NAG,
severe ↑ BP or CAD, urinary retention

Disp: Liq 7.5 mg/5 mL; drops: 1.25/0.8 mL, 2.5 mg/5 mL; tabs 5, 10 mg; chew tabs 10 mg; tabs once daily 10 mg; strips: 1.25, 2.5, 10 mg; many combo OTC products

SE: Arrhythmias, HTN, HA, agitation, anxiety, tremor, palpitations; can be chemically processed into methamphetamine; products now sold behind pharmacy counter w/ o prescription

Phenylephrine, Systemic (Generic) BOX: Prescribers should be aware of full prescribing information before use

Uses: *Vascular failure in shock, allergy, or drug-induced ↓ BP*

Acts: α-Adrenergic agonist

Dose: 

**Adults.** Mild–mod ↓ BP: 2–5 mg IM or SQ ↑ BP for 2 h; 0.1–0.5 mg IV elevates BP for 15 min. Severe ↓ BP/shock: Cont Inf at 100–180 mcg/min; after BP stable **Peds.** ↓ BP: 5–20 mcg/kg/dose IV q10–15min or 0.1–0.5 mcg/kg/min IV Inf, titrate to effect

W/P: [C, +/-] HTN, acute pancreatitis, hep, coronary Dz, NAG, hyperthyroidism

CI: ↓ HR, arrhythmias

Disp: Inj 10 mg/mL

SE: Arrhythmias, HTN, peripheral vasoconstriction ↑ w/ oxytocin, MAOIs, & TCAs; HA, weakness, necrosis, ↓ renal perfusion

Notes: Restore blood vol if loss has occurred; use large veins to avoid extrav; phentolamine 10 mg in 10–15 mL of NS for local Inj to Rx extrav

Phenytoin (Dilantin, Generic) Uses: *Sz disorders*

Acts: ↓ Sz spread in the motor cortex

Dose: 

**Adults & Peds. Load:** 15–20 mg/kg IV, 50 mg/min max or PO in 400-mg doses at 4-h intervals; **Adults. Maint:** Initial 200 mg PO or IV bid or 300 mg hs then follow levels; alternatively 5–7 mg/kg/d based on IBW ÷ daily-tid, **Peds. Maint:** 4–7 mg/kg/24h PO or IV ÷ daily-bid; avoid PO susp (erratic absorption)

W/P: [D, +] CI: Heart block, sinus bradycardia

Disp: Dilantin Infatab: chew 50 mg. Dilantin/Phenytek: caps 100 mg; caps, ER 30, 100, 200, 300 mg; susp 125 mg/5 mL; Inj 50 mg/mL

SE: Nystagmus/ataxia early signs of tox; gum hyperplasia w/ long-term use.

Notes: Levels: **Trough:** Just before next dose. **Therapeutic:** 10–20 mcg/mL **Toxic:** > 20 mcg/mL

Phenytoin albumin bound, levels = bound & free phenytoin; w/ ↓ albumin & azotemia, low levels may be therapeutic (nl free levels); do not change dosage at intervals < 7–10 d; hold tube feeds 1 h before and after dose if using oral susp; avoid large dose ↑

Physostigmine (Generic) Uses: *Reverse toxic CNS effects of atropine & scopolamine OD*

Acts: Reversible cholinesterase inhib

Dose: 

**Adults.** 0.5–2 mg IV or IM q20 min **Peds.** 0.01–0.03 mg/kg/dose IV q5–10 min up to 2 mg total PRN

W/P: [C, ?] CI: GI/GU obst, CV Dz, asthma

Disp: Inj 1 mg/mL

SE: Rapid IV administration associated w/ Szs; cholinergic SEs; sweating, salivation, lacrimation, GI upset, asystole, changes in HR

Notes: Excessive readministration can result in cholinergic crisis; crisis reversed w/ atropine; contains bisulfite (allergy possible)

Phytonadione [Vitamin K1] (Mephyton, Generic) BOX: Hypersens Rxns associated w/ or immediately following Inf

Uses: *Coagulation disorders d/t faulty formation of factors II, VII, IX, X*; hyperalimentation

Acts: Cofactor for production of factors II, VII, IX, & X

Dose: 

**Adults & Peds. Anticoagulant-induced prothrombin deficiency:** 1–10 mg PO or IV slowly. **Hyperalimentation:** 10 mg IM or IV qwk. **Infants:** 0.5–1 mg/dose; IM w/ in 1 h of brith, or PO

W/P: [C, +/–] CI: Allergy

Disp: Tabs 5 mg; Inj 2, 10 mg/mL

SE: Anaphylaxis from IV dosage; give IV slowly; GI upset (PO), Inf site Rxns

Notes: w/ Parenteral Rx, 1st change in PT/INR usually seen in 12–24 h; use makes rewarfarinization more difficult; see label for dosing algorithm based on INR of S/Sx of bleeding

Pimecrolimus (Elidel) BOX: Associated w/ rare skin malignancies and lymphoma, limit to area, not for age < 2 y

Uses: *Atopic dermatitis* refractory, severe perianal itching

Acts: Inhibits T lymphocytes

Dose: 

**Adults & Peds > 2 y.** Apply bid W/P: [C, ?/–] w/ Local Infxn, lymphadenopathy;
immunocompromised; avoid in pts < 2 y CI: Allergy component, < 2 y Disp: Cream 1% SE:
Phototox, local irritation/burning, flu-like Sxs, may ↑ malignancy Notes: Use on dry skin only; wash hands after; 2nd-line/short-term use only

Pimozide (Orap) BOX: ↑ Mortality in elderly w/ dementia-related psychosis Uses: * Tourette Dz*
agitation, psychosis Acts: Typical antipsychotic, dopamine antagonist Dose: Initial 1–2 mg/d to max of 10 mg/d or 0.2 mg/kg/d (whichever is less); ↓ hepatic impair W/P: [C/–] NAG, elderly, hepatic impair, neurologic Dz, CI: compound hypersens, CNS depression, coma, dysrhythmia, ↑ QT syndrome, w/ QT prolonging drugs, ↓ K, ↓ Mg, w/ CYP3A4 inhibit (Table 10, p 319) Disp: Tabs 1, 2 mg SE: CNS (somnolence, agitation, others), rash, xerostomia, weakness, rigidity, visual changes, constipation, ↑ salivation, akathisia, tardive dyskinesia, neuroleptic malignant syndrome, ↑ QT Notes: 

Pindolol (Generic) Uses: *HTN*
Acts: β-Adrenergic receptor blocker, β1, β2, ISA Dose: 5–10 mg bid, 60 mg/d max; ↓ in hepatic/renal failure W/P: [B (1st tri; D 2nd/3rd tri), +/–] CI: Uncompensated CHF, cardiogenic shock, ↓ HR, heart block, asthma, COPD Disp: Tabs 5, 10 mg SE: Insomnia, dizziness, fatigue, edema, GI upset, dyspnea; fluid retention may exacerbate CHF

Pioglitazone (Actos, Generic) BOX: May cause or worsen CHF Uses: *Type 2 DM*
Acts: Combined ↑ insulin sensitivity w/ ↓ hepatic glucose release Dose: Initial 1 tab PO daily or bid, titrate; max daily pioglitazone 45 mg & metformin 2550 mg; XR: 1 tab PO daily w/ evening meal; max daily pioglitazone 45 mg & metformin IR 2550 mg, metformin ER 2000 mg; give w/ meals W/P: [C, –] Stop w/ radiologic IV contrast agents; w/ Hx bladder CA; do not use w/ active bladder CA CI: CHF, renal impair, acidosis Disp: Tabs (pioglitazone mg/metformin mg): 15/500, 15/850; Tabs XR (pioglitazone mg/metformin ER mg) 15/1000, 30/1000 mg SE: Lactic acidosis, CHF, ↓ glucose, edema, Wt gain, myalgia, URI, HA, hypoglycemia, edema, ↑ fracture risk in women; may ↑ bladder CA risk Notes: Follow LFTs; ↑ fracture risk in women receiving pioglitazone; pioglitazone may ↑ bladder CA risk

Pioperacillin/Tazobactam (Zosyn, Generic) Uses: *Infxns of skin, bone, resp & urinary tract, Abd, sepsis*
Acts: 4th-gen PCN plus β-lactamase inhib; bactericidal; ↓ cell wall synth. Spectrum: Good gram(+), excellent gram(–); anaerobes & β-lactamase producers Dose: Adults. 3.375–4.5 g IV q6h; ↓ in renal Insuff W/P: [B, M] CI: PCN or β-lactam sensitivity Disp: Frozen and powder for Inj: 2.25, 3.375, 4.5 g SE: D, HA, insomnia, GI upset, liver damage Notes: Often used in combo w/ aminoglycoside

Pirbuterol (Maxair, Autohaler) Uses: *Prevention & Rx reversible bronchospasm*
Acts: β2-Adrenergic agonist Dose: 2 Inh q4–6h; max 12 Inh/d W/P: [C, ?/–] Disp: Aerosol 0.2 mg/actuation (contains ozone-depleting CFCs; will be gradually removed from US market) SE: Nervousness, restlessness, trembling, HA, taste changes, tachycardia Notes: Teach pt proper inhaler technique

Piroxicam (Feldene, Generic) BOX: May ↑ risk of cardiovascular CV events & GI bleeding Uses:
Arthritis & pain: Acts: NSAID; ↓ prostaglandins  
Dose: 10–20 mg/d  
W/P: [C/D if 3rd tri, –] GI bleeding  
CI: ASA/NSAID sensitivity  
Disp: Caps 10, 20 mg SE: Dizziness, rash, GI upset, edema, acute renal failure, peptic ulcer

Pitavastatin (Livalo) Uses: *Reduce elevated total cholesterol*  
Acts: Statin, inhibits HMG-CoA reductase  
Dose: 1–4 mg once/d w/o regard to meals; CrCl < 60 mL/min start 1 mg w/ 2 mg max  
W/P: [X, –] May cause myopathy and rhabdomyolysis  
CI: Active liver Dz, with lopinavir/ritonavir/cyclosporine, severe renal impair not on dialysis  
Disp: Tabs 1, 2, 4 mg SE: Dizziness, rash, GI upset, edema, acute renal failure, peptic ulcer  
Notes: LFTs; OK w/ grapefruit

Plasma Protein Fraction (Plasmanate) Uses: *Shock & ↓ BP*  
Acts: Plasma vol expander  
Dose: Adults. Initial: 250–500 mL IV (not > 10 mL/min); subsequent Inf based on response.  
Peds. 10–15 mL/kg/dose IV; subsequent Inf based on response; safety & efficacy in children not established  
W/P: [C, +] CI: Renal Insuff, CHF, cardiopulmonary bypass  
Disp: Inj 5% SE: ↓ BP w/ rapid Inf; hypocoagulability, metabolic acidosis, PE  
Notes: 0.25 mEq K/L & 145 mEq Na/L; not substitute for RBC

Plerixafor (Mozobil) Uses: *Mobilize stem cells for ABMT in lymphoma and myeloma in combo w/G-CSF*  
Acts: Hematopoietic stem cell mobilizer  
Dose: 0.24 mg/kg SQ daily; max 40 mg/d; CrCl < 50 mL/min: 0.16 mg/kg, max 27 mg/d)  
W/P: [D, ?] CI: Disp: IV: 20 mg/mL (1.2 mL) SE: HA, N/V/D, Inj site Rxns, ↑ WBC, ↓ plt  
Notes: Give w/ filgrastim 10 mcg/kg

Pneumococcal 13-Valent Conjugate Vaccine (Prevnar 13) Uses: *Immunization against pneumococcal Infxns in infants & children*  
Acts: Active immunization  
Dose: 0.5 mL IM/dose; series of 4 doses; 1st dose age 2 mo; then 4 mo, 6 mo, and 12–15 mo; if previous Prevnar switch to Prevnar 13; if completed Prevnar series, supplemental dose Prevnar 13 at least 8 wk after last Prevnar dose  
W/P: [C, +] w/ ↓ plt CI: Sensitivity to components/diphtheria toxoid, febrile illness  
Disp: Inj SE: Local Rxns, anorexia, fever, irritability, ↑/↓ sleep, V, D  
Notes: Keep epi (1:1000) available for Rxns; replaces Prevnar (has additional spectrum); does not replace Pneumovax-23 in age > 24 mo w/ immunosuppression; inactivated capsular antigens

Pneumococcal Vaccine, Polyvalent (Pneumovax 23) Uses: *Immunization against pneumococcal Infxns in pts at high risk (all pts > 65 y, also asplenia, sickle cell Dz, HIV, and other immunocompromised and w/ chronic illnesses)*  
Acts: Active immunization  
Dose: 0.5 mL IM or SQ  
W/P: [C, ?] CI: Do not vaccinate during immunosuppressive Rx  
Disp: Inj 0.5 mL SE: Fever, Inj site Rxs, also hemolytic anemia w/ other heme conditions, ↓ plt w/ stable ITP, anaphylaxis, Guillain-Barré synd  
Notes: Keep epi (1:1000) available for Rxns. Revaccinate q3–5 y if very high risk (eg, asplenia, nephrotic synd), consider revaccination if > 6 y since initial or if previously vaccinated w/ 14-valent vaccine; inactivated capsular antigens

Podophyllin (Podocon-25, Condylox Gel 0.5%, Condylox) Uses: *Topical Rx of benign growths (genital & perianal warts [condylomata acuminata]*, papillomas, fibromas)  
Acts: Direct antimitotic effect; exact mechanism unknown  
Dose: Condylox gel & Condylox: Apply bid for 3 consecutive d/wk then hold for 4 d may repeat 4 × 0.5 mL/d max; Podocon-25: Use sparingly on the lesion, leave on for only 30–40 min for 1st application, then 1–4 h on subsequent applications, thoroughly wash off; limit < 5 mL or < 10 cm²/Rx  
W/P: [X, ?] Immunosuppression CI: DM, bleeding lesions  
Disp: Podocon-25 (w/ benzoin) 15-mL bottles; Condylox gel 0.5% 35-g clear gel; Condylox soln 0.5% 35-g clear SE: Local Rxns, sig absorption; anemias, tachycardia, paresthesias, GI upset, renal/hepatic damage  
Notes: Podocon-25 applied by the clinician; do not dispense directly to pt
Polyethylene Glycol [PEG]-Electrolyte Soln (GoLYTELY, Colyte) Uses: *Bowel prep prior to examination or surgery* Acts: Osmotic cathartic Dose: Adults. Following 3- to 4-h fast, drink 240 mL of soln q10min until 4 L consumed or until BMs are clear. Peds. 25–40 mL/kg/h for 4–10 h until BM clear; max dose 4L? W/P: [C, ?] CI: GI obst, bowel perforation, megacolon, UC Disp: Powder for recons to 4 L SE: Cramping or N, bloating Notes: 1st BM should occur in approximately 1 h; chilled soln more palatable; flavor packets available

Polyethylene Glycol [PEG] 3350 (MiraLAX [OTC]) Uses: *Occasional constipation* Acts: Osmotic laxative Dose: 17-g powder (1 heaping tsp) in 8 oz (1 cup) of H₂O & drink; max 14 d W/P: [C, ?] Rule out bowel obst before use CI: GI obst, allergy to PEG Disp: Powder for reconstitution; bottle cap holds 17 g SE: Upset stomach, bloating, cramping, gas, severe D, hives Notes: Can add to H₂O, juice, soda, coffee, or tea

Pomalidomide (Pomalyst) BOX: CI in PRG. A thalidomide analogue: a teratogen that causes life-threatening birth defects. Obtain 2 negative PRG tests prior to use; use 2 methods of contraception or abtain from sex during & for 4 wk after stopping. Only available through POMALYST REMS Program. Risk for VTE Uses: *Multiple myeloma w/ 2 prior therapies including lenalidomide & bortezomib & w/ Dz prog on or w/ in 60 d of therapy* Acts: Immunomodulatory w/ antineoplastic activity Dose: Adults. 4 mg PO daily d 1–21 of 28-d cycle; repeat until Dz prog; on empty stomach, swallow whole; see label for tox dose adjustments; avoid w/ SCr > 3 mg/dL, bili > 2 mg/dL, AST/ALT > 3 × ULN W/P: [X, –] √ for hematologic tox; avoid w/ strong inhib/induc CYP1A2, CYP3A, or P-glycoprotein; smoking ↓ efficacy CI: PRG Disp: Caps 1, 2, 3, 4 mg SE: Fatigue, asthenia, ↓ WBC/HGB/plts, N/V/D, constipation, dyspnea, URI, back pain, pyrexia, VTE, dizziness, confusion, neuropathy, hypersens Rxn, rash Notes: Do not donate blood during Tx & × 1 mo after; males must use condom during sex w/ Tx & × 28 d after; do not donate sperm

Posaconazole (Noxafil) Uses: *Prevent Aspergillus and Candida Infxns in severely immunocompromised; Rx oropharyngeal candida* Acts: ↓ Cell membrane ergosterol synth Dose: Adults. Invasive fungal prophylaxis: 200 mg PO tid. Oropharyngeal candidiasis: 100 mg bid on day 1, then 100 mg daily × 13 d Peds > 13 y. See adult dose W/P: [C, ?] Multiple drug interactions; ↑ QT, cardiac Dzs, severe renal/liver impair CI: Component hypersens; w/ many drugs including alfuzosin, astemizole, alprazolam, phenothiazines, terfenadine, triazolam, others Disp: Soln 40 mg/mL SE: ↑ QT, ↑ LFTs, hepatic failure, fever, N/V/D, HA, Abd pain, anemia, ↓ plt, ↓ K⁺, dyspnea, cough, anorexia, fatigue Notes: Monitor LFTs, CBC, lytes; administer w/ meal or nutritional supplement

Potassium Citrate (Urocit-K, Generic) Uses: *Alkalinize urine, prevention of urinary stones (uric acid, calcium stones if hypocitraturic)* Acts: Urinary alkalinizer Dose: Adults. 30–60 mEq/d based on severity of hypocitraturia. Max 100 mEq/d W/P: [A, +] CI: Severe renal impair, dehydration, ↑ K⁺, peptic ulcer; w/ K⁺-sparing diuretics, salt substitutes Disp: Tabs 5, 10, 15 mEq/d SE: GI upset, ↓ Ca²⁺, ↑ K⁺, metabolic alkalosis

Potassium Iodide [Lugol Soln] (Iosat, SSKI, Thyro-Block, ThyroSafe, ThyroShield) [OTC] Uses: *Thyroid storm*, ↓ vascularity before thyroid surgery, block thyroid uptake of radioactive iodine (nuclear scans or nuclear emergency), thin bronchial secretions Acts: Iodine suppl Dose: Adults & Peds > 2 y. Preop thyroidectomy: 50–100 mg PO tid (1–2 gtts or 0.05–0.1 mL SSKI); give 10 d preop. Protection: 130 mg/d. Peds. Protection: < 1 y: 16.25 mg qd. 1 mo–3y: 32.5 mg qd. 3–18
**Potassium Supplements (Kaon, Kaochlor, K-Lor, Slow-K, Micro-K, Klorvess, Generic)**

**Uses:** *Prevention or Rx of ↓ K⁺* (eg, diuretic use)

**Acts:** K⁺ supl

**Dose:**
- Adults: 20–100 mEq/d PO ÷ 1–4×/d; IV 10–20 mEq/h, max 40 mEq/h & 150 mEq/d (monitor K⁺ levels frequently and in presence of continuous ECG monitoring w/ high-dose IV).
- Peds. Calculate K⁺ deficit; 1–3 mEq/kg/d PO ÷ 1–4×/d; IV max dose 0.5–1 mEq/kg/× 1–2 h

**W/P:** [D, +] Renal Insuff, use w/ NSAIDs & ACE inhib

**CI:** ↑ K⁺

**Disp:** PO forms (Table 6, p 314) Inj

**SE:** GI irritation; ↓ HR, ↑ K⁺, heart block

**Notes:** Mix powder & liq w/ beverage (unsalted tomato juice, etc); swallow SR tabs must be swallowed whole; follow monitor K⁺; Cl⁻ salt OK w/ alkalosis; w/ acidosis use acetate, bicarbonate, citrate, or gluconate salt; do not administer IV K⁺ undiluted

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**Pralatrexate (Folotyn)**

**Uses:** *Tx refractory T-cell lymphoma*

**Acts:** Folate analogue metabolic inhibit; ↓ dihydrofolate reductase

**Dose:** Adults. IV push over 3–5 min: 30 mg/m² once weekly for 6 wk

**W/P:** [D, –] Disp: Inj 20 mg/mL (1 mL, 2 mL)

**SE:** ↓ Plt, anemia, ↓ WBC, mucositis, N/V/D, edema, fever, fatigue, rash

**Notes:** Give folic acid supplements prior to and after; ANC should be ≥ 1000/mm³

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**Pramipexole (Mirapex, Mirapex ER, Generic)**

**Uses:** *Parkinson Dz (Mirapex, Mirapex ER), restless leg synd (Mirapex)*

**Acts:** Dopamine agonist

**Dose:**
- Mirapex: 1.5–4.5 mg/d PO, initial 0.375 mg/d in 3 ÷ doses; titrate slowly;
- RLS: 0.125–0.5 mg PO 2–3 h before bedtime.
- Mirapex ER: Start 0.375 PO daily, ↑ dose every 5–7 d to 0.75, then by 0.75 mg to max 4.5 mg/d

**W/P:** [C, ?/–] Daytime falling asleep, ↓ BP

**CI:** None

**Disp:** Mirapex: Tabs 0.125, 0.25, 0.5, 0.75, 1, 1.5 mg; Mirapex ER: 0.375, 0.75, 1.5, 2.25, 3, 3.75, 4.5 mg

**SE:** Somnolence, N, constipation, dizziness, fatigue, hallucinations, dry mouth, muscle spasms, edema

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**Pramoxine (Anusol Ointment, ProctoFoam-NS, Others)**

**Uses:** *Relief of pain & itching from hemorrhoids, anorectal surgery*; topical for burns & dermatosis

**Acts:** Topical anesthetic

**Dose:** Apply freely to anal area 3–5×/d

**W/P:** [C, ?] Disp: [OTC] All 1%; foam, cream, oint, lotion, gel, pads, spray

**SE:** Contact dermatitis, mucosal thinning w/ chronic use

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**Pramoxine/Hydrocortisone (ProctoFoam-HC)**

**Uses:** *Relief of pain & itching from hemorrhoids*

**Acts:** Topical anesthetic, anti-inflammatory

**Dose:** Apply freely to anal area tid-qid

**W/P:** [C, ?/–] Disp: Cream: pramoxine 1% acetate 1/2.5/2.35%, foam: pramoxine 1% hydrocortisone 1%; lotion: pramoxine 1% hydrocortisone 1/2.5%; ointment pramoxine 1% & hydrocortisone 1/2.5%

**SE:** Contact dermatitis, mucosal thinning w/ chronic use

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**Prasugrel (Effient)**

**BOX:** Can cause significant, sometimes fatal, bleeding; do not use w/ planned CABG, w/ active bleeding, Hx TIA or stroke or pts > 75 y

**Uses:** *↓ Thrombotic CV events (eg, stent thrombosis) post-PCI*, administer ASAP in ECC setting w/ high-risk ST depression or T-wave inversion w/ planned PCI

**Acts:** ↓ Plt aggregation

**Dose:** 10 mg/d; Wt < 60 kg, consider 5 mg/d; 60 mg PO loading dose in ECC; use at least 12 mo w/ cardiac stent (bare or drug eluting); consider > 15 mo w/ drug eluting stent

**W/P:** [B, ?] Active bleeding; ↑ bleed risk; w/ CYP3A4 substrates

**CI:** Active bleed, Hx TIA/stroke risk factors: ≥ 75 y, propensity to bleed, Wt < 60 kg, CABG, meds that ↑
bleeding Disp: Tabs 5, 10 mg SE: ↑ Bleeding time, ↑ BP, GI intolerance, HA, dizziness, rash, ↓ WBC Notes: Plt aggregation to baseline ~ 7 d after D/C, plt transfusion reverses acutely

Pravastatin (Pravachol, Generic) Uses: *↓ Cholesterol* Acts: HMGCoA reductase inhib Dose: 10–80 mg PO hs; ↓ in sig renal/hepatic impair W/P: [X, –] w/ Gemfibrozil CI: Liver Dz or persistent LFTs ↑ Disp: Tabs 10, 20, 40, 80 mg SE: ↑ Bleeding time, ↑ BP, GI intolerance, HA, dizziness, rash, ↓ WBC Notes: Plt aggregation to baseline ~ 7 d after D/C, plt transfusion reverses acutely

Pravastatin (Pravachol, Generic) Uses: *↓ Cholesterol* Acts: HMGCoA reductase inhib Dose: 10–80 mg PO hs; ↓ in sig renal/hepatic impair W/P: [X, –] w/ Gemfibrozil CI: Liver Dz or persistent LFTs ↑ Disp: Tabs 10, 20, 40, 80 mg SE: Use caution w/ concurrent gemfibrozil; HA, GI upset, hep, myopathy, renal failure Notes: OK w/ grapefruit juice

Prazosin (Minipress, Generic) Uses: *HTN* Acts: Peripherally acting α-adrenergic blocker Dose: Adults. 1 mg PO tid; can ↑ to 20 mg/d max PRN. Peds. 0.05–0.1 mg/kg/d in 3 ÷ doses; max 0.5 mg/kg/d W/P: [C, ?] Use w/ phosphodiesterase-5 (PDE5) inhib (eg, sildenafil) can cause ↓ BP CI: Component allergy, concurrent use of PDE5 inhib Disp: Caps 1, 2, 5 mg; tabs ER 2.5, 5 mg SE: Use caution w/ concurrent gemfibrozil; HA, GI upset, hep, myopathy, renal failure Notes: OK w/ grapefruit juice

Prednisolone (Flo-Pred, Omnipred, Orapred, Pediapred, Generic) (See Steroids, p 259 & Table 2, p 301)

Prednisone (Generic)(See Steroids, p 259 & Table 2, p 301)

Pregabalin (Lyrica, Generic) Uses: *DM peripheral neuropathy pain; postherpetic neuralgia; fibromyalgia; adjunct w/ adult partial onset Szs* Acts: Nerve transmission modulator, antinociceptive, antiseizure effect; mechanism ?; related to gabapentin Dose: Neuropathic pain: 50 mg PO tid, ↑ to 300 mg/d w/ in 1 wk based on response, 300 mg/d max Postherpetic neuralgia: 75–150 mg bid or 50–100 mg tid; start 75 mg bid or 50 mg tid; ↑ to 300 mg/d w/ in 1 wk PRN; if pain persists after 2–4 wk, ↑ to 600 mg/d. Partial onset Sz: Start 150 mg/d (75 mg bid or 50 mg tid) may ↑ to max 600 mg/d; ↓ w/ CrCl < 60; w/ or w/o food W/P: [C, –] w/ Sig renal impair (see PI), w/ elderly & severe CHF avoid abrupt D/C CI: Hypersensitivity Disp: Caps 25, 50, 75, 100, 150, 200, 225, 300 mg; soln 20 mg/mL SE: Dizziness, drowsiness, xerostomia, edema, blurred vision, Wt gain, difficulty concentrating; suicidal ideation Notes: w/ D/C, taper over at least 1 wk

Probenecid (Probalan, Generic) Uses: *Prevent gout & hyperuricemia; extends levels of PCNs & cephalosporins* Acts: Uricosuric, renal tubular blocker of weak organic anions Dose: Adults. Gout: 250 mg bid × 1 wk, then 500 mg PO bid; can ↑ by 500 mg/mo up to 2–3 g/d. Antibiotic effect: 1–2 g PO 30 min before dose. Peds > 2 y. 25 mg/kg, then 40 mg/kg/d PO qid W/P: [B, ?] CI: Uric acid kidney stones, initiations during acute gout attack, coadministration of salicylates, age < 2 y, MDD, renal impair Disp: Tabs 500 mg SE: HA, GI upset, rash, pruritus, dizziness, blood dyscrasias

Procainamide (Generic) BOX: Positive ANA titer or SLE w/ prolonged use; only use in life-threatening arrhythmias; hematologic tox can be severe, follow CBC Uses:

*Supraventricular/ventricular arrhythmias* Acts: Class 1a antiarrhythmic (Table 9, p 318) Dose: Adults. Recurrent VF/VT: 20–50 mg/min IV (total 17 mg/kg max). Maint: 1–4 mg/min. Stable wide-complex tachycardia of unknown origin, AF w/ rapid rate in WPW: 20 mg/min IV until arrhythmia suppression, ↓ BP, or QRS widens > 50%, then 1–4 mg/min. Recurrent VF/VT: 20–50 mg/min IV; max total 17 mg/kg. E C C 2010. Stable monomorphic VT, refractory reentry SVT, stable wide-complex tachycardia, AFib w/ WPW: 20 mg/min IV until one of these: arrhythmia stopped, hypotension, QRS widens > 50%, total 17 mg/kg; then maint Inf of 1–4 mg/min Peds. E C C 2010. SVT, aflutter, VT (w/ pulses): 15 mg/kg IV/IO over 30–60 min W/P: [C, +] ↓ In renal/hepatic impair CI: Complete heart block, 2nd-/3rd-degree heart block w/ o pacemaker, torsades de pointes, SLE
Disp: Inj 100, 500 mg/mL SE: ↓ BP, lupus-like synd, GI upset, taste perversion, arrhythmias, tachycardia, heart block, angioneurotic edema, blood dyscrasias Notes: Levels: Trough: Just before next dose. Therapeutic: 4–10 mcg/mL; N-acetyl procainamide (NAPA) + procaine 10–30 mcg/mL Toxic (procainamide only): > 10 mcg/mL; NAPA + procaine > 30 mcg/mL half-life: procaine 3–5 h, NAPA 6–10 h

Procarbazine (Matulane) BOX: Highly toxic; handle w/ care; should be administard under the supervision of an experienced CA chemotherapy physician Uses: *Hodgkin Dz*, NHL, brain & lung tumors Acts: Alkylating agent; ↓ DNA & RNA synth Dose: Per protocol W/P: [D, ?] w/ EtOH ingestion CI: Inadequate BM reserve Disp: Caps 50 mg SE: ↓ BM, hemolytic Rxns (w/ G6PD deficiency), N/V/D; disulfiram-like Rxn; cutaneous & constitutional Sxs, myalgia, arthralgia, CNS effects, azoosperma, cessation of menses

Promazine (Procydol, Procamol, Generic) BOX: ↑ Mortality in elderly pts w/ dementia related psychosis Uses: *N/V, agitation, & psychotic disorders* Acts: Phenothiazine; blocks postsynaptic dopaminergic CNS receptors Dose: Adults. Antiemetic: 5–10 mg PO 3–4×/d or 25 mg PR bid or 5–10 mg deep IM q4–6h. Antipsychotic: 10–20 mg IM acutely or 5–10 mg PO 3–4×/d for maint; ↑ doses may be required for antipsychotic effect. Peds. 0.1–0.15 mg/kg/dose IM q4–6h or 0.4 mg/kg/24 h PO/PR ÷ 3–4×/d W/P: [C, +/–] NAG, severe liver/cardiac Dz CI: Phenothiazine sensitivity, BM suppression; age < 2 y or Wt < 9 kg Disp: Tabs 5, 10 mg; syrup 5 mg/5 mL; supp 25 mg; Inj 5 mg/mL SE: EPS common; Rx w/ diphenhydramine or benztropine

Promazine (Promethegan, Generic) BOX: Do not use in pts < 2 y; resp depression risk; tissue damage, including gangrene w/ extravasation Uses: *N/V, motion sickness, adjunct to postop analgesics, sedation, rhinitis* Acts: Phenothiazine; blocks CNS postsynaptic mesolimbic dopaminergic receptors Dose: Adults. 12.5–50 mg PO, PR, or IM 2–4×/d PRN. Peds > 2 y 0.1–0.5 mg/kg/dose PO/or IM 4–6h PRN W/P: [C, +/-] Use w/ agents w/ resp depressant effects CI: Component allergy, NAG, age < 2 y Disp: Tabs 12.5, 25, 50 mg; syrup 6.25 mg/5 mL; supp 12.5, 25, 50 mg; Inj 25, 50 mg/mL SE: Drowsiness, tardive dyskinesia, EPS, lowered Sz threshold, ↓ BP, GI upset, blood dyscrasias, photosens, resp depression in children Notes: IM/PO preferred route; not SQ or intra-arterial

Propafenone (Rythmol, Rhythmol SR, Generic) BOX: Excess mortality or nonfatal cardiac arrest rate possible; avoid use w/ asymptomatic and symptomatic non–life-threatening ventricular arrhythmias Uses: *Life-threatening ventricular arrhythmias, AF* Acts: Class Ic antiarrhythmic (Table 9, p 318) Dose: Adults. 150–300 mg PO q8h. Peds. 8–10 mg/kg/d ÷ in 3–4 doses; may ↑ 2 mg/kg/d, 20 mg/kg/d max W/P: [C, ?] w/ Ritonavir, MI w/ in 2 y, w/ liver/renal impair, safety in peds not established CI: Uncontrolled CHF, bronchospasm, cardiogenic shock, AV block w/ o pacemaker Disp: Tabs 150, 225, 300 mg; SR caps 225, 325, 425 mg SE: Dizziness, unusual taste, 1st-degree heart block, arrhythmias, prolongs QRS & QT intervals; fatigue, GI upset, blood dyscrasias

Propantheline (Pro-Banthine, Generic) Uses: *PUD*, symptomatic Rx of small intestine hypermotility, spastic colon, ureteral spasm, bladder spasm, pyloro-spasm Acts: Antimuscarinic Dose: Adults. 15 mg PO ac & 30 mg PO hs; ↓ in elderly. Peds. 2–3 mg/kg/24 h PO ÷ 3–4×/d W/P: [C, ?] CI: NAG, UC, toxic megacolon, GI atony in elderly, MG, GI/GU obst Disp: 15 mg SE: Anticholinergic (eg, xerostomia, blurred vision)

Propofol (Diprivan, Generic) Uses: *Induction & maint of anesthesia; sedation in intubated pts*
Propoxyphene (Darvon-N); Propoxyphene/Acetaminophen (Generic); Propoxyphene/Aspirin (Generic) [C-IV] Notes: In November 2010 the FDA banned all products containing propoxyphene due to the increased risk of abnormal and potentially fatal heart rhythm disturbances

Pravastatin (Brand name: Pravachol, Generic) Uses: *Hypertension, peripheral vascular disease, coronary artery disease, hypercholesterolemia, hypertriglyceridemia* Acts: Inhibits HMG-CoA reductase, which is the rate-limiting enzyme in cholesterol synthesis Dose: Adults. Hypercholesterolemia: 20–80 mg/day PO. *Hypertension: 20–80 mg/day PO. Hypertriglyceridemia: 40–160 mg/day PO. Of note, it is hepatic metabolism, so any hepatic dysfunction will lower the bioavailability.

Propranolol (Inderal LA, Innopran XL, Generic) Uses: *HTN, angina, MI, hyperthyroidism, essential tremor, hypertrophic subaortic stenosis, pheochromocytoma; prevents migraines & atrial arrhythmias* Acts: ß-Adrenergic receptor blocker, β₁, β₂; only β-blocker to block conversion of T₄ to T₃ Dose: Adults. Angina: 80–320 mg/d PO ÷ 2–4×/d or 80–320 mg/d SR. Arrhythmia: 10–30 mg/dose PO q6–8h or 1 mg IV slowly, repeat q5min, 5 mg max. HTN: 40 mg PO bid or 60–80 mg/d SR, weekly to max 640 mg/d. Hypertrophic subaortic stenosis: 20–40 mg PO 3–4×/d. MI: 180–240 mg PO ÷ 3–4×/d, ↑ weekly 160–240 mg/d ÷ 3–4×/d max; wean if no response in 6 wk. Pheochromocytoma: 30–60 mg/d ÷ 3–4×/d. Thyrotoxicosis: 1–3 mg IV × 1; 10–40 mg PO q6h. Tremor: 40 mg PO bid, ↑ PRN 320 mg/d max

ECC 2010. SVT: 0.5–1 mg IV given over 1 min; repeat PRN up to 0.1 mg/kg. Peds. Arrhythmia: 0.5–1.0 mg/kg/d ÷ 3–4×/d, ↑ PRN q3–7d to 8 mg/kg max; 0.01–0.1 mg/kg IV over 10 min, 1 mg max infants, 3 mg max children. HTN: 0.5–1.0 mg/kg ÷ 3–4×/day, PRN q3–7d to 8 mg/kg/d max; ↓ in renal impair W/P: [C (1st tri, D if 2nd or 3rd tri), +] CI: Uncompensated CHF, cardiogenic shock, HR, heart block, PE, severe resp Dz Disp: Tabs 10, 20, 40, 80 mg; SR caps 60, 80, 120, 160 mg; oral soln 4, 8, mg/mL; Inj 1 mg/mL SE: ↓ HR, ↓ BP, fatigue, GI upset, ED

Propylthiouracil (Generic) BOX: Severe liver failure reported; use only if pt cannot tolerate methimazole; d/t fetal anomalies w/ methimazole, PTU may be DOC in 1st tri Uses: *Hyperthyroidism* Acts: ↓ Production of T₃ & T₄ & conversion of T₄ to T₃ Dose: Adults. Initial: 100 mg PO q8h (may need up to 1200 mg/d); after pt euthyroid (6–8 wk), taper dose by 1/2 q4–6wk to maint, 50–150 mg/24 h; can usually D/C in 2–3 y; ↓ in elderly. Peds. Initial: 5–7 mg/kg/24 h PO ÷ q8h. Maint: 1/3–2/3 of initial dose W/P: [D, –] See Box CI: Allergy Disp: Tabs 50 mg SE: Fever, rash, leukopenia, dizziness, GI upset, taste perversion, SLE-like synd, ↑ LFT, liver failure Notes: Monitor pt clinically; report any S/Sx of hepatic dysfunction, TFT and LFT

Protamine (Generic) BOX: Severe ↓ BP, CV collapse, noncardiogenic pulm edema, pulm vasoconstriction, and pulm HTN can occur; risk factors: high dose/overdose, repeat doses, prior protamine use, current or use of prior protamine- containing product (eg, NPH or protamine zinc insulin, some beta-blockers), fish allergy, prior vasectomy, severe LV dysfunction, abnormal pulm testing; weigh risk/benefit in pts w/ 1 or more risk factors; resuscitation equipment must be available Uses: *Reverse heparin effect* Acts: Neutralize heparin by forming a stable complex Dose: Based on degree of heparin reversal; give IV slowly; 1 mg reverses ~ 100 units of heparin given in the preceding 30 min; 50 mg max W/P: [C, ?] CI: Allergy Disp: Inj 10 mg/mL SE: Follow coagulation markers; anticoagulant effect if given w/ o heparin; ↓ BP, ↓ HR, dyspnea, hemorrhage Notes: √ aPTT
Prothrombin Complex Concentrate (Human) (Kcentra) BOX: Risk of fatal & nonfatal arterial & venous TE. Weigh risk of TE vs benefit of reversing VKA. May not be suitable for pts w/ Hx of TE w/ in the past 3 mo Uses: *Urgent reversal of VKA (vitamin K antagonist) induced coag factor deficiency in pts w/ acute major bleed* Acts: Nonactivated 4F-PCC containing vit K-dep factors II, VII, IX, X & antithrombotic proteins C & S Dose: INR 2–< 4: 25 units of factor IX/kg (max 2500 units); INR 4–6: 35 units of factor IX/kg (max 3500 units); INR > 6: 50 units of factor IX/kg (max 5000 units); IV only @ 0.12 mL/kg/min (max 8.4 mL/min); give w/ vit K W/P: [C, ?/–] Hypersens Rxn; S/Sxs of thrombosis; from human plasma, infectious agent risk CI: Hx anaphylactic/severe Rxn to factors II, VII, IX, X, protein C & S, heparin, antithrombin III, human albumin; DIC; Hx HIT Disp: Inj 500 units/vial (20–31 factor IX units/mL, potency on each carton) SE: N/V, HA, arthralgia, ↓ BP, stroke, PE, DVT

Pseudoephedrine (Many OTC Mono and Combination Brands) Uses: *Decongestant* Acts: Stimulates α-adrenergic receptors w/ vasoconstriction Dose: Adults. IR: 60 mg PO q4–6h PRN; ER: 120 mg PO q12h, 240 mg/d max. Peds 2–5 y. 15 mg q4–6h, 60 mg/24 h max. 6–12 y: 30 mg q4–6h, 120 mg/24 h max; ↓ w/ renal Insuff W/P: [C, +] Not rec for use in peds < 2 y CI: Poorly controlled HTN or CAD, w/ MAOIs w/ in 14 d, urinary retention Disp: IR tabs 30, 60 mg; ER caplets 60, 120 mg; ER tabs 120, 240 mg; liq 15, 30 mg/5 mL; syrup 15, 30 mg/5mL; multiple combo OTC products SE: HTN, insomnia, tachycardia, arrhythmias, nervousness, tremor Notes: Found in many OTC cough/cold preparations; OTC restricted distribution by state (illicit ingredient in methamphetamine production).

Psyllium (Konsyl, Metamucil, Generic) Uses: *Constipation & colonic diverticular Dz* Acts: Bulk laxative Dose: 1.25–30 g/d varies w/ specific product W/P: [B, ?] Effer-Syllium (effervescent psyllium) usually contains K+, caution w/ renal failure; phenylketonuria (in products w/ aspartame) CI: Suspected bowel obst Disp: Large variety available: granules; powder, caps, wafers SE: D, Abd cramps, bowel obst, constipation, bronchospasm Notes: Maintain adequate hydration

Pyrazinamide (Generic) Uses: *Active TB in combo w/ other agents* Acts: Bacteriostatic; unknown mechanism Dose: Adults. Dose varies based on Tx option chosen daily 1 × 2 wk–3 × wk; dosing based on lean body Wt; ↓ dose in renal/hepatic impair. Peds. 20–40 mg/kg/d PO ÷ daily-bid; ↓ w/ renal/hepatic impair W/P: [C, +/–] CI: Severe hepatic damage, acute gout Disp: Tabs 500 mg SE: Hepatotox, malaise, GI upset, arthralgia, myalgia, gout, photosens Notes: Use in combo w/ other anti-TB drugs; consult http://www.cdc.gov/tb/ for latest TB recommendations; dosage regimen differs for “directly observed” Rx

Pyridoxine [Vitamin B₆] (Generic) Uses: *Rx & prevention of vit B₆ deficiency* Acts: Vit B₆ suppl Dose: Adults. Deficiency: 10–20 mg/d PO. Drug-induced neuritis: 100–200 mg/d; 25–100 mg/d prophylaxis. Peds. 5–25 mg/d × 3 wk W/P: [A (C if doses exceed RDA), +] CI: Component allergy tabs 25, 50, 100, 250, 500 mg, tab SR 500 mg; liquid 200 mg, 15 mg; Inj: 100 mg/mL; caps: 50, 250

Quetiapine (Seroquel, Seroquel XR, Generic) BOX: Closely monitor pts for worsening depression or emergence of suicidality, particularly in ped pts; not for use in peds; ↑ mortality in elderly w/ dementia-related psychosis Uses: *Acute exacerbations of schizophrenia, bipolar Dz* Acts: Serotonin & dopamine antagonism Dose: 150–750 mg/d; initiate at 25–100 mg bid-tid; slowly ↑ dose; XR: 400–800 mg PO q P.M.; start ↑ 300 mg/d, 800 mg/d max ↓ dose w/ hepatic & geriatric pts
**Quinapril (Accupril, Generic)**

**Uses:** *HTN, CHF, DN, post-MI*

**Acts:** ACE inhib

**Dose:** 10–80 mg PO daily; ↓ in renal impair

**W/P:** [D, +] w/ RAS, vol depletion

**CI:** ACE inhib sensitivity, angioedema, PRG

**Disp:** Tabs 5, 10, 20, 40 mg

**SE:** Dizziness, HA, ↓ BP, impaired renal Fxn, angioedema, taste perversion, cough

**Quinidine (Generic)**

**Uses:** Prevention of tachydysrhythmias, malaria*

**Acts:** Class IA antiarrhythmic

**Dose:** Adults. Antiarrhythmic IR: 200–400 mg/dose q6h; ER: 300 mg q8–12h (sulfate) 324 mg q8–12h (gluconate) Peds. 15–60 mg/kg/24 h PO in 4–5 doses; ↓ in renal impair

**W/P:** [C, +] TTP, thrombocytopenia, medications that prolong QT interval, digitalis tox & AV block; conduction disorders

**Disp:** Sulfate: Tabs 200, 300 mg; SR tabs 300 mg. Gluco-nate: SR tabs 324 mg; Inj 80 mg/mL

**SE:** Extreme ↓ BP w/ IV use; syncope, QT prolongation, GI upset, arrhythmias, fatigue, cinchonism (tinnitus, hearing loss, delirium, visual changes), fever, hemolytic anemia, thrombocytopenia, rash

**Notes:** Levels: *Trough:* just before next dose. *Therapeutic:* 2–5 mcg/mL, some pts require higher levels

**Toxic:** > 10 mcg/mL

**Half-life:** 6–8h; sulfate salt 83% quinidine; gluco-nate salt 62% quinidine; use w/ drug that slows AV conduction (eg, digoxin, diltiazem, β-blocker)

267 mg of quinidine gluconate = 200 mg of quinidine sulfate

**Quinupristin/Dalfopristin (Synercid)**

**Uses:** Vancomycin-resistant Infxns d/t E. faecium & other gram(+)*

**Acts:** ↓ Ribosomal protein synth. *Spectrum:* Vancomycin-resistant E. faecium, methicillin-susceptible S. aureus, S. pyogenes; not against E. faecalis

**Dose:** Adults & Peds. 7.5 mg/kg IV q12h (central line preferred); incompatible w/ NS or heparin; flush IV w/ dextrose; ↓ w/ hepatic failure

**W/P:** [B, M] Multiple drug interactions w/ drugs metabolized by CYP3A4 (eg, cyclosporine) CI: Component allergy

**Disp:** Inj 500 mg (150 mg quinupristin/350 mg dalfopristin) SE: Hyperbilirubinemia, Inf site Rxns & pain, arthralgia, myalgia

**Rabeprazole (AcipHex)**

**Uses:** PUD, GERD, ZE* H. pylori

**Acts:** Proton pump inhib

**Dose:** 20 mg/d; may ↑ to 60 mg/d; H. pylori 20 mg PO bid × 7 d (w/ amoxicillin and clarithromycin); do not crush/chew tabs; do not use clopidogrel

**W/P:** [B, ?/–] Do not use w/ clopidogrel, possible ↓ effect (controversial)

**Disp:** Tabs 20 mg ER

**SE:** HA, fatigue, GI upset

**Notes:** ↑ Risk of fractures, C. difficile, CAP w/ all PPI; risk of hypomagnesemia w/ long-term use, monitor

**Raloxifene (Evista)**

**Uses:** Prevent osteoporosis, breast CA prevention*

**Acts:** Partial antagonist of estrogen, behaves like estrogen

**Dose:** 60 mg/d

**W/P:** [X, –] CI: Thromboembolism, PRG

**Disp:** Tabs 60 mg SE: CP, insomnia, rash, hot flashes, GI upset, hepatic dysfunction, leg cramps

**Raltegravir (Isentress)**

**Uses:** HIV in combo w/ other antiretroviral agents*

**Acts:** HIV-integrase strand transfer inhib

**Dose:** 400 mg PO bid, 800 mg PO bid if w/ rifampin; w/ or w/ o food

**W/P:** [C, –] CI: None

**Disp:** Tabs 400 mg SE: Development of immune reconstitution synd: ↑ CK, myopathy, and rhabdomyolysis, insomnia, N/D, HA, fever, ↑ cholesterol, paranoia, and anxiety

**Notes:** Monitor lipid profile; initial therapy may cause immune reconstitution synd (inflammatory response to residual opportunistic Infxns (eg, M. avium, Pneumocystis jiroveci)

**Ramelteon (Rozerem)**

**Uses:** Insomnia*

**Acts:** Melatonin receptor agonist

**Dose:** 8 mg PO 30 min
before bedtime W/P: [C, ?/–] w/ CYP1A2 inhib CI: w/ Fluvoxamine; hypersens Disp: Tabs 8 mg SE: Somnolence, dizziness Notes: Avoid w/ high-fat meal, do not break

Ramipril (Altace, Generic) BOX: ACE inhib used during PRG can cause fetal injury & death Uses: *HTN, CHF, DN, post-MI* Acts: ACE inhib Dose: 1.25–20 mg/d PO ÷ daily-bid; ↓ in renal failure W/P: [C-1st tri/D-2nd & 3rd, +] CI: ACE inhib-induced angioedema Disp: Caps 1.25, 2.5, 5, 10 mg SE: Cough, HA, dizziness, ↓ BP, renal impair, angioedema Notes: OK in combo w/ diuretics

Ranibizumab (Lucentis) Uses: *Neovascular “wet” macular degeneration* Acts: VEGF inhib Dose: 0.5 mg intravitreal Inj qmo W/P: [C, ?] Hx thromboembolism CI: Periocular Infxn Disp: Inj 10 mg/mL SE: Endophthalmitis, retinal detachment/hemorrhage, cataract, intraocular inflammation, conjunctival hemorrhage, eye pain, floaters

Ranitidine (Zantac, Zantac EFFERDose [OTC], Generic) Uses: *Duodenal ulcer, active benign ulcers, hypersecretory conditions, & GERD* Acts: H₂-receptor antagonist Dose: Adults. Ulcer: 150 mg PO bid, 300 mg PO hs, or 50 mg IV q6–8h; or 400 mg IV/d cont Inf, then maint of 150 mg PO hs. Hypersecretion: 150 mg PO bid, up to 600 mg/d. GERD: 300 mg PO bid; maint 300 mg PO hs. Dyspepsia: 75 mg PO daily-bid. Peds. 1.5–2 mg/kg/dose IV q6–8h or 2 mg/kg/dose PO q12h; ↓ in renal Insuff/failure W/P: [B, +] CI: Component allergy Disp: Tabs 75, 150 mg [OTC], 150, 300 mg; caps 150, 300 mg; effervescent tabs 25 mg (contains phenylalanine); syrup 15 mg/mL; Inj 25 mg/mL SE: Dizziness, sedation, rash, GI upset Notes: PO & parenteral doses differ

Ranolazine (Ranexa) Uses: *Chronic angina* Acts: ↓ Ischemia-related Na⁺ entry into myocardium Dose: Adults. 500 mg bid–1000 mg PO bid CI: w/ Cirrhosis, CYP3A inhib/inducers (Table 10, p 319) W/P: [C, ?/–] HTN may develop w/ renal impair, agents that ↑ QTc, ↓ K⁺ Disp: SR tabs 500, 1000 mg SE: Dizziness, HA, constipation, arrhythmias Notes: Not 1st line; use w/ amlodipine, nitrates, or β-blockers

Rasagiline Mesylate (Azilect) Uses: *Early Parkinson Dz monotherapy; levodopa adjunct w/ advanced Dz* Acts: MAO B inhib Dose: Adults. Early Dz: 1 mg PO daily, start 0.5 mg PO daily w/ levodopa; ↓ w/ CYP1A2 inhibit or hepatic impair CI: MAOIs, sympathomimetic amines, meperidine, methadone, tramadol, propoxyphene, dextromethorphan, mirtazapine, cyclobenzaprine, St. John’s wort, sympathomimetic vasoconstrictors, SSRIs W/P: [C, ?] Avoid tyramine-containing foods; mod–severe hepatic impair Disp: Tabs 0.5, 1 mg SE: Arthralgia, indigestion, dyskinesia, hallucinations, ↓ Wt, postural ↓ BP, N/V, constipation, xerostomia, rash, sedation, CV conduction disturbances Notes: Rare melanoma reported; periodic skin exams (skin CA risk); D/C 14 d prior to elective surgery; initial ↓ levodopa dose OK

Rasburicase (Elitek) BOX: Anaphylaxis possible; do not use in G6PD deficiency and hemolysis; can cause methemoglobinemia; can interfere w/ uric acid assays; collect blood samples and store on ice Uses: *Reduce ↑ uric acid d/t tumor lysis* Acts: Catalyzes uric acid Dose: Adult & Peds. 0.20 mg/kg IV over 30 min, daily × 5; do not bolus, redosing based uric acid levels W/P: [C, ?/–] Falsely ↓ uric acid values CI: Anaphylaxis, screen for G6PD deficiency to avoid hemolysis, methemoglobinemia Disp: 1.5, 7.5 mg powder Inj SE: Fever, neutropenia, GI upset, HA, rash Notes: Place blood test tube for uric acid level on ice to stop enzymatic Rxn; removed by dialysis; doses as low as 0.05 mg/kg have been used effectively in clinical trials

Regorafenib (Stivarga) BOX: May cause severe/fatal hepatotox. Monitor LFTs & dose adjust or D/C for ↑ LFTs or hepatocellular necrosis Uses: *Metastatic colorectal CA & GIST (see
**Ripaglinide (Prandin) Uses:** *Type 2 DM*  
**Acts:** ↑ Pancreatic insulin release  
**Dose:** Adults. 0.5–4 mg ac, PO start 1–2 mg, ↑ to 16 mg/d max; take pc  
**W/P:** [C, ?/–]  
**CI:** DKA, type 1 DM  
**Disp:** Tabs 0.5, 1, 2 mg  
**SE:** HA, hyper-/hypoglycemia, GI upset

**Ripaglinide/Metformin (PrandiMet) BOX:** Associated w/ lactic acidosis, risk ↑ w/ sepsis, dehydration, renal/hepatic impair, ↑ alcohol, acute CHF; Sxs include myalgias, malaise, resp distress, Abd pain, somnolence; Labs: ↓ pH, ↑ anion gap, ↑ blood lactate; D/C immediately & hospitalize if suspected  
**Uses:** *Type 2 DM*  
**Acts:** Meglitinide & biguanide (see metformin)  
**Dose:** Adults. 1/500 mg bid w/ in 15 min pc (skip dose w/ skipped meal); max 10/2500 mg/d or 4/1000 mg/meal  
**W/P:** [C, –] suspend use w/ iodinated contrast, do not use w/ NPH insulin, use w/ cationic drugs & CYP2C8 & CYP3A4 inhib  
**CI:** SCr > 1.4 mg/dL (females) or > 1.5 mg/dL (males); metabolic acidosis; w/ gemfibrozil  
**Disp:** Tabs (repaglinide mg/metformin mg) 1/500, 2/500  
**SE:** Hypoglycemia, HA, N/V/D, anorexia, weakness, myalgia, rash, ↓ vit B12
influenzae, or S. aureus carriers*; adjunct w/ severe S. aureus Acts: ↓ DNA-dependent RNA polymerase

**Dose:** *Adults.* N. meningitidis & H. influenzae carrier: 600 mg/d PO for 4 d. *TB:* 600 mg PO or IV daily or 2×/wk w/ combo regimen. **Peds.** 10–20 mg/kg/dose PO or IV daily-bid; ↓ in hepatic failure **W/P:** [C, +] w/ Fosamprenavir, multiple drug interactions **CI:** Allergy, active N. meningitidis Infxn, w/ saquinavir/ritonavir **Disp:** Caps 150, 300 mg; Inj 600 mg SE: Red-orange–colored bodily fluids, ↑ LFTs, flushing, HA **Notes:** Never use as single agent w/ active TB

*Rifapentine (Priftin)* **Uses:** *Pulm TB* **Acts:** ↓ DNA-dependent RNA polymerase. **Spectrum:** Mycobacterium tuberculosis **Dose:** Intensive phase: 600 mg PO 2×/wk for 2 mo; separate doses by > 3 d. **Continuation phase:** 600 mg/wk for 4 mo; part of 3–4 drug regimen **W/P:** [C, +/- red-orange breast milk] Strong CYP450 inducer, ↓ protease inhib efficacy, antiepileptics, β-blockers, CCBs **CI:** Rifamycins allergy **Disp:** 150-mg tabs **SE:** Neutropenia, hyperuricemia, HTN, HA, dizziness, rash, GI upset, blood dyscrasias, ↑ LFTs, hematuria, discolored secretions **Notes:** Monitor LFTs

*Rifaximin (Xifaxan)* **Uses:** *Traveler’s D (noninvasive strains of E. coli) in pts > 12 y (Xifaxan); hepatic encephalopathy (Xifaxan 550) > 18 y* **Acts:** Not absorbed, derivative of rifamycin. **Spectrum:** E. coli **Dose:** Diarrhea (Xifaxan): 1 tab PO, tid daily × 3 d; encephalopathy (Xifaxan 550) > 550 mg PO bid **W/P:** [C, ?/–] Hx allergy; pseudomembranous colitis; w/ severe (Child-Pugh C) hepatic impair **CI:** Allergy to rifamycins **Disp:** Tabs: Xifaxan: 200 mg; Xifaxan 550: 550 mg **SE:** Xifaxan: Flatulence, HA, Abd pain, rectal tenesmus and urgency, N; Xifaxan 550: Edema, N, dizziness, fatigue, ascites, flatulence, HA **Notes:** D/C if D Sx worsen or persist > 24–48 h, or w/ fever or blood in stool

*Rilpivirine (Edurant)* **Uses:** *HIV in combo w/ other antiretroviral agents* **Acts:** NRTI **Dose:** *Adults.* 25 mg daily **W/P:** [B, –] **CI:** None **Disp:** Tab 25 mg **SE:** HA, depression, insomnia, rash, ↑ AST/ALT, ↑ cholesterol, ↑ SCr **Notes:** Take w/ food; metabolized via CYP3A; CYP3A inducers may ↓ virologic response, CYP3A inhib may ↑ levels; ↑ gastric pH ↓ absorption

*Rimantadine (Flumadine, Generic)* **Uses:** *Prophylaxis & Rx of influenza A viral Infxns* **Acts:** Antiviral **Dose:** *Adults & Peds > 9 y.* 100 mg PO bid. *Peds 1–9 y.* 5 mg/kg/d PO, 150 mg/d max; daily w/ severe renal/hepatic impair & elderly; initiate w/ in 48 h of Sx onset **W/P:** [C, –] w/ Cimetidine; avoid w/ PRG, breast-feeding **CI:** Component & amantadine allergy **Disp:** Tabs 100 mg SE: Orthostatic ↓ BP, edema, dizziness, GI upset, ↓ Sz threshold **Notes:** See CDC (**MMWR**) for current influenza A guidelines

*Rimexolone (Vexol Ophthalmic)* **Uses:** *Postop inflammation & uveitis* **Acts:** Steroid **Dose:** *Adults & Peds > 2 y.* Uveitis: 1–2 gtt/h daytime & q2h at night, taper to 1 gtt q6h. Postop: 1–2 gtt qid × 2 wk **W/P:** [C, ?/–] Ocular Infxns **Disp:** Susp 1% **SE:** Blurred vision, local irritation **Notes:** Taper dose

*Risedronate (Actonel, Actonel W/ Calcium, Generic)* **Uses:** *Paget Dz; Rx/prevention glucocorticoid-induced/postmenopausal osteoporosis, ↑ bone mass in osteoporotic men; w/ calcium only FDA approved for female osteoporosis* **Acts:** Bisphosphonate; ↓ osteoclast-mediated bone resorption **Dose:** Paget Dz: 30 mg/d PO for 2 mo. Osteoporosis Rx/prevention: 5 mg daily or 35 mg qwk or 150 mg qmo; 30 min before 1st food/drink of the d; stay upright for at least 30 min after dose **W/P:** [C, ?/–] **Disp:** Tabs 5, 30, 35, 150 mg; Risedronate 35 mg (4 tabs)/calcium carbonate 1250 mg (24
Risedronate, Delayed-Release (Atelvia) Uses: *Postmenopausal osteoporosis* 

**Acts:** See Risedronate 

**Dose:** One 35 mg tab 1 × wk; in a.m. following breakfast w/ 4-oz water; do not lie down for 30 min 

**W/P:** [C, ?/−] Ca\(^{2+}\) & Fe\(^{2+}\) supls/antacids ↓ absorption; do not use w/ Actonel or CrCl < 30 mL/min; jaw osteonecrosis reported, avoid dental work; may ↑ subtrochanteric femur fractures; severe bone/jt pain 

**CI:** Component allergy, ↓ Ca\(^{2+}\), esophageal abnormalities, unable to stand/sit for 30 min 

**Disp:** DR Tabs 35 mg 

**SE:** D, influenza, arthralgia, back/Abd pain; rare hypersens, eye inflam 

Notes: Correct ↓ Ca\(^{2+}\) before use; − Ca\(^{2+}\) 

Risperidone, Oral (Risperdal, Risperdal M-Tab, Generic) BOX: ↑ Mortality in elderly w/ dementia-related psychosis 

**Uses:** *Psychotic disorders (schizophrenia)*, dementia of the elderly, bipolar disorder, mania, Tourette disorder, autism 

**Acts:** Benzisoxazole antipsychotic 

**Dose:** Adults & Peds. See PI for Dz specific dosing, ↓ dose w/ elderly, renal/hepatic impair 

**W/P:** [C, –], ↑ BP w/ anti-hypertensives, clozapine 

**CI:** Component allergy 

**Disp:** Tabs 0.25, 0.5, 1, 2, 3, 4 mg; soln 1 mg/mL, M-Tab (ODT) tabs 0.5, 1, 2, 3, 4 mg 

**SE:** Orthostatic ↓ BP, EPS w/ high dose, tachycardia, arrhythmias, sedation, dystonias, neuroleptic malignant synd, sexual dysfunction, constipation, xerostomia, ↓ WBC, neutropenia and agranulocytosis, cholestatic jaundice 

Notes: Several weeks for effect 

Risperidone, Parenteral (Risperdal Consta) BOX: Not approved for dementia-related psychosis; ↑ mortality risk in elderly dementia pts on atypical anti-psychotics; most deaths d/t CV or infectious events 

**Uses:** Schizophrenia 

**Acts:** Benzisoxazole antipsychotic 

**Dose:** 25 mg q2wk IM may ↑ to max 50 mg q2wk; w/ renal/hepatic impair start PO Risperdal 0.5 mg PO bid × 1 wk titrate weekly 

**W/P:** [C, −], ↑ BP w/ antihypertensives, clozapine 

**CI:** Component allergy 

**Disp:** Inj 25, 37.5, 50 mg/vial 

**SE:** See Risperidone, oral 

Notes: Long-acting Inj; give PO dose w/ initial Inj & continue × 3 wk 

Ritonavir (Norvir) BOX: Life-threatening adverse events when used w/ certain nonsedating antihistamines, sedative hypnotics, antiarrhythmics, or ergot alkaloids d/t inhibited drug metabolism 

**Uses:** *HIV* combo w/ other antiretrovirals 

**Actions:** Protease inhib; ↓ maturation of immature noninfectious virions to mature infectious virus 

**Dose:** Adults. Initial 300 mg PO bid, titrate over 1 wk to 600 mg PO bid (titration will ↓ GI SE). Peds > 1 mo. Initiate @ 250 mg/m\(^2\) titrate by 50 mg/m\(^2\) q 2–3d, goal 350–400 mg/m\(^2\), max 600 mg bid; adjust w/ fosamprenavir, indinavir, nelfinavir, & saquinavir; take w/ food 

**W/P:** [B, +] w/ Ergotamine, amiodarone, bepridil, bosentan, colchicine, PDE inhib, flecainide, propafenone, quinidine, pimozide, midazolam, triazolam 

**CI:** Component allergy 

**Disp:** Caps & tabs 100 mg; soln 80 mg/mL 

**SE:** ↑ Triglycerides, ↑ LFTs, N/V/D/C, Abd pain, taste perversion, anemia, weakness, HA, fever, malaise, rash, paresthesias 

Notes: Refrigerate 

Rivaroxaban (Xarelto) BOX: May ↑ risk of spinal/epidural hematoma w/ paralysis & increase risk of stroke w/ premature D/C, monitor closely 

**Uses:** *Prevention DVT in knee/hip replacement surgery & prevention of stroke and systemic embolism in pts w/ nonvalvular Afib* 

**Acts:** Factor Xa inhib 

**Dose:** 10 mg PO qd × 35 d (hip) or 12 d (knee), stroke 20 mg daily; w or w/ o food 

**W/P:** [C, −] w/ CYP3A4 inhib/inducers, other anticoagulants or plt inhib; avoid w/ CrCl < 30 mL/min or mod/severe hepatic impair 

**CI:** Active bleeding; component hypersens 

**Disp:** Tabs 10 mg SE: Bleeding 

Notes: See PI for information about timing of stopping or starting dosage in relation to other anticoagulants
Rivastigmine (Exelon, Generic) Uses: *Mild–mod dementia in Alzheimer Dz* Acts: Enhances cholinergic activity Dose: 1.5 mg bid; ↑ to 6 mg bid, w/ ↑ at 2-wk intervals (take w/ food) W/P: [B, ?] w/ β-Blockers, CCBs, smoking, neuro-muscular blockade, digoxin CI: Rivastigmine or carbamate allergy Disp: Caps 1.5, 3, 4.5, 6 mg; soln 2 mg/mL SE: Dose-related GI effects, N/V/D, dizziness, insomnia, fatigue, tremor, diaphoresis, HA, Wt loss (in 18–26%) Notes: Swallow caps whole, do not break/chew/ crush; avoid EtOH

Rivastigmine, Transdermal (Exelon Patch, Generic) Uses: *Mild–mod Alzheimer and Parkinson Dz dementia* Acts: Acetylcholinesterase inhib Dose: Initial: 4.6-mg patch/d applied to back, chest, upper arm, ↑ 9.5 mg after 4 wk if tolerated W/P: [?, ?] Sick sinus synd, conduction defects, asthma, COPD, urinary obst, Szs; death from multiple patches at same time reported CI: Hyper-sens to rivastigmine, other carbamates Disp: Transdermal patch 5 cm² (4.6 mg/24 h), 10 cm² (9.5 mg/24 h) SE: N/V/D

Rizatriptan (Maxalt, Maxalt MLT, Generic) Uses: *Rx acute migraine* Acts: Vascular serotonin receptor agonist Dose: 5–10 mg PO, repeat in 2 h, PRN, 30 mg/d max W/P: [C, M] CI: Angina, ischemic heart Dz, ischemic bowel Dz, hemiplegic/basilar migraine, uncontrolled HTN, ergot or serotonin 5-HT₁ agonist use w/ in 24 h, MAOI use w/ in 14 d Disp: Tab 5, 10 mg; Maxalt MLT: OD tabs 5, 10 mg. SE: CP, palpitations, N, V, asthenia, dizziness, somnolence, fatigue

Rocuronium (Zemuron, Generic) Uses: *Skeletal muscle relaxation during rapid-sequence intubation, surgery, or mechanical ventilation* Acts: Nondepolarizing neuromuscular blocker Dose: Rapid sequence intubation: 0.6–1.2 mg/kg IV. Continuous Inf: 8–12 mcg/kg/min IV; adjust/titrate based on train of four monitoring; ↓ in hepatic impair W/P: [C, ?] Anaphylactoid reactions can occur. Concomitant use of corticosteroids has been associated w/ myopathy CI: Component or omer neuromuscular blocker allergy Disp: Inj preservative-free 10 mg/mL SE: BP changes, tachycardia Notes: Cross-reactivity w/ other neuromuscular blocker possible

Roflumilast (Daliresp) Uses: *↓ Exacerbations severe COPD* Acts: Selective phosphodiesterase -4 inhib (PDE4), ↑ cAMP w/ ↓ inflammation Dose: Adults. 500 mcg daily W/P: [C, –] Metabolized by CYP3A4 and 1A2; CYP3A4 and 1A2 inhib (cimetidine, erythromycin) increase levels, inducers (rifampin, carbamazepine) can decrease blood levels CI: Mod–severe liver impair Disp: Tabs 500 mcg SE: Worsening depression/suicidal behavior/ideation; N/D, ↓ Wt, HA, insomnia, anxiety Notes: Not a bronchodilator, not for acute exacerbations

Romidepsin (Istodax) Uses: *Rx cutaneous T-cell lymphoma in pts who have received at least one prior systemic therapy* Acts: Histone deacetylase (HDAC) inhib Dose: 14 mg/m² IV over 4 h days 1, 8, and 15 of a 28-d cycle; repeat cycles every 28 d if tolerated; Tx D/C or interruption w/ or w/o dose reduction to 10 mg/m² to manage adverse drug reactions W/P: [D, ?] Risk of ↑QT, hematologic tox; strong CYP3A4 inhibs may ↑ conc Disp: Inj 10 mg SE: N, V, fatigue, Infxn, anorexia, ↓ plt Notes: Hazardous agent, precautions for handling and disposal

Romiplostim (Nplate) BOX: ↑ Risk for heme malignancies and thromboembolism. D/C may worsen ↓ plt Uses: *Rx ↓ plt d/t ITP w/ poor response to other therapies)* Acts: Thrombopoietic, thrombopoietin receptor agonist Dose: Adults. 1 mcg/kg SQ weekly, adjust 1 mcg/kg/wk to plt count > 50,000/mm³; max 10 mcg/kg/wk W/P: [C,/?] CI: None Disp: 500 mcg/mL (250-mcg vial) SE: HA, fatigue, dizziness, N/V/D, myalgia, epistaxis Notes: CBC/diff/plt weekly; plt ↑ 4–9 d, peak 12–16 d; D/C if no ↑ plt after 4 wk max dose; ↓ dose w/ plt count > 200,000/mm³ for 2 wk
Ropinirole (Requip, Requip XL, Generic) Uses: *Rx of Parkinson Dz, restless leg synd (RLS)*

Acts: Dopamine agonist Dose: Parkinson Dz: IR initial 0.25 mg PO tid, weekly ↑ 0.25 mg/dose, to 1 mg PO tid (may continue to titrate weekly to max dose of 24 mg/d); ER: 2 mg PO daily, titrate qwk by 2 mg/d to max 24 mg/d RLS: initial 0.25 mg PO 1–3 h before bedtime W/P: [C, ?/–] Severe CV/renal/hepatic impair CI: Component allergy Disp: Tabs IR 0.25, 0.5, 1, 2, 3, 4, 5 mg; tabs ER 2, 4, 6, 8, 12 mg SE: Syncope, postural ↓ BP, N/V, HA, somnolence, dose-related hallucinations, dyskinesias, dizziness Notes: D/C w/ 7-d taper

Rosiglitazone (Avandia) BOX: May cause or worsen CHF; may increase myocardial ischemia

Uses: *Type 2 DM* Acts: Thiazolidinedione; ↑ insulin sensitivity Dose: 4–8 mg/d PO or in 2 ÷ doses (w/ o regard to meals) W/P: [C, –] w/ ESRD, CHF, edema, CI: Severe CHF (NYHA class III IV) Disp: Tabs 2, 4, 8 mg SE: May ↑ CV, CHF & ? CA risk; Wt gain, hyperlipidemia, HA, edema, fluid retention, worsen CHF, hyper/hypoglycemia, hepatic damage w/ ↑ LFTs Notes: Increased MI risk now requires REMS restricted distribution program

Rosuvastatin (Crestor) Uses: *Rx primary hypercholesterolemia & mixed dyslipidemia*

Acts: HMG-CoA reductase inhib Dose: 5–40 mg PO daily; max 5 mg/d w/ cyclosporine, 10 mg/d w/ gemfibrozil or CrCl < 30 mL/min (avoid Al-/Mg-based antacids for 2 h after) W/P: [X, ?/–] CI: Active liver Dz, unexplained ↑ LFTs Disp: Tabs 5, 10, 20, 40 mg SE: Myalgia, constipation, asthenia, Abd pain, N, myopathy, rarely rhabdomyolysis Notes: May ↑ warfarin effect; monitor LFTs at baseline, 12 wk, then q6mo; ↓ dose in Asian pts; OK w/ grapefruit

Rotavirus Vaccine, Live, Oral, Monovalent (Rotarix) Uses: *Prevent rotavirus gastroenteritis in peds*

Acts: Active immunization w/ live attenuated rotavirus Dose: Peds 6–24 wk. 1st dose PO at 6 wk of age, wait at least 4 wk then a 2nd dose by 24 wk of age. W/P: [C, ?] CI: Component sensitivity, uncorrected congenital GI malformation, severe combined immunodeficiency (SCID), intussusception Disp: Single-dose vial SE: Irritability, cough, runny nose, fever, anaphylactic Rxn, D, ↓ appetite, otitis media, V Notes: Conclude by age 24 wk; can be given to infant in house w/ immunosuppressed fam member or mother who is breast-feeding. Safety and effectiveness not studied in immunocompromised infants

Rotavirus Vaccine, Live, Oral, Pentavalent (RotaTeq) Uses: *Prevent rotavirus gastroenteritis*

Acts: Active immunization w/ live attenuated rotavirus Dose: Peds 6–24 wk. Single dose PO at 2, 4, & 6 mo W/P: [?, ?] CI: Component sensitivity, uncorrected congenital GI malformation, severe combined immunodeficiency (SCID), intussusception Disp: Oral susp 2-mL single-use tubes SE: Irritability, cough, runny nose, fever, anaphylactic Rxn, D, ↓ appetite, otitis media, V Notes: Begin series by age 12 wk and conclude by age 32 wk; can be given to infant in house w/ immunosuppressed fam member or mother who is breast-feeding. Safety and effectiveness not studied in immunocompromised infants

Rotigotine (Neupro) Uses: *Parkinson Dz, RLS*

Acts: Dopamine agonist Dose: Adults. Parkinson Dz: 2 mg/24 h (early Dz) or 4 mg/24 h (advanced Dz); ↑ by 2 mg/24 h qwk PRN to max of 6 mg/24 h (early Dz) or 8 mg/24 h (advanced Dz); RLS: 1 mg/24 h; ↑ by 1 mg/24 h qwk PRN to max 3 mg/24 h; apply patch 1×/d to dry, intact skin; ↓ gradually w/ D/C W/P: [C, ?/–] Allergic Rxns w/ sulfite sens CI: Hypersens Disp: Transdermal sys 1, 2, 3, 4, 6, 8 mg/24 h SE: N/V, site Rxn, somnolence, dizziness, anorexia, hyperhidrosis, insomnia, peripheral edema, dyskinesia, HA, postural hypotension, syncope, ↑ HR, ↑ BP, hallucinations, psychotic-like/compulsive behavior Notes: Do not use same site more than once q14 d
Rufinamide (Banzel) Uses: *Adjunct Lennox-Gastaut Szs* Acts: Anticonvulsant Dose: Adults. Initial: 400–800 mg/d ÷ bid (max 3200 mg/d ÷ bid) Peds ≥ 4 y. Initial: 10 mg/kg/d ÷ bid, target 45 mg/kg/d ÷ bid; 3200 mg/d max W/P: [C, –] CI: Familial short QT synd Disp: Tab: 200, 400 mg; susp 40 mg/mL (460 mL) SE: ↓ QT, HA, somnolence, N/V, ataxia, rash Notes: Monitor for rash; use w/ OCP may lead to contraceptive failure; dose adjust w/ valproate; initial dose not > 400 mg

Ruxolitinib (Jakafi) Uses: *Myelofibrosis* Acts: Inhib Janus-assoc kinases, mediators of hematologic and immunologic cytokines and growth factors Dose: 20 mg bid if plt > 200,000 × 10^9/L; 15 mg bid if plt 100,000–200,000 × 10^9/L; ↑ based on response, 25 mg bid max; stop Tx if plt < 50,000 × 10^9/L; restart when > 50,000 × 10^9/L; 20 mg bid if plt > 125,000 × 10^9/L; 15 mg bid if plt 100–125,000 × 10^9/L; 10 mg bid if plt 75–100,000 × 10^9/L x 2 wk, if stable ↑ to 15 mg bid; if plt 50–75,000 × 10^9/L, 5 mg bid x 2 wk, if stable ↑ to 10 mg bid if no ↓ in spleen size or symptoms D/C after 6 mo W/P: [C, –] Do not use if ESRD and not on dialysis; ↓ dose w/ strong CYP3A4 inhib CI: None Disp: Tabs 5, 10, 15, 20, 25 mg SE: ↓ Plt, ↓ WBC, anemia, bruising, HA, dizziness, serious Infxns including zoster Notes: w/ D/C for reason other than ↓ plt, taper 5 mg bid each wk

Salmeterol (Serevent Diskus) BOX: Long-acting β2-agonists, such as salmeterol, may ↑ risk of asthma-related death. Do not use alone, only as additional Rx for pts not controlled on other asthma meds; LABAs may ↑ risk of asthma-related hospitalization in pediatric and adolescent pts Uses: *Asthma, exercise-induced asthma, COPD* Acts: Sympathomimetic bronchodilator, long acting β2-agonist Dose: Adults & Peds > 12 y. 1 Diskus-dose inhaled bid W/P: [C, ?/–] CI: Acute asthma; monotherapy concomitant use of inhaled steroid, status astheticus Disp: 50 mcg/dose, dry powder discus, SE: HA, pharyngitis, tachycardia, arrhythmias, nervousness, GI upset, tremors Notes: Not for acute attacks; must use w/ steroid or short-acting β-agonist

Saquinavir (Invirase) BOX: Invirase and Fortovase not bioequivalent/interchangeable; must use Invirase in combo w/ ritonavir, which provides saquinavir plasma levels = those w/ Fortovase Uses: *HIV Infxn* Acts: HIV protease inhib Dose: 1000 mg PO bid w/ in 2 h of a full meal (dose w/ ritonavir 100 mg PO bid) w/ in 2 h pc (dose adjust w/ delavirdine, lopinavir, & nelfinavir) W/P: [B, ?] CI: Complete AV block w/ o implanted pacemaker; concomitant use antiarrhythmics, ergot derivatives, sedatives/hypnotics, trazodone, sildenafil, statins, rifamins, congenital ↑ QT synd; severe hepatic impair; refractory ↓ K+/↓ Mg2+; anaphylaxis to component Disp: Caps 200 mg, tabs 500 mg SE: Dyslipidemia, lipodystrophy, rash, hyperglycemia, GI upset, weakness Notes: Take w/ in 2 h of a meal, avoid direct sunlight

Sargramostim [GM-CSF] (Leukine) Uses: *Myeloid recovery following BMT or chemotherapy* Acts: Recombinant GF, activates mature granulocytes & macrophages Dose: Adults & Peds. 250 mcg/m^2/d IV cont until ANC > 1500 cells/m^2 for 3 consecutive days W/P: [C, ?/–] Li, corticosteroids CI: > 10% blasts, allergy to yeast, concurrent chemotherapy/RT Disp: Inj 250, 500 mcg SE: Bone pain, fever, ↑ BP, tachycardia, flushing, GI upset, myalgia Notes: Rotate Inj sites; use APAP PRN for pain

Saxagliptin (Onglyza) Uses: *Monotherapy/combo type 2 DM* Acts: DDP-4 inhib, ↑ insulin synth/release Dose: 2.5 or 5 mg 1×/d w/ o regard to meals; 2.5 mg once/d w/ CrCl < 50 mL/min or w/ strong CYP3A4/5 inhib (eg, atazanavir, clarithromycin, indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, ritonavir, saquinavir, telithromycin) W/P: [B, ?] May ↓ glucose when used w/
**Saxagliptin/Metformin (Kombiglyze XR) BOX:** Lactic acidosis can occur w/ metformin accumulation; ↑ risk w/ sepsis, vol depletion, CHF, renal/hepatic impair, excess alcohol; if lactic acidosis suspected D/C med and hospitalize

**Uses:** *Type 2 DM*

**Acts:** Dipeptidyl peptidase-4 (DDP-4) inhib, ↑ insulin synth/release & biguanide; ↓ hepatic glucose production & intestinal absorption of glucose; ↑ insulin sens

**Dose:** 5/500 mg–5/2000 mg saxagliptin/metformin HCl XR PO daily w/ evening meal

**W/P:** [B, ?/–] w/ 10 diagonsed contrast studies

**CI:** SCr > 1.4 mg/dL (females) or > 1.5 mg/dL (males); met acidosis

**Disp:** Tabs mg saxagliptin/mg metformin XR 5/500, 5/1000, 2.5/1000

**SE:** Lactic acidosis; ↓ vit B12 levels; ↓ glucose w/ insulin secretagogue; N/V/D, anorexia, HA, URI, UTI, urticaria, myalgia

**Notes:** Do not exceed 5 mg/2000 mg saxagliptin/metformin HCl XR; do not crush or chew; w/ strong CYP3A4/5 inhib do not exceed 2.5 mg saxagliptin/d

**Secobarbital (Seconal) [C-II] Uses:** *Insomnia, short-term use*, preanesthetic agent

**Acts:** Rapid-acting barbiturate

**Dose:** Adults. 100–200 mg hs, 100–300 mg preop. Peds. 2–6 mg/kg/dose, 100 mg/max, ↓ in elderly

**W/P:** [D, +] w/ CYP2C9, 3A3/4, 3A5/7 inducer (Table 10, p 319); ↑ tox w/ other CNS depressants

**CI:** w/ Meperidine, MAOI, dextromethorphan, tramadol, methadone, general anesthesia w/ in 10 d, pheochromocytoma

**Disp:** Caps 100 mg

**SE:** Tolerance in 1–2 wk; resp depression, CNS depression, porphyria, PRG

**Notes:** Do not exceed 5 mg selegiline, Oral (Eldepryl, Zelapar, Generic) BOX: Closely monitor for worsening depression or emergence of suicidality, particularly in ped pts

**Uses:** *Parkinson Dz*

**Acts:** MAOI

**Dose:** Adults. Apply patch daily to upper torso, upper thigh, or outer upper arm

**W/P:** [C, –] ↑ Carbamazepine and oxcarbazepine levels

**CI:** Tyramine-containing foods w/ 9- or 12-mg doses; serotonin-sparing agents

**Disp:** ER Patches 9, 12 mg

**SE:** Local Rxns requiring topical steroids; HA, insomnia, orthostatic, ↓ BP, arrhythmias, tachycardia, edema, confusion, xerostomia

**Notes:** Rotate site; see oral form

**Selegiline, Transdermal (Emsam) BOX:** May ↑ risk of suicidal thinking and behavior in children and adolescents w/ MDD

**Uses:** *Depression*

**Acts:** MAOI

**Dose:** Adults. Apply patch daily to upper torso, upper thigh, or outer upper arm

**W/P:** [C, –] ↑ Carbamazepine and oxcarbazepine levels

**Disp:** ER Patches 9, 12 mg

**SE:** Local Rxns requiring topical steroids; HA, insomnia, orthostatic, ↓ BP, serotonin synd, suicide risk

**Notes:** Rotate site; see oral form

**Selenium Sulfide (Exsel Shampoo, Selsun Blue Shampoo, Selsun Shampoo) Uses:** *Scalp seborrheic dermatitis*, scalp itching & flaking d/t *dandruff*, tinea versicolor

**Acts:** Antiseborrheic

**Dose:** Dandruff, seborrhea: Massage 5–10 mL into wet scalp, leave on 2–3 min, rinse, repeat; use 2× wk, then once q1–4wk PRN. *Tinea versicolor:* Apply 2.5% daily on area & lather w/ small
amounts of water; leave on 10 min, then rinse W/P: [C, ?] Avoid contact w/ open wounds or mucus membranes CI: Component allergy Disp: Shampoo [OTC]; 2.5% lotion SE: Dry or oily scalp, lethargy, hair discoloration, local irritation Notes: Do not use more than 2×/wk

Sertaconazole (Ertaczo) Uses: *Topical Rx interdigital tinea pedis* Acts: Imidazole antifungal. Spectrum: *Trichophyton rubrum, Trichophyton mentagrophytes, Epidermophyton floccosum* Dose: Adults & Peds > 12. Apply between toes & immediate surrounding healthy skin bid × 4 wk W/P: [C, ?] Avoid occlusive dressing CI: Component allergy Disp: 2% Cream SE: Contact dermatitis, dry/burning skin, tenderness Notes: Use in immunocompetent pts; not for oral, intravag, ophthal use
Sertraline (Zoloft, Generic) BOX: Closely monitor pts for worsening depression or emergence of suicidality, particularly in ped pts Uses: *Depression, panic disorders, PMDD, OCD, PTSD*, social anxiety disorder, eating disorders, premenstrual disorders Acts: ↓ Neuronal uptake of serotonin

Dose: Adults. Depression: 50–200 mg/d PO. PTSD: 25 mg PO daily × 1 wk, then 50 mg PO daily, 200 mg/d max. Peds 6–12 y. 25 mg PO daily. 13–17 y: 50 mg PO daily

W/P: [C, ?/–] Serotonin syndrome: ↑ risk w/ concomitant use of serotonin antagonists (haloperidol, etc), hepatic impair

CI: MAOI use w/ in 14 d; concomitant pimozide

Disp: Tabs 25, 50, 100 mg; 20 mg/mL oral

SE: Activate manic/hypomanic state, ↑/↓ Wt, insomnia, somnolence, fatigue, tremor, xerostomia, N/D, dyspepsia, ejaculatory dysfunction, ↓ libido, hepatotox

Sevelamer Carbonate (Renvela) Uses: *Control ↑ in ESRD*

Acts: Intestinal phosphate binder

Dose: Start 0.8 or 1.6 g PO tid w/ meals; titrate 0.8 g/meal for target PO\textsubscript{4}\textsuperscript{3–} 3.5–5.5 mg/dL; switch g/g among sevelamer forms, titrate PRN

W/P: [C, ?] w/ Swallow disorders, bowel problems, may ↓ absorption of vits D, E, K, ↓ ciprofloxacin & other medicine levels

CI: Bowel obst

Disp: Tab 800 mg, powder 0.8/2.4 g

SE: N/V/D, dyspepsia, Abd pain, flatulence, constipation

Notes: Separate other meds 1 h before or 3 h after

Sevelamer HCl (Renagel) Uses: *↓ PO\textsubscript{4}\textsuperscript{3–} in ESRD*

Acts: Binds intestinal PO\textsubscript{4}\textsuperscript{3–}

Dose: Initial: PO\textsubscript{4}\textsuperscript{3–} > 5.5 and < 7.5 mg/dL: 800 mg PO tid; ≥ 7.5 mg/dL: 1200–1600 mg PO tid.

Switching from sevelamer carbonate: per-g basis; titrate ↑/↓ 1 tab/meal 2-wk intervals PRN; take w/ food 2–4 caps PO tid w/ meals; adjust based on PO\textsubscript{4}\textsuperscript{3–}; max 4 g/dose

W/P: [C, ?] May ↓ absorption of vits D, E, K, ↓ ciprofloxacin & other medicine levels

CI: ↓ PO\textsubscript{4}\textsuperscript{3–}, bowel obst

Disp: Tab 400, 800 mg

SE: N/V/D, dyspepsia, ↑ Ca\textsuperscript{2+}

Notes: Do not open/chew caps; separate other meds 1 h before or 3 h after; 800 mg sevelamer = 667 mg Ca acetate

Sildenafil (Viagra, Revatio) Uses: Viagra: *ED*; Revatio: *Pulm artery HTN (adult only)*

Acts: ↓ Phosphodiesterase type 5 (PDE5) (responsible for cGMP breakdown); ↑ cGMP activity to relax smooth muscles & ↑ flow to corpus cavernosum and pulm vasculature; ? antiproliferative on pulm artery smooth muscle

Dose: ED: 25–100 mg PO 1 h before sexual activity, max 1/d; ↓ if > 65 y

Revatio: Pulm HTN: 20 mg PO tid or 10 mg IV tid

W/P: [B, ?] w/ CYP3A4 inhib (Table 10, p 319), retinitis pigmentosa; hepatic/severe renal impair; w/ sig hypo-/hypertension

CI: w/ Nitrates or if sex not advised; w/ protease inhib

Disp: Tabs Viagra: 25, 50, 100 mg, tabs Revatio: Tabs 20 mg; Inj 5–10 mg/vial

SE: HA; flushing; dizziness; blue haze visual change, hearing loss, priapism

Notes: Cardiac events in absence of nitrates debatable; transient global amnesia reports; avoid fatty food w/ dose; not for peds use

Silodosin (Rapaflo) Uses: *BPH*

Acts: α-blockers of prostatic α\textsubscript{1a}

Dose: 8 mg/d; 4 mg/d w/ CrCl 30–50 mL/min; take w/ food

W/P: [B, ?] Not for use in females; do not use w/ other α-blockers or glycoprotein inhibit (ie, cyclosporine); R/O PCa before use; IFIS possible w/ cataract surgery

CI: Severe hepatic/renal impair (CrCl < 30 mL/min), w/ CYP3A4 inhib (eg, ketoconazole, clarithromycin, itraconazole, ritonavir)

Disp: Caps 4, 8 mg

SE: Retrograde ejaculation, dizziness, D, syncope, somnolence, orthostatic ↓ BP, nasopharyngitis, nasal congestion, intraoperative floppy iris syndrome during contract surgery

Notes: Not for use as antihypertensive; no effect on QT interval

Silver Nitrate (Generic) Uses: *Removal of granulation tissue & warts; prophylaxis in burns*

Acts: Caustic antiseptic & astringent

Dose: Adults & Peds. Apply to moist surface 2–3 × wk for 2–3 wk or
until effect

**Silver Sulfadiazine (Silvadene, Generic) Uses:** *Prevention & Rx of Infxn in 2nd- & 3rd-degree burns*  
**Acts:** Bactericidal  
**Dose:** Adults & Peds: Aseptically cover the area w/ 1/16-in coating bid  
**W/P:** [C, ?]  
**CI:** Do not use on broken skin  
**Disp:** Topical impregnated applicator sticks, soln 0.5, 10, 25, 50%; topical ointment 10%  
**SE:** May stain tissue black, usually resolves; local irritation, methemoglobinemia  
**Notes:** D/C if redness or irritation develops; no longer used in US for newborn prevention of gonococcus conjunctivitis

**Simethicone (Generic [OTC]) Uses:** Flatulence  
**Acts:** Defoaming, alters gas bubble surface tension  
**Dose:** Adults & Peds > 12 y: 40–360 mg PO after meals and at bedtime PRN; 500 mg/d max.  
**Peds < 2 y:** 20 mg PO qid PRN. 2–12 y: 40 mg PO qid PRN  
**W/P:** [C, ?]  
**CI:** Infants < 2 mo, PRG near term  
**Disp:** Cream 1%  
**SE:** Itching, rash, skin discoloration, blood dyscrasias, hep  
**Notes:** Available in combo products OTC

**Simvastatin (Zocor) Uses:** ↓ Cholesterol  
**Acts:** HMG-CoA reductase inhib  
**Dose:** Adults: 5–40 mg PO q P.M.; w/ meals; ↓ in renal Insuff; w/ o grapefruit.  
**Peds 10–17 y:** 10 mg, 40 mg/d max  
**W/P:** [X, –]  
**CI:** PRG, liver Dz, strong CYP3A4 inhib  
**Disp:** Tabs 5, 10, 20, 80 mg  
**SE:** HA, GI upset, myalgia, myopathy (pain, tenderness, weakness w/ creatine kinase 10 × ULN) and rhabdomyolysis, hep  
**Notes:** Combo w/ ezetimibe/simvastatin; follow LFTs; ↑ blood glucose w/ DM

**Sipuleucel-T (Provenge) Uses:** *Asymptomatic/minimally symptomatic metastatic castrate resistant PCa*  
**Acts:** Autologous (pt specific) cellular immuno-therapy  
**Dose:** 3 doses over 1 mo @ 2-wk intervals; premed w/ APAP & diphenhydramine  
**W/P:** [N/A, N/A]  
**CI:** None  
**Disp:** 50 mill units autologous CD54+ cells activated w/ PAP GM-CSF in 250 mL LR  
**SE:** Chills, fatigue, fever, back pain, N, jt ache, HA  
**Notes:** Pt must undergo leukaphoresis, w/ shipping and autologous cell processing at manufacturing facility before each Inf

**Sirolimus [Rapamycin] (Rapamune) BOX:** Use only by physicians experienced in immunosuppression; immunosuppression associated w/ lymphoma, ↑ Infxn risk; do not use in lung transplant (fatal bronchial anastomotic dehiscence); do not use in liver transplant: ↑ risk hepatic arterythrombosis, graft failure, and mortality (w/ evidence of Infxn)  
**Uses:** *Prevent organ rejection in new renal Tx pts*  
**Acts:** ↓ T-lymphocyte activation and proliferation  
**Dose:** Adults > 40 kg: 6 mg PO on day 1, then 2 mg/d PO.  
**Peds < 40 kg & ≥ 13 y:** 3 mg/m² load, then 1 mg/m²/d (in H₂O/orange juice; no grapefruit juice w/ sirolimus); take 4 h after cyclosporine; ↓ in hepatic impair  
**W/P:** [C, ?/–]  
**Impaired wound healing & angioedema; grapefruit juice, ketoconazole  
**CI:** Component allergy  
**Disp:** Soln 1 mg/mL, tab 0.5, 1, 2 mg  
**SE:** HTN, edema, CP, fever, HA, insomnia, acne, rash, ↑ cholesterol, GI upset, ↑↓ K⁺, Infxns, blood dyscrasias, arthralgia, tachycardia, renal impair, graft loss & death in liver transplant (hepatic artery thrombosis), ascites  
**Notes:** Levels: Trough: 4–20 ng/mL; varies w/ assay method and indication

**Sitagliptin (Januvia) Uses:** *Monotherapy or combo for type 2 DM*  
**Acts:** Dipeptidyl peptidase-4 (DDP-4) inhib, ↑ insulin synth/release  
**Dose:** 100 mg PO daily; CrCl 30–50: 50 mg PO daily; CrCl <
30 mL/min: 25 mg PO daily W/P: [B/?] May cause ↓ blood sugar when used w/ insulin secretagogues such as sulfonylureas CI: Component hypersens Disp: Tabs 25, 50, 100 mg SE: URI, peripheral edema, asopharyngitis Notes: No evidence for ↑ CV risk

**Sitagliptin/Metformin (Janumet) BOX**

*[Adjunct to diet and exercise in type 2 DM]*

**Uses:**
- Adjunct to diet and exercise in type 2 DM
- *Acts:* ↑ Insulin synth/release and ↓ chol, ↓ VLDL, ↓ triglycerides, ↑ HDL; dipeptidyl peptidase-4 (DPP-4) inhib w/ HMG-CoA reductase inhib

**Dose:**
- Start 100/40 mg or maintain simvastatin dose W/P: [X, –] ↑ AST/ALT; myopathy (↑ risk of myopathy w/ age > 65 y, female, renal impair, meds (eg, niacin, amiodarone, CCBs, fribates, colchicine); renal failure, hypoglycemia w/ sulfonylureas, or insulin; pancreatitis, anaphylaxis CI: Hx hypersens Rxn; w/ CYP3A4 inhib, gemfibrozil, cyclosporine, danazol, ketoconazole, itraconazole, erythromycin, clarithromycin, HIV protease inhib; liver Dx; PRG or women who may get PRG; nursing Disp: Tabs mg sitagliptin/mg simvastatin: 100/10, 100/20, 100/40, 50/10, 50/20, 50/40 SE: Simvastatin: HA, GI upset, myalgia, myopathy (pain, tenderness, weakness w/ creatine kinase 10× ULN) and rhabdomyolysis, hep; sitagliptin: URI, nasopharyngitis, UTI, HA Notes: ↑ Myopathy w/ coadministration of CYP3A4 inhib; risk of myopathy dose related

**Smallpox Vaccine (ACAM2000) BOX**

Immunization against smallpox (variola virus) Acts: Active immunization (live attenuated cowpox virus) Dose:
- Adults. Primary and revaccination: 15 punctures w/ bifurcated needle dipped in vaccine into deltoid, site for Rxn in 6–8 d; if major Rxn, site scabs, & heals, leaving scar W/P: [D, ?] CI: Nonemergency use: febrile illness, immunosuppression, Hx eczema & in household contacts. Emergency: No absolute CI Disp: Vial for reconstitution: 100 mill pock-forming units/mL SE: Malaise, fever, regional lymphadenopathy, encephalopathy, rashes, spread of inoculation to other sites; SJS, eczema vaccinatum w/ severe disability Notes: Avoid infants for 14 d; intradermal use only; restricted distribution; Dryvax discontinued

**Sodium Bicarbonate [NaHCO₃] (Generic) Uses:**
- *Alkalization of urine, RTA, metabolic acidosis, ↑ K⁺, TCA OD*
- *Acts:* Alkalinizing agent

**Dose:**
- **Adults. ECC 2010. Cardiac arrest w/ good ventilation, hyperkalemia, OD of TCAs, ASA, cocaine, diphenhydramine:** 1 mEq/kg IV bolus; repeat 1/2 dose q10min PRN. **Metabolic acidosis:** 2–5 mEq/kg IV over 8 h & PRN based on acid–base status. ↑ K⁺: 50 mEq IV over 5 min. **Alkalinize urine:** 4 g (48 mEq) PO, then 12–24 mEq q4h; adjust based on urine pH; 2 amp (100 mEq)/1 L D₅W at 100–250 mL/h IV, monitor urine pH & serum bicarbonate. **Chronic renal failure:** 1–3 mEq/kg/d. **Distal RTA:** 0.5–2 mEq/kg/d in 4–5 × doses. **Peds.** Sodium bicarbonate **ECC 2010. Severe metabolic acidosis, hyperkalemia:** 1 mEq/kg IV slow bolus; 4.2% conc in infants < 1 mo. **Chronic renal failure:** See Adults dosage. **Distal RTA:** 2–3 mEq/kg/d PO. **Proximal RTA:** 5–10 mEq/kg/d; titrate based on serum bicarbonate. **Urine alkalinization:** 84–840 mg/kg/d (1–10 mEq/kg/d) in × doses; adjust based on urine pH W/P: [C, ?] CI: Alkalosis, ↑ Na⁺, severe pulm edema, ↓ Ca²⁺ Disp: Powder, tabs; 325 mg = 3.8 mEq; 650 mg = 7.6 mEq; Inj 1 mEq/1 mL, 4.2% (5 mEq/10 mL), 7.5% (8.92 mEq/mL), 8.4% (10 mEq/10 mL) vial or
amp SE: Belching, edema, flatulence, ↑ Na\(^+\), metabolic alkalosis Notes: 1 g neutralizes 12 mEq of acid; 50 mEq bicarbonate = 50 mEq Na; can make 3 amps in 1 L D\(_5\)W = D\(_5\)NS w/ 150 mEq bicarbonate

**Sodium Citrate/Citric Acid (Bicitra, Oracit)**

*Chronic metabolic acidosis, alkalinize urine; dissolve uric acid & cysteine stones*

**Acts:** Urinary alkalinizer

**Dose:** Adults. 10–30 mL in 1- to 3-oz H\(_2\)O pc & hs. Peds. 5–15 mL in 1- to 3-oz H\(_2\)O pc & hs; best after meals

**W/P:** [?, ?] CI: Severe renal impair or Na-restricted diets

**Disp:** 15- or 30-mL unit dose: 16 (473 mL) or 4 fl oz

**SE:** Tetany, metabolic alkalosis, ↑ K\(^+\), GI upset; avoid use of multiple 50-mL amps; can cause ↑ Na\(^+\)/hyperosmolality

**Notes:** 1 mL = 1 mEq Na & 1 mEq bicarbonate

**Sodium Oxybate/Gamma Hydroxybutyrate/GHB (Xyrem) [C-III] BOX:** Known drug of abuse even at recommended doses; confusion, depression, resp depression may occur

**Uses:** Narcolepsy-associated cataplexy

**Acts:** Inhibitory neurotransmitter

**Dose:** Adults & Peds > 16 y. 2.25 g PO qhs, 2nd dose 2.5–4 h later; may ↑ 9 g/d max

**W/P:** [C, ?/–] CI: Succinic semialdehyde dehydrogenase deficiency; potentiates EtOH & other CNS depressants

**Disp:** 500 mg/mL (180-mL) PO soln

**SE:** Confusion, depression, ↓ diminished level of consciousness, incontinence, sig V, resp depression, psychological Sxs

**Notes:** May lead to dependence; GHB abused as a “date rape drug”; controlled distribution (prescriber & pt registration); must be administered when pt in bed

**Sodium Phosphate (Osmoprep, Visicol) BOX:** Acute phosphate nephropathy reported w/ permanent renal impair risk; w/ ↑ age, hypovolemia, bowel obstr or colitis, baseline kidney Dz, w/ meds that affect renal perf/Fxn (diuretics, ACE inhib, ARB, NSAIDs)

**Uses:** Bowel prep prior to colonoscopy, short-term constipation

**Acts:** Hyperosmotic laxative

**Dose:** 3 tabs PO w/ at least 8-oz clear liq q15min for 6 doses; then 2 additional tabs in 15 min, 3–5 h prior to colonoscopy; 3 tabs q15 min for 6 doses, then 2 additional tabs in 15 min

**W/P:** [C, ?] Renal impair, electrolyte disturbances

**CI:** Megacolon, bowel obst

**Disp:** Tabs 0.398, 1.102 g (32/bottle)
**avoid conception (male/female); avoid inducers**

**Disp:** Tabs 200 mg

**SE:** Hand–foot synd; Tx-emergent hypertension; bleeding, ↑ INR, cardiac infarction/ischemia; ↑ pancreatic enzymes, hypophosphatemia, lymphopenia, anemia, fatigue, alopecia, pruritus, D, GI upset, HA, neuropathy

**Notes:** Monitor BP first 6 wk; may require ↓ dose (daily or q other day); impaired metabolism w/ Asian descent; may effect wound healing, D/C before major surgery

**Sorbitol (Generic) Uses:** *Constipation*

**Acts:** Osmotic laxative

**Dose:** 30–150 mL PO of a 20–70% soln

**W/P:** [C, ?] CI: Anuria

**Disp:** Liq 70%

**SE:** Edema, lyte loss, lactic acidosis, GI upset, xerostomia

**Notes:** Vehicle for many liq formulations (eg, zinc, Kayexalate)

**Sotalol (Betapace, Sorine, Generic) BOX:** To minimize risk of induced arrhythmia, pts initiated/reinitiated on Betapace AF should be placed for a minimum of 3 d (on their maint) in a facility that can provide cardiac resuscitation, cont ECG monitoring, & calculations of CrCl.

Betapace should not be substituted for Betapace AF because of labeling; adjust dose base on CrCl. Can cause life-threatening ventricular tachycardia w/ prolonged QT. Do not initiate if QT > 450 ms. If QTc > 500 ms during Tx, ↓ dose.

**Uses:** *Ventricular arrhythmias, AF*

**Acts:** β-Adrenergic-blocking agent

**Dose:** Adults. CrCl > 60 mL/min: 80 mg PO bid, may ↑ to 240–320 mg/d. CrCl 30–60 mL/min: 80 mg q24h. CrCl 10–30 mL/min: Dose 80 mg q36–48h.

**ECC 2010. SVT and ventricular arrhythmias:** 1–1.5 mg/kg IV over 5 min. Peds < 2 y: Dosing dependent on age, renal Fxn, heart rate, QT interval; ≥ 2 y: 30 mg/m² tid; to max dose of 60 mg/m² tid; ↓ w/ renal impair

**W/P:** [B, + (monitor child)] CI: Asthma, ↓ HR, ↑ QT interval, 2nd/3rd-degree heart block w/o pacemaker, cardiogenic shock, uncontrolled CHF

**Disp:** Tabs 80, 120, 160, 240 mg

**SE:** ↓ HR, CP, palpitations, fatigue, dizziness, weakness, dyspnea

**Notes:** Follow renal Fxn & QT interval; Betapace should not be substituted for Betapace AF because of differences in labeling

**Spinosad (Natroba) Uses:** *Head lice*

**Acts:** Neuronal excitation of lice, w/ paralysis & death

**Dose:** Cover dry scalp w/ suspension, then apply to dry hair; rinse off in 10 min, may repeat after 7 d; unlabeled to use < 4 y

**W/P:** [B, ?–] Disp: 0.9% topical susp

**SE:** Scalp/ocular erythema

**Notes:** Shake well before use; use w/ overall lice management program; in benzyl alcohol, serious Rxns in neonates, in breast milk, pump and discard milk for 8 h after use

**Spironolactone (Aldactone, Generic) BOX:** Tumorogenic in annial studies; avoid unnecessary use

**Uses:** *Hyperaldosteronism, HTN, class III/IV CHF, ascites from cirrhosis*

**Acts:** Aldosterone antagonist; K⁺-sparing diuretic

**Dose:** Adults. CHF (NYHA class III–IV) 12.5–25 mg/d (w/ ACE and loop diuretic); HTN 25–50 mg/d; Ascites:100–400 mg q A.M w/ 40–160 mg of furosemide, start w/ 100 mg/40 mg, wait at least 3 d before ↑ dose

**Peds.** 1–3.3 mg/kg/24 h PO ÷ bid q12–24h, take w/ food

**W/P:** [C, +(D/C w/ breast-feeding)] CI: ↑ K⁺, acute renal failure, anuria

**Disp:** Tabs 25, 50,
Starch, Topical, Rectal (Tucks Suppositories [OTC]) Uses: *Temporary relief of anorectal disorders (itching, etc)*

**Dose:** **Adults & Peds ≥ 12 y.** Cleanse, rinse, and dry, insert 1 supl rectally 6×/d × 7 d max.

**W/P:** [? , ?] **CI:** None

**Disp:** Supp SE: D/C w/ or if rectal bleeding occurs or if condition worsens or does not improve w/ in 7 d

**Stavudine (Zerit, Generic)**

**BOX:** Lactic acidosis & severe hepatomegaly w/ steatosis & pancreatitis reported w/ didanosine

**Uses:** *HIV in combo w/ other antiretrovirals*

**Acts:** NRTI

**Dose:** **Adults > 60 kg.** 40 mg bid. **< 60 kg.** 30 mg bid. **Peds Birth–13 d.** 0.5 mg/kg q12h. > 14 d & < 30 kg. 1 mg/kg q12h. ≥ 30 kg. Adult dose; ↓ w/ renal Insuff

**W/P:** [C, –] **CI:** Allergy

**Disp:** Caps 15, 20, 30, 40 mg; soln 1 mg/mL

**SE:** Peripheral neuropathy, HA, chills, rash, GI upset, anemias, lactic acidosis, ↑ LFTs, pancreatitis

**Notes:** Take w/ plenty of H2O

**Steroids, Systemic (See Table 2, p 301)** The following relates only to the commonly used systemic glucocorticoids

**Uses:** *Endocrine disorders (adrenal Insuff), rheumatoid disorders, collagen–vascular Dzs, derm Dzs, allergic states, cerebral edema*, nephritis, nephrotic synd, immunosuppression for transplantation, ↑ Ca2+, malignancies (breast, lymphomas), preop (pt who has been on steroids in past year, known hypoadrenalism, preop for adrenalectomy); Inj into jts/tissue

**Acts:** Glucocorticoid

**Dose:** Varies w/ use & institutional protocols.

- **Adrenal Insuff, acute:** **Adults.** Hydrocortisone: 100 mg IV; then 300 mg/d ÷ q8h for 48 h then convert to 50 mg PO q8h × 6 doses, taper to 30–50 mg/d ÷ bid. **Peds.** Hydrocortisone: 1–2 mg/kg IV, then 150–250 mg/d ÷ q6h–q8h.

- **Adrenal Insuff, chronic (physiologic replacement):** May need mineralocorticoid supl such as Florinef. **Adults.** Hydrocortisone: 20 mg PO q A.M., 10 mg PO q P.M.; cortisone: 25–35 mg PO daily. Dexamethasone: 0.03–0.15 mg/kg/d or 0.6–0.75 mg/m2/d ÷ q6–12h PO, IM, IV. **Peds.** Hydrocortisone: 8–10 mg/m2/d ÷ q8h; some may require up to 12 mg/m2/d. Hydrocortisone succinate: 0.25–0.35 mg/kg/d IM.

- **Asthma, acute:** **Adults.** Methylprednisolone 40–80 mg/d in 1–2 ÷ dose PO/IV or dexamethasone 12 mg IV q6h. **Peds.** Prednisolone 1–2 mg/kg/d or prednisone 1–2 mg/kg/d ÷ daily-bid for up to 5 d; methylprednisolone 12 mg/kg/d IV ÷ bid; dexamethasone 0.1–0.3 mg/kg/d ÷ q6h.

- **Congenital adrenal hyperplasia:** **Peds.** Initial hydrocortisone 10–20 mg/m2/d in 3 ÷ doses

- **Extubation/airway edema:** **Adults.** Dexamethasone: 0.5–2 mg/kg/d IM/IV ÷ q6h (start 24 h prior to extubation; continue × 4 more doses). **Peds.** Dexamethasone: 0.5–2 mg/kg/d ÷ q6h (start 24 h before & cont for 4–6 doses after extubation)

- **Immunosuppressive/anti-inflammatory:** **Adults & Older Peds.** Hydrocortisone: 15–240 mg PO, IM, IV q12h. Methylprednisolone: 2–60 mg/d PO in 1–4 ÷ doses, taper to lowest effective dose. Methylprednisolone Na succinate: 10–80 mg/d IM or 10–40 mg/d IV. **Adults.** Prednisone or prednisolone: 5–60 mg/d PO ÷ daily-qid. **Infants & Younger Children.** Hydrocortisone: 2.5–10 mg/kg/d PO ÷ q6–8h; 1–5 mg/kg/d IM/IV ÷ bid-daily.

- **Nephrotic synd:** **Peds.** Prednisolone or prednisone: 2 mg/kg/d PO tid-qid until urine is protein-free for 5 d, use up to 28 d; for persistent proteinuria, 4 mg/kg/dose PO q other day max, 120 mg/d
for an additional 28 d; maint 2 mg/kg/dose q other day for 28 d; taper over 4–6 wk (max 80 mg/d).

- **Septic shock (controversial): Adults.** Hydrocortisone: 50 mg IV q6h; max 300 mg/d; some suggest 200 mg/d cont Inf. **Peds.** Hydrocortisone: 1–2 mg/kg/d intermittent or continuous Inf; may titrate up to 50 mg/kg/d.

- **Status asthmaticus: Adults & Peds.** Hydrocortisone: 1–2 mg/kg/dose IV q6h for 24h; then ↓ by 0.5–1 mg/kg q6h.


- **Perioperative steroid coverage:** Hydrocortisone: 100 mg IV night before surgery, 1 h preop, intraoperative, & 4, 8, & 12 h postop; postop day No. 1 100 mg IV q6h; postop day No. 2 100 mg IV q8h; postop day No. 3 100 mg IV q12h; postop day No. 4 50 mg IV q12h; postop day No. 5 25 mg IV q12h; resume prior PO dosing if chronic use or D/C if only perioperative coverage required.

- **Cerebral edema:** Dexamethasone: 10 mg IV; then 4 mg IV q4–6h

**W/P:** [C/D, ?] CI: Active varicella Infxn, serious Infxn except TB, fungal Infxns. **Disp:** Table 2, p 301  
**SE:** ↑ Appetite, hyperglycemia, ↓ K⁺, osteoporosis, nervousness, insomnia, “steroid psychosis,” adrenal suppression  
**Notes:** Hydrocortisone succinate for systemic, acetate for intraarticular; never abruptly D/C steroids, taper dose; also used for bacterial and TB meningitis

**Steroids, Topical (See Table 3, p 302) Uses:** *Steroid-responsive dermatoses (seborrheic/atopic dermatitis, neurodermatitis, anogenital pruritus, psoriasis)*  
**Acts:** Glucocorticoid; ↓ capillary permeability, stabilizes lysosomes to control inflammation; controls protein synthesis; ↓ migration of leukocytes, fibro-blasts  
**Dose:** Use lowest potency produce for shortest period for effect (see Table 3, p 302)  
**W/P:** [C, +] Do not use occlusive dressings; high potency topical products not for rosacea, perioral dermatitis; not for use on face, groin, axillae; none for use in a diapered area. CI: Component hypersens  
**Disp:** See Table 3, p 302  
**SE:** Skin atrophy w/ chronic use; chronic administration or application over large area may cause adrenal suppression or hyperglycemia

**Streptokinase (Generic) Uses:** *Coronary artery thrombosis, acute massive PE, DVT, & some occluded vascular grafts*  
**Acts:** Activates plasminogen to plasmin that degrades fibrin  
**Dose:** Adults. PE: Load 250,000 units peripheral IV over 30 min, then 100,000 units/h IV for 24–72 h. **Coronary artery thrombosis:** 1.5 mill units IV over 60 min. **DVT or arterial embolism:** Load as w/ PE, then 100,000 units/h for 24 h; **ECC 2010. AMI:** 1.5 mill units over 1 h. **Peds.** 1000–2000 units/kg over 30 min, then 1000 units/kg/h for up to 24 h. **Occluded catheter (controversial):** 10,000–25,000 units in NS to final vol of catheter (leave in for 1 h, aspirate & flush w/ NS)  
**W/P:** [C, +] CI: Streptococcal Infxn or streptokinase in last 6 mo, active bleeding, CVA, TIA, spinal surgery/trauma in last mo, vascular anomalies, severe hepatic/renal Dz, severe uncontrolled HTN  
**Disp:** Powder for Inj 250,000, 750,000, 1,500,000 units  
**SE:** Bleeding, ↓ BP, fever, bruising, rash, GI upset, hemorrhage, anaphylaxis  
**Notes:** If Inf inadequate to keep clotting time 2–5 × control, see PI for adjustments; antibodies remain 3–6 mo following dose

**Streptomycin (Generic) BOX:** Neuro/oto/renal tox possible; neuromuscular blockage w/ resp paralysis possible  
**Uses:** *TB combo Rx therapy*  
**Acts:**
Aminoglycoside; ↓ protein synth

**Dose:** Adults. IM route. Endocarditis: 1 g q12h 1–2 wk, then 500 mg q12h 1–4 wk in combination w/ PCN; TB: 15 mg/kg/d (up to 1 g), directly observed therapy (DOT) 2 × wk 20–30 mg/kg/dose (max 1.5 g), DOT 3 × wk 25–30 mg/kg/dose (max 1.5 g). Peds. 20–40 mg/kg/d, 1 g/d max; DOT 2 × wk 25–30 mg/kg/d (max 1.5 g/dose) (max 1.5 g/dose); ↓ w/ renal Insuff, either IM (preferred) or IV over 30–60 min

**W/P:** [D, –] CI: PRG Disp: Inj 400 mg/mL (1-g vial) SE: ↑ Incidence of vestibular & auditory tox, ↑ neurotox risk in pts w/ impaired renal Fxn

**Notes:** Monitor levels: Peak: 20–30 mcg/mL, Trough: < 5 mcg/mL; Toxic peak: > 50 mcg/mL, Trough: > 10 mcg/mL

Streptozocin (Zanosar) BOX: Administer under the supervision of a physician experienced in the use of chemotherapy. Renal tox dose-related/cumulative and may be severe or fatal. Other major toxicities: N/V, and may be Tx-limiting; liver dysfunction, D, hematologic changes possible. Streptozocin is mutagenic. **Uses:** *Pancreatic islet cell tumors* & carcinoid tumors Acts: DNA–DNA (intrastrand) cross-linking; DNA, RNA, & protein synth inhib

**Dose:** Per protocol; ↓ in renal failure

**W/P:** w/ Renal failure [D, –] CI: w/ PRG Disp: Inj 1 g SE: N/V/D, duodenal ulcers, depression, ↓ BM rare (20%) & mild; nephrotox (proteinuria & azotemia dose related), ↑ LFT hypophosphatemia dose limiting; hypoglycemia; Inj site Rxns

**Notes:** Monitor lead levels, maintain hydration, may open caps

Succimer (Chemet) **Uses:** *Lead poisoning (levels > 50 mcg/dL w/ significant symptoms)* Acts: Heavy metal-chelating agent

**Dose:** Adults & Peds. 10 mg/kg/dose q8h × 5 d, then 10 mg/kg/dose q12h for 14 d

**W/P:** [C, ?] w/ Hepatic/renal Insuff CI: Allergy Disp: Caps 100 mg SE: Rash, fever, GI upset, hemorrhoids, metallic taste, drowsiness, ↑ LFTs

**Notes:** May be given IV push/Inf/IM deltoid

Sucralfate (Carafate, Generic) **Uses:** *Duodenal ulcers*, gastric ulcers, stomatitis, GERD, preventing stress ulcers, esophagitis Acts: Forms ulcer-adherent complex that protects against acid, pepsin, & bile acid

**Dose:** Adults. 1 g PO qid, 1 h prior to meals & hs. Peds. 40–80 mg/kg/d ÷ q6h; continue 4–8 wk unless healing demonstrated by x-ray or endoscopy; separate from other drugs by 2 h; take on empty stomach ac

**W/P:** See Box [C, ?] CI: Component allergy Disp: Tabs 1 g; susp 1 g/10 mL SE: Constipation; D, dizziness, xerostomia

**Notes:** Al may accumulate in renal failure

Sulfacetamide (Bleph-10, Cetamide, Klaron, Generic) **Uses:** *Conjunctival Infxns*, topical acne, seborrheic dermatitis Acts: Sulfonamide antibiotic

**Dose:** Ophthal soln: 1–2 gtt q2–3 h while awake for 7–10 d; 10% oint apply qid & hs; soln for keratitis apply q2–3h based on severity

**W/P:** [C, M] CI: Sulfonamide sensitivity; age < 2 mo Disp: Ophthal: Oint soln 10%; topical cream 10%; foam, gel,
**Lotion, pad all 10%**

**SE**: Irritation, burning, blurred vision, brow ache, SJS, photosens

**Sulfacetamide/Prednisolone (Blephamide) Uses**: *Steroid-responsive inflammatory ocular conditions w/ Infxn or a risk of Infxn*

**Acts**: Antibiotic & anti-inflammatory

**Dose**: Adults & Peds > 2 y. Apply oint lower conjunctival sac daily-qid; soln 1–3 gtt q4h while awake

**W/P**: [C, ?/–]

Sulfonamide sensitivity; age < 2 mo

**Disp**: Oint: sulfacetamide 10%/prednisolone 0.2%. Susp: sulfacetamide 10%/prednisolone 0.2%

**SE**: Irritation, burning, blurred vision, brow ache, SJS, photosens

**Notes**: OK ophthal susp use as otic agent

**Sulfasalazine (Azulfidine, Azulfidine EN, Generic) Uses**: *UC, RA, juvenile RA*

**Acts**: Sulfonamide; actions unclear

**Dose**: Adults. Ulcerative colitis: Initial, 1 g PO tid-qid; ↑ to a max of 4–6 g/d in 4 ÷ doses; maint 500 mg PO qid. RA: (EC tab) 0.5–1 g/d, ↑ weekly to maint 2 g ÷ bid.

**Peds. Ulcerative colitis**: Initial: 40–60 mg/kg/24 h PO ÷ q4–6h; maint: 30 mg/kg/24 h PO ÷ q6h. RA > 6 y: 30–50 mg/kg/d in 2 doses, start w/ 1/4–1/3 maint dose, ↑ weekly until dose reached at 1 mo, 2 g/d max

**W/P**: [B, M] Not rec w/ renal or hepatic impair

**CI**: Sulfonamide or salicylate sensitivity, porphyria, GI or GU obst

**Disp**: Tabs 500 mg; EC DR tabs 500 mg

**SE**: GI upset; discolors urine; dizziness, HA, photosens, oligospermia, anemias, SJS

**Notes**: May cause yellow-orange skin/contact lens discoloration; avoid sunlight exposure

**Sulindac (Clinoril) BOX**: May ↑ risk of CV events & GI bleeding; do not use for post-CABG pain control

**Uses**: *Arthritis & pain*

**Acts**: NSAID; ↓ prostaglandins

**Dose**: 150–200 mg bid, 400 mg/d max; w/ food

**W/P**: [B (D if 3rd tri or near term), ?] not rec w/ severe renal impair

**CI**: Allergy to component, ASA or any NSAID, postop pain in CABG

**Disp**: Tabs 150, 200 mg

**SE**: Dizziness, rash, GI upset, pruritus, edema, ↓ renal blood flow, renal failure (? fewer renal effects than other NSAIDs), peptic ulcer, GI bleeding

**Sumatriptan (Alsuma, Imitrex, Imitrex Statdose, Imitrex Nasal Spray, Sumavel Dosepro, Generic) Uses**: *Rx acute migraine and cluster HA*

**Acts**: Vascular serotonin receptor agonist

**Dose**: Adults. SQ: 6 mg SQ as a single-dose PRN; repeat PRN in 1 h to a max of 12 mg/24 h. PO: 25–100 mg, repeat in 2 h, PRN, 200 mg/d max. Nasal spray: 1 spray into 1 nostril, repeat in 2 h to 40 mg/24 h max.

**Peds. Nasal spray**: 6–9 y: 5–20 mg/d. 10–17 y: 5–20 mg, up to 40 mg/d max

**W/P**: [C, ?]

**CI**: IV use, angina, ischemic heart Dz, CV syndromes, PUD, cenebro vascular Dz, uncontrolled HTN, severe hepatic impair, ergot use, MAOI use w/ in 14 d, hemiplegic or basilar migraine

**Disp**: Imitrex Oral: OD tabs 25, 50, 100 mg; Imitrex Injection: 4, 6 mg/0.5 mL; ODTs 25, 50, 100 mg; Imitrex Nasal Spray: 5, 20 mg/spray; Alsuma Auto-Injector: 6 mg/0.5 mL

**SE**: Pain & bruising at Inj site; dizziness, hot flashes, paresthesia, N, dyspepsia, dry mouth, chest/neck/throat/jaw pain, tightness, pressure

**Notes**: Do not split/crush/chew

**Sumatriptan Needleless System (Sumavel DosePro) Uses**: *Rx acute migraine and cluster HA*

**Acts**: Vascular serotonin receptor agonist

**Dose**: Adults. SQ: 6 mg SQ as a single-dose PRN; repeat PRN in 1 h to a max of 12 mg/24 h; administer in abdomen/thigh.

**W/P**: [C, M] CI: See Sumatriptan
**Disp:** Needle-free SQ injector 6 mg/0.5 mL **SE:** Injection site Rxn, tingling, warm/hot/burning sensation, feeling of heaviness/pressure/tightness/numbness, feeling strange, lightheadedness, flushing, tightness in chest, discomfort in nasal cavity/sinuses/jaw, dizziness/vertigo, drowsiness/sedation, HA

**Sunitinib (Sutent) BOX:** Hepatotox that may be severe and/or result in fatal liver failure **Uses:** *Advanced GI stromal tumor (GIST) refractory/intolerant of imatinib; advanced RCC; well-differentiated pancreatic neuroendocrine tumors unresectable, locally advanced, metastatic* **Acts:** TKI; VEGF inhib; **Dose:** **Adults.** 50 mg PO daily × 4 wk, followed by 2 wk holiday = 1 cycle; ↓ to 37.5 mg w/ CYP3A4 inhib (Table 10, p 319), to ↑ 87.5 mg or 62.5 mg/d w/ CYP3A4 inducers **CI:** None **W/P:** [D, –] Multiple interactions require dose modification (eg, St. John’s wort) **Disp:** Caps 12.5, 25, 50 mg **SE:** ↓ WBC & plt, bleeding, ↑ BP, ↓ ejection fraction, ↑ QT interval, pancreatitis, DVT, Szs, adrenal insufficiency, N/V/D, skin discoloration, oral ulcers, taste perversion, hypothyroidism **Notes:** Monitor left ventricular ejection fraction, ECG, CBC/plts, chemistries (K+/Mg2+/phosphate), TFT & LFTs periodically; ↓ dose in 12.5-mg increments if not tolerated

**Tacrolimus (Prograf, Generic) BOX:** ↑ Risk of Infxn and lym phoma. Only physicians experienced in immunosuppression should prescribe **Uses:** *Prevent organ rejection (kidney/liver/heart)* **Acts:** Calcineurin inhib/immunosuppressant **Dose:** **Adults.** IV: 0.03–0.05 mg/kg/d in kidney and liver, 0.01 mg/kg/d in heart IV Inf **Peds.** IV: 0.03–0.05 mg/kg/d as cont Inf. **PO:** 0.15–0.2 mg/kg/d PO ÷ q12h. **Adults & Peds.** Eczema: Take on empty stomach; ↓ w/ hepatic/renal impair **W/P:** [C, –] w/ Cyclosporine; avoid topical if < 2 y; Neuro & nephrotox, ↑ risk opportunistic Infxns; avoid grapefruit juice **CI:** Component allergy, castor oil allergy w/ IV form **Disp:** Caps 0.5, 1, 5 mg; Inj 5 mg/mL **SE:** HTN, edema, HA, insomnia, fever, pruritus, ↑/↓ K⁺, hyperglycemia, GI upset, anemia, leukocytosis, tremors, paresthesias, pleural effusion, Szs, lymphoma, post rior reversible encephalopathy syndrome (PRES), BK nephropathy, PML **Notes:** Monitor levels; **Trough:** 5–12 ng/mL based on indication and time since transplant

**Tacrolimus, Ointment (Protopic) BOX:** Long-term safety of topical calcineurin inhibs not established. Avoid long-term use. ↑ Risk of Infxn and lym phoma. Not for peds < 2yr **Uses:** *2nd line mod–severe atopic dermatitis* **Acts:** Topical calcineurin inhib/immunosuppressant **Dose:** **Adult & Peds > 15 y.** Apply thin layer (0.03–0.1%) bid; D/C when S/Sxs clear. **Peds 2–15 y.** Apply thin layer (0.03%) bid, D/C when S/Sxs clear **W/P:** [C, -] Reevaluate if no response in 6 wk; not for < 2 y; avoid cont long-term use, ↑ risk opportunistic Infxns **CI:** Component allergy **Disp:** Oint 0.03, 0.1% **SE:** Local irritation **Notes:** Avoid occlusive dressing; only use 0.03% in peds

**Tadalafil (Adcirca) Uses:** *Pulmonary artery hypertension* **Acts:** PDE5 inhib, ↑ cyclic guanosine monophosphate & NO levels; relaxes pulm artery smooth muscles **Dose:** **Adults.** PRN: 10 mg PO before sexual activity (5–20 mg max based on response) 1 dose/24 h. **Daily dosing:** 2.5 mg qd, may ↑ to 5 mg qd, **BPH;** 5 mg PO qd; w/ o regard to meals; ↓ w/ renal/hepatic Insuff **W/P:** [B, –] w/ CV Dz, impaired autonomic control of BP, aortic stenosis α-blockers (except tamsulosin); use w/ CYP3A4 inhib/inducers (eg, ritonavir, ketoconazole); monitor for sudden ↓/loss of hearing or vision (NAION), tinnitus, priapism **CI:** w/ Nitrates, component hypersens **Disp:** Tabs 20 mg **SE:** HA **Notes:** See Tadalafil (Cialis) for ED

**Tadalafil (Cialis) Uses:** *ED, BPH* **Acts:** PDE5 inhib, ↑ cyclic guanosine monophosphate & NO levels; relaxes smooth muscles, dilates cavernosal arteries **Dose:** **Adults.** PRN: 10 mg PO before sexual activity (5–20 mg max based on response) 1 dose/24 h. **Daily dosing:** 2.5 mg qd, may ↑ to 5 mg qd, **BPH;** 5 mg PO qd; w/ o regard to meals; ↓ w/ renal/hepatic Insuff **W/P:** [B, –] w/ α-Blockers
Tamsulosin (Flomax, Generic) Uses: *BPH* Acts: Antagonist of prostatic α-receptors Dose: 0.4 mg/d, may ↑ to 0.8 mg PO daily W/P: [B, ?] Floppy iris syndrome w/ cataract surgery Disp: Caps 0.4 mg SE: HA, dizziness, syncope, somnolence, ↓ libido, GI upset, retrograde ejaculation, rhinitis, rash, angioedema, IFIS Notes: Not for use as antihypertensive; do not open/crush/chew; approved for use w/ dutasteride for BPH

Taliglucerase Alfa (Elelyso) Uses: *Long-term enzyme replacement for type 1 Gaucher Dz* Acts: Catalyzes hydrolysis of glucocerebroside to glucose & ceramide Dose: Adults. 60 units/kg IV every other wk; Inf over 1–2 h W/P: [B, ?/–] CI: None Disp: Inj 200 units/vial SE: Inf Rxns (allergic, HA, CP, asthenia, fatigue, urticaria, erythema, ↑ BP, back pain, arthralgia, flushing), anaphylaxis, URI, pharyngitis, influenza, UTI, extremity pain Notes: For Rxns: ↓ Inf rate, give antihistamines/antipyretics or D/C

Tamoxifen (Generic) BOX: CA of the uterus or endometrium; stroke, and blood clots can occur Uses: *Breast CA [postmenopausal, estrogen receptor(+)], ↓ risk of breast CA in high-risk, met male breast CA*, ovulation induction Acts: Nonsteroidal antiestrogen; mixed agonist–antagonist effect Dose: 20–40 mg/d; doses > 20 mg ÷ bid. Prevention: 20 mg PO/d × 5 y W/P: [D, –] w/ ↓ WBC, ↓ plts, hyperlipidemia CI: PRG, w/ warfarin, Hx thromboembolism Disp: Tabs 10, 20 mg SE: Uterine malignancy & thrombosis events seen in breast CA prevention trials; menopausal Sxs (hot flashes, N/V) in premenopausal pts; Vag bleeding & menstrual irregularities; skin rash, pruritus vulvae, dizziness, HA, peripheral edema; acute flare of bone metastasis pain & ↑ Ca\(^{2+}\); retinopathy reported (high dose)

Tapentadol (Nucynta) [C-II] Box: Provider should be alert to problems of abuse, misuse, & diversion. Avoid use w/ alcohol. Uses: *Mod–severe acute pain* Acts: Mu-opioid agonist and norepinephrine reuptake inhib Dose: 50–100 mg PO q4–6h PRN (max 600 mg/d); w/ mod hepatic impair: 50 mg q8h PRN (max 3 doses/24 h) ER dosing: initial 50 mg PO bid (max daily dose 500 mg) W/P: [C, –] Hx of Szs, CNS depression; ↑ ICP, severe renal impair, biliary tract Dz, elderly,
serotonin synd w/ concomitant serotonergic agents **CI:** ↓ Pulm Fxn, use w/ or w/ in 14 d of MAOI, ileus

**Disp:** Tabs 50, 75, 100 mg, ER: 50, 100, 150, 200, 250 mg

**SE:** N/V, dizziness, somnolence, HA, constipation

**Notes:** Taper dose w/ D/C

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**Tazarotene (Avage, Fabior, Tazorac) Uses:** *Facial acne vulgaris; stable plaque psoriasis up to 20% BSA* **Acts:** Keratolytic **Dose:** **Adults & Peds > 12 y. Acne:** Cleanse face, dry, apply thin film qhs lesions. **Psoriasis:** Apply qhs **W/P:** [X, ?/–] **CI:** Retinoid sensitivity, PRG, use in women of childbearing age unable to comply w/ birth control requirements **Disp:** Gel 0.05, 0.1%; cream 0.05, 0.1%; foam 0.1% **SE:** Burning, erythema, irritation, rash, photosens, desquamation, bleeding, skin discoloration **Notes:** D/C w/ excessive pruritus, burning, skin redness, or peeling until Sxs resolve; external use only, not for broken or sunburned skin

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**Teduglutide [rDNA Origin] (Gattex) Uses:** *Short bowel synd dependent on parenteral support* **Acts:** GLP-2 analog ↑ intest & portal blood flow & ↓ gastric acid secretion **Dose:** **Adults. 0.05 mg/kg SQ daily; ↓ 50% w/ mod–severe renal impair; alt Inj site between Abd, thighs, arms **W/P:** [B, ?/–] Acceleration neoplastic growth (colonoscopy baseline, 1 y, & q5y); D/C w/ intestinal obstr; biliary/pancreatic Dz (baseline & q6mo bili, alk phos, lipase, amylase); may ↑ absorption oral meds **CI:** None **Disp:** Inj vial 5 mg

**SE:** N/V, Abd pain, Abd distention, Inj site Rxn, HA, URI, fluid overload

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**Telaprevir (Incivek) Uses:** *Hep C virus, genotype 1, w/ compensated liver Dz including naive to Tx, nonresponders, partial responders, relapers; w/ peginterferon and ribavirin* **Acts:** Hep C antiviral; NS3/4A protease inhib **Dose:** **Adults. 750 mg tid, w/ food, must be used w/ peginterferon and ribavirin × 12 wk, then peginterferon and ribavirin × 12 wk (if hep C undetectable at 4 and 12 wk) or 36 wk (if hep C detectable at 4 and/or 12 wk) **W/P:** [X, –] **CI:** All CIs to peginterferon and ribavirin; men if PRG female partner; w/ CYP3A metabolized drugs (eg, alfuzosin, sildenafil, tadalafil, lovastatin, simvastatin, ergotamines, cisapride, midazolam, rifampin, St. John’s wort’s wort) **Disp:** Tabs 375 mg

**SE:** Rash > 50% of pts, include SJS, drug rash w/ eosinophilia (DRESS); pruritus, anemia, N, V, D, fatigue, anorectal pain, dysgeusia, hemorrhoids **Notes:** Must not be used as monotherapy

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**Telavancin (Vibativ)** **BOX:** Fetal risk; must have PRG test prior to use in childbearing age

**Uses:** *Complicated skin/skin structure Infxns d/t susceptible Gram-positive bacteria* **Acts:** Lipoglycopeptide antibacterial; **Spectrum:** Good gram(+) aerobic and anaerobic include MRSA, MSSA, some VRE; poor gram(–) **Dose:** 10 mg/kg IV q24h; 7.5 mg/kg q24h w/ CrCl 30–50 mL/min; 10 mg/kg q48h w/ CrCl 10–30 mL/min; **W/P:** [C, ?] Nephrotox, C. difficile-associated diarrhea, insomnia, HA Dz, ↑ QTc, interferes w/ some coag tests: **CI:** None **Disp:** Inj 250, 750 mg

**SE:** Insomnia, psychiatric disorder, taste disturbance, HA, N, V, foamy urine **Notes:** Contains cyclodextrin, which can accumulate in renal dysfunction

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**Telbivudine (Tyzeka)** **BOX:** May cause lactic acidosis and severe hepatomegaly w/ steatosis when used alone or w/ antiretrovirals; D/C of the drug may lead to exacerbations of hep B; monitor LFTs

**Uses:** *Rx chronic hep B* **Acts:** Nucleoside RT inhib **Dose:** **CrCl > 50 mL/min:** 600 mg PO daily; **CrCl 30–49 mL/min:** 600 mg q 48h; **CrCl < 30 mL/min:** 600 mg q72h; ESRD: 600 mg q96h; dose after hemodialysis **W/P:** [B, ?/–] May cause myopathy; follow closely w/ other myopathy causing drugs **Disp:** Tabs 600 mg

**SE:** Fatigue, Abd pain, N/V/D, HA, URI, nasopharyngitis, ↑ LFTs, CPK, myalgia/myopathy, flu-like Sxs, dizziness, insomnia, dyspepsia **Notes:** Use w/ PEG-interferon may ↑ peripheral neuropathy risk
Telithromycin (Ketek) BOX: CI in MyG; life-threatening RF occurred in PF w/ MyG Uses: *Mild–mod CAP* Acts: Unique macrolide, blocks ↓ protein synth; bactericidal. Spectrum: S. aureus, S. pneumoniae, H. influenzae, M. catarrhalis, C. pneumoniae, M. pneumoniae Dose: CAP: 800 mg (2 tabs) PO daily × 7–10 d W/P: [C, ?] Pseudomembranous colitis, ↑ QTc interval, visual disturbances, hepatic dys-function; dosing in renal impair unknown CI: Macrolide allergy, w/ pimozide or cisapride, Hx of hep or jaundice, w/ macrolide abx, w/ MyG Disp: Tabs 300, 400 mg SE: N/V/D, dizziness, blurred vision Notes: A CYP450 inhib; multiple drug interactions; hold statins d/t ↑ risk of myopathy

Telmisartan (Micardis) BOX: Use of renin-angiotensin agents in PRG can cause fetal injury and death, D/C immediately when PRG detected Uses: *HTN, CHF* Acts: Angiotensin II receptor antagonist Dose: 40–80 mg/d W/P: [C (1st tri; D 2nd & 3rd tri), ?/–] ↑ K+ CI: Angiotensin II receptor antagonist sensitivity Disp: Tabs mg telmisartan/mg amlodipine 40/5; 40/10; 80/5; 80/10 SE: HA, edema, dizziness, N, ↓ BP Notes: Titrate w/ hepatic/renal impair; avoid w/ ACE/other ARBs; correct hypovolemia before; w/ CHF monitor

Temazepam (Restoril, Generic) [C-IV] Uses: *Insomnia*, anxiety, depression, panic attacks Acts: Benzodiazepine Dose: 15–30 mg PO hs PRN; ↓ in elderly W/P: [X, ?/–] Potentiates CNS depressive effects of opioids, barbs, EtOH, antihistamines, MAOIs, TCAs CI: NAG, PRG Disp: Caps 7.5, 15, 22.5, 30 mg SE: Confusion, dizziness, drowsiness, hangover Notes: Abrupt D/C after > 10 d use may cause withdrawal

Temelzolomide (Temodar) Uses: *Glioblastoma multiforme (GBM), refractory anaplastic astrocytoma* Acts: Alkylating agent Dose: GBM, new: 75 mg/m² PO/IV/d × 42 d w/ RT, maint 150 mg/m²/d days 1–5 of 28-d cycle × 6 cycles; may ↑ to 200 mg/m²/d × 5 d every 28 d in cycle 2; Refractory astrocytoma: 150 mg/m² PO/IV/d × 5 d per 28-d cycle; Adjust dose based on ANC and plt count (per PI and local protocols). W/P: [D, ?/–] w/ Severe renal/hepatic impair, myelosuppression (monitor ANC & plt), myelodysplastic synd, secondary malignancies, PCP pneumonia (PCP prophylaxis required) CI: Hypersens to components or dacarbazine Disp: Caps 5, 20, 100, 140, 180, & 250 mg; powder for Inj 100 mg SE: N/V/D, fatigue, HA, asthenia, Sz, hemiparesis, fever, dizziness, coordination abnormality, alopecia, rash, constipation, anorexia, amnesia, insomnia, viral Infxn, ↓ WBC, plt Notes: Infuse over 90 min; swallow caps whole; if caps open avoid inhalation and contact w/ skin/mucous membranes

Temsirolimus (Torisel) Uses: *Advanced RCC* Acts: Multikinase inhib, ↓ mTOR (mammalian target of rapamycin), ↓ hypoxic-induced factors, ↓ VEGF Dose: 25 mg IV 30–60 min 1×/wk. Hold w/ ANC < 1000 cells/mcL, plt < 75,000 cells/mcL, or NCI grade 3 tox. Resume when tox grade 2 or less, restart w/ dose ↓ 5 mg/wk not < 15 mg/wk. w/ CYP3A4 inducers ↑ 50 mg/wk W/P: [D, –] Avoid live vaccines, ↓ wound healing, avoid periop CI: Bili > 1.5 × ULN Disp: Inj 25 mg/mL w/ 250 mL diluent SE: Rash, asthenia, mucositis, N, bowel perforation,
angioedema, impaired wound healing; interstitial lung Dz anorexia, edema, ↑ lipids, ↑ glucose, ↑ triglycerides, ↑ LFTs, ↑ Cr, ↓ WBC, ↓ HCT, ↓ plt, ↓ PO₄

Notes: Premedicate w/ antihistamine; √ lipids, CBC, plt, Cr, glucose; w/ sunitinib dose-limiting tox likely; females use w/ contraception

Tenecteplase (TNKase) Uses: *Restore perfusion & ↓ mortality w/ AMI*

Acts: Thrombolytic; TPA

Dose: 30–50 mg; see table below

W/P: [C, ?], ↑ Bleeding w/ NSAIDs, ticlopidine, clopidogrel, GPIIb/IIIa antagonists
CI: Bleeding, AVM aneurysm, CVA, CNS neoplasm, uncontrolled ↑ BP, major surgery (intracranial, intraspinal) or trauma w/ in 2 mo

Disp: Inj 50 mg, reconstitute w/ 10 mL sterile H₂O only

SE: Bleeding, allergy

Notes: Do not shake w/ reconstitution; start ASA ASAP, IV heparin ASAP w/ aPTT 1.5–2 × UL of control

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Tenofovir (Viread) BOX: Lactic acidosis/hepatomegaly w/ steatosis (some fatal) reported w/ the use of NRTI. Exacerbations of hepatitis reported w/ HBV patients who D/C hep B Rx, including VIREAD. √ LFT in these patients and may need to resume hep B Rx

Uses: *HIV and chronic hep B Infxn*

Acts: NRTI

Dose: 300 mg PO daily w/ or w/o meal; CrCl 30–49 mL/min q48h, CrCl 10–29 mL/min 2×/wk

W/P: [B, –] Didanosine, lopinavir, ritonavir w/ known risk factors for liver Dz

CI: Hypersens

Disp: Tabs 300 mg SE: GI upset, metabolic synd, hepatotox; insomnia, rash, ↑ CK, Fanconi synd

Notes: Combo product w/ emtricitabine is Truvada

Tenofovir/Emtricitabine (Truvada) BOX: Lactic acidosis/hepatomegaly w/ steatosis (some fatal) reported w/ the use of NRTI. Not approved for chronic hep B. Exacerbations of hepatitis reported w/ HBV pts who D/C Truvada. May need to resume hep B Rx. If used for PrEP, confirm (–) HIV before and q3mo. Drug-resistant HIV-1 variants have been identified

Uses: *HIV Infxn pre-exposure prophylaxis (PrEP) for HIV-1*

Acts: Dual nucleotide RT inhib

Dose: 1 tab PO daily w/ or w/o a meal; adjust w/ renal impair

W/P: [B, ?–/–] w/ Known risk factors for liver Dz

CI: None

Disp: Tabs: 200 mg emtricitabine/300 mg tenofovir SE: GI upset, rash, metabolic synd, hepatotox; Fanconi synd; OK peds > 12 y

Terazosin (Hytrin, Generic) Uses: *BPH & HTN*

Acts: α₁-Blocker (blood vessel & bladder neck/prostate)

Dose: Initial, 1 mg PO hs; ↑ 20 mg/d max; may ↓ w/ diuretic or other BP medicine

W/P: [C, ?] w/ β-Blocker, CCB, ACE inhib; use w/ phosphodiesterase-5 (PDE5) inhib (eg, sildenafil) can cause ↓ BP, intra op floppy iris synd w/ cataract surgery

CI: α-Antagonist sensitivity
Disp: Tabs 1, 2, 5, 10 mg; caps 1, 2, 5, 10 mg angina SE: Angina, ↓ BP, & syncope following 1st dose or w/ PDE5 inhib; dizziness, weakness, nasal congestion, peripheral edema, palpitations, GI upset Notes: Caution w/ 1st dose syncope; if for HTN, combine w/ thiazide diuretic

Terbinafine (Lamisil, Lamisil AT, Generic [OTC])

**Uses:** *Onychomycosis, athlete’s foot, jock itch, ringworm*, cutaneous candidiasis, pityriasis versicolor

**Acts:** ↓ Squalene epoxidase resulting in fungal death

**Dose:** PO: 250 mg/d PO for 6–12 wk. Topical: Apply to area tinea pedis bid, tinea cruris & corporus daily-bid, tinea versicolor soln bid; ↓ PO in renal/hepatic impair

**W/P:** [B, –] PO ↑ effects of drug metabolism by CYP2D6, w/ liver/renal impair

**CI:** CrCl < 50 mL/min, WBC < 1000/mm³, severe liver Dz

Disp: Tabs 250 mg; oral granules 125 mg/pkt, 187.5 mg/pkt Lamisil AT [OTC] cream, gel, soln 1%

**SE:** HA, DIV/N dizziness, rash, pruritus, alopecia, GI upset, taste perversion, neutropenia, retinal damage, SJS, ↑ LFTs

**Notes:** Effect may take months d/t need for new nail growth; topical not for nails; do not use occlusive dressings; PO follow CBC/LFTs

Terbutaline (Generic)

**BOX:** Not approved and should not be used > 48–72h for tocolysis. Serious adverse Rxns possible, including death. **Uses:** *Reversible bronchospasm (asthma, COPD); inhib labor*

**Acts:** Sympathomimetic; tocolytic

**Dose:** Adults. Bronchodilator: 2.5–5 mg PO qid or 0.25 mg SQ; repeat in 15 min PRN; max 0.5 mg SQ in 4 h. Max 15 mg/24 h PO. Metered-dose inhaler: 1 puff PRN, repeat after 5 min PRN; 6 inhal/24 h max. Premature labor: 0.25 mg SQ every 1–4 h × 24 h; 2.5–5 mcg/min IV, ↑ 5 mcg/min q10min as tolerated, 25 mcg/min max. When controlled ↓ to lowest effective dose; SQ pump: basal 0.05–0.10 mg/h, bolus over 25 mg PRN

**Peds.** PO: 0.05–0.15 mg/kg/dose PO tid; max 5 mg/24 h; ↓ in renal failure

**W/P:** [C, +] ↑ Tox w/ MAOIs, TCAs; DM, HTN, hyperthyroidism, convulsive disorders, K+ CI: Component allergy, prolonged tocolysis

Disp: Tabs 2.5, 5 mg; Inj 1 mg/mL; metered-dose inhaler

**SE:** HTN, hyperthyroidism, β1-adrenergic effects w/ high dose, nervousness, trembling, tachycardia, arrhythmia, HTN, dizziness,

**Notes:** Tocolysis requires close monitoring of mother and fetus

Terconazole (Terazol 3, Terazol 7, Generic)

**Uses:** *Vag fungal Infxns*

**Acts:** Topical triazole antifungal

**Dose:** 1 applicator-full or 1 supp intravag hs × 3–7 d

**W/P:** [C, ?] CI: Component allergy

Disp: Vag cream (Terszol 7) 0.4, (Terszol 3), 0.8%, (Terszol 3) Vag supp 80 mg

**SE:** Vulvar/Vag burning

**Notes:** Insert high into vagina

Teriflunomide (Aubagio)

**BOX:** Hepatotox; ✔ LFT baseline & ALT qmo × 6 mo. D/C w/ liver injury & begin accelerated elimination procedure; CI in PRG & women of childbearing potential w/ o reliable contraception

**Uses:** *Relapsing MS* **Acts:** Pyrimidine synth inhib

**Dose:** Adults. 7 or 14 mg PO daily

**W/P:** [X, –] w/ CYP2C8, CYP1A2 metab drugs, warfarin, ethinylestradiol, levonorgestrel; ↑ elimin w/ cholesteryramine or activated charcoal × 11 d; CI: PRG; severe hepatic impair; w/ leflunomide

Disp: Tabs 7, 14 mg

**SE:** ↑ ALT, alopecia, N/D, influenza, paresthesia, ↓ WBC, neuropathy, ↑ BP, SJS, TEN, ARF, ↑ K+

**Notes:** ✔ CBC & TB screen prior to Rx; ✔ BP, S/Sxs of Infxn; do not give w/ live vaccines

Teriparatide (Forteo)

**BOX:** ↑ Osteosarcoma risk in animals, use only where potential benefits outweigh risks

**Uses:** *Severe/refractory osteoporosis*

**Acts:** PTH (recombinant)

**Dose:** 20 mcg SQ daily in thigh or Abd

**W/P:** [C, –]; Caution in urolithiasis

Disp: 250 mcg/mL in 2.4-mL prefilled syringe

**SE:** Orthostatic ↓ BP on administration, N/D, ↑ Ca2+; leg cramps, ↑ uric acid

**Notes:** 2 y max use

Tesamorelin (Egrifta)

**Uses:** *↓ Excess Abd fat in HIV-infected patients w/ lipodystrophy*

**Acts:**
Binds/stimulates growth hormone-releasing factor receptors **Dose**: 2 mg SQ/d; **W/P**: [X; HIV-infected mothers should not breast-feed] **CI**: Hypothalamic-pituitary axis disorders; hypersensitivity to tesamorelin, mannitol, or any component, head radiation/trauma; malignancy; PRG; child w/ open epiphyses **Disp**: Vial 1 mg **SE**: Arthralgias, Inj site Rxn, edema, myalgia,↑ glucose, N, V **Notes**: Gluc, ↑ mortality w/ acute critical illness; ↑ IGF

**Testosterone (AndroGel 1%, AndroGel 1.62% Androderm, Axiron, Fortesta, Striant, Testim, Testopel) [C-III] BOX**: Virilization reported in children exposed to topical testosterone products. Children to avoid contact w/ unwashed or unclothed application sites **Uses**: *Male hypogonadism* (congenital/acquired)* **Acts**: Testosterone replacement; ↑ lean body mass, libido **Dose**: All daily applications: AndroGel 1%: 50 mg (4 pumps); AndroGel 1.62%: 40.5 mg (2 pumps); apply to clean skin on upper body only. Andromed: Two 2.5-mg or one 5-mg patch daily. Axiron: 60 mg (1 pump = 30 mg each axilla) q a.m. Fortesta: 40 mg (4 pumps) on clean, dry thighs; adjust form 1–7 pumps based on blood test 2 h after (days 14 and 35). Striant: 30-mg buccal tabs bid. Testopel: 150–450 mg (2–6 pellets) SQ implant q3–6mo (implant two 75-mg pellets for each 25 mg testosterone required weekly; eg: For 75 mg/wk, implant 450 mg (6 pellets). **W/P**: [X, –] May cause polycythemia, worsening of BPH Sx **CI**: PCa, male breast CA, women **Disp**: AndroGel 1%: 12.5 mg/pump; AndroGel 1.62%: 20.25 mg/pump; Androderm: 2.5-, 5-mg patches; Axiron: Metered-dose pump 30 mg/pump; Fortesta: Metered-dose gel pump 10 mg/pump; Striant: 30-mg buccal tab. Testopel: 75 mg/implant **SE**: Site Rxns, acne, edema, Wt gain, gynecomastia, HTN, ↑ sleep apnea, prostate enlargement, ↑ PSA **Notes**: IM testosterone enanthate (Delatestryl; Testro-L.A.) & cypionate (Depo-Testosterone) dose q14–28d w/ variable serum levels; PO agents (methyltestosterone & oxandrolone) associated w/ hepatic tumors; transdermal/mucosal forms preferred; wash hands immediately after topical applications AndroGel formulations not equivalent; levels and adjust PRN (300–1000 ng/dL testosterone range)

**Tetanus Immune Globulin** **Uses**: Prophylaxis *passive tetanus immunization* (suspected contaminated wound w/ unknown immunization status, see Table 7, p 315), or Tx of tetanus **Acts**: Passive immunization **Dose**: Adults & Peds. Prophylaxis: 250 mg units IM × 1; Tx: 500–6000 (30–300 units/kg) units IM **W/P**: [C, ?] Anaphylaxis Rxn **CI**: Thimerosal sensitivity **Disp**: Inj 250-unit vial/syringe **SE**: Pain, tenderness, erythema at site; fever, angioedema **Notes**: May begin active immunization series at different Inj site if required

**Tetanus Toxoid (TT) (Generic)** **Uses**: *Tetanus prophylaxis* **Acts**: Active immunization **Dose**: Based on previous immunization, Table 7, p 315 **W/P**: [C, ?/–] CI: Thimersal hypersensitivity neurologic Sxs w/ previous use, active Infxn w/ routine primary immunization **Disp**: Inj tetanus toxoid fluid, 5 Lf units/0.5 mL; tetanus toxoid adsorbed, 5 units/0.5 mL **SE**: Inj site erythema, induration, sterile abscess; arthralgias, fever, malaise, neurologic disturbances **Notes**: DTaP rather than TT or Td all adults 19–64 y who have not previously received 1 dose of DTaP (protection adult pertussis); also use DT or Td instead of TT to maintain diphtheria immunity; if IM, use only preservative-free Inj; do not confuse Td (for adults) w/ DT (for children)

**Tetrabenazine (Xenazine) BOX**: ↑ Risk of depression, suicide w/ Huntington Dz **Uses**: *Rx chorea in Huntington Dz* **Acts**: Monoamine depleter **Dose**: Divide 25–100 mg/d ÷ doses; 12.5 mg PO/d × 1 wk, ↑ to 12.5 mg bid, may ↑ to 12.5 mg TID if > 37.5 mg/d tid after 1 wk; if > 50 mg needed, ↑ for CYP2D6 gene; if poor metabolizer, 25 mg/dose, 50 mg/d max; extensive/indeterminate metabolizer 37.5 mg dose max, 100 mg/d max **W/P**: [C, ?/–] 1/2 dose w/ strong CYP2D6 inhib 50 mg/d max
(paroxetine, fluoxetine) CI: Wait 20 d after reserpine D/C before use, suicidality, untreated or inadequately treated depression; hepatic impair; w/ MOAI or reserpine Disp: Tabs 12.5, 25 mg SE: Sedation, insomnia, depression, anxiety, irritability, akathisia, Parkinsonism, balance difficulties, neuroleptic malignant syndrome, fatigue, N, V, dysphagia, ↑ QT, EPS Szs, falls

**Tetracycline (Generic) Uses:** *Broad-spectrum antibiotic* Acts: Bacterio-static; ↓ protein synth. Spectrum: Gram(+): *Staphylococcus, Streptococcus*. Gram(–): *H. pylori*. Atypicals: *Chlamydia, Rickettsia, & Mycoplasma* Dose: *Adults*. 250–500 mg PO bid-qid. *Peds* > 8 y. 25–50 mg/kg/24 h PO q6–12h; ↓ w/ renal/hepatic impair, w/ o food preferred W/P: [D, –] CI: PRG, children < 8 y Disp: Caps 100, 250, 500 mg; tabs 250, 500 mg; PO susp 250 mg/5 mL SE: Photosens, GI upset, renal failure, pseudotumor cerebri, hepatic impair Notes: Can stain tooth enamel & depress bone formation in children; do not administer w/ antacids or milk products

**Thalidomide (Thalomid) BOX:** Restricted use; use associated w/ severe birth defects and ↑ risk of venous thromboembolism Uses: *Erythema nodosum leprosum (ENL)*, GVHD, aphthous ulceration in HIV(+) Acts: ↓ Neutrophil chemotaxis, ↓ monocyte phagocytosis Dose: *GVHD*: 50–100 tid, max 600–1200 mg/d. *Stomatitis*: 200 mg bid for 5 d, then 200 mg daily up to 8 wk. *Erythema nodosum leprosum*: 100–300 mg PO qhs W/P: [X, –] May ↑ HIV viral load; Hx Szs CI: PRG or females not using 2 forms of contraception Disp: 50, 100, 150, 200 mg caps SE: Dizziness, drowsiness, rash, fever, orthostasis, SJS, thrombosis, fatigue, peripheral neuropathy, Szs Notes: MD must register w/ STEPS risk-management program; informed consent necessary; immediately D/C if rash develops

**Theophylline (Theo24, Theochron, Theolair, Generic) Uses:** *Asthma, bronchospasm* Acts: Relaxes smooth muscle of the bronchi & pulm blood vessels Dose: *Adults*. 900 mg PO ÷ q6h; SR products may be ÷ q8–12h (maint). *Peds*. 16–22 mg/kg/24 h PO ÷ q6h; SR products may be ÷ q8–12h (maint); ↓ in hepatic failure W/P: [C, +] Multiple interactions (eg, caffeine, smoking, carbamazepine, barbiturates, β-blockers, ciprofloxacin, E-mycin, INH, loop diuretics), arrhythmia, hyperthyroidism, uncontrolled Szs CI: Corn allergy Disp: Elixir 80 mg/15 mL; soln 80 mg/15 mL; ER 12 h caps: 300 mg; ER 12 h tabs: 200, 100, 300, 480 mg; ER 24 h caps: 100, 200, 300, 400 mg; ER 24 h tabs: 400, 600 mg SE: N/V, tachycardia, Szs, nervousness, arrhythmias Notes: IV levels: Sample 12–24 h after Inf started; Therapeutic: 5–15 mcg/mL; Toxic: > 20 mcg/mL. PO levels: Trough: just before next dose; Therapeutic: 5–15 mcg/mL

**Thiamine [Vitamin B₁] (Generic) Uses:** *Thiamine deficiency (beriberi), alcoholic neuritis, Wernicke encephalopathy* Acts: Dietary supl Dose: *Adults*. Deficiency: 5–30 mg IM or IV TID then 5–30 mg/d for 1 mo. Wernicke encephalopathy: 100 mg IV single dose, then 100 mg/d IM for 2 wk. *Peds*. 10–25 mg/d IM for 2 wk, then 5–10 mg/24 h PO for 1 mo W/P: [A, +] CI: Component allergy Disp: Tabs 50, 100, 250, 500 mg; Inj 100 mg/mL SE: Angioedema, paresthesias, rash, anaphylaxis w/ rapid IV Notes: IV use associated w/ anaphylactic Rxn; give IV slowly

**Thioguanine (Tabloid) Uses:** *AML, ALL, CML* Acts: Purine-based anti-metabolite (substitutes for natural purines interfering w/ nucleotide synth) Dose: *Adult*: 2–3 mg/kg/d *Peds*: 60 mg/m²/d for 14 d no renal adjustment in peds; D/C if pt develops jaundice, VOD, portal hypertension; ↓ in severe renal/hepatic impair W/P: [D, –] CI: Resistance to mercaptopurine Disp: Tabs 40 mg SE: ↓ BM (leukopenia/thrombocytopenia), N/V/D, anorexia, stomatitis, rash, hyperuricemia, rare hepatotox

**Thioridazine BOX:** Dose-related QT prolongation elderly pts w/ dementia-related psychosis Tx w/ antipsyanosis are at an ↑ risk of death Uses: *Schizophrenia*, psychosis Acts: Phenothiazine
**Thiothixene (Generic)**

**BOX:** Not for dementia-related psychosis; increased mortality risk in elderly on antipsychotics

**Uses:** *Psychosis*  
**Acts:** ? May antagonize dopamine receptors  
**Dose:**  
- **Adults & Peds > 12 y.** Mild–mod psychosis: 2 mg PO tid, up to 20–30 mg/d. Rapid tranquilization for agitated pts: 5–10 mg q30–60 min; Avg: 15–30 mg total  
- **Severe psychosis**: 5 mg PO bid; ↑ to max of 60 mg/24 h PRN.  
**IM use:** 16–20 mg/24 h ÷ bid-qid; max 30 mg/d. **Peds < 12 y.** 0.25 mg/kg/24 h PO ÷ q6–12h

**W/P:** [C, ?] Avoid w/ ↑ QT interval or meds that can ↑ QT  
**CI:** Severe CNS depression; circulatory collapse; blood dyscrasias, phenothiazine sensitivity

**Disp:** Caps 1, 2, 5, 10 mg  
**SE:** Dizziness, HA, somnolence, memory impair, tremors, N

**Notes:** Use gradual withdrawal; used in combo w/ other anticonvulsants

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**Tiagabine (Gabitril)**

**Uses:** *Adjunct in partial Szs*, bipolar disorder  
**Acts:** Antiepileptic, enhances activity of GABA  
**Dose:**  
- **Adults & Peds ≥ 12 y.** (Dose if already on enzyme-inducing AED; use lower dose if not on AED) Initial 4 mg/d PO, ↑ by 4 mg during 2nd wk; ↑ PRN by 4–8 mg/d based on response, 56 mg/d max; take w/ food  
**W/P:** [C, –] May ↑ suicidal risk  
**CI:** Component allergy  

**Disp:** Tabs 2, 4, 12, 16 mg  
**SE:** Dizziness, HA, somnolence, memory impair, tremors, N

**Notes:** Use gradual withdrawal; used in combo w/ other anticonvulsants

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**Ticagrelor (Brilinta)**

**BOX:** ↑ Bleeding risk; can be fatal; daily aspirin > 100 mg may ↓ effectiveness; do not start w/ active bleeding, Hx intracranial bleed, planned CABG; if hypotensive and recent procedure, suspect bleeding; manage any bleed w/ o D/C of ticagrelor  

**Uses:** *↓ CV death and heart attack in ACS*  
**Acts:** Oral antiplatelet; reversibly binding ADP receptor antagonist inhib  
**Dose:** Initial 180 mg PO w/ ASA 325 mg, then 90 mg bid w/ ASA 75–100 mg/d  
**W/P:** [C, –] w/ Mod hepatic impair; w/ strong CYP3A inhib or CYP3A inducers  
**CI:** Hx intracranial bleed, active pathologic bleeding, severe hepatic impair

**Disp:** Tabs 90 mg  
**SE:** Bleeding, SOB

**Notes:** REMS; D/C 5 days preop

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**Ticarcillin/Potassium Clavulanate (Timentin)**

**Uses:** *Infxns of the skin, bone, resp & urinary tract, Abd, sepsis*  
**Acts:** Carboxy-PCN; bactericidal; ↓ cell wall synth; clavulanic acid blocks β-lactamase.  
**Spectrum:** Good gram(+), not MRSA; good gram(–) & anaerobes  
**Dose:**  
- **Adults.** 3.1 g IV q4–6h max 24 g ticarcillin component/d  
- **Peds. ≤ 60 kg** (if ≥ 60 kg, adult dose). 200–300 mg/kg/d IV ÷ q4–6h; ↓ in renal failure  
**W/P:** [B, +/-] PCN sensitivity  

**Disp:** Inj ticarcillin/clavulanate acid 3.1/0.1-g vial  
**SE:** Hemolytic anemia, false(+) proteinuria  
**Notes:** Often used in combo w/ aminoglycosides; penetrates CNS w/ meningeal irritation

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**Ticlopidine (Ticlid)**

**BOX:** Neutropenia/agranulocytosis, TTP, aplastic anemia reported  
**Uses:** *↓ Risk of thrombotic stroke*, protect grafts status post-CABG, diabetic microangiopathy, ischemic heart Dz,  
**Acts:** Plt aggregation inhib  
**Dose:** 250 mg PO bid w/ food  
**W/P:** [B, ?–], ↑ Tox of ASA, anticoagulation, NSAIDs, theophylline; do not use w/ clopidogrel (↓ effect)  
**CI:** Bleeding, hepatic impair, neutropenia, ↓ plt

**Disp:** Tabs 250 mg SE: Bleeding, GI upset, rash, ↑ LFTs  
**Notes:** CBC
Tigecycline (Tygacil) Uses: *Rx complicated skin & soft-tissue Infxsns, & complicated intra-Abd Infxsns*  
**Acts:** A glycycyline; binds 30 S ribosomal subunits, ↓ protein synthesis; **Spectrum:** Broad gram(+), gram(–), anaerobic, some mycobacterial; *E. coli, E. faecalis* (vancomycin-susceptible isolates), *S. aureus* (methicillin-susceptible/resistant), *Streptococcus* (agalactiae, anginosus grp, pyogenes), *Citrobacter freundii, Enterobacter cloacae, B. fragilis* group, *C. perfringens,*  
**Peptostreptococcus** **Dose:** 100 mg, then 50 mg q12h IV over 30–60 min  
**W/P:** [D, ?] Hepatic impair, monotherapy w/ intestinal perforation, not OK in peds, w/ tetracycline allergy  
**CI:** Component sensitivity  
**Disp:** Inj 50-mg vial  
**SE:** N/V, Inj site Rxn, anaphylaxis  
**Notes:** Not indicated for HAP, VAP (↑ mortality for VAP), bacteremia  

Timolol (Generic) BOX: Exacerbation of ischemic heart Dz w/ abrupt D/C Uses: *HTN & MI*  
**Acts:** β-Adrenergic receptor blocker, β₁, β₂  
**Dose:** HTN: 10–20 mg bid, up to 60 mg/d. MI: 10 mg bid  
**W/P:** [C (1st tri; D if 2nd or 3rd tri), +] CI: CHF, cardiogenic shock, ↓ HR, heart block, COPD, asthma  
**Disp:** Tabs 5, 10, 20 mg  
**SE:** Sexual dysfunction, arrhythmia, dizziness, fatigue, CHF  

Timolol, Ophthalmic (Betimol, Timoptic, Timoptic XE, Generic) Uses: *Glaucoma*  
**Acts:** β-Blocker  
**Dose:** 0.25% 1 gt bid; ↓ to daily when controlled; use 0.5% if needed; 1-gtt/d gel  
**W/P:** [C, ?/+]  
**Disp:** Soln 0.25/0.5%; Timoptic XE (0.25) gel-forming soln  
**SE:** Local irritation  

Tinidazole (Tindamax, Generic) BOX: Off-label use discouraged (animal carcinogenicity w/ other drugs in class) Uses: Adults/children > 3 y:  
*Trichomoniasis & giardiasis; intestinal amebiasis or amebic liver abscess*  
**Acts:** Antiprotozoal nitroimidazole; **Spectrum:** Trichomonas vaginalis, Giardia duodenalis, Entamoeba histolytica  
**Dose:** Adults. Trichomoniasis: 2 g PO; Rx partner. Giardiasis: 2 g PO. Amebiasis: 2 g PO daily × 3 d. Amebic liver abscess: 2 g PO daily × 3–5 d.  
**Peds.** Trichomoniasis: 50 mg/kg PO, 2 g/d max. Giardiasis: 50 mg/kg PO, 2 g max. Amebiasis: 50 mg/kg PO daily × 3 d, 2 g/d max. Amebic liver abscess: 50 mg/kg PO daily × 3–5 d, 2 g/d max; take w/ food  
**W/P:** [C, D in 1st tri, –] May be cross-resistant w/ metronidazole; Sz/peripheral neuropathy may require D/C; w/ CNS/hepatic impair CI: Metronidazole allergy, 1st-tri PRG, breast-feeding  
**Disp:** Tabs 250, 500 mg SE: CNS disturbances; blood dyscrasias, taste disturbances, N/V, darkens urine  
**Notes:** D/C EtOH during & 3 d after Rx; potentiates warfarin & Li; clearance ↓ w/ other drugs; crush & disperse in cherry syrup for peds; removed by HD  

Tioconazole (Generic [OTC]) Uses: *Vag fungal Infxsns*  
**Acts:** Topical antifungal  
**Dose:** 1 applicator-full intravag hs (single dose)  
**W/P:** [C, ?] CI: Component allergy  
**Disp:** Vag oint 6.5% SE: Local burning, itching, soreness, polyuria  
**Notes:** Insert high into vagina; may damage condom or diaphragm  

Tiotropium (Spiriva) Uses: Bronchospasm w/ COPD, bronchitis, emphysema  
**Acts:** Synthetic anticholinergic-like atropine  
**Dose:** 1 caps/d inhaled using HandiHaler, do not use w/ spacer  
**W/P:** [C, ?/–] BPH, NAG, MyG, renal impair CI: Acute bronchospasm  
**Disp:** Inh caps 18 mcg SE: URI, xerostomia  
**Notes:** Monitor FEV1 or peak flow  

Tirofiban (Aggrastat) Uses: *Acute coronary synd*  
**Acts:** Glycoprotein IIb/IIIa inhib  
**Dose:** Initial 0.4 mcg/kg/min for 30 min, followed by 0.1 mcg/kg/min 12–24 h; use in combo w/ heparin; **ECC 2010. ACS or PCI:** 0.4 mcg/kg/min IV for 30 min, then 0.1 mcg/kg/min for 18–24 h post PCI; ↓ in renal Insuff  
**W/P:** [B, ?/–] CI: Bleeding, intracranial neoplasm, vascular malformation, stroke/surgery/trauma w/ in last 30 d, severe HTN, acute pericarditis  
**Disp:** Inj 50 mcg/mL SE:
Bleeding, ↓ HR, coronary dissection, pelvic pain, rash

**Tizanidine (Zanaflex, Generic) Uses:** *Rx spasticity*  
Acts: $\alpha_2$-Adrenergic agonist  
Dose: Adults. 4 mg q6–8h, ↑ 2–4 mg PRN max 12 mg/dose or 36 mg/d; ↓ w/ CrCl < 25 mL/min.  
**Peds:** Not rec  
W/P: [C, ?/–] Do not use w/ potent CYP1A2 inhib or other $\alpha_2$-adrenergic agonists  
CI: w/ Fluvoxamine, ciprofloxacin; hypersens  
Disp: Caps 2, 4, 6 mg; tabs 2, 4 mg  
SE: ↓ BP, ↓ HR, somnolence, hepatotox  
Notes: √ LFT & BP; do not abruptly D/C, taper dose; take consistently w/ or w/o food

**Tobramycin (Nebcin) Uses:** *Serious gram(–) Infxns*  
Acts: Aminoglycoside; ↓ protein synth.  
Spectrum: Gram(–) bacteria  
Dose: Adults. Conventional dosing: 1–2.5 mg/kg/dose IV q8–12h.  
**Once-daily dosing:** 5–7 mg/kg/dose q24h.  
**Peds.** 2.5 mg/kg/dose IV q8h; ↓ w/ renal Insuff  
W/P: [D, –] CI: PRGlt; aminoglycoside sensitivity  
Disp: Inj 10, 40 mg/mL  
SE: Nephro/ototox  
Notes: Follow CrCl & levels. Levels: Peak: 30 min after Inf; Trough: < 0.5 h before next dose; Therapeutic Conventional: Peak: 5–10 mcg/mL, Trough: < 2 mcg/mL

**Tobramycin, Inhalation (TOBI, TOBI Podhaler) Uses:** *CF pts w/ P. aeruginosa*  
Acts: Aminoglycoside; ↓ protein synth.  
Spectrum: Gram(–) bacteria  
Dose: Adults/Peds > 6 y. 300 mg inhal q12h by nebulizer, cycle 28 d on 28 d off  
W/P: [D, –] w/ Renal/auditory/vestibular/neuromusc dysfxn; avoid w/ other neuro/nephro/ototoxic drugs  
CI: Aminoglycoside sens  
Disp: 300 mg vials for nebulizer; TOBI Podhaler: 4-wk supply (56 blister caps w/ inhaler device plus reserve)  
SE: Cough, productive cough, lung disorders, dyspnea, pyrexia, oropharyngeal pain, dysphonia, hemoptysis, ↓ hearing  
Notes: Do not mix w/ dornase alfa in nebulizer; safety not established in peds < 6 y, or w/ FEV1 < 25% or > 80%, or if colonized w/ Burkholderia cepacia

**Tobramycin Ophthalmic (AKTob, Tobrex, Generic) Uses:** *Ocular bacterial Infxns*  
Acts: Aminoglycoside  
Dose: 1–2 gtt q2-4h; oint bid-tid; if severe, use oint q3–4h, or 2 gtt q60 min, then less frequently  
W/P: [B, –] CI: Aminoglycoside sensitivity  
Disp: Oint & soln tobramycin 0.3%  
SE: Ocular irritation

**Tobramycin/Dexamethasone Ophthalmic (TobraDex) Uses:** *Ocular bacterial Infxns associated w/ sig inflammation*  
Acts: Antibiotic w/ anti-inflammatory  
Dose: 0.3% oint apply q6–8h or soln 0.3% apply 1–2 gtt 4–6h (↑ to q2h for first 24–48 h)  
W/P: [C, M] CI: Aminoglycoside sensitivity viral, fungal, or mycobacterium Infxn of eye  
Disp: Oint & susp 2.5, 5, & 10 mL tobramycin 0.3% & dexamethasone 0.1%  
SE: Local irritation/edema  
Notes: Use under ophthalmologist’s direction

**Tocilizumab (Actemra)**  
BOX: May cause serious Infxn (TB, bacterial, viral, opportunistic); w/ serious Infxn stop tocilizumab until Infxn controlled  
Uses: *Mod–severe RA, SJIA*  
Acts: IL-6 receptor inhib  
Dose: RA 4–8 mg/kg q4wk; SJIA if < 30 kg 12 mg/kg q2wk; if > 30 kg 8 mg/kg q2wk  
W/P: [C, ?/–] ANC < 2000/mm$^3$, plt ct < 100,000, AST/ALT > 1.5 ULN; serious Infxn infection; high-risk bowel perforation  
CI: Hypersensitivity  
Disp: Inj 20 mg/mL  
SE: URI, nasopharyngitis, HA, HTN, ↑ ALT, ↑ AST, rash, D, ↑ LDL, ↓ ANC  
Notes: Do not give live vaccines; CBC/plt counts, LFTs, lipids; PPD, if + treat before starting, w/ prior Hx retreat unless adequate Tx confirmed, monitor for TB, even if –PPD; ↓ mRNA expression of several CYP450 isoenzymes (CYP3A4)

**Tofacitinib (Xeljanz)**  
BOX: Serious Infxns (bacterial, viral, fungal, TB, opportunistic) possible.  
D/C w/ severe Infxn until controlled; test for TB w/ Tx; lymphoma/other CA possible; possible EBV-associated renal transplant lymphoproliferative disorder  
Uses: *Mod–severe RA w/ inadequate response/intolerance to MTX*  
Acts: Janus kinase inhib  
Dose: Adults. 5 mg PO bid; ↓ 5 mg once
daily w/ mod–severe renal & mod hepatic impair, w/ potent inhib CYP3A4, w/ meds w/ both mod inhib CYP3A4 & potent inhib CYP2C19 W/P: [C, −] Do not use w/ active Infxn, w/ severe hepatic impair, w/ biologic DMARDs, immunosuppressants, live vaccines, w/ risk of GI perforation CI: None Disp: Tabs 5 mg SE: D, HA, URI, nasopharyngitis, ↑ LFTs, HTN, anemia Notes: OK w/ MTX or other nonbiologic DMARDs; ✓ CBC, LFTs, lipids

**Tolazamide (Generic)** Uses: *Type 2 DM* Acts: Sulfonylurea; ↑ pancreatic insulin release; ↑ peripheral insulin sensitivity; ↓ hepatic glucose output Dose: 100–500 mg/d (no benefit > 1 g/d) W/P: [C, ?/−] Elderly, hepatic or renal impair; G6PD deficiency = ↑ risk for hemolytic anemia CI: Component hypersens, DM type 1, DKA Disp: Tabs 250, 500 mg SE: HA, dizziness, GI upset, rash, photosens, blood dyscrasias

**Tolbutamide (Generic)** Uses: *Type 2 DM* Acts: Sulfonylurea; ↑ pancreatic insulin release; ↑ peripheral insulin sensitivity; ↓ hepatic glucose output Dose: 500–1000 mg bid; 3 g/d max; ↓ in hepatic failure W/P: [C, −] G6PD deficiency = ↑ risk hemolytic anemia CI: Sulfonylurea sensitivity Disp: Tabs 500 mg SE: HA, dizziness, GI upset, rash, photosens, blood dyscrasias, hypoglycemia, heartburn

**Tolcapone (Tasmar)** BOX: Cases of fulminant liver failure resulting in death have occurred Uses: *Adjunct to carbidopa/levodopa in Parkinson Dz* Acts: Catechol-O-methyltransferase inhib slows levodopa metabolism Dose: 100 mg PO tid w/ 1st daily levodopa/carbidopa dose, then dose 6 & 12 h later; ↓/w/ renal Insuff W/P: [C, ?] CI: Hepatic impair; w/ nonselective MAOI; nontraumatic rhabdomyolysis or hyperpynexia Disp: Tabs 100 mg SE: Constipation, xerostomia, vivid dreams, anorexia, N/D, orthostasis, liver failure, rhabdomyolysis Notes: Do not abruptly D/C or ↓ dose; monitor LFTs

**Tolmetin (Generic)** BOX: May ↑ risk of CV events & GI bleeding Uses: *Arthritis & pain* Acts: NSAID; ↓ prostaglandins Dose: 400 mg PO tid titrate up max 1.8 g/d max W/P: [C, −] CI: NSAID or ASA sensitivity; use for pain CABG Disp: Tabs 200, 600 mg; caps 400 mg SE: Dizziness, rash, GI upset, edema, GI bleeding, renal failure

**Tolnaftate (Tinactin [OTC])** Uses: *Tinea pedis, cruris, corporis, manus, versi-color* Acts: Topical antifungal Dose: Apply to area bid for 2–4 wk W/P: [C, ?] CI: Nail & scalp Infxns Disp: OTC 1% liq; gel; powder; topical cream; ointment, powder, spray soln SE: Local irritation Notes: Avoid ocular contact, Infxn should improve in 7–10 d

**Tolterodine (Detrol, Detrol LA, Generic)** Uses: *OAB (frequency, urgency, incontinence)* Acts: Anticholinergic Dose: Detrol: 1–2 mg PO bid; Detrol LA: 2–4 mg/d W/P: [C, −] w/ CYP2D6 & 3A3/4 inhib (Table 10, p 319); w/ QT prolongation CI: Urinary retention, gastric retention, or uncontrolled NAG Disp: Tabs 1, 2 mg; Detrol LA tabs 2, 4 mg SE: Xerostomia, blurred vision, HA, constipation Notes: LA form may see “intact” pill in stool

**Tolvaptan (Samsca)** BOX: Hospital use only w/ close monitoring of Na⁺; too rapid Na⁺ correction can cause severe neurologic symptoms. Correct slowly w/ ↑ risk (malnutrition, alcoholism, liver Dz) Uses: *Hypervolemic or euvolemic ▼Na⁺* Dose: Adults. 15 mg PO daily; after ≥ 24 h, may ↑ to 30 mg x 1 daily; max 60 mg x d; titrate at 24-h intervals to Na⁺ goal W/P: [C, −] Monitor Na⁺, volume, neurologic status; GI bleed risk w/ cirrhosis, avoid w/ CYP3A inducers and moderate inhib, ↓ dose w/ P-gp inhib, ↑ K⁺ CI: Hypovolemic hyponatremia; urgent need to raise Na⁺; in pts incapable of sensing/reacting to thirst; anuria; w/ strong CYP3A inhib
Disp: Tabs 15, 30 mg SE: N, xerostomia, pollakiuria, polyuria, thirst, weakness, constipation, hyperglycemia Notes: Monitor K+

**Topiramate (Topamax, Generic)**

**Uses:** *Adjunctive Rx for complex partial Szs & tonic–clonic Szs*, bipolar disorder, neuropathic pain, migraine prophylaxis **Acts:** Anticonvulsant **Dose:** Adults: Seizures: Total dose 400 mg/d; see PI for 8-wk titration schedule. Migraine prophylaxis: titrate 100 mg/d total. **Peds 2–9:** See ply PI for dosing & dose titration; ↓ w/ renal impair **W/P:** [D, ?/–] CI: Component allergy **Disp:** Tabs 25, 50, 100, 200 mg; caps sprinkles 15, 25 mg **SE:** Somnolence, fatigue, ↓ serum bicarbonate, Wt loss, memory impair, metabolic acidosis, kidney stones, fatigue, dizziness, psychomotor slowing, paresthesias, GI upset, tremor, nystagmus, acute glaucoma requiring D/C **Notes:** Metabolic acidosis responsive to ↓ dose or D/C; D/C w/ taper

**Topotecan (Hycamtin, Generic)**

**BOX:** Chemotherapy precautions, for use by physicians familiar w/ chemotherapeutic agents, BM suppression possible **Uses:** *Ovarian CA (cisplatin-refractory), cervical CA, NSCLC*, sarcoma, ped NSCLC **Acts:** Topoisomerase I inhib; ↓ DNA synth **Dose:** 1.5 mg/m^2/d as a 1-h IV Inf × 5 d, repeat q3wk; ↓ w/ renal impair **W/P:** [D, –] CI: PRG, breast-feeding; severe bone marrow suppression **Disp:** Inj 4-mg vials; caps 0.25, 1.0 mg **SE:** ↑ BM, N/V/D, drug fever, skin rash, interstitial lung Dz

**Torsemide (Demadex)**

**Uses:** *Edema, HTN, CHF, & hepatic cirrhosis* **Acts:** Loop diuretic; ↓ reabsorption of Na^+ & Cl^– in ascending loop of Henle & distal tubule **Dose:** 5–20 mg/d PO or IV; 200 mg/d max **W/P:** [B, ?] CI: Sulfonylurea sensitivity, anuria **Disp:** Tabs 5, 10, 20, 100 mg; Inj 10 mg/mL **SE:** Ortho-static ↓ BP, HA, dizziness, photosens, electrolyte imbalance, blurred vision, renal impair **Notes:** 10–20 mg torsemide = 40 mg furosemide = 1 mg bumetanide

**Tramadol (Rybix ODT, Ryzolt ER, Ultram, Ultram ER, Generic)**

**Uses:** *Mod–severe pain* **Acts:** Centrally acting synthetic opioid analgesic **Dose:** Adults. 50–100 mg PO q4–6h PRN, start 25 mg PO q a.m., ↑ q3d to 25 mg PO qid; ↑ 50 mg q3d, 400 mg/d max (300 mg if > 75 y); ER 100–300 mg PO daily; Rybix ODT individualize ↑ 50 mg/d q3d to 200 mg/d or 50 mg qid; after titration 50–100 mg q4–6 PRN, 400 mg/d max. **Peds.** (ER form not rec) 1–2 mg/kg q4–6h (max dose 100 mg); ↓ w/ renal Insuff **W/P:** [C, –] Suicide risk in addiction prone, w/ tranquilizers or antidepressants; ↑ Szs risk w/ MAOI; seratonin syndrome **CI:** Opioid dependency; w/ MAOIs; sensitivity to opioids, acute alcohol intoxication, hypnotics, centrally acting analgesics, or w/ psychotropic drugs **Disp:** Tabs 50 mg; ER 100, 200, 300 mg; Rybix ODT 50 mg SE: Dizziness, HA, somnolence, GI upset, resp depression, anaphylaxis **Notes:** ↓ Sz threshold; tolerance/dependence may develop; abuse potential d/t mu-opioid agonist activity; Avoid EtOH; do not cut, chew ODT tabs

**Tramadol/Acetaminophen (Ultracet)**

**Uses:** *Short-term Rx acute pain (< 5 d)* **Acts:** Centrally acting opioid analgesic w/ APAP **Dose:** 2 tabs PO q4–6h PRN; 8 tabs/d max. Elderly/renal impair: Lowest possible dose; 2 tabs q12h max if CrCl < 30 mL/min **W/P:** [C, –] Szs, hepatic/renal impair, suicide risk in addiction prone, w/ tranquilizers or antidepressants **CI:** Acute intoxication, w/ ethanol, hypnotics, central acting analgesics or psychotropic drugs, hepatic dysfunction **Disp:** Tab 37.5 mg tramadol/325 mg APAP SE: SSRI, TCA, opioids, MAOIs ↑ risk of Szs; dizziness, somnolence, tremor, HA, N/V/D, constipation, xerostomia, liver tox, rash, pruritus, ↑ sweating, physical dependence **Notes:** Avoid EtOH; abuse potential mu-opioid agonist activity (tramadol); see acetaminophen note, p 36

**Trandolapril (Mavik, Generic)**

**BOX:** Use in PRG in 2nd/3rd tri can result in fetal death **Uses:**
*HTN*, heart failure, LVD, post-AMI **Acts**: ACE inhib **Dose**: HTN: 1–4 mg/d. Heart failure/LVD: Start 1 mg/d, titrate to 4 mg/d; ↓ w/ severe renal/hepatic impair **W/P**: [C first, D in 2nd + 3rd, –] ACE inhib sensitivity, angioedema w/ ACE inhib **Disp**: Tabs 1, 2, 4 mg SE: ↓ BP, ↓ HR, dizziness, ↑ K⁺, GI upset, renal impair, cough, angioedema **Notes**: African Americans minimum dose is 2 mg vs 1 mg in caucasians

**Tranexamic Acid (Lysteda, Generic)** **Uses**: ↓ Cyclic heavy menstrual bleeding** Acts**: ↓ Dissolution of hemostatic fibrin by plasmin **Dose**: 2 tabs tid (3900 mg/d) 5 d max during monthly menstruation; ↓ w/ renal impair (see label) **W/P**: [B, +/-] ↑ thrombosis risk **CI**: Component sensitivity; active or ↑ thrombosis risk **Disp**: Tabs 650 mg; Inj 100 mg/mL SE: HA, sinus and nasal symptoms, Abd pain, back/musculoskeletal/jt pain, cramps, migraine, anemia, fatigue, retinal/ocular occlusion; allergic Rxns **Notes**: Inj used off label trauma associated hemorrhage

**Tranylcypromine (Parnate)** **BOX**: Antidepressants ↑ risk of suicidal thinking and behavior in children and adolescents w/ MDD and other psychiatric disorders **Uses**: *Depression* **Acts**: MAOI **Dose**: 30 mg/d PO ÷ doses, may ↑ 10 mg/d over 1–3 wk to max 60 mg/d **W/P**: [C, +/-] Minimize foods w/ tyramine **CI**: CV Dz, cerebrovascular defects, Pheo, w/ MAOIs, TCAs, SSRIs, SNRIs, sympathomimetics, bupropion, meperidine, dextromethorphan, buspirone **Disp**: Tabs 10 mg SE: Orthostatic hypotension, ↑ HR, sex dysfunction, xerostomia **Notes**: False(+) amphetamine drug test

**Trastuzumab (Herceptin)** **BOX**: Can cause cardiomyopathy and ventricular dysfunction; Inf Rxns and pulm tox reported; use during PRG can lead to pulm hypoplasia, skeletal malformations, & neonatal death **Uses**: *Met breast CA that over express the HER2/neu protein*, breast CA adjuvant, w/ doxorubicin, cyclophosphamide, and paclitaxel if pt HER2/neu(+) **Acts**: MoAb; binds human epidermal growth factor receptor 2 protein (HER2); mediates cellular cytotoxicity **Dose**: Per protocol, typical 2 mg/kg/IV/wk **W/P**: [D, –] CV dysfunction, allergy/Inf Rxns **CI**: None **Disp**: Inj 440 mg SE: Anemia, cardiomyopathy, nephrotic synd, pneumonitis, N/V/D, rash, pain, fever, HA, insomnia **Notes**: Inf-related Rxns minimized w/ acetaminophen, diphenhydramine, & meperidine

**Trazodone (Oleptro, Generic)** **BOX**: Closely monitor for worsening depression or emergence of suicidality, particularly in pts < 24 y. Oleptro not approved in peds **Uses**: *Depression*, hypnotic, augment other antidepressants **Acts**: Antidepressant; ↓ reuptake of serotonin & norepinephrine **Dose**: Adults & Adolescents. Desyrel: 50–150 mg PO daily–tid; max 600 mg/d. Sleep: 25–50 mg PO, qhs, PRN. Adults. Oleptro: Start 150 mg PO daily, may ↑ by 75 mg q3d, max 375 mg/d; take qhs on empty stomach **W/P**: [C, ?/-] Serotonin/neuroleptic malignant syndromes reported; ↑ QTc; may activate manic states; syncope reported; may ↑ bleeding risk; avoid w/ in 14 d of MAOI **CI**: Component allergy **Disp**: Desyrel: Tabs 50, 100, 150, 300 mg; Oleptro: Scored tabs 150, 300 mg SE: Dizziness, HA, sedation, N, xerostomia, syncope, confusion, libido, ejaculation dys-function, tremor, hep, EPS **Notes**: Takes 1–2 wk for Sx improvement; may interact w/ CYP3A4 inhib to ↑ trazodone concentrations, carbamazepine ↓ trazo-done concentrations

**Treprostinil (Remodulin, Tyvaso)** **Uses**: *NYHA class II–IV pulm arterial HTN* **Acts**: Vasodilation, ↓ plt aggregation **Dose**: Remodulin 0.625–1.25 ng/kg/min cont Inf/SQ (preferred), titrate to effect; Tyvaso: Initial: 18 mcg (3 Inh) q4h 4×/d; if not tolerated, ↓ to 1–2 inhalas, then ↑ to 3 inhal; Maint: ↑ additional 3 inhal 1–2 wk intervals; 54 mcg (or 9 inhal) 4×/d max **W/P**: [B, ?/–] CI: Component allergy **Disp**: Remodulin Inj 1, 2.5, 5, 10 mg/mL; Tyvaso: 0.6 mg/mL (2.9 mL) ~6 mcg/inhal SE: Additive effects w/ anticoagulants, antihypertensives; Inf site Rxns; D, N, HA, ↓ BP
**Tretinoin, Topical [Retinoic Acid] (Avita, Retin-A, Renova, Retin-A Micro)**

**Uses:** *Acne vulgaris, sun-damaged skin, wrinkles* (photo aging), some skin CAs

**Acts:** Exfoliant retinoic acid derivative

**Dose:** *Adults & Peds > 12 y.* Apply daily hs (w/ irritation, ↓ frequency).

**Photoaging:** Start w/ 0.025%, ↑ to 0.1% over several mo (apply only q3d if on neck area; dark skin may require bid use)

**W/P:** [C, ?] CI: Retinoid sensitivity

**Disp:** Cream 0.02, 0.025, 0.05, 0.0375, 0.1%; gel 0.01, 0.025, 0.05% micro formulation gel 0.1, 0.04% SE: Avoid sunlight; edema; skin dryness, erythema, scaling, changes in pigmentation, stinging, photosens

**Notes:** Initiate in monitored setting; do not D/C or ↓ dose, abruptly, will cause rebound pulm HTN

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**Triamcinolone/Nystatin (Generic)**

**Uses:** *Cutaneous candidiasis*

**Acts:** Antifungal & anti-inflammatory

**Dose:** Apply lightly to area bid; max 25 mg/d W/P: [C, ?] CI: Varicella; systemic fungal Infxns

**Disp:** Cream & oint: triamcino-lone 1 mg/g and 100,000 units nystatin/g SE: Local irritation, hypertrichosis, pigmentation changes

**Notes:** For short-term use (< 7 d)

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**Triamterene (Dyrenium)**

**Box:** Hyperkalemia can occur

**Uses:** *Edema associated w/ CHF, cirrhosis*

**Acts:** K⁺-sparing diuretic

**Dose:** *Adults.* 100–300 mg/24 h PO ÷ daily-bid. *Peds. HTN:* 2–4 mg/kg/d in 1–2 ÷ doses; ↓ w/ renal/hepatic impair W/P: [C (Expert opinion), ?] CI: ↑ K⁺, renal impair; caution w/ other K⁺-sparing diuretics

**Disp:** Caps 50, 100 mg SE: ↓ K⁺, ↓ BP, bradycadia, cough

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**Triazolam (Halcion, Generic) [C-IV]**

**Uses:** *Short-term management of insomnia*

**Acts:** Benzodiazepine

**Dose:** 0.125–0.25 mg/d PO hs PRN; ↓ in elderly W/P: [X, ?/–] CI: Concurrent fosamprenavir, ritonavir, nelfinavir, itraconazole, ketoconazole, nefazodone or other moderate/strong CYP3A4 inhib; PRG

**Disp:** Tabs 0.125, 0.25 mg SE: Tachycardia, CP, drowsiness, fatigue, memory impair, GI upset

**Notes:** Additive CNS depression w/ EtOH & other CNS depressants, avoid abrupt D/C

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**Triethylene thiophosphoramide (Thiotepa, Thioplex, Tespa, TSPA)**

**Uses:** *Breast, ovarian CAs, lymphomas (infrequently used) preparative regimens for allogeneic & ABMT w/ high doses, intravesical for bladder CA, intracavitary effusion control*

**Acts:** Polyfunctional alkylating agent

**Dose:** Per protocol typical 0.3–0.4 mg/kg IV q1–4 wk. Effusions: Intracavitary 0.6-0.8 mg/kg; 60 mg into the bladder & retained 2 h q1–4wk; 900–125 mg/m² in ABMT regimens (highest dose w/ o ABMT is 180 mg/m²); ↓ in renal failure W/P: [D, –] w/ BM suppression, renal and hepatic impair CI: Compo nent allergy

**Disp:** Inj 15 mg/vial SE: ↓ BM, N/V, dizziness, HA, allergy, paresthesias, alopecia

**Notes:** Intravesical use in bladder CA infrequent today

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**Trifluoperazine (Generic)**

**Box:** ↑ Mortality in elderly patients w/ dementia-related psychosis

**Uses:** *Psychotic disorders*

**Acts:** Phenothiazine; blocks postsynaptic CNS dopaminergic receptors

**Dose:** *Adults. Schizophrenia/psychosis:* initial 1–2 mg PO bid (out pt) or 2–5 mg PO bid (in pat). Typical 15–20 mg/d, max 40 mg/d. *Nonpsychotic anxiety:* 1–2 mg PO/d, 6 mg/d max. *Peds 6–12 y.* 1 mg PO daily-bid initial, gradually to 15 mg/d; ↓ in elderly/debilitated pts W/P: [C, ?/–] CI: Hx blood dyscrasias; phenothiazine sens, severe hepatic Dz

**Disp:** Tabs 1, 2, 5, 10 mg SE: Orthostatic ↓ BP, EPS, dizziness, neuroleptic malignant synd, skin discoloration, lowered Sz threshold, photosens, blood dyscrasias

**Notes:** Several weeks for onset of effects

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**Trifluridine Ophthalmic (Viroptic)**

**Uses:** *Herpes simplex keratitis & conjunctivitis*

**Acts:** Antiviral

**Dose:** 1 gtt q2h, max 9 gtt/d; ↑ to 1 gtt q4h × 7 d after healing begins; Rx up to 21 d W/P: [C, ?] CI: Component allergy

**Disp:** Soln 1% SE: Local burning, stinging
Trihexyphenidyl (Generic) Uses: *Parkinson Dz, drug-induced EPS* 
**Acts:** Blocks excess acetylcholine at cerebral synapses 
**Dose:** Parkinson: 1 mg PO daily, ↑ by 2 mg q3–5d to usual dose 6–10 mg/d in 3–4 ÷ doses. EPS: 1 mg PO daily, ↑ to 5–15 mg/d in 3–4 ÷ doses 
**W/P:** [C, –] NAG, GI obst, MyG, BOO 
**CI:** Disp: Tabs 2, 5 mg; elixir 2 mg/5 mL SE: Dry skin, constipation, xerostomia, photosens, tachycardia, arrhythmias

Trimethobenzamide (Tigan, Generic) Uses: *N/V* 
**Acts:** ↓ Medullary chemoreceptor trigger zone 
**Dose:** Adults. 300 mg PO or 200 mg IM tid-qid PRN. 
**W/P:** [C, ?] CI: Benzocaine sensitivity; children < 40 kg Disp: Caps 300 mg; Inj 100 mg/mL SE: Drowsiness, ↓ BP, dizziness; hepatic impair, blood dyscrasias, Szs, parkinsonian-like synd 
**Notes:** In the presence of viral Infns, may mask emesis or mimic CNS effects of Reye synd

Trimethoprim (Primsol, Generic) Uses: *UTI d/t susceptible gram(+) & gram(–) organisms; Rx PCP w/ dapsone* 
**Acts:** ↓ Dihydrofo-late reductase. 
**Spectrum:** Many gram(+) & (–) except Bacteroides, Branhamella, Brucella, Chlamydia, Clostridium, Mycobacterium, Mycoplasma, Nocardia, Neisseria, Pseudomonas, & Treponema 
**Dose:** Adults. 100 mg PO bid or 200 mg PO daily; PCP 15 mg/kg ÷ in 3 d w/ dapsone. 
**Peds ≥ 2 mo:** 4–6 mg/kg/d in 2 ÷ doses; otitis media (> or equal to 6 mo): 10 mg/kg/d in 2 ÷ doses × 10 d; ↓ w/ renal failure 
**W/P:** [C, +] CI: Megaloblastic anemia d/t folate deficiency 
**Disp:** Tabs 100 mg; (Primsol) PO soln 50 mg/5 mL SE: Rash, pruritus, megaloblastic anemia, hepatic impair, blood dyscrasias 
**Notes:** Take w/ plenty of H2O

Trimethoprim (TMP)/Sulfamethoxazole (SMX) [Co-Trimoxazole, TMP-SMX] (Bactrim, Bactrim DS, Septra DS, Generic) Uses: *UTI Rx & prophylaxis, otitis media, sinusitis, bronchitis, prevent PCP pneumonia (w/ CD4 count < 200 cells/mm³)* 
**Acts:** SMX ↓ synth of dihydrofolic acid, TMP ↓ dihydrofolate reductase to impair protein synth. 
**Spectrum:** Includes Shigella, PCP, & Nocardia Infns, Mycoplasma, Enterobacter sp, Staphylococcus, Streptococcus, & more 
**Dose:** All doses based on TMP 
**Adults.** 1 DS tab PO bid or 8–20 mg/kg/24 h IV in 1–2 ÷ doses. PCP: 15–20 mg/kg/d IV or PO (TMP) in 4 ÷ doses. Nocardia: 10–15 mg/kg/d IV or PO (TMP) in 4 ÷ doses. PCP prophylaxis: 1 reg tab daily or DS tab 3 × wk. 
**UTI prophylaxis:** 1 PO bid. 
**Peds.** 8–10 mg/kg/24 h PO ÷ in 2 doses or 3–4 doses IV; do not use in < 2 mo; ↓ in renal failure; maintain hydration 
**W/P:** [C (D if near term), –] CI: Sulfonamide sensitivity, porphyria, megaloblastic anemia w/ folate deficiency, PRF, breast-feeding Inf < 2 mo, sig hepatic impair 
**Disp:** Regular tabs 80 mg TMP/400 mg SMX; DS tabs 160 mg TMP/800 mg SMX; PO susp 40 mg TMP/200 mg SMX/5 mL; Inj 80 mg TMP/400 mg SMX/5 mL SE: Allergic skin Rxns, photosens, GI upset, SJS, blood dyscrasias, hep 
**Notes:** Synergistic combo, interacts w/ warfarin

Triptorelin (Trelstar 3.75, Trelstar 11.25, Trelstar 22.5) Uses: *Palliation of advanced PCa* 
**Acts:** LHRH analog; ↓ GNRH w/ cont dosing; transient ↑ in LH, FSH, testosterone, & estradiol 7–10 d after 1st dose; w/ chronic use (usually 2–4 wk), sustained ↓ LH & FSH w/ ↓ testicular & ovarian steroidogenesis similar to surgical castration 
**Dose:** 3.75 mg IM q4wk; or 11.25 mg IM q12wk or 22.5 mg q24wk 
**W/P:** [X, N/A] CI: Not indicated in females 
**Disp:** Inj Depot 3.75 mg; 11.25 mg; 22.5 mg SE: Dizziness, emotional lability, fatigue, HA, insomnia, HTN, D, V, ED, retention, UTI, pruritus, anemia, Inj site pain, musculoskeletal pain, osteoporosis, allergic Rxns 
**Notes:** Only 6-mo formulation, ✔ periodic testosterone levels & PSA

Trospium (Sanctura, Sanctura XR, Generic) Uses: *OAB w/ Sx of urge incontinence, urgency, frequency* 
**Acts:** Muscarinic antagonist, ↓ bladder smooth muscle tone 
**Dose:** 20 mg tab PO bid; 60
mg ER caps PO daily a.m., 1 h ac or on empty stomach. ↓ w/ CrCl < 30 mL/min and elderly W/P: [C, +/–] w/ EtOH use, in hot environments, UC, MyG, renal/hepatic impair CI: Urinary/gastric retention, NAG Disp: Tab 20 mg; caps ER 60 mg SE: Dry mouth, constipation, HA, rash

Ultrapristal Acetate (Ella) Uses: *Emergency contraceptive for PRG prevention (unprotected sex/contraceptive failure)* Acts: Progesterone agonist/antagonist, delays ovulation Dose: 1 tab (30 mg) PO ASAP w/ in 5 d of unprotected sex or contraceptive failure W/P: [X, –] CYP3A4 inducers ↓ effect CI: PRG Disp: Tab 30 mg SE: HA, N, Abd, dysmenorrhea Notes: NOT for routine contraception; fertility after use unchanged, maintain routine contraception; use any day of menstrual cycle

Ustekinumab (Stelara) Uses: *Mod–severe plaque psoriasis* Acts: Human IL-12 and -23 antagonist Dose: Wt < 100 kg, 45 mg SQ initial and 4 wk later, then 45 mg q12wks. Wt > 100 kg, 90 mg SQ initially and 4 wk later, then 90 mg q 12 wk. W/P: [B/?] Disp: Prefilled syringe and single-dose vial 45 mg/0.5 mL, 90 mg/1 mL SE: HA, N, Abd, dysmenorrhea Notes: Do not use w/ live vaccines

Valacyclovir (Valtrex, Generic) Uses: *Herpes zoster; genital herpes; herpes labialis* Acts: Prodrug of acyclovir; ↓ viral DNA replication. Spectrum: Herpes simplex I & II Dose: Zoster: 1 g PO tid × 7 d. Genital herpes(initial episode): 1 g bid × 7–10 d, (recurrent) 500 mg PO bid × 3 d. Herpes prophylaxis: 500–1000 mg/d. Herpes labialis: 2 g PO q12h × 1 d ↓ w/ renal failure W/P: [B, +] ↑ CNS effects in elderly Disp: Caplets 500, 1000 mg; tab 500, 1000 mg SE: HA, GI upset, ↑ LFTs, dizziness, pruritus, photophobia Notes: Monitor CBC & Cr

Valganciclovir (Valcyte) BOX: Granulocytopenia, anemia, and thrombocytopenia reported. Carcinogenic, teratogenic, and may cause aspermatogenesis Uses: *CMV retinitis and CMV prophylaxis in solid-organ transplantation* Acts: Ganciclovir prodrug; ↓ viral DNA synth Dose: CMV Retinitis induction: 900 mg PO bid w/ food × 21 d, then 900 mg PO daily; CMV prevention: 900 mg PO daily × 100 d posttransplant, ↓ w/ renal dysfunction W/P: [C, ?/–] Use w/ imipenem/cilastatin, nephrotoxic drugs; ANC < 500 cells/mcL; plt < 25,000 cells/mcL; Hgb < 8 g/dL CI: Allergy to acyclovir, ganciclovir, valganciclovir Disp: Tabs 450 mg; oral solution: 50 mg/mL SE: BM suppression, HA, GI upset Notes: Monitor CBC & Cr

Valproic Acid (Depakene, Depakote, Stavzor, Generic) BOX: Fatal hepatic failure (usually during first 6 mo of Tx, ped’s < 2 y high risk, monitor LFTs at baseline and frequent intervals), teratogenic effects, and life-threatening pancreatitis reported Uses: *Rx epilepsy, mania; prophylaxis of migraines*, Alzheimer behavior disorder Acts: Anticonvulsant; ↑ availability of GABA Dose: Adults & Peds. Szs: 10–15 mg/kg/24 h PO ÷ tid (after initiation by 5–10 mg/kg/d weekly basis until therapeutic levels). Mania: 750 mg in 3 ÷ doses, ↑ 60 mg/kg/d max. Migraines: 250 mg bid, ↑ 1000 mg/d max; ↓ w/ hepatic impair W/P: [D, –] Multiple drug interactions CI: Severe hepatic impair, urea cycle disorder Disp: Caps 250 mg; caps w/ coated particles 125 mg; tabs DR 125, 250, 500 mg; tabs ER 250, 500 mg; caps DR (Stavzor) 125, 250, 500 mg; syrup 250 mg/5 mL; Inj 100 mg/mL SE: Somnolence, dizziness, GI upset, diplopia, ataxia, rash, thrombocytopenia, ↓ plt, hep, pancreatitis, ↑ bleeding times, alopecia, ↑ Wt ↑, hyperammonemonic encephalopathy in pts w/ urea cycle disorders; if taken during PRG may cause lower IQ tests in children Notes: Monitor LFTs & levels: Trough: Just before next dose; Therapeutic: Trough: 50–100 mcg/mL; Toxic trough: > 100 mcg/mL. Half-life: 9–16 h; phenobarbital & phenytoin may alter levels

Valsartan (Diovan) BOX: Use during 2nd/3rd tri of PRG can cause fetal harm Uses: HTN, CHF,
DN Acts: Angiotensin II receptor antagonist Dose: 80–160 mg/d, max 320 mg/d W/P: [D, ?/–] w/ K+-sparking diuretics or K+ supls W/P: Severe hepatic impair, biliary cirrhosis/obst, primary hyperaldosteronism, bilateral RAS CI: None Disp: Tabs 40, 80, 160, 320 mg SE: ↓ BP, dizziness, HA, viral Infxn, fatigue, Abd pain, D, arthralgia, fatigue, back pain, hyperkalemia, cough, ↑ Cr

Vancomycin (Vancocin, Generic) Uses: *Serious MRSA Infxns; enterococcal Infxns; PO Rx of S. aureus and C. difficile pseudomembranous colitis* Acts: ↓ Cell wall synth. Spectrum: Gram(+) bacteria & some anaerobes (includes MRSA, Staphylococcus, Enterococcus, Streptococcus sp, C. difficile) Dose: Adults. 15–20 mg/kg IV q8–48h based on CrCl, 15–20 mg/kg/dose; C. difficile: 125–500 mg PO q6–7 h. Peds. 40–60 mg/kg/d PO in 4–6 doses q6–12 h; C. difficile: 40 mg/kg/d PO in 3–4 doses × 7–10 d. W/P: [B oral + C Inj, -] CI: Component allergy; avoid in Hx hearing loss Disp: Caps 125, 250 mg; powder for Inj SE: Oto-/nephrotoxic, GI upset (PO) Notes: Not absorbed PO, effect in gut only; give IV slowly (over 1–3 h) to prevent “red-man synd” (flushing of head/neck/upper torso); IV product used PO for colitis. Levels: Trough: < 0.5 h before next dose; Therapeutic: Trough: 10–20 mcg/mL; Trough: 15–20 mcg/mL. Half-life: 6–8 h; peak monitoring is not rec (toxic > 80 mcg/mL)

Vandetanib (Caprelsa) BOX: Can ↑ QT interval, Torsades de pointes, sudden death; do not use in pts w/ ↓ K+, ↓ Ca2+, ↓ Mg2+, prolonged QT, avoid drugs that prolong QT, monitor QT baseline, 2–4 wk, 8–12 wk, then q3mo Uses: *Advanced medullary thyroid CA* Acts: Multi TKI inhib Dose: Adults. 300 mg/d; ↓ dose w/ ↓ renal Fxn W/P: [D, –] Can ↑ QT; avoid w/ CYP3A inducers or drugs that ↑ QT (eg, amiodarone, sotalol, clarithromycin); avoid w/ mod–severe liver impair CI: Prolonged QT synd Disp: Tabs 100, 300 mg SE: Anorexia, Abd pain, N/V, HA, ↑ BP, reversible posterior leukoencephalopathy synd (PRES), fatigue, rash (eg, acne), ↑ QT interval, ILD Notes: Half-life 19 d; restricted distribution, providers and pharmacies must be certified; may need ↑ thyroid replacement

Vardenafil (Levitra, Staxyn, Generic) Uses: *ED* Acts: PDE5 inhib, increases cyclic guanosine monophosphate (cGMP) and NO levels; relaxes smooth muscles, dilates cavernosal arteries Dose: Levitra 10 mg PO 60 min before sexual activity; titrate; max × 1 = 20 mg; 2.5 mg w/ CYP3A4 inhib (Table 10, p 319); Staxyn 1 (10 mg ODT) 60 min before sex, max 1×/d W/P: [B, –] w/ CV, hepatic, or renal Dz or if sex activity not advisable; potentiate the hypotensive effects of nitrates, alpha-blockers, and antihypertensives CI: w/ Nitrates, Disp: Levitra Tabs 2.5, 5, 10, 20 mg tabs; Staxyn 10 mg ODT (contains phenylalanine) SE: ↑ QT interval ↓ BP, HA, dyspepsia, priapism, flushing, rhinitis, sinusitis, flu synd, sudden ↓/loss of hearing, tinnitus, NIAON. Notes: Concomitant alpha-blockers may cause ↓ BP; transient global amnesia reports; place Staxyn on tongue to disintegrate w/o liquids; ODT not inter changeable to oral pill; gets higher levels

Varenicline (Chantix) BOX: Serious neuropsychiatric events (depression, suicidal ideation/attempt) reported Uses: *Smoking cessation* Acts: Nicotine receptor partial agonist Dose: Adults. 0.5 mg PO daily × 3 d, 0.5 mg bid × 4 d, then 1 mg PO bid for 12 wk total; after meal w/ glass of water W/P: [C, ?/–] ↓ Dose w/ renal impair, may increase risk of CV events in pts w/ CV Dz Disp: Tabs 0.5, 1 mg SE: Serious psychological disturbances, N, V, insomnia, flatulence, constipation, unusual dreams Notes: Slowly ↑ dose to ↓ N; initiate 1 wk before desired smoking cessation date; monitor for changes in behavior

Varicella Immune Globulin (VarZIG) BOX: Prepared from pools of human plasma, which may contain causative agents of hep & other viral Dz; may cause rare hypersensitivity w/ shock;
Varicella Virus Vaccine (Varivax) Uses: *Prevent varicella (chickenpox)*

Acts: Active immunization w/ live attenuated virus

Dose: Adults & Peds (> 12 mo). 0.5 mL SQ, repeat 4–8 wk

W/P: [C, M] CI: Immunosuppression; PRG, fever, untreated TB, neomycin-anaphylactoid Rxn; Disp: Powder for Inj, acute febrile Infxn

SE: Varicella rash, generalized or at Inj site, arthralgias/myalgias, fatigue, fever, HA, irritability, GI upset

Notes: OK for all children & adults who have not had chickenpox; avoid PRG for 3 mo after; do not give w/ in 3 mo of immunoglobulin (IgG) and no IgG w/ in 2 mo of vaccination; avoid ASA for 6 wk in peds; avoid high-risk people for 6 wk after vaccination

Vasopressin [Antidiuretic Hormone, ADH] (Pitressin, Generic) Uses: *DI; Rx postop Abd distention*; adjunct Rx of GI bleeding & esophageal varices; asystole, PEA, pulseless VT & VF, adjunct systemic vasopressor (IV drip)

Acts: Posterior pituitary hormone, potent GI, and peripheral vasoconstrictor

Dose: Adults & Peds. DI: 5–10 units SQ or IM bid-tid. GI hemorrhage: 0.2–0.4 units/min; ↓ in cirrhosis; caution in vascular Dz. VT/VF: 40 units IV push × 1. Vasopressor: 0.01–0.03 units/min

Peds. (ECC 2010). Cardiac arrest: 0.4–1 unit/kg IV/IO bolus; max dose 40 units; Hypotension: 0.2–2 mill units/kg/min cont Inf

W/P: [C, +] w/ Vascular Dz

CI: Allergy

Disp: Inj 20 units/mL

SE: ↓ HR, ↓ BP, itching, rash, tachycardia, CV collapse, muscle weakness

Notes: Fewer cardiac effects than succinylcholine

Vecuronium (Generic) BOX: To be administered only by appropriately trained individuals

Uses: *Skeletal muscle relaxation*

Acts: Nondepolarizing neuromuscular blocker; onset 2–3 min

Dose: Adults & Peds. 0.1–0.2 mg/kg IV bolus (also rapid intubation (ECC 2010); maint 0.010–0.015 mg/kg after 25–40 min; additional doses q12–15min PRN; ↓ w/ in severe renal/hepatic impair

W/P: [C, ?] Drug interactions cause ↑ effect (eg, aminoglycosides, tetracycline, succinylcholine) CI: Component hypenses

Disp: Powder for Inj 10, 20 mg

SE: ↓ HR, ↓ BP, itching, rash, tachycardia, CV collapse, muscle weakness

Notes: Fewer cardiac effects than succinylcholine

Vemurafenib (Zelboraf) Uses: *Unresectable metastatic melanoma w/ BRAF mutation*

Acts: BRAF serine-threonine kinase inhib

Dose: Adults. 960 mg bid

W/P: [D, –] If on warfarin, monitor closely

Disp: Tab 240 mg

SE: Rash including SJS; anaphylaxis, pruritus, alopecia, photosens, arthralgias, skin

Notes: Derm exams q2mo for SCC; monitor ECG 15 d and qmo × 3; if QTc > 500 ms, D/C temporarily; mod CYP1A2 inhib, weak CYP2D6 inhib and CYP3A4 inducer

Venlafaxine (Effexor, Effexor XR, Generic) BOX: Monitor for worsening depression or emergence of suicidality, particularly in ped pts

Uses: *Depression, generalized anxiety, social anxiety disorder; panic disorder*, OCD, chronic fatigue synd, ADHD, autism

Acts: Potentiation of CNS neurotransmitter activity

Dose: 75–225 mg/d ÷ in 2–3 equal doses (IR) or daily (ER); 375 mg
IR or 225 mg ER max/d ↓ w/ renal/hepatic impair W/P: [C, ?/−] CI: MAOIs Disp: Tabs IR 25, 37.5, 50, 75, 100 mg; ER caps 37.5, 75, 150 mg; ER tabs 37.5, 75, 150, 225 mg SE: HTN, ↑ HR, HA, somnolence, xerostomia, insomnia, GI upset, sexual dysfunction; actsuates mania or Szs Notes: Avoid EtOH; taper on D/C to avoid withdrawal Sxs

Verapamil (Calan, Covera HS, Isoptin, Verelan, Generic)

Uses: *Angina, HTN, PSVT, AF, atrial flutter*, migraine prophylaxis, hypertrophic cardiomyopathy, bipolar Dz Acts: CCB Dose: Adults. Arrhythmias: 2nd line for PSVT w/ narrow QRS complex & adequate Dz BP 2.5–10 mg IV over 1–2 min; repeat 5–10 mg in 15–30 min PRN (30 mg max). Angina: 80–120 mg PO tid, ↑ 480 mg/24 h max. HTN: 80–180 mg PO tid or SR tabs 120–240 mg PO daily to 240 mg bid; ECC 2010. Reentry SVT w/ narrow QRS: 2.5–5 mg IV over 2 min (slower in older pts); repeat 5–10 mg, in 15–30 min, PRN max (may repeat in 30 min). 1–16 y: 0.1–0.3 mg/kg IV over 3 min (may repeat in 30 min); 5 mg max. PO: 3–4 mg/kg/d PO ÷ in 3 doses, max 8 mg/kg/d up to 480 mg/d > 5 y: 80 mg q6–8h; ↓ in renal/hepatic impair W/P: [C, +] Amiodarone/β-blockers/flecainide can cause ↓ HR; statins, midazolam, tacrolimus, theophylline levels may be ↑; use w/ clonidine may cause severe ↓ HR w/ elderly pts CI: EF < 30%, severe LV dysfunction, BP < 90 mm Hg, SSS, 2nd-, 3rd-AV block AF/atrial flutter w/ bypass tract Disp: Calan SR: Caps 120, 180, 240 mg; Verelan SR: Caps 120, 180, 240, 360 mg Verelan PM: Caps (ER) 100, 200, 300 mg; Calan: Tabs 80, 120 mg; Isoptin SR 24-h 120, 180, 240 mg; Inj 2.5 mg/mL SE: Gingival hyperplasia, constipation, ↓ BP, bronchospasm, HR or conduction disturbances; edema; ↓ BP and bradyarrhythmias taken w/ telithromycin

Vigabatrin (Sabril) BOX: Vision loss reported D/C w/ in 2–4 wk if no effects seen Uses: *Refractory complex partial Szs disorder, infantile spasms* Acts: ↓ Gamma-aminobutyric acid transaminase (GABA-T) to ↑ levels of brain GABA Dose: Adults. Initially 500 mg 2×/d, then ↑ daily dose by 500 mg at weekly intervals based on response and tolerability; 1500 mg/d max Peds. Seizures: 10–15 kg: 0.5–1 g/d ÷ 2×/d; 16–30 kg: 1–1.5 g/d ÷ 2×/d; 31–50 kg: 1.5–3 g/d ÷ 2×/d; > 50 kg: 2–3 g/d ÷ 2×/d; Infantile spasms: Initially 50 mg/kg/d ÷ bid, ↑ 25–50 mg/kg/d q3d to 150 mg/kg/d max W/P: [C, +/−] ↓ dose by 25% w/ CrCl 50–80 mL/min, ↓ dose 50% w/ CrCl 30–50 mL/min, ↓ dose 75% w/ CrCl 10–30 mL/min; MRI signal changes reported in some infants Disp: Tabs 500 mg, powder/oral soln 500 mg/packet SE: Vision loss/blurring, anemia, peripheral neuropathy, fatigue, somnolence, nystagmus, tremor, memory impairment, ↑ Wt, arthralgia, abnormal coordination, confusion Notes: ↓ Phenytoin levels reported; taper slowly to avoid withdrawal Szs; restricted distribution; see PI for powder dosing in peds

Vilazodone (Viibryd) BOX: ↑ Suicide risk in children/adolescents/young adults on antidepressants for major depressive disorder (MDD) and other psych disorders Uses: *MDD* Acts: SSRI and 5HT1A receptor partial agonist Dose: 40 mg/d; start 10 mg PO/d × 7 d, then 20 mg/d × 7 d, then 40 mg/d; ↓ to 20 mg w/ CYP3A4 inhib W/P: [C, ?/−] CI: MOAI, < 14 d between D/C MAOI and start Disp: Tabs 10, 20, 40 mg SE: Serotonin syndrome, neuroleptic malignant syndrome, N/V/D, dry mouth, dizziness, insomnia, restlessness, abnormal dreams, sexual dysfunction Notes: NOT approved for peds; w/ D/C, ↓ dose gradually

Vinblastine (Generic) BOX: Chemotherapeutic agent; handle w/ caution; only individuals experienced use of vinblastine should administer. Uses: *Hodgkin Dz & NHLs, mycosis fungoides, CAs (testis, renal cell, breast, NSCLC), AIDS-related Kaposi sarcoma*, choriocarcinoma, histiocytosis Acts: ↓ Microtubule assembly Dose: 0.1–0.5 mg/kg/wk (4–20 mg/m²) (based on
specific protocol); ↓ in hepatic failure W/P: [D, ?] CI: Granulocytopenia, bacterial Infxn Disp: Inj 1 mg/mL in 10-mg vial SE: ↓ BM (especially leukopenia), N/V, constipation, neurotox, alopecia, rash, myalgia, tumor pain Notes: It’s use can be fatal

Vincristine (Marquibo, Vincasar, Generic) BOX: Chemotherapeutic agent; handle w/ caution; fatal if administered IT; IV only; administration by individuals experienced in use of vincristine only; severe w/ extrav Uses: *ALL, breast & small-cell lung CA, sarcoma (eg, Ewing tumor, rhabdomyosarcoma), Wilms tumor, Hodgkin Dz & NHLs, neuroblastoma, multiple myeloma* Acts: Promotes disassembly of mitotic spindle, causing metaphase arrest, vinca alkaloid Dose: 0.4–1.4 mg/m² (single doses 2 mg/max); ↓ in hepatic failure W/P: [D, –] CI: Charcot-Marie-Tooth synd Disp: Inj 1 mg/mL SE: Neurotox commonly dose limiting, jaw–pain (trigeminal neuralgia), fever, fatigue, anorexia, constipation & paralytic ileus, bladder atony; no sig ↓ BM w/ standard doses; tissue necrosis w/ extrav; myelosuppression

Vinorelbine (Navelbine, Generic) BOX: Chemotherapeutic agent; administration by physician experienced in CA chemotharapy only; severe granulocytopenia possible; extravas may cause tissue irritation and necrosis Uses: *Breast CA & NSCLC* (alone or w/ cisplatin) Acts: ↓ Polymerization of microtubules, impairing mitotic spindle formation; semisynthetic vinca alkaloid Dose: 30 mg/m²/wk; ↓ in hepatic failure W/P: [D, –] CI: Intrathecal IT use, granulocytopenia (< 1000/mm³) Disp: Inj 10 mg SE: ↓ BM (leukopenia), mild GI, neurotox (6–29%); constipation/paresthesias (rare); tissue damage from extrav, alopecia

Vismodegib (Erivedge) BOX: Embryo-fetal death and severe birth defects; verify PRG status before start; advise female and male pts of these risks; advise females on need for contraception and males of potential risk of exposure through semen Uses: *Metastatic basal cell carcinoma, postsurgery local recurrence, not surgical candidate* Acts: Binds/inhibs transmembrane protein—involved in hedgehog signal transduction Dose: 150 mg PO daily W/P: [D, –] CI: None Disp: Caps 150 mg SE: N/V/D/C, ↓ Wt, anorexia, dysgeusia, ageusia, arthralgias, muscle spasms, fatigue, alopecia, ↓ Na⁺, ↓ K⁺, azotemia; ↑ SE if coadministered w/ P-gp inhib Notes: w/ Missed dose DO NOT make up missed dose, resume w/ next scheduled dose; DO NOT donate blood while on Tx of until 7 mo after last Tx; immediately report exposure if PRG

Vitamin B₁ See Thiamine (p 272)
Vitamin B₆ See Pyridoxine (p 242)
Vitamin B₁₂ See Cyanocobalamin (p 93)
Vitamin K See Phytonadione (p 232)
Vitamin, Multi See Multivitamins (Table 12, p 322)
Voriconazole (VFEND, Generic) Uses: *Invasive aspergillosis, candidemia, serious fungal Infxns* Acts: ↓ Ergosterol synth. Spectrum: Candida, Aspergillus, Scedosporium, Fusarium sp Dose: Adults & Peds > 12 y. IV: 6 mg/kg q2h × 2, then 4 mg/kg bid PO. < 40 kg: 100 mg q12h, up to 150 mg. > 40 kg: 200 mg q12h, up to 300 mg; w/ mild–mod hepatic impair; IV not rec d/t accumulation of IV diluent; w/ CYP3A4 sub strates (Table 10, p 319); do not use w/ clopidogrel (↓ effect) W/P: [D, ?/–] SJS, electrolyte disturbances CI: w/ Terfenadine, astemizole, cisapride, pimozide, quinidine, sirolimus, rifampin, carbamazepine, long-acting barbiturates, ritonavir, rifabutin, ergot alkaloids, St. John’s wort; in pt w/ galactose intol; skeletal events w/ long term use; w/ proarrhythmic cond Disp:
Vorinostat (Zolinza) Uses: *Rx cutaneous manifestations in cutaneous T-cell lymphoma*  
**Acts:** Histone deacetylase inhibit  
**Dose:** 400 mg PO daily w/ food; if intolerant. 300 mg PO d × 5 consecutive days each week  
**W/P:** [D, ?/–] w/ Warfarin (↑ INR)  
**CI:** Severe hepatic impair  
**Disp:** Caps 100 mg SE: N/V/D, dehydration, fatigue, anorexia, dysgeusia, DVT, PE, ↓ plt, anemia, ↑ SCr, hyperglycemia, ↑ QTc, edema, muscle spasms  
**Notes:** Monitor CBC, lytes (K⁺, Mg²⁺, Ca²⁺), glucose, & SCr q2wk × 2 mo then monthly; baseline & periodic ECGs; drink 2 L fluid/d

Warfarin (Coumadin, Jantoven, Generic) BOX: Can cause major/fatal bleeding. Monitor INR. Drugs, dietary changes, other factors affect INR. Instruct pts about bleeding risk  
**Uses:** *Prophylaxis & Rx of PE & DVT, AF w/ embolization*, other postop indications  
**Acts:** ↓ Vit K-dependent clotting factors in this order: VII-IX-X-II  
**Dose:**  
**Adults.** Titrate, INR 2.0–3.0 for most; mechanical valves INR is 2.5–3.5.  
**American College of Chest Physicians guidelines:** 5 mg initial, may use 7.5–10 mg; ↓ if pt elderly or w/ other bleeding risk factors; maint 2–10 mg/d PO, follow daily INR initial to adjust dosage (Table 8, p 316).  
**Peds.** 0.05–0.34 mg/kg/24 h PO or IV; follow PT/INR to adjust dosage; monitor vit K intake; ↓ w/ hepatic impair/elderly  
**W/P:** [X, +]  
**CI:** Bleeding, peptic ulcer, PRG  
**Disp:** Tabs 1, 2, 2.5, 3, 4, 5, 6, 7.5, 10 mg; Inj SE: Bleeding d/t overanticoagulation or injury & therapeutic INR; bleeding, alopecia, skin necrosis, purple toe synd  
**Notes:** Monitor vit K intake (↓ effect); INR preferred test; to rapidly correct overanticoagulation: vit K, fresh-frozen plasma, or both. Caution pt on taking w/ other meds that can ↑ risk of bleed. Common warfarin interactions:  
**Potentiated by:** APAP, EtOH (w/ liver Dz), amiodarone, cimetidine, ciprofloxacin, cotrimoxazole, erythromycin, fluconazole, flu vaccine, isoniazid, itraconazole, metronidazole, omeprazole, phenytoin, propranolol, quinidine, tetracycline.  
**Inhibited by:** barbiturates, carbamazepine, chlordiazepoxide, cholesterol, dicloxacillin, nafcillin, rifampin, sucralffate, high–vit K foods. Consider genotyping for VKORC1 & CYP2C9

Witch Hazel (Tucks Pads, Others [OTC]) Uses: After bowel movement, cleansing to decrease local irritation or relieve hemorrhoids; after anorectal surgery, episiotomy, Vag hygiene  
**Acts:** Astringent; shrinks blood vessels locally  
**Dose:** Apply PRN  
**W/P:** [?, ?] External use only  
**CI:** None  
**Supplied:** Presoaked pads  
**SE:** Mild itching or burning

Zafirlukast (Accolate, Generic) Uses: *Adjunctive Rx of asthma*  
**Acts:** Selective & competitive inhib of leukotrienes  
**Dose:**  
**Adults & Peds > 12 y.** 20 mg bid.  
**Peds 5–11 y.** 10 mg PO bid (empty stomach)  
**W/P:** [B, –] Interacts w/ warfarin, ↑ INR  
**CI:** Component allergy, hepatic impair  
**Disp:** Tabs 10, 20 mg SE: Hepatic dysfunction, usually reversible on D/C; HA, dizziness, GI upset; Churg-Strauss synd, neuropsych events (agitation, restlessness, suicidal ideation)  
**Notes:** Not for acute asthma

Zaleplon (Sonata, Generic) [C-IV] Uses: *Insomnia*  
**Acts:** A nonbenzodiazepine sedative/hypnotic, a pyrazolopyrimidine  
**Dose:** 5–20 mg hs PRN; not w/ high-fat meal; ↓ w/ hepatic Insuff, elderly  
**W/P:** [C, ?/–] Angioedema, anaphylaxis; w/ mental/psychological conditions  
**CI:** Component allergy  
**Disp:** Caps 5, 10 mg SE: HA, edema, amnesia, somnolence, photosens  
**Notes:** Take immediately before desired onset

Zanamivir (Relenza) Uses: *Influenza A & B w/ Sxs < 2 d; prophylaxis for influenza*  
**Acts:** ↓ Viral
neuraminidase **Dose**: *Adults & Peds > 7 y*. 2 Inh (10 mg) bid × 5d, initiate w/ in 48 h of Sxs. *Prophylaxis household*: 10 mg daily × 10 d. *Adults & Peds > 12 y*. *Prophylaxis community*: 10 mg daily × 28 d. **W/P**: [C, ?] Not OK for pt w/ airway Dz, reports of severe bronchospasm CI: Component or milk allergy **Disp**: Powder for Inh 5 mg SE: Bronchospasm, HA, GI upset, allergic Rxn, abnormal behavior, ear, nose, throat Sx **Notes**: Uses a Diskhaler for administration; dose same time each day; 2009 H1N1 strains susceptible

**Ziconotide (Prialt)** **BOX**: Psychological, cognitive, neurologic impair may develop over several wk; monitor frequently; may necessitate D/C **Uses**: *IT Rx of severe, refractory, chronic pain* **Acts**: N-type CCB in spinal cord **Dose**: Max initial dose 2.4 mcg/d IT at 0.1 mcg/h; may ↑ 2.4 mcg/d 2–3×/wk to max 19.2 mcg/d (0.8 mcg/h) by day 21 **W/P**: [C, ?/–] w/ Neuro-/psychological impair CI: Psychosis, bleeding diathesis, spinal canal obst **Disp**: Inj mcg/mL: 100/1, 500/5, 500/20 **SE**: Dizziness, N/V, confusion, psych disturbances, abnormal vision, edema, ↑ SCF, amnesia, ataxia, meningitis; may require dosage adjustment **Notes**: May D/C abruptly; uses specific pumps (eg, Medtronic SynchroMed systems); do not ↑ more frequently than 2–3×/wk

**Zidovudine (Retrovir, Generic)** **BOX**: Neutropenia, anemia, lactic acidosis, myopathy, & hepatomegaly w/ steatosis **Uses**: *HIV Infxn, prevent maternal HIV transmission* **Acts**: NRTI **Dose**: *Adults*. 200 mg PO tid or 300 mg PO bid or 1 mg/kg dose IV q4h. **PRG**: 100 mg PO 5×/d until labor; during labor 2 mg/kg IV over 1 h then 1 mg/kg/h until cord clamped. *Peds 4 wk–18 y*. 160 mg/m²/dose tid or see table below; ↓ in renal failure **W/P**: [C, ?/–] w/ Ganciclovir, interferon alfa, ribavirin; may alter many other meds (see PI) **CI**: Allergy **Disp**: Caps 100 mg; tab 300 mg; syrup 50 mg/5 mL; Inj 10 mg/mL **SE**: Hematologic tox, HA, fever, rash, GI upset, malaise, myopathy, fat redistribution **Notes**: w/ Severe anemia/neutropenia dosage interruption may be needed

**Recommended Pediatric Dosage of Retrovir**

<table>
<thead>
<tr>
<th>Body Weight (kg)</th>
<th>Total Daily Dose</th>
<th>Dosage Regimen and Dose</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>bid</td>
<td>tid</td>
</tr>
<tr>
<td>4 to &lt; 9</td>
<td>24 mg/kg/d</td>
<td>12 mg/kg; 8 mg/kg</td>
</tr>
<tr>
<td>≥ 9 to &lt; 30</td>
<td>18 mg/kg/d</td>
<td>9 mg/kg; 6 mg/kg</td>
</tr>
<tr>
<td>≥ 30</td>
<td>600 mg/d</td>
<td>300 mg; 200 mg</td>
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</table>

**Zidovudine/Lamivudine (Combivir, Generic)** **BOX**: Neutropenia, anemia, lactic acidosis, myopathy & hepatomegaly w/ steatosis **Uses**: *HIV Infxn* **Acts**: Combo of RT inhib **Dose**: *Adults & Peds > 12 y*. 1 tab PO bid; ↓ in renal failure **W/P**: [C, ?/–] CI: Component allergy **Disp**: Tab zidovudine 300 mg/lamivudine 150 mg SE: Hematologic tox, HA, fever, rash, GI upset, malaise, pancreatitis **Notes**: Combo product ↓ daily pill burden; refer to individual component listings

**Zileuton (Zyflo, Zyflo CR)** **Uses**: *Chronic Rx asthma* **Acts**: Leuko-triene inhib (↓ 5-lipoxygenase) **Dose**: *Adults & Peds > 12 y*. 600 mg PO qid; CR 1200 mg bid 1 h after a.m./p.m. meal **W/P**: [C, ?/–] CI: Hepatic impair **Disp**: Tabs 600 mg; CR tabs 600 mg SE: Hepatic damage, HA, D/N, upper Abd
pain, leukopenia, neuropsych events (agitation, restlessness, suicidal ideation) Notes: Monitor LFTs qmo × 3, then q2–3mo; take regularly; not for acute asthma; do not chew/ crush CR

**Ziprasidone (Geodon, Generic) BOX:** ↑ Mortality in elderly w/ dementia-related psychosis Uses: *Schizophrenia, acute agitation bipolar disorder* Acts: Atypical antipsychotic Dose: 20 mg PO bid, may ↑ in 2-d intervals up to 80 mg bid; agitation 10–20 mg IM PRN up to 40 mg/d; separate 10mg doses by 2 h & 20 mg doses by 4 h (w/ food) W/P: [C, –] w/ ↓ Mg²⁺, ↓ K⁺ CI: QT prolongation, recent MI, uncompensated heart failure, meds that ↑ QT interval Disp: Caps 20, 40, 60, 80 mg; susp 10 mg/mL; Inj 20 mg/mL SE: ↓ HR; rash, somnolence, resp disorder, EPS, Wt gain, orthostatic ↓ BP Notes: ✓ Lytes

**Ziv-Aflibercept (Zaltrap) BOX:** Severe/fatal hemorrhage possible including GI hemorrhage; D/C w/ GI perf; D/C w/ compromised wound healing, suspend Tx 4 wk prior & after surgery & until surgical wound is fully healed Uses: *Metastatic colorectal CA (label/institution protocol)* Acts: Binds VEGF-A & PIGF w/ ↓ neovascularization & ↓ vascular permeability Dose: 4 mg/kg IV Inf over 1 h q2 wk W/P: [C, –] Severe D w/ dehydration; D/C w/ fistula, ATE, hypertensive crisis, RPLS; ✓ urine protein, suspend Tx if proteinuria > 2 g/24 h, D/C w/ nephrotic synd or thrombotic microangiopathy; ✓ neutrophils, delay until > 1.5 × 10⁹/L CI: None Disp: Inj vial 25 mg/mL (100 mg/4 mL, 200 mg/8 mL) SE: D, ↓ WBC, ↓ plts, stomatitis, proteinuria, ↑ ALT/AST, fatigue, epistaxis, Abd pain, ↓ appetite, ↓ Wt, dysphonia, ↑ SCr, HA Notes: Males/females: use contraception during Tx & for 3 mo after last dose

**Zoledronic Acid (Reclast, Zometa, Generic) Uses:** *↑ Ca²⁺ of malignancy (HCM), ↓ skeletal-related events in CAP, multiple myeloma, & metastatic bone lesions (Zometa)*; *prevent/Rx of postmenopausal osteoporosis, Paget Dz, ↑ bone mass in men w/ osteoporosis, steroid-induced osteoporosis (Reclast)* Acts: Bisphosphonate; ↓ osteoclastic bone resorption Dose: Zometa HCM: 4 mg IV over ≥ 15 min; may retreat in 7 d w/ adequate renal Fxn. Zometa bone lesions/myeloma: 4 mg IV over > 15 min, repeat q3–4wk PRN; extend w/ ↑ Cr. Reclast Rx osteoporosis: 5 mg IV annually. Reclast: Prevent postmenopausal osteoporosis 5 mg IV q2y. Paget: 5 mg IV X 1. W/P: [D, ?/–] w/ Diuretics, aminoglyco-sides; ASA-sensitive asthmatics; avoid invasive dental procedures CI: Bisphosphonate allergy; hypocalcemia, angioedema, CrCl < 35 Disp: Vial 4 mg, 5 mg SE: Fever, flu-like synd, GI upset, insomnia, anemia; electrolyte abnormalities, bone, jt, muscle pain, AF, osteonecrosis of jaw, atyp femur Fx Notes: Requires vigorous prehydration; do not exceed rec doses/Inf duration to ↓ renal dysfunction; follow Cr; effect prolonged w/ Cr ↑; avoid oral surgery; dental exam recommended prior to Rx; ↓ dose w/ renal dysfunction; give Ca²⁺ and vit D supls; may ↑ atypical subtrochanteric femur fractures

**Zolmitriptan (Zomig, Zomig ZMT, Zomig Nasal) Uses:** *Acute Rx migraine* Acts: Selective serotonin agonist; causes vasoconstriction Dose: Initial 2.5 mg PO, may repeat after 2 h, 10 mg max in 24 h; nasal 5 mg; if HA returns, repeat after 2 h, 10 mg max 24 h W/P: [C, ?/–] CI: Ischemic heart Dz, Prinzmetal angina, uncontrolled HTN, accessory conduction pathway disorders, ergots, MAOIs Disp: Tabs 2.5, 5 mg; rapid tabs (ZMT) 2.5, 5 mg; nasal 5 mg, SE: Dizziness, hot flashes, paresthesias, chest tightness, myalgia, diaphoresis, unusual taste, coronary artery spasm

**Zolpidem (Ambien IR, Ambien CR, Edluar, ZolpiMist, Generic) [C-IV] Uses:** *Short-term Tx of insomnia; Ambien and Edluar w/ difficulty of sleep onset; Ambien CR w/ difficulty of sleep onset and/or sleep maint* Acts: Hypnotic agent Dose: Adults. Ambien: 5–10 mg or 12.5 mg CR PO qhs; Edluar: 10 mg SL qhs; Zolpimist: 10 mg spray qhs; ↓ dose in elderly, debilitated, & hepatic impair (5
mg or 6.25 mg CR) W/P: [C, M] May cause anaphylaxis, angioedema, abnormal thinking, CNS depression, withdrawal; evaluate for other comorbid conditions; next-day psychomotor impairment/impaired driving when Ambien is taken w/ less than a full night of sleep remaining (7–8 h) CI: None Disp: Ambien IR: Tabs 5, 10 mg; Ambien CR 6.25, 12.5 mg; Edluar: SL tabs 5, 10 mg; Zolpimist: Oral soln 5 mg/spray (60 actuations/unit) SE: Drowsiness, dizziness, D, drugged feeling, HA, dry mouth, depression Notes: Take tabs on empty stomach; be able to sleep 7–8 h; Zolpimist: Prime w/ 5 sprays initially, and w/ 1 spray if not used in 14 d; store upright.

Zonisamide (Zonegran, Generic) Uses: *Adjunct Rx complex partial Szs* Acts: Anticonvulsant Dose: Initial 100 mg/d PO; may ↑ by 100 mg/d q2wk to 400 mg/d W/P: [C, –] ↑ q2wks w/ CYP3A4 inhibit; ↓ levels w/ carbamazepine, phenytoin, phenobarbital, valproic acid CI: Allergy to sulfonamides Disp: Caps 25, 50, 100 mg SE: Metabolic acidosis, dizziness, drowsiness, confusion, ataxia, memory impair, paresthesias, psychosis, nystagmus, diplopia, tremor, anemia, leukopenia; GI upset, nephrolithiasis (? d/t metabolic acidosis), SJS; monitor for ↓ sweating & ↑ body temperature Notes: Swallow caps whole

Zoster Vaccine, Live (Zostavax) Uses: *Prevent varicella zoster in adults > 60 y* Acts: Active immunization (live attenuated varicella) virus Dose: Adults. 0.65 mL SQ × 1 CI: Gelatin, neomycin anaphylaxis; fever, untreated TB, immunosuppression, PRG W/P: [C, ?/–] Disp: Single-dose vial SE: Inj site Rxn, HA Notes: May be used if previous Hx of zoster; do not use in place of varicella virus vaccine in children; contact precautions not necessary; antivirals and immune globulins may ↓ effectiveness
The following is a guide to some common herbal products. These may be sold separately or in combo with other products. According to the FDA, “Manufacturers of dietary supplements can make claims about how their products affect the structure or function of the body, but they may not claim to prevent, treat, cure, mitigate, or diagnose a disease without prior FDA approval.” The table on p 297 summarizes some of the common dangerous aspects of natural and herbal agents.

**Black Cohosh Uses**: Sx of menopause (eg, hot flashes), PMS, hypercholesterolemia, peripheral arterial Dz; has anti-inflammatory & sedative effects **Efficacy**: May have short-term benefit on menopausal Sx **Dose**: 20–40 mg bid **W/P**: May further ↓ lipids &/or BP w/ prescription meds **CI**: PRG (miscarriage, prematurity reports); lactation **SE**: w/ OD, N/V, dizziness, nervous system & visual changes, ↑ HR, & (possibly) Szs, liver damage/failure

**Chamomile Uses**: Antispasmodic, sedative, anti-inflammatory, astringent, antibacterial. **Dose**: 10–15 g PO daily (3 g dried flower heads tid-qid between meals; can steep in 250 mL hot H₂O) **W/P**: w/ Allergy to chrysanthemums, ragweed, asters (family Compositae) **SE**: Contact dermatitis; allergy, anaphylaxis **Interactions**: w/ Anticoagulants, additive w/ sedatives (benzodiazepines); delayed ↓ gastric absorption of meds if taken together (↓ GI motility)

**Cranberry (Vaccinium macrocarpon) Uses**: Prevention & Rx UTI. **Efficacy**: Possibly effective **Dose**: 300–400 mg bid in 6-oz juice qid; tincture 1/2–1 tsp up to 3×/d, tea 2–3 tsps of dried flowers/cup; creams apply topically 2–3×/d PO **W/P**: May ↑ kidney stones in some susceptible individuals, V **SE**: None known **Interactions**: May potentiate warfarin

**Dong Quai (Angelica polymorpha, sinensis) Uses**: Uterine stimulant; anemia, menstrual cramps, irregular menses, & menopausal Sx; anti-inflammatory, vasodilator, CNS stimulant, immunosuppressant, analgesic, antipyretic, antiasthmatic **Efficacy**: Possibly effective for menopausal Sx **Dose**: 3–15 g daily, 9–12 g PO tab bid. **W/P**: Avoid in PRG & lactation **SE**: D, photosens, skin CA **Interactions**: Anticoagulants (↑ INR w/ warfarin)

**Echinacea (Echinacea purpurea) Uses**: Immune system stimulant; prevention/Rx URI of colds, flu; supportive care in chronic Infxns of the resp/lower urinary tract **Efficacy**: Not established; may ↓ severity & duration of URI **Dose**: Caps 500 mg, 6–9 mL expressed juice or 2–5 g dried root PO **W/P**: Do not use w/ progressive systemic or immune Dzs (eg, TB, collagen–vascular disorders, MS); may interfere w/ immunosuppressive Rx, not OK w/ PRG; do not use > 8 consecutive wk; possible immunosuppression; 3 different commercial forms **SE**: N; rash **Interactions**: Anabolic steroids, amiodarone, MTX, corticosteroids, cyclosporine

**Evening Primrose Oil Uses**: PMS, diabetic neuropathy, ADHD **Efficacy**: Possibly for PMS, not for menopausal Sx **Dose**: 2–4 g/d PO **SE**: Indigestion, N, soft stools, HA **Interactions**: ↑ Phenobarbital metabolism, ↓ Sz threshold

**Feverfew (Tanacetum parthenium) Uses**: Prevent/Rx migraine; fever; menstrual disorders; arthritis; toothache; insect bites **Efficacy**: Weak for migraine prevention **Dose**: 125 mg PO of dried
Fish Oil Supplements (Omega-3 Polyunsaturated Fatty Acid) Uses: CAD, hypercholesterolemia, hypertriglyceridemia, type 2 DM, arthritis Efficacy: No definitive data on ↓ cardiac risk in general population; may ↓ lipids & help w/ secondary MI prevention Dose: One FDA approved (see Lovaza, p 205); OTC 1500–3000 mg/d; AHA rec: 1 g/d W/P: Mercury contamination possible, some studies suggest ↑ cardiac events SE: ↑ Bleeding risk, dyspepsia, belching, aftertaste Interactions: Anticoagulants

Garlic (Allium sativum) Uses: Antioxidant; hyperlipidemia, HTN; anti-infective (antibacterial, antifungal); tick repellant (oral) Efficacy: ↓ Cholesterol by 4–6%; soln ↓ BP; possible ↓ GI/CAP risk Dose: 2–5 g, fresh garlic; 0.4–1.2 g of dried powder; 2–5 mg oil; 300–1000 mg extract or other formulations = 2–5 mg of allicin daily, 400–1200 mg powder (2–5 mg allicin) PO W/P: Do not use in PRG (abortifacient); D/C 7 d pre op (bleeding risk) SE: ↑ Insulin/lipid/cholesterol levels, anemia, oral burning sensation, N/V/D Interactions: Warfarin & ASA (↓ plt aggregation), additive w/ DM agents (↑ hypoglycemia), CYP 3A4 inducer (may ↑ cyclosporine, HIV antivirals, oral contraceptives)

Ginger (Zingiber officinale) Uses: Prevent motion sickness; N/V d/t anesthesia Efficacy: Benefit in ↓ N/V w/ motion or PRG; weak for post op or chemotherapy Dose: 1–4 g rhizome or 0.5–2 g powder PO daily W/P: Pt w/ gallstones; excessive dose (↑ depression, & may interfere w/ cardiac Fxn or anticoagulants) SE: Heartburn Interactions: Excessive consumption may interfere w/ cardiac, DM, or anticoagulant meds (↓ plt aggregation)

Ginkgo Biloba Uses: Memory deficits, dementia, anxiety, improvement Sx peripheral vascular Dz, vertigo, tinnitus, asthma/bronchospasm, antioxidant, premenstrual Sx (especially breast tenderness), impotence, SSRI-induced sexual dysfunction Dose: 60–80 mg standardized dry extract PO bid-tid Efficacy: Small cognition benefit w/ dementia; no other demonstrated benefit in healthy adults W/P: ↑ Bleeding risk (antagonism of plt-activating factor), concerning w/ anti-platlet agents (D/C 3 d pre op); reports of ↑ Sz risk SE: GI upset, HA, dizziness, heart palpitations, rash Interactions: ASA, salicylates, warfarin, antidepressants

Ginseng Uses: “Energy booster” general; also for pt undergoing chemotherapy, stress reduction, enhance brain activity & physical endurance (adaptogenic), antioxidant, aid to control type 2 DM; Panax ginseng being studied for ED Efficacy: Not established Dose: 1–2 g of root or 100–300 mg of extract (7% ginsenosides) PO tid W/P: w/ Cardiac Dz, DM, ↓ BP, HTN, mania, schizophrenia, w/ corticosteroids; avoid in PRG; D/C 7 d pre op (bleeding risk) SE: Controversial “ginseng abuse synd” w/ high dose (nervousness, excitation, HA, insomnia); palpitations, vag bleeding, breast nodules, hypoglycemia Interactions: Warfarin, antidepressants, & caffeine (↑ stimulant effect), DM meds (↑ hypoglycemia)

Glucosamine Sulfate (Chitosamine) and Chondroitin Sulfate Uses: Osteoarthritis (glucosamine: rate-limiting step in glycosaminoglycan synth), ↑ cartilage rebuilding; Chondroitin: biological polymer, flexible matrix between protein filaments in cartilage; draws fluids/nutrients into joint, “shock absorption”) Efficacy: Controversial Dose: Glucosamine 500 PO tid, chondroitin 400 mg PO tid W/P: Many forms come from shellfish, so avoid if have shellfish allergy SE: ↑ Insulin resistance in DM; concentrated in cartilage, theoretically unlikely to cause toxic/teratogenic effects Interactions: Glucosamine: None. Chondroitin: Monitor anticoagulant Rx
**Kava Kava (Kava Kava Root Extract, *Piper methysticum*) Uses:** Anxiety, stress, restlessness, insomnia  
**Efficacy:** Possible mild anxiolytic  
**Dose:** Standardized extract (70% kavalactones) 100 mg PO bid-tid  
**W/P:** Hepatotox risk, banned in Europe/Canada. Not OK in PRG, lactation. D/C 24 h pre op (may ↑ sedative effect of anesthetics)  
**SE:** Mild GI disturbances; rare allergic skin/rash Rxns, may ↑ cholesterol; ↑ LFTs/jaundice; vision changes, red eyes, puffy face, muscle weakness  
**Interactions:** Avoid w/ sedatives, alcohol, stimulants, barbiturates (may potentiate CNS effect)

**Melatonin Uses:** Insomnia, jet lag, antioxidant, immunostimulant  
**Efficacy:** Sedation most pronounced w/ elderly pts w/ ↓ endogenous melatonin levels; some evidence for jet lag  
**Dose:** 1–3 mg 20 min before HS (w/ CR 2 h before hs)  
**W/P:** Use synthetic rather than animal pineal gland, “heavy head,” HA, depression, daytime sedation, dizziness  
**Interactions:** β-Blockers, steroids, NSAIDs, benzodiazepines

**Milk Thistle (*Silybum marianum*) Uses:** Prevent/Rx liver damage (eg, from alcohol, toxins, cirrhosis, chronic hep); preventive w/ chronic toxin exposure (painters, chemical workers, etc.)  
**Efficacy:** Use before exposure more effective than use after damage has occurred  
**Dose:** 80–200 mg PO tid  
**SE:** GI intolerance  
**Interactions:** None

**Red Yeast Rice Uses:** Hyperlipidemia  
**Efficacy:** HMG-CoA reductase activity, naturally occurring lovastatin; ↓ LDL, ↓ triglycerides, ↑ HDL; ↑ secondary CAD events  
**Dose:** 1200–1800 mg bid  
**W/P:** CI w/ PRG, lactation; do not use w/ liver Dz, recent surgery, serious infection; may contain a mycotoxin, citrinin, can cause renal failure  
**Disp:** Caps 600–1200 mg  
**SE:** N, V, Abd pain, hepatitis, myopathy, rhabdomyolysis  
**Interactions:** Possible interactions many drugs, avoid w/ CYP3A4 inhibitors or EtOH  
**Notes:** Use only in adults; generic lovastatin cheaper

**Resveratrol Uses:** Cardioprotective, prevent aging; ↓ antioxidant  
**Efficacy:** Limited human research  
**W/P:** Avoid w/ Hx of estrogen responsive CA or w/ CYP3A4 metabolized drugs  
**Disp:** Caps, tabs 20–500 mg, skins of red grapes, plums, blueberries, cranberries, red wine  
**SE:** D/N, anorexia, insomnia, anxiety, jt pain, antiplatelet aggregation  
**Interactions:** Avoid w/ other antiplatelet drugs or anticoagulants; CYP3A4 inhibitor

**Saw Palmetto (*Serenoa repens*) Uses:** Rx BPH, hair tonic, PCa prevention (weak 5α-reductase inhibit like finasteride, dutasteride)  
**Efficacy:** Small, no sig benefit for prostatic Sx  
**Dose:** 320 mg daily  
**W/P:** Possible hormonal effects, avoid in PRG, w/ women of childbearing years  
**SE:** Mild GI upset, mild HA, D w/ large amounts  
**Interactions:** ↑ Iron absorption; ↑ estrogen replacement effects

**St. John’s Wort (*Hypericum perforatum*) Uses:** Mild–mod depression, anxiety, gastritis, insomnia, vitiligo; anti-inflammatory; immune stimulant/anti-HIV/antiviral  
**Efficacy:** Variable; benefit w/ mild–mod depression in several trials, but not always seen in clinical practice  
**Dose:** 2–4 g of herb or 0.2–1 mg of total hypericin (standardized extract) daily. Also 300 mg PO tid (0.3% hypericin)  
**W/P:** Excess doses may potentiate MAOI, cause allergic Rxn, not OK in PRG  
**SE:** Photosens, xerostomia, dizziness, constipation, confusion, fluctuating mood w/ chronic use  
**Interactions:** CYP 3A enzyme inductor; do not use w/ Rx antidepressants(eespecially MAOI); ↓ cyclosporine efficacy (may cause rejection), digoxin (may ↑ CHF), protease inhib, theophylline, OCP; potency varies between products/batches

**Valerian (*Valeriana officinalis*) Uses:** Anxiolytic, sedative, restlessness, dysmenorrhea  
**Efficacy:** Probably effective sedative (reduces sleep latency)  
**Dose:** 2–3 g in extract PO daily bid added to 2/3 cup boiling H$_2$O, tincture 15–20 drops in H$_2$O, oral 400–900 mg hs (combined w/ OTC sleep product
Alluna) W/P: Hepatotoxicity w/ long-term use SE: Sedation, hangover effect, HA, cardiac disturbances, GI upset Interactions: Caution w/ other sedating agents (eg, alcohol or prescription sedatives): may cause drowsiness w/ impaired Fxn

Yohimbine (Pausinystalia yohimbe) [Yocon, Yohimex] Uses: Improve sexual vigor, Rx ED Efficacy: Variable Dose: 1 tab = 5.4 mg PO tid (use w/ physician supervision) W/P: Do not use w/ renal/hepatic Dz; may exacerbate schizophrenia/mania (if pt predisposed). α₂-Adrenergic antagonist (↓ BP, Abd distress, weakness w/ high doses), OD can be fatal; salivation, dilated pupils, arrhythmias SE: Anxiety, tremors, dizziness, ↑ BP, ↑ HR Interactions: Do not use w/ antidepressants (eg, MAOIs or similar agents)


Unsafe Herbs With Known Toxicity

<table>
<thead>
<tr>
<th>Agent</th>
<th>Toxicities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aconite</td>
<td>Salivation, N/V, blurred vision, cardiac arrhythmias</td>
</tr>
<tr>
<td>Aristolochic acid</td>
<td>Nephrotox</td>
</tr>
<tr>
<td>Calamus</td>
<td>Possible carcinogenicity</td>
</tr>
<tr>
<td>Chaparral</td>
<td>Hepatotoxic, possible carcinogenicity, nephrotox</td>
</tr>
<tr>
<td>&quot;Chinese herbal mixtures&quot;</td>
<td>May contain ma huang or other dangerous herbs</td>
</tr>
<tr>
<td>Colisfoot</td>
<td>Hepatotoxic, possibly carcinogenic</td>
</tr>
<tr>
<td>Comfrey</td>
<td>Hepatotoxic, carcinogenic</td>
</tr>
<tr>
<td>Ephedra/ma huang</td>
<td>Adverse cardiac events, stroke, Sz</td>
</tr>
<tr>
<td>Juniper</td>
<td>High allergy potential, D, Sz, nephrotox</td>
</tr>
<tr>
<td>Kava kava</td>
<td>Hepatotoxic</td>
</tr>
<tr>
<td>Licorice</td>
<td>Chronic daily amounts (&gt; 30 g/mo) can result in increased K⁺, Na/fluid retention w/ HTN, myoglobinuria, hyporeflexia</td>
</tr>
<tr>
<td>Life root</td>
<td>Hepatotoxic, liver CA</td>
</tr>
<tr>
<td>Pokeweed</td>
<td>GI cramping, N/D/V, labored breathing, increased BP, Sz</td>
</tr>
<tr>
<td>Sassafras</td>
<td>V, stupor, hallucinations, dermatitis, abortion, hypothermia, liver CA</td>
</tr>
<tr>
<td>Usnic acid</td>
<td>Hepatotoxic</td>
</tr>
<tr>
<td>Yohimbine</td>
<td>Hypotension, Abd distress, CNS stimulation (mania/ &amp; psychosis in predisposed individuals)</td>
</tr>
</tbody>
</table>

### TABLE 1
Local Anesthetic Comparison Chart for Commonly Used Injectable Agents

<table>
<thead>
<tr>
<th>Agent</th>
<th>Proprietary Names</th>
<th>Onset</th>
<th>Duration</th>
<th>mg/kg</th>
<th>Volume in 70-kg Adult&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bupivacaine</td>
<td>Marcaine</td>
<td>7-30 min</td>
<td>5-7 h</td>
<td>3</td>
<td>70 mL of 0.25% solution</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>Xylocaine, Anestacon</td>
<td>5-30 min</td>
<td>2 h</td>
<td>4</td>
<td>28 mL of 1% solution</td>
</tr>
<tr>
<td>Lidocaine with epinephrine (1:200,000)</td>
<td></td>
<td>5-30 min</td>
<td>2-3 h</td>
<td>7</td>
<td>50 mL of 1% solution</td>
</tr>
<tr>
<td>Mepivacaine</td>
<td>Carbocaine</td>
<td>5-30 min</td>
<td>2-3 h</td>
<td>7</td>
<td>50 mL of 1% solution</td>
</tr>
<tr>
<td>Procaine</td>
<td>Novocaine</td>
<td>Rapid</td>
<td>30 min-1 h</td>
<td>10-15</td>
<td>70-105 mL of 1% solution</td>
</tr>
</tbody>
</table>

<sup>a</sup>To calculate the maximum dose if not a 70-kg adult, use the fact that a 1% solution has 10 mg/mL drug.

### TABLE 2
Comparison of Systemic Steroids (See also p 259)
<table>
<thead>
<tr>
<th>Drug</th>
<th>Relative Equivalent Dose (mg)</th>
<th>Relative Mineralocorticoid Activity</th>
<th>Duration (h)</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Betamethasone (Cortone)</td>
<td>0.75</td>
<td>0</td>
<td>36–72</td>
<td>PO, IM</td>
</tr>
<tr>
<td>Cortisone (Decadron)</td>
<td>25</td>
<td>2</td>
<td>8–12</td>
<td>PO, IM</td>
</tr>
<tr>
<td>Dexamethasone (Solu-Cortef, Hydrocortone)</td>
<td>0.75</td>
<td>0</td>
<td>36–72</td>
<td>PO, IV</td>
</tr>
<tr>
<td>Hydrocortisone</td>
<td>20</td>
<td>2</td>
<td>8–12</td>
<td>PO, IM, IV</td>
</tr>
<tr>
<td>Methylprednisolone acetate (Depo-Medrol)</td>
<td>4</td>
<td>0</td>
<td>36–72</td>
<td>PO, IM, IV</td>
</tr>
<tr>
<td>Methylprednisolone succinate (Solu-Medrol)</td>
<td>4</td>
<td>0</td>
<td>8–12</td>
<td>PO, IM, IV</td>
</tr>
<tr>
<td>Prednisone (Deltasone)</td>
<td>5</td>
<td>1</td>
<td>12–36</td>
<td>PO</td>
</tr>
<tr>
<td>Prednisolone (Delta-Cortef)</td>
<td>5</td>
<td>1</td>
<td>12–36</td>
<td>PO, IM, IV</td>
</tr>
</tbody>
</table>

TABLE 3
Topical Steroid Preparations (See also p 260)
<table>
<thead>
<tr>
<th>Agent</th>
<th>Common Trade Names</th>
<th>Potency</th>
<th>Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alclometasone dipropionate</strong></td>
<td>Aclovate, cream, oint 0.05%</td>
<td>Low</td>
<td>bid/tid</td>
</tr>
<tr>
<td><strong>Aminonide</strong></td>
<td>Cyclocort, cream, lotion, oint 0.1%</td>
<td>High</td>
<td>bid/tid</td>
</tr>
<tr>
<td><strong>Betamethasone</strong></td>
<td>Valisone cream, lotion 0.01%</td>
<td>Low</td>
<td>q day/bid</td>
</tr>
<tr>
<td>Betamethasone valerate</td>
<td>Valisone cream 0.01, 0.1%,</td>
<td>Intermediate</td>
<td>q day/bid</td>
</tr>
<tr>
<td></td>
<td>oint, lotion 0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betamethasone dipropionate</td>
<td>Diprosone cream 0.05%</td>
<td>High</td>
<td>q day/bid</td>
</tr>
<tr>
<td>Betamethasone dipropionate, augmented</td>
<td>Diprosone aerosol 0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diproleone oint, gel 0.05%</td>
<td>Ultrahigh</td>
<td>q day/bid</td>
</tr>
<tr>
<td><strong>Clobetasol propionate</strong></td>
<td>Temovate cream, gel, oint, scalp, soln 0.05%</td>
<td>Ultrahigh</td>
<td>bid (2 wk max)</td>
</tr>
<tr>
<td><strong>Clocortolone pivalate</strong></td>
<td>Cloderm cream 0.1%</td>
<td>Intermediate</td>
<td>q day-qid</td>
</tr>
<tr>
<td><strong>Desonide</strong></td>
<td>DesOwen, cream, oint, lotion 0.05%</td>
<td>Low</td>
<td>bid-qid</td>
</tr>
<tr>
<td><strong>Desoximetasone</strong></td>
<td>Topicort LP cream, gel 0.05%</td>
<td>Intermediate</td>
<td>q day-qid</td>
</tr>
<tr>
<td>Desoximetasone 0.05%</td>
<td>Topicort cream, oint</td>
<td>High</td>
<td>q day-bid</td>
</tr>
<tr>
<td>Desoximetasone 0.25%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dexamethasone base</strong></td>
<td>Aeroseb-Dex aerosol 0.01%</td>
<td>Low</td>
<td>bid-qid</td>
</tr>
<tr>
<td></td>
<td>Decadron cream 0.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Diflorasone diacetate</strong></td>
<td>Psorcon cream, oint 0.05%</td>
<td>Ultrahigh</td>
<td>bid/qid</td>
</tr>
<tr>
<td><strong>Fluocinolone</strong></td>
<td>Synalar cream, soln 0.01%</td>
<td>Low</td>
<td>bid/tid</td>
</tr>
<tr>
<td>Fluocinolone acetonide 0.01%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluocinolone acetonide 0.025%</td>
<td>Synalar oint, cream 0.025%</td>
<td>Intermediate</td>
<td>bid/tid</td>
</tr>
<tr>
<td>Drug</td>
<td>Formulation</td>
<td>Potency</td>
<td>Administration</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>Fluocinolone acetone 0.2%</td>
<td>Synalar-HP cream 0.2%</td>
<td>High</td>
<td>bid/tid</td>
</tr>
<tr>
<td>Fluocinolone 0.05%</td>
<td>Lidex, anhydrous cream, gel, oint, soln 0.05%</td>
<td>High</td>
<td>bid/tid</td>
</tr>
<tr>
<td></td>
<td>Lidex-E aqueous cream 0.05%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flurandrenolide</td>
<td>Cordran cream, oint 0.025%</td>
<td>Intermediate</td>
<td>bid/tid</td>
</tr>
<tr>
<td></td>
<td>cream, lotion, oint 0.05%</td>
<td>Intermediate</td>
<td>bid/tid</td>
</tr>
<tr>
<td></td>
<td>tape, 4 mcg/cm²</td>
<td>Intermediate</td>
<td>q day</td>
</tr>
<tr>
<td>Fluticasone propionate</td>
<td>Cutivate cream 0.05%, oint 0.005%</td>
<td>Intermediate</td>
<td>bid</td>
</tr>
<tr>
<td>Halobetasol</td>
<td>Ultravate cream, oint 0.05%</td>
<td>Very high</td>
<td>bid</td>
</tr>
<tr>
<td>Halcinonide</td>
<td>Halog cream 0.025%, emollient base 0.1% cream, oint, soln 0.1%</td>
<td>High</td>
<td>q day/tid</td>
</tr>
<tr>
<td>Hydrocortisone</td>
<td>Cortizone, Caldecort, Hycort, Hytone, etc.—aerosol 1%, cream 0.5, 1, 2.5%, gel 0.5%, oint 0.5, 1, 2.5%, lotion 0.5, 1, 2.5%, paste 0.5%, soln 1%</td>
<td>Low</td>
<td>tid/qid</td>
</tr>
<tr>
<td>Hydrocortisone acetate</td>
<td>Corticaine cream, oint 0.5, 1%</td>
<td>Low</td>
<td>tid/qid</td>
</tr>
<tr>
<td>Hydrocortisone butyrate</td>
<td>Locoid oint, soln 0.1%</td>
<td>Intermediate</td>
<td>bid/tid</td>
</tr>
<tr>
<td>Hydrocortisone valerate</td>
<td>Westcort cream, oint 0.2%</td>
<td>Intermediate</td>
<td>bid/tid</td>
</tr>
<tr>
<td>Mometasone furoate</td>
<td>Elocon 0.1% cream, oint, lotion</td>
<td>Intermediate</td>
<td>q day</td>
</tr>
<tr>
<td>Prednicarbate</td>
<td>Dermatop 0.1% cream</td>
<td>Intermediate</td>
<td>bid</td>
</tr>
<tr>
<td>Triamcinolone</td>
<td>Aristocort, Kenalog cream, oint, lotion 0.025%</td>
<td>Low</td>
<td>tid/qid</td>
</tr>
<tr>
<td></td>
<td>Aristocort, Kenalog cream, oint, lotion 0.1%</td>
<td>Intermediate</td>
<td>tid/qid</td>
</tr>
<tr>
<td></td>
<td>Aristocort, Kenalog cream, Aerosol 0.2-mg/2-sec spray</td>
<td>Intermediate</td>
<td>tid/qid</td>
</tr>
<tr>
<td></td>
<td>Aristocort, Kenalog cream, oint 0.5%</td>
<td>High</td>
<td>tid/qid</td>
</tr>
</tbody>
</table>

**TABLE 4**
Comparison of Insulins (See also p 159)
<table>
<thead>
<tr>
<th>Type of Insulin</th>
<th>Onset (h)</th>
<th>Peak (h)</th>
<th>Duration (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ultra Rapid</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apidra (glulisine)</td>
<td>&lt; 0.25</td>
<td>0.5–1.5</td>
<td>3–4</td>
</tr>
<tr>
<td>Humalog (lispro)</td>
<td>&lt; 0.25</td>
<td>0.5–1.5</td>
<td>3–4</td>
</tr>
<tr>
<td>NovoLog (aspart)</td>
<td>&lt; 0.25</td>
<td>0.5–1.5</td>
<td>3–4</td>
</tr>
<tr>
<td><strong>Rapid (regular insulin)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humulin R, Novolin R</td>
<td>0.5–1</td>
<td>2–3</td>
<td>4–6</td>
</tr>
<tr>
<td><strong>Intermediate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humulin N, Novolin L</td>
<td>1–4</td>
<td>6–10</td>
<td>10–16</td>
</tr>
<tr>
<td><strong>Prolonged</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lantus (insulin glargine)</td>
<td>1–4</td>
<td>No peak</td>
<td>24</td>
</tr>
<tr>
<td>Levemir (insulin detemir)</td>
<td>1–4</td>
<td>No peak</td>
<td>24</td>
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</table>
**Combination Insulins**

<table>
<thead>
<tr>
<th>Insulin</th>
<th>Effectiveness</th>
<th>Type</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Humalog Mix 75/25 (lispro protamine/lispro)</td>
<td>&lt; 0.25</td>
<td>Dual</td>
<td>Up to 10–16</td>
</tr>
<tr>
<td>Humalog Mix 50/50 (lispro protamine/lispro)</td>
<td>&lt; 0.25</td>
<td>Dual</td>
<td>Up to 10–16</td>
</tr>
<tr>
<td>NovoLog Mix 70/30 (aspart protamine/aspart)</td>
<td>&lt; 0.25</td>
<td>Dual</td>
<td>Up to 10–16</td>
</tr>
<tr>
<td>Humulin 70/30, Novolin 70/30 (NPH/regular)</td>
<td>0.5–1</td>
<td>Dual</td>
<td>Up to 10–16</td>
</tr>
</tbody>
</table>

Note: Do not confuse Humalog, NovoLog, Humalog Mix, and NovoLog Mix with each other or with other agents as serious medication errors can result.

**TABLE 5**
**Oral Contraceptives (See also p 217)**
Drug (Manufacturer) | Estrogen (mcg) | Progestin (mg) | Content of Additional Pills (d = days)
---|---|---|---
**Monophasics**
Alesse 21, 28 (Wyeth) | Ethinyl estradiol (20) | Levonorgestrel (0.1) | 0.451 mg levomefolate in all including 7 placebo
Apri (Barr) | Ethinyl estradiol (30) | Desogestrel (0.15) | 75 mg Fe × 7 d
Aviane (Barr) | Ethinyl estradiol (20) | Levonorgestrel (0.1) | 75 mg Fe × 7 d
Balziva (Barr) | Ethinyl estradiol (35) | Norethindrone (0.4) | 75 mg Fe × 7 d
Beyaz (Bayer) | Ethinyl estradiol (20) | Drospirenone (3.0) | 2 inert; 2 ethinyl estradiol (10)
Brevicon (Watson) | Ethinyl estradiol (35) | Norethindrone (0.5) | 75 mg Fe × 7 d
Cryselle (Barr) | Ethinyl estradiol (30) | Norgestrel (0.3) | 75 mg Fe × 7 d
Demulen 1/35 21, 28 (Pfizer) | Ethinyl estradiol (35) | Ethynodiol diacetate (1) | 75 mg Fe × 7 d
Demulen 1/50 21, 28 (Pfizer) | Ethinyl estradiol (50) | Ethynodiol diacetate (1) | 75 mg Fe × 7 d
Desogen (Organon) | Ethinyl estradiol (30) | Desogestrel (0.15) | 75 mg Fe × 7 d
Emoquette (Qualitest/Endo) | Ethinyl estradiol (30) | Desogestrel (0.15) | 75 mg Fe × 7 d
Femcon Fe (Warner-Chilcott) | Ethinyl estradiol (35) | Norethindrone (0.4) | 75 mg Fe × 7 d
Junel Fe 1/20, 21, 28 (Barr) | Ethinyl estradiol (20) | Norethindrone acetate (1) | 75 mg Fe × 7 d
Junel Fe 1.5/30, 28 (Barr) | Ethinyl estradiol (30) | Norethindrone acetate (1.5) | 75 mg Fe × 7 d
Kariva (Barr) | Ethinyl estradiol (20, 0, 10) | Desogestrel (0.15) | 2 inert; 2 ethinyl estradiol (10)
Kelnor 1/35 (Barr) | Ethinyl estradiol (35) | Ethynodiol Diacetate (1) | 75 mg Fe × 7 d
Lessina (Barr) | Ethinyl estradiol (20) | Levonorgestrel (0.1) | 75 mg Fe × 7 d
(Note: 21 = 21 Active pills; 24 = 24 Active pills; Standard for most products is 28 [unless specified] = 21 Active pills + 7 Placebo)
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<th>Product</th>
<th>Estrogen</th>
<th>Progestin</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levlen 21, 28 (Bayer)</td>
<td>Ethinyl estradiol (30)</td>
<td>Levonorgestrel (0.15)</td>
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</tr>
<tr>
<td>Levite (Bayer)</td>
<td>Ethinyl estradiol (20)</td>
<td>Levonorgestrel (0.1)</td>
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<tr>
<td>Levora (Watson)</td>
<td>Ethinyl estradiol (30)</td>
<td>Levonorgestrel (0.15)</td>
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<tr>
<td>Loestrin 24 Fe (Warner-Chilcott)</td>
<td>Ethinyl estradiol (20)</td>
<td>Norethindrone (1)</td>
<td>75 mg Fe x 4 d in 28 d</td>
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<td>Loestrin Fe 1.5/30 21, 28 (Warner-Chilcott)</td>
<td>Ethinyl estradiol (30)</td>
<td>Norethindrone acetate (1.5)</td>
<td>75 mg Fe x 7 d in 28 d</td>
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<tr>
<td>Loestrin Fe 1/20 21, 28 (Warner-Chilcott)</td>
<td>Ethinyl estradiol (20)</td>
<td>Norethindrone acetate (1)</td>
<td>75 mg Fe x 7 d in 28 d</td>
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<tr>
<td>Loestrin 1/20 21 (Warner-Chilcott)</td>
<td>Ethinyl estradiol (20)</td>
<td>Norethindrone acetate (1.5)</td>
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<tr>
<td>Loestrin 1.5/20 21 (Warner-Chilcott)</td>
<td>Ethinyl estradiol (20)</td>
<td>Norethindrone acetate (1)</td>
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</tr>
<tr>
<td>Lo/Ovral 21, 28 (Wyeth)</td>
<td>Ethinyl estradiol (30)</td>
<td>Norgestrel (0.3)</td>
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<td>Low-Ogestrel (Watson)</td>
<td>Ethinyl estradiol (30)</td>
<td>Norgestrel (0.3)</td>
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<td>Lutera (Watson)</td>
<td>Ethinyl estradiol (20)</td>
<td>Levonorgestrel (0.1)</td>
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<tr>
<td>Microgestin 1/20 21, 28 (Watson)</td>
<td>Ethinyl estradiol (20)</td>
<td>Norethindrone acetate (1)</td>
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<tr>
<td>Microgestin 1.5/30 21, 28 (Watson)</td>
<td>Ethinyl estradiol (30)</td>
<td>Norethindrone acetate (1.5)</td>
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<tr>
<td>Microgestin Fe 1/20 21, 28 (Watson)</td>
<td>Ethinyl estradiol (20)</td>
<td>Norethindrone acetate (1)</td>
<td>75 mg Fe x 7 d in 28 d</td>
</tr>
<tr>
<td>Microgestin Fe 1.5/30 21, 28 (Watson)</td>
<td>Ethinyl estradiol (30)</td>
<td>Norethindrone acetate (1.5)</td>
<td>75 mg Fe x 7 d in 28 d</td>
</tr>
<tr>
<td>Mircette (Organon)</td>
<td>Ethinyl estradiol (20, 0, 10)</td>
<td>Desogestrel (0.15)</td>
<td>2 inert; 2 ethinyl estradiol (10)</td>
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<tr>
<td>Modicon (Ortho-McNeil)</td>
<td>Ethinyl estradiol (35)</td>
<td>Norethindrone (0.5)</td>
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<tr>
<td>MonoNessa (Watson)</td>
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<td>Norgestimate (0.25)</td>
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<tr>
<td>Necon 0.5/35 (Watson)</td>
<td>Mestranol (35)</td>
<td>Norethindrone (0.5)</td>
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<tr>
<td>Necon 1/50 (Watson)</td>
<td>Mestranol (50)</td>
<td>Norethindrone (1)</td>
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<td>Estrogen</td>
<td>Progestin</td>
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<td>Necon 1/35</td>
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<td>Norinyl 1/35</td>
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<td>Norinyl 1/50</td>
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<td>Drospirenone (3)</td>
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<td>Norgestrel (0.5)</td>
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<td>Ortho-Cept</td>
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<td>Ortho-Novum 1/35</td>
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<td>Norethindrone (1)</td>
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<td>Ortho-Novum 1/50 2</td>
<td>Mestranol (50)</td>
<td>Norethindrone (1)</td>
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<td>Ovcon 35 21, 28</td>
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<td>Norethindrone (0.4)</td>
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<td>Ovcon 35 FE</td>
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<td>Ovcon 50</td>
<td>Ethinyl estradiol (50)</td>
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<tr>
<td>Ovral 21, 28</td>
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<td>Norgestrel (0.5)</td>
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</tbody>
</table>

75 mg Fe × 7 d in 28 d
<table>
<thead>
<tr>
<th>Drug</th>
<th>Estrogen (mg)</th>
<th>Progestin (mcg)</th>
<th>Content of Additional Pills</th>
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<tbody>
<tr>
<td><strong>Multiphasics</strong></td>
<td></td>
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<tr>
<td>Aranelle (Barr)</td>
<td>Ethinyl estradiol (35)</td>
<td>Norethindrone (0.5, 1, 0.5)</td>
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<tr>
<td>Cesia (Prasco)</td>
<td>Ethinyl estradiol (25)</td>
<td>Desogestrel (0.1, 0.125, 0.15)</td>
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<tr>
<td>Cyclessa (Organon)</td>
<td>Ethinyl estradiol (25)</td>
<td>Desogestrel (0.1, 0.125, 0.15)</td>
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<tr>
<td>Enpresse (Barr)</td>
<td>Ethinyl estradiol (30, 40, 30)</td>
<td>Levonorgestrel (0.05, 0.075, 0.125)</td>
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<tr>
<td>Estrostep (Warner-Chilcott)</td>
<td>Ethinyl estradiol (20, 30, 35)</td>
<td>Norethindrone acetate (1)</td>
<td>75 mg Fe x 7 d in 28 d</td>
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<tr>
<td>Estrostep Fe (Warner-Chilcott)</td>
<td>Ethinyl estradiol (20, 30, 35)</td>
<td>Norethindrone acetate (1)</td>
<td>75 mg Fe x 7 d in 28 d</td>
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<table>
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<th>Progestin (mcg)</th>
<th>Content of Additional Pills</th>
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<td>Portia (Barr)</td>
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<td>Reclipsen (Watson)</td>
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<td>Desogestrel (0.15)</td>
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<tr>
<td>Safryal (Bayer)b</td>
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<td>Drospirenone (3.0)</td>
<td>0.451 mg levomefolate in all including 7 placebo</td>
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<tr>
<td>Solia (Prasco)</td>
<td>Ethinyl estradiol (30)</td>
<td>Desogestrel (0.15)</td>
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<tr>
<td>Sprintec (Barr)</td>
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<td>Sronyx (Watson)</td>
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<td>Yasmin (Bayer)d</td>
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<td>Drospirenone (3.0)c</td>
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<td>(generic Ocella, Syeda, Zarah)</td>
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<tr>
<td>Yaz (Bayer) 28 day d,e,f</td>
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<td>4 inert in 28 d</td>
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<td>(generics Gianvi, Loryna)</td>
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<td>Zenchent (Watson)</td>
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<tr>
<td>Generess Fe (Watson)</td>
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<tr>
<td>(Note: Chewable tablets)</td>
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<td>75 mg Fe x 4 days</td>
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<td>Nortrel 7/7/7 (Barr)</td>
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<tr>
<td>Ortho Tri-Cyclen 21, 28 (Ortho-McNeil)</td>
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<td>Ortho Tri-Cyclen Lo 21, 28 (Ortho-McNeil)</td>
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<td>Progestin (mcg)</td>
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<td>-----------------------</td>
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<tr>
<td>Tilia Fe (Watson)</td>
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<td>Norethindrone (1)</td>
<td>75 mg Fe × 7 d in 28 d</td>
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<td>Tri-Legest (Barr)</td>
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<td>Tri-Legest Fe (Barr)</td>
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<td>Norethindrone (1)</td>
<td>75 mg Fe × 7 d in 28 d</td>
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<td>Tri-Levlen (Bayer)</td>
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<td>Tri-Nessa (Watson)</td>
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<tr>
<td>Tri-Previfem (Teva)</td>
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<td>Tri-Sprintec (Barr)</td>
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<tr>
<td>Trivora 28 (Watson)</td>
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<tr>
<td>Velivet (Barr)</td>
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<tr>
<td><strong>Progestin Only (aka “mini-pills”)</strong></td>
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<tr>
<td>Camila (Barr)</td>
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<tr>
<td>Errin (Barr)</td>
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### Progestin Only (aka “mini-pills”)###

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<th>Progestin (mcg)</th>
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<td>Micronor (Ortho-McNeil)</td>
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<td>Nor-QD (Watson)</td>
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<tr>
<td>Nora-BE (Ortho-McNeil)</td>
<td>None</td>
<td>Norethindrone (0.35)</td>
<td></td>
</tr>
</tbody>
</table>

### Extended-Cycle Combination (aka COCP [combined oral contraceptive pills])###

<table>
<thead>
<tr>
<th>Drug</th>
<th>Estrogen (mg)</th>
<th>Progestin (mcg)</th>
<th>Content of Additional Pills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jolessa (Barr) 91-d pack</td>
<td>Ethinyl estradiol (30)</td>
<td>Levonorgestrel (0.15)</td>
<td>7 inert</td>
</tr>
<tr>
<td>LoSeasonique (Duramed)</td>
<td>Ethinyl estradiol (20, 10)</td>
<td>Levonorgestrel (0.1)</td>
<td>7 (10 mcg ethinyl estradiol)</td>
</tr>
<tr>
<td>Lybrel (Wyeth) 28-d pack</td>
<td>Ethinyl estradiol (20)</td>
<td>Levonorgestrel (0.09)</td>
<td>None</td>
</tr>
<tr>
<td>Quasense (Watson)</td>
<td>Ethinyl estradiol (30)</td>
<td>Levonorgestrel (0.15)</td>
<td>7 inert</td>
</tr>
<tr>
<td>Product</td>
<td>Estrogen</td>
<td>Progestin</td>
<td>Duration</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>Seasonique (Duramed) 91-d pack</td>
<td>Ethinyl estradiol (30)</td>
<td>Levonorgestrel (0.15)</td>
<td>7 (10 mcg ethinyl estradiol)</td>
</tr>
<tr>
<td>Seasonale (Duramed) 91-d pack</td>
<td>Ethinyl estradiol (30)</td>
<td>Levonorgestrel (0.15)</td>
<td>7 inert</td>
</tr>
</tbody>
</table>

**Extended-Cycle Combination, ascending dose**

<table>
<thead>
<tr>
<th>Product</th>
<th>Estrogen</th>
<th>Progestin</th>
<th>Duration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartette (Teva) 91 d</td>
<td>Ethinyl estradiol 0.02 mg (42 d)</td>
<td>Levonorgestrel 0.15 mg (42 d)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ethinyl estradiol 0.025 mg (21 d)</td>
<td>Levonorgestrel 0.15 mg (21 d)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ethinyl estradiol 0.03 mg (21 d)</td>
<td>Levonorgestrel 0.15 mg (21 d)</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ethinyl estradiol 0.01 mg (7 d)</td>
<td>Levonorgestrel 0.15 mg (7 d)</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>


*a* The designations 21 and 28 refer to number of days in regimen available.

*b* Raises folate levels to help decrease neural tube defect risk with eventual pregnancy.

*c* Drospirenone containing pills have increased risk for blood clots compared to other progestins

*d* Avoid in patients with hyperkalemia risk.

*e* Also approved for acne.

*f* Approved for premenstrual dysphoric disorder (PMDD) in women who use contraception for birth control.

*g* First “four phasic” OCP. Varies doses of estrogen (estradiol valerate) with progestin (dienogest) throughout cycle with 2 inert pills at end of cycle: days 1–2: estradiol valerate 3 mg alone; days 3–7: estradiol valerate 2 mg/dienogest 2 mg; days 8–24: estradiol valerate 2 mg/dienogest 3 mg; days 25–26: estradiol valerate 1 mg alone; days 27–28: placebo.

*h* First FDA-approved pill for 365 d dosing.

**TABLE 6**  
Oral Potassium Supplements (See also p 236)
<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Salt</th>
<th>Form</th>
<th>mEq Potassium/Dosing Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glu-K</td>
<td>Gluconate</td>
<td>Tablet</td>
<td>2 mEq/tablet</td>
</tr>
<tr>
<td>Kaon elixir</td>
<td>Gluconate</td>
<td>Liquid</td>
<td>20 mEq/15 mL</td>
</tr>
<tr>
<td>Kaon-Cl 10</td>
<td>KCl</td>
<td>Tablet, SR</td>
<td>10 mEq/tablet</td>
</tr>
<tr>
<td>Kaon-Cl 20%</td>
<td>KCl</td>
<td>Liquid</td>
<td>40 mEq/15 mL</td>
</tr>
<tr>
<td>K-Dur 20</td>
<td>KCl</td>
<td>Tablet, SR</td>
<td>20 mEq/tablet</td>
</tr>
<tr>
<td>KayCiel</td>
<td>KCl</td>
<td>Liquid</td>
<td>20 mEq/15 mL</td>
</tr>
<tr>
<td>K-Lor</td>
<td>KCl</td>
<td>Powder</td>
<td>20 mEq/packet</td>
</tr>
<tr>
<td>K-lyte/Cl</td>
<td>KCl/bicarbonate</td>
<td>Effervescent</td>
<td>25 mEq/tablet</td>
</tr>
<tr>
<td>Klorvess</td>
<td>KCl/bicarbonate</td>
<td>Effervescent</td>
<td>20 mEq/tablet</td>
</tr>
<tr>
<td>Klotrix</td>
<td>KCl</td>
<td>Tablet, SR</td>
<td>10 mEq/tablet</td>
</tr>
<tr>
<td>K-Lyte</td>
<td>Bicarbonate/citrate</td>
<td>Effervescent</td>
<td>25 mEq/tablet</td>
</tr>
<tr>
<td>Klor-Con/EF</td>
<td>Bicarbonate/citrate</td>
<td>Effervescent</td>
<td>25 mEq/tablet</td>
</tr>
<tr>
<td>K-Tab</td>
<td>KCl</td>
<td>Tablet, SR</td>
<td>10 mEq/tablet</td>
</tr>
<tr>
<td>Micro-K</td>
<td>KCl</td>
<td>Capsule, SR</td>
<td>8 mEq/capsule</td>
</tr>
<tr>
<td>Potassium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chloride 10%</td>
<td>KCl</td>
<td>Liquid</td>
<td>20 mEq/15 mL</td>
</tr>
<tr>
<td>Potassium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chloride 20%</td>
<td>KCl</td>
<td>Liquid</td>
<td>40 mEq/15 mL</td>
</tr>
<tr>
<td>Slow-K</td>
<td>KCl</td>
<td>Tablet, SR</td>
<td>8 mEq/tablet</td>
</tr>
<tr>
<td>Tri-K</td>
<td>Acetate/bicarbonate/citrate</td>
<td>Liquid</td>
<td>45 mEq/15 mL</td>
</tr>
<tr>
<td>Twin-K</td>
<td>Citrate/gluconate</td>
<td>Liquid</td>
<td>20 mEq/5 mL</td>
</tr>
</tbody>
</table>

SR = sustained release.

Note: Alcohol and sugar content vary between preparations.
TABLE 7
Tetanus Prophylaxis (See also p 271)

<table>
<thead>
<tr>
<th>History of Absorbed Tetanus Toxoid Immunization</th>
<th>Clean, Minor Wounds</th>
<th>All Other Wounds&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown or &lt; 3 doses</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>= 3 doses</td>
<td>No&lt;sup&gt;e&lt;/sup&gt;</td>
<td>No&lt;sup&gt;f&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup> Such as, but not limited to, wounds contaminated with dirt, feces, soil, saliva, etc.; puncture wounds; avulsions; and wounds resulting from missiles, crushing, burns, and frostbite.

<sup>b</sup> Td = tetanus-diphtheria toxoid (adult type), 0.5 mL IM.
- For children < 7 y, DPT (DT, if pertussis vaccine is contraindicated) is preferred to tetanus toxoid alone.
- For persons > 7 y, Td is preferred to tetanus toxoid alone.
- DT = diphtheria-tetanus toxoid (pediatric), used for those who cannot receive pertussis.

<sup>c</sup> TIG = tetanus immune globulin, 250 units IM.

<sup>d</sup> If only 3 doses of fluid toxoid have been received, then a fourth dose of toxoid, preferably an adsorbed toxoid, should be given.

<sup>e</sup> Yes, if >10 y since last dose.

<sup>f</sup> Yes, if > 5 y since last dose.

Data from Guidelines from the Centers for Disease Control and Prevention and reported in MMWR (MMWR, December 1, 2006; 55(RR-15):1-48).

TABLE 8
Oral Anticoagulant Standards of Practice (See also warfarin p 288)
### Thromboembolic Disorder

<table>
<thead>
<tr>
<th>Thromboembolic Disorder</th>
<th>INR</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment of single episode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transient risk factor</td>
<td>2–3</td>
<td>3 mo</td>
</tr>
<tr>
<td>Idiopathic(^a)</td>
<td>2–3</td>
<td>long-term</td>
</tr>
<tr>
<td>Recurrent systemic embolism</td>
<td>2–3</td>
<td>long-term</td>
</tr>
</tbody>
</table>

### Prevention of Systemic Embolism

<table>
<thead>
<tr>
<th>Condition</th>
<th>INR</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrial fibrillation (AF)(^b)</td>
<td>2–3</td>
<td>long-term</td>
</tr>
<tr>
<td>AF: cardioversion</td>
<td>2–3</td>
<td>3 wk prior; 4 wk post sinus rhythm</td>
</tr>
<tr>
<td>Mitral valvular heart dx(^c)</td>
<td>2–3</td>
<td>long-term</td>
</tr>
<tr>
<td>Cardiomyopathy (usually ASA)(^d)</td>
<td>2–3</td>
<td>long-term</td>
</tr>
</tbody>
</table>

### Acute Myocardial Infarction

<table>
<thead>
<tr>
<th>Condition</th>
<th>INR</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk(^e)</td>
<td>2–3</td>
<td>long-term</td>
</tr>
<tr>
<td>low-dose aspirin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All other infarcts (usually ASA)(^f)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 9

Antiarrhythmics: Vaughn Williams Classification

<table>
<thead>
<tr>
<th>Thromboembolic Disorder</th>
<th>INR</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prosthetic Valves</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioprosthetic heart valves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitral position</td>
<td>2–3</td>
<td>3 mo</td>
</tr>
<tr>
<td>Aortic position&lt;sup&gt;g&lt;/sup&gt;</td>
<td>2–3</td>
<td>3 mo</td>
</tr>
<tr>
<td>Bileaflet mechanical valves in aortic position&lt;sup&gt;h&lt;/sup&gt;</td>
<td>2–3</td>
<td>long-term</td>
</tr>
<tr>
<td>Other mechanical prosthetic valves&lt;sup&gt;i&lt;/sup&gt;</td>
<td>2.5–3.5</td>
<td>long-term</td>
</tr>
</tbody>
</table>

<sup>a</sup> 3 mo if mod or high risk of bleeding or distal DVT; if low risk of bleeding, then long-term for proximal DVT/PE.

<sup>b</sup> Paroxysmal AF or ≥2 risk factors (age > 75, Hx, BP, DM, mod-severe LV dysfunction or CHF), then warfarin; 1 risk factor warfarin or 75–325 mg ASA; 0 risk factors ASA.

<sup>c</sup> Mitral valve Dz: rheumatic if Hx systemic embolism, or AF or LA thrombus or LA > 55 mm; MVP: only if AF, systemic embolism or TIAs on ASA; mitral valve calcification: warfarin if AF or recurrent embolism on ASA; aortic valve w/ calcification: warfarin not recommended.

<sup>d</sup> In adults only ASA; only indication for anticoagulation cardiomyopathy in children, to begin no later than their activation on transplant list.

<sup>e</sup> High risk = large anterior MI, significant CHF, intracardiac thrombus visible on TE, AF, and Hx of a thromboembolic event.

<sup>f</sup> If meticulous INR monitoring and highly skilled dose titration are expected and widely accessible, then INR 3.5 (3.0–4.0) w/o ASA or 2.5 (2.0–3.0) w/ ASA long-term (4 years).

<sup>g</sup> Usually ASA 50–100 mg; warfarin if Hx embolism, LA thrombus, AF, low EF, hypercoagulable state, 3 mo, or until thrombus resolves.

<sup>h</sup> Target INR 2.5–3.5 if AF, large anterior MI, LA enlargement, hypercoagulable state, or low EF.

<sup>i</sup> Add ASA 50–100 mg if high risk (AF, hypercoagulable state, low EF, or Hx of ASCVD).


**TABLE 9**

Antiarrhythmics: Vaughn Williams Classification
**Class I: Sodium Channel Blockade**

A. **Class Ia:** Lengthens duration of action potential (↑ the refractory period in atrial and ventricular muscle, in SA and AV conduction systems, and Purkinje fibers)
   1. Amiodarone (also classes II, III, IV)
   2. Disopyramide (Norpace)
   3. Imipramine (MAO inhibitor)
   4. Procainamide (Pronestyl)
   5. Quinidine

B. **Class Ib:** No effect on action potential
   1. Lidocaine (Xylocaine)
   2. Mexiletine (Mexitil)
   3. Phenytoin (Dilantin)
   4. Tocainide (Tonocard)

C. **Class Ic:** Greater sodium current depression (blocks the fast inward Na⁺ current in heart muscle and Purkinje fibers, and slows the rate of ↑ of phase 0 of the action potential)
   1. Flecainide (Tambocor)
   2. Propafenone

---

**Class II: β-Blocker**

D. Amiodarone (also classes Ia, III, IV)
E. Esmolol (Brevibloc)
F. Sotalol (also class III)

---

**Class III: Prolong Refractory Period via Action Potential**

G. Amiodarone (also classes Ia, II, IV)
H. Sotalol

---

**Class IV: Calcium Channel Blocker**

I. Amiodarone (also classes Ia, II, III)
J. Diltiazem (Cardizem)
K. Verapamil (Calan)
Increased or decreased (primarily hepatic cytochrome P-450) metabolism of medications may influence the effectiveness of drugs or result in significant drug-drug interactions. Understanding the common cytochrome P-450 isoforms (eg, CYP2C9, CYP2D9, CYP2C19, CYP3A4) and common drugs that are metabolized by (aka “substrates”), inhibit, or induce activity of the isoform helps identify and minimize significant drug interactions.

<table>
<thead>
<tr>
<th>CYP1A2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Substrates:</strong></td>
</tr>
<tr>
<td><strong>Inhibitors:</strong></td>
</tr>
<tr>
<td><strong>Inducers:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CYP2C9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Substrates:</strong></td>
</tr>
<tr>
<td><strong>Inhibitors:</strong></td>
</tr>
<tr>
<td><strong>Inducers:</strong></td>
</tr>
</tbody>
</table>
CYP2C19

**Substrates:** Amitriptyline, clopidogrel, cyclophosphamide, diazepam, lansoprazole, omeprazole, pantoprazole, phenytoin, rabeprazole

**Inhibitors:** Fluoxetine, fluvoxamine, isoniazid, ketoconazole, lansoprazole, omeprazole, ticlopidine

**Inducers:** Barbiturates, carbamazepine, prednisone, rifampin

---

CYP2D6

**Substrates:**

- **Antidepressants:** Most tricyclic antidepressants, clomipramine, fluoxetine, paroxetine, venlafaxine
- **Antipsychotics:** Aripiprazole, clozapine, haloperidol, risperidone, thioridazine
- **Beta-blockers:** Carvedilol, metoprolol, propranolol, timolol
<table>
<thead>
<tr>
<th>Opioids:</th>
<th>Codeine, hydrocodone, oxycodone, tramadol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others:</td>
<td>Amphetamine, dextromethorphan, duloxetine, encaïnide, flecainide, mexiletine, ondansetron, propafenone, selegiline, tamoxifen</td>
</tr>
<tr>
<td>Inhibitors:</td>
<td>Amiodarone, bupropion, cimetidine, clomipramine, doxepin, duloxetine, fluoxetine, haloperidol, methadone, paroxetine, quinidine, ritonavir</td>
</tr>
<tr>
<td>Inducers:</td>
<td>Dexamethasone, rifampin</td>
</tr>
</tbody>
</table>

**CYP3A**

(in involved in the metabolism of > 50% of drugs metabolized by the liver)

| Substrates: | Anticholinergics: Darifenacin, oxybutynin, solifenacin, tolterodine |
|            | Benzodiazepines: Alprazolam, diazepam, midazolam, triazolam |
| Calcium channel blockers: Amlodipine, diltiazem, felodipine, nifedipine, nimodipine, nisoldipine, verapamil |
| Chemotherapy: Cyclophosphamide, erlotinib, ifosfamide, paclitaxel, tamoxifen, vincristine |
| HIV protease inhibitors: Atazanavir, indinavir, nelfinavir, ritonavir, saquinavir |
| HMG-CoA reductase inhibitors: Atorvastatin, lovastatin, simvastatin |
| Immunosuppressive agents: Cyclosporine, tacrolimus |
| Macrolide-type antibiotics: Clarithromycin, erythromycin, telithromycin, troleandomycin |
| Opioids: Alfentanil, cocaine, fentanyl, methadone, sufentanil |
| Steroids: Budesonide, cortisol, 17-β-estradiol, progesterone |
| Others: Acetaminophen, amiodarone, carbamazepine, delavirdine, efavirenz, nevirapine, quinidine, repaglinide, sildenafil, tadalafil, trazodone, vardenafil |

| Inhibitors: | Amiodarone, amprenavir, aprepitant, atazanavir, ciprofloxacin, cisapride, clarithromycin, diltiazem, erythromycin, fluconazole, fluvoxamine, grapefruit juice (in high ingestion), indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, norfloxacin, ritonavir, saquinavir, telithromycin, troleandomycin, verapamil, voriconazole |
**Inducers:** Carbamazepine, efavirenz, glucocorticoids, modafinil, nevirapine, phenytoin, phenobarbital, rifabutin, rifapentine, rifampin, St. John’s wort

---


---

**TABLE 11**

SSRIs/SNRIs/Triptans and Serotonin Syndrome

A life-threatening condition, when selective serotonin reuptake inhibitors (SSRIs) and 5-hydroxytryptamine receptor agonists (triptans) are used together. However, many other drugs have been implicated (see below). Signs and symptoms of serotonin syndrome include the following:
Restlessness, coma, N/V/D, hallucinations, loss of coordination, overactive reflexes, hypertension, mydriasis, rapid changes in BP, increased body temperature

<table>
<thead>
<tr>
<th>Class</th>
<th>Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antidepressants</td>
<td>MAOIs, TCAs, SSRIs, SNRIs, mirtazapine, venlafaxine</td>
</tr>
<tr>
<td>CNS stimulants</td>
<td>Amphetamines, phentermine, methylphenidate, sibutramine</td>
</tr>
<tr>
<td>5-HT1 agonists</td>
<td>Triptans</td>
</tr>
<tr>
<td>Illicit drugs</td>
<td>Cocaine, methylenedioxyamphetamine (ecstasy), lysergic acid diethylamide (LSD)</td>
</tr>
<tr>
<td>Opioids</td>
<td>Tramadol, oxycodone, morphine, meperidine</td>
</tr>
<tr>
<td>Others</td>
<td>Buspirone, chlorpheniramine, dextromethorphan, linezolid, lithium, selegiline, tryptophan, St. John’s wort</td>
</tr>
</tbody>
</table>

Management includes removal of the precipitating drugs and supportive care. To control agitation, the serotonin antagonists cyproheptadine can be used. When symptoms are mild, discontinuation of the medication or medications and the control of agitation with benzodiazepines may be needed. Critically ill patients may require sedation and mechanical ventilation as well as control of hyperthermia. (Ables AZ, Nagubilli R. Prevention, recognition, and management of serotonin syndrome. Am Fam Physician. May 1, 2010;81(9):1139-1142.)

MOAI = monoamine oxidase inhibitor.
TCA = tricyclic antidepressant.
SNRI = serotonin-norepinephrine reuptake inhibitors.

### TABLE 12
Selected Multivitamin Supplements
This table lists common multivitamins available without a prescription, and most chains have generic versions. Many specialty vitamin combinations are available and are not included in this table. [Examples are B vitamins plus C; disease-specific supplements; pediatric and infant formulations; prenatal vitamins, etc.] A check (√) indicates the component is found in the formulation; NA indicates it is not in the formulation. Details of the specific composition of these multivitamins can be found at www.eDrugbook.com or on the product site.

<table>
<thead>
<tr>
<th>Fat-Soluble Vitamins</th>
<th>Water-Soluble Vitamins</th>
<th>Minerals</th>
<th>Trace Elements</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, D, E K</td>
<td>C, B₁, B₂, B₃, B₅, B₆, B₁₂, Folate, Biotin</td>
<td>Ca, P, Mg, Fe, Zn, I, Se, K</td>
<td>Mn, Cu, Cr, Mo</td>
<td></td>
</tr>
<tr>
<td>Centrum</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centrum Performance</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centrum Silver</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NatureMade Multi</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NatureMade Complete</td>
<td>√</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>NatureMade Multi Daily</td>
<td>√</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>NatureMade Multi Max</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NatureMade Multi 50+</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| One-A-Day 50 Plus    | √                      | √        |                |       | Lycopene
<p>|                      |                        |          |                | Ginseng, Ginkgo |
|                      |                        |          |                | Lycopene |
|                      |                        |          |                | Lutein |
|                      |                        |          |                | Lutein |</p>
<table>
<thead>
<tr>
<th>Product</th>
<th>Influenza</th>
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Vitamin B₅ = thiamine; B₂ = riboflavin; B₃ = niacin; B₅ = pantothenic acid; B₆ = pyridoxine; B₁₂ = cyanocobalamin.

Ca = calcium; Cr = chromium; Cu = copper; Fe = iron; Fl = fluoride; I = iodine; K = potassium; Mg = magnesium; Mn = manganese; Mo = molybdenum; P = phosphorus; Se = selenium; Zn = zinc.

**TABLE 13**
Influenza Vaccine Strains for 2013–2014 (See also pp 158–159)
The 2013–2014 trivalent influenza vaccine is made from the following three viruses:
- A/California/7/2009 (H1N1)pdm09-like virus;
- A(H3N2) virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011;
- B/Massachusetts/2/2012-like virus.

It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Brisbane/60/2008-like virus.

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<th>Age</th>
<th>Brand Name Product</th>
<th>Dosage Form/Strength</th>
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<tr>
<td>6–35 mo</td>
<td>Fluzone</td>
<td>0.25 mL prefilled syringe</td>
</tr>
<tr>
<td></td>
<td>Fluzone Quadrivalent</td>
<td>0.25 mL prefilled syringe</td>
</tr>
<tr>
<td>2–49 y</td>
<td>FluMist Quadrivalent</td>
<td>0.2 mL prefilled intranasal sprayer</td>
</tr>
<tr>
<td>≥ 36 mo</td>
<td>Fluarix</td>
<td>0.5 mL prefilled syringe</td>
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<td></td>
<td>Fluzone</td>
<td>0.5 mL prefilled syringe &amp; single-dose vial; 5 mL multi-dose vial</td>
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<tr>
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<td>Fluarix Quadrivalent</td>
<td>0.5 mL prefilled syringe</td>
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<tr>
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<td>Fluzone Quadrivalent</td>
<td>0.5 mL prefilled syringe &amp; single-dose vial</td>
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<tr>
<td>≥ 4 y</td>
<td>Fluvirin</td>
<td>0.5 mL prefilled syringe &amp; 5 mL multi-dose vial</td>
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<tr>
<td>≥ 9 y</td>
<td>Afluria</td>
<td>0.5 mL prefilled syringe &amp; 5 mL multi-dose vial</td>
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<tr>
<td>≥ 18 y</td>
<td>Flucelvax</td>
<td>0.5 mL prefilled syringe</td>
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<tr>
<td></td>
<td>FluLaval</td>
<td>5 mL multi-dose vial</td>
</tr>
<tr>
<td>18–49 y</td>
<td>FluBlok</td>
<td>0.5 mL single-dose vial</td>
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<tr>
<td>18–64 y</td>
<td>Fluzone Intradermal</td>
<td>0.1 mL prefilled microinjection system</td>
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<tr>
<td>≥ 65 y</td>
<td>Fluzone High-Dose</td>
<td>0.5 mL prefilled syringe</td>
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</table>

*Age indication per package labeling is ≥ 5 y; ACIP [www.cdc.gov/vaccines/acip] recommends Afluria not be used in children 6–8 y due to increased risk of febrile Rxn.*
Index

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### MEDICATION

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<th>Generic (Trade)</th>
<th>Adult Dose</th>
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<td>Abciximab (ReoPro)</td>
<td><strong>ACS with immediate PCI</strong>: 0.25-mg/kg IV bolus 10-60 min before PCI, then 0.125 mcg/kg/minute (max 10 mcg/min) for 12 hours; w/ heparin. <strong>ACS w/ planned PCI w/in 24 h</strong>: 0.25 mg/kg IV bolus, then 10 mcg/min IV over 18–24 h, concluding 1 h post PCI.</td>
</tr>
<tr>
<td>Adenosine (Adenocard)</td>
<td>6 mg rapid IV push, then 20 mL NS bolus. Elevate extremity; repeat 12 mg in 1–2 min PRN × 2.</td>
</tr>
<tr>
<td>Alteplase, recombinant (Activase)</td>
<td><strong>STEMI</strong>: 15-mg bolus; then 0.75 mg/kg over 30 min (50 mg max); then 0.50 mg/kg over next 60 min (35 mg max; max total dose 100 mg) <strong>Acute ischemic stroke</strong>: 0.9 mg/kg IV (max 90 mg) over 60 min; give 10% of total dose over 1 min; remaining 90% over 1 h (or 3-h Inf).</td>
</tr>
<tr>
<td>Amiodarone (Cordarone, Pacerone)</td>
<td><strong>VF/VT Cardiac arrest refractory to CPR, shock and pressor</strong>: 300 mg IV/IO push; can give additional 150 mg IV/IO once; <strong>Life-threatening arrhythmias</strong>: Max dose 2.2 g IV/24h. Initial, 15 mg/min IV for 10 min (150 mg), then 1 mg/min IV for 6 h (360 mg), then 0.5 min/min IV for 18h (540 mg) 160–325 mg nonenteric coated PO ASAP (chewing preferred at ACS onset).</td>
</tr>
<tr>
<td>Aspirin</td>
<td><strong>ACS</strong>: 30 units IV over 2–5 min.</td>
</tr>
<tr>
<td>Anistreplase (Eminase)</td>
<td><strong>AMI</strong>: 5 mg IV over 5 min; in 10 min, 5 mg slow IV; if tolerated in 10 min, start 50 mg PO, titrate.</td>
</tr>
<tr>
<td>Atenolol (Tenormin)</td>
<td><strong>Asystole or PEA</strong>: Routine use for asystole or PEA no longer recommended.</td>
</tr>
<tr>
<td>Atropine sulfate</td>
<td><strong>Bradycardia</strong>: 0.5 mg IV q3–5 min as needed; max 3 mg or 0.04 mg/kg.</td>
</tr>
<tr>
<td>Calcium chloride</td>
<td><strong>Hyperkalemia/hypermagnesemia/CCB overdose</strong>: 500–1000 mg (5–10 mL of 10% soln) IV; repeat PRN; comparable dose of 10% calcium gluconate is 15–30 mL.</td>
</tr>
<tr>
<td>Generic (Trade)</td>
<td>Adult Dose</td>
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<tr>
<td>Clopidogrel (Plavix)</td>
<td>ACS: 300-600 mg PO loading dose, then 75 mg/d PO; full effect takes several d.</td>
</tr>
<tr>
<td>Diltiazem (Cardizem)</td>
<td>Acute rate control: 0.25 mg/kg (15-20 mg) over 2 min, followed in 15 min by 0.35 mg/kg (20-25 mg) over 2 min; maint inf 5-15 mg/h.</td>
</tr>
<tr>
<td>Dobutamine (Dobutrex)</td>
<td>2-20 mcg/kg/min; titrate to HR not &gt;10% of baseline.</td>
</tr>
<tr>
<td>Dopamine</td>
<td>2-20 mcg/kg/min.</td>
</tr>
<tr>
<td>Epinephrine</td>
<td>1 mg (10 mL of 1:1000 soln) IV/IO push; repeat q3-5 min (0.2 mg/kg max) if 1 mg dose fails. Inf: 0.1-0.5 mcg/kg/min, titrate. ET 2-2.5 mg in 20 mL NS. Profound bradycardia/ hypotension: 2-10 mcg/min (1 mg in 250 mL D5W). Allergic Rtn: 0.3-0.5 mg (0.3-0.5 mL of 1:1000 soln) SQ. Anaphylaxis: 0.3-0.5 (3-5 mL of 1:1000 soln) IV.</td>
</tr>
<tr>
<td>Eptifibatide (Integrilin)</td>
<td>ACS: 180 mcg/kg/min IV bolus over 1-2 min; then 2 mcg/kg/min, then repeat bolus in 10 min; continue infusion 18-24 h post PCI.</td>
</tr>
<tr>
<td>Esmolol (Brevibloc)</td>
<td>0.5 mcg/kg (500 mcg/kg) over 1 min, then 0.05 mcg/kg/min (50 mcg/kg/min) Inf; if inadequate response after 5 min, repeat 0.5 mcg/kg bolus, then titrate Inf up to 0.2 mcg/kg/min (200 mcg/kg/min); maximum 0.3 mcg/kg/min (300 mcg/kg/min).</td>
</tr>
<tr>
<td>Glucagon</td>
<td>β-Blocker or CCB overdose: 3-10 mg slow IV over 3-5 min; follow with Inf of 3-5 mcg/h; Hypoglycemia: 1 mg IV, IM, or SQ.</td>
</tr>
<tr>
<td>Heparin (unfractionated)</td>
<td>STEMI: Bolus 60 units/kg (max 4000 units); then 12 units/kg/h (max 1000 units/h) round to nearest 50 units; keep aPTT 1.5-2 X control 4-8 h until angiography.</td>
</tr>
<tr>
<td>Ibutilide</td>
<td>SVT (AFib and AFLutter): ≥60 kg, 1 mg (10 mL) over 10 min; a second dose may be used; &lt;60 kg, 0.01 mg/kg over 10 min.</td>
</tr>
<tr>
<td>Labetalol (Trandate)</td>
<td>10-20 mg IV over 1-2 min; repeat or double dose q10min (150 mg max); or initial bolus, then maint inf 1-8 mcg/min (max 300 mcg/24h).</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>Cardiac arrest fromVF/VT refractory VF: Initial: 1-1.5 mg/kg IV/O, additional 0.5-0.75 mg/kg IV push, repeat in 5-10 min, max total 3 mg/kg. ET: 2-4 mg/kg as last resort. Reperfusing stable VT, wide complex tachycardia or ectopy: Doses of 0.5-0.75 mg/kg to 1-1.5 mg/kg may be used initially; repeat 0.5-0.75 mg/kg q8-10min; max dose 3 mg/kg.</td>
</tr>
<tr>
<td>Magnesium sulfate</td>
<td>VF/pulseless VT arrest with torsade de points: 1-2 g IV push (2-4 mL 50% solution) in 10 mL D5W. If pulse present, then 1-2 g in 50-100 mL D5W over 5-60 min.</td>
</tr>
<tr>
<td>Metoprolol</td>
<td>AM1: 5 mg slow IV q5min, total 15 mg; then 50 mcg PO, titrate to effect.</td>
</tr>
<tr>
<td>Morphine</td>
<td>ACS: 2-4 mg IV (over 1-5 min) q5-15 min PRN if symptoms not relieved with NTG or symptoms recur use w/ caution; can be reversed with 0.4-2 mg IV naloxone.</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>SL tab or spray: 0.4 mg, repeat q5min, if unrelieved after 1st dose call 911. IV infusion: Start 10-20 mcg/min, titrate by 10 mcg/min q3-5 min to chest pain relief or 200 mcg/min. Cls: Sildenafil or Vardenafil use &lt;24h, tadalafil &lt;48h, SBP &lt;90mmHg.</td>
</tr>
<tr>
<td>Nitropresside</td>
<td>0.1 mcg/kg/min start, titrate q5 min (max dose 5-10 mcg/kg/min).</td>
</tr>
<tr>
<td>Procaitamide</td>
<td>Stable monomorphic VT, refractory reentry VT, stable wide-complex tachycardia, AFlb w/ WPW; 20 mg/min IV until one of these: arrhythmia stopped, hypotension, QRS widens &gt;50%, total 17 mg; then main Inf of 1-4 mcg/min.</td>
</tr>
<tr>
<td>Propranolol (Inderal)</td>
<td>SVT: 0.5 to 1 mg IV given over 1 min; repeat PRN up to 0.1 mg/kg.</td>
</tr>
<tr>
<td>Retepla, recombinant (Retavase)</td>
<td>10 Units IV bolus over 2 min; 30 min later, 10 units IV bolus over 2 min w/NS flush before and after each dose.</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td>Cardiac Arrest w/ good ventilation, hyperkalemia, OD of TCAs, ASA, cocaine, diphenhydramine: 1 mL/kg IV bolus; repeat 1/2 dose q10min PRN. If rapidly available, use ABG to guide therapy (ABG results unreliable in cardiac arrest).</td>
</tr>
<tr>
<td>Sotalol (Betapace)</td>
<td>SVT and ventricular arrhythmias: 1-1.5 mg/kg IV over 5 min.</td>
</tr>
<tr>
<td>Streptokinase</td>
<td>AM1: 1.5 million units over 1 h.</td>
</tr>
<tr>
<td>Tirofiban (Aggrastat)</td>
<td>ACS or PCI: 0.4 mcg/kg/min IV for 30 min, then 0.1 mcg/kg/min for 18-24 h post PCI.</td>
</tr>
<tr>
<td>Verapamil</td>
<td>Reentry SVT w/narrow QRSs: 2.5-5 mg IV over 2 min (slower in older pts); repeat 5-10 mg, in 15-30 min PRN max of 20 mg; or 5 mg bolus q15min (max 30 mg).</td>
</tr>
</tbody>
</table>

ABG: arterial blood gas, QRS: electrocardiogram complex