

CLINICIAN'S POCKET DRUG REFERENCE

2008

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the SCUT MONKEY DRUG MANUAL

CLINICIAN'S POCKET DRUG REFERENCE 2008

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PREFACE

We are pleased to present the 7th edition of the *Clinician's Pocket Drug Reference*. This book is based on the drug presentation style used since 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 and OTC products. The book includes well over 1000 medications and is designed to represent a cross section of commonly used products in medical practices across the country.

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

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 prescription medications. Although health-care providers should ideally be completely familiar with the entire package insert of any medication prescribed, such a requirement is unreasonable. References such as the *Physician's Desk Reference* and the drug manufacturer's Web site make package inserts readily available for many medications, but may not highlight clinically significant facts or key data for generic drugs and those available over the counter.

The limitations of difficult-to-read package inserts were acknowledged by the Food and Drug Administration in early 2001, when it noted that physicians do not have time to read the many pages of small print in the typical package insert. Newer drugs are producing more user-friendly package insert summaries that will highlight important drug information for easier practitioner reference. Although useful, these summaries do not commingle with similarly approved generic or “competing” similar products.

The editorial board has analyzed the information on both brand and generic medications and has made this key prescribing information available in this pocket-sized book. Information in this book is meant for use by health-care professionals who are familiar with these commonly prescribed medications.

This 2008 edition has been completely reviewed and updated by our editorial board and technical contributors. Over 55 new drugs have been added, and changes in other medications based on FDA actions have been incorporated, including dele-

tions of discontinued brand names and compounds. Where appropriate, emergency cardiac care (ECC) guidelines are provided based on the latest recommendations for the American Heart Association (Circulation, Volume 112, Issue 24 Supplement; December 13, 2005)

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 contributions of the members of the editorial board are deeply appreciated. The assistance of Denise Tropea and the team at McGraw-Hill, are also to be thanked.

Your comments and suggestions are always welcome and encouraged because improvements to this and all our books would be impossible without the interest and 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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MEDICATION KEY

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]

WARNING: Summarized version of the “Black Box” precautions deemed necessary by the FDA. These are significant precautions 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 rather than the official “labeled indications” (FDA approved) based on input from our editorial board **Action:** 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 **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) **Caution:** [pregnancy/fetal risk categories, breast-feeding (as noted below)] cautions concerning the use of the drug in specific settings **Contra:** Contraindications **Disp:** Common dosing forms **SE:** Common or significant side effects **Notes:** Other key information about the drug.

CONTROLLED SUBSTANCE CLASSIFICATION

Medications under the control of the US Drug Enforcement Agency (Schedule 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 five 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.

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 data set).

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

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ABBREVIATIONS

- √: check or monitor
Ab: antibody
ABMT: autologous bone marrow transplantation
ACE: angiotensin-converting enzyme
ACLS: advanced cardiac life support
ACS: acute coronary syndrome, American Cancer Society, American College of Surgeons
ADH: antidiuretic hormone
ADHD: attention-deficit hyperactivity disorder
ADR: adverse drug reaction
AF: atrial fibrillation
ALL: acute lymphocytic leukemia
ALT: alanine aminotransferase
AMI: acute myocardial infarction
AML: acute myelogenous leukemia
amp: ampule
ANC: absolute neutrophil count
aPTT: activated partial thromboplastin time
APAP: acetaminophen [*N*-acetyl-*p*-aminophenol]
ARB: angiotensin II receptor blocker
ARDS: adult respiratory distress syndrome
ASA: aspirin (acetylsalicylic acid)
AUC: area under the curve
AUB: abnormal uterine/vaginal bleeding
AV: atrioventricular
AVM: arteriovenous malformation
BCL: B-cell lymphoma
BM: bone marrow; bowel movement
↓BM: bone marrow suppression, myelosuppression
BMT: bone marrow transplantation
BOO: bladder outlet obstruction
↓BP: hypotension
BSA: body surface area
BUN: blood urea nitrogen
Ca: calcium
CA: cancer
CAD: coronary artery disease
CAP: community acquired pneumonia
CBC: complete blood count
CCB: calcium channel blocker
CF: cystic fibrosis
CHF: congestive heart failure
CLL: chronic lymphocytic leukemia
CML: chronic myelogenous leukemia
CMV: cytomegalovirus
Contra: contraindicated
COPD: chronic obstructive pulmonary disease
CP: chest pain
CPP: central precocious puberty
CR: controlled release
CrCl: creatinine clearance
CRF: chronic renal failure
CV: cardiovascular
CVA: cerebrovascular accident, costovertebral angle
CVH: common variable hypergammaglobulinemia
D: diarrhea
D₅LR: 5% dextrose in lactated Ringer's solution

- D₅NS: 5% dextrose in normal saline
D₅W: 5% dextrose in water
D/C: discontinued
DI: diabetes insipidus
Disp: dispensed as, how the drug is supplied
DKA: diabetic ketoacidosis
dL: deciliter
DM: diabetes mellitus
DMARD: Disease-modifying antirheumatic drug; drugs in randomized trials to decrease erosions and joint space narrowing in rheumatoid arthritis (eg, D-penicillamine, methotrexate, azathioprine)
DN: diabetic nephropathy
dppr: dropper
DOT: directly observed therapy
DVT: deep venous thrombosis
Dz: disease
EC: enteric-coated
ECC: emergency cardiac care
ECG: electrocardiogram
ED: erectile dysfunction
ELISA: enzyme-linked immunosorbent assay
EMIT: enzyme-multiplied immunoassay test
EPS: extrapyramidal symptoms (tardive dyskinesia, tremors and rigidity, restlessness [akathisia], muscle contractions [dystonia], changes in breathing and heart rate)
ER: extended release
ESRD: end-stage renal disease
ET: endotracheal
EtOH: ethanol
FSH: follicle-stimulating hormone
5-FU: fluorouracil
Fxn: function
G-CSF: granulocyte colony-stimulating factor
gen: generation
GERD: gastroesophageal reflux disease
GF: growth factor
GFR: glomerular filtration rate
GI: gastrointestinal
GIST: Gastrointestinal stromal tumor
GM-CSF: granulocyte-macrophage colony-stimulating factor
GnRH: gonadotropin-releasing hormone
gtt: drop, drops (*gutta*)
GUHD Graft URS Host Disease
HA: headache
HCL: hairy cell leukemia
Hct: hematocrit
HCTZ: hydrochlorothiazide
HD: hemodialysis
Hgb: hemoglobin
HIT: heparin-induced thrombocytopenia
HIV: human immunodeficiency virus
HMG-CoA: hydroxymethylglutaryl coenzyme A
HR: heart rate
↑HR: increased heart rate (tachycardia)
hs: at bedtime (*hora somni*)
HSV: herpes simplex virus
5-HT: 5-hydroxytryptamine
HTN: hypertension
Hx: history of
IBD: irritable bowel disease
IBS: irritable bowel syndrome
ICP: intracranial pressure
IFIS: Intraoperative Floppy Iris Syndrome
Ig: immunoglobulin
IM: intramuscular

Inf: infusion	MyG: myasthenia gravis
Infxn: infection	N: nausea
Inh: inhalation	NA: narrow angle
INH: isoniazid	NAG: narrow angle glaucoma
INR: international normalized ratio	ng: nanogram
Insuff: insufficiency	NG: nasogastric
Intravag: intravaginal	NHL: non-Hodgkin's lymphoma
IOP: intraocular pressure	nl: normal
ISA: intrinsic sympathomimetic activity	NO: nitric oxide
IT: intrathecal	NPO: nothing by mouth (<i>nil per os</i>)
ITP: idiopathic thrombocytopenic purpura	NRTI: nucleoside reverse transcriptase inhibitor
IV: intravenous	NS: normal saline
K/K ⁺ : potassium	NSAID: nonsteroidal antiinflammatory drug
LA: long acting	NSCLC: non-small-cell lung cancer
LDL: low-density lipoprotein	N/V: nausea and vomiting
LFT: liver function test	N/V/D: nausea, vomiting, diarrhea
LH: luteinizing hormone	OAB: overactive bladder
LHRH: luteinizing hormone-releasing hormone	OCp: oral contraceptive pill
LMW: low molecular weight	OD: overdose
LVD: left ventricular dysfunction	ODT: orally disintegrating tablets
LVSD: left ventricular systolic dysfunction	OK: recommended
MAC: <i>Mycobacterium avium</i> complex	OTC: over the counter
MAO/MAOI: monoamine oxidase/inhibitor	PAT: paroxysmal atrial tachycardia
MDI: multidose inhaler	pc: after eating (<i>post cibum</i>)
mEq: milliequivalent	PCa: cancer of the prostate
MI: myocardial infarction, mitral insufficiency	PCI: percutaneous coronary intervention
Mg/Mg ²⁺ : magnesium	PCN: penicillin
mL: milliliter	PCP: <i>Pneumocystis jiroveci</i> (formerly <i>carinii</i>) pneumonia
MoAb: monoclonal antibody	PCWP: pulmonary capillary wedge pressure
MRSA: methicillin-resistant <i>Staphylococcus aureus</i>	PDE5: phosphodiesterase type 5
MS: multiple sclerosis	PDGF: platelet-derived growth factor
MSSA: methicillin-sensitive <i>Staphylococcus aureus</i>	PE: pulmonary embolus, physical examination, pleural effusion
MTT: monotetrazolium	PFT: pulmonary function test
MTX: methotrexate	pg: picogram
	PID: pelvic inflammatory disease
	plt: platelet

↓plt: decreased platelets (thrombocytopenia)	SCr: serum creatinine
PMDD: premenstrual dysphoric disorder	SDV: single-dose vial
PO: by mouth (<i>per os</i>)	SIADH: syndrome of inappropriate antidiuretic hormone
PPD: purified protein derivative	SL: sublingual
PR: by rectum	SLE: systemic lupus erythematosus
PRG: pregnancy	Sol/soln: solution
PRN: as often as needed (<i>pro re nata</i>)	SPAG: small particle aerosol generator
PSVT: paroxysmal supraventricular tachycardia	Sp: species
pt: patient	SNRIs: serotonin-norepinephrine reuptake inhibitors
PT: prothrombin time	SQ: subcutaneous
PTCA: percutaneous transluminal coronary angioplasty	SR: sustained release
PTH: parathyroid hormone	SSRI: selective serotonin reuptake inhibitor
PTT: partial thromboplastin time	SSS: sick sinus syndrome
PUD: peptic ulcer disease	S/Sys: signs & symptoms
PVC: premature ventricular contraction	stat: immediately (<i>statim</i>)
PWP: pulmonary wedge pressure	supl: supplement
Px: prevention	supp: suppository
q: every (<i>quaque</i>)	SVT: supraventricular tachycardia
q_h: every _ hours	Sx: symptom
q day: every day	Sz: seizure
qh: every hour	tab/tabs: tablet/tablets
qhs: every hour of sleep (before bedtime)	TB: tuberculosis
qid: four times a day (<i>quater in die</i>)	TCA: tricyclic antidepressant
q other day: every other day	TTS: transdermal therapeutic system
RA: rheumatoid arthritis	TFT: thyroid function test
RCC: renal cell carcinoma	TIA: transient ischemic attack
RDA: recommended dietary allowance	tid: three times a day (<i>ter in die</i>)
RDS: respiratory distress syndrome	TMP: trimethoprim
resp: respiratory	TMP—SMX: trimethoprim— sulfamethoxazole
RSV: respiratory syncytial virus	tox: toxicity
RT: reverse transcriptase	TPA: tissue plasminogen activator
RTA: renal tubular acidosis	tri: trimester
Rx: prescription or therapy	TTP: thrombotic thrombocytopenic purpura
Rxn: reaction	Tx: treatment
	uln: upper limits of normal

URI: upper respiratory infection

UTI: urinary tract infection

Vag: vaginal

VF: ventricular fibrillation

VRE: vancomycin-resistant
Enterococcus

VT: ventricular tachycardia

WHI: Women's Health Initiative

WNL: within normal limits

WPW: Wolff–Parkinson–White
syndrome

XR: extended release

ZE: Zollinger–Ellison (syndrome)

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CLASSIFICATION (Generic and common brand names)

ALLERGY

Antihistamines

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

Miscellaneous Antiallergy Agents

Budesonide (Rhinocort, Pulmicort)	Cromolyn Sodium (Intal, NasalCrom, Opticrom)	Montelukast (Singulair)
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ANTIDOTES

Acetylcysteine (Acetadote, Mucomyst)	Deferasirox (Exjade)	Ipecac Syrup (OTC Syrup)
Amifostine (Ethyol)	Dexrazoxane (Zinecard)	Mesna (Mesnex)
Atropine (AtroPen)	Digoxin Immune Fab (Digibind, DigiFab)	Naloxone
Charcoal (SuperChar, Actidose, Liqui-Char Activated)	Flumazenil (Romazicon)	Physostigmine (Antilirium)
	Hydroxocobalamin (Cyanokit)	Succimer (Chemet)

ANTIMICROBIAL AGENTS

Antibiotics

AMINOGLYCOSIDES

Amikacin (Amikin)	Neomycin	Tobramycin (Nebcin)
Gentamicin (Garamycin, G-Mycitin)	Streptomycin	

CARBAPENEMS

Ertapenem (Invanz)

Imipenem-Cilastatin
(Primaxin)

Meropenem (Merrem)

CEPHALOSPORINS, FIRST GENERATIONCefadroxil (Duricef,
Ultracef)Cefazolin (Ancef,
Kefzol)Cephalexin (Keflex,
Keftab)
Cephradine (Velosef)**CEPHALOSPORINS, SECOND GENERATION**

Cefaclor (Ceclor)

Cefuroxime (Ceftin
[oral], Zinacef
[parenteral])

Loracarbef (Lorabid)

Cefotetan (Cefotan)

Cefoxitin (Mefoxin)

Cefprozil (Cefzil)

CEPHALOSPORINS, THIRD GENERATION

Cefdinir (Omnicef)

Cefpodoxime (Vantin)

Ceftibuten (Cedax)

Cefditoren (Spectracef)

Ceftazidime (Fortaz,

Ceftizoxime (Cefizox)

Cefixime (Suprax)

Ceptaz, Tazidime,

Ceftriaxone (Rocephin)

Cefoperazone (Cefobid)

Tazicef)

Cefotaxime (Claforan)

CEPHALOSPORINS, FOURTH GENERATION

Cefepime (Maxipime)

FLUOROQUINOLONES

Ciprofloxacin (Cipro)

Lomefloxacin (Maxaquin)

Ofloxacin (Floxin,
Ocuflux Ophthalmic)

Gemifloxacin (Factive)

Moxifloxacin (Avelox)

Levofloxacin (Levaquin,
Quixin Ophthalmic)Norfloxacin (Noroxin,
Chibroxin Ophthalmic)**MACROLIDES**Azithromycin
(Zithromax)Dirithromycin (Dynabac)
Erythromycin (E-Mycin,
E.E.S., Ery-Tab)Erythromycin &
Sulfisoxazole
(Eryzole, Pediazole)**KETOLIDE**

Telithromycin (Ketek)

PENICILLINS

Amoxicillin (Amoxil, Polymox)	Nafcillin (Nallpen)	Penicillin V (Pen-Vee K, Veetids)
Amoxicillin & Clavulanic Acid (Augmentin)	Oxacillin (Bactocill, Prostaphlin)	Piperacillin (Pipracil)
Ampicillin (Amcill, Omnipen)	Penicillin G, Aqueous (Potassium or Sodium) (Pfizerpen, Pentids)	Piperacillin-Tazobactam (Zosyn)
Ampicillin-Sulbactam (Unasyn)	Penicillin G Benzathine (Bicillin)	Ticarcillin (Ticar)
Dicloxacillin (Dynapen, Dycill)	Penicillin G Procaine (Wycillin)	Ticarcillin/Potassium Clavulanate (Timentin)

TETRACYCLINES

Doxycycline (Adoxa, Periostat, Oracea, Vibramycin, Vibra-Tabs)	Tetracycline (Achromycin V, Sumycin)	Tigecycline (Tygacil)
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Miscellaneous Antibiotic Agents

Aztreonam (Azactam)	Metronidazole (Flagyl, MetroGel)	Trimethoprim–Sulfamethoxazole [Co-Trimoxazole] (Bactrim, Septra)
Clindamycin (Cleocin, Cleocin-T)	Quinupristin-Dalfopristin (Synercid)	Vancomycin (Vancocin, Vancoled)
Fosfomycin (Monurol)	Rifaximin (Xifaxan)	
Linezolid (Zyvox)	Trimethoprim	

ANTIFUNGALS

Amphotericin B (Fungizone)	Anidulafungin (Eraxis)	Ketoconazole (Nizoral)
Amphotericin B Cholesteryl (Amphotec)	Caspofungin (Cancidas)	Miconazole (Monistat)
Amphotericin B Lipid Complex (Abelcet)	Clotrimazole (Lotrimin, Mycelex)	Nystatin (Mycostatin)
Amphotericin B Liposomal (AmBisome)	Clotrimazole & Betamethasone (Lotrisone)	Oxiconazole (Oxistat)
	Econazole (Spectazole)	Sertaconazole (Ertaczo)
	Fluconazole (Diflucan)	Terbinafine (Lamisil)
	Itraconazole (Sporanox)	Triamcinolone & Nystatin (Mycolog-II)
		Voriconazole (VFEND)

Antimycobacterials

Dapsone, oral	Isoniazid (INH)	Rifampin (Rifadin)
Ethambutol (Myambutol)	Pyrazinamide	Rifapentine (Priftin)
	Rifabutin (Mycobutin)	Streptomycin

Antiprotozoals

Nitazoxanide (Alinia)	Tinidazole (Tindamax)
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ANTIRETROVIRALS

Abacavir (Ziagen)	Lopinavir/Ritonavir (Kaletra)	Pentamidine (Pentam 300, NebuPent)
Amprenavir (Agenerase)	Nelfinavir (Viracept)	Retapamulin (Altabax)
Daptomycin (Cubicin)	Nevirapine (Viramune)	Telbivudine (Tyzeka)
Delavirdine (Rescriptor)	Ritonavir (Norvir)	Trimetrexate (Neutrexin)
Didanosine [ddI] (Videx)	Saquinavir (Fortovase)	Zidovudine (Retrovir)
Efavirenz (Sustiva)	Stavudine (Zerit)	Zidovudine & Lamivudine (Combivir)
Efavirenz/emtricitabine/ tenofovir (Atripla)	Tenofovir (Viread)	
Fosamprenavir (Lexiva)	Tenofovir/Emtricitabine (Truvada)	
Indinavir (Crixivan)		
Lamivudine (Epivir, Epivir-HBV)		

Antivirals

Acyclovir (Zovirax)	Ganciclovir (Cytovene, Vitrasert)	Ribavirin (Virazole)
Adefovir (Hepsera)	Interferon Alfa-2b & Ribavirin Combo (Rebetron)	Rimantadine (Flumadine)
Amantadine (Symmetrel)	Oseltamivir (Tamiflu)	Telbivudine (Tyzeka)
Atazanavir (Reyataz)	Palivizumab (Synagis)	Valacyclovir (Valtrex)
Cidofovir (Vistide)	Peg Interferon Alfa 2a (Peg Intron)	Valganciclovir (Valcyte)
Emtricitabine (Emtriva)	Penciclovir (Denavir)	Zanamivir (Relenza)
Enfuvirtide (Fuzeon)		
Famciclovir (Famvir)		
Foscarnet (Foscavir)		

Miscellaneous Antiviral Agents

Atovaquone (Meproon)	Daptomycin (Cubicin)	Retapamulin (Altabax)
Atovaquone/Proguanil (Malarone)	Pentamidine (Pentam 300, NebuPent)	Trimetrexate (Neutrexin)

ANTINEOPLASTIC AGENTS**Alkylating Agents**

Altretamine (Hexalen)	Carboplatin (Paraplatin)	Procarbazine (Matulane)
Busulfan (Myleran, Busulfex)	Cisplatin (Platinol)	Triethylenetriphospham- ide (Thio-Tepa)
	Oxaliplatin (Eloxatin)	

NITROGEN MUSTARDS

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

NITROSOUREAS

Carmustine [BCNU] (BiCNU, Gliadel)	Streptozocin (Zanosar)
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Antibiotics

Bleomycin Sulfate (Blenoxane)	Daunorubicin (Dauno- mycin, Cerubidine)	Epirubicin (Ellence)
Dactinomycin (Cosmegen)	Doxorubicin (Adriamycin, Rubex)	Idarubicin (Idamycin)
		Mitomycin (Mutamycin)

Antimetabolites

Clofarabine (Clolar)	Fludarabine Phosphate (Flamp, Fludara)	Methotrexate (Folex, Rheumatrex)
Cytarabine [ARA-C] (Cytosar-U)	Fluorouracil [5-FU] (Adrucil)	Nelarabine (Arranon)
Cytarabine Liposome (DepoCyt)	Gemcitabine (Gemzar)	Pemetrexed (Alimta)
Floxuridine (FUDR)	Mercaptopurine [6-MP] (Purinethol)	6-Thioguanine [6-TG]

Hormones

Anastrozole (Arimidex)	Fulvestrant (Faslodex)	Megestrol Acetate (Megace)
Bicalutamide (Casodex)	Goserelin (Zoladex)	Nilutamide (Nilandron)
Estramustine Phosphate (Estracyt, Emcyt)	Leuprolide (Lupron, Viadur, Eligard)	Tamoxifen
Exemestane (Aromasin)	Levamisole (Ergamisol)	Triptorelin (Trelstar Depot, Trelstar LA)
Flutamide (Eulexin)		

Mitotic Inhibitors

Etoposide [VP-16] (VePesid)	Vincristine (Oncovin, Vincasar PFS)	Vinorelbine (Navelbine)
Vinblastine (Velban, Velbe)		

Monoclonal Antibodies

Cetuximab (Erbix)	Panitumumab (Vectibix)	Trastuzumab (Herceptin)
Erlotinib (Tarceva)		

Miscellaneous Antineoplastic Agents

Aldesleukin [Interleukin- 2, IL-2] (Proleukin)	Gefitinib (Iressa)	Panitumumab (Vectibix)
Aminoglutethimide (Cytadren)	Gemtuzumab	Pemetrexed (Alimta)
L-Asparaginase (Elspar, Oncaspar)	Ozogamicin (Mylotarg)	Rasburicase (Elitek)
BCG [Bacillus Calmette- Guérin] (TheraCys, Tice BCG)	Hydroxyurea (Hydrea, Droxia)	Sorafenib (Nexavar)
Bevacizumab (Avastin)	Imatinib (Gleevec)	Sunitinib (Sutent)
Bortezomib (Velcade)	Irinotecan (Camptosar)	Temsirolimus (Torisel Kit)
Cladribine (Leustatin)	Letrozole (Femara)	Thalidomide (Thalomid)
Dacarbazine (DTIC)	Leucovorin (Wellcovorin)	Topotecan (Hycamtin)
Docetaxel (Taxotere)	Mitoxantrone (Novantrone)	Tretinoin, Topical [Retinoic Acid] (Retin- A, Avita, Renova, Retin-A Micro)
	Paclitaxel (Taxol, Abraxane)	

CARDIOVASCULAR (CV) AGENTS**Aldosterone Antagonist**

Eplerenone (Inspra)

Alpha₁-Adrenergic Blockers

Doxazosin (Cardura)	Prazosin (Minipress)	Terazosin (Hytrin)
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Angiotensin-Converting Enzyme (ACE) Inhibitors

Benazepril (Lotensin)	Lisinopril (Prinivil,	Quinapril (Accupril)
Captopril (Capoten)	Zestril)	Ramipril (Altace)
Enalapril (Vasotec)	Moexipril (Univasc)	Trandolapril (Mavik)
Fosinopril (Monopril)	Perindopril Erbumine (Aceon)	

Angiotensin II Receptor Antagonists

Candesartan (Atacand)	Irbesartan (Avapro)	Telmisartan (Micardis)
Eprosartan (Teveten)	Losartan (Cozaar)	Valsartan (Diovan)

Antiarrhythmic Agents

Adenosine (Adenocard)	Dofetilide (Tikosyn)	Procainamide (Pronestyl,
Amiodarone (Cordarone,	Esmolol (Brevibloc)	Pronestyl SR,
Pacerone)	Flecainide (Tambocor)	Procanbid)
Atropine	Ibutilide (Corvert)	Propafenone (Rythmol)
Digoxin (Digitek,	Lidocaine (Anestacon	Quinidine (Quinidex,
Lanoxin, Lanoxicaps)	Topical, Xylocaine)	Quinaglute)
Disopyramide	Mexiletine (Mexitil)	Sotalol (Betapace,
(NAPamide, Norpace,		Betapace AF)
Norpace CR,		
Rhythmolan)		

Beta-Adrenergic Blockers

Acebutolol (Sectral)	Carteolol (Cartrol,	Metoprolol (Lopressor,
Atenolol (Tenormin)	Ocupress Ophthalmic)	Toprol XL)
Atenolol &	Carvedilol (Coreg, Coreg	Nadolol (Corgard)
Chlorthalidone	CR)	Penbutolol (Levatol)
(Tenoretic)	Labetalol (Trandate,	Pindolol (Visken)
Betaxolol (Kerlone)	Normodyne)	Propranolol (Inderal)
Bisoprolol (Zebeta)		Timolol (Blocadren)

Calcium Channel Antagonists

Amlodipine (Norvasc)	Isradipine (DynaCirc)	Nimodipine (Nimotop)
Diltiazem (Cardizem,	Nicardipine (Cardene)	Nisoldipine (Sular)
Cartia XT, Dilacor,	Nifedipine (Procardia,	Verapamil (Calan,
Diltia XT, Taztia XT,	Procardia XL, Adalat,	Isoptin, Verelan)
Tiamate, Tiazac)	Adalat CC)	
Felodipine (Plendil)		

Centrally Acting Antihypertensive Agents

Clonidine (Catapres) Methyldopa (Aldomet)

Diuretics

Acetazolamide (Diamox)	Hydrochlorothiazide & Amiloride (Moduretic)	Indapamide (Lozol)
Amiloride (Midamor)		Mannitol
Bumetanide (Bumex)	Hydrochlorothiazide & Spironolactone (Aldactazide)	Metolazone (Mykrox, Zaroxolyn)
Chlorothiazide (Diuril)		Spironolactone (Aldactone)
Chlorthalidone (Hygroton)	Hydrochlorothiazide & Triamterene (Dyazide, Maxzide)	Torsemide (Demadex)
Furosemide (Lasix)		Triamterene (Dyrenium)
Hydrochlorothiazide (HydroDIURIL, Esidrix)		

Inotropic/Pressor Agents

Digoxin (Digitek, Lanoxin, Lanoxicaps)	Epinephrine (Adrenalin, Sus-Phrine, EpiPen)	Nesiritide (Natrecor)
Dobutamine (Dobutrex)	Inamrinone (Inacor)	Norepinephrine (Levophed)
Dopamine (Intropin)	Isoproterenol (Isuprel)	Phenylephrine (Neo-Synephrine)
	Milrinone (Primacor)	

Lipid-Lowering Agents

Atorvastatin (Lipitor)	Fenofibrate (TriCor, Anatra, Lipofen, Triglide)	Lovastatin (Mevacor, Altacor)
Cholestyramine (Questran, LoCholest)		Niacin (Niaspan)
Colesevelam (WelChol)	Fluvastatin (Lescol)	Pravastatin (Pravachol)
Colestipol (Colestid)	Gemfibrozil (Lopid)	Rosuvastatin (Crestor)
Ezetimibe (Zetia)		Simvastatin (Zocor)

Lipid-Lowering/Antihypertensive Combos

Amlodipine/Atorvastatin (Caduet)

Vasodilators

Alprostadil [Prostaglandin E ₁] (Prostin VR)	Isosorbide Mononitrate (Ismo, Imdur)	Nitroprusside (Nipride, Nitropress)
Epoprostenol (Flolan)	Minoxidil (Loniten, Rogaine)	Tolazoline (Priscoline)
Fenoldopam (Corlopam)	Nitroglycerin (Nitrostat, Nitrolingual, Nitro- Bid Ointment, Nitro- Bid IV, Nitrodisc, Transderm-Nitro)	Treprostiniil Sodium (Remodulin)
Hydralazine (Apresoline)		
Iloprost (Ventavis)		
Isosorbide Dinitrate (Isordil, Sorbitrate, Dilatrate-SR)		

Miscellaneous Cardiovascular Agents

Aliskiren (Tekturna)	Conivaptan (Vaprisol)	Ranolazine (Ranexa)
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CENTRAL NERVOUS SYSTEM AGENTS**Antianxiety Agents**

Alprazolam (Xanax)	Diazepam (Valium, Diastat)	Lorazepam (Ativan)
Buspirone (BuSpar)	Doxepin (Sinequan, Adapin)	Meprobamate (Equanil, Miltown)
Chlordiazepoxide (Librium, Mitran, Libritabs)	Hydroxyzine (Atarax, Vistaril)	Oxazepam
Clorazepate (Tranxene)		

Anticonvulsants

Carbamazepine (Tegretol)	Lamotrigine (Lamictal)	Phenobarbital
Clonazepam (Klonopin)	Levetiracetam (Keppra)	Phenytoin (Dilantin)
Diazepam (Valium)	Lorazepam (Ativan)	Tiagabine (Gabitril)
Ethosuximide (Zarontin)	Oxcarbazepine (Trileptal)	Topiramate (Topamax)
Fosphenytoin (Cerebyx)	Pentobarbital (Nembutal)	Valproic Acid (Depakene, Depakote)
Gabapentin (Neurontin)		Zonisamide (Zonegran)

Antidepressants

Amitriptyline (Elavil)	Fluoxetine (Prozac, Sarafem)	Paroxetine (Paxil)
Bupropion (Wellbutrin, Zyban)	Fluvoxamine (Luvox)	Phenelzine (Nardil)
Citalopram (Celexa)	Imipramine (Tofranil)	Selegiline transdermal (Emsam)
Desipramine (Norpramin)	Mirtazapine (Remeron)	Sertraline (Zoloft)
Doxepin (Adapin)	Nefazodone (Serzone)	Trazodone (Desyrel)
Duloxetine (Cymbalta)	Nortriptyline (Aventyl, Pamelor)	Venlafaxine (Effexor, Effexor XR)
Escitalopram (Lexapro)		

Antiparkinson Agents

Amantadine (Symmetrel)	Entacapone (Comtan)	Selegiline (Eldepryl, Zelapar)
Apomorphine (Apokyn)	Pramipexole (Mirapex)	Tolcapone (Tasmar)
Benzotropine (Cogentin)	Rasagiline mesylate (Azilect)	Trihexyphenidyl (Artane)
Bromocriptine (Parlodel)	Ropinirole (Requip)	
Carbidopa/Levodopa (Sinemet)		

Antipsychotics

Aripiprazole (Abilify)	Molindone (Moban)	Risperidone (Risperdal, Risperdal Constra, Risperdal M-Tab)
Chlorpromazine (Thorazine)	Olanzapine (Zyprexa)	Thioridazine (Mellaril)
Clozapine (Clozaril, FazaClo)	Paliperidone (Invega)	Thiothixene (Navane)
Clozapine (Clozaril, FazaClo)	Perphenazine (Trilafon)	Trifluoperazine (Stelazine)
Haloperidol (Haldol)	Prochlorperazine (Compazine)	Ziprasidone (Geodon)
Lithium Carbonate (Eskalith, Lithobid)	Quetiapine (Seroquel, Seroquil XR)	

Sedative Hypnotics

Chloral Hydrate (Aquachloval, Suppettes)	Flurazepam (Dalmane)	Propofol (Diprivan)
Diphenhydramine (Benadryl)	Hydroxyzine (Atarax, Vistaril)	Secobarbital (Seconal)
Estazolam (ProSom)	Midazolam	Temazepam (Restoril)
Eszopiclone (Lunesta)	Pentobarbital	Triazolam (Halcion)
	(Nembutal)	Zaleplon (Sonata)
	Phenobarbital	Zolpidem (Ambien)

Miscellaneous CNS Agents

Atomoxetine (Strattera)	Methylphenidate, Oral	Natalizumab (Tysabri)
Galantamine (Razadyne)	(Concerta, Ritalin,	Nimodipine (Nimotop)
Interferon beta 1a (Rebif)	Ritalin-SR others)	Rivastigmine (Exelon)
Lisdexamfetamine	Methylphenidate,	Sodium Oxybate (Xyrem)
(Vyvanse)	Transdermal	Tacrine (Cognex)
Memantine (Namenda)	(Daytrana)	

DERMATOLOGIC AGENTS

Acitretin (Soriatane)	Dapsone Topical	Miconazole (Monistat)
Acyclovir (Zovirax)	(Aczone)	Miconazole/zinc
Alefacept (Amevive)	Dibucaine (Nupercainal)	oxide/petrolatum
Anthralin (Anthra-Derm)	Doxepin, Topical	(Vusion)
Amphotericin B	(Zonalon, Prudoxin)	Minocycline (Solodyn)
(Fungizone)	Econazole (Spectazole)	Minoxidil (Loniten,
Bacitracin, Topical	Efalizumab (Raptiva)	Rogaine)
(Baciguent)	Erythromycin, Topical	Mupirocin (Bactroban)
Bacitracin & Polymyxin	(A/T/S, Eryderm,	Naftifine (Naftin)
B, Topical (Polysporin)	Erycette, T-Stat)	Neomycin Sulfate
Bacitracin, Neomycin, &	Finasteride (Propecia)	(Myciguent)
Polymyxin B, Topical	Gentamicin, Topical	Nystatin (Mycostatin)
(Neosporin Ointment)	(Garamycin,	Oxiconazole (Oxistat)
Bacitracin, Neomycin,	G-Mycitin)	Penciclovir (Denavir)
Polymyxin B, &	Imiquimod Cream, 5%	Permethrin (Nix, Elimate)
Hydrocortisone,	(Aldara)	Pimecrolimus (Elidel)
Topical (Cortisporin)	Isotretinoin [13- <i>cis</i>	Podophyllin (Podocon-
Bacitracin, Neomycin,	Retinoic acid]	25, Condylox Gel
Polymyxin B, &	(Accutane,	0.5%, Condylox)
Lidocaine, Topical	Amnesteem, Claravis,	Pramoxine (Anusol
(Clomycin)	Sotret)	Ointment,
Botulinum toxin type A	Ketoconazole (Nizoral)	ProctoFoam-NS)
(Botox Cosmetic)	Kunecatechins (Veregen)	Pramoxine & Hydro-
Calcipotriene (Dovonex)	Lactic Acid &	cortisone (Enzone,
Capsaicin (Capsin,	Ammonium Hydroxide	ProctoFoam-HC)
Zostrix)	[Ammonium Lactate]	Selenium Sulfide (Exsel
Ciclopirox (Loprox)	(Lac-Hydrin)	Shampoo, Selsun Blue
Ciprofloxacin (Cipro)	Lindane (Kwell)	Shampoo, Selsun
Clindamycin (Cleocin)	Lisdexamfetamine	Shampoo)
Clotrimazole &	(Vyvanse)	Silver Sulfadiazine
Betamethasone	Metronidazole (Flagyl,	(Silvadene)
(Lotrisone)	MetroGel)	

Steroids, Topical (Table 4, page 228)	Tazarotene (Tazorac, Avage)	Tretinoin, Topical [Retinoic Acid] (Retin-A, Avita, Renova)
Tacrolimus (Prograf, Protopic)	Terbinafine (Lamisil)	Vorinostat (Zolinza)
	Tolnaftate (Tinactin)	

DIETARY SUPPLEMENTS

Calcium Acetate (Calphron, Phos-Ex, PhosLo)	Ferrous Gluconate (Fergon)	Phytonadione [Vitamin K] (Aqua-MEPHYTON)
Calcium Glubionate (Neo-Calglucon)	Ferrous Sulfate	Potassium Supplements (Kaon, Kaochlor, K-Lor, Slow-K, Micro-K, Klorvess)
Calcium Salts [Chloride, Gluconate, Gluceptate]	Fish Oil (Omacor, OTC)	Pyridoxine [Vitamin B ₆]
Cholecalciferol [Vitamin D ₃] (Delta D)	Folic Acid	Sodium Bicarbonate [NaHCO ₃]
Cyanocobalamin [Vitamin B ₁₂] (Nasocobal)	Iron Dextran (DexFerrum, INFED)	Thiamine [Vitamin B ₁]
Ferric Gluconate Complex (Ferrlecit)	Iron Sucrose (Venofer)	
	Magnesium Oxide (Mag-Ox 400)	
	Magnesium Sulfate	
	Multivitamins (Table 13, page 243)	

EAR (OTIC) AGENTS

Acetic Acid & Aluminum Acetate (Otic Domeboro)	(Cortisporin-TC Otic Drops)	Polymyxin B & Hydrocortisone (Otobiotic Otic)
Benzocaine & Antipyrine (Auralgan)	Neomycin, Colistin, Hydrocortisone, & Thonzonium (Cortisporin-TC Otic Suspension)	Sulfacetamide & Prednisolone (Blephamide)
Ciprofloxacin, Otic (Cipro HC Otic)		Triethanolamine (Cerumenex)
Neomycin, Colistin, & Hydrocortisone		

ENDOCRINE SYSTEM AGENTS

Antidiabetic Agents

Acarbose (Precose)	Glipizide (Glucotrol)	Insulins, Systemic (Table 5, page 231)
Chlorpropamide (Diabinese)	Glyburide (DiaBeta, Micronase, Glynase)	Metformin (Glucophage)
Glimepiride (Amaryl)	Glyburide/Metformin (Glucovance)	
Glimepiride/pioglitazone (Duetact)		

Miglitol (Glyset)	Repaglinide (Prandin)	Sitagliptin/Metformin (Janumet)
Nateglinide (Starlix)	Rosiglitazone (Avandia)	Tolazamide (Tolinase)
Pioglitazone (Actos)	Sitagliptin (Januvia)	Tolbutamide (Orinase)
Pioglitazone/Metformin (ActoPlus Met)		

Hormone & Synthetic Substitutes

Calcitonin (Cibacalcin, Miacalcin)	Fludrocortisone Acetate (Florinef)	Prednisolone
Calcitriol (Rocaltrol, Calcisex)	Fluoxymesterone (Halotestin, Androxy)	Prednisone
Cortisone Systemic, Topical	Glucagon	Testosterone (AndroGel, Androderm, Striant, Testim)
Desmopressin (DDAVP, Stimate)	Hydrocortisone Topical & Systemic (Cortef, Solu-Cortef)	Vasopressin [Antidiuretic Hormone, ADH] (Pitressin)
Dexamethasone (Decadron)	Methylprednisolone (Solu-Medrol)	

Hypercalcemia/Osteoporosis Agents

Etidronate Disodium (Didronel)	Ibandronate (Boniva)	Zoledronic acid (Zometa)
Gallium Nitrate (Ganite)	Pamidronate (Aredia)	

Obesity

Sibutramine (Meridia)

Osteoporosis Agents

Alendronate (Fosamax)	Risedronate (Actonel)	Zoledronic acid (Zometa)
Raloxifene (Evista)	Teriparatide (Forteo)	

Thyroid/Antithyroid

Levothyroxine (Synthroid, Levoxyl)	Potassium iodide [Lugol Solution] (SSKI, Thyro-Block)	Propylthiouracil [PTU]
Liothyronine (Cytomel)		
Methimazole (Tapazole)		

Miscellaneous Endocrine Agents

Cinacalcet (Sensipar)	Demeclocycline (Declomycin)	Diazoxide (Proglycem)
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EYE (OPHTHALMIC) AGENTS**Glaucoma Agents**

Acetazolamide (Diamox)	Dorzolamide & Timolol (Cosopt)	Neomycin, Polymyxin, & Hydrocortisone (Cortisporin Ophthalmic & Otic)
Apraclonidine (Iopidine)	Echthiophate Iodine (Phospholine Ophthalmic)	Norfloxacin (Chibroxin)
Betaxolol, Ophthalmic (Betopic)	Epinastine (Elestat)	Ofloxacin (Ocuflox Ophthalmic)
Brimonidine (Alpha- gan P)	Latanoprost (Xalatan)	Rimexolone (Vexol Ophthalmic)
Brinzolamide (Azopt)	Levobunolol (A-K Beta, Betagan)	Timolol, Ophthalmic (Timoptic)
Carteolol (Cartrol, Ocupress Ophthalmic)	Levocabastine (Livostin)	Trifluridine, Ophthalmic (Viroptic)
Ciprofloxacin, Ophthalmic (Ciloxan)	Levofloxacin (Lеваquin, Quixin & Iquix Ophthalmic)	
Cyclosporine, Ophthalmic (Restasis)	Lodoxamide (Alomide)	
Dipivefrin (Propine)	Moxifloxacin (Vigamox)	
Dorzolamide (Trusopt)		

Ophthalmic Antibiotics

Bacitracin, Ophthalmic (AK-Tracin Ophthalmic)	HC Ophthalmic, Cortisporin Ophthalmic)	Neomycin, Polymyxin B, & Dexamethasone (Maxitrol)
Bacitracin & Polymyxin B, Ophthalmic (AK Poly Bac Ophthalmic, Polysporin Ophthalmic)	Ciprofloxacin, Ophthalmic (Ciloxan)	Neomycin, Polymyxin B, & Prednisolone (Poly- Pred Ophthalmic)
Bacitracin, Neomycin, & Polymyxin B (AK Spore Ophthalmic, Neosporin Ophthalmic)	Erythromycin, Ophthalmic (Ilotycin Ophthalmic)	Ofloxacin (Floxin, Ocuflox Ophthalmic)
Bacitracin, Neomycin, Polymyxin B, & Hydrocortisone, Ophthalmic (AK Spore	Gentamicin, Ophthalmic (Garamycin, Genoptic, Gentacidin, Gentak)	Silver Nitrate (Dey-Drop)
	Neomycin & Dexamethasone (AK- Neo-Dex Ophthalmic, NeoDecadron Ophthalmic)	Sulfacetamide (Bleph-10, Cetamide, Sodium Sulamyd)
		Sulfacetamide & Prednisolone (Blephamide)

Tobramycin, Ophthalmic (AKTob, Tobrex)	Tobramycin & Dexamethasone (TobraDex)	Trifluridine (Viroptic)
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Miscellaneous Ophthalmic Agents

Artificial Tears (Tears Naturale)	Dexamethasone, Ophthalmic (AK-Dex	Naphazoline & Pheniramine Acetate (Naphcon A)
Atropine	Ophthalmic, Decadron	Nepafenac (Nevanac)
Cromolyn Sodium (Opticrom)	Ophthalmic)	Olopatadine (Patanol)
Cyclopentolate (Cyclogyl, Cyclate)	Emedastine (Emadine)	Pemirolast (Alamast)
Cyclopentolate with phenylephrine (Cyclomydril)	Ketorolac, Ophthalmic (Acular, Aculair LS, Aculair PF)	Rimexolone (Vexol Ophthalmic)
Cyclosporine Ophthalmic (Restasis)	Ketotifen (Zaditor)	Scopolamine ophthalmic
	Lodoxamide (Alomide)	
	Naphazoline (Albalon, AK-Con, Naphcon, others)	

GASTROINTESTINAL AGENTS

Antacids

Alginate Acid (Gaviscon)	Aluminum Hydroxide with Magnesium	Calcium Carbonate (Tums, Alka-Mints)
Aluminum Hydroxide (Amphojel, ALternaGEL)	Hydroxide & Simethicone	Magaldrate (Riopan, Lowsium)
Aluminum Hydroxide with Magnesium Carbonate (Gaviscon)	(Mylanta, Mylanta II, Maalox Plus)	Simethicone (Mylicon)
Aluminum Hydroxide with Magnesium Hydroxide (Maalox)	Aluminum Hydroxide with Magnesium Trisilicate (Gaviscon, Gaviscon-2)	

Antidiarrheals

Bismuth Subsalicylate (Pepto-Bismol)	Kaolin-Pectin (Kaodene, Kao-Spen, Kapectolin, Parepectolin)	Loperamide (Imodium)
Diphenoxylate with Atropine (Lomotil, Lonox)	Lactobacillus (Lactinex Granules)	Octreotide (Sandostatin, Sandostatin LAR)
		Paregoric [Camphorated Tincture of Opium]

Antiemetics

Aprepitant (Emend)	Granisetron (Kytril)	Prochlorperazine (Compazine)
Chlorpromazine (Thorazine)	Meclizine (Antivert)	Promethazine (Phenergan)
Dimenhydrinate (Dramamine)	Metoclopramide (Reglan, Clopra, Octamide)	Scopolamine (Scopace)
Dolasetron (Anzemet)	Nabilone (Cesamet)	Thiethylperazine (Torecan)
Dronabinol (Marinol)	Ondansetron (Zofran)	Trimethobenzamide (Tigan)
Droperidol (Inapsine)	Palonosetron (Aloxi)	

Antiulcer Agents

Cimetidine (Tagamet)	Nizatidine (Axid)	Ranitidine
Esomeprazole (Nexium)	Omeprazole (Prilosec, Zegerid)	Hydrochloride (Zantac)
Famotidine (Pepcid, Pepcid AC)	Pantoprazole (Protonix)	Sucralfate (Carafate)
Lansoprazole (Prevacid)	Rabeprazole (AcipHex)	

Cathartics/Laxatives

Bisacodyl (Dulcolax)	Lactulose (Constulose, Generlac, Chronulac, Cephulac, Enulose)	Polyethylene Glycol- Electrolyte Solution (GoLYTELY, CoLyte)
Docusate Calcium (Surfak)	Magnesium Citrate	Psyllium (Metamucil, Serutan, Effer-Syllium)
Docusate Potassium (Dialose)	Magnesium Hydroxide (Milk of Magnesia)	Sodium Phosphate (Visicol)
Docusate Sodium (Doss, Colace)	Mineral Oil	Sorbitol
Glycerin Suppository		

Enzymes

Pancreatin (Pancrease, Cotazym, Creon, Ultras)
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Miscellaneous GI Agents

Alosetron (Lotronex)	Dibucaine (Nupercainal)	Hyoscyamine (Anaspaz, Cystospaz, Levsin)
Budonaside (Entocort EC)	Dicyclomine (Bentyl)	Hyoscyamine, Atropine, Scopolamine, & Phenobarbital (Donnatal)
Balsalazide (Colazal)	Hydrocortisone, Rectal (Anusol-HC)	
Dexpanthenol (Ilopan- Choline Oral, Ilopan)	Suppository, Cortifoam Rectal, Proctocort)	

Infliximab (Remicade)	Neomycin Sulfate (Neo-Fradin, generic)	(Enzone, ProctoFoam-HC)
Lubiprostone (Amitiza)	Olsalazine (Dipentum)	Propantheline (Pro-Banthine)
Mesalamine (Asacol, Lialda, Pentasa, Rowasa)	Pramoxine (Anusol Ointment, ProctoFoam-NS)	Vasopressin (Pitressin)
Metoclopramide (Reglan, Clopra, Octamide)	Pramoxine with Hydrocortisone	
Misoprostol (Cytotec)		

HEMATOLOGIC AGENTS

Anticoagulants

Ardeparin (Normiflo)	Enoxaparin (Lovenox)	Protamine
Argatroban (Acova)	Fondaparinux (Arixtra)	Tinzaparin (Innohep)
Bivalirudin (Angiomax)	Heparin	Warfarin (Coumadin)
Dalteparin (Fragmin)	Lepirudin (Refludan)	

Antiplatelet Agents

Abciximab (ReoPro)	Dipyridamole (Persantine)	Reteplase (Retavase)
Aspirin (Bayer, Ecotrin, St. Joseph's)	Dipyridamole & Aspirin (Aggrenox)	Ticlopidine (Ticlid)
Clopidogrel (Plavix)	Eptifibatide (Integrilin)	Tirofiban (Aggrastat)

Antithrombotic Agents

Alteplase, Recombinant [tPA] (Activase)	Aprotinin (Trasylol)	Streptokinase (Streptase, Kabikinase)
Aminocaproic Acid (Amicar)	Danaparoid (Orgaran)	Tenecteplase (TNKase)
Anistreplase (Eminase)	Dextran 40 (Gentran 40, Rheomacrodex)	Urokinase (Abbokinase)
	Reteplase (Retavase)	

Hematopoietic Stimulants

Darbepoetin Alfa (Aranesp)	Filgrastim [G-CSF] (Neupogen)	Pegfilgrastim (Neulasta)
Epoetin Alfa [Erythropoietin, EPO] (Epogen, Procrit)	Oprelvekin (Neumega)	Sargramostim [GM-CSF] (Leukine)

Volume Expanders

Albumin (Albuminar, Buminate, Albutein)	Dextran 40 (Rheomacrodex) Hetastarch (Hespan)	Plasma Protein Fraction (Plasmanate)
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Miscellaneous Hematologic Agents

Antihemophilic Factor VIII (Monoclate)	Desmopressin (DDAVP, Stimate)	Lenalidomide (Revlimid)
Decitabine (Dacogen)		Pentoxifylline (Trental)

IMMUNE SYSTEM AGENTS**Immunomodulators**

Abatacept (Orencia)	Interferon Alfacon-1 (Infergen)	Natalizumab (Tysabri)
Adalimumab (Humira)	Interferon Beta-1b (Betaseron)	Peg Interferon Alfa-2b (PEG-Intron)
Anakinra (Kineret)	Interferon Gamma-1b (Actimmune)	
Etanercept (Enbrel)		
Interferon Alfa (Roferon- A, Intron A)		

Immunosuppressive Agents

Azathioprine (Imuran)	[Antithymocyte Globulin, ATG]	Mycophenolate Mofetil (CellCept)
Basiliximab (Simulect)	(Atgam)	Sirolimus (Rapamune)
Cyclosporine (Sandimmune, NePO)	Muromonab-CD3 (Orthoclone OKT3)	Steroids, Systemic (Table 4, page 228)
Daclizumab (Zenapax)	Mycophenolic Acid (Myfortic)	Tacrolimus (Prograf, Protopic)
Lymphocyte Immune Globulin		

Vaccines/Serums/Toxoids

Cytomegalovirus Immune Globulin [CMV-IG IV] (CryoGam)	Inactivated Poliovirus Vaccine (IPV) Combined (Pediatrix) Haemophilus B Conjugate Vaccine (ActHIB, HibTITER, PedvaxHIB, Prohibit)	Hepatitis A (Inactivated) & Hepatitis B Recombinant Vaccine (Twinrix)
Diphtheria, Tetanus Toxoids, & Acellular Pertussis Adsorbed, Hepatitis B (recombinant), &	Hepatitis A Vaccine (Havrix, Vaqta)	Hepatitis B Immune Globulin (HyperHep, H-BIG)

Hepatitis B Vaccine (Engerix-B, Recombivax HB)	Influenza Virus Vaccine Live, Intranasal (FluMist)	Pneumococcal Vaccine, Polyvalent (Pneumovax-23)
Human Papillomavirus (Types 6, 11, 16, 18) Recombinant Vaccine (Gardasil)	Measles, Mumps, Rubella, and Varicella Virus Vaccine Live [MMRV] (Proquad)	Rotavirus vaccine, live, oral, pentavalent (RotaTeq)
Immune Globulin, IV (Gamimune N, Sandoglobulin, Gammar IV)	Meningococcal conjugate vaccine (Menactra)	Tetanus Immune Globulin
Immune Globulin, Sub Cutaneous (Vivaglobin)	Meningococcal Polysaccharide Vaccine (Menomune A/C/Y/W-135)	Tetanus Toxoid
Influenza Vaccine (Fluarix, Flulaval, Fluzone, Fluvirin)	Pneumococcal 7-Valent Conjugate Vaccine (Prevnar)	Varicella Virus Vaccine (Varivax)
		Zoster vaccine, live (Zostavax)

MUSCULOSKELETAL AGENTS

Antigout Agents

Allopurinol (Zyloprim, Lopurin, Aloprim)	Colchicine	Probenecid (Benemid)
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Muscle Relaxants

Baclofen (Lioresal Intrathecal)	Cyclobenzaprine (Flexeril)	Diazepam (Valium)
Carisoprodol (Soma)	Cyclobenzaprine, extended release (Amrix)	Metaxalone (Skelaxin)
Chlorzoxazone (Paraflex, Parafon Forte DSC)	Dantrolene (Dantrium)	Methocarbamol (Robaxin)
		Orphenadrine (Norflex)

Neuromuscular Blockers

Atracurium (Tracrium)	Succinylcholine (Anectine, Quelicin, Sucostrin)	Vecuronium (Norcuron)
Pancuronium (Pavulon)		
Rocuronium (Zemuron)		

Miscellaneous Musculoskeletal Agents

Edrophonium (Tensilon, Enlon, Reversol)	Leflunomide (Arava)	Methotrexate (Folex, Rheumatrex)
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OB/GYN AGENTS**Contraceptives**

Copper IUD Contraceptive (ParaGard T 380A)	Etonogestrel/Ethinyl Estradiol (NuvaRing)	Oral Contraceptives, Multiphasic (Table 6, page 234)
Estradiol Cypionate & Medroxyprogesterone Acetate (Lunelle)	Medroxyprogesterone (Provera, Depo- Provera)	Oral Contraceptives, Progestin Only (Table 6, page 235)
Etonogestrel Implant (Implanon)	Norgestrel (Ovrette)	Oral Contraceptives, Extended Cycle Combination (Table 7, page 235)
Levonorgestrel intrauterine device (IUD) (Mirena)	Oral Contraceptives, Monophasic (Table 6, page 232)	

Emergency Contraceptives

Ethinyl Estradiol & Lev- onorgestrel (Preven)	Levonorgestrel (Plan B)
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Estrogen Supplementation**ESTROGEN ONLY**

Estradiol (Estrace, others)	Estrogen, Conjugated (Premarin)	Esterified Estrogens (Estratab, Menest)
Estradiol gel (Elestrin)		
Estradiol, Transdermal (Estraderm, Climara, Vivelle)	Estrogen, Conjugated- Synthetic (Cenestin, Enjuva)	

COMBINATION ESTROGEN/PROGESTIN

Esterified Estrogens with Methyltestosterone (Estratest, Estratest HS, Syntest DS, HS)	terone (Premarin with Methylprogesterone)	Estradiol/Norethindrone acetate (FemHRT, Activella)
Estrogen, Conjugated with Medroxyproges- terone (Prempro, Premphase)	Estrogen, Conjugated with Methyltestos- terone (Premarin with Methyltestosterone)	Norethindrone acetate/ athinyl Estradiol (ethinyl Estradiol/ norethindrone acetate)
Estrogen, Conjugated with Methylproges-	Estradiol/levonorgestrel, transdermal(Climara Pro)	

Vaginal Preparations

Amino-Cerv pH 5.5 Cream Factrel	Miconazole (Monistat) Nystatin (Mycostatin)	Terconazole (Terazol 7) Tioconazole (Vagistat)
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Miscellaneous Ob/Gyn Agents

Dinoprostone (Cervidil Vaginal Insert, Prepidil Vaginal Gel, Prostin E2)	Magnesium Sulfate Medroxyprogesterone (Provera, Depo-Provera)	Mifepristone [RU 486] (Mifeprex)
Gonadorelin (Factrel)	Methylergonovine (Methergine)	Oxytocin (Pitocin)
Leuprolide (Lupron)		Terbutaline (Brethine, Bricanyl)
Lutropin Alfa (Luveris)		

PAIN MEDICATIONS**Local Anesthetics (Table 2, page 226)**

Benzocaine & Antipyrine (Auralgan)	Cocaine	Lidocaine & Prilocaine (EMLA, LMX)
Bupivacaine (Marcaine)	Dibucaine (Nupercainal)	Pramoxine (Anusol Ointment, ProctoFoam-NS)
Capsaicin (Capsin, Zostrix)	Lidocaine (Anestacon Topical, Xylocaine)	

Migraine Headache Medications

Acetaminophen with Butalbital w/and w/o Caffeine (Fioricet, Medigesic, Repan, Sedapap-10, Two-Dyne, Triapin, Axocet, Phrenilin Forte)	Almotriptan (Axert)	Eletriptan (Relpax)
	Aspirin & Butalbital Compound (Fiorinal)	Frovatriptan (Frova)
	Aspirin with Butalbital, Caffeine, & Codeine (Fiorinal with Codeine)	Naratriptan (Amerge)
		Sumatriptan (Imitrex)
		Zolmitriptan (Zomig)

Narcotic Analgesics

Acetaminophen with Codeine (Tylenol No. 3, 4)	Fentanyl iontophoretic transdermal system (Ionsys)	Hydrocodone & Aspirin (Lortab ASA)
Alfentanil (Alfenta)	Fentanyl, Transdermal (Duragesic)	Hydrocodone & Ibuprofen (Vicoprofen)
Aspirin with Codeine (Empirin No. 2, 3, 4)	Fentanyl, Transmucosal (Actiq, Fentora)	Hydromorphone (Dilaudid)
Buprenorphine (Buprenex)	Hydrocodone & Acetaminophen (Lorcet, Vicodin, Hycet)	Levorphanol (Levo-Dromoran)
Butorphanol (Stadol)		Meperidine (Demerol)
Codeine		Methadone (Dolophine)
Fentanyl (Sublimaze)		

Morphine (Avinza XR, Duramorph, Infumorph, MS Contin, Kadian SR, Oramorph SR, Palladone, Roxanol)	Oxycodone & Acetaminophen (Percocet, Tylox)	Propoxyphene & Acetaminophen (Darvocet)
Morphine, Liposomal (DepoDur)	Oxycodone & Aspirin (Percodan, Percodan-Demi)	Propoxyphene & Aspirin (Darvon Compound-65, Darvon-N with Aspirin)
Nalbuphine (Nubain)	Oxymorphone (Opana, Opana ER)	
Oxycodone (OxyContin, OxyIR, Roxicodone)	Pentazocine (Talwin)	
	Propoxyphene (Darvon)	

Nonnarcotic Analgesics

Acetaminophen [APAP] (Tylenol)	Tramadol (Ultram, Ultram ER)	Tramadol/Acetaminophen (Ultracet)
Aspirin (Bayer, Ecotrin, St. Joseph's)		

Nonsteroidal Antiinflammatory Agents

Celecoxib (Celebrex)	Ibuprofen (Motrin, Rufen, Advil)	Nabumetone (Relafen)
Diclofenac (Cataflam, Flector, Voltaren)	Indomethacin (Indocin)	Naproxen (Aleve, Naprosyn, Anaprox)
Diflunisal (Dolobid)	Ketoprofen (Orudis, Oruvail)	Oxaprozin (Daypro)
Etodolac	Ketorolac (Toradol)	Piroxicam (Feldene)
Fenoprofen (Nalfon)	Meloxicam (Mobic)	Sulindac (Clinoril)
Flurbiprofen (Ansaid, Ocurfer)		Tolmetin (Tolectin)

Miscellaneous Pain Medications

Amitriptyline (Elavil)	Pregabalin (Lyrica)	Ziconotide (Prialt)
Imipramine (Tofranil)	Tramadol (Ultram)	

RESPIRATORY AGENTS

Antitussives, Decongestants, & Expectorants

Acetylcysteine (Acetadote, Mucomyst)	Benzonatate (Tessalon Perles)	Dextromethorphan (Mediquell, Benylin DM, PediaCare 1)
	Codeine	

Guaifenesin (Robitussin)	Hydrocodone & Homatropine (Hycodan, Hydromet)	Acetaminophen, & Caffeine (Hycomine)
Guaifenesin & Codeine (Robitussin AC, Brontex)	Hydrocodone & Pseudoephedrine (Detussin, Histussin-D)	Potassium Iodide (SSKI, Thyro-Block)
Guaifenesin & Dextromethorphan	Hydrocodone, Chlorpheniramine, Phenylephrine,	Pseudoephedrine (Sudafed, Novafed, Afrinol)
Hydrocodone & Guaifenesin (Hycotuss Expectorant)		

Bronchodilators

Albuterol (Proventil, Ventolin, Volmax)	Formoterol (Foradil Aerolizer)	Salmeterol (Serevent, Serevent Diskus)
Albuterol & Ipratropium (Combivent)	Isoproterenol (Isuprel)	Terbutaline (Brethine, Bricanyl)
Aminophylline	Levalbuterol (Xopenex, Xopenex HFA)	Theophylline (Theo24, TheoChron)
Arformoterol (Brovana)	Metaproterenol (Alupent, Metaprel)	
Ephedrine	Pirbuterol (Maxair)	
Epinephrine (Adrenalin, Sus-Phrine, EpiPen)		

Respiratory Inhalants

Acetylcysteine (Acetadote, Mucomyst)	Calfactant (Infasurf)	Xinafoate (Advair Diskus, Advair HFA)
Beclomethasone (Beconase, Vancenase Nasal Inhaler)	Cromolyn Sodium (Intal, Nasalcrom, Opticrom)	Ipratropium (Atrovent HFA, Atrovent Nasal)
Beclomethasone (QVAR)	Dexamethasone, Nasal (Dexacort Phosphate Turbinaire)	Nedocromil (Tilade)
Beractant (Survanta)	Flunisolide (AeroBid, Aerospan, Nasarel)	Tiotropium (Spiriva)
Budesonide (Rhinocort, Pulmicort)	Fluticasone, Oral, Nasal (Flonase, Flovent)	Triamcinolone (Azmacort)
Budesonide/formoterol (Symbicort)	Fluticasone Propionate & Salmeterol	

Miscellaneous Respiratory Agents

Alpha ₁ -Protease Inhibitor (Prolastin)	Dornase Alfa (Pulmozyme, Dnase)	Omalizumab (Xolair)
	Montelukast (Singulair)	Zafirlukast (Accolate)
		Zileuton (Zyflo)

URINARY/GENITOURINARY AGENTS

Alprostadil, Intracavernosal (Caverject, Edex)	Methenamine (Hiprex, Urex)	Potassium Citrate (Urocit-K)
Alprostadil, Urethral Suppository (Muse)	Neomycin-Polymyxin Bladder Irrigant [Neosporin GU Irrigant]	Potassium Citrate & Citric Acid (Polycitra-K)
Ammonium Aluminum Sulfate [Alum]	Nitrofurantoin (Macrochantin, Furadantin, Macrobid)	Sildenafil (Viagra)
Belladonna & Opium Suppositories (B & O Suppettes)	Oxybutynin (Ditropan, Ditropan XL)	Solifenacin (VESIcare)
Bethanechol (Urecholine, Duvold)	Oxybutynin Transdermal System (Oxytrol)	Sodium Citrate/Citric Acid (Bicitra)
Darifenacin (Enblex)	Pentosan Polysulfate (Elmiron)	Tadalafil (Cialis)
Dimethyl Sulfoxide [DMSO] (Rimso 50)	Phenazopyridine (Pyridium)	Tolterodine (Detrol, Detrol LA)
Flavoxate (Urispas)		Trimethoprim (Trimplex, Proloprim)
Hyoscyamine (Anaspaz, Cystospaz, Levsin)		Tropium Chloride (Sanctura)
		Vardenafil (Levitra)

Benign Prostatic Hyperplasia Medications

Alfuzosin (Uroxatral)	Dutasteride (Avodart)	Tamsulosin (Flomax)
Doxazosin (Cardura, Cardura XL)	Finasteride (Proscar)	Terazosin (Hytrin)

WOUND CARE

Becaplermin (Regranex Gel)	Silver Nitrate (Dey-Drop)
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MISCELLANEOUS THERAPEUTIC AGENTS

Acamprosate (Campral)	Megestrol Acetate (Megace)	Nicotine Gum (Nicorette, others)
Alglucosidase alfa (Myozyme)	Mecasermin (Increlex)	Nicotine Nasal Spray (Nicotrol NS)
Cilostazol (Pletal)	Lanthanum Carbonate (Fosrenol)	Nicotine Transdermal (Habitrol, Nicoderm, Nicotrol, others)
Drotrecogin Alfa (Xigris)	Naltrexone (Depade, ReVia, Vivitrol)	
Eculizumab (Soliris)		

Orlistat (Xenical, Alli [OTC])	Sevelamer (Renagel)	Talc (Sterile Talc Powder)
Palifermin (Kepivance)	Sodium Polystyrene Sulfonate (Kayexalate)	Varenicline (Chantix)
Potassium Iodide [Lugol Solution] (SSKI, Thyro-Block)		

NATURAL AND HERBAL AGENTS

Black Cohosh	Ginger (<i>Zingiber officinale</i>)	Milk Thistle (<i>Silybum marianum</i>)
Chamomile	Ginkgo Biloba	Saw Palmetto (<i>Serenoa repens</i>)
Cranberry (<i>Vaccinium macrocarpon</i>)	Ginseng	St. John's Wort (<i>Hypericum perforatum</i>)
Dong Quai (<i>Angelica polymorpha, sinensis</i>)	Glucosamine Sulfate (chitosamine) & Chondroitin Sulfate	Valerian (<i>Valeriana officinalis</i>)
Echinacea (<i>Echinacea purpurea</i>)	Kava Kava (Kava Kava Root Extract, <i>Piper methysticum</i>)	Yohimbine (<i>Pausinystalia yohimbe</i>)
Ephedra/MaHuang	Melatonin	
Evening Primrose Oil		
Fish Oil		
Garlic (<i>Allium sativum</i>)		

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GENERIC AND SELECTED BRAND DRUG DATA

Abacavir (Ziagen) **WARNING:** Allergy (fever, rash, fatigue, GI, resp) reported; stop drug immediately & do not rechallenge; lactic acidosis & hepatomegaly/steatosis reported **Uses:** *HIV Infxn* **Action:** NRTI **Dose:** *Adults.* 300 mg PO bid or 600 mg PO daily *Peds.* 8 mg/kg bid **Caution:** [C, -] CDC recommends HIV-infected mothers not breast-feed (transmission risk) **Disp:** Tabs 300 mg; soln 20 mg/mL **SE:** See Warning, ↑ LFTs, fat redistribution **Notes:** Numerous drug interactions

Abatacept (Orencia) **Uses:** *Mod/severe RA w/inadequate response to one or more DMARDs* **Action:** Selective costimulation modulator, ↓ T-cell activation **Dose:** Initial 500 mg (<60 kg), 750 mg(60–100 kg); 1 gm (>100 kg) IV over 30 min; repeat at 2 and 4 wk, then every 4 wk **Caution:** w/TNF blockers [C; ?/-] COPD; h/o recurrent/localized/chronic, /predisposition to Infxn **Contra:** w/TNF antagonists (↑ Infxn); w/ live vaccines w/in 3 mo of D/C abatacept **Disp:** IV powder: 250 mg/10 mL **SE:** HA, URI, N, nasopharyngitis, Infxn, malignancy, inf Rxns/hypersensitivity (dizziness, HA, HTN), COPD exacerbations, cough, dyspnea **Notes:** Screen for TB prior to use

Abciximab (ReoPro) **Uses:** *Prevent acute ischemic comps in PTCA,* MI **Action:** ↓ plt aggregation (glycoprotein IIb/IIIa inhibitor) **Dose:** *Unstable angina w/ planned PCI (ECC 2005):* 0.25 mg/kg bolus, then 10 mcg/min cont inf × 18–24 h, stop 1 h after PCI; *PCI:* 0.25 mg/kg bolus 10–60 min pre PTCA, then 0.125 mcg/kg/min (max = 10 mcg/min) cont inf for 12 h; **Caution:** [C, ?/-] **Contra:** Active or recent (w/in 6 wk) internal hemorrhage, CVA w/in 2 y or CVA w/ significant neurologic 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, use of dextran prior to or during PTCA, allergy to murine proteins **Disp:** Inj 2 mg/mL **SE:** Allergic Rxns, bleeding, ↓plt **Notes:** Use w/ heparin/ASA

Acamprosate (Campral) **Uses:** *Maint abstinence from EtOH* **Action:** ↓ Glutamatergic transmission; modulates neuronal hyperexcitability; related to GABA **Dose:** 666 mg PO tid; CrCl 30–50 mL/min: 333 mg PO tid **Caution:** [C; ?/-] **Contra:** CrCl <30 mL/min **Disp:** Tabs 333 mg EC (enteric coated) **SE:** N/D, depression, anxiety, insomnia **Notes:** Does not eliminate EtOH withdrawal Sx; continue even if relapse occurs

Acarbose (Precose) **Uses:** *Type 2 DM* **Action:** α-glucosidase inhibitor; delays digestion of carbohydrates to ↓ glucose **Dose:** 25–100 mg PO tid w/ 1st bite each meal; 50 mg tid (< 60 kg); 100 mg tid (>60 kg) **Caution:** [B, ?] Avoid w/

CrCl <25 mL/min; can affect digoxin levels **Contra:** IBD, colonic ulceration, partial intestinal obst; cirrhosis **Disp:** Tabs 25, 50, 100 mg **SE:** Abd pain, D, flatulence, ↑ LFTs, hypersensitivity Rxn **Notes:** OK w/ sulfonyleureas; ✓LFTs q3mo for 1st y
Acebutolol (Sectral) **Uses:** *HTN, arrhythmias* angina **Action:** Blocks β-adrenergic receptors, β₁, & ISA **Dose:** HTN: 200–800 mg/d; arrhythmia: 400–1200 mg/d ÷ doses; ↓ if CrCl <50 mL/min or elderly; elderly initial 200–400 mg/d; max 800 mg/d. **Caution:** [B, D in 2nd & 3rd tri, +] Can exacerbate ischemic heart Dz, do not D/C abruptly **Contra:** 2nd-, 3rd-degree heart block **Disp:** Caps 200, 400 mg **SE:** Fatigue, HA, dizziness, bradycardia

Acetaminophen [APAP, N-acetyl-p-aminophenol] (Tylenol, other generic) [OTC] **Uses:** *Mild-moderate pain, HA, fever* **Action:** 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 4 g/24 h. *Peds.* <12 y. 10–15 mg/kg/dose PO or PR q4–6h; max 2.6 g/24 h. Quick dosing Table 1. Administer q6h if CrCl 10–50 mL/min & q8h if CrCl <10 mL/min **Caution:** [B, +] Hepatotoxic in elderly & w/ EtOH use w/ >4 g/day; alcoholic liver Dz **Contra:** G6PD deficiency **Disp:** Tabs meltaway/dissolving 160 mg; Tabs: 325, 500, 650 mg; chew tabs 80, 160 mg; liq 100 mg/mL, 120 mg/2.5 mL, 120 mg/5 mL, 160 mg/5 mL, 167 mg/5 mL, 325 mg/5 mL, 500 mg/15 mL, 80 mg/0.8 mL; supp 80, 120, 125, 325, 650 mg **SE:** OD hepatotox at 10 g; 15 g can be lethal; Rx w/ N-acetylcysteine **Notes:** No anti-inflammatory or plt-inhibiting action; avoid EtOH

Acetaminophen + Butalbital ± Caffeine (Fioricet, Medigesic, Repan, Sedapap-10, Two-Dyne, Triapin, Axocet, Phrenilin Forte) [C-III] **Uses:** *Tension HA,* mild pain **Action:** Nonnarcotic analgesic w/ barbiturate **Dose:** 1–2 tabs or caps PO q4/6h PRN; ↓ in renal/hepatic impair; 4 g/24 h APAP max **Caution:** [C, D, +] Alcoholic liver Dz **Contra:** G6PD deficiency **Disp:** Caps *Dolgic Plus:* butalbital 50 mg, caffeine 40 mg, APAP 750 mg; Caps *Medigesic, Repan, Two-Dyne:* butalbital 50 mg, caffeine 40 mg, + APAP 325 mg; Caps *Axocet, Phrenilin Forte:* butalbital 50 mg + APAP 650 mg; Caps *Esgic-Plus, Zebutral:* butalbital 50 mg, caffeine 40 mg, APAP 500 mg; Liq. *Dolgic LQ:* butalbital 50 mg, caffeine 40 mg, APAP 325 mg/15mL. Tabs *Medigesic, Fioricet, Repan:* butalbital 50 mg, caffeine 40 mg, APAP 325 mg; *Phrenilin:* butalbital 50 mg + APAP 325 mg; *Sedapap-10:* butalbital 50 mg + APAP 650 mg **SE:** Drowsiness, dizziness, “hangover” effect **Notes:** Butalbital habit forming; avoid EtOH

Acetaminophen + Codeine (Tylenol No. 3, No. 4) [C-III, C-V] **Uses:** *Mild-moderate pain (No. 3); moderate-severe pain (No. 4)* **Action:** Combined APAP & narcotic analgesic **Dose:** *Adults.* 1–2 tabs q3–4h PRN (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); ↓ in renal/hepatic impair **Caution:** [C, +] Alcoholic liver Dz **Contra:** G6PD deficiency **Disp:** Tabs 300 mg APAP + codeine; caps 325 mg APAP + codeine; susp (C-V) APAP 120 mg + codeine 12 mg/5 mL **SE:** Drowsiness, dizziness, N/V **Notes:** Codeine in No. 3 = 30 mg, No. 4 = 60 mg

Acetazolamide (Diamox) **Uses:** *Diuresis, glaucoma, prevent high-altitude sickness, refractory epilepsy* **Action:** Carbonic anhydrase inhibitor; ↓ renal excretion of hydrogen & ↑ renal excretion of Na^+ , K^+ , HCO_3^- , & H_2O **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:* 250 mg PO q8–12h or SR 500 mg PO q12–24h start 24–48 h before & 48 h after highest ascent. *Peds.* Epilepsy: 8–30 mg/kg/24 h PO in ÷ doses; max 1 g/d. Diuretic: 5 mg/kg/24 h PO or IV. *Alkalinization of urine:* 5 mg/kg/dose PO bid-tid. *Glaucoma:* 5–15 mg/kg/24 h PO in ÷ doses; max 1 g/d; ↓ dose w/CrCl 10–50 mL/min; avoid if CrCl <10 mL/min **Caution:** [C, +] **Contra:** Renal/hepatic failure, sulfa allergy **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* **Action:** Antiinfective **Dose:** 4–6 gtt in ear(s) q2–3h **Caution:** [C, ?] **Contra:** Perforated tympanic membranes **Disp:** 2% otic soln **SE:** Local irritation

Acetylcysteine (Acetadote, Mucomyst) **Uses:** *Mucolytic, antidote to APAP hepatotox/OD * adjuvant Rx chronic bronchopulm Dzs & CF* prevent contrast-induced renal dysfunction. **Action:** 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 H_2O 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) *Acetadote:* 150 mg/kg IV over 15 min, then 50 mg/kg over 4 h, then 100 mg/kg over 16 h; prevention: 600 mg po bid × 2 days **Caution:** [C, ?] **Disp:** Soln, inhaled and oral 10%, 20%; Acetadote IV soln 20% **SE:** Bronchospasm (inhal), 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) **WARNING:** Must not be used by females who are pregnant or intend to become pregnant during therapy or for up to 3 y following D/C of therapy; EtOH must not be ingested during therapy or for 2 mo following cessation of therapy; do not donate blood for 3 y following cessation **Uses:** *Severe psoriasis*; other keratinization disorders (lichen planus, etc) **Action:** Retinoid-like activity **Dose:** 25–50 mg/d PO, w/ main meal; ↑ if no response by 4 wk to 75 mg/d **Caution:** [X, –] Renal/hepatic impair; in women of reproductive potential **Contra:** See Warning **Disp:** Caps 10, 25 mg **SE:** Cheilitis, skin peeling, alopecia, pruritus, rash, arthralgia, GI upset, photosens, thrombocytosis, hypertriglyceridemia **Notes:** Follow LFTs and lipids; response up to 2–3 mo; pt agreement/informed consent prior to use

Acyclovir (Zovirax) **Uses:** *Herpes simplex & zoster Infxns* **Action:** Interferes w/ viral DNA synth **Dose:** *Adults. Dose on IBW if obese >125% IBW* PO: Initial genital herpes: 200 mg PO q4h while awake, 5 caps/d × 10 d or 400 mg PO tid × 7–10 d. *Chronic suppression:* 400 mg PO bid. *Intermittent Rx:* As initial Rx,

except Rx for 5 d, or 800 mg PO bid, at prodrome. *Herpes zoster*: 800 mg PO 5X/d for 7–10 d. *IV*: 5–10 mg/kg/dose IV q8h. *Topical*: *Initial herpes genitalis*: Apply q3h (6X/d) for 7 d. *Peds*: 5–10 mg/kg/dose IV or PO q8h or 750 mg/m²/24 h ÷ q8h. *Chickenpox*: 20 mg/kg/dose PO qid; ↓ w/CrCl <50 mL/min **Caution**: [B, +] **Contra**: Hypersensitivity to compound **Disp**: Caps 200 mg; tabs 400, 800 mg; susp 200 mg/5 mL; inj 500 mg/vial; 1000, injection soln 25 mg/mL, 50 mg/mL oint 5% and cream 5% **SE**: Dizziness, lethargy, confusion, rash, inflammation at IV site; transient ↑Cr/BUN **Notes**: PO better than topical for herpes genitalis

Adalimumab (Humira) **WARNING**: Cases of TB have been observed; ✓ TB skin test prior to use; Hep B reactivation possible, invasive fungal and other opportunistic infections have been reported **Uses**: *Moderate-severe RA w/ an inadequate response to one or more DMARDs* Active arthritis w/psoriatic arthritis **Action**: TNF- α inhibitor **Dose**: 40 mg SQ qowk; may ↑ 40 mg qwk if not on MTX **Caution**: [B, ?/–] Serious Infxns & sepsis reported **Disp**: Prefilled 0.8 mL (40 mg) syringe **SE**: Inj site Rxns, serious Infxns, neurologic events, malignancies **Notes**: Refrigerate prefilled syringe, rotate inj sites, OK w/ other DMARDs

Adefovir (Hepsera) **WARNING**: Acute exacerbations of hepatitis may occur following d/c therapy (monitor LFTs); chronic use may lead to nephrotox w/ underlying renal impair (monitor renal Fxn); HIV resistance may emerge; lactic acidosis & severe hepatomegaly w/ steatosis reported alone or in combo w/ other anti-retrovirals **Uses**: *Chronic active hep B* **Action**: 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; adjust w/ CrCl <50 mL/min **Caution**: [C, –] **Disp**: Tabs 10 mg **SE**: Asthenia, HA, abd pain; see Warning

Adenosine (Adenocard) **Uses**: *PSVT;* including w/ WPW **Action**: Class IV antiarrhythmic; slows AV node conduction **Dose**: **Adults**. 6 mg over 1–3 s, then 20 mL NS bolus, elevate extremity; repeat 12 mg in 1–2 min PRN (*ECC 2005*) **Peds**. 0.05 mg/kg IV bolus; may repeat q1–2 min to 0.3 mg/kg max **Caution**: [C, ?] **Contra**: 2nd- or 3rd-degree AV block or SSS (w/o pacemaker); recent MI or cerebral hemorrhage **Disp**: Inj 3 mg/mL **SE**: Facial flushing, HA, dyspnea, chest pressure, ↓ BP **Notes**: Doses >12 mg not OK; can cause momentary asystole with use; caffeine, theophylline antagonize effects

Albumin (Albuminar, Buminat, Albutein) **Uses**: *Plasma volume expansion for shock* (eg, burns, hemorrhage) **Action**: Maint plasma colloid oncotic pressure **Dose**: **Adults**. Initial 25 g IV; then based on response; 250 g/48h max. **Peds**. 0.5–1 g/kg/dose; inf at 0.05–0.1 g/min **Caution**: [C, ?] Severe anemia; cardiac, renal, or hepatic insuff due to protein load & hypervolemia **Contra**: CHF **Disp**: Soln 5%, 25% **SE**: Chills, fever, CHF, tachycardia, ↓ BP, hypervolemia **Notes**: Contains 130–160 mEq Na⁺/L; may cause pulm edema

Albuterol (Proventil, Ventolin, Volmax) **Uses**: *Asthma; prevent exercise-induced bronchospasm* **Action**: β -adrenergic sympathomimetic bronchodilator; relaxes bronchial smooth muscle **Dose**: **Adults**. Inhaler: 2 inhal q4–6h

PRN; 1 Rotacap inhaled q4–6h. PO: 2–4 mg PO tid-qid. Neb: 1.25–5 mg (0.25–1 mL of 0.5% soln in 2–3 mL of NS) tid-qid. **Peds.** Inhaler: 2 inhal q4–6h. PO: 0.1–0.2 mg/kg/dose PO; max 2–4 mg PO tid; Neb: 0.05 mg/kg (max 2.5 mg) in 2–3 mL of NS tid-qid **Caution:** [C, +] **Disp:** Tabs 2, 4 mg; XR tabs 4, 8 mg; syrup 2 mg/5 mL; 90 mcg/dose met-dose inhaler; soln for neb 0.083, 0.5% **SE:** Palpitations, tachycardia, nervousness, GI upset

Albuterol & Ipratropium (Combivent, DuoNeb) **Uses:** *COPD*

Action: Combo of β -adrenergic bronchodilator & quaternary anticholinergic

Dose: 2 inhal qid; neb 3 mL q 6 h **Caution:** [C, +] **Contra:** Peanut/soybean allergy

Disp: Met-dose inhaler, 18 mcg ipratropium & 103 mcg albuterol/puff; nebulization soln (DuoNeb) ipratropium 0.5 mg & albuterol 2.5 mg/3 mL 0.042%, 0.21%

SE: Palpitations, tachycardia, nervousness, GI upset, dizziness, blurred vision

Aldesleukin (IL-2) (Proleukin) **WARNING:** Use restricted to pts w/ nl

pulm & cardiac Fxn **Uses:** *Met RCC & melanoma*

Action: Acts via IL-2 receptor; many immunomodulatory effects

Dose: 600,000 IU/kg q8h \times 14 doses days 1–5 and days 15–19 of 28-day cycle (FDA-approved dose/schedule for RCC); other schedules (eg, “high dose” 24×10^6 IU/m² IV q8h on days 1–5 & 12–16)

Caution: [C, ?/–] **Contra:** Organ allografts **Disp:** Powder for recons 22×10^6 IU,

when reconstituted 18 million int units/ mL = 1.1 mg/mL **SE:** Flulike synd

(malaise, fever, chills), N/V/D, \uparrow bilirubin; capillary leak synd w/ \downarrow BP, pulm

edema, fluid retention, & wgt gain; renal & mild hematologic tox (\downarrow HgB,

plt, WBC), eosinophilia; cardiac tox (ischemia, atrial arrhythmias); neuro tox (CNS

depression, somnolence, delirium, rare coma); pruritic rashes, urticaria, & erythro-

derma common. **Notes:** Cont inf \downarrow risk severe \downarrow BP & fluid retention

Alefacept (Amevive) **WARNING:** Must monitor CD4 before each dose;

w/hold if <250 ; D/C if $<250 \times 1$ month **Uses:** *Moderate/severe chronic plaque

psoriasis* **Action:** Fusion protein inhibitor **Dose:** 7.5 mg IV or 15 mg IM once wk

\times 12 wk **Caution:** [B, ?/–] PRG registry; associated w/ serious Infxn **Contra:**

Lymphopenia, HIV **Disp:** 7.5, 15-mg powder for recons vials **SE:** Pharyngitis,

myalgia, inj site Rxn, malignancy, Infxn **Notes:** IV or IM different formulations;

may repeat course 12 wk later if CD4 OK

Alendronate (Fosamax, Fosamax Plus D) **Uses:** *Rx & prevent osteo-

porosis male & female, Rx steroid-induced osteoporosis, Paget Dz* **Action:** \downarrow nl

& abnormal bone resorption **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. *Prevention:*

5 mg/d PO or 35 mg qwk. Paget Dz: 40 mg/d PO **Caution:** [C, ?] Not OK if CrCl <35

mL/min, w/NSAID use **Contra:** Esophageal anomalies, inability to sit/stand upright

for 30 min, \downarrow Ca²⁺ **Disp:** Tabs 5, 10, 35, 40, 70 mg, soln 70mg/75mL, Fosamax plus D:

Alendronate 70 mg and cholecalciferol 2800 int units **SE:** GI disturbances,

esophageal irritation, HA, pain, jaw osteonecrosis (w/dental procedures, chemo)

Notes: Take 1st thing in AM w/ H₂O (8 oz) >30 min before 1st food/beverage of the

day. Do not lie down for 30 min after. Ca²⁺ & vitamin D supl necessary for regular tab

Alfentanil (Alfenta) [C-II] Uses: *Adjunct in the maint of anesthesia; analgesia* **Action:** Short-acting narcotic analgesic **Dose:** *Adults & Peds >12 y.* 3–75 mcg/kg (IBW) IV inf; total depends on duration of procedure **Caution:** [C, +/-] ↑ ICP, resp depression **Disp:** Inj 500 mcg/mL **SE:** Bradycardia, ↓ BP arrhythmias, peripheral vasodilation, ↑ ICP, drowsiness, resp depression

Alfuzosin (Uroxatral) **WARNING:** May prolong QTc interval Uses: *BPH* **Action:** α-Blocker **Dose:** 10 mg PO daily immediately after the same meal **Caution:** [B, -] **Contra:** W/CYP3A4 inhibitors; moderate-severe hepatic impair **Disp:** Tabs 10 mg **SE:** Postural ↓ BP, dizziness, HA, fatigue **Notes:** XR tablet do not cut or crush; ↓ ejaculatory disorders compared w/similar drugs

Alginate Acid + Aluminum Hydroxide & Magnesium Trisilicate (Gaviscon) [OTC] Uses: *Heartburn*; hiatal hernia pain **Action:** Protective layer blocks gastric acid **Dose:** 2–4 tabs or 15–30 mL PO qid followed by H₂O; **Caution:** [B, -] Avoid in renal impair or Na⁺-restricted diet **Disp:** Tabs, susp **SE:** D, constipation

Alglucosidase alfa (Myozyme) **WARNING:** Life-threatening anaphylactic Rxns have occurred w/infusion; appropriate medical support measures should be immediately available Uses: *Rx Pompe DZ* **Action:** Recombinant acid alpha-glucosidase; degrades glycogen in lysosomes **Dose:** 20 mg/kg IV q 2 wks over 4 h (see insert) **Caution:** [B, ?/-] Illness at time of inf may ↑ inf Rxns **Disp:** Powder 50 mg/vial **SE:** Hypersensitivity, fever, rash, D, V, gastroenteritis, pneumonia, URI, cough, respiratory distress, infxns, cardiorespiratory failure, cardiac arrhythmia w/general anesthesia

Aliskiren (Tekturna) **WARNING:** May cause injury and death to a developing fetus; D/C immediately when pregnancy is detected Uses: HTN **Action:** Direct renin inhibitor **Dose:** 150–300mg PO day **Caution:** [C (1st trim), D (2nd & 3rd trim);?]; w/severe renal impair **Disp:** Tabs 150, 300 mg **SE:** D, abd pain, dyspepsia, GERD, cough, ↑ K⁺, angioedema, ↓ BP

Allopurinol (Zyloprim, Lopurin, Alopurin) Uses: *Gout, hyperuricemia of malignancy, uric acid urolithiasis* **Action:** Xanthine oxidase inhibitor; ↓ uric acid production **Dose:** *Adults.* PO: Initial 100 mg/d; usual 300 mg/d; max 800 mg/d. IV: 200–400 mg/m²/d (max 600 mg/24 h); (after meal w/ plenty of fluid). *Peds.* Only for hyperuricemia of malignancy if <10 y: 10 mg/kg/24 h PO or 200 mg/m²/d IV ÷ q6–8h; max 600 mg/24 h; ↓ in renal impair **Caution:** [C, M] **Disp:** Tabs 100, 300 mg; inj 500 mg/30 mL (Aloprim) **SE:** Rash, N/V, renal impair, angioedema **Notes:** Aggravates acute gout; begin after acute attack resolves; IV dose of 6 mg/mL final conc as single daily inf or ÷ 6, 8, or 12-h intervals

Almotriptan (Axert) Uses: *Rx acute migraine* **Action:** Vascular serotonin receptor agonist **Dose:** *Adults.* PO: 6.25–12 mg PO, repeat in 2 h PRN; 2 dose/24h max PO dose; max 12 or 24 mg/d. **Caution:** [C, ?/-] **Contra:** Angina, ischemic heart Dz, coronary artery vasospasm, hemiplegic or basilar migraine, uncontrolled HTN, ergot use, MAOI use w/in 14 d **Disp:** Tabs 6.25, 12.5 mg **SE:** N,

somnolence, paresthesias, HA, dry mouth, weakness, numbness, coronary vasospasm, HTN

Alosetron (Lotronex) **WARNING:** Serious GI side effects, some fatal, including ischemic colitis reported. May be prescribed only through participation in the prescribing program for Lotronex **Uses:** *Severe D-predominant IBS in women who fail conventional therapy*

Action: Selective 5-HT₃ receptor antagonist **Dose: Adults.** 0.5 mg po bid; titrate to 1 mg bid max; D/C after 4 wk at max dose if Sxs not controlled **Caution:** [B, ?/–] **Contra:** Hx chronic/severe constipation, GI obst, strictures, toxic megacolon, GI perforation, adhesions, ischemic/ulcerative colitis, Crohn Dz, diverticulitis, thrombophlebitis, hypercoagulability **Disp:** Tabs 0.5, 1 mg **SE:** Constipation, abd pain, N **Notes:** D/C immediately if constipation or Sxs of ischemic colitis develop; pt must sign informed consent prior to use “patient-physician agreement”

Alpha₁-Protease Inhibitor (Prolastin) **Uses:** *α₁-Antitrypsin deficiency*; pancinar emphysema **Action:** Replace human α₁-protease inhibitor **Dose:** 60 mg/kg IV once/wk **Caution:** [C, ?] **Contra:** Selective IgA deficiencies w/ known IgA antibodies **Disp:** Inj 500 mg/20 mL, 1000 mg/40 mL powder for inj **SE:** Fever, dizziness, flulike Sxs, allergic Rxns, ↑AST/ALT

Alprazolam (Xanax, Niravam) [C-IV] **Uses:** *Anxiety & panic disorders, anxiety w/ depression **Action:** 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 **Caution:** [D, –] **Contra:** NAG, concomitant itra/ketoconazole **Disp:** Tabs 0.25, 0.5, 1, 2 mg; Xanax XR 0.5, 1, 2, 3 mg; Niravam (orally disintegrating tabs) 0.25, 0.5, 1, 2 mg; soln 1 mg/mL **SE:** Drowsiness, fatigue, irritability, memory impair, sexual dysfunction, paradoxical rxns **Notes:** Avoid abrupt D/C after prolonged use

Alprostadil [Prostaglandin E₁] (Prostin VR) **WARNING:** Apnea in up to 12% of neonates especially < 2 kg at birth **Uses:** *Conditions ductus arteriosus blood flow must be maintained* sustain pulm/systemic circulation until OR (eg, pulm atresia/stenosis, transposition, etc.) **Action:** Vasodilator (ductus arteriosus very sensitive), plt inhibitor **Dose:** 0.05 mcg/kg/min IV; ↓ to lowest that maintains response **Caution:** [X, –] **Contra:** Neonatal resp distress synd **Disp:** Inj 500 mcg/mL **SE:** Cutaneous vasodilation, Sz-like activity, jitteriness, ↑ temp, ↓ Ca²⁺, thrombocytopenia, ↓ BP; may cause apnea **Notes:** Keep intubation kit at bedside

Alprostadil, Intracavernosal (Caverject, Edex) **Uses:** *Erectile dysfunction* **Action:** Relaxes smooth muscles, dilates cavernosal arteries, ↑ lacunar spaces and blood entrapment **Dose:** 2.5–60 mcg intracavernosal; titrate in office **Caution:** [X, –] **Contra:** ↑ risk of priapism (eg, sickle cell); penile deformities/implants; men in whom sexual activity inadvisable **Disp:** *Caverject:* 5, 10, 20, 40 mcg powder for injection 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/ injection **Notes:** Counsel about priapism, penile fibrosis, & hematoma risks, titrate dose in office

Alprostadil, Urethral Suppository (Muse) Uses: *Erectile dysfunction* Action: Urethral absorption; vasodilator, relaxes smooth muscle of corpus cavernosa Dose: 125–1000 mcg system 5–10 min prior to sexual activity; may repeat \times 1/24 hrs; titrate in office Caution: [X, -] Contra: \uparrow priapism risk (eg, sickle cell) penile deformities/implants; men in whom sexual activity inadvisable Disp: 125, 250, 500, 1000 mcg w/transurethral delivery system SE: \downarrow 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 occlusion* Action: Thrombolytic; binds fibrin in thrombus, initiates fibrinolysis Dose: AMI: 15 mg IV over 1–2 mins, then 0.75 mg/kg (max 50 mg) over 30 min, then 0.5 mg/kg over next 60 minutes (max 35 mg) (ECC 2005) Stroke: 0.09 mg/kg IV over one min, then 0.81 mg/kg; max 90 mg inf over 60 min (ECC 2005) Cath occlusion: 10–29 kg 1 mg/mL; \geq 30 kg 2 mg/mL Caution: [C, ?] Contra: 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 diseases (AVM/aneurysm/subarachnoid hemorrhage), prolonged cardiac massage; intracranial neoplasm, suspected aortic dissection, bleeding/hemostatic defects, Sz at the time of stroke Disp: Powder for inj 2, 50, 100 mg SE: Bleeding, bruising (eg, venipuncture sites), \downarrow BP Notes: Give heparin to prevent reocclusion; in AMI, doses of $>$ 150 mg associated w/ intracranial bleeding

Altretenamine (Hexalen) WARNING: Bone marrow suppression, neurotoxicity common Uses: *Epithelial ovarian CA* Action: Unknown; cytotoxic agent, unknown alkylating agent; \downarrow nucleotide incorporation into DNA/RNA Dose: 260 mg/m²/d in 4 \div doses for 14–21 d of a 28-d Rx cycle; dose \uparrow to 150 mg/m²/d for 14 d in multiagent regimens (per protocols); after meals and at bedtime Caution: [D, ?/–]. Contra: Preexisting BM depression or neurologic tox Disp: Caps 50 mg SE: V/D, cramps; neurologic (peripheral neuropathy, CNS depression); minimally myelosuppressive Notes: \checkmark CBC, routine neuro exams

Aluminum Hydroxide (Amphojel, AlternaGEL) [OTC] Uses: *Relief of heartburn, upset or sour stomach, or acid indigestion*; suppl to Rx of hyperphosphatemia Action: Neutralizes gastric acid; binds PO₄⁻² 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 \div q4–6h (hyperphosphatemia) Caution: [C, ?] Disp: Tabs 300, 600 mg; susp 320, 600 mg/5 mL SE: constipation Notes: OK in renal failure

Aluminum Hydroxide + Magnesium Carbonate (Gaviscon Extra Strength, Liquid) [OTC] Uses: *Relief of heartburn, acid indigestion* Action: Neutralizes gastric acid Dose: Adults. 15–30 mL PO pc & hs. Peds. 5–15 mL PO qid or PRN; avoid in renal impair Caution: \uparrow Mg²⁺ (w/ renal insuff) [C, ?] Disp: Liq w/ AlOH 95 mg/Mg carbonate 358 mg/15 mL; Extra Strength liq AlOH 254 mg/Mg carbonate 237mg/15mL; chew tabs AlOH 160 mg/Mg carb 105 mg SE: Constipation, D Notes: qid doses best given pc & hs; may affect absorption of some drugs, take 2–3 h apart to \downarrow effect

Aluminum Hydroxide + Magnesium Hydroxide (Maalox)

[OTC] Uses: *Hyperacidity* (peptic ulcer, hiatal hernia, etc) **Action:** Neutralizes gastric acid **Dose: Adults.** 10–20 mL or 2–4 tabs PO qid or PRN. **Peds.** 5–15 mL PO qid or PRN **Caution:** [C, ?] **Disp:** Tabs, susp **SE:** May cause ↑ Mg²⁺ in renal insuff, constipation, D **Notes:** Doses qid best given pc & hs

Aluminum Hydroxide + Magnesium Hydroxide & Simethicone (Mylanta, Mylanta II, Maalox Plus) [OTC]

Uses: *Hyperacidity w/ bloating* **Action:** Neutralizes gastric acid & defoaming **Dose: Adults.** 10–20 mL or 2–4 tabs PO qid or PRN **Peds.** 5–15 mL PO qid or PRN; avoid in renal impair **Caution:** [C, ?] **Disp:** Tabs, susp, liquid **SE:** ↑ Mg²⁺ in renal insuff, D, constipation **Notes:** Mylanta II contains 2X Al & Mg hydroxide of Mylanta; may affect absorption of some drugs

Aluminum Hydroxide + Magnesium Trisilicate (Gaviscon, Regular Strength) [OTC]

Uses: *Relief of heartburn, upset or sour stomach, or acid indigestion* **Action:** Neutralizes gastric acid **Dose:** Chew 2–4 tabs qid; avoid in renal impair **Caution:** [C, ?] **Contra:** 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

Amantadine (Symmetrel)

Uses: *Rx or prophylaxis influenza A, parkinsonism, & drug-induced EPS* (Note: Do not use for Influenza A in the US—increased resistance) **Action:** Prevents release of infectious viral nucleic acid into host cell; releases dopamine from intact dopaminergic terminals **Dose: Adults.** *Influenza A:* 200 mg/d PO or 100 mg PO bid. *Parkinsonism:* 100 mg PO daily-bid. **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 1–2 ÷ doses; ↓ in renal impair **Caution:** [C, M] **Disp:** Caps 100 mg; tabs 100 mg; soln 50 mg/5 mL **SE:** Orthostatic ↓ BP, edema, insomnia, depression, irritability, hallucinations, dream abnormalities

Amifostine (Ethyol)

Uses: *Xerostomia prophylaxis during RT (head, neck, ovarian, non-small-cell lung CA); ↓ renal tox w/ repeated cisplatin* **Action:** Prodrug, dephosphorylated by alkaline phosphatase to active thiol metabolite **Dose:** 910 mg/m²/d 15-min IV inf 30 min prior to chemo **Caution:** [C, +/-] CV disease **Disp:** 500-mg vials powder, reconstitute in NS **SE:** Transient ↓ BP (>60%), N/V, flushing w/ hot or cold chills, dizziness, ↓ Ca²⁺, somnolence, sneezing. **Notes:** Does not ↓ effectiveness of cyclophosphamide + cisplatin chemo

Amikacin (Amikin)

Uses: *Serious gram(-) bacterial Infxns* & mycobacteria **Action:** Aminoglycoside; ↓ protein synth **Spectrum:** Good gram(-) bacterial coverage: Pseudomonas & Mycobacterium sp **Dose: Adults & Peds.** Conventional: 5–7.5 mg/kg/dose q 8 h; once daily: 15–20 mg/kg q 24 h; ↑ interval w/ renal impair; *Neonates <1200 g, 0–4 wk:* 7.5 mg/kg/dose q12h–18h. *Postnatal age <7 d, 1200–2000 g:* 7.5 mg/kg/dose q12h; >2000 g: 10 mg/kg/dose q12h. *Postnatal age >7 d, 1200–2000 g:* 7 mg/kg/dose q8h; >2000 g: 7.5–10 mg/kg/dose q8h **Caution:** [C, +/-] avoid w/ diuretics **Disp:** 50 mg/mL, 250 mg/mL **SE:**

Nephro/oto/neurotox, neuromuscular blockage, resp paralysis **Notes:** May be effective in gram(-) bacteria resistant to gent & tobra; follow Cr; **Levels:** *Peak:* 30 min after inf; *Trough* <0.5h before next dose; *Therapeutic:* *Peak* 20–30 mcg/ml, *Trough* < 8 mcg/ml; *Toxic Peak* > 35 mcg/ml; ½ life: 2 h

Amiloride (Midamor) **Uses:** *HTN, CHF, & thiazide-induced ↓ K⁺ **Action:** K⁺-sparing diuretic; interferes w/ K⁺/Na⁺ exchange in distal tubule **Dose:** *Adults.* 5–10 mg PO daily *Peds.* 0.625 mg/kg/d; ↓ in renal impair **Caution:** [B, ?] **Contra:** ↑ K⁺, SCr > 1.5, BUN > 30, diabetic neuropathy **Disp:** Tabs 5 mg **SE:** ↑ K⁺; HA, dizziness, dehydration, impotence **Notes:** monitor K⁺

Aminocaproic Acid (Amicar) **Uses:** *Excessive bleeding from systemic hyperfibrinolysis & urinary fibrinolysis* **Action:** ↓ fibrinolysis; via inhibition of TPA substances **Dose:** *Adults.* 5 g IV or PO (1st h) followed by 1–1.25 g/h IV or PO (max dose/d: 30 g) *Peds.* 100 mg/kg IV (1st h) then 1 g/m²/h; max 18 g/m²/d; ↓ in renal failure **Caution:** [C, ?] Upper urinary tract bleeding **Contra:** DIC **Disp:** Tabs 500, syrup 250 mg/mL; inj 250 mg/mL **SE:** ↓ BP, bradycardia, dizziness, HA, fatigue, rash, GI disturbance, ↓ plt Fxn **Notes:** Administer X 8 h or until bleeding controlled; not for upper urinary tract bleeding

Amino-Cerv pH 5.5 Cream **Uses:** *Mild cervicitis,* postpartum cervicitis/cervical tears, postcauterization, postcryosurgery, & postconization **Action:** Hydrating agent; removes excess keratin in hyperkeratotic conditions **Dose:** 1 Applicatorful intravag hs X 2–4 wk **Caution:** [C, ?] W/viral skin Infxn **Disp:** Vaginal cream **SE:** Stinging, local irritation **Notes:** AKA carbamide or urea; contains 8.34% urea, 0.5% sodium propionate, 0.83% methionine, 0.35% cystine, 0.83% inositol, & benzalkonium chloride

Aminoglutethimide (Cytadren) **Uses:** *Cushing synd* Adrenocortical carcinoma, breast CA & CAP **Action:** ↓ adrenal steroidogenesis & conversion of androgens to estrogens; aromatase inhibitor **Dose:** Initial 250 mg po 4 x D, titrate q 1–2 wks max 2 gm/D; w/hydrocortisone 20–40 mg/d; ↓ in renal insuff **Caution:** [D, ?] **Disp:** Tabs 250 mg **SE:** Adrenal insuff (“medical adrenalectomy”), hypothyroidism, masculinization, ↓ BP, V, rare hepatotox, rash, myalgia, fever

Aminophylline **Uses:** *Asthma, COPD* & bronchospasm **Action:** Relaxes smooth muscle (bronchi, pulm vessels); stimulates diaphragm **Dose:** *Adults.* Acute asthma: Load 6 mg/kg IV, then 0.4–0.9 mg/kg/h IV cont inf. *Chronic asthma:* 24 mg/kg/24 h PO ÷ q6h. *Peds.* Load 6 mg/kg IV, then 1 mg/kg/h IV cont inf; ↓ in hepatic insuff & w/ certain drugs (macrolide & quinolone antibiotics, cimetidine, & propranolol) **Caution:** [C, +] Uncontrolled arrhythmias, HTN, Sz disorder, hyperthyroidism, peptic ulcers **Disp:** Tabs 100, 200 mg; PR tabs 100 mg, 200 mg, soln 105 mg/5 mL, inj 25 mg/mL **SE:** N/V, irritability, tachycardia, ventricular arrhythmias, Szs **Notes:** Individualize dosage; Level 10 to 20 mcg/mL, toxic > 20 mcg/mL; aminophylline 85% theophylline; erratic rectal absorption

Amiodarone (Cordarone, Pacerone) **Uses:** *Recurrent VF or hemodynamically unstable VT,* supraventricular arrhythmias, AF **Action:** Class III an-

tiarrhythmic (Table 10) **Dose: Adults.** *Ventricular arrhythmias:* IV: 15 mg/min for 10 min, then 1 mg/min X 6 h, maint 0.5 mg/min cont inf or PO: Load: 800–1600 mg/d PO X 1–3 wk. Maint: 600–800 mg/d PO for 1 mo, then 200–400 mg/d. *Supraventricular arrhythmias:* IV: 300 mg IV over 1 h, then 20 mg/kg for 24 h, then 600 mg PO daily for 1 wk, maint 100–400 mg daily or PO: Load 600–800 mg/d PO for 1–4 wk. *Maint:* Slow ↓ to 100–400 mg daily (ECC 2005) *Cardiac arrest:* 300 mg IV push; 150 mg IV push 3(-5 min PRN. *Refractory pulseless VT, VF:* 5 mg/kg rapid IV bolus. *Perfusing arrhythmias:* Load: 5 mg/kg IV/IO over 20–60 min (repeat, max 15 mg/kg/d) **Peds.** 10–15 mg/kg/24 h ÷ q12h PO for 7–10 d, then 5 mg/kg/24 h ÷ q12h or daily (infants/neonates require ↑ loading); ↓ w/liver insuff **Caution:** [D, -] may require ↓ digoxin/warfarin dose, many drug interactions **Contra:** Sinus node dysfunction, 2nd-/3rd-degree AV block, sinus bradycardia (w/o pacemaker), iodine sensitivity **Disp:** Tabs 100, 200, 300 mg 400 mg; inj 50 mg/mL **SE:** Pulm fibrosis, exacerbation of arrhythmias, prolongs QT interval; CHF, hypohyperthyroidism, ↑ LFTs, liver failure, corneal microdeposits, optic neuropathy/neuritis, peripheral neuropathy, photosens **Notes:** IV conc of >0.2 mg/mL via a central catheter; Levels: *Trough:* just before next dose *Therapeutic:* 1–2.5 mcg/mL; *Toxic:* > 2.5 mcg/mL; ½ life: 30–100 h

Amitriptyline (Elavil) **WARNING:** Antidepressants may ↑ suicide risk; consider risks/benefits of use. Monitor patients closely **Uses:** *Depression,* peripheral neuropathy, chronic pain, tension HAs **Action:** TCA; ↓ reuptake of serotonin & norepinephrine by presynaptic neurons **Dose: Adults.** Initial, 30–50 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 **Caution:** CV dz, seizures [D,+/-] NAG, hepatic impair **Contra:** W/ MAOIs, during acute MI 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, photosens **Notes:** Levels: *Therapeutic:* 120 to 150 ng/ml; *Toxic:* > 500 mg/mL

Amlodipine (Norvasc) **Uses:** *HTN, stable or unstable angina* **Action:** CCB; relaxes coronary vascular smooth muscle **Dose:** 2.5–10 mg/d PO; ↓ w/ hepatic impair **Caution:** [C, ?] **Disp:** Tabs 2.5, 5, 10 mg **SE:** Peripheral edema, HA, palpitations, flushing **Notes:** Take w/o regard to meals

Amlodipine/Atorvastatin (Caduet) **Uses:** * HTN, chronic stable/vasospastic angina, control cholesterol & triglycerides* **Action:** CCB & HMG-CoA reductase inhibitor **Dose:** Amlodipine 2.5–10 mg w/ Atorvastatin 10–80 mg PO daily **Caution:** [X, -] **Contra:** Active liver Dz, ↑ LFT **Disp:** Tabs amlodipine/atorvastatin: 2.5/10, 2.5/20, 2.5/40, 5/10, 5/20, 5/40, 5/80, 10/10, 10/20, 10/40, 10/80 mg **SE:** Peripheral edema, HA, palpitations, flushing, myopathy, arthralgia, myalgia, GI upset **Notes:** ✓ LFTs; instruct patient to report muscle pain/weakness

Ammonium Aluminum Sulfate [Alum] [OTC] **Uses:** *Hemorrhagic cystitis when saline bladder irrigation fails* **Action:** Astringent **Dose:** 1–2% soln w/ constant NS bladder irrigation **Caution:** [+/-] **Disp:** Powder for recons **SE:**

Encephalopathy possible; ✓ aluminum levels, especially in renal insuff; can precipitate & occlude catheters **Notes:** Safe w/o anesthesia & w/vesicoureteral reflux

Amoxicillin (Amoxil, Polymox) **Uses:** *Ear, nose, & throat, lower resp, skin, urinary tract Infxs from susceptible gram(+) bacteria* endocarditis prophylaxis **Action:** β -Lactam antibiotic; ↓ cell wall synth **Spectrum:** Gram(+) (Strep sp, *Enterococcus* sp); some gram(-) (*H. influenzae*, *E. coli*, *N. gonorrhoeae*, *H. pylori*, & *P. mirabilis*) **Dose: Adults.** 250–500 mg PO tid or 500–875 mg bid. **Peds.** 25–100 mg/kg/24 h PO \div q8h. 200–400 mg PO bid (equivalent to 125–250 mg tid); ↓ in renal impair **Caution:** [B, +] **Disp:** Caps 250, 500 mg; chew tabs 125, 200, 250, 400 mg; susp 50 mg/mL, 125, 200, 250 & 400 mg/5 mL; tabs 500, 875 mg **SE:** D; skin rash **Notes:** Cross hypersensitivity w/PCN; many *E. coli* strains resistant; chew tabs contain pheyalanine

Amoxicillin & Clavulanic Acid (Augmentin, Augmentin 600 ES, Augmentin XR) **Uses:** *Ear, lower resp, sinus, urinary tract, skin Infxs caused by β -lactamase-producing *H. influenzae*, *S. aureus*, & *E. coli** **Action:**

Combo β -lactam antibiotic & β -lactamase inhibitor. **Spectrum:** Gram(+) same as amox alone, MSSA; gram(-) as w/ amox alone, β -lactamase-producing *H. influenzae*, *Klebsiella* sp, *M. catarrhalis* **Dose: Adults.** 250–500 mg PO q8h or 875 mg q12h; XR 2000 mg PO Q12H. **Peds.** 20–40 mg/kg/d as amoxicillin PO \div q8h or 45 mg/kg/d \div q12h; ↓ in renal impair; take w/ food **Caution:** [B, enters breast milk] **Disp:** Supplied (as amox/clav): Tabs 250/125, 500/125, 875/125 mg; chew tabs 125/31.25, 200/28.5, 250/62.5, 400/57 mg; susp 125/31.25, 250/62.5, 200/28.5, 400/57 mg/5 mL; susp: ES 600/42.9 mg/5 mL; XR tab 1000/62.5 mg **SE:** Abd discomfort, N/V/D, allergic Rxn, vaginitis **Notes:** Do not substitute two 250-mg tabs for one 500-mg tab (OD of clavulanic acid); max clavulanic acid 125 mg/dose

Amphotericin B (Amphocin) **Uses:** *Severe, systemic fungal Infxs; oral & cutaneous candidiasis* **Action:** Binds ergosterol in the fungal membrane to alter permeability **Dose: Adults & Peds.** Test dose: 1 mg IV adults or 0.1 mg/kg to 1 mg IV in children; then 0.25–1.5 mg/kg/24 h IV over 2–6 h (range 25–50 mg/d or qod). Total dose varies w/ indication. PO: 1 mL qid **Caution:** [B, ?] **Disp:** Powder for inj 50 mg/vial **SE:** ↓ K^+ /Mg²⁺ from renal wasting; anaphylaxis reported, HA, fever, chills, nephrotoxicity, ↓ BP, anemia, rigors **Notes:** Monitor Cr/LFTs/K/Mg; ? ↓ in renal impair; pretreatment w/ APAP & antihistamines (Benadryl) ↓ SE

Amphotericin B Cholesteryl (Amphotec) **Uses:** *Aspergillosis if intolerant/refractory to conventional amphotericin B,* systemic candidiasis **Action:** Binds cell membrane sterols, alters permeability **Dose: Adults & Peds.** Test dose 1.6–8.3 mg, over 15–20 min, then 3–4 mg/kg/d; 1 mg/kg/h inf; ↓ w/renal insuff **Caution:** [B, ?] **Disp:** Powder for inj 50 mg, 100 mg/vial **SE:** Anaphylaxis; fever, chills, HA, ↓ K^+ , ↓ Mg²⁺, nephrotox, ↓ BP, anemia **Notes:** Do not use in-line filter; ✓ LFT/lytes

Amphotericin B Lipid Complex (Abelcet) **Uses:** *Refractory invasive fungal Infxn in pts intolerant to conventional ampho B* **Action:** Binds cell

membrane sterols, alters permeability **Dose: Adults & Peds.** 5 mg/kg/d IV single daily dose; 2.5 mg/kg/h inf **Caution:** [B, ?] **Disp:** Inj 5 mg/mL **SE:** Anaphylaxis; fever, chills, HA, ↓ K⁺, ↓ Mg²⁺, nephrotox, ↓ BP, anemia **Notes:** Filter w/5-micron needle; do not mix in electrolyte-containing solns; if inf >2 h, manually mix bag

Amphotericin B Liposomal (AmBisome) **Uses:** *Refractory invasive fungal Infxn w/ intolerance to conventional ampho B; cryptococcal meningitis in HIV; empiric for febrile neutropenia; visceral leishmaniasis* **Action:** Binds cell membrane sterols, changes membrane permeability **Dose: Adults & Peds.** 3–6 mg/kg/d, inf 60–120 min; **Caution:** [B, ?] **Disp:** Powder inj 50 mg **SE:** Anaphylaxis, fever, chills, HA, ↓ K⁺, ↓ Mg²⁺ nephrotox, ↓ BP, anemia **Notes:** Use no less than 1-micron filter; ? ↓ in renal insuff

Ampicillin (Ampicillin, Omnipen) **Uses:** *Resp, GU, or GI tract Infxns, meningitis due to gram(–) & (+) bacteria; SBE prophylaxis* **Action:** 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.** 500 mg–2 g IM or IV q6h or 250–500 mg PO q6h. **Peds. Neonates** <7 d: 50–100 mg/kg/24 h IV ÷ q8h. **Term infants:** 75–150 mg/kg/24 h ÷ q6–8h IV or PO. **Children >1 mo:** 100–200 mg/kg/24 h ÷ q4–6h IM or IV; 50–100 mg/kg/24 h ÷ q6h PO up to 250 mg/dose. **Meningitis:** 200–400 mg/kg/24 h ÷ q4–6h IV; ↓ in renal impair; take on empty stomach **Caution:** [B, M] Cross hypersensitivity w/ PCN **Disp:** Caps 250, 500 mg; susp 100 mg/mL (reconstituted drops), 125 mg/5 mL, 250 mg/5 mL; powder for inj 125 mg, 250 mg, 500 mg, 1 g, 2 g, 10 g/vial **SE:** D, skin rash, allergic Rxn **Notes:** Many *E. coli* strains resistant

Ampicillin-Sulbactam (Unasyn) **Uses:** *Gynecologic, intraabd, skin Infxns due to β-lactamase-producing *S. aureus*, *Enterococcus*, *H. influenzae*, *P. mirabilis*, & *Bacteroides* sp* **Action:** β-lactam antibiotic & β-lactamase inhibitor. **Spectrum:** Gram(+) & (–) as for amp alone; also *Enterobacter*, *Acinetobacter*, *Bacteroides* **Dose: Adults.** 1.5–3 g IM or IV q6h. **Peds.** 100–200 mg ampicillin/kg/d (150–300 mg Unasyn) q6h; ↓ w/ renal insuff **Caution:** [B, M] **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

Amprenavir (Agenerase) **WARNING:** PO soln contra in children <4 y, Asians, Eskimos, Native Americans (polypropylene glycol toxicity) **Uses:** *HIV Infxn* **Action:** Protease inhibitor; prevents virion maturation **Dose: Adults.** 1200 mg bid. **Peds.** 20 mg/kg bid or 15 mg/kg tid to 2400 mg/d; ↓ w/hepatic insuff **Caution:** [C, ?] CDC recommends HIV-infected mothers not breast-feed; Hx sulfonamide allergy **Contra:** CYP450 3A4 substrates (Table 11); soln <4 y, PRG, hepatic/renal insuff, w/ disulfiram, metronidazole **Disp:** Caps 50, 150 mg; soln 15 mg/mL **SE:** Life-threatening rash, hyperglycemia, hypertriglyceridemia, fat redistribution, N/V/D, depression **Notes:** Caps & soln contain vitamin E > RDA; avoid high-fat meals; many drug interactions

Anakinra (Kineret) **WARNING:** Associated w/ ↑ incidence of serious Infxn; D/C w/ serious Infxn **Uses:** *Reduce signs & Sxs of moderate/severe active RA, failed 1 or more DMARD* **Action:** Human IL-1 receptor antagonist **Dose:** 100 mg SQ daily; w/CrCl <30 mL/min, QOD **Caution:** [B, ?] **Contra:** *E. coli*-derived proteins allergy, active Infxn, <18 y **Disp:** 100-mg prefilled syringes; 100 mg (0.67 mL/vial) **SE:** Neutropenia especially w/ TNF-blocking agents, inj site Rxn, Infxn

Anastrozole (Arimidex) **Uses:** *Breast CA: postmenopausal w/ met breast CA, adjuvant Rx postmenopausal early hormone-receptor(+) breast CA* **Action:** Selective nonsteroidal aromatase inhibitor, ↓ circ estradiol **Dose:** 1 mg/d **Caution:** [D, ?] **Contra:** PRG **Disp:** Tabs 1 mg **SE:** May ↑ cholesterol; D, HTN, flushing, ↑ bone/tumor pain, HA, somnolence **Notes:** No effect on adrenal corticosteroids or aldosterone

Anidulafungin (Eraxis) **Uses:** *Candidemia, esophageal candidiasis, other Candida Infxn (peritonitis, intra-abd abscess)* **Action:** Echinocandin; ↓ cell wall synth **Spectrum:** *C. albicans*, *C. glabrata*, *C. parapsilosis*, *C. tropicalis* **Dose:** Candidemia, others: 200 mg IV × 1, then 100 mg IV daily (Tx 14 days after last + culture); Esophageal candidiasis: 100 mg IV × 1, then 50 mg IV daily (Tx >14 d and 7 d after resolu of Sx); 1.1 mg/min max inf rate **Caution:** [C, ?/-] **Contra:** Echinocandin hypersensitivity **Disp:** Powder 50 mg/vial, 100 mg/vial **SE:** Generally safe, histamine-mediated infusion Rxns (urticaria, flushing, ↓ BP, dyspnea, etc), fever, N/V/D, ↓ K⁺, HA, ↑LFTs, hepatitis, worsening hepatic failure **Notes:** ↓ inf rate to <1.1 mg/min w/inf Rxns

Anistreplase (Eminase) **Uses:** *AMI* **Action:** Thrombolytic; activates conversion of plasminogen to plasmin, ↑ thrombolysis **Dose:** 30 units IV over 2–5 min (*ECC 2005*) **Caution:** [C, ?] **Contra:** Active internal bleeding, Hx CVA, recent (<2 mo) intracranial or intraspinal surgery/trauma/neoplasm, AVM, aneurysm, bleeding diathesis, severe HTN **Disp:** 30 units/vial **SE:** Bleeding, ↓ BP, hematoma **Notes:** Ineffective if readministered >5 d after the previous dose of anistreplase or streptokinase, or streptococcal Infxn (production of antistreptokinase Ab)

Anthralin (Anthra-Derm) **Uses:** *Psoriasis* **Action:** Keratolytic **Dose:** Apply daily **Caution:** [C, ?] **Contra:** Acutely inflamed psoriatic eruptions, erythroderma **Disp:** Cream, oint 0.1, 0.25, 0.4, 0.5, 1% **SE:** Irritation; hair/finger-nails/skin discoloration

Antihemophilic Factor [AHF, Factor VIII] (Monoclate) **Uses:** *Classic hemophilia A, von Willebrand Dz* **Action:** Provides factor VIII needed to convert prothrombin to thrombin **Dose:** **Adults & Peds.** 1 AHF unit/kg ↑ factor VIII level @2%, Units required = (kg) (desired factor VIII ↑ as % nl) × (0.5); Prevent spontaneous hemorrhage = 5% nl; Hemostasis after trauma/surgery = 30% nl; Head injuries, major surgery, or bleeding = 80–100% nl **Caution:** [C, ?] **Disp:** ✓ each vial for units contained, powder for recons **SE:** Rash, fever, HA, chills, N/V **Notes:** Determine % nl factor VIII before dosing

Antithymocyte Globulin (See Lymphocyte Immune Globulin, page 136)

Apomorphine (Apokyn) **WARNING:** Do not administer IV **Uses:** *Acute, intermittent hypomobility ("off") episodes of Parkinson Dz* **Action:** Dopamine agonist **Dose:** *Adults.* 0.2-mL SQ test dose under medical supervision; 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/antiemetic; ↓ in renal impair **Caution:** [C, +/-] Avoid EtOH; antihypertensives, vasodilators, cardio or cerebrovascular Dz, hepatic impair **Contra:** 5HT3 antagonists, sulfite allergy **Disp:** Inj 10 mg/mL, 3-mL pen cartridges; 2-mL amp **SE:** Emesis, syncope, QT prolongation, orthostatic ↓ BP, somnolence, ischemia, injection site Rxn, abuse potential, dyskinesia, fibrotic conditions, priapism **Notes:** Daytime somnolence may limit activities; trimethobenzamide 300 mg tid PO or other non-5HT3 antagonist antiemetic given 3 d prior to & up to 2 mo following initiation

Apraclonidine (Iopidine) **Uses:** *Glaucoma, postop intraocular HTN* **Action:** α_2 -adrenergic agonist **Dose:** 1–2 gtt of 0.5% tid; 1 gtt before and after surgical procedure **Caution:** [C, ?] **Contra:** w/ MAOI **Disp:** 0.5, 1% soln **SE:** Ocular irritation, lethargy, xerostomia

Aprepitant (Emend) **Uses:** *Prevents N/V assoc w/ emetogenic CA chemo (eg, cisplatin) (use in combo w/ other antiemetics)* **Action:** Substance P/neurokinin 1(NK₁) receptor antagonist **Dose:** 125 mg PO day 1, 1 h before chemo, then 80 mg PO q AM days 2 & 3 **Caution:** [B, +/-]; substrate & mod CYP3A4 inhibitor; CYP2C9 inducer (Table 11) **Contra:** Use w/ pimozide, **Disp:** Caps 40, 80, 125 mg **SE:** Fatigue, asthenia, hiccups **Notes:** ↓ effect OCP and warfarin

Aprotinin (Trasylol) **WARNING:** May cause fatal anaphylactic Rxns **Uses:** *↓ loss during CABG* **Action:** Protease inhib, antifibrinolytic **Dose:** 1-mL IV test dose; *High dose:* 2 million KIU load, 2 million KIU to prime pump, then 500,000 KIU/h until surgery ends; *Low dose:* 1 million KIU load, 1 million KIU to prime pump, then 250,000 KIU/h until surgery ends; 7 million KIU max total **Caution:** [B, ?] Thromboembolic Dz requiring anticoagulants/blood factor administration **Contra:** Previous use <12 mo (↑ anaphylactic risk) **Disp:** Inj 1.4 mg/mL (10,000 KIU/mL) **SE:** AF, MI, CHF, dyspnea, postop ↑ Cr **Notes:** 1000/KIU = 0.14 mg aprotinin

Arformoterol (Brovana) **WARNING:** Long-acting β -2 agonists may ↑ risk of asthma related death **Uses:** *COPD maint* **Action:** LA beta-2 agonist, relaxes airway smooth muscles **Dose:** 15 mcg neb bid, 30 mcg/day max **Caution:** [C, ?] w/ CV disease, ↓ **Contra:** Not for acute asthma; component hypersensitivity; peds; w/phenothiazines **Disp:** 15 mcg/2 mL nebulizer **SE:** chest/back pain, D, sinusitis, leg cramps, dyspnea, rash, flu-synd, ↑BP, arrhythmias, heart block ↓K⁺

Argatroban (Acova) **Uses:** *Prevent/Tx thrombosis in HIT, PCI in pts w/ risk of HIT* **Action:** Anticoagulant, direct thrombin inhibitor **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 **Caution:** [B, ?] Avoid PO anticoagulants, ↑ bleeding risk; avoid use w/thrombolytics **Contra:** Overt major bleed **Disp:** Inj 100 mg/mL **SE:** AF, cardiac arrest, cerebrovascular disorder, ↓ BP, VT, N/V/D, sepsis, cough, renal tox, ↓ Hgb **Note:** Steady state in 1–3 h

Aripiprazole (Abilify) **WARNING:** Increased mortality in elderly with dementia-related psychosis **Uses:** *Schizophrenia* **Action:** Dopamine & serotonin antagonist **Dose:** Adults. 10–15 mg PO daily; 5.25–15 mg for acute agitation

↓ dose w/CYP3A4/CYP2D6 inhibitors (Table 11); ↑ dose w/ CYP3A4 inducer

Caution: [C, –] **Disp:** Tabs 2, 5, 10, 15, 20, 30 mg; Discmelt (disint. tabs 10, 15, 20, 30 mg, soln 1 mg/ml, inj 7.5 mg/mL **SE:** Neuroleptic malignant synd, tardive dyskinesia, orthostatic ↓ BP, cognitive & motor impair, ↑ glucose

Artificial Tears (Tears Naturale) [OTC] **Uses:** *Dry eyes* **Action:** Ocular lubricant **Dose:** 1–2 gtt tid-qid **Disp:** OTC soln

L-Asparaginase (Elspar, Oncaspar) **Uses:** *ALL* (in combo w/ other agents) **Action:** Protein synth inhibitor **Dose:** 500–20,000 IU/m²/d for 1–14 d (Per protocols) **Caution:** [C, ?] **Contra:** Active/Hx pancreatitis **Disp:** Inj powder

for recons 10,000 units **SE:** Allergy 20–35% (urticaria to anaphylaxis); rare GI tox (mild N, anorexia, pancreatitis) ↑ glucose, coagulopathy **Notes:** test dose recommended, ✓ glucose, coags

Aspirin (Bayer, Ecotrin, St. Joseph's) [OTC] **Uses:** *Angina, CABG, PTCA, carotid endarterectomy, ischemic stroke, TIA, MI, arthritis, pain,*

HA, *fever,* inflammation, Kawasaki Dz **Action:** Prostaglandin inhibitor **Dose:** *Adults. Pain, fever:* 325–650 mg q4–6h PO or PR. RA: 3–6 g/d PO in ÷ doses. *Plt inhibitor:* 81–325 mg PO daily. *Prevent MI:* 81 (preferred)–325 mg PO daily.

Acute Coronary Syndrome (ECC 2005): 160–325 mg PO ASAP (chewing preferred at onset) **Peds.** Antipyretic: 10–15 mg/kg/dose PO or PR q4h up to 80 mg/kg/24 h. RA: 60–100 mg/kg/24 h PO ÷ q4–6h (keep levels 15–30 mg/dL);

avoid w/ CrCl <10 mL/min, severe liver Dz **Caution:** [C, M] Linked to Reye's synd; avoid w/viral illness in children **Contra:** Allergy to ASA, chickenpox/flu

Sxs, synd of nasal polyps, angioedema, & bronchospasm to NSAIDs **Disp:** Tabs 325, 500 mg; chew tabs 81 mg; EC tabs 81, 162, 325, 500, 650, 975 mg; SR tabs 650, 800 mg; effervescent tabs 325, 500 mg; supp 125, 200, 300, 600 mg **SE:** GI upset & erosion **Notes:** D/C 1 wk prior to surgery; avoid/limit EtOH; Salicylate

Levels Therapeutic: 100 to 250 mcg/ml; Toxic: > 300 mcg/ml

Aspirin & Butalbital Compound (Fiorinal) [C-III] **Uses:** *Tension HA,* pain **Action:** Combo barbiturate & analgesic **Dose:** 1–2 PO q4h PRN, max 6 tabs/d; avoid w/ CrCl <10 mL/min & severe liver Dz **Caution:** [C (D w/ prolonged

use or high doses at term), ?] **Contra:** ASA allergy, GI ulceration, bleeding disorder, porphyria, synd of nasal polyps, angioedema, & bronchospasm to NSAIDs

Disp: Caps (Fiorgen PF, Lanorinal), Tabs (Lanorinal) ASA 325 mg/butalbital 50 mg/cafeine 40 mg **SE:** Drowsiness, dizziness, GI upset, ulceration, bleeding **Notes:** Butalbital habit-forming; D/C 1 wk prior to surgery, avoid or limit EtOH

Aspirin + Butalbital, Caffeine, & Codeine (Fiorinal + Codeine)

[C-III] Uses: Mild *pain*, HA, especially when associated w/ stress **Action:** Sedative analgesic, narcotic analgesic **Dose:** 1–2 tabs (caps) PO q4–6h PRN max 6/day **Caution:** [D, ?] **Contra:** Allergy to ASA and codeine; synd of nasal polyps, angioedema, & bronchospasm to NSAIDs **Disp:** Cap/tab contains 325 mg ASA, 40 mg caffeine, 50 mg of butalbital, 30 mg of codeine **SE:** Drowsiness, dizziness, GI upset, ulceration, bleeding **Notes:** D/C 1 wk prior to surgery, avoid/limit ETOH

Aspirin + Codeine (Empirin No. 3, 4) [C-III] Uses: Mild to *moderate pain* **Action:** Combined effects of ASA & codeine **Dose:** *Adults.* 1–2 tabs PO q4–6h PRN. *Peds.* ASA 10 mg/kg/dose; codeine 0.5–1 mg/kg/dose q4h **Caution:** [D, M] **Contra:** Allergy to ASA/codeine, PUD, bleeding, anticoagulant Rx, children w/ chickenpox or flu Sxs synd of nasal polyps, angioedema, & bronchospasm to NSAIDs **Disp:** Tabs 325 mg of ASA & codeine (Codeine in No. 3 = 30 mg, No. 4 = 60 mg) **SE:** Drowsiness, dizziness, GI upset, ulceration, bleeding **Notes:** D/C 1 wk prior to surgery; avoid/limit ETOH

Atazanavir (Reyataz) **WARNING:** Hyperbilirubinemia may require drug D/C **Uses:** *HIV-1 Infxn* **Action:** Protease inhibitor **Dose:** 400 mg PO daily w/ food; when given w/ efavirenz 600 mg, administer atazanavir 300 mg + ritonavir 100 mg once/d; separate doses from buffered didanosine administration; ↓ in hepatic impair **Caution:** CDC recommends HIV-infected mothers not breast feed [B, –]; ↑ levels of statins, (avoid lovastatin/simvastatin) sildenafil, antiarrhythmics, warfarin, cyclosporine, TCAs; ↓ w/St. John's wort, H2 receptor antagonists **Contra:** w/midazolam, triazolam, ergots, pimozide **Disp:** Caps 100, 150, 200, 300 mg **SE:** HA, N/V/D, rash, abd pain, DM, photosens, ↑ PR interval **Notes:** May have less adverse effect on cholesterol

Atenolol (Tenormin) Uses: *HTN, angina, MI* **Action:** β-adrenergic receptor blocker **Dose:** *HTN & angina:* 50–100 mg/d PO. *AMI:* 5 mg IV × 2 over 10 min, then 50 mg PO bid if tolerated; ↓ in renal impair; 5 mg IV over 5 min; in 10 min, 5 mg slow IV; if tolerated in 10 min, start 50 mg PO, then 50 mg PO BID (*ECC 2005*) **Caution:** [D, M] DM, bronchospasm; abrupt D/C can exacerbate angina & ↑ MI risk **Contra:** Bradycardia, cardiogenic shock, cardiac failure, 2nd-/3rd-degree AV block **Disp:** Tabs 25, 50, 100 mg; inj 5 mg/10 mL **SE:** Bradycardia, ↓ BP, 2nd-/3rd-degree AV block, dizziness, fatigue

Atenolol & Chlorthalidone (Tenoretic) Uses: *HTN* **Action:** β-adrenergic blockade w/ diuretic **Dose:** 50–100 mg/d PO; ↓ in renal impair **Caution:** [D, M] DM, bronchospasm **Contra:** See atenolol; anuria, sulfonamide cross-sensitivity **Disp:** Tenoretic 50: Atenolol 50 mg/chlorthalidone 25 mg; Tenoretic 100: Atenolol 100 mg/chlorthalidone 25 mg **SE:** Bradycardia, ↓ BP, 2nd- or 3rd-degree AV block, dizziness, fatigue, ↓ K⁺, photosens

Atomoxetine (Strattera) **WARNING:** Severe liver injury may rarely occur; DC w/jaundice or ↑LFT, ↑ frequency of suicidal thinking **Uses:** *ADHD* **Action:** Selective norepinephrine reuptake inhibitor **Dose:** *Adults & chil-*

dren >70 kg, 40 mg × 3 days, ↑ 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) **Caution:** [C, ? /-] **Contra:** NAG, w/ or w/in 2 wk of D/C an MAOI **Disp:** Caps 5, 10, 18, 25, 40, 60, 80, 100 mg **SE:** ↑ BP, tachycardia, wgt loss, sexual dysfunction **Notes:** ↓ dose w/ hepatic insuff or in combo w/ CYP2D6 inhibitors (Table 11)

Atorvastatin (Lipitor) **Uses:** *↑ cholesterol & triglycerides* **Action:** HMG-CoA reductase inhibitor **Dose:** Initial 10 mg/d, may ↑ to 80 mg/d **Caution:** [X, -] **Contra:** Active liver Dz, unexplained ↑ LFT **Disp:** Tabs 10, 20, 40, 80 mg **SE:** Myopathy, HA, arthralgia, myalgia, GI upset **Notes:** Monitor LFTs, instruct patient to report unusual muscle pain or weakness

Atovaquone (Mepron) **Uses:** *Rx & prevention PCP* **Action:** ↓ nucleic acid & ATP synth **Dose:** Rx: 750 mg PO bid for 21 d. **Prevention:** 1500 mg PO once/d (w/ meals) **Caution:** [C, ?] **Disp:** Susp 750 mg/5 mL **SE:** Fever, HA, anxiety, insomnia, rash, N/V

Atovaquone/Proguanil (Malarone) **Uses:** *Prevention or Rx *P. falciparum* malaria* **Action:** Antimalarial **Dose:** **Adults:** Prevention: 1 tab PO 2 d before, during, & 7 d after leaving endemic region; Rx: 4 tabs PO single dose daily × 3 d. **Peds.** See insert **Caution:** [C, ?] **Contra:** CrCl <30 mL/min **Disp:** Tab atovaquone 250 mg/proguanil 100 mg; peds 62.5/25 mg **SE:** HA, fever, myalgia

Atracurium (Tracrium) **Uses:** *Anesthesia adjunct to facilitate ET intubation* **Action:** Nondepolarizing neuromuscular blocker **Dose:** **Adults & Peds.** 0.4–0.5 mg/kg IV bolus, then 0.08–0.1 mg/kg q20–45 min PRN **Caution:** [C, ?] **Disp:** Inj 10 mg/mL **SE:** Flushing **Notes:** Pt must be intubated & on controlled ventilation; use adequate amounts of sedation & analgesia

Atropine (AtroPen) **WARNING:** Primary protection against exposure to chemical nerve agent and insecticide poisoning is the wearing of specially designed protective garments **Uses:** *Preanesthetic; symptomatic bradycardia & asystole, organophosphate (insecticide) and acetylcholinesterase (nerve gas) inhibitor antidote; cycloplegic* **Action:** Antimuscarinic; blocks acetylcholine at parasympathetic sites, cycloplegic **Dose:** **Adults.** (2005 ECC): **Asystole or PEA:** 1 mg IV/IO push. Repeat every 3–5 min (if asystole persists) to 0.03(-0.04 mg/kg max. **Bradycardia:** 0.5–1.0 mg IV every 3–5 min as needed; max 0.03(-0.04 mg/kg; ET 2–3 mg in 10 mL NS **Preanesthetic:** 0.3–0.6 mg IM. **Poisoning:** 1–2 mg IV bolus, repeat Q 3–5 min PRN to reverse effects **Peds.** (ECC 2005): 0.01–0.03 mg/kg IV q2–5min, max 1 mg, min dose 0.1 mg. **Preanesthetic:** 0.01 mg/kg/dose SC/IV (max 0.4 mg) **Poisoning:** 0.05 mg/kg IV, repeat Q 3–5 min PRN to reverse effects **Caution:** [C, +] **Contra:** NAG **Disp:** inj 0.05, 0.1, 0.3, 0.4, 0.5, 0.8, 1 mg/mL; AtroPen Auto injector: 0.5, 1, 2 mg/dose; MDI 0.36 mg/inhal **SE:** Flushing, mydriasis, tachycardia, dry mouth & nose, blurred vision, urinary retention, constipation psychosis **Notes:** SLUDGE (Salivation, Lacrimation, Urination, Diaphoresis, Gastrointestinal motility, Emesis) are Sx of organophosphate poisoning; Autoinjector limited distribution

Atropine, ophthalmic (Isopto Atropine, generic) Uses: *cycloplegic refraction, uveitis, amblyopia * **Action:** Antimuscarinic; cycloplegic, dilates pupils **Dose: Adults.** Refraction: 1–2 gtt 1 h before; *uveitis:* 1–2 gtt daily-qid **Peds.** 1 gtt in nonamblyotic eye daily **Caution:** [C, +] **Contra:** Glaucoma **Disp:** 15-mL bottle 1% ophthalmic soln **SE:** Local irritation, burning, blurred vision, light sensitivity **Notes:** Compress lacrimal sac 2–3 min after instillation; effects can last 1–2 weeks

Atropine/pralidoxime (DuoDote) **WARNING:** For use by personnel with appropriate training; wear protective garments; do not rely solely on medication; evacuation and decontamination as soon as possible **Uses:** *Nerve agent and insecticide poisoning* **Action:** Atropine blocks effects of excess acetylcholine; pralidoxime reactivates acetylcholinesterase inactivated by organophosphorus poisoning **Dose:** 1 injection in midlateral thigh; if symptoms progress or are severe, give 2 additional injections **Caution:** [C, ?] **Contra:** Disp: Autoinjector 2.1 mg atropine/60 mg pralidoxime **SE:** Dry mouth, blurred vision, dry eyes, photophobia, confusion, HA, tachycardia, flushing, urinary retention, constipation, abd pain N, V, emesis. **Notes:** Severe sx of poisoning include confusion, dyspnea with copious secretions, weakness and twitching, involuntary urination and defecation, convulsions, unconsciousness

Azathioprine (Imuran) **WARNING:** may ↑ neoplasia w/chronic use; mutagenic and hematologic toxicity possible **Uses:** *Adjunct to prevent renal transplant rejection, RA,* SLE, Crohn Dz, ulcerative colitis **Action:** Immunosuppressive; antagonizes purine metabolism **Dose: Adults & Peds.** 1–3 mg/kg/d IV or PO; Crohn and ulcerative colitis, start 50 mg/d, ↑ 100–250 mg/d; ↓ w/renal insuff **Caution:** [D, ?] **Contra:** PRG **Disp:** Tabs 25, 50, 75, 100 mg; inj 100 mg powder for recons. **SE:** GI intolerance, fever, chills, leukopenia, 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 days pretransplant

Azelastine (Astelin, Optivar) Uses: *Allergic rhinitis (rhinorrhea, sneezing, nasal pruritus); allergic conjunctivitis* **Action:** Histamine H₁-receptor antagonist **Dose: Nasal:** 2 sprays/nostril bid. *Ophth:* 1 gtt into each affected eye bid **Caution:** [C, ?/–] **Contra:** Component sensitivity **Disp:** Nasal 137 mcg/spray; ophth soln 0.05% **SE:** Somnolence, bitter taste

Azithromycin (Zithromax) Uses: *Community-acquired pneumonia, pharyngitis, otitis media, skin Infxns, nongonococcal (chlamydial) urethritis, chancroid & PID; Rx & prevention of MAC in HIV* **Action:** 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: Cap 500 mg day 1, then 250 mg/d PO × 4 days ; *sinusitis* 500 mg/d PO × 3 days; *IV:* 500 mg × 2 days, then 500 mg PO × 7–10 days or 500 mg IV daily × 2 days, then 500 mg/day PO X 7–10 days *Nongonococcal urethritis:* 1 g PO X1. *Gonorrhea, uncomplicated* 2 mg PO X1; *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:** 12 mg/kg/d PO × 5 d (susp on empty stomach; tabs OK w/wo food; ↓ w/CrCl < 10 mL/mg **Caution:** [B, +] **Disp:** Tabs 250, 500, 600 mg; Z-Pack (5-day, 250 mg); Tri-Pak (500-mg tabs × 3); susp 1-g; single-dose packet (ZMAX) ER susp. (2 gm); susp 100, 200 mg/5 mL; powder for reconstitutions 500, 2.5-mg ophtn soln 1% **SE:** GI upset, metallic taste

Aztreonam (Azactam) **Uses:** *Aerobic gram(–) UTIs, lower resp, intra-abd, skin, gynecologic Infxns & septicemia* **Action:** Monobactam. ↓ Cell wall synth. **Spectrum:** Gram(–) (*Pseudomonas*, *E. coli*, *Klebsiella*, *H. influenzae*, *Serratia*, *Proteus*, *Enterobacter*, *Citrobacter*) **Dose: Adults.** 1–2 g IV/IM q6–12h. **Peds.** Premature: 30 mg/kg/dose IV q12h. Term & children: 30 mg/kg/dose q6–8h; ↓ in renal impair **Caution:** [B, +] **Disp:** Inj (soln), 1 g, 2 gm/ 50 mL Inj powder for reconstitutions 500 mg 1 g, 2 gm **SE:** N/V/D, rash, pain at injection site **Notes:** No gram(+) or anaerobic activity; OK in PCN-allergic pts

Bacitracin, Ophthalmic (AK-Tracin Ophthalmic); Bacitracin & Polymyxin B, Ophthalmic (AK Poly Bac Ophthalmic, Polysporin Ophthalmic); Bacitracin, Neomycin, & Polymyxin B, Ophthalmic (AK Spore Ophthalmic, Neosporin Ophthalmic); Bacitracin, Neomycin, Polymyxin B, & Hydrocortisone, Ophthalmic (AK Spore HC Ophthalmic, Cortisporin Ophthalmic) **Uses:** *Steroid-responsive inflammatory ocular conditions* **Action:** Topical antibiotic w/anti-inflammatory **Dose:** Apply q3–4h into conjunctival sac **Caution:** [C, ?] **Contra:** Viral, mycobacterial, fungal eye Infxn **Disp:** See Bacitracin, Topical equivalents, below

Bacitracin, Topical (Baciguent); Bacitracin & Polymyxin B, Topical (Polysporin); Bacitracin, Neomycin, & Polymyxin B, Topical (Neosporin Ointment); Bacitracin, Neomycin, Polymyxin B, & Hydrocortisone, Topical (Cortisporin); Bacitracin, Neomycin, Polymyxin B, & Lidocaine, Topical (Clomycin) **Uses:** Prevent/Rx of *minor skin Infxns* **Action:** Topical antibiotic w/added components (anti-inflammatory & analgesic) **Dose:** Apply sparingly bid-qid **Caution:** [C, ?] **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 U/g oint; Bacitracin 400 Units/neomycin 3.5 mg/polymyxin B 10,000 Units/hydrocortisone 10 mg/g oint; Bacitracin 500 Units/neomycin 3.5 mg/polymyxin B 5000 Units/lidocaine 40 mg/g oint **Notes:** Systemic & irrigation forms available, but not generally used due to potential tox

Baclofen (Lioresal Intrathecal, generic) **WARNING:** IT abrupt discontinuation can lead to organ failure, rhabdomyolysis, and death **Uses:** *Spasticity due to severe chronic disorders (eg, MS, ALS, or spinal cord lesions),* trigeminal neuralgia, hiccups **Action:** 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. *Intrathecal*: via implantable pump (see insert) **Peds.** 2–7 y.: 10–15 mg/d ÷ q8h; titrate, max 40 mg/d. >8 y.: Max 60 mg/d. *IT*: via implantable pump; ↓ in renal impair; w/food or milk **Caution:** [C, +] Epilepsy, neuropsychiatric disturbances; **Disp:** Tabs 10, 20 mg; IT inj 50 mcg/mL 10 mg/20 mL, 10 mg/5 mL **SE:** Dizziness, drowsiness, insomnia, ataxia, weakness, ↓ BP

Balsalazide (Colazal) **Uses:** *Ulcerative colitis* **Action:** 5-ASA derivative, anti-inflammatory, ↓ leukotriene synth **Dose:** 2.25 g (3 caps) tid × 8–12 wk **Caution:** [B, ?] Severe renal/hepatic failure **Contra:** Mesalamine or salicylates hypersensitivity **Disp:** Caps 750 mg **SE:** Dizziness, HA, N, agranulocytosis, pancytopenia, renal impair, allergic Rxns **Notes:** Daily dose of 6.75 g = to 2.4 g mesalamine

Basiliximab (Simulect) **WARNING:** Administer only under the supervision of a physician experienced in immunosuppression therapy in an appropriate facility **Uses:** *Prevent acute transplant rejection* **Action:** IL-2 receptor antagonists **Dose:** *Adults.* 20 mg IV 2 h before transplant, then 20 mg IV 4 d post. **Peds.** 12 mg/m² ↑ to max of 20 mg 2 h prior to transplant; same dose IV 4 d post **Caution:** [B, ?/–] avoid w/other immunosuppressants **Contra:** Hypersensitivity to murine proteins **Disp:** Inj: powder for recons 10, 20 mg **SE:** Edema, HTN, HA, dizziness, fever, pain, Infxn, GI effects, electrolyte disturbances **Notes:** A murine/human MoAb

BCG [Bacillus Calmette-Guérin] (TheraCys, Tice BCG) **Uses:** *Bladder carcinoma (superficial),* TB prophylaxis **Action:** Immunomodulator **Dose:** Bladder CA, 1 vial prepared & instilled in bladder for 2 h. Repeat once/wk for 6 wk; then 1 treatment at 3, 6, 12, 18, & 24 mo after initial therapy **Caution:** [C, ?] Asthma **Contra:** Immunosuppression, UTI, steroid use, acute illness, fever of unknown origin, w/traumatic catheterization or UTI **Disp:** Inj powder for recons 81 mg (10.5 ± 8.7 × 10⁸ CFU vial) (TheraCys), 50 mg (1–8 × 10⁸ CFU/vial) (Tice BCG) **SE:** *Intravesical:* Hematuria, urinary frequency, dysuria, bacterial UTI, rare BCG sepsis **Notes:** Routine US adult BCG immunization not rec; occasionally used in high-risk children who are PPD(–) & cannot take INH, dispose/void in toilet with chlorine bleach

Becaplermin (Regranex Gel) **Uses:** Adjunct to local wound care w/ *diabetic foot ulcers* **Action:** Recombinant PDGF, enhances granulation tissue **Dose:** Based on lesion; 11/3-in. ribbon from 2-g tube, 2/3-in. ribbon from 15-g tube/in. × in² of ulcer; apply & cover w/moist gauze; rinse after 12 h; do not reapply; repeat in 12 h **Caution:** [C, ?] **Contra:** Neoplasm/or active site Infxn **Disp:** 0.01% gel in 2-, 15-g tubes **SE:** Erythema, local pain **Notes:** Use w/ good wound care; wound must be vascularized

Beclomethasone (Beconase) **Uses:** *Allergic rhinitis* refractory to antihistamines & decongestants; *nasal polyps* **Action:** Inhaled steroid **Dose:** *Adults & Peds 6–12 y.* *Aqueous inhal:* 1–2 sprays/nostril twice daily **Caution:**

[C, ?] **Disp:** Nasal met-dose inhaler **SE:** Local irritation, burning, epistaxis **Notes:** Nasal spray delivers 42 mcg/dose

Beclomethasone (QVAR) **Uses:** Chronic *asthma* **Action:** Inhaled corticosteroid **Dose:** *Adults & Peds* 5–11 y. 40–160 mcg 1–4 inhal bid; initial 40–80 mcg inhal bid if on bronchodilators alone; 40–160 mcg w/other inhaled steroids; 320 mcg bid max; taper to lowest effective dose bid rinse mouth/throat after

Caution: [C, ?] **Contra:** Acute asthma **Disp:** PO met-dose inhaler; 40, 80 mcg/inhal **SE:** HA, cough, hoarseness, oral candidiasis **Notes:** Not effective for acute asthma

Belladonna & Opium Suppositories (B&O Supporettes) [C-II]

Uses: *Bladder spasms; moderate/severe pain* **Action:** Antispasmodic, analgesic **Dose:** 1 supp PR q6h PRN; 15A = 30 mg powdered opium/16.2 mg belladonna extract; 16A = 60 mg powdered opium/16.2 mg belladonna extract

Caution: [C, ?] **Contra:** Glaucoma, resp dep **Disp:** Supp 15A, 16A **SE:** Anticholinergic (eg, sedation, urinary retention, constipation)

Benazepril (Lotensin) **Uses:** *HTN,* DN, CHF **Action:** ACE inhibitor **Dose:** 10–40 mg/d PO **Caution:** [C (1st tri), D (2nd & 3rd tri), +] **Contra:** Angioedema, Hx edema, bilateral RAS

Disp: Tabs 5, 10, 20, 40 mg **SE:** Symptomatic ↓ BP w/ diuretics; dizziness, HA, ↑ K⁺, nonproductive cough

Benzocaine & Antipyrine (Auralgan) **Uses:** *Analgesia in severe otitis media* **Action:** Anesthetic w/ local decongestant **Dose:** Fill ear & insert a moist cotton plug; repeat 1–2 h PRN

Caution: [C, ?] **Contra:** w/ perforated eardrum **Disp:** Soln 5.4% antipyrine, 1.4% benzocaine **SE:** Local irritation

Benzonatate (Tessalon Perles) **Uses:** Symptomatic relief of *cough*

Action: Anesthetizes the stretch receptors in the resp passages **Dose:** *Adults & Peds* >10 y. 100 mg PO tid (max 600 mg/day) **Caution:** [C, ?] **Disp:** Caps 100, 200 mg

SE: Sedation, dizziness, GI upset **Notes:** Do not chew or puncture the caps

Benzotropine (Cogentin) **Uses:** *Parkinsonism & drug-induced extrapyramidal disorders* **Action:** Partially blocks striatal cholinergic receptors **Dose:** *Adults.* 0.5–6 mg PO, IM, or IV in ÷ doses/d to 4 mg/day max *Peds* >3 y.

0.02–0.05 mg/kg/dose 1–2/d **Caution:** [C, ?] **Contra:** < 3 y, myasthenia gravis **Disp:** Tabs 0.5, 1, 2 mg; inj 1 mg/mL

SE: Anticholinergic side effects **Notes:** Physostigmine 1–2 mg SC/IV to reverse severe Sxs

Beractant (Survanta) **Uses:** *Prevention & Rx of RDS in premature infants* **Action:** Replaces pulm surfactant **Dose:** 100 mg/kg via ET tube; repeat 3 × q6h PRN; max 4 doses/48 h

Disp: Susp 25 mg of phospholipid/mL **SE:** Transient bradycardia, desaturation, apnea **Notes:** Administer via 4-quadrant method

Betaxolol (Kerlone) **Uses:** *HTN* **Action:** Competitively blocks β-adrenergic receptors, b₁ **Caution:** [C (1st tri), D (2nd or 3rd tri), +/-] **Contra:** Sinus bradycardia, AV conduction abnormalities, uncompensated cardiac failure

Dose: 5–20 mg/d **Disp:** Tabs 10, 20 mg **SE:** Dizziness, HA, bradycardia, edema, CHF

Betaxolol, Ophthalmic (Betoptic) **Uses:** Open-angle glaucoma **Action:** Competitively blocks β-adrenergic receptors, b₁ **Dose:** 1–2 gtt bid **Caution:**

[C (1st tri), D (2nd or 3rd tri), ?/–] **Disp:** Soln 0.5%; susp 0.25% **SE:** Local irritation, photophobia

Bethanechol (Urecholine, Duvoid, others) **Uses:** *Neurogenic bladder atony w/ retention,* acute *postop* & postpartum functional *(nonobstructive) urinary retention* **Action:** Stimulates cholinergic smooth muscle receptors in bladder & GI tract **Dose:** *Adults.* 10–50 mg PO tid-qid or 2.5–5 mg SQ tid-qid & PRN. *Peds.* 0.6 mg/kg/24 h PO ÷ tid-qid or 0.15–2 mg/kg/d SQ ÷ 3–4 × (take on empty stomach) **Caution:** [C, ?/–] **Contra:** BOO, PUD, epilepsy, hyperthyroidism, bradycardia, COPD, AV conduction defects, parkinsonism, ↓BP, vasomotor instability **Disp:** Tabs 5, 10, 25, 50 mg; inj 5 mg/mL **SE:** Abd cramps, D, salivation, ↓BP **Notes:** Do not use IM/IV

Bevacizumab (Avastin) **WARNING:** Associated w/ GI perforation, wound dehiscence, & fatal hemoptysis **Uses:** *Met colorectal ca, w/5-FU NSCLC w/paclitaxel and carboplatin* **Action:** Vascular endothelial GF inhibitor **Dose:** *Adults. Colon:* 5 mg/kg or 10 mg/kg IV q14d; *NSCLC:* 15 mg/kg Q 21 days; 1st dose over 90 min; 2nd over 60 min, 3rd over 30 min if tolerated **Caution:** [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 events **Disp:** 100 mg/4 mL, 400 mg/16 mL vials **SE:** Wound dehiscence, GI perforation, tracheo-esophageal fistula, hemoptysis, hemorrhage, HTN, proteinuria, CHF, inf Rxns, D, leucopenia, thromboembolism **Notes:** Monitor for ↑BP & proteinuria

Bicalutamide (Casodex) **Uses:** *Advanced CAP (met)* (w/ GnRH agonists [eg, leuprolide, goserelin]) **Action:** Nonsteroidal antiandrogen **Dose:** 50 mg/d **Caution:** [X, ?] **Contra:** Women **Disp:** Caps 50 mg **SE:** Hot flashes, loss of libido, impotence, D/N/V, gynecomastia, & LFT elevation

Bicarbonate (See Sodium Bicarbonate, page 188)

Bisacodyl (Dulcolax) [OTC] **Uses:** *Constipation; preop bowel prep* **Action:** 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) **Caution:** [B, ?] **Contra:** Acute abdomen or bowel obst, appendicitis, gastroenteritis **Disp:** EC tabs 5 mg; DR Tab 5 mg; supp 10 mg, enema soln 10 mg/30 mL **SE:** Abd cramps, proctitis, & inflammation w/ suppositories

Bismuth Subcitrate/Metronidazole/Tetracycline (Pylera) **WARNING:** Metronidazole carcinogenic in mice and rats; avoid use unless absolutely necessary **Uses:** **H. pylori* infection w/ omeprazole* **Action:** eradication of *H. pylori*, see agents **Dose:** 3 caps 4X day w/omeprazole 20 mg 2X day for 10 days **Caution:** [D, –] **Contra:** Pregnancy, childhood to 8 yrs (tetracycline during tooth development causes teeth discoloration), w/renal/hepatic impair, component hypersensitivity **Disp:** Caps w/ 140 mg bismuth subcitrate potassium, 125 mg metronidazole, and 125 mg tetracycline hydrochloride **SE:** stool abnormality, D, dyspepsia, abd pain, HA, flu-like synd, taste perversion, vaginitis, dizziness; see SE for each component

Bismuth Subsalicylate (Pepto-Bismol) [OTC] Uses: Indigestion, N, & *D;* combo for Rx of *H. pylori* Infxn* **Action:** Antisecretory & anti-inflammatory **Dose:** *Adults:* 2 tabs or 30 mL PO PRN (max 8 doses/24 h). *Peds:* 3–6 y: 1/3 tab or 5 mL PO PRN (max 8 doses/24 h). 6–9 y: 2/3 tab or 10 mL PO PRN (max 8 doses/24 h). 9–12 y: 1 tab or 15 mL PO PRN (max 8 doses/24 h) **Caution:** [C, D (3rd tri), –] Avoid w/renal failure; hx severe GI bleed **Contra:** Influenza or chickenpox (↑ risk of Reye's synd), ASA allergy (see aspirin) **Disp:** Chew tabs 262 mg; Caplets 262 mg, liq 262, 525 mg/15 mL, susp 262 mg/15 mL **SE:** May turn tongue & stools black

Bisoprolol (Zebeta) Uses: *HTN* **Action:** Competitively blocks β_1 -adrenergic receptors **Dose:** 2.5–10 mg/d (max dose 20 mg/d); ↓ w/renal impair **Caution:** [C (D 2nd & 3rd tri), +/-] **Contra:** Sinus bradycardia, AV conduction abnormalities, uncompensated cardiac failure **Disp:** Tabs 5, 10 mg **SE:** Fatigue, lethargy, HA, bradycardia, edema, CHF **Notes:** Not dialyzed

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

Bleomycin Sulfate (Blenoxane) Uses: *Testis CA; Hodgkin Dz & NHLs; cutaneous lymphomas; & squamous cell CA (head & neck, larynx, cervix, skin, penis); malignant pleural effusion sclerosing agent* **Action:** Induces DNA breakage (scission) **Dose:** (Per protocols); ↓ w/renal impair **Caution:** [D, ?] Severe pulm Dz (pulm fibrosis) **Disp:** Inj: Powder for recons 15, 30 units **SE:** Hyperpigmentation (skin staining) & 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

Bortezomib (Velcade) **WARNING:** May worsen preexisting neuropathy **Uses:** *Rx multiple myeloma or mantle cell lymphoma with one previous RX* **Action:** Proteasome inhibitor **Dose:** 1.3 mg/m² bolus IV 2 \times /wk \times 2 wk, w/ 10-day rest period (=1 cycle); ↓ dose w/hematologic tox, neuropathy **Caution:** [D, ?–] w/drugs CYP450 metabolized (Table 11) **Disp:** 3.5-mg vial **SE:** Asthenia, GI upset, anorexia, dyspnea, HA, orthostatic ↓ BP, edema, insomnia, dizziness, rash, pyrexia, arthralgia, neuropathy

Botulinum Toxin Type A (Botox, Botox Cosmetic) Uses: *Glabellar lines (cosmetic), blepharospasm, cervical dystonia, axillary hyperhidrosis, strabismus* **Action:** ↓ acetylcholine release from nerve endings, ↓ neuromuscular transmission and local muscle activity; neurotoxin **Dose:** *Adults: Glabellar lines (cosmetic):* 0.1 mL IM \times 5 sites q3–4mo; *Blepharospasm:* 1.25–2.5 units IM/site

q3mo; max 200 units/30 d cum dose; *cervical dystonia* 198–300 units IM divided <100 units into sternocleidomastoid; *hyperhidrosis, axillary*: 50 units intradermal/axilla divided; *strabismus*: 1.25–2.5 units IM/site q3mo; inject extraocular muscles w/ EMG guidance **Peds**: *Blepharospasm* >12 y: see adult; *cervical dystonia* >16 y: 198–300 units IM ÷ among affected muscles; use <100 units in sternocleidomastoid; *strabismus* >12 y: 1.25–2.5 units IM/site q3mo; 25 units/site max; inject extraocular muscles w/ EMG guidance **Caution**: [C, ?] w/neurologic Dz **Contra**: hypersensitivity to components, infect at inj site **Disp**: powder for reconst **SE**: Anaphylaxis, erythema multiforme, dysphagia, dyspnea, syncope, HA, NAG, inj site pain

Brimonidine (Alphagan P) **Uses**: *Open-angle glaucoma, ocular HTN* **Action**: α_2 -Adrenergic agonist **Dose**: 1 gtt in eye(s) tid (wait 15 min to insert contacts) **Caution**: [B, ?] **Contra**: MAOI therapy **Disp**: 0.15, 0.1% soln **SE**: Local irritation, HA, fatigue

Brinzolamide (Azopt) **Uses**: *Open-angle glaucoma, ocular HTN* **Action**: Carbonic anhydrase inhibitor **Dose**: 1 gtt in eye(s) tid **Caution**: [C, ?] **Contra**: Sulfonamide allergy **Disp**: 1% susp **SE**: Blurred vision, dry eye, blepharitis, taste disturbance

Bromocriptine (Parlodel) **Uses**: *Parkinson Dz, hyperprolactinemia, acromegaly, pituitary tumors* **Action**: Direct-acting on the striatal dopamine receptors; ↓ prolactin secretion **Dose**: Initial, 1.25 mg PO bid; titrate to effect, w/food **Caution**: [B, ?] **Contra**: Severe ischemic heart Dz or PVD **Disp**: Tabs 2.5 mg; caps 5 mg **SE**: ↓ BP, Raynaud phenomenon, dizziness, N, hallucinations

Budesonide (Rhinocort Aqua, Pulmicort) **Uses**: *Allergic & non-allergic rhinitis, asthma* **Action**: Steroid **Dose**: **Adults**: Rhinocort Aqua 1–4 sprays/nostril/d; Turbuhaler 1–4 inhal bid; Pulmicort Flexhaler 1–2 inhal bid **Peds**: Rhinocort Aqua intranasal 1–2 sprays/nostril/d; Pulmicort Turbuhaler 1–2 inhal bid, Respules: 0.25–0.5 mg daily or bid (Rinse mouth after PO use) **Caution**: [C, ?/–] **Disp**: Met-dose Turbuhaler, 200 mcg/inhalation; Flexhaler 90, 180 mcg/inh.; Respules 0.25, 0.5 mg/2 mL; Rhinocort Aqua 32 mcg/spray **SE**: HA, cough, hoarseness, *Candida* Infxn, epistaxis

Budesonide, oral (Entocort EC) **Uses**: *Mild-moderate Crohn Dz* **Action**: Steroid, anti-inflammatory **Dose**: **Adults**: initial, 9 mg PO qam to 8 wk max; maint 6 mg PO qam taper by 3 mo; avoid grapefruit juice **Contra**: Active TB and fungal Infxn **Caution**: [C, ?/–] DM, glaucoma, cataracts, HTN, CHF **Disp**: Caps 3 mg ER **SE**: HA, cough, hoarseness, *Candida* Infxn, epistaxis **Notes**: Do not cut/crush/chew

Budesonide/formoterol (Symbicort) **WARNING**: Long-acting B2 agonists may ↑ risk of asthma-related death **Uses**: *Asthma maintenance* **Action**: Steroid w/LA beta-2-agonist **Dose**: **Adult and Peds** > 12 y.: 2 inhal BID **Caution**: [C, ?] w/transfer from systemic to inhal steroids **Contra**: acute attack **Disp**: inhal 80/4.5, 160/4.5 **SE**: allergic rxns, HA, tremor, ↑ BP & HR, ↑ infection risk, throat irritation, growth ↓ in children

Bumetanide (Bumex) Uses: *Edema from CHF, hepatic cirrhosis, & renal Dz* **Action:** 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) for PO and IV. **Peds.** 0.015–0.1 mg/kg/d PO, q6h–24h **Caution:** [D, ?] **Contra:** Anuria, hepatic coma, severe electrolyte depletion **Disp:** Tabs 0.5, 1, 2 mg; inj 0.25 mg/mL **SE:** ↓ K⁺, ↓ Na⁺, ↑ creatinine, ↑ uric acid, dizziness, ototoxic **Notes:** Monitor fluid & lytes

Bupivacaine (Marcaine) Uses: *Local, regional, & spinal anesthesia, local & regional analgesia* **Action:** Local anesthetic **Dose: Adults & Peds.** Dose dependent on procedure (tissue vascularity, depth of anesthesia, etc) (Table 2) **Caution:** [C, ?] **Contra:** Severe bleeding, ↓ BP, shock & arrhythmias, local Infxns at anesthesia site, septicemia **Disp:** Inj 0.25, 0.5, 0.75% **SE:** ↓ BP, bradycardia, dizziness, anxiety

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

Bupropion (Wellbutrin, Wellbutrin SR, Wellbutrin XL, Zyban)

WARNING: Closely monitor for worsening depression or emergence of suicidality, increased suicidal behavior in young adults **Uses:** *Depression, adjunct to smoking cessation* **ADHD Action:** Weak inhibitor 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 not after 6 PM; ↓ renal/hepatic impair **Caution:** [C, ?/–] **Contra:** Sz disorder, Hx anorexia nervosa or bulimia, MAOI, w/in 14 d, abrupt D/C of EtOH or sedatives **Disp:** Tabs 75, 100 mg; SR tabs 50, 100, 150, 200 mg; XL tabs 150, 300 mg; Zyban 150 mg tabs **SE:** Szs, agitation, insomnia, HA, tachycardia **Notes:** Avoid EtOH & other CNS depressants, SR and XR do not cut/chew/crush

Buspiron (BuSpar) **WARNING:** Closely monitor for worsening depression or emergence of suicidality **Uses:** Short-term relief of *anxiety* **Action:** Antianxiety; antagonizes CNS serotonin receptors **Dose:** Initial: 7.5 mg PO bid; ↑ by 5 mg q 2–3 days to effect; usual 20–30 mg/d; max 60 mg/d **Contra:** w/ MAOI **Caution:** [B, ?/–] avoid w/severe hepatic/renal insuff **Disp:** Tabs dividose 5, 10, 15, 30 mg **SE:** Drowsiness, dizziness, HA, N, EPS, serotonin synd, hostility, depression **Notes:** No abuse potential or physical/psychologic dependence

Busulfan (Myleran, Busulfex) Uses: *CML,* preparative regimens for allogeneic & ABMT in high doses **Action:** Alkylating agent **Dose:** (per protocol) **Caution:** [D, ?] **Disp:** Tabs 2 mg, inj 60 mg/10 mL **SE:** ↓ BM, pulm fibrosis, N (w/high-dose), gynecomastia, adrenal insuff, & skin hyperpigmentation

Butorphanol (Stadol) [C-IV] Uses: *Anesthesia adjunct, pain* & migraine HA **Action:** Opiate agonist-antagonist w/ central analgesic actions **Dose:**

1–4 mg IM or IV q3–4h PRN. *Migraine*: 1 spray in 1 nostril, repeat x 1 60–90 minutes, then q3–4 hrs. ↓ in renal impair **Caution**: [C (D if high dose or prolonged use at term), +] **Disp**: Inj 2 mg/mL; nasal 1 mg/spray **SE**: Drowsiness, dizziness, nasal congestion **Notes**: May induce withdrawal in opioid dependency

Calcipotriene (Dovonex) **Uses**: *Plaque psoriasis* **Action**: Keratolytic **Dose**: Apply bid **Caution**: [C, ?] **Contra**: ↑ Ca²⁺; vitamin D tox; do not apply to face **Disp**: Cream; oint; soln 0.005% **SE**: Skin irritation, dermatitis

Calcitonin (Fortical, Miacalcin) **Uses**: *Paget Dz of bone, ↑ Ca²⁺, *osteogenesis imperfecta, *postmenopausal osteoporosis* **Action**: Polypeptide hormone **Dose**: *Paget Dz*: 100 units/d IM/SC initial, 50 units/d or 50–100 units q1–3d maint. ↑ Ca²⁺ 4 units/kg IM/SC q12h; ↑ to 8 units/kg q12h, max q6h. *Osteoporosis*: 100 units/qod IM/SQ; intranasal 200 units = 1 nasal spray/d **Caution**: [C, ?] **Disp**: Spray, nasal 200 units/activation; inj, salmon 200 units/mL (2 mL) **SE**: Facial flushing, N, injection site edema, nasal irritation, polyuria **Notes**: For nasal spray alternate nostrils daily

Calcitriol (Rocaltrol, Calcijex) **Uses**: *Reduction of ↑ PTH levels, ↓ Ca²⁺ on dialysis* **Action**: 1,25-Dihydroxycholecalciferol (vitamin D analog) **Dose**: *Adults. Renal failure*: 0.25 mcg/d PO, ↑ 0.25 mcg/d q4–6wk PRN; 0.5 mcg 3 x/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 **Caution**: [C, ?] **Contra**: ↑ Ca²⁺; vitamin D tox **Disp**: Inj 1, 2 mcg/mL (in 1-mL); caps 0.25, 0.5 mcg; sol 1 mcg/mL **SE**: ↑ Ca²⁺ possible **Notes**: Monitor to keep Ca²⁺ WNL

Calcium Acetate (PhosLo) **Uses**: *ESRD-associated hyperphosphatemia* **Action**: Ca²⁺ suppl w/o aluminum to ↓ PO₄⁻² absorption **Dose**: 2–4 tabs PO w/ meals **Caution**: [C, ?] **Contra**: ↑ Ca²⁺ **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* **Action**: Neutralizes gastric acid **Dose**: 500 mg–2 g PO PRN; ↓ in renal impair **Caution**: [C, ?] **Disp**: Chew tabs 350, 420, 500, 550, 750, 850 mg; susp **SE**: ↑ Ca²⁺, ↓PO₄, constipation

Calcium Glubionate (Neo-Calglucon) [OTC] **Uses**: *Rx & prevent calcium deficiency* **Action**: Ca²⁺ suppl **Dose**: *Adults*. 6–18 g/d ÷ doses. *Peds*. 600–2000 mg/kg/d ÷ qid (9 g/d max); ↓ in renal impair **Caution**: [C, ?] **Contra**: ↑ Ca²⁺ **Disp**: OTC syrup 1.8 g/5 mL = elemental Ca 115 mg/5 mL **SE**: ↑ Ca²⁺, ↓PO₄, constipation

Calcium Salts (Chloride, Gluconate, Gluceptate) **Uses**: *Ca²⁺ replacement,* VF, Ca²⁺ blocker tox, Mg²⁺ intox, tetany, *hyperphosphatemia in ESRD* **Action**: Ca²⁺ suppl/replacement **Dose**: *Adults. Replacement*: 1–2 g/d PO. *Tetany*: 1 g CaCl over 10–30 min; repeat in 6 h PRN; *Hyperkalemia/calcium channel blocker overdose*: 8–16 mg/kg (usually 5–10 mL) IV; 2–4 mg/kg

(usually 2 mL) IV before IV calcium blockers (*ECC 2005*) **Peds.** Replacement: 200–500 mg/kg/24 h PO or IV ÷ qid. *Cardiac emergency:* 100 mg/kg/dose IV gluconate salt q 10 min. *Tetany:* 10 mg/kg CaCl over 5–10 min; repeat in 6 h or use inf (200 mg/kg/d max). **Adult & Peds.** ↓ Ca²⁺ due to citrated blood inf: 0.45 mEq Ca/100 mL citrated blood inf (↓ in renal impair) **Caution:** [C, ?] **Contra:** ↑ Ca²⁺ **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:** Bradycardia, cardiac arrhythmias, ↑ Ca²⁺ **Notes:** CaCl 270 mg (13.6 mEq) elemental Ca/g, & calcium gluconate 90 mg (4.5 mEq) Ca/g. RDA for Ca: Adults = 800 mg/d; Peds = <6 mo. 360 mg/d, 6 mo–1 y. 540 mg/d, 1–10 y. 800 mg/d, 10–18 y. 1200 mg/d

Calfactant (Infasurf) **Uses:** *Prevention & Rx of RSD in infants* **Action:** Exogenous pulm surfactant **Dose:** 3 mL/kg instilled into lungs. Can retreat for a total of 3 doses given 12 h apart **Caution:** [?, ?] **Disp:** Intratracheal susp 35 mg/mL **SE:** Monitor for cyanosis, airway obst, bradycardia during administration

Candesartan (Atacand) **Uses:** *HTN,* DN, CHF **Action:** Angiotensin II receptor antagonist **Dose:** Z-32 mg/d (usual 16 mg/d) **Caution:** [C (first trim, D (second & third trim), -)] **Contra:** Primary hyperaldosteronism; bilateral RAS **Disp:** Tabs 4, 8, 16, 32 mg **SE:** Dizziness, HA, flushing, angioedema

Capsaicin (Capsin, Zostrix, others) [OTC] **Uses:** Pain due to *postherpetic neuralgia,* chronic neuralgia, *arthritis, diabetic neuropathy,* postop pain, psoriasis, intractable pruritus **Action:** Topical analgesic **Dose:** Apply tid-qid **Caution:** [C, ?] **Disp:** OTC creams; gel; lotions; roll-ons **SE:** Local irritation, neurotox, cough **Note:** Weeks to onset of action

Captopril (Capoten, others) **Uses:** *HTN, CHF, MI,* LVD, DN **Action:** ACE inhibitor **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 <2 mo: 0.05–0.5 mg/kg/dose PO q8–24h. **Children:** Initial, 0.3–0.5 mg/kg/dose PO; ↑ to 6 mg/kg/d max in 2–4 divided doses; 1 h before meals **Caution:** [C (1st tri); D (2nd & 3rd tri) +]; unknown effects in renal impair **Contra:** Hx angioedema, bilateral RAS **Disp:** Tabs 12.5, 25, 50, 100 mg **SE:** Rash, proteinuria, cough, ↑ K+

Carbamazepine (Tegretol XR, Carbatrol, Epitol) **WARNING:** Aplastic anemia & agranulocytosis have been reported w/ carbamazepine **Uses:** *Epilepsy, trigeminal neuralgia,* EtOH withdrawal **Action:** Anticonvulsant **Dose:** **Adults.** Initial, 200 mg PO bid; or 100 mg 4 times/day as susp; ↑ by 200 mg/d; usual 800–1200 mg/d ÷ doses. **Peds.** <6 y: 5 mg/kg/d, ↑ to 10–20 mg/kg/d ÷ in 2–4 doses. 6–12 y: Initial, 100 mg PO bid or 10 mg/kg/24 h PO ÷ daily-bid; ↑ to maint 20–30 mg/kg/24 h ÷ tid-qid; ↓ in renal impair; take w/food **Caution:** [D, +] **Contra:** MAOI use, Hx BM suppression **Disp:** Tabs 100, 200, 300, 400 mg; chew tabs 100 mg, 200 mg; xr tabs 100, 200, 400 mg; Caps ER 100, 200, 300 mg; susp 100

mg/5 mL **SE:** Drowsiness, dizziness, blurred vision, N/V, rash, ↓ Na⁺, leukopenia, agranulocytosis **Notes:** Monitor CBC & levels: *Trough:* Just before next dose; *Therapeutic:* Peak 8–12 mcg/ml (monotherapy), 4–8 (polytherapy); *Toxic Trough* > 12 mcg/mL; ½ life: 15–20 h; generic products not interchangeable, many drug interactions, administer susp in 3–4 div doses daily

Carbidopa/Levodopa (Sinemet, Parcopa) **Uses:** *Parkinson Dz* **Action:** ↑ CNS dopamine levels **Dose:** 25/100 mg bid-qid; ↑ as needed (max 200/2000 mg/d) **Caution:** [C, ?] **Contra:** NAG, suspicious skin lesion (may activate melanoma), melanoma, MAOI use **Disp:** Tabs (mg carbidopa/mg levodopa) 10/100, 25/100, 25/250; tabs SR (mg carbidopa/mg levodopa) 25/100, 50/200; ODT (oral disintegrating tab) 10/100, 25/100, 25/250, **SE:** Psychiatric disturbances, orthostatic ↓ BP, dyskinesias, cardiac arrhythmias

Carboplatin (Paraplatin) **WARNING:** Administration only by physician experienced in cancer chemotherapy; BM suppression possible, Anaphylaxis may occur **Uses:** *Ovarian*, lung, head & neck, testicular, urothelial, & brain *CA, NHL* & allogeneic & ABMT in high doses **Action:** DNA cross-linker; forms DNA-platinum adducts **Dose:** 360 mg/m² (ovarian carcinoma); AUC dosing 4–7 mg/mL (Culvert 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) **Caution:** [D, ?] **Contra:** Severe BM suppression, excessive bleeding **Disp:** Inj 50, 150, 450 mg vial (10mg/mL) **SE:** Anaphylaxis, ↓ BM, N/V/D, nephrotox, hematuria, neurotox, ↑ LFTs **Notes:** Physiologic dosing based on Culvert or Egorin formula allows ↑ doses w/ ↓ tox

Carisoprodol (Soma) **Uses:** *Adjunct to sleep & physical therapy to relieve painful musculoskeletal conditions* **Action:** Centrally acting muscle relaxant **Dose:** 350 mg PO tid-qid **Caution:** [C, M] Tolerance may result; w/ renal/hepatic impair **Contra:** Allergy to meprobamate; acute intermittent porphyria **Disp:** Tabs 350 mg **SE:** CNS depression, drowsiness, dizziness, tachycardia **Notes:** Avoid EtOH & other CNS depressants; available in combo w/ ASA or codeine.

Carmustine [BCNU] (BiCNU, Gliadel) **Uses:** *Primary brain tumors, melanoma, Hodgkin's lymphoma & NHLs, multiple myeloma, & induction for allogeneic & ABMT in high doses; adjunct to surgery in pts w/ recurrent glioblastoma* **Action:** 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; 300–900 mg/m² in BMT (per protocols); ↓ w/hepatic impair **Caution:** [D, ?] ↓ WBC, RBC, plt counts, renal/hepatic impair **Contra:** ↓ BM, PRG **Disp:** Inj 100 mg/vial; wafer: 7.7 mg **SE:** ↓BP, N/V, ↓ WBC & plt, phlebitis, facial flushing, hepatic/renal dysfunction, pulm fibrosis, optic neuroretinitis; hematologic tox may persist 4–6 wk after dose **Notes:** Do not give course more frequently than q6wk (cumulative tox); ✓ baseline PFTs

Carteolol (Cartrol, Ophthalmic) **Uses:** *HTN, ↑ intraocular pressure, chronic open-angle glaucoma* **Action:** Blocks β-adrenergic receptors (β₁, β₂),

mild ISA **Dose:** Opth 1 gt in eye(s) bid **Caution:** [C (1st tri); D (2nd & 3rd tri), ?/–] Cardiac failure, asthma **Contra:** Sinus bradycardia; heart block >1st degree; bronchospasm **Disp:** Opth soln 1% **SE:** Drowsiness, sexual dysfunction, bradycardia, edema, CHF; ocular: conjunctival hyperemia, anisocoria, keratitis, eye pain **Notes:** No value in CHF

Carvedilol (Coreg, Coreg CR) **Uses:** *HTN, Mild to severe CHF, LV dysfunction post MI* **Action:** Blocks adrenergic receptors, β_1 , β_2 , α_1 **Dose:** HTN: 6.25–12.5 mg bid. CHF: 3.125–25 mg bid; w/ food to minimize ↓ BP **Caution:** [C (1st tri); D (2nd & 3rd tri), ?/–] asthma, DM **Contra:** Decompensated CHF, 2nd-/3rd-degree heart block, SSS, severe bradycardia w/o pacemaker, asthma, severe hepatic impair **Disp:** Tabs 3.125, 6.25, 12.5, 25 mg **SE:** Dizziness, fatigue, hyperglycemia, may mask/potentiate hypoglycemia, bradycardia, edema, hypercholesterolemia **Notes:** Do not D/C abruptly; ↑ digoxin levels

Caspofungin (Cancidas) **Uses:** *Invasive aspergillosis refractory/intolerant to standard therapy, esophageal candidiasis* **Action:** 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; ↓ in hepatic impair **Caution:** [C, ?/–] Do not use w/ cyclosporine; not studied as initial therapy **Contra:** Allergy to any component **Disp:** Inj 50, 70 mg powder for recons **SE:** Fever, HA, N/V, thrombophlebitis at site, ↑ LFTs **Notes:** Monitor during infusion; limited experience beyond 2 wk of therapy

Cefaclor (Raniclor) **Uses:** *Bacterial Infxns of the upper & lower resp tract, skin, bone, urinary tract, abdomen, gynecologic system* **Action:** 2nd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** More gram(–) activity than 1st-gen cephalosporins; effective against gram(+) (*S. aureus*); good gram(–) coverage against *Haemophilus influenzae* **Dose: Adults.** 250–500 mg PO tid; XR 375–500 mg bid. **Peds.** 20–40 mg/kg/d PO ÷ 8–12 h; ↓ renal impair **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Caps 250, 500 mg; Tabs ER 375, 500 mg Chew tabs 125, 187, 250, 375 mg; susp 125, 187, 250, 375 mg/5 mL **SE:** D, rash, eosinophilia, ↑ transaminases

Cefadroxil (Duricef) **Uses:** *Infxns of skin, bone, upper & lower resp tract, urinary tract* **Action:** 1st-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Good gram(+) coverage (group A β -hemolytic *Strep*, *Staph*); gram(–) (*E. coli*, *Proteus*, *Klebsiella*) **Dose: Adults.** 1–2 g/d PO, 2 ÷ doses **Peds.** 30 mg/kg/d ÷ bid; ↓ in renal impair **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Caps 500 mg; tabs 1 g; susp 125, 250, 500 mg/5 mL **SE:** N/V/D, rash, eosinophilia, ↑ transaminases

Cefazolin (Ancef) **Uses:** * Infxns of skin, bone, upper & lower resp tract, urinary tract* **Action:** 1st-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Good coverage gram(+) bacilli & cocci, (*Strep*, *Staph* [except *Enterococcus*]); some gram(–) (*E. coli*, *Proteus*, *Klebsiella*) **Dose: Adults.** 1–2 g IV q8h **Peds.** 25–100 mg/kg/d IV ÷ q6–8h; ↓ in renal impair **Caution:** [B, +] **Contra:** Cephalosporin al-

lergy **Disp:** Inj: 500 mg, 1, 10, 20 g **SE:** D, rash, eosinophilia, ↑ LFT, inj site pain
Notes: Widely used for surgical prophylaxis

Cefdinir (Omnicef) **Uses:** *Infxns of the resp tract, skin, bone, & urinary tract* **Action:** 3rd-gen cephalosporin; ↓ cell wall synth **Spectrum:** Many gram(+)&(–) organisms; more active than cefaclor & cephalexin 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 **Caution:** [B, +] w/PCN-sensitive pts, serum sicknesslike Rxns reported **Contra:** Hypersensitivity to cephalosporins **Disp:** Caps 300 mg; susp 125, 250 mg/5 mL **SE:** Anaphylaxis, D, rare pseudomembranous colitis

Cefditoren (Spectracef) **Uses:** *Acute exacerbations of chronic bronchitis, pharyngitis, tonsillitis; skin Infxns* **Action:** 3rd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Good gram (+) (*Strep* & *Staph*); gram (–) (*Haemophilus influenzae* & *Moraxella catarrhalis*) **Dose: Adults & Peds >12 y.** Skin: 200 mg PO bid × 10 days. *Chronic bronchitis, pharyngitis, tonsillitis:* 400 mg PO bid × 10 days; avoid antacids w/in 2 h; take w/ meals; ↓ in renal impair **Caution:** [B, ?] Renal/hepatic impair **Contra:** Cephalosporin/PCN allergy, milk protein, or carnitine deficiency **Disp:** 200 mg tabs **SE:** HA, N/V/D, colitis, nephrotox, hepatic dysfunction, Stevens-Johnson synd, toxic epidermal necrolysis, allergic Rxns **Notes:** Causes renal excretion of carnitine; tablets contain milk protein

Cefepime (Maxipime) **Uses:** *UTI, pneumonia, febrile neutropenia, skin/soft tissue Infxns* **Action:** 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 q6–12h. **Peds.** 50 mg/kg q8h for febrile neutropenia; 50 mg/kg bid for skin/soft tissue Infxns; ↓ in renal impair **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Inj 500 mg, 1, 2 g **SE:** Rash, pruritus, N/V/D, fever, HA, (+) Coombs' test w/o hemolysis **Notes:** give IM or IV

Cefixime (Suprax) **Uses:** *Infxns of the resp tract, skin, bone, & urinary tract* **Action:** 3rd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** *S. pneumoniae*, *S. pyogenes*, *H. influenzae*, & *enterobacteria*. **Dose: Adults.** 400 mg PO daily-bid. **Peds.** 8–20 mg/kg/d PO ÷ daily-bid; ↓ in renal impair **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Susp 100 mg/5 mL, 200 mg/5mL **SE:** N/V/D, flatulence, & abd pain **Notes:** Monitor renal & hepatic Fxn; use susp for otitis media

Cefoperazone (Cefobid) **Uses:** *Rx Infxns of the resp, skin, urinary tract, sepsis* **Action:** 3rd-gen cephalosporin; ↓ bacterial cell wall synth. **Spectrum:** gram(–) (eg, *E. coli*, *Klebsiella*), *P. aeruginosa* but < ceftazidime; gram (+) variable against *Streptococcus* & *Staphylococcus* sp **Dose: Adults.** 2–4 g/d IM/IV ÷ q 8–12h (12 g/d max). **Peds.** (not approved) 100–150 mg/kg/d IM/IV ÷ bid-tid (12 g/d max); ↓ in renal/hepatic impair **Caution:** [B, +] May ↑ bleeding risk **Contra:** Cephalosporin allergy **Disp:** Powder for inj 1, 2, 10 g **SE:** D, rash, eosinophilia, ↑ LFTs, hypoprothrombinemia, & bleeding (due to MTT side chain) **Notes:** May interfere w/ warfarin

Cefotaxime (Claforan) Uses: *Rx Infxns of resp tract, skin, bone, urinary tract, meningitis, sepsis* **Action:** 3rd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Most gram(-) (not *Pseudomonas*), some gram(+) cocci (not *Enterococcus*); many PCN-resistant pneumococci **Dose: Adults.** 1–2 g IV q4–12h. **Peds.** 50–200 mg/kg/d IV ÷ q 4–12h; ↓ dose renal/hepatic impair **Caution:** [B, +] Arrhythmia w/ rapid inj; w/colitis **Contra:** Cephalosporin allergy **Disp:** Powder for inj 500 mg, 1, 2, 10, 20 g, premixed infusions 20 mg/mL, 40 mg/mL **SE:** D, rash, pruritus, colitis, eosinophilia, ↑ transaminases

Cefotetan (Cefotan) Uses: *Rx Infxns of the upper & lower resp tract, skin, bone, urinary tract, abdomen, & gynecologic system* **Action:** 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/divided IV ÷ q12h; ↓ w/renal impair **Caution:** [B, +] May ↑ bleeding risk; w/Hx of PCN allergies, w/other nephrotoxic drugs **Contra:** Cephalosporin allergy **Disp:** Powder for inj 1, 2, 10 g **SE:** D, rash, eosinophilia, ↑ transaminases, hypoprothrombinemia, & bleeding (due to MTT side chain) **Notes:** May interfere w/ warfarin

Cefoxitin (Mefoxin) Uses: *Rx Infxns of the upper & lower resp tract, skin, bone, urinary tract, abdomen, & gynecologic system* **Action:** 2nd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Good gram(-) against enteric bacilli (ie, *E. coli*, *Klebsiella*, & *Proteus*); anaerobic *B. fragilis* **Dose: Adults.** 1–2 g IV q6–8h. **Peds.** 80–160 mg/kg/d ÷ q4–6h; ↓ in renal impair **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Powder for inj 1, 2, 10 g **SE:** D, rash, eosinophilia, ↑ transaminases

Cefpodoxime (Vantin) Uses: *Rx resp, skin, & urinary tract Infxns* **Action:** 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 **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Tabs 100, 200 mg; susp 50, 100 mg/5 mL **SE:** D, rash, HA, eosinophilia, ↑ transaminases **Notes:** Drug interactions w/ agents that ↑ gastric pH

Cefprozil (Cefzil) Uses: *Rx resp tract, skin, & urinary tract Infxns* **Action:** 2nd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Active against MSSA, strep, & 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 **Caution:** [B, +] **Contra:** Cephalosporin 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

Ceftazidime (Fortaz, Tazicef) Uses: *Rx resp tract, skin, bone, urinary tract Infxns, meningitis, & septicemia* **Action:** 3rd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** *P. aeruginosa* sp, good gram(-) activity **Dose: Adults.** 500–2 g

IV/im q8–12h. **Peds.** 30–50 mg/kg/dose IV q8h; ↓ in renal impair **Caution:** [B, +] PCN sensitivity **Contra:** Cephalosporin allergy **Disp:** Powder for inj 500 mg, 1, 2, 6 g **SE:** D, rash, eosinophilia, ↑ transaminases. **Notes:** Use only for proven or strongly suspected Infxn to ↓ development of drug resistance

Ceftibuten (Cedax) **Uses:** *Rx resp tract, skin, urinary tract Infxns & otitis media* **Action:** 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) **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Caps 400 mg; susp 90 mg/5 mL **SE:** D, rash, eosinophilia, ↑ transaminases

Ceftizoxime (Cefizox) **Uses:** *Rx resp tract, skin, bone, & urinary tract Infxns, meningitis, septicemia* **Action:** 3rd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Good gram(–) bacilli (not *Pseudomonas*), some gram(+) cocci (not *Enterococcus*), & some anaerobes **Dose: Adults.** 1–4g IV q8–12h. **Peds.** 150–200 mg/kg/d IV ÷ q6–8h; ↓ in renal impair **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Inj 1, 2, 10 g **SE:** D, fever, rash, eosinophilia, thrombocytosis, ↑ transaminases

Ceftriaxone (Rocephin) **Uses:** *Resp tract (pneumonia), skin, bone, urinary tract Infxns, meningitis, & septicemia;* **Action:** 3rd-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Moderate gram(+); excellent against β-lactamase producers **Dose: Adults.** 1–2 g IV/IM q12–24h. **Peds.** 50–100 mg/kg/d IV/IM ÷ q12–24h; ↓ in renal impair **Caution:** [B, +] **Contra:** Cephalosporin allergy; hyperbilirubinemic neonates **Disp:** Powder for inj 250 mg, 500 mg, 1, 2, 10 g; premixed 10, 20, 40 mg/mL **SE:** D, rash, leukopenia, thrombocytosis, eosinophilia, ↑ transaminases

Cefuroxime (Ceftin [PO], Zinacef [parenteral]) **Uses:** *Upper & lower resp tract, skin, bone, urinary tract, abdomen, gynecologic Infxns* **Action:** 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 q6h or 250–500 mg PO bid. **Peds.** 100–150 mg/kg/d IV ÷ q8h or 20–30 mg/kg/d PO ÷ bid; ↓ in renal impair; take w/ food **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Tabs 125, 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) **WARNING:** ↑ 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 intestines; can be fatal **Uses:** *Osteoarthritis & RA, ankylosing spondylitis; acute pain, primary dysmenorrhea; preventive in familial adenomatous polyposis* **Action:** NSAID; ↓ COX-2 pathway **Dose:** 100–200 mg/d or bid; FAP: 400 mg po bid; ↓ w/hepatic impair; take w/ food/milk **Caution:** [C/D (3rd tri), ?] w/ renal impair **Contra:**

Sulfonamide allergy, periop CABG **Disp:** Caps 100, 200 400 mg **SE:** see Warning; GI upset, HTN, edema, renal failure, HA **Notes:** Watch for Sxs of GI bleed; no effect on plt/bleeding time; can affect drugs metabolized by P-450 pathway

Cephalexin (Keflex, Pranixine Disperdose) **Uses:** *Skin, bone, upper/lower resp tract, urinary tract Infxns* **Action:** 1st-gen cephalosporin; ↓ cell wall synth. **Spectrum:** *Strep, Staph, E. coli, Proteus, & Klebsiella* **Dose: Adults.** 250–1000 mg PO qid. **Peds.** 25–100 mg/kg/d PO ÷ qid; ↓ in renal impair; (on empty stomach) **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Caps 250, 500 mg; tabs for oral susp 100, 125, 250 mg; susp 125, 250 mg/5 mL **SE:** D, rash, eosinophilia, ↑ LFTs

Cephadrine (Velosef) **Uses:** *Respiratory, GU, GI, skin, soft tissue, bone, & joint Infxns* **Action:** 1st-gen cephalosporin; ↓ cell wall synth. **Spectrum:** Gram(+) bacilli & cocci (not *Enterococcus*); some gram(–) (*E. coli, Proteus, & Klebsiella*) **Dose: Adults.** 250–500 mg q6–12h (8 g/d max). **Peds >9 mo.** 25–100 mg/kg/d ÷ bid-qid (4 g/d max); ↓ in renal impair **Caution:** [B, +] **Contra:** Cephalosporin allergy **Disp:** Caps: 250, 500 mg; powder for susp 125, 250 mg/5 mL **SE:** Rash, eosinophilia, ↑ LFTs, N/V/D

Cetirizine (Zyrtec, Zyrtec D) **Uses:** *Allergic rhinitis & other allergic Sxs including urticaria* **Action:** Nonsedating antihistamine **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. 12–23 mo: 2.5 mg daily-bid; ↓ in renal/hepatic impair **Caution:** [B, ?/–] Elderly & nursing mothers; >10 mg/d may cause drowsiness **Contra:** 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

Cetuximab (Erbix) **WARNING:** Severe inf Rxns including rapid onset of airway obst (bronchospasm, stridor, hoarseness), urticaria, & ↓ BP; permanent D/C required; ↑ risk sudden death and cardiopulm arrest **Uses:** *EGFR + met colorectal CA w/wo irinotecan, unresectable head/neck SCC w/RT; monotherapy in met head/neck cancer* **Action:** 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 1 × wk **Caution:** [C, –] **Disp:** Inj 100 mg/ 50 mL **SE:** Acne-form rash, asthenia/malaise, N/V/D, abd pain, alopecia, inf Rxn, derm tox, interstitial lung disease, fever, sepsis, dehydration, kidney failure, PE **Notes:** Assess tumor for EGFR before Rx; pretreat w/diphenhydramine; w/mild SE ↓ inf rate by 50%; limit sun exposure

Charcoal, Activated (Superchar, Actidose, Liqui-Char) **Uses:** *Emergency poisoning by most drugs & chemicals (see Contra)* **Action:** Adsorbent detoxicant **Dose:** Give w/ 70% sorbitol (2 mL/kg); repeated use of sorbitol not OK **Adults.** Acute intox: 30–100 g/dose. GI dialysis: 20–50 g q6h for 1–2 d. **Peds 1–12 y.** Acute intox: 1–2 g/kg/dose. GI dialysis: 5–10 g/dose q4–8h **Caution:** [C, ?] May cause V (hazardous w/ petroleum & caustic ingestions); do not mix w/

dairy **Contra:** 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 **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

Chloral Hydrate (Aquachloral, Suppnettes) [C-IV] **Uses:** *Short-term nocturnal & preop sedation* **Action:** Sedative hypnotic; active metabolite trichloroethanol **Dose: Adults.** Hypnotic: 500 mg–1 g PO or PR 30 min hs or before procedure. *Sedative:* 250 mg PO or PR tid. **Peds.** Hypnotic: 20–50 mg/kg/24 h PO or PR 30 min hs or before procedure. *Sedative:* 5–15 mg/kg/dose q8h; avoid w/ CrCl <50 mL/min or severe hepatic impair **Caution:** [C, +] Porphyrria & neonates, long-term care facility residents **Contra:** Allergy to components; severe renal, hepatic or cardiac Dz **Disp:** Caps 500 mg; syrup 250, 500 mg/5 mL; supp 324, 648 mg **SE:** GI irritation, drowsiness, ataxia, dizziness, nightmares, rash **Notes:** May accumulate; tolerance may develop >2 wk; taper dose; mix syrup in H₂O or fruit juice; do not crush caps avoid EtOH & CNS depressants

Chlorambucil (Leukeran) **WARNING:** Myelosuppressive, carcinogenic, teratogenic, associated with infertility **Uses:** *CLL, Hodgkin Dz, Waldenström's macroglobulinemia* **Action:** Alkylating agent (nitrogen mustard) **Dose:** (per protocol) 0.1–0.2 mg/kg/d for 3–6 wk or 0.4 mg/kg/dose q2wk **Caution:** [D, ?] Sz disorder & BM suppression; affects human fertility **Contra:** 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, hepatotox **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 **Action:** Benzodiazepine; antianxiety agent **Dose: Adults.** *Mild anxiety:* 5–10 mg PO tid-qid or PRN. *Severe anxiety:* 25–50 mg IM, IV, or PO q6–8h or PRN **Peds** >6 y. 0.5 mg/kg/24 h PO or IM ÷ q6–8h; ↓ in renal impair, elderly **Caution:** [D, ?] Resp depression, CNS impair, Hx of drug dependence; avoid in hepatic impair **Contra:** Preexisting CNS depression, NAG **Disp:** Caps 5, 10, 25 mg; inj 100 mg **SE:** Drowsiness, CP, rash, fatigue, memory impair, xerostomia, wgt gain **Notes:** Erratic IM absorption

Chlorothiazide (Diuril) **Uses:** *HTN, edema* **Action:** Thiazide diuretic **Dose: Adults.** 500 mg–1 g PO daily-bid; 100–1000 mg/d IV (for edema only). **Peds** >6 mo. 20–30 mg/kg/24 h PO ÷ bid; 4 mg/kg/d IV; OK w/food **Caution:** [D, +] **Contra:** Cross-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] Uses: *Allergic rhinitis* common cold **Action:** Antihistamine **Dose: Adults.** 4 mg PO q4–6h or 8–12 mg PO bid of SR **Peds.** 0.35 mg/kg/24 h PO ÷ q4–6h or 0.2 mg/kg/24 h SR **Caution:** [B, ?/–] BOO; NAG; hepatic insuff **Contra:** Allergy **Disp:** Tabs 4 mg; chew tabs 2 mg; SR tabs 8, 12 mg **SE:** Anticholinergic SE & sedation common, postural ↓ BP, QT changes, extrapyramidal Rxns, photosens **Notes:** Do not cut/crush/chew ER forms; recent deaths in < 2 y. assoc w/cough and cold meds (MMWR 2007 56(01):1-4)

Chlorpromazine (Thorazine) Uses: *Psychotic disorders, N/V,* apprehension, intractable hiccups **Action:** Phenothiazine antipsychotic; antiemetic **Dose: Adults.** Psychosis: 10–25 mg PO bid-tid (usual 30–800 mg/d in ÷ doses). *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 bid-tid. **Children >6 mo.** *Psychosis & N/V:* 0.5–1 mg/kg/dose PO q4–6h or IM/IV q6–8h; **Caution:** [C, ?/–] Safety in children <6 mo. not established; Szs, avoid w/ hepatic impair, BM suppression **Contra:** Cross-sensitivity w/ phenothiazines; NAG **Disp:** Tabs 10, 25, 50, 100, 200 mg; conc 30, 100 mg/mL; syrup 10 mg/5 mL; inj 25 mg/mL **SE:** Extrapyramidal SE & sedation; α-adrenergic blocking properties; ↓ BP; ↑ QT interval **Notes:** Do not D/C abruptly; dilute PO conc in 2–4 oz of liq

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

Chlorthalidone (Hygroton, others) Uses: *HTN* **Action:** Thiazide diuretic **Dose: Adults.** 25–100 mg PO daily. **Peds.** (Not approved) 2 mg/kg/dose PO 3X/wk or 1–2 mg/kg/d PO; ↓ in renal impair; OK w/food, milk **Caution:** [D, +] **Contra:** Cross-sensitivity w/thiazides or sulfonamides; anuria **Disp:** Tabs 15, 25, 50 mg **SE:** ↓ K⁺, dizziness, photosens, hyperglycemia, hyperuricemia, sexual dysfunction

Chlorzoxazone (Paraflex, Parafon Forte DSC, others) Uses: *Adjunct to rest & physical therapy to relieve discomfort associated w/ acute, painful musculoskeletal conditions* **Action:** Centrally acting skeletal muscle relaxant **Dose: Adults.** 250–500 mg PO tid-qid. **Peds.** 20 mg/kg/d in 3–4 ÷ doses **Caution:** [C, ?] Avoid EtOH & CNS depressants **Contra:** Severe liver Dz **Disp:** Tabs 250, 500 mg **SE:** Drowsiness, tachycardia, dizziness, hepatotox, angioedema

Cholecalciferol [Vitamin D₃] (Delta D) Uses: Dietary suppl to Rx vitamin D deficiency **Action:** ↑ intestinal Ca²⁺ absorption **Dose:** 400–1000 IU/d PO **Caution:** [A (D doses above the RDA), +] **Contra:** ↑ Ca²⁺, hypervitaminosis, allergy **Disp:** Tabs 400, 1000 IU **SE:** Vitamin D tox (renal failure, HTN, psychosis) **Notes:** 1 mg cholecalciferol = 40,000 IU vitamin D activity

Cholestyramine (Questran, Prevalite) Uses: *Hypercholesterolemia; Rx pruritus assoc w/ partial biliary obst; D associated w/excess fecal bile acids*

pseudomembranous colitis **Action:** Binds intestinal bile acids, forms insoluble complexes **Dose: Adults.** Titrate: 4 g/d-bid ↑ to max 24 g/d & 6 doses/d. **Peds.** 240 mg/kg/d in 3 ÷ doses **Caution:** [C, ?] Constipation, phenylketonuria **Contra:** Complete biliary or bowel obst; hypolipoproteinemia types III, IV, V **Disp:** 4 g of cholestyramine resin/9 g powder; w/ aspartame: 4 g resin/5 g powder (Light) 4 g resin/6.4 g powder **SE:** Constipation, abd pain, bloating, HA, rash **Notes:** OD may cause GI obst; mix 4 gm in 2–6 oz of noncarbonated beverage; take other meds 1–2 h before or 6 h after

Ciclesonide (Omnaris) **Uses:** Allergic rhinitis **Action:** Nasal corticosteroid **Dose: Adults and Peds > 12 y:** 2 sprays each nostril 1 X day **Caution:** [C, ?-]/w/ ketoconazole **Contra:** Component allergy **Disp:** Intranasal spray susp, 50 mcg/spray, 120 doses **SE:** adrenal suppression, delayed nasal wound healing, URI, HA, ear pain, epistaxis ↑ risk viral dz (eg, chickenpox), delayed growth in children

Ciclopirox (Loprox, Penlac) **Uses:** *Tinea pedis, tinea cruris, tinea corporis, cutaneous candidiasis, tinea versicolor, tinea rubrum* **Action:** Antifungal antibiotic; cellular depletion of essential substrates &/or ions **Dose: Adults & Peds > 10 y.** Massage into affected area bid. *Onychomycosis:* apply to nails daily, with removal every 7 d **Caution:** [B, ?] **Contra:** Component sensitivity **Disp:** Cream 0.77%, gel 0.77%, topical sus 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) **WARNING:** Renal impair is the major tox. Follow administration instructions **Uses:** *CMV retinitis w/ HIV* **Action:** Selective inhibition of viral DNA synth **Dose: Rx:** 5 mg/kg IV over 1 h once/wk for 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); ↓ in renal impair **Caution:** [C, -] SCr >1.5 mg/dL or CrCl = 55 mL/min or urine protein >100 mg/dL; w/ other nephrotoxic drugs **Contra:** Probenecid or sulfa allergy **Disp:** Inj 75 mg/mL **SE:** Renal tox, chills, fever, HA, N/V/D, thrombocytopenia, neutropenia **Notes:** Hydrate w/NS prior to each inf

Cilostazol (Pletal) **Uses:** *Reduce Sxs of intermittent claudication* **Action:** Phosphodiesterase III inhibitor; ↑'s cAMP in plts & blood vessels, vasodilation & inhibit plt aggregation **Dose:** 100 mg PO bid, ½ h before or 2 h after breakfast & dinner **Caution:** [C, +/-] ↓ dose w/ drugs that inhibit CYP3A4 & CYP2C19 (Table 11) **Contra:** CHF, hemostatic disorders, active pathologic bleeding **Disp:** Tabs 50, 100 mg **SE:** HA, palpitation, D

Cimetidine (Tagamet) (Tagamet HB, Tagamet DS OTC) **Uses:** *Duodenal ulcer; ulcer prophylaxis in hypersecretory states, (eg, trauma, burns); & GERD* **Action:** 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 **Caution:** [B, +] Many drug interactions (P-450 system)
Contra: Component sensitivity **Disp:** Tabs 200, 300, 400, 800 mg; liq 300 mg/5 mL; inj 300 mg/2 mL **SE:** Dizziness, HA, agitation, thrombocytopenia, gynecostasia **Notes:** 1 h before or 2 h after antacids; avoid EtOH

Cinacalcet (Sensipar) **Uses:** *Secondary hyperparathyroidism in CRF; ↑ Ca^{2+} in parathyroid carcinoma* **Action:** ↓ 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 **Caution:** [C, ?/–] W/ seizures, adjust w/CYP3A4 inhibitors (Table 11) **Disp:** Tabs 30, 60, 90 mg **SE:** N/V/D, myalgia, dizziness, ↓ Ca^{2+} **Notes:** Monitor Ca^{2+} , PO_4^{-2} , PTH

Ciprofloxacin (Cipro, Cipro XR, Proquin XR) **Uses:** *Rx lower resp tract, sinuses, skin & skin structure, bone/joints, & UT Infxns including prostatitis* **Action:** Quinolone antibiotic; ↓ DNA gyrase. *Spectrum:* Broad gram(+) & (–) aerobics; little Strep; good *Pseudomonas*, *E. coli*, *B. fragilis*, *P. mirabilis*, *K. pneumoniae*, *Campylobacter 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 **Caution:** [C, ?/–] Children <18 y **Contra:** Component sensitivity **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 mg/100 mL **SE:** Restlessness, N/V/D, rash, ruptured tendons, ↑ LFTs **Notes:** Avoid antacids; reduce/restrict caffeine intake; interactions w/ theophylline, caffeine, sucralfate, warfarin, antacids

Ciprofloxacin, Ophthalmic (Ciloxan) **Uses:** *Rx & prevention of ocular Infxns (conjunctivitis, blepharitis, corneal abrasions)* **Action:** 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 ½" ribbon in eye 3 × d × 2 days, then 2 × d × 5 days **Caution:** [C, ?/–] **Contra:** Component sensitivity **Disp:** Soln 3.5 mg/mL; oint 0.3%, 35g **SE:** Local irritation

Ciprofloxacin, Otic (Cipro HC Otic) **Uses:** *Otitis externa* **Action:** Quinolone antibiotic; ↓ DNA gyrase **Dose:** *Adult & Peds >1 mo.* 1–2 gtt in ear(s) bid for 7 d **Caution:** [C, ?/–] **Contra:** Perforated tympanic membrane, viral Infxns of the external canal **Disp:** Susp ciprofloxacin 0.2% & hydrocortisone 1% **SE:** HA, pruritus

Cisplatin (Platinol, Platinol AQ) **Uses:** *Testicular, SCLC, NSCLC, bladder, ovarian, breast, head & neck, & penile CAs; osteosarcoma; ped brain tumors* **Action:** 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 **Caution:** [D, –] Cumulative renal tox may be severe; ✓ Mg^{2+} , lytes before & w/in 48 h after cisplatin **Contra:** Platinum-containing compound allergy; ↓ BM, hearing impair, preexisting renal insuff **Disp:** Inj 1 mg/mL **SE:** Allergic Rxns, N/V, nephrotox (↑ w/admin 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

Citalopram (Celexa) **WARNING:** Closely monitor for worsening depression or emergence of suicidality, particularly in patients < 24 y. **Uses:** *Depression* **Action:** SSRI **Dose:** Initial 20 mg/d, may ↑ to 40 mg/d; ↓ in elderly & hepatic/renal insuff **Caution:** [C, +/-] Hx of mania, Szs & pts at risk for suicide

Contra: MAOI or w/in 14 d of MAOI use **Disp:** Tabs 10, 20, 40 mg; dist tabs 10, 20, 40 mg; cap 10, 20, 40 mg; Soln 10 mg/5 mL **SE:** Somnolence, insomnia, anxiety, xerostomia, diaphoresis, sexual dysfunction **Notes:** May cause ↓ Na⁺/SIADH

Cladribine (Leustatin) **Uses:** *HCL, CLL, NHLs, progressive MS* **Action:** 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)

Caution: [D, ?/-] Causes neutropenia & Infxn **Contra:** 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 **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* **Action:** Macrolide antibiotic, ↓ protein synth. **Spectrum:** *H. influenzae*, *M. catarrhalis*, *S. pneumoniae*, *Mycoplasma 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**

>9 mo. 7.5 mg/kg/dose PO bid; ↓ in renal/hepatic impair **Caution:** [C, ?] Antibiotic-associated colitis; rare QT prolongation & ventricular arrhythmias, including torsades de pointes **Contra:** Macrolide allergy; w/ranitidine in pts w/ Hx of porphyria or CrCl <25 mL/min **Disp:** Tabs 250, 500 mg; susp 125, 250 mg/5 mL; 500, 1000 mg XL tab **SE:** ↑QT interval, causes metallic taste, N/D, abd pain, HA, rash

Notes: Multiple drug interactions, ↑ theophylline & carbamazepine levels; do not refrigerate susp

Clemastine Fumarate (Tavist, Dayhist, Antihist-1) [OTC]

Uses: *Allergic rhinitis & Sxs of urticaria* **Action:** Antihistamine **Dose:** **Adults & Peds** >12 y. 1.34 mg bid-2.68 mg tid; max 8.04 mg/d <6 y: 0.335–0.67 mg/day ÷ into (max 1.34 mg/d) 2–3 days, 6–12 y: 0.67–1.34 mg bid (max 4.02 /day) **Caution:** [C, M] BOO; Do not take w/ MAOI **Contra:** NAG **Disp:** Tabs 1.34, 2.68 mg; syrup 0.67 mg/5 mL **SE:** Drowsiness, dyscoordination, epigastric distress, urinary retention **Notes:** Avoid EtOH

Clindamycin (Cleocin, Cleocin-T, others) **WARNING:** Pseudo-membraneous colitis may range from mild to life threatening **Uses:** *Rx aerobic & anaerobic Infxns; topical for severe acne & vaginal Infxns* **Action:** Bacteriostatic; interferes w/ protein synth. **Spectrum:** *Streptococci*, *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. **Vaginal:** 1 applicator hs for 7 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 **Caution:** [B, +] Can cause fatal colitis **Contra:** Hx pseudomembranous colitis **Disp:** Caps 75, 150, 300 mg; susp 75 mg/5 mL; inj 300 mg/2 mL; vaginal cream 2%, topical sol 1%, gel 1%, lotion 1%, vaginal supp 100 mg **SE:** D may be *C. difficile* pseudomembranous colitis, rash, ↑ LFTs **Notes:** D/C drug w/D, evaluate for *C. difficile*

Clofarabine (Clolar) **Uses:** Rx relapsed/refractory ALL after at least 2 regimens in children 1–21 y **Action:** Antimetabolite; ↓ ribonucleotide reductase w/ false nucleotide base-inhibiting DNA synth **Dose:** 52 mg/m² IV over 2 h daily × 5 d (repeat q2–6wk); Per protocol **Caution:** [D, –] **Disp:** Inj 20 mg/20 mL **SE:** N/V/D, anemia, leukopenia, thrombocytopenia, neutropenia, Infxn, ↑ AST/ALT **Notes:** Monitor for tumor lysis synd & systemic inflammatory response synd (SIRS)/capillary leak synd; hydrate well

Clonazepam (Klonopin) [C-IV] **Uses:** *Lennox-Gastaut synd, akinetic & myoclonic Szs, absence Szs, panic attacks,* restless legs synd, neuralgia, parkinsonian dysarthria, bipolar disorder **Action:** 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; avoid abrupt D/C **Caution:** [D, M] Elderly pts, resp Dz, CNS depression, severe hepatic impair, NAG **Contra:** 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 side effects, including drowsiness, dizziness, ataxia, memory impair **Notes:** Can cause retrograde amnesia; a CYP3A4 substrate

Clonidine, Oral (Catapres) **Uses:** *HTN*; opioid, EtOH, & tobacco withdrawal **Action:** Centrally acting α-adrenergic stimulant **Dose:** **Adults.** 0.1 mg PO bid, adjust daily by 0.1- to 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 **Caution:** [C, +/-] Avoid w/ β-blocker **Contra:** Component sensitivity **Disp:** Tabs 0.1, 0.2, 0.3 mg **SE:** drowsiness, orthostatic ↓ BP, xerostomia, constipation, bradycardia, dizziness **Notes:** More effective for HTN if combined w/ diuretics; withdraw slowly, rebound HTN w/ abrupt D/C of doses >0.2 mg bid

Clonidine, Transdermal (Catapres TTS) **Uses:** *HTN* **Action:** Centrally acting α-adrenergic stimulant **Dose:** 1 patch q7d to hairless area (upper arm/torso); titrate to effect; ↓ w/ severe renal impair; **Caution:** [C, +/-] Avoid w/ β-blocker, withdraw slowly **Contra:** 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, bradycardia **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) **Uses:** *Reduce atherosclerotic events*, administer ASAP in ECC setting w/ high risk ST depression or T wave inversion **Action:** ↓ Plt aggregation **Dose:** 75 mg/d; 300-600 mg PO × 1 dose can be used to load pts; 300 mg PO, then 75 mg Daily 1-9 mo (*ECC 2005*) **Caution:** [B, ?] Active bleeding; risk of bleeding from trauma & other; TTP; liver Dz **Contra:** Coagulation disorders, active/or intracranial bleeding; CABG planned w/in 5-7 days **Disp:** Tabs 75 mg **SE:** ↑ bleeding time, GI intolerance, HA, dizziness, rash, thrombocytopenia, ↓ WBC **Notes:** Plt aggregation to baseline ≈ 5 days after D/C, plt transfusion to reverse acutely

Clorazepate (Tranxene) [C-IV] **Uses:** *Acute anxiety disorders, acute EtOH withdrawal Sxs, adjunctive therapy in partial Szs* **Action:** 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. *Peds.* 3.75-7.5 mg/dose bid to 60 mg/d max ÷ bid-tid **Caution:** [D, ?/-] Elderly; Hx depression **Contra:** NAG; Not OK <9 y of age **Disp:** Tabs 3.75, 7.5, 15 mg; Tabs-SD (daily) 11.25, 22.5 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* **Action:** Antifungal; alters cell wall permeability. *Spectrum:* Oropharyngeal candidiasis, dermatophytoses, superficial mycoses, cutaneous candidiasis, & vulvovaginal candidiasis **Dose:** *PO: Prophylaxis:* One troche dissolved in mouth tid Rx: One troche dissolved in mouth 5X d for 14 d. *Vaginal 1% Cream:* 1 applicatorful hs for 7 d. *2% Cream:* 1 applicatorful 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 **Caution:** [B, (C if PO), ?] Not for systemic fungal Infxn; safety in children <3 y not established **Contra:** Component allergy **Disp:** 1% cream; soln; lotion; troche 10 mg; vaginal tabs 100, 500 mg; vaginal cream 1%, 2% **SE:** Topical: Local irritation; PO: N/V, ↑ LFTs **Notes:** PO prophylaxis immunosuppressed pts

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

Clozapine (Clozaril & FazaClo) **WARNING:** Myocarditis, agranulocytosis, Szs, & orthostatic ↓ BP associated w/ clozapine; ↑ mortality in elderly w/dementia-related psychosis **Uses:** *Refractory severe schizophrenia*; childhood psychosis **Action:** "Atypical" TCA **Dose:** 25 mg daily-bid initial; ↑ to 300-450 mg/d over 2 wk; maint lowest dose possible; do not D/C abruptly

Caution: [B, +/-] Monitor for psychosis & cholinergic rebound **Contra:** Uncontrolled epilepsy; comatose state; WBC <3500 cells/mm³ and ANC <2000 cells/mm³ before Rx or <3000 cells/mm³ during Rx **Disp:** Orally disint tabs 25 mg, 100 mg; tabs 25, 100 mg **SE:** Sialorrhea, tachycardia, drowsiness, ↑ wgt, 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 qowk

Cocaine [C-II] **Uses:** *Topical anesthetic for mucous membranes* **Action:** Narcotic analgesic, local vasoconstrictor **Dose:** Lowest topical amount that provides relief; 1 mg/kg max **Caution:** [C, ?] **Contra:** PRG **Disp:** Topical soln & viscous preparations 4–10%; powder **SE:** CNS stimulation, nervousness, loss of taste/smell, chronic rhinitis, CV toxicity, abuse potential **Notes:** Use only on PO, laryngeal, & nasal mucosa; do not use on extensive areas of broken skin

Codeine [C-II] **Uses:** *Mild-moderate pain; symptomatic relief of cough* **Action:** Narcotic analgesic; ↓ cough reflex **Dose:** *Adults. Analgesic:* 15–20 mg PO or IM qid PRN. *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; **Max:** 60 mg/dose; ↓ in renal/hepatic impair **Caution:** [C, (D if prolonged use or high dose at term), +] **Contra:** Component sensitivity **Disp:** Tabs 15, 30, 60 mg; soln 15 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 **Uses:** *Acute gouty arthritis & prevention of recurrences; familial Mediterranean fever*; primary biliary cirrhosis **Action:** ↓ migration of leukocytes; ↓ leukocyte lactic acid production **Dose:** *Initial:* 0.6–1.2 mg PO, then 0.6 mg q1–2h until relief or GI SE develop (max 8 mg/d); do not repeat for 3 d. *IV:* 1–3 mg, then 0.5 mg q6h until relief (max 4 mg/d); do not repeat for 7 d. *Prophylaxis:* PO: 0.6 mg/d or 3–4 d/wk; ↓ renal impair **Caution:** [D, +] Elderly **Contra:** Serious renal, GI, hepatic, or cardiac disorders; blood dyscrasias **Disp:** Tabs 0.6 mg; inj 1 mg/2 mL **SE:** N/V/D, abd pain, BM suppression, hepatotox; local Rxn w/ SQ/IM **Notes:** Colchicine 1–2 mg IV w/in 24–48 h of an acute attack diagnostic/therapeutic in monoarticular arthritis

Colesevelam (WelChol) **Uses:** *Reduction of LDL & total cholesterol alone or in combo w/ an HMG-CoA reductase inhibitor* **Action:** Bile acid sequestrant **Dose:** 3 tabs PO bid w/ meals **Caution:** [B, ?] Severe GI motility disorders; in patients w triglycerides > 300 mg/dl (may ↑ levels); use not established in peds **Contra:** Bowel obst **Disp:** Tabs 625 mg **SE:** Constipation, dyspepsia, myalgia, weakness **Notes:** May ↓ absorption of fat-soluble vitamins

Colestipol (Colestid) **Uses:** *Adjunct to ↓ serum cholesterol in primary hypercholesterolemia, relieve pruritus associate with ↑bile acids* **Action:** Binds intestinal bile acids to form insoluble complex **Dose:** Granules: 5–30 g/d ÷ 2–4 doses; tabs: 2–16 g/d daily-bid **Caution:** [C, ?] Avoid w/ high triglycerides, GI

dysfunction **Contra:** Bowel obst **Disp:** Tabs 1 g; granules 5, 7.5, 300, 450, 500 g
SE: Constipation, abd pain, bloating, HA **Notes:** Do not use dry powder; mix w/ beverages, cereals, etc; may ↓ absorption of other medications and fat-soluble vitamins

Conivaptan HCL (Vaprisol) **Uses:** Euvolemic hyponatremia **Action:** 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 q 24 h
Caution: [C; ?/–] Rapid ↑ Na^+ (>12 mEq/L/24 h) may cause osmotic demyelination synd; impaired renal/hepatic fxn; may ↑ digoxin levels; CYP3A4 inhibitor (Table 11) **Contra:** Hypovolemic hyponatremia;w/CYP3A4 inhibitors **Disp:** Ampule 20 mg/4 mL **SE:** Infusion site Rxns, HA, N/V/D, constipation, ↓ K^+ , orthostatic ↓ BP, thirst, dry mouth, pyrexia, pollakiuria, polyuria, Infxn **Notes:** Monitor Na^+ , volume 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 yrs)* **Action:** ?, interfere w/sperm survival/transport **Dose:** Insert any time during menstrual cycle; replace @ 10 y. max **Caution:** [C, ?] Remove w/intrauterine PRG, increased risk of comps w/PRG and device in place **Contra:** Acute PID or in high-risk behavior, post-partum endometritis, cervicitis **Disp:** 52 mg IUD **SE:** PRG, ectopic PRG, pelvic infection immunocompromise, embedment, perforation expulsion, Wilson's dz, fainting w/ insert, vag bleeding, expulsion **Notes:** Counsel patient does not protect against STD/HIV; see insert for detailed instructions; 99% effective

Cortisone See Steroids (page 191) and Tables 3 & 4

Cromolyn Sodium (Intal, NasalCrom, Opticrom, others) **Uses:** *Adjunct to the Rx of asthma; prevent exercise-induced asthma; allergic rhinitis; ophth allergic manifestations*; food allergy **Action:** Antiasthmatic; mast cell stabilizer **Dose: Adults & Children >12 y.** Inhal: 20 mg (as powder in caps) inhaled qid or met-dose inhaler 2 puffs qid. *PO:* 200 mg qid 15–20 min ac, up to 400 mg qid. *Nasal instillation:* Spray once in each nostril 2–6 ×/d. *Ophth:* 1–2 gtt in each eye 4–6 × d-. **Peds.** Inhal: 2 puffs qid of met-dose inhaler. *PO: Infants <2 y.:* (not OK) 20 mg/kg/d in 4 ÷ doses. 2–12 y: 100 mg qid ac **Caution:** [B, ?] **Contra:** Acute asthmatic attacks **Disp:** PO conc 100 mg/5 mL; soln for neb 20 mg/2 mL; met-dose inhaler; nasal soln 40 mg/mL; ophth 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 B₁₂] (Nasocobal) **Uses:** *Pernicious anemia & other vitamin B₁₂ deficiency states; ↑ requirements due to PRG; thyrotoxicosis; liver or kidney Dz* **Action:** Dietary vitamin B₁₂ suppl **Dose: Adults.** 100 mcg IM or SQ daily; intranasal: 500 mcg once/wk for pts in remission, for 5–10 d, then 100 mcg IM 2 ×/wk for 1 mo, then 100 mcg IM monthly. **Peds.** Use 0.2

mcg/kg x 2 days test dose; if OK 30–50 mcg/day/M for 2 or more wks (total 10 mcg) then maint: 100 mg/month. **Caution:** [A (C if dose exceeds RDA), +] **Contra:** Allergy to cobalt; hereditary optic nerve atrophy; Leber Dz **Disp:** Tabs 50, 100, 250, 500, 1000, 2500, 5000 mcg; inj 100, 1000 mcg/mL; intranasal (Nasobal) gel 500 mcg/0.1 mL **SE:** Itching, D, HA, anxiety **Notes:** PO absorption erratic and not recommended; OK for use w/hyperalimentation

Cyclobenzaprine (Flexeril) **Uses:** *Relief of muscle spasm* **Action:** Centrally acting skeletal muscle relaxant; reduces tonic somatic motor activity **Dose:** 5–10 mg PO bid-qid (2–3 wk max) **Caution:** [B, ?] Shares the toxic potential of the TCAs; urinary hesitancy, NAG **Contra:** Do not use concomitantly or w/in 14 d of MAOIs; hyperthyroidism; heart failure; arrhythmias **Disp:** Tabs 5, 7.5, 10 mg **SE:** Sedation & anticholinergic effects **Notes:** May inhibit mental alertness or physical coordination

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

Cyclopentolate ophthalmic (Cyclogyl, Cylate) **Uses:** *Cycloplegia, mydriasis* **Action:** Cycloplegic mydriatic, anticholinergic inhibits iris sphincter and ciliary body **Dose:** *Adults.* 1 gtt in eye 40–50 min preprocedure, may repeat x 1 in 5–10 min *Peds.* As adult, children 0.5–1.0%; infants use 0.5% **Caution:** (C [may cause late-term fetal anoxia/bradycardia, +/-], premature infants HTN, Down synd, elderly, **Contra:** NAG **Disp:** Ophth 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:** * **Action:** 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 **Caution:** (C [may cause late-term fetal anoxia/bradycardia, +/-] HTN, w/elderly w/CAD, **Contra:** NAG **Disp:** Ophth 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 (Cytosan, 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* **Action:** Converted to acrolein &

phosphoramidate mustard, the active alkylating moieties **Dose:** (per protocol) 500–1500 mg/m²; single dose at 2- to 4-wk intervals; 1.8 g/m² to 160 mg/kg (or @ 12 g/m² in 75-kg individual) in the BMT setting (per protocols); ↓ renal impair
Caution: [D, ?] w/ BM suppression, hepatic insuff **Contra:** Component sensitivity
Disp: Tabs 25, 50 mg; inj 500 mg, 1g, 2g **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: continuous bladder irrigation & mesna uroprotection; encourage hydration, long-term bladder Ca screening

Cyclosporine (Sandimmune, NeOral, Gengraf) **WARNING:** ↑ risk neoplasm, ↑ risk skin malignancies, ↑ risk HTN and nephrotoxicity. **Uses:** *Organ rejection in kidney, liver, heart, & BMT w/ steroids; RA; psoriasis* **Action:** Immunosuppressant; reversible inhibition of immunocompetent lymphocytes **Dose: Adults & Peds.** PO: 15 mg/kg/d 12 h 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 **Caution:** [C, ?] Dose-related risk of nephrotox/hepatotox; live, attenuated vaccines may be less effective **Contra:** Renal impair; uncontrolled HTN **Disp:** Caps 25, 50, 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; many drug interactions; 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 due to ocular inflammation* **Action:** Immune modulator, anti-inflammatory **Dose:** 1 gtt bid each eye 12 h apart; OK w/ artificial tears, allow 15 min between **Caution:** [C, -] **Contra:** Ocular Infxn, component allergy **Disp:** Single-use vial 0.05% **SE:** Ocular burning/hyperemia **Notes:** Mix vial well

Cyproheptadine (Periactin) **Uses:** *Allergic Rxns; itching* **Action:** 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 **Caution:** [B, ?] BPH **Contra:** Neonates or <2 y; NAG; BOO; acute asthma; GI obst **Disp:** Tabs 4 mg; syrup 2 mg/5 mL **SE:** Anticholinergic, drowsiness **Notes:** May stimulate appetite

Cytarabine [ARA-C] (Cytosar-U) **WARNING:** Administration by experienced physician in properly equipped facility; potent myelosuppressive agent **Uses:** *Acute leukemias, CML, NHL; IT for leukemic meningitis or prophylaxis* **Action:** Antimetabolite; interferes w/ DNA synth **Dose:** 100–150 mg/m²/d for 5–10 d (low dose); 3 g/m² q12h for 8–12 doses (high dose); 1 mg/kg 1–2/wk (SQ maint); 5–70 mg/m² up to 3/wk IT (per protocols); ↓ in renal/hepatic impair **Caution:** [D, ?] w/ marked BM suppression, ↓ dosage by ↓ the number of days of administration **Contra:** Component sensitivity **Disp:** Inj 100, 500 mg, 1, 2 g, also 20,

100 mg/mL **SE:** ↓ BM, N/V/D, stomatitis, flulike synd, rash on palms/soles, hepatic/cerebellar dysfunction, noncardiogenic pulm edema, neuropathy, fever
Notes: Little use in solid tumors; high-dose tox limited by corticosteroid ophth soln

Cytarabine Liposome (DepoCyt) **WARNING:** Can cause chemical arachnoiditis (N/V/HA, fever) ↓ severity w/dexamethasone. Administer by experienced physician in properly equipped facility **Uses:** *Lymphomatous meningitis*

Action: Antimetabolite; interferes w/DNA synth **Dose:** 50 mg IT q14d for 5 doses, then 50 mg IT q28d × 4 doses; use dexamethasone prophylaxis **Caution:** [D, ?] May cause neurotox; blockage to CSF flow may ↑ the risk of neurotox; use in peds not established **Contra:** 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: *Attenuation CMV Dz associated w/ transplantation* **Action:** Exogenous IgG antibodies to CMV **Dose:** 150 mg/kg/dose w/in 72 h of transplant, for 16 wk posttransplant; see insert **Caution:** [C, ?] Anaphylactic Rxns; renal dysfunction **Contra:** Allergy to immunoglobulins; IgA deficiency **Disp:** Inj 50 mg/mL **SE:** Flushing, N/V, muscle cramps, wheezing, HA, fever **Notes:** IV only; administer by separate line; do not shake

Decarbazine (DTIC) **WARNING:** Causes hematopoietic depression, hepatic necrosis, may be carcinogenic, teratogenic **Uses:** *Melanoma, Hodgkin Dz, sarcoma*

Action: 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 **Caution:** [C, ?] In BM suppression; renal/hepatic impair **Contra:** Component sensitivity **Disp:** Inj 100, 200, 500 mg **SE:** ↓ BM, N/V, hepatotox, flulike synd, ↓ BP, photosens, alopecia, facial flushing, facial paresthesias, urticaria, phlebitis at inj site **Notes:** Avoid extrav, ✓ CBC, plt

Daclizumab (Zenapax) **WARNING:** Administer under skilled supervision in equipped facility **Uses:** *Prevent acute organ rejection*

Action: IL-2 receptor antagonist **Dose:** 1 mg/kg/dose IV; 1st dose pretransplant, then 4 doses 14 d apart post-transplant **Caution:** [C, ?] **Contra:** Component sensitivity **Disp:** Inj 5 mg/mL **SE:** Hyperglycemia, edema, HTN, ↓ BP, constipation, HA, dizziness, anxiety, nephrotox, pulm edema, pain, anaphylaxis/hypersensitivity **Notes:** Administer w/in 4 h of preparation

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

Choriocarcinoma, Wilms' tumor, Kaposi and Ewing sarcoma, rhabdomyosarcoma, uterine and testicular CA **Action:** DNA intercalating agent **Dose:** *Adult:*

0.5 mg/d for 5 d; 2 mg/wk for 3 consecutive wk; 15 mcg/kg or 0.45 mg/m²/d (max 0.5 mg) for 5 d q3–8 wk **Peds:** *Sarcoma* (per protocols); ↓ in renal impair **Caution:** [C, ?] **Contra:** concurrent/recent chickenpox or herpes zoster; infants < 6 mo **Disp:** Inj 0.5 mg SE: Myelo/immunosuppression, severe N/V, alopecia, acne, hyperpigmentation, radiation recall phenomenon, tissue damage w/extrav, hepatotox

Dalteparin (Fragmin) **WARNING:** ↑ risk of spinal/epidural hematoma with LP **Uses:** *Unstable angina, non-Q-wave MI, prevention of ischemic comps due to clot formation in pts on concurrent ASA, prevent & Rx DVT following surgery* **Action:** LMW heparin **Dose:** *Angina/MI:* 120 units/kg (max 10,000 units) SQ q12h w/ ASA. DVT prophylaxis: 2500–5000 units SC 1–2 h preop, then daily for 5–10 d. *Systemic anticoagulation:* 200 units/kg/d SQ or 100 units/kg bid SQ **Caution:** [B, ?] in renal/hepatic impair, active hemorrhage, cerebrovascular Dz, cerebral aneurysm, severe HTN **Contra:** HIT; pork product allergy; w/ mifepristone **Disp:** Inj 2500 units (16 mg/0.2 mL), 5000 units (32 mg/0.2 mL), 7,500 units (48 mg/0.3 mL), 10,000 units (64 mg/mL), 25,000 units/mL (3.8 mL); prefilled vials: 10,000 units/mL (9.5 mL) **SE:** Bleeding, pain at site, ↓ plt **Notes:** Predictable effects eliminates lab monitoring; not for IM/IV use

Dantrolene (Dantrium) **WARNING:** Hepatotoxicity reported; DC after 45 days if no benefit observed **Uses:** *Rx spasticity due to upper motor neuron disorders (eg, spinal cord injuries, stroke, CP, MS); malignant hyperthermia* **Action:** Skeletal muscle relaxant **Dose:** *Adults. Spasticity:* 25 mg PO daily; ↑ 25 mg to effect to 100 mg max PO qid PRN. *Peds.* 0.5 mg/kg/dose bid; ↑ by 0.5 mg/kg to effect, to 3 mg/kg/dose max qid PRN. *Adults & Peds. Malignant hyperthermia:* Rx: Continuous rapid IV, start 1 mg/kg until Sxs subside or 10 mg/kg is reached. *Post-crisis F/U:* 4–8 mg/kg/d in 3–4 ÷ doses for 1–3 d to prevent recurrence **Caution:** [C, ?] Impaired cardiac/pulm Fxn **Contra:** 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, D, blurred vision, hepatitis **Notes:** Monitor LFT; avoid sunlight/EtOH/CNS depressants

Dapsone, oral **Uses:** *Rx & prevent PCP; toxoplasmosis prophylaxis; leprosy* **Action:** 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/week (max 200 mg); Prophylaxis of PCP 1–2 mg/kg/24 h PO daily; max 100 mg/d **Caution:** [C, +] G6PD deficiency; severe anemia **Contra:** 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* **Action:** Unknown; bactericidal **Dose:** Apply pea sized amount and rub into areas BID; wash hands after **Caution:** [C, +] G6PD deficiency; severe anemia **Contra:**

Component sensitivity **Disp:** 5% gel **SE:** Skin oiliness/peeling, dryness erythema
Notes: Not for oral, ophthalmic, or intravaginal use; check G6PD levels before use; follow CBC if G6PD deficient

Daptomycin (Cubicin) **Uses:** *Complicated skin/skin structure Infxns due to gram(+) organisms* *Staph aureus*, bacteremia, right sided MSA, MRSA endocarditis **Action:** Cyclic lipopeptide; rapid membrane depolarization & bacterial death **Spectrum:** *Staph aureus* (including MRSA), *Streptococcus pyogenes*, *S. agalactiae*, *S. dysgalactiae* subsp *Equisimilis* & *Enterococcus faecalis* (vancomycin-susceptible strains only) **Dose:** *Bacteremia:* 4 mg/kg IV daily × 7–14 d (over 30 min); 6mg/kg IV daily for 2–6 wks; *Endocarditis:* 6 mg/kg q 48; ↓ w/ CrCl < 30 mL/min/ or dialysis: 4 mg/kg q48h **Caution:** [B, ?] w/HMG-CoA inhibitors **Disp:** Inj 250, 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, chest pain, sore throat, cardiac failure, confusion, *Candida* Infxns **Notes:** ✓ CPK baseline & weekly; consider D/C HMG-CoA reductase inhibitors to ↓ myopathy risk

Darbepoetin Alfa (Aranesp) **Warning:** Associated with ↑ CV, thromboembolic events and/or mortality; d/c if HB > 12 g/dl; may increase tumor progression and death in cancer patients **Uses:** *Anemia associated w/ CRF*, anemia in nonmyeloid malignancy w/ concurrent chemo **Action:** ↑ 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 insert to convert from Epogen **Caution:** [C, ?] May ↑ risk of CV &/or neurologic SE in renal failure; HTN; w/ Hx Szs **Contra:** Uncontrolled HTN, component allergy **Disp:** 25, 40, 60, 100, 200, 300, mcg/mL, 150 mcg/.075 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 ½-life than Epogen; weekly CBC until stable

Darifenacin (Enblex) **Uses:** *OAB* Urinary antispasmodic, **Action:** Muscarinic receptor antagonist **Dose:** 7.5 mg/d PO; 15 mg/d max (7.5 mg/d w/ moderate hepatic impair or w/ CYP3A4 inhibitors); w/ drugs metabolized by CYP2D) (Table 11); swallow whole **Caution:** [C, ?/–] w/hepatic impair **Contra:** Urinary/gastric retention, uncontrolled NAG, paralytic ileus **Disp:** Tabs ER 7.5 mg, 15 mg **SE:** Xerostomia/eyes, constipation, dyspepsia, abd pain, retention, abnormal vision, dizziness, asthenia

Darunavir (Prezista) **Uses:** *Rx HIV w/resistance to multiple protease inhibitors* **Action:** HIV-1 protease inhibitor **Dose:** 600 mg PO BID, administer w/ ritonavir 100 mg BID **Caution:** [B, ?/–] hx sulf allergy, CYP3A4 substrate, increase or decrease levels of many medications including ↑ amnodarone, ↑ dihydropyridines, ↑ HMG-CoA reductase inhibitors (statins), ↓ SSRIs, ↓ rifampin, ↓ methadone **Contra:** w/ astazole, terfadine, dihydroergotamine, ergonovine, ergotamine, methylergonovine, pimozide, midazolam, triazolam **Supplied:** Tabs

300 mg **SE:** ↑ glucose, cholesterol, triglycerides, central redistribution of fat (metabolic synd.), N, ↓ neutrophils and ↑ amylase

Dasatinib (Sprycel) **Uses:** CML, Ph + ALL **Action:** multi tyrosine kinase inhibitor **Dose:** 70 mg PO BID; adjust w/CYP3A4 inhibitors/inducers (Table 11)

Caution: [D, ?/–] **Contra:** None **Disp:** Tabs 20, 50, 70 mg **SE:** ↓ BM, edema, fluid retention, pleural effusions, N/V/D, abd pain, bleeding, fever, ↑ QT

D Daunorubicin (Daunomycin, Cerubidine) **WARNING:** Cardiac Fxn should be monitored due to potential risk for cardiac tox & CHF, renal/hepatic dsfxn

Uses: *Acute leukemias* **Action:** 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); ↓ in renal/hepatic impair

Caution: [D, ?] **Contra:** Component sensitivity **Disp:** Inj 20, 50 mg **SE:** ↓ BM, mucositis, N/V, alopecia, radiation recall phenomenon, hepatotox (hyperbilirubinemia), tissue necrosis w/

extrav, cardiotox (1–2% CHF w/ 550 mg/m² cumulative dose) **Notes:** Prevent cardiotox w/ dexrazoxane (when pt received > 300 mg/m of daunorubicin cum dose); for IV use only; allopurinol prior to ↓ hyperuricemia

Decitabine (Dacogen) **Uses:** *MDS* **Action:** Inhibits DNA methyltransferase **Dose:** 15 mg/m² cont inf over 3 h; repeat q 8 h × 3 days; repeat cycle q 6 wk, min 4 cycles; delay Tx and ↓ dose if inadequate hematologic recovery at 6 wk (see label protocol) **Caution:** [D, ?/–]; avoid pregnancy; males should not father a child during or 2 months after; renal/hepatic impair

Disp: Powder 50 mg/vial **SE:** Neutropenia, febrile neutropenia, thrombocytopenia, anemia, leukopenia, peripheral edema, petechiae, N/V/D, constipation, stomatitis, dyspepsia, cough, fever, fatigue, ↑ LFTs & bili, hyperglycemia, Infxn, HA **Notes:** ✓ CBC and plt before each cycle and prn; may premedicate w/anti-emetic

Delavirdine (Rescriptor) **Uses:** *HIV Infxn* **Action:** Nonnucleoside RT inhibitor **Dose:** 400 mg PO tid **Caution:** [C, ?] CDC recommends HIV-infected mothers not breast-feed (transmission risk); w/renal/hepatic impair

Contra: Use w/ drugs dependent on CYP3A for clearance (Table 11) **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

Deferasirox (Exjade) **Uses:** *Chronic iron overload due to transfusion in patients > 2 yrs* **Action:** Oral iron chelator **Dose:** Initial: 20 mg/kg PO/d; adjust by 5–10 mg/kg q 3–6 mo based on monthly ferritin; 30 mg/kg/d max; on empty stomach 30 min before food; hold dose if ferritin <500 mcg/L, dissolve in water, orange, apple juice (< 1 gm/3.5 oz; >1 gm in 7 oz) drink immediately; resuspend residue and swallow; do not chew, swallow whole tabs or take w/ Al-containing antacids

Caution: [B, ?/–] **Disp:** Tabs for oral susp 125, 250, 500 mg **SE:** N/V/D, abd pain, skin rash, HA, fever, cough, ↑ creatinine & LFTs, Infxn, hearing loss, dizziness, cataracts, retinal disorders, ↑ IOP, lens opacities, dizziness **Notes:** ARF, peripheral cypenias possible; ✓ Cr weekly 1st month then Q month, ✓ monitor CBC; Do not

combine w/other iron chelator therapies; dose to nearest whole tablet; auditory/ophthalmic testing initially and q 12 mo; monthly Cr, urine protein, LFTs

Demeclocycline (Declomycin) Uses: *SIADH* Action: Antibiotic, antagonizes ADH action on renal tubules Dose: 300–600 mg PO q12h on empty stomach; ↓ in renal failure; avoid antacids Caution: [D, +] Avoid in hepatic/renal impair & children Contra: Tetracycline allergy Disp: Tabs 150, 300 mg SE: D, abd cramps, photosens, DI Notes: Avoid sunlight, numerous drug interactions.

Desipramine (Norpramin) WARNING: Closely monitor for worsening depression or emergence of suicidality Uses: *Endogenous depression,* chronic pain, peripheral neuropathy Action: TCA; ↑ synaptic serotonin or norepinephrine in CNS Dose: 75–200 mg/d single or ÷ dose; usually single hs dose (max 300 mg/d); ↓ dose in elderly Caution: [C, ?/–] CV Dz, Sz disorder, hypothyroidism Contra: MAOIs w/in 14 d; during AMI recovery phase Disp: Tabs 10, 25, 50, 75, 100, 150 mg; caps 25, 50 mg SE: Anticholinergic (blurred vision, urinary retention, xerostomia); orthostatic ↓ BP; ↑ QT interval, arrhythmias Notes: Numerous drug interactions; blue-green urine; avoid sunlight

Desloratadine (Clarinet) Uses: *Seasonal & perennial allergic rhinitis; chronic idiopathic urticaria* Action: Active metabolite of Claritin, H₁-antihistamine, blocks inflammatory mediators Dose: Adults & Peds >12 y. 5 mg PO daily; 5 mg PO qod w/hepatic/renal impair Caution: [C, ?/–] RediTabs contain phenylalanine; safety not established for < 12 y Disp: Tabs & Reditabs (rapid dissolving) 5 mg, syrup 0.5 mg/mL SE: Allergy, anaphylaxis, somnolence, HA, dizziness, fatigue, pharyngitis, xerostomia, N, dyspepsia, myalgia

Desmopressin (DDAVP, Stimate) Uses: *DI (intranasal & parenteral); bleeding due to uremia, hemophilia A, & type I von Willebrand Dz (parenteral), nocturnal enuresis* Action: Synthetic analog of vasopressin (human ADH); ↑ factor VIII Dose: DI: Intranasal: 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 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 Caution: [B, M] Avoid overhydration Contra: Hemophilia B; CrCl < 50 mL/min, severe classic von Willebrand Dz; pts w/ factor VIII antibodies Disp: Tabs 0.1, 0.2 mg; inj 4, 15 mcg/mL; nasal soln 0.1, 1.5 mg/mL SE: Facial flushing, HA, dizziness, vulval pain, nasal congestion, pain at inj site, ↓ Na⁺, H₂O intox Notes: In very young & old pts, ↓ fluid intake to avoid H₂O intox & ↓ Na⁺

Dexamethasone, Nasal (Dexacort Phosphate Turbinaire) Uses: *Chronic nasal inflammation or allergic rhinitis* Action: Anti-inflammatory corticosteroid Dose: Adult & Peds >12 y. 2 sprays/nosril bid–tid, max 12 sprays/d. Peds 6–12 y. 1–2 sprays/nosril bid, max 8 sprays/d Caution: [C, ?] Contra: Untreated Infxn Disp: Aerosol, 84 mcg/activation SE: Local irritation

Dexamethasone, Ophthalmic (AK-Dex Ophthalmic, Decadron Ophthalmic)

Uses: *Inflammatory or allergic conjunctivitis*
Action: Anti-inflammatory corticosteroid **Dose:** Instill 1–2 gtt tid–qid **Caution:** [C, ?/–] **Contra:** Active untreated bacterial, viral, & fungal eye Infxns **Disp:** Susp & soln 0.1%; oint 0.05% **SE:** Long-term use associated w/ cataracts

Dexamethasone Systemic, Topical (Decadron) See Steroids, Systemic, page 185, & Tables 3 and 4

Dexpanthenol (Ilopan-Choline PO, Ilopan) **Uses:** *Minimize paralytic ileus, Rx postop distention* **Action:** 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 **Caution:** [C, ?] **Contra:** Hemophilia, mechanical bowel obst **Disp:** Inj 250 mg/mL; tabs 50 mg; cream 2% **SE:** GI cramps

Dexrazoxane (Zinecard) **Uses:** *Prevent anthracycline-induced (eg, doxorubicin) cardiomyopathy* **Action:** Chelates heavy metals; binds intracellular iron & prevents anthracycline-induced free radicals **Dose:** 10:1 ratio dexrazoxane:doxorubicin 30 min prior to each dose, 5:1 ratio w/CrCl < 40 mL/min **Caution:** [C, ?] **Contra:** Component sensitivity **Disp:** Inj powder 250, 500 mg (10 mg/mL) **SE:** ↓ BM (esp. leukopenia), fever, Infxn, stomatitis, alopecia, N/V/D; mild ↑ transaminase, inj site pain

Dextran 40 (Rheomacrodex, Gentran 40) **Uses:** *Shock, prophylaxis of DVT & thromboembolism, adjunct in peripheral vascular surgery* **Action:** Expands plasma volume; ↓ 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 **Caution:** [C, ?] Inf Rxns; w/corticosteroids **Contra:** 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

Dextromethorphan (Mediquell, Benlyn DM, PediaCare 1, Delsym, others) [OTC] **Uses:** *Control nonproductive cough* **Action:** Suppresses medullary cough center **Dose:** *Adults.* 10–30 mg PO q4h PRN (max 120 mg/24 h). *Peds.* 2–6 y: 2.5–7.5 mg q4–8h (max 30 mg/24 h). 7–12 y: 5–10 mg q4–8h (max 60 mg/24h) **Caution:** [C, ?/–] Not for persistent or chronic cough **contra:** <2 yrs **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 < 2 y; Abuse potential; Efficacy in children debated

Diazepam (Valium, Diastat) [C-IV] **Uses:** *Anxiety, EtOH withdrawal, muscle spasm, status epilepticus, panic disorders, amnesia, preop

sedation* **Action:** Benzodiazepine **Dose: Adults.** *Status epilepticus:* 5–10 mg q10–20 min 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:* Initial 2–5 mg IV, then 5–10 mg q5–10 min, 100 mg in 1 h max. May require up to 1,000 mg/24-h for severe withdrawal; 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 q15–30 min 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 **Caution:** [D, ?/–] **Contra:** Coma, CNS depression, resp depression, NAG, severe uncontrolled pain, PRG **Disp:** Tabs 2, 5, 10 mg; soln 1, 5 mg/mL; inj 5 mg/mL; rectal gel 2.5, 5, 10, 20 mg/mL **SE:** Sedation, amnesia, bradycardia, ↓ 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 due to hyperinsulinism (Proglycem); hypertensive crisis (Hyperstat)* **Action:** ↓ Pancreatic insulin release; antihypertensive **Dose:** Repeat in 5–15 min until BP controlled; repeat every 4–24 h; monitor BP closely. *Hypoglycemia: Adults & Peds.* 3–8 mg/kg/24 h PO ÷ q8–12h. *Neonates.* 8–15 mg/kg/24 h ÷ in 3 equal doses; maint 8–10 mg/kg/24 h PO in 2–3 equal doses **Caution:** [C, ?] ↓ effect w/ phenytoin; ↑ effect w/ diuretics, warfarin **Contra:** Allergy to thiazides or other sulfonamide-containing products; HTN associated w/ aortic coarctation, AV shunt, or pheochromocytoma **Disp:** Caps 50 mg; PO susp 50 mg/mL **SE:** Hyperglycemia, ↓ BP, dizziness, Na⁺ & H₂O retention, N/V, weakness **Notes:** Can give false-negative insulin response to glucagons; Rx extrav w/ warm compress

Dibucaine (Nupercainal) **Uses:** *Hemorrhoids & minor skin conditions* **Action:** Topical anesthetic **Dose:** Insert PR w/ applicator bid & after each bowel movement; apply sparingly to skin **Caution:** [C, ?] **Contra:** Component sensitivity **Disp:** 1% Oint w/ rectal applicator; 0.5% cream **SE:** Local irritation, rash

Diclofenac (Cataflam, Felctor, Voltaren) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Arthritis & pain* **Action:** NSAID **Dose:** 50–75 mg PO bid; w/ food or milk; 1 patch to painful area BID **Caution:** [B (D 3rd tri or near delivery), ?] CHF, HTN, renal/hepatic dysfunction, & Hx PUD **Contra:** NSAID/aspirin allergy; porphyria; peri-operative pain following CABG **Disp:** Tabs 50 mg; tabs DR 25, 50, 75, 100 mg; XR tabs 100 mg; Flector Patch 10 × 14 cm, ophthal soln 0.1% **SE:** Abd cramps, heartburn, GI ulceration, rash, interstitial nephritis; patch: pruritus, dermatitis, burning, N, HA **Notes:** Do not crush tabs; watch for GI bleed; do not apply patch to damaged skin or while bathing

Dicloxacillin (Dynapen, Dycill) **Uses:** *Rx of pneumonia, skin, & soft tissue Infxns, & osteomyelitis caused by penicillinase-producing staphylococci* **Action:** Bactericidal; ↓ cell wall synth. *Spectrum:* *S. aureus* & *Strep* **Dose: Adults.**

250–500 mg qid **Peds** <40 kg. 12.5–100 mg/kg/d ÷ qid; take on empty stomach

Caution: [B, ?] **Contra:** Component or PCN sensitivity **Disp:** Caps 125, 250, 500 mg; soln 62.5 mg/5 mL **SE:** N/D, abd pain **Notes:** Monitor PTT if pt on warfarin

Dicyclomine (Bentyl) **Uses:** *Functional IBS* **Action:** Smooth-muscle relaxant **Dose:** Adults. 20 mg PO qid; ↑ to 160 mg/d max or 20 mg IM q6h, 80mg/day ÷ QID then ↑ to 160 mg/day, max 2 wks **Peds.** Infants > 6 mo: 5 mg/dose tid–qid. **Children:** 10 mg/dose tid–qid **Caution:** [B, –] **Contra:** Infants < 6 mo, NAG, MyG, severe UC, BOO **Disp:** Caps 10, 20 mg; tabs 20 mg; syrup 10 mg/5 mL; inj 10 mg/mL **SE:** Anticholinergic SEs may limit dose **Notes:** Take 30–60 min before meal; avoid EtOH, do not administer IV

Didanosine [ddl] (Videx) **WARNING:** 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* **Action:** 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 wks to 8 mo age 100 mg/m², > 8 mo 120 mg/m² PO BID; ↓ in renal impair **Caution:** [B, –] CDC recommends HIV-infected mothers not breast-feed **Contra:** Component sensitivity **Disp:** Chew tabs 25, 50, 100, 150, 200 mg; powder packets 100, 167, 250, 375 mg; powder for soln 2, 4 g **SE:** Pancreatitis, peripheral neuropathy, D, HA **Notes:** Do not take w/ meals; thoroughly chew tablets, do not mix w/ fruit juice or acidic beverages; reconstitute powder w/ H₂O, many drug interactions

Diffenhydramine (Benadryl) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Mild–moderate pain; osteoarthritis* **Action:** NSAID **Dose:** Pain: 500 mg PO bid. **Osteoarthritis:** 500–1500 mg PO in 2–3 ÷ doses; ↓ in renal impair, take w/ food/milk **Caution:** [C (D 3rd tri or near delivery), ?] CHF, HTN, renal/hepatic dysfunction, & Hx PUD. **Contra:** Allergy to NSAIDs or aspirin, active GI bleed **Disp:** Tabs 250, 500 mg **SE:** May ↑ bleeding time; HA, abd cramps, heartburn, GI ulceration, rash, interstitial nephritis, fluid retention

Digoxin (Lanoxin, Lanoxicaps, Digitek) **Uses:** *CHF, AF & flutter, & PAT* **Action:** 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. **Maint:** 6–10 mcg/kg/24 h PO or 5–8 mcg/kg/24 h ÷ q12h. 1 mo–2 y: Digitalization: 35–60 mcg/kg PO or 30–50 mcg/kg IV; give 1/2 the initial dose, then 1/3 dose at 8–12-h intervals for 2 doses. **Maint:** 10–15 mcg/kg/24 h PO or 7.5–15 mcg/kg/24 h IV ÷ q12h. 2–10 y: Digitalization: 30–40 mcg/kg PO or 25 mcg/kg IV; give 1/2 initial

dose, then $\frac{1}{2}$ of the dose at 8–12-h intervals for 2 doses. *Maint:* 8–10 mcg/kg/24 h PO or 6–8 mcg/kg/24 h IV \div q12h. 7–10 y: Same as for adults; \downarrow in renal impair

Caution: [C, +] **Contra:** AV block; idiopathic hypertrophic subaortic stenosis; constrictive pericarditis **Disp:** Caps 0.05, 0.1, 0.2 mg; tabs 0.125, 0.25, 0.5 mg; elixir 0.05 mg/mL; inj 0.1, 0.25 mg/mL **SE:** Can cause heart block; \downarrow 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:* 0.8–2.0 ng/mL; *Toxic* > 2 ng/mL; $\frac{1}{2}$ life: 36 h

Digoxin Immune Fab (Digibind, DigiFab) **Uses:** *Life-threatening digoxin intox* **Action:** Antigen-binding fragments bind & inactivate digoxin **Dose:** *Adults & Peds.* Based on serum level & pt's wgt; see charts provided w/ drug **Caution:** [C, ?] **Contra:** Sheep product allergy **Disp:** Inj 38 mg/vial **SE:** Worsening of cardiac output or CHF, \downarrow K⁺, facial swelling, & redness **Notes:** Each vial binds \approx 0.6 mg of digoxin; renal failure may require redosing in several days

Diltiazem (Cardizem, Cardizem CD, Cardizem SR, Cartia XT, Dilacor XR, Diltia XT, Taztia XT, Tiamate, Tiazac) **Uses:**

Angina, prevention of reinfarction, HTN, AF or flutter, & PAT **Action:** CCB **Dose:** *PO:* Initial, 30 mg PO qid; \uparrow to 180–360 mg/d in 3–4 \div doses PRN. *SR:* 60–120 mg PO bid; \uparrow to 360 mg/d max. *CD or XR:* 120–360 mg/d (max 480 mg/d). *IV:* 0.25 mg/kg IV bolus over 2 min; may repeat in 15 min at 0.35 mg/kg; begin inf of 5–15 mg/h; *Acute Rate Control:* 15–20 mg (0.25 mg/kg) IV over 2 min, Repeat in 15 min at 20–25 mg (0.35 mg/kg) over 2 min (*ECC 2005*) **Caution:** [C, +] \uparrow effect w/ amiodarone, cimetidine, fentanyl, lithium, cyclosporine, digoxin, β -blockers, theophylline **Contra:** SSS, AV block, \downarrow BP, AMI, pulm congestion **Disp:** *Cardizem CD:* Caps 120, 180, 240, 300, 360 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 180, 240 mg; *Diltia XT:* Caps 120, 180, 240 mg; *Tiazac:* Caps 120, 180, 240, 300, 360, 420 mg; *Tiamate (XR):* Tabs 120, 180, 240 mg; inj 5 mg/mL; *Taztia XT:* 120, 180, 240, 300, 360 mg **SE:** Gingival hyperplasia, bradycardia, 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* **Action:** Antiemetic **Dose:** *Adults.* 50–100 mg PO q4–6h, max 400 mg/d; 50 mg IM/IV PRN. *Peds.* 2–6 yrs: 12.5–25 mg Q6–8 H max 75 mg/day, 6–12 yrs: 25–50 mg q6–8h max 150 mg/d; **Caution:** [B, ?] **Contra:** Component sensitivity **Disp:** Tabs 50 mg; chew tabs 50 mg; liq 12.5 mg/4 mL, 12.5 mg/5 mL, 15.62 mg/5 mL; **SE:** Anticholinergic side effects

Dimethyl Sulfoxide [DMSO] (Rimso 50) **Uses:** *Interstitial cystitis* **Action:** Unknown **Dose:** Intravesical, 50 mL, retain for 15 min; repeat q2wk until relief **Caution:** [C, ?] **Contra:** Component sensitivity **Disp:** 50% & 100% soln **SE:** Cystitis, eosinophilia, GI, & taste disturbance

Dinoprostone (Cervidil Vaginal Insert, Prepidil Vaginal Gel, Prostin E2)

WARNING: 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* **Action:** 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). *Vaginal insert:* 1 insert (10 mg = 0.3 mg dinoprostone/h over 12 h); remove w/ onset of labor or 12 h after insertion. *Vaginal supp:* 20 mg repeated every 3–5 h; adjust PRN supp: 1 high in vagina, repeat at 3–5-h intervals until abortion (240 mg max) **Caution:** [X, ?] **Contra:** Ruptured membranes, allergy to prostaglandins, placenta previa or AUB, when oxytocic drugs contraindicated 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-mm & 20-mm shielded catheter) *Vaginal gel:* 0.5 mg/3 g *Vaginal supp:* 20 mg *Vaginal 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 extrapyramidal Rxns* **Action:** Antihistamine, antiemetic **Dose:** *Adults.* 25–50 mg PO, IV, or IM bid–tid. *Peds.* > 2 y. 5 mg/kg/24 h PO or IM ÷ q6h (max 300 mg/d); ↑ dosing interval w/ moderate–severe renal insuff **Caution:** [B, –] **Contra:** 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; liq 6.25 mg/5 mL, 12.5 mg/5 mL; inj 50 mg/mL, cream: 2% **SE:** Anticholinergic (xerostomia, urinary retention, sedation)

Diphenoxylate + Atropine (Lomotil, Lonox) [C-V] **Uses:** *D* **Action:** Constipating meperidine congener, ↓ GI motility **Dose:** *Adults.* Initial, 5 mg PO tid–qid until controlled, then 2.5–5 mg PO bid; 20 mg/day max *Peds* > 2 y: 0.3–0.4 mg/kg/24 h (of diphenoxylate) bid–qid, 10 mg/day max **Caution:** [C, +] **Contra:** Obstructive jaundice, D due to 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, & Acellular pertussis adsorbed, Hepatitis 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, born to HBsAg– mothers* **Actions:** 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/ one or more doses IPV, use to complete series **Caution:** [C, N/A] **Contra:** HbsAG+ mother, adults, children > 7 y, immunosuppressed, allergy to yeast, neomycin, polymyxin B, or any component, encephalopathy, or progressive neurologic disorders; caution in

bleeding disorders. **Disp:** Single-dose vials 0.5 mL **SE:** Drowsiness, restlessness, fever, fussiness, ↓ appetite, nodule redness, inj site pain/swelling **Notes:** If IM use only preservative-free injection

Dipivefrin (Propine) **Uses:** *Open-angle glaucoma* **Action:** α-Adrenergic agonist **Dose:** 1 gtt in eye q12h **Caution:** [B, ?] **Contra:** 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* **Action:** Anti-plt activity; coronary vasodilator **Dose:** *Adults.* 75–100 mg PO tid–qid; stress test 0.14 mg/kg/min (max 60 mg over 4 min). *Peds* >12 y. 3–6 mg/kg/d divided tid (safety/efficacy not established) **Caution:** [B, ?/–] w/ other drugs that affect coagulation **Contra:** 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* **Action:** ↓ Plt aggregation (both agents) **Dose:** 1 cap PO bid **Caution:** [C, ?] **Contra:** Ulcers, bleeding diathesis **Disp:** Dipyridamole (XR) 200 mg/aspirin 25 mg **SE:** ASA component: allergic Rxns, skin Rxns, ulcers/GI bleed, bronchospasm; dipyridamole component: dizziness, HA, rash **Notes:** Swallow capsule whole

Dirithromycin (Dynabac) **Uses:** *Bronchitis, community-acquired pneumonia, & skin & skin structure Infxns* **Action:** Macrolide antibiotic. *Spectrum:* *M. catarrhalis, Streptococcus pneumoniae, Legionella, H. influenzae, S. pyogenes, S. aureus* **Dose:** 500 mg/d PO; w/ food; swallow whole **Caution:** [C, M] **Contra:** w/ pimozone **Disp:** Tabs 250 mg **SE:** Abd discomfort, HA, rash, ↑ K⁺

Disopyramide (Norpace, Norpace CR, NAPamide, Rhythmolan) **WARNING:** Excessive mortality or nonfatal cardiac arrest rate with use in asymptomatic non-life-threatening ventricular arrhythmias with MI 6 days to 2 years prior. Restrict use to life-threatening arrhythmias only **Uses:** *Suppression & prevention of VT* **Action:** Class 1A antiarrhythmic; stabilizes membranes, depresses action potential **Dose:** *Adults.* 400–600 mg/d ÷ q6h or q12h for CR, max 1600 mg/day. *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 **Caution:** [C, +] **Contra:** 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* >5 mcg/mL; ½ life: 4–10 h

Dobutamine (Dobutrex) **Uses:** *Short-term in cardiac decompensation secondary to depressed contractility* **Action:** Positive inotrope **Dose:** *Adults* &

Peds. Cont IV inf of 2.5–15 mcg/kg/min; rarely, 40 mcg/kg/min required; titrate; 2–20 mcg/kg/min; titrate to HR not > 10% of baseline (*ECC 2005*) **Caution:** [C, ?] **Contra:** Sensitivity to sulfites, IHSS **Disp:** Inj 250 mg/20 mL, 12.5/mL **SE:** Chest pain, HTN, dyspnea **Notes:** Monitor PWP & cardiac output if possible; ✓ ECG for ↑ HR, ectopic activity; follow BP

Docetaxel (Taxotere) **WARNING:** Do not administer if neutrophil count < 1500 cell/mm³; severe rxns possible in hepatic dysfxn **Uses:** *Breast (anthracycline-resistant), ovarian, lung, & prostate CA* **Action:** 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/ ↑ bilirubin levels **Caution:** [D, –] **Contra:** 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 & posttreatment & 600–800 mg/m² w/ steroid prep; allergy possible (rare w/steroid prep) **Notes:** ✓ bili, SGOT or SGPT and alk phos prior to each cycle; frequent CBC during therapy

Docusate Calcium (Surfak)/Docusate Potassium (Dialose)/Docusate Sodium (DOSS, Colace) **Uses:** *Constipation; adjunct to painful anorectal conditions (hemorrhoids)* **Action:** 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: 40–120 mg/24 h ÷ daily–qid **Caution:** [C, ?] **Contra:** 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 **SE:** Rare abd cramping, D **Notes:** Take w/ full glass of H₂O; no laxative action; do not use >1 wk

Dofetilide (Tikosyn) **WARNING:** To minimize the risk of induced arrhythmia, hospitalize for minimum of 3 days to provide calculations of CrCl, continuous ECG monitoring, & cardiac resuscitation **Uses:** *Maintain normal sinus rhythm in AF/A flutter after conversion* **Action:** Type III antiarrhythmic, prolongs action potential **Dose:** Based on CrCl & QTc; CrCl > 60 mL/min 500 mcg PO q12h, check QtC 2–3h after, if QTc > 15% over baseline or > 500 msec, ↓ to 250 mcg Q 12h, ✓ after each dose; if CrCl < 60 mL/sec, see insert; D/C if QTc > 500 msec after dosing adjustments **Caution:** [C, –] **Contra:** Baseline QTc > 440 ms, CrCl < 20 mL/min; w/verapamil, cimetidine, trimethoprim, ketoconazole, quinolones, ACE inhibitors/HCTZ combo **Disp:** Caps 125, 250, 500 mcg **SE:** Vent 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.

Dolasetron (Anzemet) **Uses:** *Prevent chemo-associated N/V* **Action:** 5-HT₃ receptor antagonist **Dose: Adults & Peds.** IV: 1.8 mg/kg IV as single dose 30 min prior to chemo **Adults.** PO: 100 mg PO as a single dose 1 h prior to chemo

Peds. 1.8 mg/kg PO to max 100 mg as single dose **Caution:** [B, ?] **Contra:** Component sensitivity **Disp:** Tabs 50, 100 mg; inj 20 mg/mL **SE:** ↑ QT interval, D, HTN, HA, abd pain, urinary retention, transient ↑ LFTs

Dopamine (Intropin) **Uses:** *Short-term use in cardiac decompensation secondary to ↓ contractility; ↑ organ perfusion (at low dose)* **Action:** Positive inotropic agent w/dose response: 1–10 mcg/kg/min β-effects (↑ CO & renal perfusion); 10–20 mcg/kg/min β-effects (peripheral vasoconstriction, pressor); > 20 mcg/kg/min peripheral & renal vasoconstriction **Dose: Adults & Peds.** 5 mcg/kg/min by cont inf, ↑ by 5 mcg/kg/min to 50 mcg/kg/min max to effect (*ECC 2005*) **Caution:** [C, ?] **Contra:** 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

Dornase Alfa (Pulmozyme, DNase) **Uses:** *↓ Frequency of resp Infxns in CF* **Action:** Enzyme cleaves extracellular DNA, ↓ mucous viscosity **Dose: Adult:** Inhal 2.5 mg/BID dosing w/ FVC >85% w/ recommended nebulizer **Peds > 5 yr:** Inhal 2.5 mg/daily, BID if FVC > 85% **Caution:** [B, ?] **Contra:** Chinese hamster product allergy **Disp:** Soln for inhal 1 mg/mL **SE:** Pharyngitis, voice alteration, CP, rash

Dorzolamide (Trusopt) **Uses:** *Glaucoma* **Action:** Carbonic anhydrase inhibitor **Dose:** 1 gtt in eye(s) tid **Caution:** [C, ?] **Contra:** Component sensitivity **Disp:** 2% soln **SE:** irritation, bitter taste, punctate keratitis, ocular allergic Rxn

Dorzolamide & Timolol (Cosopt) **Uses:** *Glaucoma* **Action:** Carbonic anhydrase inhibitor w/ β-adrenergic blocker **Dose:** 1 gtt in eye(s) bid **Caution:** [C, ?] CrCl < 30 **Contra:** Component sensitivity, asthma, severe COPD, sinus bradycardia **Disp:** Soln dorzolamide 2% & timolol 0.5% **SE:** Irritation, bitter taste, superficial keratitis, ocular allergic Rxn

Doxazosin (Cardura, Cardura XL) **Uses:** *HTN & symptomatic BPH* **Action:** 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 2–8mg Q AM **Caution:** [B, ?] **Contra:** Component sensitivity **Disp:** Tabs 1, 2, 4, 8 mg; XL 4, 8 mg **SE:** Dizziness, HA, drowsiness, sexual dysfunction, doses > 4 mg ↑ postural ↓ BP risk **Notes:** First dose hs; syncope may occur w/in 90 mins of initial dose

Doxepin (Adapin) **WARNING:** Closely monitor for worsening depression or emergence of suicidality **Uses:** *Depression, anxiety, chronic pain* **Action:** TCA; ↑ synaptic CNS serotonin or norepinephrine **Dose:** 25–150 mg/d PO, usually hs but can ÷ doses; up to 300 mg/day for depression ↓ in hepatic impair **Caution:** [C, ?/–] **Contra:** 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, Topical (Zonalon, Prudoxin) Uses: *Short-term Rx pruritus (atopic dermatitis or lichen simplex chronicus)* **Action:** Antipruritic; H₁- & H₂-receptor antagonism **Dose:** Apply thin coating qid, 8 d max **Caution:** [C, ?/-] **Contra:** 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's sarcoma; Wilms' tumor; neuroblastoma; bladder, breast, ovarian, gastric, thyroid, & lung CAs* **Action:** Intercalates DNA; ↓ DNA topoisomerases 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) **Caution:** [D, ?] **Contra:** Severe CHF, cardiomyopathy, preexisting ↓ BM, previous Rx w/total cumulative doses of doxorubicin, idarubicin, daunorubicin **Disp:** Inj 10, 20, 50, 75, 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

Doxycycline (Adoxa, Periostat, Oracea, Vibramycin, Vibra-Tabs) Uses: *Broad-spectrum antibiotic *acne vulgaris, uncomplicated GC, chlamydia, PID, Lyme disease, skin infections, anthrax, malaria prophylaxis **Action:** Tetracycline; bacteriostatic; ↓ protein synth. **Spectrum:** Some gram (+) and (-), *Rickettsia* sp, *Chlamydia*, *M. pneumoniae*, *B. Anthraxus* **Dose: Adults.** 100 mg PO q12h on 1st d, then 100 mg PO daily–bid or 100 mg IV q12h; acne daily dosing, chlamydia 7d, Lyme disease 14–21 d, PID 14 d **Peds >8 yrs:** 5 mg/kg/24 h PO, to a max of 200 mg/d ÷ daily–bid **Caution:** [D, +] hepatic impair **Contra:** Children <8 y, severe hepatic dysfunction **Disp:** Tabs 20, 50, 75, 100, 150 mg; caps 50, 100 mg; Oracea 40 mg caps (30 mg timed release, 10 mg delayed release); syrup 50 mg/5 mL; susp 25 mg/5 mL; inj 100, 200 mg/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-II] Uses: *N/V associated w/ CA chemo; appetite stimulation* **Action:** 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/day **Caution:** [C, ?] **Contra:** Hx schizophrenia, sesame oil hypersensitivity **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

Droperidol (Inapsine) Uses: *N/V; anesthetic premedication, AIDS-associated anorexia* **Action:** Tranquilizer, sedation, antiemetic **Dose: Adults.** N: initial max 2.5 mg IV/IM, may repeat 1.25 mg based on response; **Premed:** 2.5–10 mg IV, 30–60 min preop. **Peds.** **Premed:** 0.1–0.15 mg/kg/dose **Caution:** [C, ?] **Contra:** Component sensitivity **Disp:** Inj 2.5 mg/mL **SE:** Drowsiness, ↓ BP, occasional

tachycardia & extrapyramidal Rxns, ↑ QT interval, arrhythmias **Notes:** Give IVP slowly over 2–5 min

Drotrecogin Alfa (Xigris) **Uses:** *↓ Mortality in adults w/ severe sepsis (w/ acute organ dysfunction) at high risk of death (eg, determined by APACHE II WWW.NCEML.ORG)* **Action:** Recombinant human-activated protein C; anti-thrombotic and anti-inflammatory, unclear mechanism **Dose:** 24 mcg/kg/h, total of 96 h **Caution:** [C, ?] **Contra:** Active bleeding, recent stroke/CNS surgery, head trauma/CNS lesion w/ herniation risk, trauma w/ ↑ bleeding risk, epidural catheter, mifepristone **Disp:** 5, 20-mg vials **SE:** Bleeding **Notes:** Single organ dysfunction & recent surgery may not be at high risk of death irrespective of APACHE II score & therefore not indicated. Percutaneous procedures: Stop inf 2 h before & resume 1 h after; major surgery: stop inf 2 h before & resume 12 h after in absence of bleeding

Duloxetine (Cymbalta) **WARNING:** 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, GAD* **Action:** Selective serotonin & norepinephrine reuptake inhibitor (SSNRI) **Dose:** *Depression:* 40–60 mg/d PO ÷ bid. *DM neuropathy:* 60 mg/d PO; *GAD:* 30–60 mg/d max 120mg/d **Caution:** [C, ?/–]; use in 3rd tri; avoid if CrCl < 30 mL/min, NAG, w/fluvoxamine, inhibitors of CYP2D6 (Table 11), TCAs, phenothiazines, type 1C antiarrhythmics (Table 10) **Contra:** MAOI use w/in 14 d, w/ thioridazine, NAG, hepatic insuff **Disp:** Caps delayed-release 20, 30, 60 mg **SE:** N, dizziness, somnolence, fatigue, sweating, xerostomia, constipation, ↓ appetite, sexual dysfunction, urinary hesitancy, ↑ LFTs, HTN **Notes:** Swallow whole; monitor BP; avoid abrupt D/C

Dutasteride (Avodart) **Uses:** *Symptomatic BPH* **Action:** 5 α -Reductase inhibitor; ↓ intracellular DHT **Dose:** 0.5 mg PO/day **Caution:** [X, –] Hepatic impair; pregnant women should not handle pills **Contra:** Women & children **Disp:** Caps 0.5 mg **SE:** ↑ testosterone, TSH ↑, ↓ PSA levels, impotence, ↓ libido, gynecomastia **Notes:** No blood donation until 6 mo after D/C, new baseline PSA @ 6 mo; corrected PSA × 2

Echothiophate Iodine (Phospholine Ophthalmic) **Uses:** *Glaucoma* **Action:** Cholinesterase inhibitor **Dose:** 1 gtt eye(s) bid w/ 1 dose hs **Caution:** [C, ?] **Contra:** Active uveal inflammation, inflammatory Dz of iris/ciliary body, glaucoma iridocyclitis **Disp:** Powder, reconstitute 1.5 mg/0.03%; 3 mg/0.06%; 6.25 mg/0.125%; 12.5 mg/0.25% **SE:** Local irritation, myopia, blurred vision, ↓ BP, bradycardia

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

Eculizumab (Soliris) **WARNING:** ↑ risk of meningococcal infections (give meningococcal vaccine 2 weeks prior to first dose and revaccinate per guidelines) **Uses:** *Rx paroxysmal nocturnal hemoglobinuria* **Action:** Complement inhibitor **Dose:** 600 mg IV q 7 days x 4 wks, then 900 mg IV fifth dose 7 days later, then 900 mg IV q 14 days **Caution:** [C; ?] **Contra:** Active *N. meningitidis* infection; 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-hr max inf time); monitor for 1 hr for s/sx of infusion rxn

Edrophonium (Tensilon, Enlon, Reversol) **Uses:** *Diagnosis of MyG; acute MyG crisis; curare antagonist, reverse of nondepolarizing neuromuscular blockers* **Action:** Anticholinesterase **Dose: Adults.** Test for MyG: 2 mg IV in 1 min; if tolerated, give 8 mg IV; (+) test is brief ↑ in strength. **Peds.** Test for MyG: Total dose 0.2 mg/kg; 0.04 mg/kg test dose; if no Rxn, give remainder in 1-mg increments to 10 mg max; ↓ in renal impair **Caution:** [C, ?] **Contra:** 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

Efalizumab (Raptiva) **WARNING:** Associated w/ serious Infxns, malignancy, thrombocytopenia **Uses:** Chronic moderate–severe plaque psoriasis **Action:** MoAb **Dose: Adults.** 0.7 mg/kg SQ conditioning dose, followed by 1 mg/kg/wk; single doses should not exceed 200 mg **Caution:** [C, +/-], chronic infection, elderly **Contra:** Admin of most vaccines **Disp:** 150-mg vial **SE:** First-dose Rxn, HA, worsening psoriasis, ↑ LFT, hemolytic anemia immunosuppressive-related Rxns (see Warning) **Notes:** Minimize 1st-dose Rxn by conditioning dose; ✓ pts monthly, then every 3 mo & w/ dose ↑; pts may be trained in self-admin

Efavirenz (Sustiva) **Uses:** *HIV Infxns* **Action:** Antiretroviral; nonnucleoside RTI **Dose: Adults.** 600 mg/d PO q hs. **Peds.** See insert; avoid high-fat meals **Caution:** [D,?] CDC recommends HIV-infected mothers not breast-feed **Contra:** Component sensitivity **Disp:** Caps 50, 100, 200; 600 mg tab **SE:** Somnolence, vivid dreams, dizziness, rash, N/V/D **Notes:** ✓ LFT, cholesterol

Efavirenz, emtricitabine, tenofovir (Atripla) **WARNING:** Lactic acidosis and severe hepatomegaly with steatosis, including fatal cases, have been reported with the use of nucleoside analogs alone or in combination with other antiretrovirals **Uses:** *HIV Infxns* **Action:** Triple fixed-dose combination antiretroviral **Dose: Adults.** 1 tab daily on empty stomach; HS dose may ↓ CNS effects **Caution:** [D, ?] CDC recommends HIV-infected mothers not breast-feed **Contra:** < 18 yrs, component sensitivity, w/ astemizole, midazolam, triazolam or ergot derivatives (competition for CYP3A4 by efavirenz could result in serious and/or life-threatening SE) **Disp:** Tab containing efavirenz 600 mg/emtricitabine 200 mg/tenofovir/300 mg **SE:** Somnolence, vivid dreams, HA, dizziness, rash, N/V/D, ↓ bone mineral density **Notes:** Monitor LFT, cholesterol; see individual agents for additional info, do not use in HIV and HepB coinfection

Eletriptan (Relpax) Uses: *Acute Rx of migraine* Action: Selective serotonin receptor (5-HT_{1B/1D}) agonist Dose: 20–40 mg PO, may repeat in 2 h; 80 mg/24 h max Caution: [C, +] Contra: 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 inhibitors Disp: Tabs 20, 40 mg SE: Dizziness, somnolence, N, asthenia, xerostomia, paresthesias; pain, pressure, or tightness in chest, jaw or neck; serious cardiac events

Emedastine (Emadine) Uses: *Allergic conjunctivitis* Action: Antihistamine; selective H₁-antagonist Dose: 1 gtt in eye(s) up to qid Caution: [B, ?] Contra: 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) WARNING: Class warning for lipodystrophy, lactic acidosis, & severe hepatomegaly Uses: HIV-1 Infxn Action: NRTI Dose: 200 mg cap or 240 mg sol PO daily; ↓ w/ renal impair Caution: [B, -] risk of liver dz Contra: Component sensitivity Disp: Soln: 10 mg/mL, 200 mg caps SE: HA, D, N, rash, rare hyperpigmentation of feet & hands, posttreatment exacerbation of hepatitis Notes: First one-daily NRTI; caps/sol not equivalent; not rec as monotherapy; screen for HepB, do not use in established HIV and HepB coinfection

Enalapril (Vasotec) Uses: *HTN, CHF, LVD,* DN Action: ACE inhibitor Dose: Adults. 2.5–40 mg/d PO; 1.25 mg IV q6h. Peds. 0.05–0.08 mg/kg/day PO q12–24h; ↓ w/renal impair Caution: [C (1st tri; D 2nd & 3rd tri), +] D/C immediately once pregnancy detected w/NSAIDs, K⁺ supls Contra: 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⁺, nonproductive cough, angioedema Notes: Monitor Cr; D/C diuretic for 2–3 d prior to start

Enfuvirtide (Fuzeon) WARNING: Rarely causes allergy; never rechallenge Uses: *w/ antiretroviral agents for HIV-1 Infxn in treatment-experienced pts with evidence of viral replication despite ongoing antiretroviral therapy* Action: Viral fusion inhibitor Dose: 90 mg (1 mL) SQ bid in upper arm, anterior thigh, or abdomen; rotate site Caution: [B,-] Contra: Previous allergy to drug Disp: 90 mg/mL reconstituted; pt kit w/ monthly supplies SE: Inj site rxns (in most); pneumonia, D, N, fatigue, insomnia, peripheral neuropathy Notes: Available only via restricted distribution system; use immediately on recons or refrigerate (24 h max)

Enoxaparin (Lovenox) WARNING: 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*

Action: 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 fibrinolysis in AMI:* 30 mg IV bolus, then 1 mg/kg SQ BID (*ECC 2005*); CrCl < 30 mL ↓ to 1/mg/kg SQ daily **Peds.** *Prevention:* 0.5 mg/kg SQ q12h. *DVT/PE Rx:* 1 mg/kg SQ q12h; ↓ dose w/ CrCl < 30 mL/min **Caution:** [B, ?] Not for prophylaxis in prosthetic heart valves **Contra:** Active bleeding, HIT Ab(+), Cr > 2.5 mg/dL men, 2 g/dL women **Disp:** Inj 10 mg/0.1 mL (30-,40-,60-,80-,100-,120-,150-mg syringes) 300-mg/mL multidose 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* **Action:** Selective & reversible carboxymethyl transferase inhibitor **Dose:** 200 mg w/ each levodopa/carbidopa dose; max 1600 mg/d; ↓ levodopa/carbidopa dose 25% w/levodopa dose > 800 mg **Caution:** [C, ?] Hepatic impair **Contra:** Use w/MAOI **Disp:** Tabs 200 mg **SE:** Dyskinesia, hyperkinesia, N, D, dizziness, hallucinations, orthostatic ↓ BP, brown-orange urine **Notes:** ✓ LFT; do not D/C abruptly

Ephedrine **Uses:** *Acute bronchospasm, bronchial asthma, nasal congestion,* ↓ BP, narcolepsy, enuresis, & MyG **Action:** Sympathomimetic; stimulates α- & β-receptors; bronchodilator **Dose:** **Adults.** *Congestion:* 25–50 mg PO q6h PRN; ↓ *BP:* 25–50 mg IV q 5–10 min, 150 mg/d max. **Peds.** 0.2–0.3 mg/kg/dose IV q4–6h PRN **Caution:** [C, ?/–] **Contra:** Arrhythmias; NAG **Disp:** Nasal soln 0.48%, 0.5%, oral capsule: 25, 37.5, 50 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 4–6h before hs; abuse potential, OTC sales mostly banned/restricted

Epinephrine (Adrenalin, Sus-Phrine, EpiPen, EpiPen Jr, others) **Uses:** *Cardiac arrest, anaphylactic Rxn, bronchospasm, open-angle glaucoma* **Action:** β-adrenergic agonist, some α-effects **Dose:** **Adults.** 1.0 mg IV push, repeat q 3–5 min; (0.2 mg/kg max) if 1 mg dose fails. Inf: 30 mg (30 mL of 1:1000 soln) in 250 mL NS or D5W, at 100 mL/h, titrate. ET 2.0–2.5 mg in 20 mL NS. Profound bradycardia/hypotension: 2–10 mcg/min (1 mg of 1:1000 in 500 mL NS, infuse 1–5 mL/min) (*ECC 2005*); *Anaphylaxis:* 0.3–0.5 mL SQ of 1:1000 dilution, repeat PRN q5–15min to max 1 mg/dose & 5 mg/d. *Asthma:* 0.1–0.5 mL SQ of 1:1000 dilution, repeat Q 20-min to 4-h or 1 inhal (met-dose) repeat in 1–2 min or susp 0.1–0.3 mL SQ for extended effect. **Peds.** ACLS: 1st dose 0.1 mL/kg IV of 1:10,000 dilution, then 0.1 mL/kg IV of 1:1000 dilution q3–5 min to response. *Anaphylaxis:* 0.15–0.3 mg IM depending on wgt < 30 kg 0.01 mg/kg *Asthma:* 0.01 mL/kg SQ of 1:1000 dilution q8–12h. **Caution:** [C, ?] ↓ bronchodilation with β-blockers **Contra:** Cardiac arrhythmias, NAG **Disp:** Inj 1:1000,

1:2000, 1:10,000, 1:100,000; susp for inj 1:200; aerosol 220 mcg/spray; 1% inhal soln; EpiPen Autoinjector one dose 0.30 mg; EpiPen Jr 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)

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

Epirubicin (Ellence) **WARNING:** Do not give IM or SQ. Potential cardiotoxicity; severe myelosupp **Uses:** *Adjuvant therapy for + axillary nodes after resection of primary breast CA*, **Actions:** Anthracycline cytotoxic agent **Dose:** Per protocols; ↓ dose w/ hepatic impair **Caution:** [D, –] **Contra:** Baseline neutrophil count < 1500 cells/mm³, severe myocardial 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, lethargy

Eplerenone (Inspra) **Uses:** *HTN* **Action:** 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 inhibitors **Caution:** [B, +/-] w/CYP3A4 inhibitors (Table 11); monitor K⁺ with ACE inhibitor, ARBs, NSAIDs, K⁺-sparing diuretics; grapefruit juice, St. John's wort **Contra:** K⁺ >5.5 mEq/L; NIDDM w/ microalbuminuria; SCr > 2 mg/dL (males), > 1.8 mg/dL (females); CrCl < 50 mL/min; w/ K⁺ supls/K⁺-sparing diuretics, ketoconazole **Disp:** Tabs 25, 50, 100 mg **SE:** Hypertriglyceridemia, ↑ K⁺, HA, dizziness, gynecomastia, ↑ cholesterol, D, orthostatic ↓ BP **Notes:** May take 4 wk for full effect

Epoetin Alfa [Erythropoietin, EPO] (Epoegen, Procrit) **WARNING:** Use lowest dose possible; may be associated with ↑ CV, thromboembolic events and/or mortality; d/c if Hgb > 12 g/dl **Uses:** *CRF associated anemia* zidovudine Rx in HIV-infected pts, CA chemo; ↓ transfusions associated w/surgery **Action:** 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 gm/dL **Caution:** [C, +] **Contra:** Uncontrolled HTN **Disp:** Inj 2000, 3000, 4000, 10,000, 20,000, 40,000 units/mL **SE:** HTN, HA, fatigue, fever, tachycardia, N/V **Notes:** Refrigerate; monitor baseline & posttreatment Hct/Hgb, BP, ferritin

Epoprostenol (Flolan) **Uses:** *Pulm HTN* **Action:** 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 < maximum-tolerated rate; adjust based on response; see package insert **Caution:** [B, ?] ↑ tox w/diuretics, vasodilators, acetate in dialy-

sis fluids, anticoagulants **Contra:** Chronic use in CHF 2nd-deg, 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, flulike 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 **Action:** ARB **Dose:** 400–800 mg/d single dose or bid **Caution:** [C (1st tri); D (2nd & 3rd tri), d/c immediately when pregnancy detected] w/ Lithium, ↑ K⁺ with K⁺-sparing diuretics/supls/high-dose trimethoprim **Contra:** Bilateral RAS, 1st-deg aldosteronism **Disp:** Tabs 400, 600 mg **SE:** Fatigue, depression, URI, UTI, abd pain, rhinitis/pharyngitis/cough, hypertriglyceridemia

Eptifibatid (Integrilin) **Uses:** *ACS, PCI* **Action:** Glycoprotein IIb/IIIa inhibitor **Dose:** 180 mcg/kg IV bolus, then 2 mcg/kg/min cont inf; ↓ in renal impair (SCr >2 mg/dL, <4 mg/dL: 135 mcg/kg bolus & 0.5 mcg/kg/min inf); ACS: 180 μg/kg IV bolus then 2 μg/kg/min. PCI: 135 mcg/kg IV bolus then 0.5 μg/kg/min; bolus again in 10 min (*ECC 2005*) **Caution:** [B, ?] Monitor bleeding w/other anticoagulants **Contra:** Other GPIIb/IIIa inhibitors, Hx abnormal bleeding, hemorrhagic stroke (within 30 d), severe HTN, major surgery (within 6 wk), plt count <100,000 cells/mm³, renal dialysis **Disp:** Inj 0.75, 2 mg/mL **SE:** Bleeding, ↓ BP, inj site Rxn, thrombocytopenia **Notes:** Monitor bleeding, coags, plts, SCr, activated coagulation time (ACT) with prothrombin consumption index (keep ACT 200–300 sec)

Erlotinib (Tarceva) **Uses:** *NSCLC after 1 chemo agent fails* **Action:** HER2/EGFR tyrosine kinase inhibitor **Dose:** 150 mg/d PO 1 h ac or 2 h pc; ↓ (in 50-mg decrements) w/severe Rxn or w/ CYP3A4 inhibitors (Table 11); per protocols **Caution:** [D, ?/–]; w/ CYP3A4 (Table 11) inhibitors **Disp:** Tabs 25, 100, 150 mg **SE:** Rash, N/V/D, anorexia, abd pain, fatigue, cough, dyspnea, edema, stomatitis, conjunctivitis, pruritus, dry skin, Infxn, ↑ LFT, interstitial lung disease **Notes:** May ↑ INR w/warfarin, monitor INR

Ertapenem (Invanz) **Uses:** *Complicated intra-abd, acute pelvic, & skin Infxns, pyelonephritis, community-acquired pneumonia* **Action:** A carbapenem; β-lactam antibiotic, ↓ cell wall synth. **Spectrum:** Good gram (+/–) & anaerobic coverage, not *Pseudomonas*, PCN-resistant pneumococci, MRSA, *Enterococcus*, β-lactamase (+) *H. influenza*, *Mycoplasma*, *Chlamydia* **Dose: Adults.** 1 g IM/IV daily; 500 mg/d in CrCl < 30 mL/min **Peds:** 3 mo – 12 yrs : 15 mg/kg BID IM/IV, max 1 gm/day **Caution:** [C, ?/–]seizure Hx, CNS disorders, beta lactam & multiple allergies, Probenecid ↓ renal clearance **Contra:** component hypersensitivity or amide anesthetics **Disp:** Inj 1 g/vial **SE:** HA, N/V/D, inj site Rxsns, 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*; ↑ GI motility (*prokinetic*); *acne vulgaris* **Action:** Bacteriostatic; interferes w/ protein synth. **Spectrum:** Group A streptococci

(*S. pyogenes*), *S. pneumoniae*, *N. meningitidis*, *N. gonorrhoea* (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 mins ac. **Peds.** 30–50 mg/kg/d PO ÷ q6–8h or 20–40 mg/kg/d IV ÷ q6h, max 2 g/d **Caution:** [B, +] ↑ tox of carbamazepine, cyclosporine, digoxin, methylprednisolone, theophylline, felodipine, warfarin, simvastatin/lovastatin; ↓ sildenafil dose w/ use **Contra:** Hepatic impair, preexisting liver Dz (estolate), use with pimozide **Disp:** lactobionate (*Ilotycin*): Powder for inj 500 mg, 1 g. **Base:** Tabs 250, 333, 500 mg; caps 250 mg. **Estolate (Ilosone):** Susp 125, 250 mg/5 mL. **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 prolongation, 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 & Benzoyl Peroxide (Benzamycin) **Uses:** *Topical for acne vulgaris* **Action:** Macrolide antibiotic w/ keratolytic **Dose:** Apply bid (AM & PM) **Caution:** [C, ?] **Contra:** Component sensitivity **Disp:** Gel erythromycin 30 mg/benzoyl peroxide 50 mg/g **SE:** Local irritation, dryness

Erythromycin & Sulfisoxazole (Eryzole, Pediazole) **Uses:** *Upper & lower resp tract; bacterial Infxns; *H. influenzae* otitis media in children*; Infxns in PCN-allergic pts **Action:** 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 **Caution:** [C (D if near term), +] w/PO anticoagulants, MRX, hypoglycemics, phenytoin, cyclosporine **Contra:** Infants < 2 mo **Disp:** Susp erythromycin ethylsuccinate 200 mg/sulfisoxazole 600 mg/5 mL (100, 150, 200 mL) **SE:** GI upset

Erythromycin, Ophthalmic (Ilotycin Ophthalmic) **Uses:** *Conjunctival/corneal Infxns* **Action:** Macrolide antibiotic **Dose:** ½ in. 2–6 X/d **Caution:** [B, +] **Contra:** Erythromycin hypersensitivity **Disp:** 0.5% oint **SE:** Local irritation

Erythromycin, Topical (A/T/S, Eryderm, Erycette, T-Stat) **Uses:** *Acne vulgaris* **Action:** Macrolide antibiotic **Dose:** Wash & dry area, apply 2% product over area bid **Caution:** [B, +] **Contra:** Component sensitivity **Disp:** Soln 1.5%, 2%; gel 2%; pads & swabs 2% **SE:** Local irritation

Escitalopram (Lexapro) **WARNING:** Closely monitor for worsening depression or emergence of suicidality, particularly in ped pts **Uses:** Depression, anxiety **Action:** SSRI **Dose: Adults.** 10–20 mg PO daily; 10 mg/d in elderly & hepatic impair **Caution:** [C, +/-] Serotonin synd (Table 12) **Contra:** W/ or 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 **Notes:** Full effects may take 3 wk

Esmolol (Brevibloc) **Uses:** *SVT & noncompensatory sinus tachycardia, AF/flutter* **Action:** β_1 -adrenergic blocker; class II antiarrhythmic **Dose: Adults & Peds.** Initial 500 mcg/kg load over 1 min, then 50 mcg/kg/min \times 4 min; if inadequate response, repeat load & maint inf of 100 mcg/kg/min \times 4 min; titrate by repeating load, then incremental \uparrow in the maint dose of 50 mcg/kg/min for 4 min until desired HR reached or \downarrow BP; average dose 100 mcg/kg/min; 0.5 mg/kg over 1 min, then 0.05 mg/kg/min (*ECC 2005*) **Caution:** [C (1st tri; D 2nd or 3rd tri), ?] **Contra:** Sinus bradycardia, heart block, uncompensated CHF, cardiogenic shock, \downarrow BP **Disp:** Inj 10, 20, 250 mg/mL; premix inf 10 mg/mL **SE:** \downarrow BP; bradycardia, diaphoresis, dizziness, pain on inj **Notes:** Hemodynamic effects back to baseline w/in 30 mins after D/C inf

Esomeprazole (Nexium) **Uses:** *Short-term (4–8 wk) for erosive esophagitis/GERD; *H. pylori* Infxn in combo with antibiotics* **Action:** Proton pump inhibitor, \downarrow gastric acid **Dose: Adults.** GERD/erosive gastritis: 20–40 mg/d PO \times 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; **Caution:** [B, ?/–] **Contra:** Component sensitivity **Disp:** Caps 20, 40 mg; IV 20, 40 mg **SE:** HA, D, abd pain **Notes:** Do not chew; may open capsule & sprinkle on applesauce

Estazolam (Prosom) [C-IV] **Uses:** *Short-term management of insomnia* **Action:** Benzodiazepine **Dose:** 1–2 mg PO qhs PRN; \downarrow in hepatic impair/elderly/debilitated **Caution:** [X, –] \uparrow effects w/ CNS depressants **Contra:** PRG **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 (Estratab, Menest) **WARNING:** Do not use in the prevention of CV Dz or dementia; \uparrow risk of endometrial cancer **Uses:** *Vasomotor Sxs or vulvar/vaginal atrophy w/ menopause*; female hypogonadism, Pca, prevent osteoporosis **Action:** Estrogen suppl **Dose: Menopausal vasomotor sx:** 0.3–1.25 mg/d, cyclically 3 wk on, 1 wk off; add progestin 10–14 d w/ 28-day cycle w/uterus intact; *Vulvovaginal atrophy:* same regimen except use 0.3–1.25 mg; *Hypogonadism:* 2.5–7.5 mg/d PO \times 20 d, off \times 10 d; add progestin 10–14d w/ 28-day cycle w/uterus intact **Caution:** [X, –] **Contra:** 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 Women's Health Initiatives (WHI) data www.whi.org)

Esterified Estrogens + Methyltestosterone (Estratest, Estratest HS, Syntest DS, HS) **WARNING:** \uparrow risk of dementia in postmenopausal women, unopposed estrogens may \uparrow risk of endometrial carcinoma in postmenopausal women. **Uses:** *Vasomotor Sxs*; postpartum breast engorge-

ment **Action:** Estrogen & androgen supl **Dose:** 1 tab/d × 3 wk, 1 wk off **Caution:** [X, -] **Contra:** Genital bleeding of unknown cause, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombophlebitis, recent MI, PRG **Disp:** Tabs (estrogen/methyltestosterone) 0.625 mg/1.25 mg, 1.25 mg/2.5 mg **SE:** N, HA, bloating, breast enlargement/tenderness, edema, ↑ triglycerides, venous thromboembolism, gallbladder Dz **Notes:** Use lowest dose for shortest time; (see Women's Health Initiatives (WHI) data www.whi.org)

Estradiol (Estrace, others) **Uses:** *Atrophic vaginitis, vasomotor Sxs associated w/ menopause, osteoporosis* **Action:** Estrogen supl **Dose:** PO: 1–2 mg/d, adjust PRN to control Sxs. *Vaginal cream:* 2–4 g/d × 2 wk, then 1 g 1–3×/wk **Caution:** [X, -] **Contra:** Genital bleeding of unknown cause, breast CA, porphyria, estrogen-dependent tumors, thromboembolic disorders, thrombophlebitis; recent MI; hepatic impair **Disp:** Ring, 0.05, 0.1, 2 mg; gel 0.061%; Tabs 0.5, 1, 2 mg; vaginal cream 0.1 mg/g **SE:** N, HA, bloating, breast enlargement/tenderness, edema, ↑ triglycerides, venous thromboembolism, gallbladder Dz

Estradiol gel (Elestrin) **WARNING:** Do not use in the prevention of CV Dz or dementia; ↑ risk of endometrial cancer **Uses:** *Postmenopausal vasomotor symptoms* **Action:** Estrogenic **Dose:** Apply 0.87–1.7 g to skin daily; add progesterin x 10–14 days/28-day cycle w/intact uterus; use lowest effective estrogen dose **Caution:** [C, ?] **Contra:** AUB, breast CA, estrogen-dependent tumors, thromboembolic disorders, recent MI, PRG, severe hepatic Dz **Disp:** 0.87 g gel = 0.52 mg estradiol/pump **SE:** Thromboembolic events, MI, stroke, ↑ BP, breast/ovarian/endometrial CA, site rxns, vag spotting, breast changes, abd bloating, cramps, HA, fluid retention **Notes:** Apply to upper arm, wait > 25 min before sunscreen; avoid concomitant use for > 7 d; ✓ BP, breast exams

Estradiol Cypionate & Medroxyprogesterone Acetate (Lunelle) **WARNING:** Cigarette smoking ↑ risk of serious CV side effects from contraceptives containing estrogen. This risk ↑ with age & with heavy smoking (> 15 cigarettes/d) & is quite marked in women > 35 y. Women who use Lunelle should be strongly advised not to smoke **Uses:** *Contraceptive* **Action:** Estrogen & progestin **Dose:** 0.5 mL IM (deltoid, ant thigh, buttock) monthly, do not exceed 33 d **Caution:** [X, M] HTN, gallbladder Dz, ↑ lipids, migraines, sudden HA, valvular heart Dz with comps **Contra:** PRG, heavy smokers >35 y, DVT, PE, cerebro/CV Dz, estrogen-dependent neoplasm, undiagnosed AUB, porphyria, hepatic tumors, cholestatic jaundice **Disp:** Estradiol cypionate (5 mg), medroxyprogesterone acetate (25 mg) single-dose vial or syringe (0.5 mL) **SE:** Arterial thromboembolism, HTN, cerebral hemorrhage, MI, amenorrhea, acne, breast tenderness **Notes:** Start w/in 5 d of menstruation

Estradiol, Transdermal (Estraderm, Climara, Vivelle, Vivelle Dot) **WARNING:** Do not use in the prevention of CV Dz or dementia; ↑ risk of endometrial cancer **Uses:** *Severe menopausal vasomotor Sxs; female hypogonadism* **Action:** Estrogen supl **Dose:** Start 0.0375–0.05 mg/d patch– 2 × wk based

on product; adjust PRN to control Sxs; w/intact uterus cycle 3 wk on 1 wk off or use cyclic progesterin 10–14 d **Caution:** [X, -] See estradiol **Contra:** PRG, AUB, porphyria, breast CA, estrogen-dependent tumors, Hx thrombophlebitis, thrombosis **Disp:** TD 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 breasts, place on trunk, rotate sites

Estradiol/Levonorgestrel transdermal (Climara Pro) **WARN-**

ING: Do not use in the prevention of CV Dz or dementia **Uses:** *Menopausal vasomotor sx; prevent postmenopausal osteoporosis* **Action:** Estrogen and progesterone **Dose:** 1 patch 1X/wk **Caution:** [X, -] w/ ↓ thyroid **Contra:** AUB, estrogen sens tumors, hx thromboembolism, liver impair, PRG, hysterectomy **Disp:** Pro 0.045 mg/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 Ca²⁺/vit D supp; follow breast exams

Estradiol/ Norethindrone Acetate (Femhrt, Activella)

WARNING: Estrogens & progestins should not be used for the prevention of CV Dz or dementia; the WHI study reported ↑ risks of MI, breast CA, & DVT in postmenopausal women during 5 y of treatment with estrogens combined with medroxyprogesterone acetate relative to placebo **Uses:** *Vasomotor Sxs associated w/ menopause; prevent osteoporosis* **Action:** Estrogen/progestin hormone replacement; plant derived **Dose:** 1 tab/day start w/ lowest dose combo **Caution:** [X, -] w/ ↓ Ca²⁺/thyroid **Contra:** 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 1.0/0.5, 0.5 mg/0.1 mg **SE:** Thrombosis, dizziness, HA, libido changes, insomnia, emotional stability, breast pain **Notes:** Use in women w/ intact uterus; caution in heavy smokers

Estramustine Phosphate (Estracyt, Emcyt) **Uses:** *Advanced

PCa* **Action:** Antimicrotubule agent; weak estrogenic & antiandrogenic activity **Dose:** 14 mg/kg/d in 3–4 ÷ doses; on empty stomach, no dairy products **Caution:** [NA, not used in females] **Contra:** Active thrombophlebitis or thromboembolic disorders **Disp:** Caps 140 mg **SE:** N/V, exacerbation of preexisting CHF, edema, hepatic disturbances, thrombophlebitis, MI, PE, gynecomastia in 20–100%

Estrogen, Conjugated (Premarin) **WARNING:** Should not be used

for the prevention of CV Dz or dementia. The WHI reported ↑ risk of MI, stroke, breast CA, PE, & DVT when combined with methoxyprogesterone over 5 y of Rx; ↑ risk of endometrial CA, unopposed estrogens ↑ risk of endometrial cancer, ↑ risk of dementia in premenopausal women **Uses:** *Moderate–severe menopausal vasomotor Sxs; atrophic vaginitis; palliative advanced CAP; prevent & Tx of estrogen-deficiency osteoporosis* **Action:** Estrogen hormonal replacement **Dose:** 0.3–1.25 mg/d PO cyclically; prostatic CA 1.25–2.5 mg PO tid; **Caution:** [X, -] **Contra:** Severe hepatic impair, genital bleeding of unknown cause, breast CA,

estrogen-dependent tumors, thromboembolic disorders, thrombosis, thrombophlebitis, recent MI **Disp:** Tabs 0.3, 0.625, 0.9, 1.25, 2.5 mg; inj 25 mg/mL, vag cream 0.625 mg/gm **SE:** ↑ Risk of endometrial CA, gallbladder Dz, thromboembolism, HA, & possibly breast CA; generic products not equivalent

Estrogen, Conjugated Synthetic (Cenestin, Enjuvia) **WARN-**

ING: Do not use in the prevention of CV Dz or dementia; ↑ risk of endometrial cancer **Uses:** *Vasomotor menopausal Sxs, vulvovaginal atrophy, prevent postmenopausal osteoporosis* **Action:** Multiple estrogen hormonal replacement **Dose:**

for all w/intact uterus progestin × 10–14 days/28-day cycle; *Vasomotor* 0.3–1.25 mg (Enjuvia) 0.625–1.25 mg (*Cenestin*) PO daily; *Vaginal atrophy* 0.3 mg/day; *osteoporosis* (*Cenestin*) 0.625 mg/day **Caution:** [X, –] **Contra:** See estrogen, conjugated

Disp: Tabs *Cenestin* 0.3, 0.45, 0.625, 0.9 mg; *Enjuvia* ER 0.3, 0.45, 0.625, 1.25 mg **SE:** ↑ risk endometrial/breast CA, gallbladder Dz, thromboembolism

Estrogen, Conjugated + Medroxyprogesterone (Prempro, Premphase) **WARNING:** Should not be used for the prevention of CV Dz

or dementia; ↑ risk of dementia in premenopausal women; the WHI study reported ↑ risk of MI, stroke, breast CA, PE, & DVT over 5 y of Rx **Uses:** *Moderate–severe menopausal vasomotor Sxs; atrophic vaginitis; prevent postmenopausal osteoporosis* **Action:** Hormonal replacement **Dose:** Prempro 1 tab PO daily; Premphase 1 tab PO daily **Caution:** [X, –] **Contra:** Severe hepatic impair, genital

bleeding of unknown cause, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombosis, thrombophlebitis **Disp:** (as estrogen/medroxyprogesterone) *Prempro:* Tabs 0.625/2.5, 0.625/5 mg; *Premphase:* Tabs 0.625/0 (days 1–14) & 0.625/5 mg (days 15–28) **SE:** Gallbladder Dz, thromboembolism, HA,

breast tenderness **Notes:** See Women's Health Initiative www.whi.org

Estrogen, Conjugated + Methylprogesterone (Premarin + Methylprogesterone) **WARNING:** Do not use in the prevention of CV

Dz or dementia; ↑ risk of endometrial cancer **Uses:** *Menopausal vasomotor Sxs; osteoporosis* **Action:** Estrogen & androgen combo **Dose:** 1 tab/d **Caution:** [X, –] **Contra:** Severe hepatic impair, AUB, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombosis, thrombophlebitis **Disp:** Tabs 0.625 mg estrogen, conjugated, & 2.5 or 5 mg of methylprogesterone **SE:** N, bloating, breast enlargement/tenderness, edema, HA, hypertriglyceridemia, gallbladder Dz

Estrogen, Conjugated + Methyltestosterone (Premarin + Methyltestosterone) **WARNING:** Do not use in the prevention of CV

Dz or dementia; ↑ risk of endometrial cancer **Uses:** *Moderate–severe menopausal vasomotor Sxs*; postpartum breast engorgement **Action:** Estrogen & androgen combo **Dose:** 1 tab/d × 3 wk, then 1 wk off **Caution:** [X, –] **Contra:** Severe hepatic impair, genital bleeding of unknown cause, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombophlebitis **Disp:** Tabs (estrogen/

methyltestosterone) 0.625 mg/5 mg, 1.25 mg/10 mg **SE:** N, bloating, breast enlargement/tenderness, edema, HA, hypertriglyceridemia, gallbladder Dz

Eszopiclone (Lunesta) [C-IV] Uses: *Insomnia* Action: Nonbenzodiazepine hypnotic Dose: 2–3 mg/d hs Elderly: 1–2 mg/d hs; w/ hepatic impair/use w/ CYP3A4 inhibitor (Table 11): 1 mg/d hs Caution: [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) Uses: *Reduces Sxs of RA in pts who fail other DMARD,* Crohn Dz Action: Binds TNF Dose: Adults, RA 50 mg sc weekly or 25 mg sc 2x/wk (separated by at least 72–96 h). Peds 4–17 y. 0.8 mg/kg/week (max 50 mg/week) or 0.4 mg/kg (max 25 mg/dose) twice weekly 72–96 h apart Caution: [B, ?] w/ predisposition to Infxn (ie, DM) Contra: Active Infxn; Disp: Inj 25 mg/vial, 50 mg/mL SE: HA, rhinitis, inj site Rxn, URI Notes: Rotate inj sites

Ethambutol (Myambutol) Uses: *Pulm TB* & other mycobacterial Infxns, MAC Action: ↓ RNA synth Dose: Adults & Peds >12 y. 15–25 mg/kg/d PO single dose; ↓ in renal impair, take w/ food, avoid antacids Caution: [B, +] Contra: unconscious patients, Optic neuritis Disp: Tabs 100, 400 mg SE: HA, hyperuricemia, acute gout, abd pain, ↑ LFTs, optic neuritis, GI upset

Ethinyl Estradiol (Estinyl, Feminone) Uses: *Menopausal vasomotor Sxs; female hypogonadism* Action: Estrogen suppl Dose: 0.02–1.5 mg/d ÷ daily–tid Caution: [X, –] Contra: Severe hepatic impair; genital bleeding of unknown cause, breast CA, estrogen-dependent tumors, thromboembolic disorders, thrombophlebitis Disp: Tabs 0.02, 0.05, 0.5 mg SE: N, bloating, breast enlargement/tenderness, edema, HA, hypertriglyceridemia, gallbladder Dz

Ethinyl Estradiol & Levonorgestrel (Preven) Uses: *Emergency contraceptive* (“morning-after pill”); prevent PRG (contraceptive failure, unprotected intercourse) Actions: Estrogen & progestin; interferes with implantation Dose: 4 tabs, take 2 tabs q12h × 2 (w/in 72 h of intercourse) Caution: [X, M] Contra: Known/suspected PRG, AUB, Hx or current DVT/PE, stroke, MI CVD, CAD; severe HTN; Severe HA with focal neurological Sx; breast or endometrial cancer; estrogen-dependent neoplasms; undiagnosed abnormal genital bleeding; hepatic dysfn; jaundice; pgy; major surgery with prolonged immobilization; heavy smoking if > 35 yo Disp: Kit: ethinyl estradiol (0.05), levonorgestrel (0.25) blister pack with 4 pills & urine PRG test SE: Peripheral edema, N/V/D, bloating, abd pain, fatigue, HA, & menstrual changes Notes: Will not induce abortion; may ↑ risk of ectopic PRG

Ethinyl Estradiol & Norelgestromin (Ortho Evra) Uses: *Contraceptive patch* Action: Estrogen & progestin Dose: Apply patch to abdomen, buttocks, upper torso (not breasts), or upper outer arm at the beginning of the menstrual cycle; new patch is applied weekly for 3 wk; week 4 is patch-free Caution: [X, M] Contra: PRG, Hx or current DVT/PE, stroke, MI, CVD, CAD; severe HTN; severe HA w/focal neurological Sx; breast/endometrial Ca; estrogen-dependent neoplasms; hepatic dysfn; jaundice; major surgery w/prolonged immobiliza-

tion; 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 patient does not protect against STD/HIV

Ethosuximide (Zarontin) **Uses:** *Absence (petit mal) Szs* **Action:** Anti-convulsant; ↑ Sz threshold **Dose:** **Adults.** Initial, 250 mg PO ÷ bid; ↑ by 250 mg/d q4–7d PRN (max 1500 mg/d) usual maint 20–30 mg/kg. **Peds 3–6 y.** Initial: 15 mg/kg/d PO ÷ bid. Maint: 15–40 mg/kg/d ÷ bid, max 1500 mg/d **Caution:** [C, +] in renal/hepatic impair **Contra:** 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; ½ life: 30–60h

Etidronate Disodium (Didronel) **Uses:** *↑ Ca²⁺ of malignancy, Paget Dz, & heterotopic ossification* **Action:** ↓ NI & abnormal bone resorption **Dose:** *Paget Dz:* 5–10 mg/kg/d PO ÷ doses (for 3–6 mo). ↑ Ca²⁺: 7.5 mg/kg/d IV inf over 2 h × 3 d, then 20 mg/kg/d PO on last day of inf × 1–3 mo **Caution:** [B PO (C par-enteral), ?] **Contra:** Overt osteomalacia, SCR > 5 mg/dL **Disp:** Tabs 200, 400 mg; inj 50 mg/mL **SE:** GI intolerance (↓ by ÷ daily doses); hypophosphatemia, hypomagnesemia, bone pain, abnormal taste, fever, convulsions, nephrotox **Notes:** Take PO on empty stomach 2 h before any meal

Etodolac **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Osteoarthritis & pain,* RA **Action:** NSAID **Dose:** 200–400 mg PO bid–qid (max 1200 mg/d) **Caution:** [C (D 3rd tri), ?] ↑ bleeding risk w/aspirin, warfarin; ↑ nephrotox w/ cyclosporine; Hx CHF, HTN, renal/hepatic impair, PUD **Contra:** 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

Etonogestrel/Ethinyl Estradiol (NuvaRing) **Uses:** *Contraceptive* **Action:** 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. First day of menses is day 1, insert before day 5 even if bleeding. Use other contraception for first 7 d of starting therapy. See insert if converting from other contraceptive; after delivery or 2nd tri abortion, insert 4 wk postpartum (if not breast-feeding) **Caution:** [X, ?/–] HTN, gallbladder Dz, ↑ lipids, migraines, sudden HA **Contra:** PRG, heavy smokers > 35 y, DVT, PE, cerebro-/CV Dz, estrogen-dependent neoplasm, undiagnosed abnormal genital bleeding, hepatic tumors, cholestatic jaundice **Disp:** Intravaginal 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 with diaphragm

Etonogestrel subdermal implant (Implanon) **Uses:** *Contraception* **Action:** transforms endometrium from proliferative to secretory **Dose:** 1 im-

plant subdermally q3y **Caution:** [X, +] exclude pregnancy before implant **Contra:** PRG, hormonally responsive tumors, Breast Ca, AUB, hepatic tumor, active liver Dz, hx thromboembolic Dz **Disp:** 68 mg implant **SE:** spotting, irregular periods, amenorrhea, dysmenorrhea, HA, tender breasts, N, wgt gain, acne, ectopic pregnancy, PE, ovarian cysts, stroke, ↑ BP, **Notes:** 99% effective; remove implant and replace; restricted distribution; physician must register and train; does not protect against STDs

Etoposide [VP-16] (VePesid, Toposar) **Uses:** *Testicular, non-small-cell lung CA, Hodgkin Dz & NHLs, peds ALL, & allogeneic/autologous BMT in high doses* **Action:** Topoisomerase II inhibitor **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 **Caution:** [D, –] **Contra:** 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

Exemestane (Aromasin) **Uses:** *Advanced breast CA in postmenopausal women w/progression after tamoxifen* **Action:** Irreversible, steroidal aromatase inhibitor; ↓ estrogens **Dose:** 25 mg PO daily after a meal **Caution:** [D, ?/–] **Contra:** PRG, Component sensitivity **Disp:** Tabs 25 mg **SE:** Hot flashes, N, fatigue

Exenatide (Byetta) **Uses:** Type 2 DM combined w/ metformin &/or sulfonylurea **Action:** An incretin mimetic: ↑ insulin release, ↓ glucagon secretion, ↓ gastric emptying, promotes satiety **Dose:** 5 mcg SQ bid w/in 60 min before AM & PM meals; ↑ to 10 mcg SQ bid after 1 mo PRN; do not give pc **Caution:** [C, ?/–] may ↓ absorption of other drugs (take antibiotics/contraceptives 1 h before) **Contra:** CrCl < 30 mL/min **Disp:** Soln 5, 10 mcg/dose in prefilled pen **SE:** Hypoglycemia, N/V/D, dizziness, HA, dyspepsia, ↓ appetite, jittery **Notes:** Consider ↓ sulfonylurea to ↓ risk of hypoglycemia; discard pen 30 d after 1st use

Ezetimibe (Zetia) **Uses:** *Hypercholesterolemia alone or w/a HMG-CoA reductase inhibitor* **Action:** ↓ cholesterol & phytosterols absorption **Dose:** **Adults & Peds >10 y.** 10 mg/d PO **Caution:** [C, +/-] Bile acid sequestrants ↓ bioavailability **Contra:** Hepatic impair **Disp:** Tabs 10 mg **SE:** HA, D, abd pain, ↑ transaminases w/ HMG-CoA reductase inhibitor

Ezetimibe/Simvastatin (Vytorin) **Uses:** *Hypercholesterolemia* **Action:** ↓ absorption of cholesterol & phytosterols w/HMG-CoA-reductase inhibitor **Dose:** 10/10–10/80 mg/d PO; w/cyclosporine or danazol:10/10 mg/d max; w/ amiodarone or verapamil: 10/20 mg/d max; ↓ w/severe renal insuff **Caution:** [X, –]; w/ CYP3A4 inhibitors (Table 11), gemfibrozil, niacin >1 g/d, danazol, amiodarone, verapamil **Contra:** PRG/lactation; liver Dz, ↑ LFTs **Disp:** Tabs (ezetimibe/simvastatin) 10/10, 10/20, 10/40, 10/80 mg **SE:** HA, GI upset, myalgia, myopathy (muscle pain, weakness, or tenderness w/ creatine kinase 10 × ULN, rhabdomyolysis), hepatitis, Infxn **Notes:** Monitor LFTs

Famciclovir (Famvir) **Uses:** *Acute herpes zoster (shingles) & genital herpes* **Action:** ↓ viral DNA synth **Dose:** *Zoster:* 500 mg PO q8h × 7 d. *Simplex:*

125–250 mg PO bid; ↓ w/ renal impair **Caution:** [B, –] **Contra:** 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 (Pepcid, Pepcid AC) [OTC] **Uses:** *Short-term Tx of duodenal ulcer & benign gastric ulcer; maint for duodenal ulcer, hypersecretory conditions, GERD, & heartburn* **Action:** 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 **Caution:** [B, M] **Contra:** Component sensitivity **Disp:** Tabs 10, 20, 40 mg; chew tabs 10 mg; susp 40 mg/5 mL; gelatin cap 10 mg, inj 10 mg/2 mL **SE:** Dizziness, HA, constipation, D, thrombocytopenia **Notes:** Chew tabs contain phenylalanine

Felodipine (Plendil) **Uses:** *HTN & CHF* **Action:** CCB **Dose:** 2.5–10 mg PO daily; swallow whole; ↓ in hepatic impair **Caution:** [C, ?] ↑ effect with azole antifungals, erythromycin, grapefruit juice **Contra:** Component sensitivity **Disp:** ER tabs 2.5, 5, 10 mg **SE:** Peripheral edema, flushing, tachycardia, HA, gingival hyperplasia **Notes:** Follow BP in elderly & w/ hepatic impair

Fenofibrate (Tricor, Anatra, Lofibra, Lipofen, Triglide) **Uses:** *Hypertriglyceridemia, hypercholesteremia* **Action:** ↓ Triglyceride synth **Dose:** 48–145 mg daily; ↓ in renal impair, take w/ meals **Caution:** [C, ?] **Contra:** Hepatic/severe renal insuff, primary biliary cirrhosis, unexplained ↑ LFTs, gallbladder Dz **Disp:** Caps 50, 100, 150 mg, Cap (micronized): (Lofibra) 67, 134, 200 mg (Antara) 43, 130 mg; Tabs 54, 160 mg **SE:** GI disturbances, cholecystitis, arthralgia, myalgia, dizziness, ↑ LFTs **Notes:** Monitor LFTs

Fenoldopam (Corlopam) **Uses:** *Hypertensive emergency* **Action:** Rapid vasodilator **Dose:** Initial 0.03–0.1 mcg/kg/min IV inf, titrate q 15 min by 1.6 mcg/kg/min to max 0.05–0.1 mcg/kg/min **Caution:** [B, ?] ↓ BP w/ β-blockers **Contra:** 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) **WARNING:** May ↑ risk of cardiovascular events and GI bleeding **Uses:** *Arthritis & pain* **Action:** NSAID **Dose:** 200–600 mg q4–8h, to 3200 mg/d max; w/ food **Caution:** [B (D 3rd tri), +/-] CHF, HTN, renal/hepatic impair, Hx PUD **Contra:** NSAID sensitivity **Disp:** Caps 200, 300, 600 mg **SE:** GI disturbance, dizziness, HA, rash, edema, renal impair, hepatitis **Notes:** Swallow whole

Fentanyl (Sublimaze) [C-II] **Uses:** *Short-acting analgesic* in anesthesia & PCA **Action:** Narcotic analgesic **Dose:** *Adults.* 25–100 mcg/kg/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 **Caution:** [B, +] **Contra:** Paralytic ileus ↑ ICP, resp depression, severe renal/hepatic impair **Disp:** Inj 0.05 mg/mL **SE:** Sedation, ↓ BP, bradycardia, constipation, N, resp depression, miosis **Notes:** 0.1 mg fentanyl = 10 mg morphine IM

Fentanyl iontophoretic transdermal system (Ionsys) WARNING:

May only be used for the treatment of hospitalized patients, D/C on discharge; fentanyl may result in potentially life-threatening respiratory depression and death **Uses:** *Short term in hospital analgesia* **Action:** Opioid narcotic, transdermal administration **Dose:** 40 mcg/activation by patient; dose given over 10 min; max over 24 h 3.2 mg (80 doses) **Caution:** [C, -] **Contra:** See fentanyl **Disp:** Battery-operated self-contained iontophoretic transdermal system, 40 mcg/activation, 80 doses **SE:** See fentanyl, site Rxn **Notes:** Choose normal skin site chest or upper outer arm; titrate to comfort, patients must have access to supplemental analgesia; instruct in device use; dispose properly at discharge

Fentanyl, Transdermal (Duragesic) [C-II] WARNING: Potential for abuse and fatal overdose

Uses: *Persistent moderate-severe chronic pain in patients already tolerant to opioids* **Action:** Narcotic **Dose:** Apply patch to upper torso q72h; dose based on narcotic requirements in previous 24 h; start 25 mcg/h patch q 72h; ↓ in renal impair **Caution:** [B, +] w/CYP3A4 inhibitors (Table 11) may ↑ fentanyl effect, w/ Hx substance abuse **Contra:** Not opioid tolerant, short-term pain management, postop 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, bradycardia, constipation, N, miosis **Notes:** 0.1 mg fentanyl = 10 mg morphine IM; do not cut patch; peak level 24–72 h

Fentanyl, Transmucosal System (Actiq, Fentora) [C-II]

WARNING: Potential for abuse and fatal overdose; use only in cancer patients with chronic pain who are opioid tolerant; buccal formulation ↑ bioavailability over trans mucosal; do not substitute on a mcg per mcg basis; use w/ strong CYP3A4 inhibitors may ↑ fentanyl levels **Uses:** *Breakthrough CA pain* **Action:** Narcotic analgesic, trans mucosal absorption **Dose:** Start 100 mcg buccal (Fentora) X1, may repeat in 30 min, 4 tabs/dose max; titrate; start 200 mcg PO (Actiq) ×1, may repeat ×1 after 30 min; titrate **Caution:** [B, +] **Contra:** ↑ ICP, resp depression, severe renal/hepatic impair, management of postop or awake pain **Disp:** (Actiq) Lozenges on stick 200, 400, 600, 800, 1200, 1600 mcg; (Fentora) Buccal Tabs 100, 200, 300, 400, 600, 800 mcg **SE:** Sedation, ↓ BP, bradycardia, constipation, N, resp depression, miosis **Notes:** 0.1 mg fentanyl = 10 mg IM morphine; for use in patients already tolerant to opioid therapy

Ferrous Gluconate (Fergon) Uses: *Iron deficiency anemia* & Fe sup

Action: Dietary sup **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 **Caution:** [A, ?] **Contra:** Hemochromatosis, hemolytic anemia **Disp:** Tabs 246 mg (2.8 mg elem), 240 mg (27 mg elm), 300 (34 mg Fe), 325 mg (36 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 toxicity in overdose

Ferrous Gluconate Complex (Ferrlecit) Uses: *Iron deficiency anemia or suppl to erythropoietin therapy* Action: Fe Supl 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) Caution: [B, ?] Contra: 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* Action: 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 Caution: [A, ?] ↑ absorption w/ vitamin C; ↓ absorption w/ tetracycline, fluoroquinolones, antacids, H₂-blockers, proton pump inhibitors Contra: 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 mg (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

Fexofenadine (Allegra, Allegra-D) Uses: *Allergic rhinitis* Action: Selective antihistamine, antagonizes H₁ receptors Dose: Adults & Peds >12 y. 60 mg PO bid or 180 mg/d; ↓ in renal impair Caution: [C, ?] w/nevirapine Contra: Component sensitivity Disp: Caps 60 mg; tabs 30, 60, 180 mg; Susp 6 mg/mL; Allegra-D (60 mg fexofenadine/120 mg pseudoephedrine) SE: Drowsiness (rare), HA Filgrastim [G-CSF] (Neupogen) Uses: *↓ incidence of Infxn in febrile neutropenic pts; Rx chronic neutropenia* Action: Recombinant G-CSF Dose: Adults & Peds. 5 mcg/kg/d SQ or IV single daily dose; D/C when ANC >10,000 Caution: [C, ?] w/ drugs that potentiate release of neutrophils (eg, lithium) Contra: Allergy to *E. coli*-derived proteins or G-CSF Disp: Inj 300, 600 mcg/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/mm³

Finasteride (Proscar, Propecia) Uses: *BPH & androgenetic alopecia* Action: ↓ 5α-Reductase Dose: BPH: 5 mg/d PO. Alopecia: 1 mg/d PO; food may ↓ absorption Caution: [X, –] Hepatic impair Contra: Pregnant women should avoid handling pills, teratogen to male fetus Disp: Tabs 1 mg (Propecia), 5 mg (Proscar) SE: ↓ libido, volume ejaculate, ED, gynecomastia Notes: ↓ 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

Flavoxate (Urispas) Uses: *Relief of Sx of dysuria, urgency, nocturia, suprapubic pain, urinary frequency, incontinence* Action: Antispasmodic Dose: 100–200 mg PO tid–qid Caution: [B, ?] Contra: GI obst, GI hemorrhage, ileus, achalasia, BPH Disp: Tabs 100 mg SE: Drowsiness, blurred vision, xerostomia

Flecainide (Tambocor) WARNING: ↑ mortality in patients with ventricular arrhythmias and recent MI; pulmonary effects reported; pro-ventricular effects

seen in atrial arrhythmias **Uses:** Prevent AF/flutter & PSVT, *prevent/suppress life-threatening ventricular arrhythmias* **Action:** Class 1C antiarrhythmic **Dose:** **Adults.** 100 mg PO q12h; ↑ by 50 mg q12h q4d to max 400 mg/d. **Peds.** 3–6 mg/kg/d in 3 ÷ doses; ↓ w/renal impair, **Caution:** [C, +] monitor w/hepatic impair, ↑ conc with amiodarone, digoxin, quinidine, ritonavir/amprenavir, BB, verapamil; may worsen arrhythmias **Contra:** 2nd-/3rd-degree AV block, RBBB 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, chest pain, 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; ½ life: 11–14 h

Floxuridine (FUDR) **WARNING:** Administration by experienced physician only; patients should be hospitalized for first course due to risk for severe rxn **Uses:** *GI adenoma, liver, renal cancers*; colon & pancreatic CAs **Action:** Converted to 5 FU; inhibits thymidylate synthase; ↓ DNA synth (S-phase specific) **Dose:** 0.1–0.6 mg/kg/d for 1–6 wk (per protocols) usually intra arterial for liver mets **Caution:** [D, –] Interaction w/ vaccines **Contra:** BM suppression, poor nutritional status, potentially serious Infxn **Disp:** Inj 500 mg **SE:** ↓ BM, anorexia, abd cramps, N/V/D, mucositis, alopecia, skin rash, & hyperpigmentation; rare neurotox (blurred vision, depression, nystagmus, vertigo, & lethargy); intra-arterial catheter-related problems (ischemia, thrombosis, bleeding, & Infxn) **Notes:** Need effective birth control; palliative Rx for inoperable/incurable pts

Fluconazole (Diflucan) **Uses:** *Candidiasis (esophageal, oropharyngeal, urinary tract, vaginal, prophylaxis); cryptococcal meningitis* **Action:** 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/day reported: 400 mg day 1, then 200 mg × 10–12wk after CSF (–). **Peds.** 3–6 mg/kg/d PO or IV; 12 mg/kg/d/systemic Infxn; ↓ in renal impair **Caution:** [C, –] **Contra:** none **Disp:** Tabs 50, 100, 150, 200 mg; susp 10, 40 mg/mL; inj 2 mg/mL **SE:** HA, rash, GI upset, ↓ K⁺, ↑ LFTs **Notes:** PO (preferred) = IV levels

Fludarabine Phosphate (Flamp, Fludara) **Uses:** *Autoimmune hemolytic anemia, CLL, cold agglutinin hemolysis,* low-grade lymphoma, mycosis fungoides **Action:** ↓ Ribonucleotide reductase; blocks DNA polymerase-induced DNA repair **Dose:** 18–30 mg/m²/d for 5 d, as a 30-min inf (per protocols) **Caution:** [D, –] Give cytarabine before fludarabine (↓ its metabolism) **Contra:** w/pentostatin, severe Infxns, CrCl <30 mL/min, hemolytic anemia **Disp:** Inj 50 mg **SE:** ↓ BM, N/V/D, ↑ LFT, edema, CHF, fever, chills, fatigue, dyspnea, nonproductive cough, pneumonitis, severe CNS tox rare in leukemia, autoimmune hemolytic anemia

Fludrocortisone Acetate (Florinef) **Uses:** *Adrenocortical insuff, Addison Dz, salt-wasting synd* **Action:** Mineralocorticoid **Dose:** **Adults.** 0.1–0.2

mg/d PO. **Peds.** 0.05–0.1 mg/d PO **Caution:** [C, ?] **Contra:** Systemic fungal Infxns; known allergy **Disp:** Tabs 0.1 mg **SE:** HTN, edema, CHF, HA, dizziness, convulsions, acne, rash, bruising, hyperglycemia, HPA suppression, cataracts **Notes:** For adrenal insuff, use w/ glucocorticoid; dose changes based on plasma renin activity

Flumazenil (Romazicon) **Uses:** *Reverse sedative effects of benzodiazepines & general anesthesia* **Action:** Benzodiazepine receptor antagonist **Dose:** **Adults.** 0.2 mg IV over 15 s; repeat PRN, to 1 mg max (3 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 **Caution:** [C, ?] **Contra:** 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/ seizures

Flunisolide (AeroBid, Aerospan, Nasarel) **Uses:** *Asthma in pts requiring chronic steroid therapy; relieve seasonal/perennial allergic rhinitis* **Action:** Topical steroid **Dose:** **Adults.** Met-dose inhal: 2 inhal bid (max 8/d). **Nasal:** 2 sprays/nostril bid (max 8/d). **Peds >6 y.** Met-dose inhal: 2 inhal bid (max 4/d). **Nasal:** 1–2 sprays/nostril bid (max 4/d) **Caution:** [C, ?] w/adrenal insufficiency **Contra:** Status asthmaticus, viral, TB, fungal, bacterial Infxn; **Disp:** Aerobid 0.25 mg/inh; Nasarel 29 mcg/spray; Aerospan 80 mcg/Inh (CFC-Free) **SE:** Tachycardia, bitter taste, local effects, oral candidiasis **Notes:** Not for acute asthma

Fluorouracil [5-FU] (Adrucil) **WARNING:** Administration by experienced physician only; patients should be hospitalized for first course due to risk for severe rxn **Uses:** *Colorectal, gastric, pancreatic, breast, basal cell,* head, neck, bladder, CAs **Action:** Inhibitor of thymidylate synthetase (interferes with DNA synth, S-phase specific) **Dose:** 370–1000 mg/m²/d for 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 **Caution:** [D, ?] ↑ tox w/ allopurinol; do not give MRX before 5-FU **Contra:** Poor nutritional status, depressed BM Fxn, thrombocytopenia, major surgery w/in past mo, G6PD enzyme deficiency, PRG, serious Infxn, bilirubin >5 mg/dL **Disp:** Inj 50 mg/mL **SE:** Stomatitis, esophagopharyngitis, N/V/D, anorexia, ↓ BM, rash/dry skin/photosens, tingling in hands/feet w/pain (palmar–plantar erythrodysesthesia), phlebitis/dicoloration at inj sites **Notes:** ↑ thiamine intake; contraception recommended.

Fluorouracil, Topical [5-FU] (Efudex) **Uses:** *Basal cell carcinoma; actinic/solar keratosis* **Action:** Inhibits thymidylate synthetase (↓ DNA synth, S-phase specific) **Dose:** 5% cream bid × 2–6 wk **Caution:** [D, ?] Irritant chemo **Contra:** 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 (Prozac, Sarafem) **WARNING:** Closely monitor for worsening depression or emergence of suicidality, particularly in ped pts **Uses:** *Depression, OCD, panic disorder, bulimia (Prozac)* *PMDD (Sarafem)* **Action:** SSRI **Dose:** 20 mg/d PO (max 80 mg/d ÷ dose); weekly 90 mg/wk after 1–2 wk of standard dose. *Bulimia:* 60 mg q AM. *Panic disorder:* 20 mg/d. *OCD:* 20–80 mg/d. *PMDD:* 20 mg/d or 20 mg intermittently, start 14 d prior to menses, repeat with each cycle; ↓ in hepatic failure **Caution:** [B, ?/–] Serotonin synd with MAOI, SSRI, serotonin agonists, linezolid; QT prolongation w/ phenothiazines **Contra:** MAOI/thioridazine (wait 5 wk after D/C before MAOI) **Disp:** *Prozac:* Caps 10, 20, 40 mg; scored tabs 10 mg; SR cap 90 mg; soln 20 mg/5 mL. *Sarafem:* Caps 10, 20 mg **SE:** N, nervousness, wgt loss, HA, insomnia

Fluoxymesterone (Halotestin, Androxy) **Uses:** Androgen-responsive met *breast CA, hypogonadism* **Action:** ↓ Secretion of LH & FSH (feedback inhibition) **Dose:** *Breast CA:* 10–40 mg/d ÷ × 1–3 mo. *Hypogonadism:* 5–20 mg/d **Caution:** [X, ?/–] ↑ effect w/ anticoagulants, cyclosporine, insulin, lithium, narcotics **Contra:** Serious cardiac, liver, or kidney Dz; PRG **Disp:** Tabs 2, 5, 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 T₄ levels

Flurazepam (Dalmane) [C-IV] **Uses:** *Insomnia* **Action:** Benzodiazepine **Dose:** *Adults & Peds >15 y:* 15–30 mg PO qhs PRN; ↓ in elderly **Caution:** [X, ?/–] Elderly, low albumin, hepatic impair **Contra:** NAG; PRG **Disp:** Caps 15, 30 mg **SE:** “Hangover” due to accumulation of metabolites, apnea, anaphylaxis, angio edma, amnesia **Notes:** May cause dependency

Flurbiprofen (Ansaid, Ocufer) **WARNING:** May ↑ risk of cardiovascular events and GI bleeding **Uses:** *Arthritis, ocular surgery* **Action:** NSAID **Dose:** 50–300 mg/d ÷ bid–qid, max 300 mg/d w/ food, ocular 1 gtt Q 30 min × 4, beginning 2 h preop **Caution:** [B (D in 3rd tri), +] **Contra:** PRG (3rd tri); aspirin allergy **Disp:** Tabs 50, 100 mg **SE:** Dizziness, GI upset, peptic ulcer Dz, ocular irritation

Flutamide (Eulexin) **WARNING:** Liver failure & death reported. Measure LFT before, monthly, & periodically after; D/C immediately if ALT 2 × upper limits of nl or jaundice develops **Uses:** Advanced *PCa* (w/LHRH agonists, eg, leuprolide or goserelin); w/radiation & GnRH for localized CAP **Action:** Nonsteroidal antiandrogen **Dose:** 250 mg PO tid (750 mg total) **Caution:** [D, ?] **Contra:** Severe hepatic impair **Disp:** Caps 125 mg **SE:** Hot flashes, loss of libido, impotence, N/V/D, gynecomastia, hepatic failure **Notes:** ✓ LFT, avoid EtOH

Fluticasone, Nasal (Flonase) **Uses:** *Seasonal allergic rhinitis* **Action:** Topical steroid **Dose:** *Adults & Peds > 12 y:* 2 sprays/nostril/d. *Peds 4–11 y:* 1–2 sprays/nostril/d **Caution:** [C, M] **Contra:** Primary Rx of status asthmaticus **Disp:** Nasal spray 50 mcg/actuation **SE:** HA, dysphonia, oral candidiasis

Fluticasone, Oral (Flovent, Flovent Rotadisk) Uses: Chronic *asthma* **Action:** Topical steroid **Dose:** *Adults & Adolescents.* 2–4 puffs bid. *Peds 4–11 y.* 50 mcg bid **Caution:** [C, M] **Contra:** Primary Rx of status asthmaticus **Disp:** Rotadisk dry powder: 50, 100, 250 mcg/activation **SE:** HA, dysphonia, oral candidiasis **Notes:** Risk of thrush, rinse mouth after; counsel on use of device

Fluticasone Propionate & Salmeterol Xinafoate (Advair Diskus, Advair HFA, 45/21, 115/21, 230/21 inhaled aerosol) **WARNING:** Increased risk of worsening wheezing or asthma-related death with long acting β -2 adrenergic agonists

Uses: *Maint therapy for asthma* **Action:** Corticosteroid w/ LA bronchodilator β -2 agonist **Dose:** *Adults & Peds >12 y.* 1 inhal bid q 12 h; titrate to lowest effective dose (4 inhal or 920/84 mcg/day max) **Caution:** [C, M] **Contra:** Acute asthma attack; conversion from PO steroids; w/ phenothiazines **Disp:** Diskus = met-dose inhal powder (fluticasone/salmeterol in mcg) 100/50, 250/50, 500/50; HFA = aerosol 45/21, 115/21, 230/21 mg **SE:** Upper resp Infxn, pharyngitis, HA **Notes:** Combo of Flovent & Serevent; do not wash mouthpiece, do not exhale into device; ADVAIR HFA for patients not controlled on other medications (eg, low-medium dose inhal steroids) or whose disease severity warrants 2 maintenance therapies

Fluvastatin (Lescol) Uses: *Atherosclerosis, primary hypercholesterolemia, heterozygous familial hypercholesterolemia hypertriglyceridemia* **Action:** HMG-CoA reductase inhibitor **Dose:** 20–40 mg BID PO or XL 80 day \downarrow w/ hepatic impair **Caution:** [X, –] **Contra:** Active liver Dz, \uparrow 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 \checkmark LFT's

Fluvoxamine (Luvox) **WARNING:** Closely monitor for worsening depression or emergence of suicidality, particularly in ped pts **Uses:** *OCD* **Action:** SSRI **Dose:** Initial 50-mg single qhs dose, \uparrow to 300 mg/d in \div doses; \downarrow in elderly/hepatic impair, titrate slowly; \div doses $>$ 100 mg **Caution:** [C, ?/–] Interactions (MAOIs, phenothiazines, SSRIs, serotonin agonists, others) **Contra:** MAOI w/in 14 days **Disp:** Tabs 25, 50, 100 mg **SE:** HA, N/D, somnolence, insomnia

Folic Acid Uses: *Megaloblastic anemia; folate deficiency* **Action:** Dietary supl **Dose:** *Adults.* Supl: 0.4 mg/d PO. *PRG:* 0.8 mg/d PO. *Folate deficiency:* 1 mg PO daily–tid. *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 **Caution:** [A, +] **Contra:** 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 child-bearing age; \downarrow fetal neural tube defects by 50%; no effect on normocytic anemias

Fondaparinux (Arixtra) **WARNING:** When epidural/spinal anesthesia or spinal puncture is used, pts anticoagulated or scheduled to be anticoagulated with 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 or replacement, knee replacement, abd surgery; w/

DVT or PE in combo w/ warfarin **Action:** Synthetic inhibitor of activated factor X; a LMW heparin **Dose:** 2.5 mg SQ daily, up to 5–9 d; start at least 6 h postop **Caution:** [B, ?] ↑ bleeding risk w/ anticoagulants, antiplatelets, drotrecogin alfa, NSAIDs **Contra:** Wt < 50 kg, CrCl < 30 mL/min, active bleeding, SBE, ↓ plt w/ antiplatelet Ab **Disp:** Prefilled syringes w/ 27 ga needle: 2.5 /0.5, 5/0.4, 7.5 /0.6, 10/0.8, mg/mL **SE:** Thrombocytopenia, anemia, fever, N **Notes:** D/C if plts < 100,000 mm³; only give SQ; may monitor antifactor Xa levels

Formoterol (Foradil Aerolizer) **WARNING:** Increased risk of worsening wheezing or asthma-related death with long-acting β-2 adrenergic agonists **Uses:** Maint Rx of *asthma & prevent bronchospasm* w/ reversible obstructive airway Dz; exercise-induced bronchospasm **Action:** LA β₂-adrenergic agonist, bronchodilator **Dose: Adults & Peds >5 y.** Asthma: Inhale one 12-mcg cap q12h w/ aerolizer, 24 mcg/d max. **Adults & Peds > 12 y.** Exercise-induced bronchospasm: 1 inhal 12-mcg cap 15 min before exercise **Caution:** [C, ?] **Contra:** Acute asthma, phenothiazines **Disp:** 12-mcg powder for inhal (as caps) for use in Aerolizer **SE:** Paradoxical bronchospasm, URI, pharyngitis, back pain **Notes:** Do not swallow caps; only use w/ inhaler; do not start w/ worsening or acutely deteriorating asthma

Fosamprenavir (Lexiva) **WARNING:** Do not use with severe liver dysfunction, reduce dose with mild–moderate liver impair (fosamprenavir 700 mg bid w/o ritonavir) **Uses:** HIV Infxn **Action:** Protease inhibitor **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 **Caution:** [C, ?/–]; **Contra:** w/ergot alkaloids, midazolam, triazolam, or pimozide; sulfa allergy **Disp:** Tabs 700 mg **SE:** N/V/D, HA, fatigue, rash **Notes:** Numerous drug interactions because of hepatic metabolism

Foscarnet (Foscavir) **Uses:** *CMV retinitis*; acyclovir-resistant *herpes Infxns* **Action:** ↓ Viral DNA polymerase & RT **Dose:** CMV retinitis: Induction: 60 mg/kg IV q8h or 100 mg/kg q12h × 14–21 d. Maint: 90–120 mg/kg/d IV (Monday–Friday). Acyclovir-resistant HSV: Induction: 40 mg/kg IV q8–12h × 14–21 d; use central line; ↓ with renal impair **Caution:** [C, –] ↑ Sz potential w/ fluoroquinolones; avoid nephrotoxic Rx (cyclosporine, aminoglycosides, amphotericin B, protease inhibitors) **Contra:** 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 Ca⁺²

Fosfomycin (Monurol) **Uses:** *Uncomplicated UTI* **Action:** ↓ cell wall synth. **Spectrum:** gram (+) (staph, pneumococci); gram (–) (*E. coli*, *Enterococcus*, *Salmonella*, *Shigella*, *H. influenzae*, *Neisseria*, indole-negative *Proteus*, *Providencia*); *B. fragilis* & anaerobic gram(–) cocci are resistant **Dose:** 3 g PO in 90–120 mL of H₂O single dose; ↓ in renal impair **Caution:** [B, ?] ↓ absorption w/ antacids/Ca salts **Contra:** Component sensitivity **Disp:** Granule packets 3 g **SE:** HA, GI upset **Notes:** May take 2–3 d for SxS to improve

Fosinopril (Monopril) Uses: *HTN, CHF,* DN Action: ACE inhibitor Dose: 10 mg/d PO initial; max 40 mg/d PO; ↓ in elderly; ↓ in renal impair Caution: [D, +] ↑ K⁺ w/ K⁺ supls, ARBs, K⁺ sparing diuretics; ↑ renal AE w/ NSAIDs, diuretics, hypovolemia Contra: Hereditary/idiopathic angioedema or angiodema w/ ACE inhibitor, bilateral RAS Disp: Tabs 10, 20, 40 mg SE: Cough, dizziness, angioedema, ↑ K⁺

Fosphenytoin (Cerebryx) Uses: *Status epilepticus* Action: ↓ 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 Caution: [D, +] May ↑ phenobarbital Contra: 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; admin < 150 mg PE/min to prevent ↓ BP; administer with BP monitoring

Frovatriptan (Frova) Uses: *Rx acute migraine* Action: Vascular serotonin receptor agonist Dose: 2.5 mg PO repeat in 2 h PRN, 7.5 mg/d max PO dose; max 7.5 mg/d Caution: [C, ?/–] Contra: 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, chest pain, skeletal pain, flushing, weakness, numbness, coronary vasospasm, HTN

Fulvestrant (Faslodex) Uses: *HR(+)* met breast CA in postmenopausal women w/ progression following antiestrogen therapy* Action: Estrogen receptor antagonist Dose: 250 mg IM monthly, as single 5-mL inj or two concurrent 2.5-mL IM inj in buttocks Caution: [X, ?/–] ↑ effects w/ CYP3A4 inhibitors (Table 11); w/ hepatic impair Contra: 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) Uses: *CHF, HTN, edema,* ascites Action: 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) Caution: [C, +] ↓ K⁺, ↑ risk of digoxin tox; ↑ risk of ototox w/ aminoglycosides, cisplatin (esp in renal dysfunction) Contra: Allergy to sulfonyleureas; 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 ototox

Gabapentin (Neurontin) Uses: Adjunct in *partial Szs; postherpetic neuralgia (PHN)*; chronic pain synds Action: Anticonvulsant Dose: Anticonvulsant: 300–1200 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); ↓ in renal impair Caution: [C, ?] Contra: Component sensitivity Disp: Caps 100, 300, 400, soln 250 mg/5 mL; tab 600, 800 mg SE: Somnolence, dizziness, ataxia, fatigue Notes: Not necessary to monitor levels

Galantamine (Razadyne) Uses: *Alzheimer Dz* Action: Acetylcholinesterase inhibitor Dose: 4 mg PO bid, ↑ to 8 mg bid after 4 wk; may ↑ to 12 mg bid in 4 wk Caution: [B, ?] ↑ effect w/ succinylcholine, amiodarone, diltiazem, verapamil, NSAIDs, digoxin; ↓ effect w/ anticholinergics, ? ↑ risk of death vs placebo Contra: Severe renal/hepatic impair Disp: Tabs 4, 8, 12 mg; soln 4 mg/mL SE: GI disturbances, wgt loss, sleep disturbances, dizziness, HA Notes: Caution w/ urinary outflow obst, Parkinson Dz, severe asthma/COPD, severe heart Dz or ↓ BP

Gallium Nitrate (Ganite) Uses: *↑ Ca²⁺ of malignancy*; bladder CA Action: ↓ bone resorption of Ca²⁺ Dose: ↑ Ca²⁺: 200 mg/m²/day × 5 d. CA: 350 mg/m² cont inf × 5 d to 700 mg/m² rapid IV inf q2wk in antineoplastic settings (per protocols) Caution: [C, ?] Do not give w/ live or rotavirus vaccine Contra: SCr > 2.5 mg/dL Disp: Inj 25 mg/mL SE: Renal insuff, ↓ Ca²⁺, hypophosphatemia, ↓ bicarb, <1% acute optic neuritis Notes: Bladder CA, use in combo w/ vinblastine & ifosfamide

Ganciclovir (Cytovene, Vitrasert) Uses: *Rx & prevent CMV retinitis, prevent CMV Dz* in transplant recipients Action: ↓ 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: One implant q5–8mo. Adults. PO: Following induction, 1,000 mg PO tid. Prevention: 1,000 mg PO tid; with food; ↓ in renal impair Caution: [C, -] ↑ effect w/ immunosuppressives, imipenem/cilastatin, zidovudine, didanosine, other nephrotoxic Rx Contra: ANC <500, plt <25,000, 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/ cytotox cautions; no systemic benefit w/implant

Gefitinib (Iressa) Uses: *Rx locally advanced or met NSCLC after platinum-based & docetaxel chemo fails* Action: ↓ phosphorylation of tyrosine kinases; inhibits intracellular domain of EGFR Dose: 250 mg/d PO Caution: [D, -] Disp: Tabs 250 mg SE: D, rash, acne, dry skin, N/V, interstitial lung Dz, ↑ transaminases Notes: ✓ LFTs, only give to patients that have already received drug;— no new patients because it has not been shown to increase survival.

Gemcitabine (Gemzar) Uses: *Pancreatic CA, brain mets, NSCLC,* gastric CA Action: Antimetabolite; ↓ ribonucleotide reductase; produces false nucleotide base-inhibiting DNA synth Dose: 1,000 mg/m² over 30 min–1 h IV inf/wk × 3–4 wk or 6–8 wk; modify dose based on hematologic Fxn (per protocol) Caution: [D, ?/–] Contra: PRG Disp: Inj 200 mg, 1 g SE: ↓ BM, N/V/D, drug fever, skin rash Notes: Reconstituted soln 38 mg/mL; ✓ hepatic/renal Fxn

Gemfibrozil (Lopid) Uses: *Hypertriglyceridemia, coronary heart Dz* Action: Fibric acid Dose: 1200 mg/d PO ÷ bid 30 min ac AM & PM Caution: [C, ?] ↑ warfarin effect, sulfonyleureas; ↑ risk of myopathy w/ HMG-CoA reductase inhibitors; ↓ effects w/ cyclosporine Contra: Renal/hepatic impair (SCr > 2.0

mg/dL), gallbladder Dz, primary biliary cirrhosis **Disp:** Tabs 600 mg **SE:** Cholelithiasis, GI upset **Notes:** Avoid w/HMG-CoA reductase inhibitors; ✓ LFTs & serum lipids

Gemifloxacin (Factive) **Uses:** *CAP, acute exacerbation of chronic bronchitis* **Action:** ↓ DNA gyrase & topoisomerase IV; **Spectrum:** *S. pneumoniae* (including MDR strains), *H. influenzae*, *H. parainfluenzae*, *M. catarrhalis*, *M. pneumoniae*, *Chlamydia pneumoniae*, *K. pneumoniae* **Dose:** 320 mg PO daily; CrCl < 40 mL/min: 160 mg PO daily **Caution:** [C, ?/–]; children < 18 y; Hx of ↑ QTc interval, electrolyte disorders, w/ Class IA/III antiarrhythmics, erythromycin, TCAs, antipsychotics, ↑ INR and bleed risk w/warfarin **Contra:** Fluoroquinolone allergy **Disp:** Tab 320 mg **SE:** Rash, N/V/D, 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, Z or other metal cations

Gemtuzumab Ozogamicin (Mylotarg) **WARNING:** Can cause severe allergic Rxns & other infusion-related rxns including severe pulm events; hepatotox, including severe hepatic venoocclusive Dz (VOD) reported **Uses:** *Relapsed CD33+ AML in pts > 60 who are poor candidates for chemo* **Action:** MoAb linked to calicheamicin; selective for myeloid cells **Dose:** Per protocol **Caution:** [D, ?/–] **Contra:** Component sensitivity **Disp:** 5 mg/20 mL vial **SE:** ↓ BM, allergy, anaphylaxis, chills, fever, N/V, HA, pulm events, hepatotox **Notes:** Single-agent use only, not in combo; premedicate w/diphenhydramine & acetaminophen

Gentamicin (Garamycin, G-Mycitin, others) **Uses:** *Serious Infxns* due to *Pseudomonas*, *Proteus*, *E. coli*, *Klebsiella*, *Enterobacter*, & *Serratia* & initial Rx gram(–) sepsis **Action:** Bactericidal; ↓ protein synth **Spectrum:** gram(–) (not *Neisseria*, *Legionella*, *Acinetobacter*); synergy w/ PCNs **Dose:** **Adults.** 3–7 mg/kg/24h IV ÷ q8–24h. **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/d IV q8h; ↓ w/renal insuff **Caution:** [C, +/–] Avoid other nephrotoxics **Contra:** Aminoglycoside sensitivity **Disp:** Premixed infus 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/neurotoxicity **Notes:** Follow CrCl, SCr & serum conc for dose adjustments; daily dosing popular; use IBW to dose (use adjusted if obese > 30% IBW); Levels: **Peak:** 30 min after inf; **Trough** < 0.5 h before next dose; **Therapeutic:** **Peak** 5–8 mcg/mL, **Trough** < 2 mcg/mL; **Toxic Peak** > 12 mcg/mL; ½ life: 2h

Gentamicin & Prednisolone, Ophthalmic (Pred-G Ophthalmic) **Uses:** *Steroid-responsive ocular & conjunctival Infxns* sensitive to gentamicin **Action:** Bactericidal; ↓ protein synth w/anti-inflammatory. **Spectrum:** *Staph*, *E. coli*, *H. influenzae*, *Klebsiella*, *Neisseria*, *Pseudomonas*, *Proteus*, & *Serratia* sp **Dose:** **Oint:** ½ in. in conjunctival sac daily–tid. **Susp:** 1 gtt bid–qid, up to 1 gtt/h for severe Infxns **Contra:** Aminoglycoside sensitivity **Caution:** [C, ?] **Disp:** **Oint, ophth:** Prednisolone acetate 0.6% & gentamicin sulfate 0.3% (3.5 g).

Susp, ophth: Prednisolone acetate 1% & gentamicin sulfate 0.3% (2, 5, 10 mL)

SE: Local irritation

Gentamicin, Ophthalmic (Garamycin, Genoptic, Gentacidin, Gentak, others) **Uses:** *Conjunctival Infxns* **Action:** Bactericidal; ↓ protein synth **Dose:** *Oint*: Apply ½ in. bid–tid. *Soln*: 1–2 gtt q2–4h, up to 2 gtt/h for severe Infxn **Caution:** [C, ?] **Contra:** Aminoglycoside sensitivity **Disp:** Soln & oint 0.1% and 0.3% **SE:** Local irritation **Notes:** Do not use other eye drops w/in 5–10 mins; do not touch dropper to eye

Gentamicin, Topical (Garamycin, G-Mycitin) **Uses:** *Skin Infxns* caused by susceptible organisms **Action:** Bactericidal; ↓ protein synth **Dose:** *Adults & Peds* >1 y. Apply tid–qid **Caution:** [C, ?] **Contra:** Aminoglycoside sensitivity **Disp:** Cream & oint 0.1% **SE:** Irritation

Glimepiride (Amaryl) **Uses:** *Type 2 DM* **Action:** Sulfonylurea; ↑ pancreatic insulin release; ↑ peripheral insulin sensitivity; ↓ hepatic glucose output/production **Dose:** 1–4 mg/d, max 8 mg **Caution:** [C, –] **Contra:** DKA **Disp:** Tabs 1, 2, 4 mg **SE:** HA, N, hypoglycemia **Notes:** Give w/ 1st meal of day

Glimepiride/pioglitazone (Duetact) **Uses:** *Adjunct to exercise type 2 DM not controlled by single agent* **Action:** Sulfonylurea (↓ glucose) w/ agent that ↑ insulin sens & ↓ gluconeogenesis **Dose:** initial 30 mg/2 mg PO qam; 45 mg pioglitazone/8 mg glimepiride/day max; w/food **Caution:** [C, ?/–] w/ liver impair, elderly **Contra:** Component hypersensitivity, DKA **Disp:** Tabs 30/2, 30 mg/4 mg **SE:** Hct, ↑ ALT, ↓ glucose, URI, ↑ wgt, edema, HA, N/D, may ↑ CV mortality **Notes:** Monitor CBC, ALT, Cr, wgt

Glipizide (Glucotrol, Glucotrol XL) **Uses:** *Type 2 DM* **Action:** 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 **Caution:** [C, ?/–] Severe liver Dz **Contra:** 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 **Uses:** Severe *hypoglycemic* Rxns in DM with sufficient liver glycogen stores; β-blocker OD **Action:** Accelerates liver gluconeogenesis **Dose:** *Adults*. 0.5–1 mg SQ, IM, or IV; repeat in 20 min PRN. *β-blocker OD*: 3–10 mg IV; repeat in 10 min PRN; may give cont infus 1–5 mg/h (ECC 2005). *Peds*. Neonates: 0.3 mg/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 **Caution:** [B, M] **Contra:** Pheochromocytoma **Disp:** Inj 1 mg **SE:** N/V, ↓ BP **Notes:** Administration of glucose IV necessary; ineffective in starvation, adrenal insuff, or chronic hypoglycemia

Glyburide (DiaBeta, Micronase, Glynase) **Uses:** *Type 2 DM* **Action:** 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–bid, max 12 mg/d **Caution**: [C, ?] Renal impair **Contra**: DKA, Type I DM **Disp**: Tabs 1.25, 2.5, 5 mg; micronized tabs 1.5, 3, 6 mg **SE**: HA, hypoglycemia **Notes**: Not OK for CrCl < 50 mL/min; hold dose if NPO

Glyburide/Metformin (Glucovance) **Uses**: *Type 2 DM* **Action**: *Sulfonylurea*: ↑ Pancreatic insulin release. *Metformin*: Peripheral insulin sensitivity; ↓ hepatic glucose output/production; ↓ intestinal glucose absorption **Dose**: 1st line (naive pts), 1.25/250 mg PO daily–bid; 2nd line, 2.5/500 mg or 5/500 mg bid (max 20/2000 mg); take w/ meals, slowly ↑ dose; hold before & 48 h after ionic contrast media **Caution**: [C, –] **Contra**: SCr > 1.4 in females or > 1.5 in males; hypoxemic conditions (sepsis, recent MI); alcoholism; metabolic acidosis; liver Dz; **Disp**: Tabs 1.25/250 mg, 2.5/500 mg, 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* **Action**: Hyperosmolar laxative **Dose**: *Adults*. 1 adult supp PR PRN. *Peds*. 1 infant supp PR daily–bid PRN **Caution**: [C, ?] **Disp**: Supp (adult, infant); liq 4 mL/applicatorful **SE**: D

Gonadorelin (Factrel) **Uses**: *Primary hypothalamic amenorrhea* **Action**: Stimulates pituitary release of LH & FSH **Dose**: 5 mcg IV q 90 min × 21 d using pump kit **Caution**: [B, M] ↑ levels w/ androgens, estrogens, progestins, glucocorticoids, spirinolactone, levodopa; ↓ levels with OCP, digoxin, dopamine antagonists **Contra**: Condition exacerbated by PRG or reproductive hormones, ovarian cysts, causes of anovulation other than hypothalamic, hormonally dependent tumor **Disp**: Inj 100 mcg **SE**: Multiple pregnancy risk; inj site pain **Notes**: Monitor LH, FSH

Goserelin (Zoladex) **Uses**: Advanced *CA Prostate* & w/ radiation for localized high-risk Dz, *endometriosis, breast CA* **Action**: LHRH agonist, transient ↑ then ↓ in LH, w/ ↓ testosterone **Dose**: 3.6 mg SQ (implant) q 28d or 10.8 mg SQ q3mo; usually lower abd wall **Caution**: [X, –] **Contra**: 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 (Kytril) **Uses**: *Prevention of N/V* **Action**: Serotonin receptor antagonist **Dose**: *Adults & Peds*. 10 mcg/kg/dose IV 30 min prior to chemo *Adults*. Inj 0.1, 1 mg/mL 2 mg PO 1 h prior to chemo, then 12 h later. *Postop N/V*: 1 mg IV before end of OR case **Caution**: [B, +/-] St. John’s wort ↓ levels **Contra**: Liver Dz, children < 2 y **Disp**: Tabs 1 mg; inj 0.1, 1 mg/mL; soln 2 mg/10 mL **SE**: HA, constipation

Guaifenesin (Robitussin, others) **Uses**: *Relief of dry, nonproductive cough* **Action**: Expectorant **Dose**: *Adults*. 200–400 mg (10–20 mL) PO q4h SR 600–1200 mg PO BID, (max 2.4 g/d). *Peds*. < 2 y: 12 mg/kg/d in 6 ÷ doses. 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) **Caution:** [C, ?] **Disp:** Tabs 100, 200; SR tabs 600, 1200 mg; caps 200 mg; SR caps 300 mg; liq 100 mg/5 mL **SE:** GI upset **Notes:** Give w/ large amount of H₂O; some dosage forms contain EtOH

Guaifenesin & Codeine (Robitussin AC, Brontex, others)

[C-V] **Uses:** *Relief of dry cough* **Action:** Antitussive w/ expectorant **Dose:** **Adults.** 5–10 mL or 1 tab PO q6–8h (max 60 mL/24 h). **Peds.** 2–6 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) **Caution:** [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

Guaifenesin & Dextromethorphan (many OTC brands)

Uses: *Cough* due to upper resp tract irritation **Action:** Antitussive w/ expectorant **Dose:** **Adults & Peds >12 y.** 10 mL PO q6–8h (max 40 mL/24 h). **Peds.** 2–6 y: Dextromethorphan 1–2 mg/kg/24 h ÷ 3–4 × d (max 10 mL/d). 6–12 y: 5 mL q6–8h (max 20 mL/d) **Caution:** [C, +] **Contra:** Administration w/ MAOI **Disp:** Many OTC formulations **SE:** Somnolence **Notes:** Give with plenty of fluids

Haemophilus B Conjugate Vaccine (ActHIB, HibTITER, PedvaxHIB, Prohibit, others)

Uses: Routine *immunization* of children against *H. influenzae* type B Dzs **Action:** Active immunization against *Haemophilus B* **Dose:** **Peds.** 0.5 mL (25 mg) IM in deltoid or vastus lateralis **Caution:** [C, +] **Contra:** Febrile illness, immunosuppression, allergy to thimerosal **Disp:** Inj 7.5, 10, 15, 25 mcg/0.5 mL **SE:** Observe for anaphylaxis; edema, ↑ risk of *Haemophilus B* Infxn the week after vaccination **Notes:** Booster not required; report SAE to VAERS: 1-800-822-7967

Haloperidol (Haldol)

Uses: *Psychotic disorders, agitation, Tourette disorders, hyperactivity in children* **Action:** Antipsychotic, neuroleptic **Dose:** **Adults.** *Moderate 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). **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 maintenance 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 **Caution:** [C, ?] ↑ effects w/ SSRIs, CNS depressants, TCA, indomethacin, metoclopramide; avoid levodopa (↓ antiparkinsonian effects) **Contra:** 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), ↓ BP, anxiety, dystonias **Notes:** Do not give decanoate IV; dilute PO conc liq w/ H₂O/juice; monitor for EPS

Heparin **Uses:** *Rx & prevention of DVT & PE,* unstable angina, AF w/ emboli, & acute arterial occlusion **Action:** Acts w/ antithrombin III to inactivate thrombin & ↓ thromboplastin formation **Dose:** **Adults.** *Prophylaxis:* 3000–5000 units SQ q8–12h. *Thrombolysis Rx:* Load 50–80 units/kg IV, then 10–20 units/kg IV

qh (adjust based on PTT); Bolus 60 IU/kg (max 4000 IU); then 12 IU/kg/h (max 1000 IU/h for patients >70 kg) round to nearest 50 IU; keep PTT 1.5–2.0 (control 48 h or until angiography (*ECC 2005*) **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) **Caution:** [B, +] ↑ risk of hemorrhage w/ anticoagulants, aspirin, antiplatelets, cephalosporins w/ MTT side chain **Contra:** Uncontrolled bleeding, severe thrombocytopenia, suspected ICH **Disp:** 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

Hepatitis A Vaccine (Havrix, Vaqta) **Uses:** *Prevent Hep A* in high-risk individuals (eg, travelers, certain professions, or high-risk behaviors) **Action:** Active immunity **Dose:** (Expressed as ELISA units [EL.U.]) *Havrix: Adults.* 1440 EL.U. single IM dose. *Peds >2 y.* 720 EL.U. single IM dose. *Vaqta: Adults.* 50 units single IM dose. *Peds.* 25 units single IM dose **Caution:** [C, +] **Contra:** Component allergy **Disp:** Inj 720 EL.U./0.5 mL, 1440 EL.U./1 mL; 50 units/mL **SE:** Fever, fatigue, HA, inj site pain **Notes:** Booster OK 6–12 mo after primary; report SAE to VAERS: 1-800-822-7967

Hepatitis A (Inactivated) & Hepatitis B (Recombinant) Vaccine (Twinrix) **Uses:** *Active immunization against Hep A/B* **Action:** Active immunity **Dose:** 1 mL IM at 0, 1, & 6 mo **Caution:** [C, +] **Contra:** Component sensitivity **Disp:** Single-dose vials, syringes **SE:** Fever, fatigue, pain at site, HA **Notes:** Booster OK 6–12 mo after vaccination; report SAE to VAERS: 1-800-822-7967

Hepatitis B Immune Globulin (HyperHep, H-BIG) **Uses:** *Exposure to HBsAg(+) material* (eg, blood, plasma, or serum, accidental needlestick, mucous membrane contact, PO) **Action:** 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 initial after exposure **Caution:** [C, ?] **Contra:** Allergies to g-globulin or anti-immunoglobulin Ab; allergies to thimerosal; IgA deficiency **Disp:** Inj **SE:** Inj site pain, dizziness **Notes:** IM in gluteal or deltoid; w/continued exposure, give Hep B vaccine

Hepatitis B Vaccine (Engerix-B, Recombivax HB) **Uses:** *Prevent Hep B* **Action:** Active immunization; recombinant DNA **Dose: Adults.** 3 IM doses 1 mL each; 1st 2 doses 1 mo apart; the 3rd 6 mo after the 1st. *Peds.* 0.5 mL IM adult schedule **Caution:** [C, +] ↓ effect w/ immunosuppressives **Contra:** Yeast allergy **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, inj site pain **Notes:** Deltoid IM inj adults/older peds; younger peds, use anterolateral thigh

Hetastarch (Hespan) **Uses:** *Plasma volume expansion* adjunct in shock & leukapheresis **Action:** Synthetic colloid; acts similar to albumin **Dose: Volume expansion:** 500–1000 mL (1500 mL/d max) IV (20 mL/kg/h max rate). *Leuka-*

pheresis: 250–700 mL; ↓ in renal failure **Caution**: [C, +] **Contra**: Severe bleeding disorders, CHF, oliguric/anuric renal failure **Disp**: Inj 6 g/100 mL **SE**: Bleeding (↑ PT, PTT, bleed time) **Notes**: Not blood or plasma substitute

Human Papillomavirus (Types 6,11,16,18) Recombinant Vaccine (Gardasil)

Uses: *Prevent cervical CA, precancerous genital lesions, and genital warts due to HPV types 6, 11, 16, 18 in females 9–26 yrs* **Action**: Recombinant vaccine, passive humoral immunity **Dose**: 0.5 mL IM initial, then 2 and 6 mo **Caution**: [B, ?/–] **Disp**: Single-dose vial and prefilled syringe: 0.5 mL **SE**: Site Rxn (pain, erythema, swelling, pruritus), fever **Notes**: First approved cancer prevention vaccine; report adverse events to VAERS 1-800-822-7967.

Hydralazine (Apresoline, others) **Uses**: *Moderate–severe HTN; CHF* (w/ Isordil) **Action**: Peripheral vasodilator **Dose**: **Adults**. Initial 10 mg PO qid, ↑ to 25 mg qid 300 mg/d max. **Peds**. 0.75–3 mg/kg/24 h PO ÷ q6–12h; ↓ in renal impair; ✓ CBC & ANA before **Caution**: [C, +] ↓ hepatic Fxn & CAD; ↑ tox w/ MAOI, indomethacin, β-blockers **Contra**: 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) **Uses**: *Edema, HTN* **Action**: Thiazide diuretic; ↓ distal tubule Na reabsorption **Dose**: **Adults**. 25–100 mg/d PO single or ÷ doses. **Peds**. < 6 mo: 2–3 mg/kg/d in 2 ÷ doses. > 6 mo: 2 mg/kg/d in 2 ÷ doses **Caution**: [D, +] **Contra**: Anuria, sulfonamide allergy, renal insuff **Disp**: Tabs 25, 50, mg; caps 12.5 mg; PO soln 50 mg/5 mL **SE**: ↓ K⁺, hyperglycemia, hyperuricemia, ↓ Na⁺; sun sensitivity

Hydrochlorothiazide & Amiloride (Moduretic) **Uses**: *HTN* **Action**: Combined thiazide & K⁺-sparing diuretic **Dose**: 1–2 tabs/d PO **Caution**: [D, ?] **Contra**: Renal failure, sulfonamide allergy **Disp**: Tabs (amiloride/HCTZ) 5 mg/50 mg **SE**: ↓ BP, photosens, ↑ K⁺/↓ K⁺, hyperglycemia, ↓ Na⁺, hyperlipidemia, hyperuricemia

Hydrochlorothiazide & Spironolactone (Aldactazide) **Uses**: *Edema, HTN* **Action**: Thiazide & K⁺-sparing diuretic **Dose**: 25–200 mg each component/d, ÷ doses **Caution**: [D, +] **Contra**: Sulfonamide allergy **Disp**: Tabs (HCTZ/spironolactone) 25 mg/25 mg, 50 mg/50 mg **SE**: Photosens, ↓ BP, ↑ or ↓ K⁺, ↓ Na⁺, hyperglycemia, hyperlipidemia, hyperuricemia

Hydrochlorothiazide & Triamterene (Dyazide, Maxzide) **Uses**: *Edema & HTN* **Action**: Combo thiazide & K⁺-sparing diuretic **Dose**: *Dyazide*: 1–2 caps PO daily–bid. *Maxzide*: 1 tab/d PO **Caution**: [D, +/-] **Contra**: Sulfonamide allergy **Disp**: (Triamterene/HCTZ) 37.5 mg/25 mg, 75 mg/50 mg **SE**: Photosens, ↓ BP, ↑ or ↓ K⁺, ↓ Na⁺, hyperglycemia, hyperlipidemia, hyperuricemia **Notes**: HCTZ component in Maxzide more bioavailable than in Dyazide

Hydrocodone & Acetaminophen (Lorcet, Vicodin, Hycet, others) [C-III] **Uses**: *Moderate–severe pain*; **Action**: Narcotic analgesic w/

nonnarcotic analgesic **Dose:** *Adult:* 1–2 caps or tabs PO q4–6h PRN; soln 15 mL Q 4–6H **Peds:** soln (Hycet) 0.27 mL/kg Q 4–6 h **Caution:** [C, M] **Contra:** CNS depression, severe resp depression **Disp:** Many formulations; specify hydrocodone/APAP dose; caps 5/500; tabs 2.5/500, 5/325, 5/400, 5/500, 7.5/325, 7.5/400, 7.5/500, 7.5/650, 7.5/750, 10/325, 10/400, 10/500, 10/650, 10/660, 10/750; 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

Hydrocodone & Aspirin (Lortab ASA, others) [C-III] **Uses:** *Moderate–severe pain* **Action:** Narcotic analgesic with NSAID **Dose:** 1–2 PO q4–6h PRN, w/ food/milk **Caution:** [C, M] ↓ renal Fxn, gastritis/PUD, **Contra:** Component sensitivity; children w/chickenpox (Reye's synd) **Disp:** 5 mg hydrocodone/500 mg ASA/tab **SE:** GI upset, sedation, fatigue **Notes:** Monitor for GI bleed

Hydrocodone & Guaifenesin (Hycotuss Expectorant, others) [C-III] **Uses:** *Nonproductive cough* associated with resp Infxn **Action:** Expectorant w/ cough suppressant **Dose:** *Adults & Peds >12 y:* 5 mL q4h pc & hs. *Peds. < 2 y:* 0.3 mg/kg/d ÷ qid. *2–12 y:* 2.5 mL q4h pc & hs **Caution:** [C, M] **Contra:** Component sensitivity **Disp:** Hydrocodone 5 mg/guaifenesin 100 mg/5 mL **SE:** GI upset, sedation, fatigue

Hydrocodone & Homatropine (Hycodan, Hydromet, others) [C-III] **Uses:** *Relief of cough* **Action:** Combo antitussive **Dose:** (Based on hydrocodone) *Adults.* 5–10 mg q4–6h. *Peds.* 0.6 mg/kg/d ÷ tid–qid **Caution:** [C, M] **Contra:** 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) [C-III] **Uses:** *Moderate–severe pain (< 10 d)* **Action:** Narcotic w/ NSAID **Dose:** 1–2 tabs q4–6h PRN **Caution:** [C, M] Renal insuff; ↓ effect w/ ACE inhibitors & diuretics; ↑ effect w/ CNS depressants, EtOH, MAOI, aspirin, TCA, anticoagulants **Contra:** Component sensitivity **Disp:** Tabs 7.5 mg hydrocodone/200 mg ibuprofen, **SE:** Sedation, fatigue, GI upset

Hydrocodone & Pseudoephedrine (Detussin, Histussin-D, others) [C-III] **Uses:** *Cough & nasal congestion* **Action:** Narcotic cough suppressant with decongestant **Dose:** 5 mL qid, PRN **Caution:** [C, M] **Contra:** MAOIs **Disp:** hydrocodone/pseudoephedrine 5 mg /60 mg, 3 mg/15 mg 5 mL; tab 5 mg/60 mg **SE:** ↑ BP, GI upset, sedation, fatigue

Hydrocodone, Chlorpheniramine, Phenylephrine, Acetaminophen, & Caffeine (Hycomine Compound) [C-III] **Uses:** *Cough & Sxs of URI* **Action:** Narcotic cough suppressant w/ decongestants & analgesic **Dose:** 1 tab PO q4h PRN **Caution:** [C, M] **Contra:** NAG **Disp:** Hydrocodone 5 mg/chlorpheniramine 2 mg/phenylephrine 10 mg/APAP 250 mg/caffeine 30 mg/tab **SE:** ↑ BP, GI upset, sedation, fatigue

Hydrocortisone, Rectal (Anusol-HC Suppository, Cortifoam Rectal, Proctocort, others) Uses: *Painful anorectal conditions,* radiation proctitis, ulcerative colitis **Action:** Anti-inflammatory steroid **Dose: Adults.** Ulcerative colitis: 10–100 mg PR daily–bid for 2–3 wk **Caution:** [B, ?/–] **Contra:** 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)
See Steroids page 185 and Tables 3 & 4 **Caution:** [B, –] **Contra:** Viral, fungal, or tubercular skin lesions; serious Infxns (except septic shock or TB meningitis) **SE:** Systemic: ↑ appetite, insomnia, hyperglycemia, bruising **Notes:** May cause HPA axis suppression

Hydromorphone (Dilaudid) [C-II] Uses: *Moderate/severe pain* **Action:** Narcotic analgesic **Dose:** 1–4 mg PO, IM, IV, or PR q4–6h PRN; 3 mg PR q6–8h PRN; ↓ w/ hepatic failure **Caution:** [B (D if prolonged use or high doses near term), ?] ↑ respiratory depression and CNS effects CNS depressants, phenothiazines, TCA **Contra:** Component sensitivity **Disp:** Tabs 2, 4 mg, 8 mg; liq 5 mg/5 mL or 1 mg/mL; inj 1, 2, 4, 10 mg/mL; supp 3 mg **SE:** Sedation, dizziness, GI upset **Notes:** Morphine 10 mg IM = hydromorphone 1.5 mg IM

Hydroxocobalamin (Cyanokit) Uses: *Cyanide poisoning* **Action:** Binds cyanide to form nontoxic cyanocobalamin excreted in urine **Dose:** 70 mg/kg IV x1, repeat X1 PRN max 5-gm single dose; inf over 7.5 min **Caution:** [C, ?] **Contra:** None known **Disp:** Kit 2 2.5 gm vials w/inf set **SE:** ↑ BP (can be severe) anaphylaxis, chest tightness, edema, urticaria, rash, chromaturia, N, HA, inj site rxns

Hydroxyurea (Hydrea, Droxia) Uses: *CML, head & neck, ovarian & colon CA, melanoma, ALL, sickle cell anemia, polycythemia vera, HIV* **Action:** ↓ 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 **Caution:** [D, –] ↑ effects w/ zidovudine, zalcitabine, didanosine, stavudine, fluorouracil **Contra:** Severe anemia, BM suppression, WBC <2500 or plt <100,000, PRG **Disp:** Caps 200, 300, 400, 500 mg, tabs 1000 mg **SE:** ↓ BM (mostly leukopenia), N/V, rashes, facial erythema, radiation recall Rxns, renal impair **Notes:** Empty caps into H₂O

Hydroxyzine (Atarax, Vistaril) Uses: *Anxiety, sedation, itching* **Action:** 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 **Caution:** [C, +/-] ↑ effects w/ CNS depressants, anticholinergics, EtOH **Contra:** 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 (Anaspaz, Cystospaz, Levsin, others) Uses: *Spasm w/ GI & bladder disorders* **Action:** Anticholinergic **Dose: Adults.** 0.125–0.25 mg (1–2 tabs) SL/PO tid–qid, ac & hs; 1 SR cap q12h **Caution:** [C, +] ↑ effects w/ amantadine, antihistamines, antimuscarinics, haloperidol, phenothiazines, TCA, MAOI **Contra:** BOO, GI obst, NAG, MyG, paralytic ileus, ulcerative colitis, 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 before meals/food

Hyoscyamine, Atropine, Scopolamine, & Phenobarbital (Donnatal, others) Uses: *Irritable bowel, spastic colitis, peptic ulcer, spastic bladder* **Action:** Anticholinergic, antispasmodic **Dose:** 0.125–0.25 mg (1–2 tabs) tid–qid, 1 cap q12h (SR), 5–10 mL elixir tid–qid or q8h **Caution:** [D, M] **Contra:** NAG **Disp:** Many combos/manufacturers; *Cap* (Donnatal, others): Hyosc. 0.1037 mg/atropine 0.0194 mg/scop 0.0065 mg/phenobarbital 16.2 mg. *Tabs* (Donnatal, others): Hyosc. 0.1037 mg/atropine 0.0194 mg/scop 0.0065 mg/phenobarbital 16.2 mg. *LA* (Donnatal): Hyosc. 0.311 mg/atropine 0.0582 mg/scop 0.0195 mg/phenobarbital 48.6 mg. *Elixirs* (Donnatal, others): Hyosc. 0.1037 mg/atropine 0.0194 mg/scop 0.0065 mg/phenobarbital 16.2 mg/5 mL **SE:** Sedation, xerostomia, constipation

Ibandronate (Boniva) Uses: *Rx & prevent osteoporosis in postmenopausal women* **Action:** Bisphosphonate, ↓ osteoclast-mediated bone-resorption **Dose:** 2.5 mg PO daily or 150 mg once/month on same day (do not lie down for 60 min after); 3 mg IV over 15–30 sec q 3 mo **Caution:** [C, ?/–] avoid w/ CrCl < 30 mL/min **Contra:** Uncorrected ↓ Ca²⁺; 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 AM w/ H₂O (6–8 oz) > 60 min before 1st food/beverage & any meds w/multivalent cations; give adequate Ca²⁺ & vit D supls

Ibuprofen (Motrin, Rufen, Advil, others) [OTC] **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Arthritis, pain, fever* **Action:** 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 **Caution:** May interfere w/ aspirin's antiplatelet effect if given < 8 hrs before aspirin [B, +] **Contra:** 3rd tri PRG, severe hepatic impair, allergy, use w/ other NSAIDs, UGI bleed, ulcers **Disp:** Tabs 100, 200, 400, 600, 800 mg; chew tabs 50, 100 mg; caps 200 mg; susp 100 mg/2.5 mL, 100 mg/5 mL, 40 mg/mL (200 mg OTC form) **SE:** Dizziness, peptic ulcer, plt inhibition, worsening of renal insuff

Ibutilide (Corvert) Uses: *Rapid conversion of AF/flutter* **Action:** Class III antiarrhythmic **Dose: Adults** > 60 kg 0.01 mg/kg (max 1 mg) IV inf over 10 min;

may repeat X 1; < 60 kg use 0.01 mg/kg (*ECC 2005*; DC cardioversion preferred)

Caution: [C, -] **Contra:** w/ class I/III antiarrhythmics (Table 10); QTc > 440 ms

Disp: Inj 0.1 mg/mL **SE:** Arrhythmias, HA **Notes:** give w/ECG monitoring

Idarubicin (Idamycin) **WARNING:** Administer only under supervision of an MD experienced in leukemia and in an institution with resources to maintain a patient compromised by drug toxicity **Uses:** *Acute leukemias* (AML, ALL, ANLL), *CML in blast crisis, breast CA*

Action: DNA intercalating agent; ↓ DNA topoisomerases I & II **Dose:** (per protocol) 10–12 mg/m²/d for 3–4 d; ↓ in renal/hepatic impairment

Caution: [D, -] **Contra:** 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, Holoxan) **Uses:** Lung, breast, pancreatic & gastric CA, HL/NHL, soft tissue sarcoma **Action:** 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

Caution: [D, M] ↑ effect w/ phenobarbital, carbamazepine, phenytoin; St. John's wort may ↓ levels **Contra:** ↓ BM Fxn, PRG

Disp: Inj 1, 3 g **SE:** Hemorrhagic cystitis, nephrotox, N/V, mild–moderate leukopenia, lethargy & confusion, alopecia, ↑ hepatic enzyme

Notes: Administer w/ mesna to prevent hemorrhagic cystitis

Iloprost (Ventavis) **WARNING:** Associated with syncope; may require dosage adjustment **Uses:** NYHA Class III/IV pulm arterial HTN* **Action:** Prostaglandin analog **Dose:** Initial 2.5 mcg; if tolerated, ↑ to 5 mcg inh 6–9 X/d (at least 2 h apart) while awake

Caution: [C, ?/-] Antiplatelet effects, ↑ bleeding risk w/ anticoagulants; additive hypotensive effects

Contra: SBP <85 mm Hg **Disp:** Inh soln 10 mcg/mL **SE:** Syncope, ↓ BP, vasodilation, cough, HA, trismus

Notes: Requires *Pro-Dose AAD* or *I-neb ADD* system nebulizer; counsel on syncope risk

Imatinib (Gleevec) **Uses:** *Rx CML Ph +, CML blast crisis, ALL Ph +, myelodysplastic/myeloproliferative Dz, aggressive systemic mastocytosis, chronic eosinophilic leukemia, GIST, dermatofibrosarcoma protuberans*

Action: ↓ BCL-ABL tyrosine kinase (signal transduction) **Dose: Adult:** Typical dose 400–600 mg PO daily; w/meal

Peds: CML Ph + newly diagnosed 340 mg/m²/day, 600 mg/day max; recurrent 260 mg/m²/day PO ÷ daily-BID, to 340 mg/m²/d max

Caution: [D, ?/-] w/CYP3A4 meds (Table 11), warfarin **Contra:** 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) **Uses:** *Serious Infxns* due to susceptible bacteria **Action:** 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 1/2h. **Peds.** 60–100 mg/kg/24 h IV ÷ q6h; ↓ if CrCl is <70 mL/min

Caution: [C, +/-] Probenecid ↑ tox

Contra: Ped pts w/ CNS Infxn (\uparrow Sz risk) & < 30 kg w/ renal impair **Disp:** Inj (imipenem/cilastatin) 250/250 mg, 500/500 mg **SE:** Szs if drug accumulates, GI upset, thrombocytopenia

Imipramine (Tofranil) **WARNING:** Close observation for suicidal thinking or unusual changes in behavior **Uses:** *Depression, enuresis,* panic attack, chronic pain **Action:** TCA; \uparrow CNS synaptic serotonin or norepinephrine **Dose:**

Adults. Hospitalized: Initial 100 mg/24 h PO in \div doses; \uparrow over several wks 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 \div daily–qid. **Enuresis:** >6 y: 10–25 mg PO qhs; \uparrow by 10–25 mg at 1–2-wk intervals (max 50 mg for 6–12 y, 75 mg for >12 y); Rx for 2–3 mo, then taper **Caution:** [D, ?/–] **Contra:** Use with MAOIs, NAG, acute recovery from MI, PRG, CHF, angina, CVD, 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, 5% (Aldara) **Uses:** *Anogenital warts, HPV, condylomata acuminata* **Action:** Unknown; ? cytokine induction **Dose:** Apply 3 \times /wk, leave on 6–10 h & wash off w/soap & water, continue 16 wk max **Caution:** [B, ?] **Contra:** Component sensitivity **Disp:** Single-dose packets 5% (250 mg cream) **SE:** Local skin rxns **Notes:** Not a cure; may weaken condoms/vaginal diaphragms, wash hands before & after use

Immune Globulin, IV (Gamimune N, Sandoglobulin, Gammar IV) **Uses:** *IgG Ab deficiency Dz states, (eg, congenital agammaglobulinemia, CVH, & BMT), HIV, Hep A prophylaxis, ITP* **Action:** IgG suppl **Dose:** **Adults & Peds. Immunodeficiency:** 100–200 mg/kg/mo IV at 0.01–0.04 mL/kg/min to 400 mg/kg/dose max. **ITP:** 400 mg/kg/dose IV daily \times 5 d. **BMT:** 500 mg/kg/wk; \downarrow in renal insuff **Caution:** [C, ?] Separate administration of live vaccines by 3 mo **Contra:** IgA deficiency w/ Abs to IgA, severe thrombocytopenia or coagulation disorders **Disp:** Inj **SE:** Associated mostly w/inf rate; GI upset

Immune Globulin, Subcutaneous (Vivaglobin) **Uses:** *Primary immunodeficiency* **Action:** IgG suppl **Dose:** 100–200 mg/kg BW subQ weekly abdomen, thighs, upper arms, or lateral hip **Caution:** [C, ?] **Contra:** Hx anaphylaxis to immune globulin; some IGA deficiency **Disp:** 10- & 20-mL vials w/160 mg/IgG/mL **SE:** Inj site Rxns, HA, GI complaint, fever, N, D, rash, sore throat **Notes:** May instruct in home administration; keep refrigerated; discard unused drug

Inamrinone [Amrinone] (Inacor) **Uses:** *Acute CHF, ischemic cardiomyopathy* **Action:** Inotrope w/ vasodilator **Dose:** IV bolus 0.75 mg/kg over 2–3 min; maint 5–10 mcg/kg/min, 10 mg/kg/d max; \downarrow if ClCr < 10 mL/min **Caution:** [C, ?] **Contra:** Bisulfite allergy **Disp:** Inj 5 mg/mL **SE:** Monitor fluid, electrolyte, & renal changes **Notes:** Incompatible w/ dextrose solns, \checkmark LFTs, observe for arrhythmias

Indapamide (Lozol) **Uses:** *HTN, edema, CHF* **Action:** Thiazide diuretic; \uparrow Na, Cl, & H₂O excretion in distal tubule **Dose:** 1.25–5 mg/d PO **Caution:**

[D, ?] ↑ effect w/ loop diuretics, ACE inhibitors, cyclosporine, digoxin, Li **Contra:** 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* **Action:** Protease inhibitor; ↓ maturation of noninfectious virions to mature infectious virus **Dose:** 800 mg PO q8h; in combo w/ other antiretrovirals; on empty stomach; ↓ w/hepatic impair **Caution:** [C, ?] Numerous drug interactions **Contra:** w/ triazolam, midazolam, pimozide, ergot alkaloids, simvastatin, lovastatin, sildenafil, St. John's wort, amiodarone **Disp:** Caps 100, 200, 333, 400 mg **SE:** Nephrolithiasis, dyslipidemia, lipodystrophy, GI effects **Notes:** Drink six 8-oz glasses of H₂O/d

Indomethacin (Indocin) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Arthritis; close ductus arteriosus; ankylosing spondylitis* **Action:** ↓ 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 up to 3 doses; w/ food **Caution:** [B, +] **Contra:** ASA/NSAID sensitivity, peptic ulcer/active GI bleed, precipitation of asthma/urticaria/rhinitis by NSAIDs/aspirin, 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) **WARNING:** TB, invasive fungal Infxns, & other opportunistic Infxns reported, some fatal; perform TB skin testing prior to use; possible association with rare lymphoma **Uses:** *Moderate–severe Crohn Dz; fistulizing Crohn Dz; ulcerative colitis; RA (w/ MTX) psoriasis, ankylosing spondylitis* **Action:** IgG1K neutralizes TNF-α **Dose:** *Adult:* *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 yo:** 5 mg/kg IV q 8 wk **Caution:** [B, ?/–] Active Infxn, hepatic impairment, Hx or risk of TB, Hep B **Contra:** Murine allergy, moderate–severe CHF, live w/ live vaccines (eg, smallpox) **Disp:** 100 mg Inj **SE:** Allergic Rxns; HA, fatigue, GI upset, infusion Rxns; hepatotoxicity; reactivation Hep B, pneumonia, BM suppression, systemic vasculitis, pericardial effusion **Notes:** Monitor LFTs, PPD at baseline, monitor HepB carrier, skin exam for malignancy w/psoriasis

Influenza Vaccine (Fluarix, Flulaval, Fluzone, Fluvirin) **Uses:** *Prevent influenza* in adults >50 y, children 6–23 mo, pregnant women (2nd/3rd tri during flu season), nursing home residents, chronic Dzs, health-care workers, household contacts of high-risk pts, children < 9 y receiving vaccine for the first time **Action:** Active immunization **Dose:** *Adults and Peds > 9 y.* 0.5 mL/dose IM annually *Peds. 6 mo > 3 y:* 0.25 mL IM annually; 0.25 mL IM x2 doses > 4 wk apart 1st vacc; give 2 doses in 2nd vacc. year if only 1 dose given in 1st year–; 3–8 y 0.5 mL IM annually, start 0.5 mL IM × 2 doses 4> wks >in 1st vacc year **Caution:** [C, +] **Contra:** Egg, gentamicin, or thimerosal allergy, Infxn at site,

acute resp or febrile illness, Hx Guillain-Barré, immunocompromised, children 5-17 y on aspirin **Disp:** Based on manufacturer, 0.25- & 0.5-mL prefilled syringes **SE:** Inj site soreness, fever, myalgia, malaise, Guillain-Barré synd (controversial) **Notes:** Fluarix not labelled for Peds; Optimal in US Oct-Nov, protection begins 1-2 wk after, lasts up to 6 mo; each yr, vaccines based on predictions of flu active in flu season (December-spring in US); whole or split virus for adults; Peds <13 y split virus or purified surface antigen to ↓ febrile Rxns; www.cdc.gov/flu for more info

Influenza Virus Vaccine Live, Intranasal (FluMist) **Uses:** *Prevent influenza* **Action:** Live-attenuated vaccine **Dose:** *Adults 18-49 y:* 1 0.1 mL each nostril × 1 annually *Peds 5-8 yo:* 0.1 mL each nostril × 1 annually; Initial 0.1 mL each nostril × 2 doses > 6 wk apart in 1st vaccination year *Peds >9 y:* see adult dose **Caution:** [C, ?/-] **Contra:** Egg allergy, PRG, Hx Guillain-Barré synd, known/suspected immune deficiency, asthma or reactive airway Dz, acute febrile illness, 5-17 YO on ASA **Disp:** Prefilled, single-use, intranasal sprayer; shipped frozen, store 35-46 F; new refrigerated shipping form for 2008 **SE:** Runny nose, nasal congestion, HA, cough **Notes:** Do not give w/ other vaccines; avoid contact w/immunocompromised individuals for 21 days

Insulin, Injectable (See Table 5) **Uses:** *Type 1 or type 2 DM refractory to diet or PO hypoglycemic agents; acute life-threatening ↑ K⁺* **Action:** Insulin supl **Dose:** Based on serum glucose; usually SQ; 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 **Caution:** [B, +] **Contra:** Hypoglycemia **Disp:** Table 5 **SE:** Highly purified insulins ↑ free insulin; monitor for several wks when changing doses/agents

Insulin Human Inhalation Powder (Exubera) **Uses:** *Type-1 DM in adults combo w/LA insulin; Type-2 DM monotherapy or w/other agents **Action:** Regulates glucose metabolism **Dose:** Premeal (mg) = BW(kg) × 0.05 mg/kg; round down to nearest whole mg; give w/in 10 min pc; titrate based on glucose; 1 mg blister = 3 IU of SC regular human insulin; 3 mg blister = 8 IU of SC regular human insulin. **Caution:** [C, M] **Contra:** Smoker/or D/C smoking < 6 mo before start; D/C if smoking resumes; unstable or poorly controlled lung disease **Disp:** Unit dose blisters: 1, 3 mg w/Exubera Inhaler **SE:** Hypoglycemia, dry mouth, chest pain, otitis media, cough, dyspnea, pharyngitis, rhinitis, sinusitis, epistaxis, ↑ sputum **Notes:** ✓ pulm fxn before Tx and 6-12 mo; store blisters at room temperature

Interferon Alfa (Roferon-A, Intron-A) **WARNING:** Can cause or aggravate fatal or life-threatening neuropsychiatric, autoimmune, ischemic, and infectious disorders. Monitor patients closely **Uses:** *Hairy cell leukemia, Kaposi sarcoma, melanoma, CML, chronic Hep B & C, follicular NHL, condylomata acuminata* **Action:** Antiproliferative; modulates host immune response; ↓ viral replication in infected cells **Dose:** Per protocols. *Adults. Hairy cell leukemia:* Alfa-2a (Roferon-A): 3 M units/d for 16-24 wk SQ/IM then 3 M units 3 ×/wk X 6-24 mo; Alfa-2b (Intron A): 2 M units/m² IM/ SQ 3 ×/wk for 2-6 mo *Chronic Hep B:*

Alfa-2b (Intron A): 3 M units/m² SQ 3 \times /wk \times 1 wk, then 6 M units/m² 3 \times /wk (Max 10M units 3 \times /wk, total duration 16–24 wks). *Follicular NHL* (Intron A) 5 M units SQ 3 \times /wk for 18 mo; *Melanoma* (Intron A) 20 M units m² IV \times 5 days/wk \times 4 wks, then 10 M units/m² SQ 3 \times /wk \times 48 wks; *Kaposi sarcoma* (Intron A) 30 M units/m IM/SQ 3 \times /wk \times 10–12 wks, then 36 M units IM/SQ 3 \times /wk; *Chronic hep C* (Intron A) 3 m units 3 \times /wk \times 16 wks (continue 18–24 mo if response) *Roferon A*: 3 M units 3 \times /wk for 12 mo SQ/IM; *Condyloma* (Intron A) 1 M units/lesion (max 5 lesions) 3 \times /wk for 3 wks. **Peds.** CML: Alfa-2a (Roferon-A): 2.5–5 M units/m² IM daily.

Contra: Benzyl alcohol sens, decompensated liver Dz, autoimmune Dz, immunosuppressed, neonates, infants **Disp:** Inj forms (see also PEG interferon) **SE:** Flulike Sxs, fatigue, anorexia, neurotox at high doses; up to 40% neutralizing Ab w/therapy

Interferon Alfa-2b & Ribavirin Combo (Rebetron) WARNING:

Can cause or aggravate fatal or life-threatening neuropsychiatric, autoimmune, ischemic, and infectious disorders. Monitor patients closely. Contraindicated in pregnant females & their male partners **Uses:** *Chronic Hep C in pts w/compensated liver Dz who relapse after α -interferon therapy* **Action:** Combo antiviral agents (see individual agents) **Dose:** 3 M units Intron A SQ 3 \times wk w/ 1,000–1,200 mg of Rebetron PO \div bid dose for 24 wk. *Pts < 75 kg:* 1000 mg of Rebetron/d **Caution:** [X, ?] **Contra:** PRG, males w/ PRG female partner, autoimmune hepatitis, CrCl < 50 mL/min **Disp:** *Pts < 75 kg:* Combo packs: 6 vials Intron A (3 M Units/0.5 mL) w/ 6 syringes & EtOH swabs, 70 Rebetol caps; one 18-M unit multidose vial of Intron A inj (22.8 M units/3.8 mL; 3 M units/0.5 mL) & 6 syringes & swabs, 70 Rebetol caps; one 18 M units Intron A inj multidose pen (22.5 M units/1.5 mL; 3 M units/0.2 mL) w/ 6 needles & swabs, 70 Rebetol caps. *Pts > 75 kg:* Identical except 84 Rebetol caps/pack **SE:** See warning, flulike synd, HA, anemia **Notes:** Monthly PRG test; instruct in self-administration of SQ Intron A

Interferon Alfacon-1 (Infergen) WARNING: Can cause or aggravate fatal or life-threatening neuropsychiatric, autoimmune, ischemic, and infectious disorders. Monitor patients closely **Uses:** *Chronic Hep C* **Action:** Biologic response modifier **Dose:** 9 mcg SQ 3 \times /wk \times 24 wk **Caution:** [C, M] **Contra:** *E. coli* product allergy **Disp:** Inj 9, 15 mcg **SE:** Flulike synd, depression, blood dyscrasias, colitis, pancreatitis, hepatic decompensation, \uparrow SCr, eye disorders, \downarrow thyroid **Notes:** Allow > 48 h between inj; monitor CBC, plt, SCr, TFT

Interferon Beta 1a (Rebif) WARNING: Can cause or aggravate fatal or life-threatening neuropsychiatric, autoimmune, ischemic, and infectious disorders. Monitor patients closely **Uses:** *MS, relapsing* **Action:** Biologic response modifier **Dose:** 44 mcg SC 3 \times /wk; start 8.8 mcg SC 3 \times /wk \times 2 wk, then 22 mcg SC 3 \times /wk \times 2 wk **Caution:** [C, ?] w/ hepatic impair, depression, Sz disorder, thyroid Dz **Contra:** Human albumin allergy **Disp:** 0.5 mL prefilled syringes w/ 29 ga 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, hepatotoxicity, \downarrow BM **Notes:** Dose > 48 h apart; CBC 1, 3, 6 mo; TFTs q6mo w/hx thyroid dz

Interferon Beta-1b (Betaseron) Uses: *MS, relapsing/remitting/ secondary progressive* **Action:** Biologic response modifier **Dose:** 0.25 mg SQ qod **CAUTION:** [C, ?] **Contra:** Human albumin allergy **Disp:** Powder for inj 0.3 mg (32 MU IFN) **SE:** Flulike synd, depression, blood dyscrasias, inj site necrosis, anaphylaxis **Notes:** Pt self inj, rotate sites; monitor LFTs, CBC 1, 3, 6 mo, TFT Q 6 mo

Interferon γ -1b (Actimmune) Uses: * \downarrow Incidence of serious Infxns in chronic granulomatous Dz (CGD), osteoporosis* **Action:** Biologic response modifier **Dose:** *Adults.* CGD: 50 mcg/m² SQ (1.5 million units/m²) BSA >0.5 m²; if BSA <0.5 m², give 1.5 mcg/kg/dose; given 3 \times wk. **Caution:** [C, ?] **Contra:** Allergy to *E. coli*-derived products **Disp:** Inj 100 mcg (2 mill units) **SE:** Flulike synd, depression, blood dyscrasias, dizziness, altered mental status, gait disturbance, hepatic tox

Ipecac Syrup [OTC] Uses: *Drug OD, certain cases of poisoning* **NOTE:** Usage is falling out of favor & is no longer recommended by some groups **Action:** Irritation of the GI mucosa; stimulation of the chemoreceptor trigger zone **Dose:** *Adults.* 15–30 mL PO, followed by 200–300 mL of H₂O; if no emesis in 20 min, repeat once. *Peds.* 6–12 y: 5–10 mL PO, followed by 10–20 mL/kg of H₂O; if no emesis in 20 min, repeat once. 1–12 y: 15 mL PO followed by 10–20 mL/kg of H₂O; if no emesis in 20 min, repeat once **Caution:** [C, ?] **Contra:** Ingestion of petroleum distillates, strong acid, base, or other caustic agents; comatose/unconscious **Disp:** Syrup 15, 30 mL (OTC) **SE:** Lethargy, D, cardiotox, protracted V **Notes:** Caution in CNS depressant OD; activated charcoal considered more effective (www.clintox.org/PosStatements/Ipecac.html)

Ipratropium (Atrovent HFA, Atrovent nasal) Uses: *Bronchospasm w/ COPD, rhinitis, rhinorrhea* **Action:** Synthetic anticholinergic similar to atropine; antagonizes acetylcholine receptors, inhibits mucous gland secretions **Dose:** *Adults & Peds >12 y.* 2–4 puffs qid, max 12 inh/day *Nasal:* 2 sprays/nostril bid–tid; *Nebulization* 500 mcg 3–4 times/day **Caution:** [B, +/-] w/inhaled insulin **Contra:** Allergy to soya lecithin/related foods **Disp:** HFA Met-dose inhaler 18 mcg/dose; inhal 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

Irbesartan (Avapro) Uses: *HTN, DN*, CHF **Action:** Angiotensin II receptor antagonist **Dose:** 150 mg/d PO, may to 300 mg/d **Caution:** [C (1st tri; D 2nd/3rd), ?/–] **Disp:** Tabs 75, 150, 300 mg **SE:** Fatigue, \downarrow BP \uparrow K

Irinotecan (Camptosar) **WARNING:** D and myelosuppression Uses: *Colorectal* & lung CA **Action:** Topoisomerase I inhibitor; \downarrow DNA synth **Dose:** Per protocol; 125–350 mg/m² qwk–q3wk (\downarrow hepatic dysfunction, as tolerated per tox) **Caution:** [D, –] **Contra:** Allergy to component **Disp:** Inj 20 mg/mL **SE:** \downarrow 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

Iron Dextran (Dexferrum, INFeD) **WARNING:** Anaphylactic rxns with use; use only if oral iron not possible; administer where resuscitation techniques available **Uses:** *Fe deficiency when cannot supplement PO* **Action:** Fe suppl **Dose: Adults.** *Iron defic anemia:* Estimate Fe deficiency, give 25–100 mg IM/IV day until total dose; total dose (mL) = $-0.0442 \times (\text{desired Hgb} - \text{observed Hgb}) \times \text{LBW}$ + (0.26 x LBW); *Iron replacement, blood loss:* total dose (mg) = blood loss (mL) x Hct (as decimal fraction) Max 100 mg/day; **Peds** > 4 mo. As above; Max: 0.5 mL (wt < 5 kg), 1 mL (5–10 kg), 2 mL (> 10 kg) per dose IM or direct IV **Caution:** [C, M] **Contra:** Anemia w/o Fe deficiency. **Disp:** Inj 50 mg (Fe)/mL **SE:** Anaphylaxis, flushing, dizziness, inj site & inf Rxns, metallic taste **Notes:** Give IM w/ “Z-track” technique; IV preferred; give test dose > 1 h before

Iron Sucrose (Venofer) **Uses:** *Fe deficiency anemia w/ chronic HD in those receiving erythropoietin* **Actions:** Fe replacement. **Dose:** 5 mL (100 mg) IV on dialysis, 1 mL (20 mg)/min max **Caution:** [C, M] **Contra:** Anemia w/o Fe deficiency **Disp:** 20 mg elemental Fe/mL, 5-mL vials. **SE:** Anaphylaxis, ↓ BP, cramps, N/V/D, HA **Notes:** Most pts require cumulative doses of 1000 mg; give slowly

Isoniazid (INH) **Uses:** *Rx & prophylaxis of TB* **Action:** 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: 15mg/kg (max 900 mg) 3 x/wk. *Prophylaxis:* 300 mg/d PO for 6–12 mo or 900 mg 2 x/wk. **Peds.** *Active TB:* 10–15 mg/kg/d daily–bid PO or IM 300 mg/d max. *Prophylaxis:* 10 mg/kg/24 h PO; ↓ in hepatic/renal dysfunction **Caution:** [C, +] Liver Dz, dialysis; avoid EtOH **Contra:** Acute liver Dz, Hx INH hepatitis **Disp:** Tabs 100, 300 mg; syrup 50 mg/5 mL; inj 100 mg/mL **SE:** Hepatitis, 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. ✓ CDC guidelines (MMWR) for current recommendations

Isoproterenol (Isuprel) **Uses:** *Shock, cardiac arrest, AV nodal block* **Action:** β_1 - & β_2 -receptor stimulant **Dose: Adults.** 2–10 mcg/min IV inf; titrate; 2–10 $\mu\text{g}/\text{min}$ titrate (ECC 2005) **Peds.** 0.2–2 mcg/kg/min IV inf; titrate. **Caution:** [C, ?] **Contra:** 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

Isosorbide Dinitrate (Isordil, Sorbitrate, Dilatrate-SR) **Uses:** *Rx & prevent angina,* CHF (w/ hydralazine) **Action:** 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 15–30-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 10–12-h drug-free intervals **Caution:** [C, ?] **Contra:** 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) **Uses:** *Prevention/Rx of angina pectoris* **Action:** Relaxes vascular smooth muscle **Dose:** 5–10 mg PO bid, w/ the 2 doses 7 h apart or XR (Imdur) 30–60 mg/d PO, max 240 mg **Caution:** [C, ?] **Contra:** Head trauma/cerebral hemorrhage (can ICP), w/ sildenafil, tadalafil, vardenafil **Disp:** Tabs 10, 20 mg; XR 30, 60, 120 mg **SE:** HA, dizziness, ↓ BP

Isotretinoin [13-cis Retinoic Acid] (Accutane, Amnesteem, Claravis, Sotret) **WARNING:** Must not be used by PRG females; can induce severe birth defects; pt must be capable of complying w/ mandatory contraceptive measures; prescribed according to product-specific risk management system. Because of teratogenicity, Accutane is approved for marketing only under a special restricted distribution FDA program called iPLEDGE **Uses:** *Refractory severe acne*

Action: Retinoic acid derivative **Dose:** 0.5–2 mg/kg/d PO ÷ bid; ↓ in hepatic Dz, take w/ food **Caution:** [X, –] Avoid tetracyclines **Contra:** Retinoid sensitivity, PRG **Disp:** Caps 10, 20, 30, 40 mg **SE:** Rare: Depression, psychosis, suicidal thoughts; derm sensitivity, xerostomia, photosens, LFTs, triglycerides **Notes:** Risk management program requires 2 (–) PRG tests before Rx & use of 2 forms of contraception 1 mo before, during, & 1 mo after therapy; to prescribe isotretinoin, the Prescriber must access the iPLEDGE system via the Internet (www.ipledgeprogram.com); monitor LFTs & lipids

Isradipine (DynaCirc) **Uses:** *HTN* **Action:** CCB **Dose:** *Adults.* 2.5–5 mg PO bid. **Caution:** [C, ?] **Contra:** Severe heart block, sinus bradycardia, CHF, dosing w/in several hours of IV β-blockers **Disp:** Caps 2.5, 5 mg; tabs CR 5, 10 mg **SE:** HA, edema, flushing, fatigue, dizziness, palpitations

Itraconazole (Sporanox) **WARNING:** Potential for negative inotropic effects on the heart; if signs or Sxs of CHF occur during administration, continued use should be assessed **Uses:** *Fungal Infxns (aspergillosis, blastomycosis, histoplasmosis, candidiasis)*

Action: ↓ ergosterol synth **Dose:** 200 mg PO or IV daily–bid (capsule w/ meals or cola/grapefruit juice); PO soln on empty stomach; avoid antacids **Caution:** [C, ?] Numerous interactions **Contra:** Inj. if CrCl < 30 mL/min, Hx of CHF or ventricular dysfunction, w/ H₂-antagonist, omeprazole **Disp:** Caps 100 mg; soln 10 mg/mL; inj 10 mg/mL **SE:** N, rash, hepatitis, ↓ K⁺, CHF (mostly w/ IV use) **Notes:** PO soln & caps not interchangeable; useful in pts who cannot take ampho B, can cause ↑ QTc in combo w/ other drugs

Kaolin-Pectin (Kaodene, Kao-Spen, Kapectolin) [OTC] **Uses:** *D* **Action:** Absorbent demulcent **Dose:** *Adults.* 60–120 mL PO after each loose stool or q3–4h PRN. *Peds.* 3–6 y: 15–30 mL/dose PO PRN. 6–12 y: 30–60 mL/dose PO PRN **Caution:** [C, +] **Contra:** D due to pseudomembranous colitis **Disp:** Multiple OTC forms; also available w/ opium (Parepectolin [CII]) **SE:** Constipation, dehydration

Ketoconazole (Nizoral, Nizoral AD Shampoo) [Shampoo-OTC] **Uses:** *Systemic fungal Infxns; topical for local fungal Infxns due to der-

matophytes & yeast; shampoo for dandruff,* PCa when rapid ↓ testosterone needed (ie, cord compression) **Action:** ↓ fungal cell wall synth **Dose: Adults.** PO: 200 mg PO daily; ↑ to 400 mg PO daily for serious Infxn; PCa 400 mg PO tid (short-term). **Topical:** Apply daily (cream/shampoo). **Peds** >2 y. 5–10 mg/kg/24 h PO ÷ q12–24h (↓ in hepatic Dz) **Caution:** [C, +/-] Any agent that ↑ gastric pH prevents absorption; may enhance anticoagulants; w/ EtOH (disulfiram-like Rxn) numerous interactions **Contra:** CNS fungal Infxns (poor CNS penetration), w/astemizole, triazolam; topical use on broken/inflamed skin **Disp:** Tabs 200 mg; topical cream 2%; gel 2%, shampoo 1% and 2% **SE:** N **Notes:** Monitor LFTs w/ systemic use

Ketoprofen (Orudis, Oruvail) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Arthritis, pain* **Action:** NSAID; ↓ prostaglandins **Dose:** 25–75 mg PO tid–qid, 300 mg/d/max; w/ food **Caution:** [B (D 3rd tri), ?] **Contra:** NSAID/ASA sensitivity **Disp:** Caps 25, 50, 75 mg; caps, SR 100, 150, 200 mg **SE:** GI upset, peptic ulcers, dizziness, edema, rash

Ketorolac (Toradol) **WARNING:** Indicated for short-term (= 5 d) Rx of moderate–severe acute pain that requires opioid analgesia levels **Uses:** *Pain* **Action:** NSAID; ↓ prostaglandins **Dose:** 15–30 mg IV/IM q6h or 10 mg PO qid; max IV/IM 120 mg/d, max PO 40 mg/d; do not use for >5 d; ↓ for age & renal dysfunction and < 50 kg **Caution:** [B (D 3rd tri), -] **Contra:** Peptic ulcer Dz, NSAID sensitivity, advanced renal Dz, CNS bleeding, anticipated major surgery, labor & delivery, nursing mothers **Disp:** Tabs 10 mg; inj 15 mg/mL, 30 mg/mL **SE:** Bleeding, peptic ulcer Dz, renal failure, Cr, edema, dizziness, allergy **Notes:** PO only as continuation of IM/IV therapy

Ketorolac Ophthalmic (Acular, Acular LS, Acular PF) **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) **Action:** NSAID **Dose:** 1 gtt qid **Caution:** [C, +] **Disp:** Acular LS: 0.4%; Acular, Acular PF Soln 0.5% **SE:** Local irritation

Ketotifen (Zaditor) **Uses:** *Allergic conjunctivitis* **Action:** H₁-receptor antagonist, mast cell stabilizer **Dose: Adults & Peds.** 1 gtt in eye(s) q8–12h **Caution:** [C, ?/-] **Disp:** Soln 0.025%/5 mL **SE:** Local irritation, HA, rhinitis

Kunecatechins (Veregen) **Uses:** *External genital/perianal warts* **Action:** Unknown **Dose:** Apply 0.5 cm ribbon to each wart 3 ×/day until all warts clear; not > 16 wks) **Caution:** [C; ?] **Disp:** Oint 15% **SE:** Local rxns (erythema, pruritus, burning, pain, erosion/ulceration, edema, induration, rash) **Notes:** Wash hands before/after use; not necessary to wipe off prior to next use

Labetalol (Trandate) **Uses:** *HTN* & hypertensive emergencies (IV) **Action:** α & β-adrenergic blocker **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; 10 mg IV over 1–2 min; repeat or double dose q 10 min (150 mg max); or initial bolus, then 2–8 mg/min (ECC 2005) **Peds.** PO: 3–20

mg/kg/d in \div doses. *Hypertensive emergency*: 0.4–1.5 mg/kg/h IV cont inf **Caution**: [C (D in 2nd or 3rd tri), +] **Contra**: Asthma/COPD, cardiogenic shock, uncompensated CHF, heart block **Disp**: Tabs 100, 200, 300 mg; inj 5 mg/mL **SE**: Dizziness, N, \downarrow BP, fatigue, CV effects

Lactic Acid & Ammonium Hydroxide [Ammonium Lactate] (Lac-Hydrin) **Uses**: *Severe xerosis & ichthyosis* **Action**: Emollient moisturizer **Dose**: Apply bid **Caution**: [B, ?] **Disp**: Cream, lotion, lactic acid 12% w/ ammonium hydroxide **SE**: Local irritation

Lactobacillus (Lactinex Granules) [OTC] **Uses**: *Control of D*, especially after antibiotic therapy **Action**: Replaces nl intestinal flora **Dose: Adults & Peds** >3 y. 1 packet, 1–2 caps, or 4 tabs daily–QID **Caution**: [A, +] **Contra**: Milk/lactose allergy **Disp**: Tabs; caps; EC caps; powder in packets (all OTC) **SE**: Flatulence

Lactulose (Constulose, Generlac, Enulose, others) **Uses**: *Hepatic encephalopathy; constipation* **Action**: Acidifies the colon, allows ammonia to diffuse into colon **Dose: Acute hepatic encephalopathy**: 30–45 mL PO q1h until soft stools, then tid–qid. *Chronic laxative therapy*: 30–45 mL PO tid–qid; adjust q1–2d to produce 2–3 soft stools/d. *Rectally*: 200 g in 700 mL of H₂O PR. **Peds. Infants**: 2.5–10 mL/24 h \div tid–qid. Other **Peds Peds**: 40–90 mL/24 h \div tid–qid **Caution**: [B, ?] **Contra**: Galactosemia **Disp**: Syrup 10 g/15 mL, soln 10 g/15 mL, 10, 20 g/packet **SE**: Severe D, flatulence; life-threatening electrolyte disturbances

Lamivudine (Epivir, Epivir-HBV) **WARNING**: Lactic acidosis & severe hepatomegaly w/ steatosis reported w/ nucleoside analogs **Uses**: *HIV Infxn, chronic Hep B* **Action**: NRTI, \downarrow 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** <16 y. 4 mg/kg PO bid. **HBV: Adults**. 100 mg/d PO. **Peds 2–17 y**. 3 mg/kg/d PO, 100 mg max; \downarrow w/ renal impair **Caution**: [C, –] **Disp**: Tabs 100 mg (HBV) 150 mg, 300 mg; soln 5 mg/mL (HBV), 10 mg/mL **SE**: HA, pancreatitis, GI upset, lactic acidosis, peripheral neuropathy

Lamotrigine (Lamictal) **WARNING**: Serious rashes requiring hospitalization & D/C of Rx reported; rash less frequent in adults **Uses**: *Partial Szs, tonic-clonic Szs, bipolar disorder, Lennox–Gastaut synd* **Action**: Phenyltriazine antiepileptic, \downarrow glutamate, stabilize neuronal membrane **Dose: Adults. Szs**: Initial 50 mg/d PO, then 50 mg PO bid for 2 wk, maint 300–500 mg/d in 2 \div doses. *Bipolar*: Initial 25 mg/d PO, 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 \div doses for wk 1 & 2, then 1.2 mg/kg for wk 3 & 4, maint 15 mg/kg/d (max 400 mg/d) 1–2 \div doses; \downarrow in hepatic Dz or if w/ enzyme inducers or valproic acid **Caution**: [C, –] Interactions w/ other antiepileptics **Disp**: Tabs 25, 100, 150, 200 mg; chew tabs 2, 5, 25 mg **SE**: Photosens, HA, GI upset, dizziness, ataxia, rash (potentially life-threatening in children > adults) **Notes**: ? value of therapeutic monitoring

Lansoprazole (Prevacid, Prevacid IV) **Uses**: *Duodenal ulcers, prevent & Rx NSAID gastric ulcers, IV alternative for \leq 7 d /w erosive esophagitis.*

H. pylori Infxn, erosive esophagitis, & hypersecretory conditions, GERD **Action:** Proton pump inhibitor **Dose:** 15–30 mg/d PO; NSAID ulcer prevention 15 mg/d PO \leq 12 wk, NSAID ulcers 30 mg/d PO, \times 8 wk; 30 mg IV daily \leq 7 d change to PO for 6–8 wk; \downarrow in severe hepatic impair **Caution:** [B, ?/–] **Disp:** Caps 15, 30 mg; granules for susp 15, 30 mg, IV 30 mg; OD tabs 15, 30 mg **SE:** HA, fatigue **Notes:** For IV provided in-line filter must be used

Lanthanum Carbonate (Fosrenol) **Uses:** *Hyperphosphatemia in renal disease* **Action:** Phosphate binder **Dose:** 750–1500 mg PO daily \div doses, w/ or immed after meal; titrate every 2–3 wk based on PO_4^{2-} levels **Caution:** [C, ?/–] No data in GI disease **Disp:** Chew tabs 250, 500, 750, 1000 mg **SE:** N/V, graft occlusion, HA \downarrow BP **Notes:** Chew tabs before swallowing; separate from meds that interact with antacids by 2 h

Lapatinib (Tykerb) **Uses:** *Advanced breast CA w/capecitabine w/tumors that overexpress HER2 and have failed therapy w/ anthracycline, taxane, and trastuzumab* **Action:** Tyrosine kinase inhibitor **Dose:** Per protocol, 1250 mg PO days 1–21 w/capecitabine 2000 mg/m²/day divided 2 doses/day day 1–14 **Caution:** [D; ?] avoid CYP3A4 inhibitors **Contra:** w/ phenothiazines **Disp:** Tabs 250 mg **SE:** N/V/D, anemia, \downarrow plt, neutropenia, hand-foot synd, \uparrow LFTs, rash, \downarrow LVEF **Notes:** Consider baseline LVEF and periodic ECG

Latanoprost (Xalatan) **Uses:** *Open angle glaucoma, ocular HTN* **Action:** Prostaglandin, \uparrow outflow of aqueous humor **Dose:** 1 gtt eye(s) hs **Caution:** [C, ?] **Disp:** 0.005% soln **SE:** May darken light irides; blurred vision, ocular stinging, & itching

Leflunomide (Arava) **WARNING:** PRG must be excluded prior to start of Rx **Uses:** *Active RA* **Action:** \downarrow Pyrimidine synth **Dose:** Initial 100 mg/d PO for 3 d, then 10–20 mg/d **Caution:** [X, –] **Contra:** PRG **Disp:** Tabs 10, 20, 100 mg **SE:** D, Infxn, HTN, alopecia, rash, N, joint pain, hepatitis **Notes:** Monitor LFTs during initial therapy

Lenalidomide (Revlimid) **WARNING:** Significant teratogen; patient must be enrolled in RevAssist risk reduction program **Uses:** *MDS* multiple myeloma **Action:** Thalidomide analog, immune modulator **Dose:** *Adults.* 10 mg PO daily; swallow whole w/water **Caution:** [X, –] w/ renal impair **Disp:** Caps 5, 10, 15, 25 mg **SE:** D, pruritus, rash, fatigue, \downarrow BM, thromboembolism, \uparrow LFT **Notes:** Monitor CBC and for thromboembolism, hepatotoxicity; routine PRG tests required; Rx only in 1-mo increments; limited distribution network; males must use condom and not donate sperm; use contraception at least 4 wks beyond D/C

Lepirudin (Refludan) **Uses:** *HIT* **Action:** Direct thrombin inhibitor **Dose:** Bolus 0.4 mg/kg IV, then 0.15 mg/kg/h inf (\downarrow dose & inf rate if CrCl < 60 mL/min) **Caution:** [B, ?/–] Hemorrhagic event or severe HTN **Contra:** Active bleeding **Disp:** Inj 50 mg **SE:** Bleeding, anemia, hematoma **Notes:** Adjust based on aPTT ratio, maintain aPTT 1.5–2.0

Letrozole (Femara) **Uses:** *Advanced breast CA in postmenopausal* **Action:** Nonsteroidal aromatase inhibitor **Dose:** 2.5 mg/d PO **Caution:** [D, ?] **Con-**

tra: PRG **Disp:** Tabs 2.5 mg **SE:** Anemia, N, hot flashes, arthralgia **Notes:** Monitor CBC, thyroid Fxn, lytes, LFT, & SCr

Leucovorin (Wellcovorin) **Uses:** *OD of folic acid antagonist; megaloblastic anemia, augment 5-FU impaired MTX elimination* **Action:** Reduced folate source; circumvents action of folate reductase inhibitors (eg, MTX) **Dose:** *Leucovorin rescue:* 10 mg/m² PO/IM/IV q6h; start w/in 24 h after dose or 15 mg PO/IM/IV q6h, 25 mg/dose max PO; *Folate antagonist overdose (eg pemetrexed)* 100 mg/m² IM/IV x1 then 50 mg/m² IM/IV q6h × 8 days 100 mg/m² × 1; *5-FU adjuvant tx, colon CA per protocol;* low dose: 20 mg/m²/day IV x5 days w/ 5-FU 425 mg/m²/day IV x5 days, repeat q4–5wk × 6; high dose: 500 mg/m² IV qwk × 6, w/ 5-FU 500 mg/m² IV qwk x6wk, repeat after 2 wk off × 4; *Megaloblastic anemia:* 1 mg IM/IV daily **Caution:** [C, ?/–] **Contra:** Pernicious anemia **Disp:** Tabs 5, 10, 15, 25 mg; inj 50, 100, 200, 350, 500 **SE:** Allergic Rxn, N/V/D, fatigue **Notes:** Monitor Cr, methotrexate levels q24h w/ leucovorin rescue; do not use intrathecally/intraventrically

Leuprolide (Lupron, Lupron DEPOT, Lupron DEPOT-Ped, Viadur, Eligard) **Uses:** *Advanced prostatic cancer (all products except Depot-Ped), endometriosis (Lupron), uterine fibroids (Lupron), & precocious puberty (Lupron-Ped)* **Action:** LHRH agonist; paradoxically ↓ release of gonadotropin, resulting in ↓ pituitary gonadotropins (↓ LH); in men ↓ testosterone **Dose:** *Adults.* PCa: Lupron Depot: 7.5 mg IM q28d or 22.5 mg IM q3mo or 30 mg IM q4mo; Eligard: 7.5 mg IM/SQ q28d or 22.5 mg IM q3mo or 30 mg IM/SQ q4mo; Eligard 45 mg SQ 6 mo; Viadur implant (PCa only); insert in inner upper arm w/ local anesthesia, replace q12mo. *Endometriosis (Lupron DEPOT):* 3.75 mg IM qmo × 6. *Fibroids:* 3.75 mg IM qmo × 3. *Peds.* CPP (Lupron-Ped): 50 mcg/kg/d SQ inj; ↑ by 10 mcg/kg/d until total down-regulation achieved. *DEPOT:* <25 kg: 7.5 mg IM q4wk. >25–37.5 kg: 11.25 mg IM q4wk. >37.5 kg: 15 mg IM q4wk **Caution:** [X, ?] w/ impending cord compression in PCa **Contra:** AUB, implant in women/peds; PRG **Disp:** Inj 5 mg/mL; Lupron DEPOT 3.75 (1 mo for fibroids, endometriosis); Lupron DEPOT for PCa: 7.5 mg (1 mo), 11.25 mg (3 mo), 22.5 (3 mo), 30 mg (4 mo); Eligard depot for PCa: 7.5 mg (1 mo); 22.5 mg (3 mo), 30 mg (4 mo), 45 mg (6 mo); Viadur 65 mg 12-mo SQ implant, Lupron-Ped 7.5, 11.25, 15 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]) **Notes:** Nonsteroidal antiandrogen (eg, bicalutamide) may block flare in men w/CaP **Levalbuterol (Xopenex, Xopenex HFA)** **Uses:** *Asthma (Rx & prevention of bronchospasm)* **Action:** Sympathomimetic bronchodilator; R-isomer of albuterol **Dose:** *Adult:* HFA 2 puffs q4–6h, 12 puffs/day max; 0.63–1.25 mg Neb q6–8h prn; *Peds > 4 yrs:* HFA 2 puffs q4–6h, 12 puffs/day max *Peds: 6–11 > yrs:* 0.31–0.63 mg neb q6–8h; *Peds > 11 yrs:* 0.63–1.25 mg neb q6–8h **Caution:** [C, ?] CAD, HTN, arrhythmias **Contra:** w/phenothiazines, MAOI w/in 14d

Disp: Multidose inhaler (HFA) 45 mcg/puff (15 gm); Soln neb inhal 0.31, 0.63, 1.25 mg/3 mL **SE:** paradox bronchospasm, anaphylaxis, angioedema, tachycardia, nervousness, **V Notes:** May ↓ CV side effects compared w/ albuterol; do not mix w/other nebs or dilute

Levetiracetam (Keppra) **Uses:** *Partial onset Szs* **Action:** Unknown **Dose:** *Adults and >16 y.* 500 mg PO bid, may ↑ 3000 mg/d max; *Peds.* 4–15 y: 10–20 mg/kg/d ÷ in 2 doses, 60 mg/kg/d max (↓ in renal insuff) **Caution:** [C, ?/–]elderly, w/renal impair, psych disorders **Contra:** Component allergy **Disp:** Tabs 250, 500, 750, 1000 mg, Sol 100 mg/mL **SE:** Dizziness, somnolence, HA, hostility, aggression, myelosupp, impaired coordination **Notes:** Do not D/C abruptly

Levobunolol (A-K Beta, Betagan) **Uses:** *Glaucoma* **Action:** β-Adrenergic blocker **Dose:** 1 gtt daily–bid **Caution:** [C, ?] **Disp:** Soln 0.25, 0.5% **SE:** Ocular stinging or burning **Notes:** Possible systemic effects if absorbed

Levocabastine (Livostin) **Uses:** *Allergic seasonal conjunctivitis* **Action:** Antihistamine **Dose:** 1 gtt in eye(s) qid ≤ 2 wk **Caution:** [C, +/-] **Disp:** 0.05% gtt **SE:** Ocular discomfort

Levofloxacin (Levaquin, Quixin & Iquix Ophthalmic) **Uses:** *Lower resp tract Infxns, sinusitis, chronic bact prostatitis, pyelonephritis, UTI uncomp; skin Infxns; anthrax; topical for bacterial conjunctivitis* **Action:** Quinolone, ↓ DNA gyrase. **Spectrum:** Excellent gram (+) except MRSA & *E. faecium*; excellent gram (–) except *S. maltophilia* & *Acinetobacter* sp; poor anaerobic **Dose:** Usual 250–750 mg/d PO or IV; *Sinusitis* 750 mg PO/IV day × 5; *Prostatitis* 500 mg PO/IV daily × 28 D; *Uncomp UTI female* 250 mg PO/IV daily × 3, if complicated × 10 days; *CAP* 750 mg/day for 5 d; *Anthrax acute* 500 mg PO/d X 60, start IV w/other antib; postexposure 500 mg PO daily × 60; *ophth* 1–2 gtt in eye(s) q2h while awake for 2 d, then q4h while awake for 5 d; ↓ in renal impair, avoid antacids if PO; oral sol 1 h before, 2 h after meals **Caution:** [C, –] w/ cation-containing products (eg, antacids) **Contra:** Quinolone sensitivity **Disp:** Tabs 250, 500, 750 mg; premixed IV 250, 500, 750 mg, inj 25 mg/mL; Leva-Pak 750 mg × 5 d; Sol: 25 mg/mL ophth soln 0.5% (Quixin), 1.5% (Iquix) **SE:** N/D, dizziness, rash, GI upset, photosens

Levonorgestrel (Plan B) **Uses:** *Emergency contraceptive (“morning-after pill”)*; prevents PRG if taken <72 h after unprotected sex/contraceptive fails **Action:** Progestin, alters tubal transport, and endometrium **Dose:** *Adult and Peds (post menarche females):* 0.75 mg q12h × 2 **Caution:** [X, M] **Contra:** Known/suspected PRG, AUB **Disp:** Tab, 0.75 mg, 2 blister pack **SE:** N/V, abd pain, fatigue, HA, menstrual changes. **Notes:** Will not induce abortion; ↑ risk of ectopic PRG; OTC if > 18 y, RX if < 18 y varies by state

Levonorgestrel IUD (Mirena) **Uses:** *Contraception, long term* **Action:** ?, may alter endometrium, thicken cervical mucus, interfere w/sperm survival or capacitation **Dose:** Up to 5 yrs, insert w/in 7 days menses onset or immed after

1st tri ab; wait 6 wk if postpartum; replace any time during menstrual cycle **Caution:** [C, ?] **Contra:** **Disp:** 52 mg IUD **SE:** Failed insertion, ectopic pregnancy, sepsis, PID, infertility, PRG comps w/IUD left in place, abortion, embedment, ovarian cysts, perforation uterus/cervix, intestinal obstruct/perf, peritonitis, **Notes:** Counsel patient does not protect against STD/HIV; see insert for instructions

Levorphanol (Levo-Dromoran) [C-II] **Uses:** *Moderate–severe pain; chronic pain* **Action:** Narcotic analgesic **Dose:** 2–4 mg PO PRN q6–8h; 1–2 mg IM/SQ PRN q6–8h; ↓ in hepatic impair **Caution:** [B/D (prolonged use/high doses at term), ?] **Contra:** Component allergy **Disp:** Tabs 2 mg; inj 2 mg/mL **SE:** Tachycardia, ↓ BP, drowsiness, GI upset, constipation, resp depression, pruritus

Levothyroxine (Synthroid, Levoxyl, others) **Uses:** *Hypothyroidism, myxedema coma* **Action:** Supplement L-thyroxine **Dose: Adults.** *Hypothyroid* Initial, 12.5–50 mcg/d PO; ↑ by 25–50 mcg/d every mo; usual 100–200 mcg/d. *Myxedema:* 200–500 mcg IV, then 100–300 mcg/d **Peds.** *Hypothyroid:* 0–3 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 yr: 5–6 mcg/kg/d PO; 6–12 yr: 4–5 mcg/kg/d PO; > 12 yr: 2–3 mcg/kg/d PO. Reduce dose by 50% if IV; titrate based on response & thyroid tests; dose can ↑ rapidly in young/middle-aged **Caution:** [A, +] **Contra:** Recent MI, uncorrected adrenal insuff **Disp:** Tabs 25, 50, 75, 88, 100, 112, 125, 137, 150, 175, 200, 300 mcg; inj 200, 500 mcg **SE:** Insomnia, wgt loss, alopecia, arrhythmia **Notes:** Take w/ full glass of water (prevents choking)

Lidocaine (Anestacon Topical, Xylocaine, others) **Uses:** *Local anesthetic; Rx cardiac arrhythmias* **Action:** Anesthetic; 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 mg/h max; cont inf 20–50 mcg/kg/min or 1–4 mg/min; *Cardiac arrest from VF/VT:* Initial: 1.0–1.5 mg/kg IV. *Refractory VF:* Additional 0.5–0.75 mg/kg IV push, repeat in 5–10 min, max total 3 mg/kg. *ET:* 2–4 mg/kg. *Perfusing stable VT, wide complex tachycardia or ectopy:* 1.0–1.5 mg/kg IV push; repeat 0.5–0.75 mg/kg q 5–10 min; max total 3 mg/kg; *Maint* 1–4 mg/min (30–50 µg/min) (ECC 2005) **Peds.** *Antiarrhythmic, ET, load:* 1 mg/kg; repeat in 10–15 min 5 mg/kg max total, then IV inf 20–50 mcg/kg/min. *Topical:* Apply max 3 mg/kg/dose. *Local inj anesthetic:* Max 4.5 mg/kg (Table 2) **Caution:** [C, +] **Contra:** Do not use lidocaine w/ epi on digits, ears, or nose (risk of vasoconstriction & necrosis); heart block **Disp:** *Inj local:* 0.5, 1, 1.5, 2, 4, 10, 20%. *Inj IV:* 1% (10 mg/mL), 2% (20 mg/mL); admixture 4, 10, 20%. *IV inf:* 0.2%, 0.4%; cream 2%; gel 2, 2.5%; oint 2.5, 5%; liq 2.5%; soln 2, 4%; viscous 2% **SE:** Dizziness, paresthesias, & convulsions associated w/ tox **Notes:** 2nd line to amiodarone in ECC; dilute ET dose 1–2 mL w/ NS; epi may be added for local anesthesia to ↑ effect & ↓ bleeding; for IV forms, ↓ w/ liver Dz or CHF; systemic levels: steady state 6–12h: *Therapeutic:* 1.2–5 mcg/mL; *Toxic* >6 mcg/mL; ½ life: 1.5 h

Lidocaine/Prilocaine (EMLA, LMX) **Uses:** *Topical anesthetic*; adjunct to phlebotomy or dermal procedures **Action:** Topical anesthetic **Dose:**

Adults. EMLA cream, anesthetic disc (1 g/10 cm²): Thick layer 2–2.5 g to intact skin, 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 **Caution:** [B, +] Methemoglobinemia

Contra: Use on mucous membranes, broken skin, eyes; allergy to amide-type anesthetics **Disp:** Cream 2.5% lidocaine/2.5% prilocaine; anesthetic disc (1 g) **SE:** Burning, stinging, methemoglobinemia **Notes:** Longer contact time ↑ effect

Lindane (Kwell) [OTC] **Uses:** *Head lice, crab lice, scabies* **Action:** Ectoparasiticide & ovicide **Dose: Adults & Peds. Cream or lotion:** Thin layer after bathing, leave for 8–12 h, pour on laundry. **Shampoo:** Apply 30 mL, develop a lather w/ warm water for 4 min, comb out nits **Caution:** [C, +/-] **Contra:** Open wounds, Sz disorder **Disp:** Lotion 1%; shampoo 1% **SE:** Arrhythmias, Szs, local irritation, GI upset **Notes:** Caution w/ overuse (may be absorbed); may repeat Rx in 7 d

Linezolid (Zyvox) **Uses:** *Infxns caused by gram (+) bacteria (including vancomycin-resistant enterococcus, VRE), pneumonia, skin Infxns* **Action:** Unique, binds ribosomal bacterial RNA; bactericidal for strep, bacteriostatic for enterococci & staph. **Spectrum:** Excellent gram (+) including VRE & MRSA **Dose: Adults.** 400–600 mg IV or PO q12h. **Peds.** 10 mg/kg IV or PO q8h (q12h in preterm neonates) **Caution:** [C, +/-] w/ reversible MAOI, avoid foods w/ tyramine & cough/cold products w/ pseudoephedrine; w/ ↓ BM **Disp:** Inj 2 mg/mL; tabs 600 mg; susp 100 mg/5 mL **SE:** HTN, N/D, HA, insomnia, GI upset, ↓ BM, tongue discoloration **Notes:** ✓ weekly CBC

Liothyronine (Cytomel) **Uses:** *Hypothyroidism, goiter, myxedema coma, thyroid suppression therapy* **Action:** 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. **Peds.** Initial 5 mcg/24 h, titrate by 5-mcg/24-h increments at 1–2-wk intervals; maint 20–75 mcg/24 h PO daily; ↓ in elderly **Caution:** [A, +] **Contra:** Recent MI, uncorrected adrenal insuff, uncontrolled HTN **Disp:** Tabs 5, 25, 50 mcg; inj 10 mcg/mL **SE:** Alopecia, arrhythmias, CP, HA, sweating **Notes:** Monitor TFT

Lisdexamfetamine (Vyvanse) **WARNING:** Amphetamines have high abuse potential. Long-term use may cause dependency **Uses:** *ADHD* **Action:** Prodrug of dextroamphetamine **Dose: Peds 6–12 yo:** 30 mg PO qam, ↑ 20 mg/d each wk, max 70 mg/day **Caution:** [C, -] ↑ sudden cardiac death, may exacerbate preexisting psych disorders **Contra:** Severe CV Dz, ↑ thyroid, BP, NAG, Hx drug abuse, w/in 14 d of MOI **Disp:** Caps 30, 50, 70 mg **SE:** N/V, dry mouth, pyrexia, ↓ appetite & weight, dizziness, HA, irritability, insomnia, rash **Notes:** Adult approval pending; OK to open and dissolve in H₂O

Lisinopril (Prinivil, Zestril) **Uses:** *HTN, CHF, prevent DN & AMI* **Action:** ACE inhibitor **Dose:** 5–40 mg/24 h PO daily–bid. **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 **Cau-**

tion: [D, -] **Contra:** ACE inhibitor sensitivity **Disp:** Tabs 2.5, 5, 10, 20, 30, 40 mg **SE:** Dizziness, HA, cough, ↓ BP, angioedema, ↑ K⁺ **Notes:** To prevent DN, start when urinary microalbuminemia begins

Lithium Carbonate (Eskalith, Lithobid, others) **Uses:** *Manic episodes of bipolar Dz* **Action:** Effects shift toward intraneuronal metabolism of catecholamines **Dose:** *Adults. Bipolar, acute mania:* 1800 mg/day PO in 3 ÷ doses in desired serum cns. 1–15 mg/L. *Bipolar maintenance:* 900–1200 /day PO in 2–3 ÷ dose **Peds 2–12 y.** 15–60 mg/kg/d in 3–4 ÷ doses; must titrate; ↓ in renal insuff, elderly **Caution:** [D, -] Many drug interactions **Contra:** Severe renal impair or CV Dz, lactation **Disp:** Caps 150, 300, 600 mg; tabs 300 mg; SR tabs 300, CR tabs 450 mg; syrup 300 mg/5 mL **SE:** Polyuria, polydipsia, nephrogenic DI, tremor; Na retention or diuretic use may ↑ tox; arrhythmias, dizziness **Notes:** Levels: *Trough:* just before next dose: *Therapeutic:* 0.8–1.2 mEq/mL; *Toxic* >2 mEq/mL; ½ life: 18–20h

Lodoxamide (Alomide) **Uses:** *Vernal conjunctivitis/keratitis* **Action:** Stabilizes mast cells **Dose:** *Adults & Peds* >2 y. 1–2 gtt in eye(s) qid ≤3 mo **Caution:** [B, ?] **Disp:** Soln 0.1% **SE:** Ocular burning, stinging, HA

Lomefloxacin (Maxaquin) **Uses:** *UTI, acute exacerbation of chronic bronchitis; prophylaxis in transurethral procedures* **Action:** Quinolone antibiotic; ↓ DNA gyrase. *Spectrum:* Good gram(-) including *H. influenzae* except *Stenotrophomonas maltophilia*, *Acinetobacter* sp., & some *P. aeruginosa* **Dose:** 400 mg/d PO; ↓ w/renal insuff, avoid antacids **Caution:** [C, -] Interactions w/ cation-containing products **Contra:** Quinolone allergy, children < 18 y, ↑ Qt interval, ↓K⁺ **Disp:** Tabs 400 mg **SE:** N/V/D, abd pain, photosens, Szs, HA, dizziness, tendon rupture, peripheral neuropathy, pseudomembranous colitis, anaphylaxis,

Loperamide (Imodium) [OTC] **Uses:** *D* **Action:** 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 **Caution:** [B, +] Not for acute D caused by *Salmonella*, *Shigella*, or *C. difficile* **Contra:** Pseudomembranous colitis, bloody D **Disp:** Caps 2 mg; tabs 2 mg; liq 1 mg/5 mL (OTC) **SE:** Constipation, sedation, dizziness

Lopinavir/Ritonavir (Kaletra) **Uses:** *HIV Infxn* **Action:** Protease inhibitor **Dose:** *Adults.* TX naïve: 2 tab PO daily or 1 tab PO bid; TX experienced pt: 1 tab PO bid (↑ dose if w/ amprenavir, efavirenz, fosamprenavir, nelfinavir, nevirapine). **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 **Caution:** [C, ?/-] Numerous interactions **Contra:** w/drugs dependent on CYP3A/CYP2D6 (Table 11) **Disp:** (mg lopinavir/ritonavir) Tab 200/50, soln 400/100/5 mL **SE:** Avoid disulfiram (soln has ETOH), metronidazole; GI upset, asthenia, ↑ cholesterol/triglycerides, pancreatitis; protease metabolic synd

Loracarbef (Lorabid) **Uses:** *Upper & lower resp tract, skin, urinary tract* **Action:** 2nd-gen cephalosporin; ↓ cell wall synth. *Spectrum:* Weaker than

1st-gen against gram (+), enhanced gram (-) **Dose: Adults.** 200–400 mg PO daily-bid. **Peds.** 7.5–15 mg/kg/d PO ÷ bid; on empty stomach; ↓ in severe renal insuff

Caution: [B, +] **Disp:** Caps 200, 400 mg; susp 100, 200 mg/5 mL **SE:** D

Loratadine (Claritin, Alavert) **Uses:** *Allergic rhinitis, chronic idiopathic urticaria* **Action:** 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 **Caution:** [B, +/-] **Contra:** Component allergy **Disp:** Tabs 10 mg (OTC); rapidly disintegrating Reditabs 10 mg; syrup 1 mg/mL **SE:** HA, somnolence, xerostomia

Lorazepam (Ativan, others) [C-IV] **Uses:** *Anxiety & anxiety w/ depression; preop sedation; control status epilepticus*; EtOH withdrawal; antiemetic **Action:** Benzodiazepine; antianxiety agent **Dose: Adults.** Anxiety: 1–10 mg/d PO in 2–3 ÷ doses. *Preop:* 0.05 mg/kg to 4 mg max IM 2 h before surgery. *Insomnia:* 2–4 mg PO hs. *Status epilepticus:* 4 mg/dose IV PRN q10–15 min; usual total dose 8 mg. *Antiemetic:* 0.5–2 mg IV or PO q4–6h PRN. *EtOH withdrawal:* 2–5 mg IV or 1–2 mg PO initial depending on severity; titrate **Peds.** Status epilepticus: 0.05 mg/kg/dose IV, repeat at 1–20 min intervals × 2 PRN. *Antiemetic, 2–15 y:* 0.05 mg/kg (to 2 mg/dose) prechemo; ↓ in elderly; do not administer IV > 2 mg/min or 0.05 mg/kg/min **Caution:** [D, +/-] **Contra:** Severe pain, severe ↓ BP, sleep apnea, NAG, allergy to propylene glycol or benzyl alcohol **Disp:** Tabs 0.5, 1, 2 mg; soln, PO conc 2 mg/mL; inj 2, 4 mg/mL **SE:** Sedation, ataxia, tachycardia, constipation, resp depression **Notes:** ≤10 min for effect if IV

Losartan (Cozaar) **Uses:** *HTN,* CHF, DN **Action:** Angiotensin II antagonist **Dose:** 25–50 mg PO daily-bid, max 100 mg; ↓ in elderly/hepatic impair **Caution:** [C (1st tri, D 2nd & 3rd tri), +/-] **Disp:** Tabs 25, 50, 100 mg **SE:** ↓ BP in pts on diuretics; GI upset, angioedema

Lovastatin (Mevacor, Altacor) **Uses:** *Hypercholesterolemia* **Action:** HMG-CoA reductase inhibitor **Dose:** 20 mg/d PO w/ PM meal; may ↑ at 4-wk intervals to 80 mg/d max or 60 mg ER tab; take w/ meals **Caution:** [X, -] Avoid w/ grapefruit juice, gemfibrozil. **Contra:** Active liver Dz **Disp:** Tabs 10, 20, 40 mg; ER tabs 10, 20, 40, 60 mg **SE:** HA & GI intolerance common; promptly report any unexplained muscle pain, tenderness, or weakness (myopathy) **Notes:** Maintain cholesterol-lowering diet; monitor LFT q12wk × 1 y, then q6mo

Lubiprostone (Amitiza) **Uses:** *Chronic idiopathic constipation in adults* **Action:** Selective Cl channel activator **Dose: Adults.** 24 mcg PO bid w/ food **Contra:** Mechanical GI obst **Caution:** [C, +/-] Severe D, severe renal or moderate-severe hepatic impair **Disp:** Gelcaps 24 mcg **SE:** N, HA, D, GI distention, abd pain **Notes:** Requires (-) pregnancy test before Tx; utilize contraception; periodically reassess drug need; not for chronic use

Lutropin Alfa (Luveris) **Uses:** *Infertility* **Action:** Recombinant LH **Dose:** 75 units SC w/ 75–150 units FSH, 2 separate inj max 14 d **Caution:** [X, ?/M] **Contra:** Primary ovarian failure, uncontrolled thyroid/adrenal dysfunc-

tion, intracranial lesion, AUB, hormone-dependent GU tumor, ovarian cyst, PRG
Disp: Inj 75 units **SE:** HA, N, ovarian hyperstimulation synd, breast pain, ovarian cysts; ↑ risk of multiple births **Notes:** Rotate inj sites; do not exceed 14 d duration unless signs of imminent follicular development

Lymphocyte Immune Globulin [Antithymocyte Globulin, ATG] (Atgam) **WARNING:** Should only be used by physician experienced

in immunosuppressive TX or management of solid organ and/or bone marrow transplant patients. Adequate lab and supportive medical resources must be readily available in the facility for patient management **Uses:** *Allograft rejection in transplant pts; aplastic anemia if not candidates for BMT* **Action:** ↓ circulating T lymphocytes **Dose: Adults. Prevent rejection:** 15 mg/kg/day IV ×14 d, then qod ×7; initial w/in 24 h before/after transplant. **Rx rejection:** Same except use 10–15 mg/kg/d; max 28 doses in 21 d. **Peds.** 5–25 mg/kg/d IV. **Caution:** [C, ?] **Contra:** Hx Rxn to other equine g-globulin preparation, leukopenia, thrombocytopenia

Disp: Inj 50 mg/mL **SE:** D/C w/ severe thrombocytopenia/leukopenia; rash, fever, chills, ↓ BP, HA, ↑ K⁺ **Notes:** Test dose: 0.1 mL 1:1000 dilution in NS

Magaldrate (Riopan, Lowsium) [OTC] **Uses:** *Hyperacidity associated w/ peptic ulcer, gastritis, & hiatal hernia* **Action:** Low-Na antacid **Dose:** 5–10 mL PO between meals & hs **Caution:** [B, ?] **Contra:** Ulcerative colitis, diverticulitis, ileostomy/colostomy, renal insuff (Mg content) **Disp:** Susp (OTC) **SE:** GI upset **Notes:** < 0.3 mg Na/tab or tsp

Magnesium Citrate (various) [OTC] **Uses:** *Vigorous bowel preparation*; constipation **Action:** Cathartic laxative **Dose: Adults.** 120–300 mL PO PRN. **Peds.** 0.5 mL/kg/dose, to 200 mL PO max; w/ a beverage **Caution:** [B, +] **Contra:** Severe renal Dz, heart block, N/V, rectal bleeding **Disp:** Effervescent soln (OTC) **SE:** Abd cramps, gas

Magnesium Hydroxide (Milk of Magnesia) [OTC] **Uses:** *Constipation*, hyperacidity, Mg replacement **Action:** NS Laxative **Dose: Adults. Antacid** 5–15 mL PO PRN qid, 2–4 tab PO PRN QID; **Laxative** 30–60 mL PO daily or in ÷ doses **Peds.** < 2 yrs 0.5 mL/kg/dose PO PRN; (follow dose w/ 8 oz of H₂O **Caution:** [B, +] **Contra:** Renal insuff, intestinal obst, ileostomy/colostomy **Disp:** Chew tabs 311 mg; liq 400, 800 mg/5 mL (OTC) **SE:** D, abd cramps

Magnesium Oxide (Mag-Ox 400, others) [OTC] **Uses:** *Replace low Mg levels* **Action:** Mg suppl **Dose:** 400–800 mg/d ÷ daily–qid w/ full glass of H₂O **Caution:** [B, +] **Contra:** Ulcerative colitis, diverticulitis, ileostomy/colostomy, heart block, renal insuff **Disp:** Caps 140 mg; tabs 400 mg (OTC) **SE:** D, N

Magnesium Sulfate (various) **Uses:** *Replace low Mg⁺²; preeclampsia & premature labor, cardiac arrest; AMI*; refractory ↓ K⁺ & ↓ Ca²⁺ **Action:** Mg+2 suppl **Dose: Adults.** 3 gm PO q6h × 4 PRN; **Supl:** 1–2 g IM or IV; repeat PRN. **Preeclampsia/premature labor:** 4 g load then 1–4 g/h IV inf; **Cardiac arrest:** 1–2 g IV push (2–4 mL 50% soln) in 10 mL D5W **AMI:** Load 1–2 g in 50–100 mL D5W,

over 5–60 min IV; then 0.5–1.0 g/h IV up to 24 h (*ECC 2005*) **Peds.** 25–50 mg/kg/dose IM or IV q4–6h for 3–4 doses; repeat PRN; ↓ dose w/ low urine output or renal insuff **Caution:** [B, +] **Contra:** Heart block, renal failure **Disp:** Inj 10, 20, 40, 80, 125, 500 mg/mL; bulk powder **SE:** CNS depression, D, flushing, heart block

Mannitol (various) **Uses:** *Cerebral edema, ↑ intraocular pressure, renal impair, poisonings* **Action:** 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 g–100 g IV over 90 min; ↑ IOP: 0.5–2 gm/kg IV over 30 min. *Cerebral edema:* 0.25–1.5 g/kg/dose IV > 30 min. **Caution:** [C, ?] w/ CHF or volume overload **Contra:** Anuria, dehydration, heart failure, PE **Disp:** Inj 5, 10, 15, 20, 25% **SE:** May exacerbate CHF, N/V/D **Notes:** Monitor for volume depletion

Measles, Mumps, Rubella and Varicella Virus Vaccine Live [MMRV] (Proquad) **Uses:** *Vaccination against measles, mumps, rubella, & varicella 12 mo–12 y or for second dose of MMR* **Action:** Active immunization, live attenuated viruses **Dose:** 1 vial SQ inj **Caution:** [N/A] Hx of cerebral injury or Szs (febrile rxn) **Contra:** Hx anaphylaxis to neomycin, blood dyscrasia, lymphoma, leukemia, w/immunosuppression, febrile illness, untreated TB **Disp:** Inj **SE:** Fever, inj site Rxn, rash **Notes:** Allow 1 mo between inj & any other measles vaccine; limited avail; substitute MMR II or Varivax

Mecasermin (Increlex) **Uses:** *Growth failure in IGF-1 deficiency or GHG antibodies* **Action:** Human IGF-1 **Dose:** **Peds.** 0.04–0.08 mg/kg SQ BID; may ↑ by 0.04 mg/kg to 0.12 mg/kg; take w/in 20 min of meal **Caution:** [C,+/-] **Disp:** Vial 40 mg **SE:** HA, inj site rxn, V, hypoglycemia **Notes:** Rapid dose ↑ may cause hypoglycemia; limited distribution

Mechlorethamine (Mustargen) **WARNING:** Highly toxic, handle w/ care, limit use to experienced physicians **Uses:** *Hodgkin Dz & NHL, cutaneous T-cell lymphoma (mycosis fungoides), lung CA, CML, malignant pleural effusions,* & CLL **Action:** Alkylating agent, bifunctional **Dose:** Per protocol; 0.4 mg/kg single dose or 0.1 mg/kg/d for 4 d; 6 mg/m² 1–2 × mo **Caution:** [D, ?] **Contra:** Known infectious Dz **Disp:** Inj 10 mg **SE:** ↓ BM, thrombosis, thrombophlebitis at site; tissue damage w/ extrav (Na thiosulfate used topically to Rx); N/V, skin rash, amenorrhea, sterility (especially in men), secondary leukemia if treated for Hodgkin Dz **Notes:** Highly volatile; give w/in 30–60 min of prep

Meclizine (Antivert) **Uses:** *Motion sickness, vertigo* **Action:** Antiemetic, anticholinergic, & antihistaminic properties **Dose:** **Adults & Peds >12 y** 12.5–100 mg PO tid–qid PRN **Caution:** [B, ?] **Disp:** Tabs 12.5, 25, 50 mg; chew tabs 25 mg; caps 25, 30 mg (OTC) **SE:** Drowsiness, xerostomia, & blurred vision

Medroxyprogesterone (Provera, Depo-Provera) **WARNING:** May cause loss of bone density; associated w/duration of use **Uses:** *Contraception; secondary amenorrhea, AUB caused by hormonal imbalance; endometrial CA* **Action:** Progestin supl **Dose:** *Contraception:* 150 mg IM q3mo depo or 104

mg SQ q3 mo (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; ↓ in hepatic insuff **Caution**: [X, +] **Contra**: Hx thromboembolic disorders, hepatic Dz, PRG **Disp**: Tabs 2.5, 5, 10 mg; depot inj 150, 400 mg/mL; depo SQ inj 104 mg/10.65 mL **SE**: Breakthrough bleeding, spotting, altered menstrual flow, anorexia, edema, thromboembolic comps, depression, wgt gain **Notes**: Perform breast exam & Pap smear before contraceptive therapy; obtain PRG test if last inj > 3 mo

Megestrol Acetate (Megace) **Uses**: *Breast/endometrial CAs; appetite stimulant in cachexia (CA & HIV)* **Action**: Hormone; progesterone analog **Dose**: CA: 40–320 mg/d PO in ÷ doses. *Appetite*: 800 mg/d PO ÷ dose **Caution**: [X, –] Thromboembolism **Contra**: PRG **Disp**: Tabs 20, 40 mg; soln 40 mg/mL; also available in 125 mg/mL (Megase ES) **SE**: DVT; edema, menstrual bleeding; photosens, insomnia, rash, ↓ BM **Notes**: Do not D/C abruptly

Meloxicam (Mobic) **WARNING**: May ↑ risk of cardiovascular events & GI bleeding **Uses**: *Osteoarthritis, RA, JRA* **Action**: NSAID w/ ↑ COX-2 activity **Dose**: *Adult*: 7.5–15 mg/d PO; *Peds* (>2 yr): 0.125 mg/kg/d, max 7.5 mg; ↓ in renal insuff; take w/food **Caution**: [C, D (3rd trim) ?/–] Peptic ulcer, NSAID, or ASA sensitivity **Disp**: Tabs 7.5, 15 mg; susp. 7.5 mg/5 mL **SE**: HA, dizziness, GI upset, GI bleeding, edema

Melphalan [L-PAM] (Alkeran) **WARNING**: Administered under the supervision of a qualified physician experienced in the use of chemotherapy; severe BM depression, leukemogenic, & mutagenic **Uses**: *Multiple myeloma, ovarian CAs,* breast & testicular CA, melanoma; allogenic & ABMT (high dose) **Action**: Bifunctional alkylating agent **Dose**: (Per protocol) 6 mg/d or 0.15–0.25 mg/kg/d for 4–7 d, repeat 4–6-wk intervals, or 1-mg/kg × 1 q4–6wk; 0.15 mg/kg/d for 5 d q6wk. *High-dose high-risk multiple myeloma*: Single dose 140 mg/m². *ABMT*: 140–240 mg/m² IV; ↓ in renal insuff **Caution**: [D, ?] **Contra**: Allergy or resistance **Disp**: Tabs 2 mg; inj 50 mg **SE**: ↓ BM, secondary leukemia, alopecia, dermatitis, stomatitis, & pulm fibrosis; rare allergic Rxns **Notes**: Take PO on empty stomach

Memantine (Namenda) **Uses**: *Moderate/severe Alzheimer Dz* **Action**: *N*-methyl-D-aspartate receptor antagonist **Dose**: Target 20 mg/d, start 5 mg/d, ↑ 5 mg/d to 20 mg/d, wait > 1 wk before ↑ dose; use ÷ doses if > 5 mg/d **Caution**: [B, ?/–] Hepatic/mild–moderate renal impair **Disp**: Tabs 5, 10 mg, combo pak: 5 mg × 28 + 10 mg × 21; sol 2 mg/mL **SE**: Dizziness **Notes**: Renal clearance ↓ by alkaline urine (↓ 80% @ pH 8)

Meningococcal conjugate vaccine (Menactra) **Uses**: *Immunize against *N. meningitidis* (meningococcus)* **Action**: Active immunization; diphtheria toxoid conjugate of *N. meningitidis* A, C, Y, W-135 **Dose**: *Adults 18–55 y* 0.5 mL IM X1 **Peds**: 11–18 y 0.5 mL IM X1 **Caution**: [C, ?/–] **Contra**: Allergy to class/compound/latex; w/acute infect **Disp**: Inj **SE**: Local inj site Rxns, HA, fa-

tigue, arthralgia, Guillain-Barré **Notes:** Keep epi available for Rxns; use polysaccharide > 55 y

Meningococcal Polysaccharide Vaccine (Menomune A/C/Y/W-135) **Uses:** *Immunize against *N. meningitidis* (meningococcus)* **Action:** Active immunization **Dose:** *Adults & Peds* >2 y. 0.5 mL SQ (not IM, intradermally, IV) may repeat 3–5 yrs if high risk **Caution:** [C, ?/–] **Contra:** Thimerosal/latex/sensitivity; w/ pertussis or typhoid vacc, < 2 yo **Disp:** Inj **SE:** Local inj site Rxns, HA **Notes:** Preferred in > 55 y, conjugate vaccine (Menactra) in 11–55 y; active against serotypes A, C, Y, & W-135; not group B; keep epi (1:1000) available for Rxns

Meperidine (Demerol) [C-II] **Uses:** *Moderate–severe pain* **Action:** Narcotic analgesic **Dose:** *Adults.* 50–150 mg PO or IM/SQ q3–4h PRN. *Peds.* 1–1.5 mg/kg/dose PO or IM/SQ q3–4h PRN, up to 100 mg/dose; ↓ in elderly/renal impair **Caution:** [C/D (prolonged use or high dose at term), +] ↓ Sz threshold **Contra:** w/ MAOIs, renal failure **Disp:** Tabs 50, 100 mg; syrup 50 mg/5 mL; inj 10, 25, 50, 75, 100 mg/mL **SE:** Resp depression, Szs, sedation, constipation **Notes:** Analgesic effects potentiated w/ hydroxyzine; 75 mg IM = 10 mg morphine IM

Meprobamate (Equinil, Miltown) [C-IV] **Uses:** *Short-term relief of anxiety* **Action:** Mild tranquilizer; antianxiety **Dose:** *Adults.* 400 mg PO tid–qid, max 2400 mg/d. *Peds 6–12 y.* 100–200 mg bid–tid; ↓ in renal/liver impair **Caution:** [D, +/-] **Contra:** NAG, porphyria, PRG **Disp:** Tabs 200, 400 mg **SE:** Drowsiness, syncope, tachycardia, edema

Mercaptopurine [6-MP] (Purinethol) **Uses:** *Acute leukemias,* 2nd-line Rx of CML & NHL, maint ALL in children, immunosuppressant w/ autoimmune Dz (Crohn Dz) **Action:** Antimetabolite, mimics hypoxanthine **Dose:** *Adult:* 80–100 mg/m²/d or 2.5–5 mg/kg/d; maint 1.5–2.5 mg/kg/d; w/ allopurinol use 67–75% ↓ dose of 6-MP (interference w/ xanthine oxidase metabolism); *Peds:* per protocol ↓ w/renal/hepatic insuff; on empty stomach **Caution:** [D, ?] **Contra:** Severe hepatic Dz, BM suppression, PRG **Disp:** Tabs 50 mg **SE:** Mild hematotox, mucositis, stomatitis, D rash, fever, eosinophilia, jaundice, hepatitis **Notes:** Handle properly; limit use to experienced physicians; ensure adequate hydration

Meropenem (Merrem) **Uses:** *IntraAbd Infxns, bacterial meningitis* **Action:** Carbapenem; ↓ cell wall synth, a β-lactam. *Spectrum:* Excellent gram (+) (except MRSA & *E. faecium*); excellent gram(–) including extended-Spectrum β-lactamase producers; good anaerobic **Dose:** *Adults.* 1 to 2 g IV q8h. *Peds.* >3 mo, <50 kg 10–40 mg/kg IV q 8h; ↓ in renal insuff **Caution:** [B, ?] **Contra:** β-lactam sensitivity **Disp:** Inj 1 g, 500 mg **SE:** Less Sz potential than imipenem; D, thrombocytopenia **Notes:** Overuse ↑ bacterial resistance

Mesalamine (Asacol, Lialda, Pentasa, Rowasa) **Uses:** *Mild–moderate distal ulcerative colitis, proctosigmoiditis, proctitis* **Action:** Unknown; may inhibit prostaglandins **Dose:** *Rectal:* 60 mL QHS, retain 8 h (enema), 500 mg bid–tid or 1000 mg qhs (supp) *PO:* Cap: 1 gm PO qid, *Tab:* 1.6–2.4 g/d ÷

doses (tid–qid); delayed release 2.4–4.8 g PO daily 8 wk max, do not cut/crush/chew w/food; ↓ initial dose in elderly **Caution:** [B, M] **Contra:** Salicylate sensitivity **Disp:** Tabs 400 mg; caps 250, 500 mg; delayed release tab (Lialda) 1.2 g; supp 500, 1000 mg; rectal susp 4 g/60 mL **SE:** Yellow-brown urine, HA, malaise, abd pain, flatulence, rash, pancreatitis, pericarditis

Mesna (Mesnex) **Uses:** *Prevent hemorrhagic cystitis due to ifosfamide or cyclophosphamide* **Action:** Antidote, reacts with 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 and 8 h, then 40% at 0, 1, 4 and 7 h; *IV inf:* 20% prechemo, 50–100% w/chemo, then 25–50% for 12 h following chemo; *Oral:* 20% IV dose at hour 0, 4, and 8 h (mix with juice) **Caution:** [B; ?/–] **Contra:** Thiol sensitivity **Disp:** Inj 100 mg/mL; tablets 400 mg **SE:** ↓ BP, allergic Rxns, HA, GI upset, taste perversion **Notes:** Hydration helps ↓ hemorrhagic cystitis; higher dose for BMT

Mesoridazine (Serentil) **WARNING:** Can prolong QT interval in dose-related fashion; torsades de pointes reported **Uses:** *Schizophrenia,* acute & chronic alcoholism, chronic brain synd **Action:** Phenothiazine antipsychotic **Dose:** Initial, 25–50 mg PO or IV tid; ↑ to 300–400 mg/d max **Caution:** [C, ?/–] **Contra:** Phenothiazine sensitivity, coadministration w/ drugs that cause QT_c prolongation, CNS depression **Disp:** Tabs 10, 25, 50, 100 mg; PO conc 25 mg/mL; inj 25 mg/mL **SE:** Low incidence of EPS; ↓ BP, xerostomia, constipation, skin discoloration, tachycardia, lowered Sz threshold, blood dyscrasias, pigmentary retinopathy at high doses

Metaproterenol (Alupent, Metaprel) **Uses:** *Asthma & reversible bronchospasm* **Action:** Sympathomimetic bronchodilator **Dose: Adults. Inhal:** 1–3 inhal q3–4h, 12 inhal max/24 h; wait 2 min between inhal. *PO:* 20 mg q6–8h. *Peds. Inhal:* 0.5 mg/kg/dose, 15 mg/dose max inhaled q4–6h by neb or 1–2 puffs q4–6h. *PO:* 0.3–0.5 mg/kg/dose q6–8h **Caution:** [C, ?/–] **Contra:** Tachycardia, other arrhythmias **Disp:** Aerosol 0.65 mg/inhal; soln for inhal 0.4%, 0.6%; tabs 10, 20 mg; syrup 10 mg/5 mL **SE:** Nervousness, tremor, tachycardia, HTN **Notes:** Fewer β₁ effects than isoproterenol & longer acting

Metaxalone (Skelaxin) **Uses:** *Painful musculoskeletal conditions* **Action:** Centrally acting skeletal muscle relaxant **Dose:** 800 mg PO tid–qid **Caution:** [C, ?/–] anemia **Contra:** Severe hepatic/renal impair **Disp:** Tabs 400, 800 mg **SE:** N/V, HA, drowsiness, hepatitis

Metformin (Glucophage, Glucophage XR) **WARNING:** Associated w/ lactic acidosis **Uses:** *Type 2 DM* **Action:** ↓ Hepatic glucose production & intestinal absorption of glucose; ↑ insulin sensitivity **Dose: Adults.** Initial: 500 mg PO bid; or 850 mg daily, may ↑ to 2,550 mg/d max; take w/ AM & PM meals; can convert total daily dose to daily dose of XR *Peds 10–16 y.* 500 mg PO bid, ↑ 500 mg/wk to 2,000 mg/d max in ÷ doses; do not use XR formulation in peds **Caution:** [B, +/-] avoid EtOH; hold dose before & 48 h after ionic contrast

Contra: SCr > 1.4 in females or > 1.5 in males; hypoxemic conditions (eg acute CHF/sepsis) **Disp:** Tabs 500, 850, 1000 mg; XR tabs 500, 750, 1,000 mg **SE:** Anorexia, N/V, rash, lactic acidosis (rare, but serious)

Methadone (Dolophine) [C-II] **WARNING:** Deaths, cardiac and respiratory have been reported during initiation and conversion of pain patients to methadone treatment from treatment with other opioids **Uses:** *Severe pain; detox w/ maint of narcotic addiction* **Action:** Narcotic analgesic **Dose: Adults.** 2.5–10 mg IM q3–8h or 5–15 mg PO q8h; titrate as needed **Peds.** 0.7 mg/kg/24 h PO or IM ÷ q8h; ↑ slowly to avoid resp depression; ↓ in renal impair **Caution:** [B/D (prolonged use/high doses at term), + (w/ doses => 20 mg/24 h)], severe liver Dz **Disp:** Tabs 5, 10, 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 **Notes:** Equianalgesic w/ parenteral morphine; longer half-life

Methenamine (Hiprex, Urex, others) **Uses:** *Suppress/eliminate bacteriuria associated w/ chronic/ recurrent UTI* **Action:** Converted to formaldehyde & ammonia in acidic urine; nonspecific bactericidal action **Dose: Adults.** *Hippurate:* 0.5–1 gm bid. *Mandelate:* 1 g qid PO pc & hs **Peds 6–12 y.** *Hippurate:* 25–50 mg/kg/d PO ÷ bid. *Mandelate:* 50–75 mg/kg/d PO ÷ qid (take w/ food, ascorbic acid w/ adequate hydration) **Caution:** [C, +] **Contra:** Renal insuff, severe hepatic Dz, & severe dehydration; sulfonamide allergy **Disp:** *Methenamine hippurate* (Hiprex, Urex): Tabs 1 g. *Methenamine mandelate:* 500 mg, 1g EC tabs **SE:** Rash, GI upset, dysuria, ↑ LFTs

Methimazole (Tapazole) **Uses:** *Hyperthyroidism, thyrotoxicosis,* prep for thyroid surgery or radiation **Action:** Blocks T₃ & T₄ formation **Dose: Adults.** Initial: 15–60 mg/d PO ÷ tid. Maint: 5–15 mg PO daily. **Peds.** Initial: 0.4–0.7 mg/kg/24 h PO ÷ tid. Maint: 1/3–2/3 of initial dose PO daily; w/ food **Caution:** [D, +/-] **Contra:** Breast-feeding **Disp:** Tabs 5, 10, 20 mg **SE:** GI upset, dizziness, blood dyscrasias **Notes:** Follow clinically & w/ TFT

Methocarbamol (Robaxin) **Uses:** *Relief of discomfort associated w/ painful musculoskeletal conditions* **Action:** Centrally acting skeletal muscle relaxant **Dose: Adults.** 1.5 g PO qid for 2–3 d, then 1-g PO qid maint therapy; IV form rarely indicated. **Peds.** 15 mg/kg/dose IV, may repeat PRN (OK for tetanus only), max 1.8 g/m²/d for 3 d **Caution:** Sz disorders [C, +] **Contra:** MyG, renal impair **Disp:** Tabs 500, 750 mg; inj 100 mg/mL **SE:** Can discolor urine; drowsiness, GI upset

Methotrexate (Rheumatrex Dose Pack, Trexall) **WARNING:** Administration only by experienced physician; do not use in women of childbearing age unless absolutely necessary (teratogenic); impaired elimination w/ impaired renal funct, ascites, pleural effusion; severe myelosuppression if used with NSAIDs; hepatotoxic; can induce lung disease; D and ulcerative stomatitis require D/C; lymphoma risk; may cause tumor lysis synd; can cause severe skin Rxn, opportunistic infns; with RT can ↑ risk of tissue necrosis **Uses:** *ALL, AML,

leukemic meningitis, trophoblastic tumors (chorioepithelioma, choriocarcinoma, hydatidiform mole), breast, lung, head & neck CAs, Burkitt's lymphoma, mycosis fungoides, osteosarcoma, Hodgkin Dz & NHL, psoriasis; RA* **Action:** ↓ Dihydrofolate reductase-mediated production of tetrahydrofolate **Dose:** CA: Per protocol. RA: 7.5 mg/wk PO 1/wk 1 or 2.5 mg q12h PO for 3 doses/wk; ↓ in renal/hepatic impair **Caution:** [D, -] **Contra:** Severe renal/hepatic impair, PRG/lactation **Disp:** Dose Pack: 2.5 mg in 8, 12, 16, 20, or 24 doses; Tabs 2.510 mg; inj 25 mg/mL **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/ intrathecal, use preservative-free/alcohol-free soln; systemic levels *Therapeutic:* > 0.01 micromole; *Toxic* > 10 micromole over 24h

Methyl dopa (Aldomet) **Uses:** *HTN* **Action:** Centrally acting antihypertensive **Dose:** *Adults.* 250–500 mg PO bid–tid (max 2–3 g/d) or 250 mg–1 g IV q6–8h. *Peds.* 10 mg/kg/24 h PO in 2–3 ÷ doses (max 40 mg/kg/24 h ÷ q6–12h) or 5–10 mg/kg/dose IV q6–8h to total dose of 20–40 mg/kg/24 h; ↓ in renal insuff/elderly **Caution:** [B (PO), C (IV), +] **Contra:** Liver Dz; MAOIs **Disp:** Tabs 125, 250, 500 mg; inj 50 mg/mL **SE:** Discolors urine; initial transient sedation/drowsiness frequent, edema, hemolytic anemia, hepatic disorders

Methylergonovine (Methergine) **Uses:** *Postpartum bleeding (uterine subinvolution)* **Action:** Ergotamine derivative **Dose:** 0.2 mg IM after placental delivery, may repeat 2–4-h intervals or 0.2–0.4 mg PO q6–12h for 2–7 d **Caution:** [C, ?] **Contra:** HTN, PRG **Disp:** Injectable 0.2 mg/mL; tabs 0.2 mg **SE:** HTN, N/V **Notes:** Give IV over > 1 min w/BP monitoring

Methylphenidate, Oral (Concerta, Ritalin, Ritalin SR, others) [CII] **WARNING:** w/ hx of drug or alcohol dependence; chronic use can lead to dependence or psychotic behavior; observe closely during withdrawal of drug **Uses:** *ADHD, narcolepsy* depression **Action:** CNS stimulant **Dose:** *Adults.* Narcolepsy: 10 mg PO 2–3 times/day, 60 mg/day max. Depression: 2.5 mg QAM; ↑ slowly, 20 mg/day max; use regular release only *Peds.* Based on product; Initial total daily dose of 15–20 mg; 90 mg/day max; administer once (ER/SR) to BID (regular) **Caution:** [C,+/-] Hx alcoholism or drug abuse; separate from MAOIs by 14 days **Disp:** Tabs 5, 10, 20 mg; Tabs SR (Ritalin SR) 20 mg; ER tabs (Concerta) 18, 27, 36, 54 mg **SE:** CV, CNS stimulation **Notes:** Titrate dose; take 30–45 min before meals; do not chew or crush; Concerta "ghost tablet" may appear in stool; see insert to convert to ER dose; see also transdermal methylphenidate; abuse and diversion concerns

Methylphenidate, transdermal (Daytrana) [CII] **WARNING:** 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

6–12 yrs* **Action:** CNS stimulant **Dose:** *Peds.* Apply to hip in AM (2 h before desired effect), remove 9 h later **Caution:** [C, +/–] sensitization may preclude subsequent use of oral forms; abuse and diversion concerns **Disp:** Patches 10, 15, 20, 30 mg **SE:** Local rxns, stimulation **Notes:** Titrate dose in weekly increments; effects last several hours following removal; eval BP, HR at baseline and periodically

Methylprednisolone (Solu-Medrol) [See Steroids page 191 and Table 3]

Metoclopramide (Reglan, Clopra, Octamide) **Uses:** *Diabetic gastroparesis, symptomatic GERD; chemo N/V, facilitate small-bowel intubation & UGI radiologic evaluation* stimulate gut in prolonged postop ileus **Action:** ↑ UGI motility; blocks dopamine in chemoreceptor trigger zone **Dose:** *Adults.* *Gastroparesis:* 10 mg PO 30 min ac & hs for 2–8 wk PRN, or same dose IV for 10 d, then PO. *Reflux:* 10–15 mg PO 30 min ac & hs. *Antiemetic:* 1–3 mg/kg/dose IV 30 min before chemo, then q2h × 2 doses, then q3h X3 doses. *Peds.* *Reflux:* 0.1 mg/kg/dose PO qid. *Antiemetic:* 1–2 mg/kg/dose IV as adults **Caution:** [B, –] Drugs w/ extrapyramidal ADRs **Contra:** Sz disorders, GI obst **Disp:** Tabs 5, 10 mg; syrup 5 mg/5 mL; inj 5 mg/mL **SE:** Dystonic Rxns common w/ high doses, (Rx w/IV diphenhydramine); restlessness, D, drowsiness

Metolazone (Mykrox, Zaroxolyn) **Uses:** *Mild–moderate essential HTN & edema of renal Dz or cardiac failure* **Action:** Thiazide-like diuretic; ↓ distal tubule Na reabsorption **Dose:** *Adult.* *HTN:* 2.5–5 mg/d PO (Zaroxolyn), 0.5–1 mg/day PO (Mykrox) *Edema:* 2.5–20 mg/d PO. *Peds.* 0.2–0.4 mg/kg/d PO ÷ q12h–daily **Caution:** [D, +] **Contra:** Thiazide/sulfonamide sensitivity, anuria **Disp:** Tabs: Mykrox (rapid acting) 0.5 mg, Zaroxolyn 2.5, 5, 10 mg **SE:** Monitor fluid/lytes; dizziness, ↓ BP, tachycardia, CP, photosens **Notes:** Mykrox & Zaroxolyn not bioequivalent

Metoprolol (Lopressor, Toprol XL) **WARNING:** Do not acutely stop therapy as marked worsening of angina can result **Uses:** *HTN, angina, AMI, CHF* **Action:** β-adrenergic receptor blocker **Dose:** *Adult.* *Angina:* 50–200 mg PO bid max 400mg/d *HTN:* 50–200 mg PO BID max 450 mg/d. *AMI:* 5 mg IV q2 min × 3 doses, then 50 mg PO q6h × 48 h, then 100 mg PO bid. *CHF:* 12–25 mg/d PO × 2 wk, ↑ at 2-wk intervals to 200 mg/max, use low dose in pts w/ greatest severity; 5 mg slow IV q 5 min, total 15 mg (ECC 2005); ↓ in hepatic failure; take w/meals **Caution:** [C, +] Uncompensated CHF, bradycardia, heart block **Contra:** Arrhythmia w/ tachycardia **Disp:** Tabs 25, 50, 100 mg; ER tabs 25, 50, 100, 200 mg; inj 1 mg/mL **SE:** Drowsiness, insomnia, ED, bradycardia, bronchospasm

Metronidazole (Flagyl, MetroGel) **WARNING:** Carcinogenic in rats **Uses:** *Bone/joint, endocarditis, intraabd, meningitis, & skin Infxns; amebiasis; trichomoniasis; bacterial vaginosis; PID; giardiasis; pseudomembranous colitis (C. diff)* **Action:** Interferes w/ DNA synth. *Spectrum:* Excellent anaerobic C. difficile, also H. pylori in combo therapy **Dose:** *Adults.* Anaerobic Infxns: 500 mg IV q6–8h. *Amebic dysentery:* 750 mg/d PO for 5–10 d. *Trichomoniasis:* 250 mg PO

tid for 7 d or 2 g PO \times 1. *C. difficile*: 500 mg PO or IV q8h for 7–10 d (PO preferred; IV only if pt NPO). *Vaginosis*: 1 applicatorful intravag bid or 500 mg PO bid for 7 d. *Acne rosacea/skin*: Apply bid. **Peds.** 30 mg/kg PO/IV/day divided q6h, 4 gm day max. *Amebic dysentery*: 35–50 mg/kg/24 h PO in 3 \div doses for 5–10 d., Rx 7–10 day for c. diff; \downarrow in hepatic impair **Caution:** [B, M] Avoid EtOH **Contra:** First tri of PRG **Disp:** Tabs 250, 500 mg; XR tabs 750 mg; caps 375 mg; IV 500 mg/100mL; topical lotion & gel 0.75%; intravag gel 0.75% (5 g/applicator 37.5 mg in 70-g tube), cream 1% **SE:** Disulfiram-like Rxn; dizziness, HA, GI upset, anorexia, urine discoloration **Notes:** For trichomoniasis, Rx pt's partner; no aerobic bacteria activity; use in combo w/ serious mixed Infxns

Mexiletine (Mexitil) **WARNING:** Mortality risks noted for flecainide and/or encanite (type 1 anti-arrhythmics). Reserve for use in patients with life-threatening Ventricular Arrhythmias **Uses:** *Suppress symptomatic ventricular arrhythmias*; diabetic neuropathy **Action:** Class IB antiarrhythmic (Table 10) **Dose: Adults.** 200–300 mg PO q8h; 1200 mg/d max. **Peds.** 2.5–5 mg/kg PO q 8h; w/ food or antacids **Caution:** [C, +] May worsen severe arrhythmias; interacts w/ hepatic inducers & suppressors (dosage changes) **Contra:** Cardiogenic shock or 2nd-/3rd-degree AV block w/o pacemaker **Disp:** Caps 150, 200, 250 mg **SE:** Lightheadedness, dizziness, anxiety, incoordination, GI upset, ataxia, hepatic damage, blood dyscrasias **Notes:** monitor LFTs CBC

Miconazole (Monistat, others) **Uses:** *Candidal Infxns, dermatomycoses (various tinea forms)* **Action:** Fungicide; alters fungal membrane permeability **Dose:** Apply to area bid for 2–4 wk. *Intravag:* 1 applicatorful or supp hs for 3 (4% or 200 mg) or 7 d (2% or 100 mg) **Caution:** [C, ?] Azole sensitivity **Disp:** Topical cream 2%; lotion 2%; powder 2%; spray 2%; vag supp 100, 200 mg; vag cream 2%, 4% [OTC] **SE:** Vag burning, may \uparrow warfarin **Notes:** Antagonistic to amphotericin B in vivo

Miconazole/zinc oxide/petrolatum (Vusion) **Uses:** *Candidal diaper rash* **Action:** Combo antifungal **Dose: Peds > 4 wks:** apply at each diaper change \times 7d **Caution:** [C, ?] **Contra:** None **Disp:** Miconazole/zinc oxide/petrolatum oint 0.25%/81.35%/15% **SE:** None **Notes:** Keep diaper dry

Midazolam [C-IV] **Uses:** *Preop sedation, conscious sedation for short procedures & mechanically ventilated pts, induction of general anesthesia* **Action:** Short-acting benzodiazepine **Dose: Adults.** 1–5 mg IV or IM; titrate to effect. **Peds.** Preop: > 6 mo 0.25–1 mg/kg PO, 20 mg max. *Conscious sedation:* 0.08 mg/kg \times 1. > 6 mo 0.1–0.15 mg/kg IM \times 1 max 10 mg. *General anesthesia:* 0.025–0.1 mg/kg IV q2min for 1–3 doses PRN to induce anesthesia (\downarrow in elderly, w/ narcotics or CNS depressants) **Caution:** [D, +/-] w/CYP3A4 substrate (Table 11), multiple drug interactions **Contra:** NAG; w/amprenavir, nelfinavir, ritonavir **Disp:** Inj 1, 5 mg/mL; syrup 2 mg/mL **SE:** Resp depression; \downarrow BP w/ conscious sedation, N **Notes:** Reversal w/ flumazenil; monitor for resp depression

Mifepristone [RU 486] (Mifeprex) **WARNING:** Pt counseling & information required; associated w/ fatal infections & bleeding **Uses:** *Terminate

intrauterine pregnancies of <49 d* **Action:** Antiprogesterin; ↑ prostaglandins, results in uterine contraction **Dose:** Administered w/ 3 office visits: day 1, three 200-mg tabs PO; day 3 if no abortion, two 200-mg tabs PO; on or about day 14, verify termination of PRG **Caution:** [X, -] **Contra:** Anticoagulation therapy, bleeding disorders **Disp:** Tabs 200 mg **SE:** Abd pain & 1–2 wk of uterine bleeding **Notes:** Under physician's supervision only

Miglitol (Glyset) **Uses:** *Type 2 DM* **Action:** α -Glucosidase inhibitor; delays digestion of carbohydrates **Dose:** Initial 25 mg PO tid; maint 50–100 mg tid (w/ 1st bite of each meal) **Caution:** [B, -] **Contra:** DKA, obstructive/inflammatory GI disorders; SCr >2 **Disp:** Tabs 25, 50, 100 mg **SE:** Flatulence, D, abd pain **Notes:** Use alone or w/ sulfonyleureas

Milrinone (Primacor) **Uses:** *CHF*, calcium antagonist intoxication **Action:** Phosphodiesterase inhibitor, + inotrope & vasodilator; little chronotropic activity **Dose:** 50 mcg/kg, then 0.375–0.75 mcg/kg/min IV inf; ↓ in renal impair **Caution:** [C, ?] **Contra:** Allergy to drug; w/ amrinone **Disp:** Inj 200 mcg/mL, 1 mg/ml **SE:** Arrhythmias, ↓ BP, HA **Notes:** Monitor fluids, lytes, BP, HR

Mineral Oil [OTC] **Uses:** *Constipation* **Action:** Lubricant laxative **Dose:** *Adults.* 15–45 mL PO PRN. *Peds* >6 y. 5–25 mL PO q day **Caution:** [C, ?] N/V, difficulty swallowing, bedridden pts **Contra:** Colostomy/ileostomy, appendicitis, diverticulitis, UC **Disp:** Liq [OTC] **SE:** Lipid pneumonia, anal incontinence, ↓ vitamin absorption

Minocycline (Solodyn) **Uses:** *Acne* **Action:** Tetracycline, bacteriostatic **Dose:** *Adult and Peds* >12 yo 1 mg/kg PO daily × 12wk; w/food to ↓ irritation **Caution:** [C, ?] assoc w/pseudomembranous colitis; w/renal impair **Contra:** Allergy, women of childbearing potential **Disp:** Tabs ER 45, 90, 135 **SE:** D, HA, fever, rash, joint pain, fatigue, dizziness, photosensitivity **Notes:** Do not cut/crush/chew; keep away from children

Minoxidil (Loniten, Rogaine) **Uses:** *Severe HTN; male & female pattern baldness* **Action:** Peripheral vasodilator; stimulates vertex hair growth **Dose:** *Adults.* HTN: 2.5–80 mg PO ÷ daily –bid, max 100mg/day. *Topical:* (Baldness) Apply bid to area. *Peds.* 0.2–1 mg/kg/24 h ÷ PO q12–24h, max 50 mg/day; ↓ PO in elderly **Caution:** [C, +] **Contra:** Pheochromocytoma, component allergy **Disp:** Tabs 2.5, 5, 10 mg; topical soln (Rogaine) 2%, 5% **SE:** Pericardial effusion & volume overload w/ PO use; hypertrichosis w/chronic use, edema, ECG changes, wgt gain

Mirtazapine (Remeron, Remeron SolTab) **WARNING:** Closely monitor for worsening depression or emergence of suicidality, particularly in ped pts **Uses:** *Depression* **Action:** Alpha-2 antagonist antidepressant **Dose:** 15 mg PO hs, up to 45 mg/d hs **Caution:** [C, ?] w/ clonidine, CNS depressant use; CYP1A2, CYP3A4 inducers/inhibitors **Contra:** MAOIs w/in 14 d **Disp:** Tabs 15, 30, 45 mg; rapid dissolving tabs 15, 30, 45 mg **SE:** Somnolence, ↑ cholesterol, constipation, xerostomia, wgt gain, agranulocytosis **Notes:** Do not ↑ dose at intervals of less than 1–2 wk; handle rapid tabs with dry hands, do not cut or chew

Misoprostol (Cytotec) **WARNING:** Use in pregnancy can cause abortion, premature birth, or birth defects; do not use to decrease ulcer risk in women of childbearing age **Uses:** *Prevent NSAID-induced gastric ulcers*; induce labor (cervical ripening); incomplete & therapeutic abortion **Action:** Prostaglandin (PGE-1), w/antisecretory & mucosal protective properties; induces uterine contractions **Dose:** *Ulcer prevention:* 200 mcg PO qid w/ meals; in females, start 2nd or 3rd day of next nl menstrual period; 25–50 mcg for induction of labor (term); 400 mcg on day 3 of mifepristone for PRG termination; take w/ food **Caution:** [X, –] **Contra:** PRG, component allergy **Disp:** Tabs 100, 200 mcg **SE:** Can cause miscarriage w/ potentially dangerous bleeding; HA, GI common (D, abd pain, constipation)

Mitomycin (Mutamycin) **WARNING:** Administer only by physician experienced in chemotherapy; myelosuppressive; can induce hemolytic uremic synd with irreversible renal failure **Uses:** *Stomach, pancreas,* breast, colon CA; squamous cell carcinoma of the anus; non-small-cell lung, head & neck, cervical; bladder CA (intravesically) **Action:** Alkylating agent; may generate oxygen-free radicals w/ DNA strand breaks **Dose:** Per protocol; 20 mg/m² q6–8wk or 10 mg/m² in combo w/ other myelosuppressive drugs; bladder CA 20–40 mg in 40 mL NS via a urethral catheter once/wk × 8 wk, followed by monthly × 12 mo for 1 y; ↓ in renal/hepatic impair **Caution:** [D, –] **Contra:** Thrombocytopenia, leukopenia, coagulation disorders, Scr >1.7 mg/dL **Disp:** Inj 5, 20, 40 mg **SE:** ↓ BM, (persists 3–8 wk after, may be cumulative; minimize w/lifetime dose <50–60 mg/m²), N/V, anorexia, stomatitis, renal tox; microangiopathic hemolytic anemia w/ progressive renal failure (like hemolytic–uremic synd); venoocclusive liver Dz, interstitial pneumonia, alopecia; extrav Rxns; contact dermatitis

Mitoxantrone (Novantrone) **WARNING:** 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 infection, follow CBC; cardiotoxic (CHF), secondary AML reported **Uses:** *AML (w/ cytarabine), ALL, CML, PCA, MS, Lung Ca* breast CA, & NHL **Action:** DNA-intercalating agent; ↓ DNA synth by interacting with topoisomerase II **Dose:** Per protocol; ↓ w/hepatic impair, leukopenia, thrombocytopenia **Caution:** [D, –] reports of secondary AML (monitor CBC) **Contra:** PRG, significant ↓ in LVEF **Disp:** Inj 2 mg/mL **SE:** ↓ BM, N/V, stomatitis, alopecia (infrequent), cardiotox, urine discoloration **Notes:** Maintain hydration; cardiac monitoring prior to each dose

Modafinil (Provigil) **Uses:** *Improve wakefulness in pts w/ narcolepsy & excess daytime sleepiness* **Action:** Alters dopamine & norepinephrine release, ↓ GABA-mediated neurotransmission **Dose:** 200 mg PO q AM; ↓ dose 50% w/elderly/hepatic impair **Caution:** [C, ?/–] CV Dz; ↑ effects of warfarin, diazepam, phenytoin; ↓ OCP, cyclosporine, & theophylline effects **Contra:** Component allergy **Disp:** Tabs 100, 200 mg **SE:** HA, N, D, paresthesias, rhinitis, agitation

Moexipril (Univasc) **Uses:** *HTN, post-MI,* DN **Action:** ACE inhibitor **Dose:** 7.5–30 mg in 1–2 ÷ doses 1 h ac ↓ in renal impair **Caution:** [C (1st tri,

D 2nd & 3rd tri, ?] **Contra:** ACE inhibitor sensitivity **Disp:** Tabs 7.5, 15 mg; **SE:** ↓ BP, edema, angioedema, HA, dizziness, cough

Molindone (Moban) **Uses:** *Psychotic disorders* **Action:** Piperazine phenothiazine **Dose:** *Adults.* 50–75 mg/d PO, ↑ to max of 225 mg/day at 3–4 day intervals if necessary. *Peds.* 3–5 y: 1–2.5 mg/d PO in 4 ÷ doses. 5–12 y: 0.5–1.0 mg/kg/d in 4 ÷ doses **Caution:** [C, ?] NAG **Contra:** Drug/EtOH CNS depression **Disp:** Tabs 5, 10, 25, 50 mg; **SE:** ↓ BP, tachycardia, arrhythmias, EPS, Szs, constipation, xerostomia, blurred vision. **Notes:** Monitor lipid profile, fasting glucose, HgB A1-c

Montelukast (Singulair) **Uses:** *Prophylaxis & Rx of chronic asthma, seasonal allergic rhinitis* **Action:** Leukotriene receptor antagonist **Dose:** *Asthma: Adults & Peds > 15 y.* 10 mg/d PO taken in PM. *Peds.* 2–5 y: 4 mg/d PO taken in PM. 6–14 y: 5 mg/d PO in PM. **Caution:** [B, M] **Contra:** Component allergy **Disp:** Tabs 10 mg; chew tabs 4, 5 mg; granules 4 mg/packet **SE:** HA, dizziness, fatigue, rash, GI upset, Churg–Strauss synd **Notes:** Not for acute asthma

Morphine (Avinza XR, Duramorph, Infumorph, MS Contin, Kadian SR, Oramorph SR, Infumorph, Roxanol) [C-II] **Uses:** *Relief of severe pain* AMI **Action:** Narcotic analgesic **Dose:** *Adults.* PO: 5–30 mg q4h PRN; SR tabs 15–60 mg q8–12h (do not chew/crush). IV/IM: 2.5–15 mg q2–6h; supp 10–30 mg q4h. IT: (Duramorph, Infumorph): Per protocol *Peds.* > 6 mo 0.1–0.2 mg/kg/dose IM/IV q2–4h PRN to 15 mg/dose max; 0.2–0.5 mg/kg PO q 4–6h prn; 0.3–0.6 mg/kg SR tabs PO q12h; 2–4 mg IV (over 1–5 min) every 5–30 min (ECC 2005) **Caution:** [B (D w/prolonged use/high doses at term), +/–] **Contra:** Severe asthma, resp depression, GI obst **Disp:** Immediate-release tabs 10, 15, 30 mg; MS Contin CR tabs 15, 30, 60, 100, 200 mg; Oramorph SR CR tabs 15, 30, 60, 100 mg; Kadian SR caps 20, 30, 50, 60, 80, 100 mg; Avinza XR caps 30, 60, 90, 120 mg; soln 10, 20, 100 mg/5 mL; supp 5, 10, 20, 30 mg; inj 2, 4, 5, 8, 10, 15, 25, 50 mg/mL; Duramorph/Astramorph inj 0.5, 1 mg/mL; Infumorph 10, 25 mg/mL, supp 5, 10, 20, 30 mg **SE:** Narcotic SE (resp depression, sedation, constipation, N/V, pruritus), granulomas w/ IT **Notes:** May require scheduled dosing to relieve severe chronic pain; do not crush/chew SR/CR forms

Morphine liposomal (DepoDur) **Uses:** *Long-lasting epidural analgesia* **Action:** ER morphine analgesia **Dose:** 10–20 mg lumbar epidural inj (C-section 10 mg after cord clamped) **Caution:** [C,+/-] elderly, biliary Dz (sphincter of Oddi spasm) **Contra:** Ileus, resp depression, asthma, obstructed airway, suspected/known head injury ↑ ICP, allergy to morphine. **Disp:** Inj 10 mg/mL **SE:** Hypoxia, resp depression, ↓ BP, retention, N/V, constipation, flatulence, pruritus, pyrexia, anemia, HA, dizziness, tachycardia, insomnia, ileus **Notes:** Effect ≤48 h; not for IT/IV/IM

Moxifloxacin (Avelox, Vigamox ophthalmic) **Uses:** *Acute sinusitis & bronchitis, skin/soft tissue Infxns, conjunctivitis, & community-acquired pneumonia* **Action:** 4th-gen quinolone; ↓ DNA gyrase. *Spectrum:* Excellent gram

(+) except MRSA & *E. faecium*; good gram (-) except *P. aeruginosa*, *S. maltophilia*, & *Acinetobacter* sp; good anaerobic coverage **Dose:** 400 mg/d PO/IV; avoid cation products, antacids. **Ophth:** 1 gtt tid X7d; take PO 4 h before or 8 h after antacids **Caution:** [C, ?/-] Quinolone sensitivity; interactions w/ Mg-, Ca-, Al-, Fe-containing products & class IA & III antiarrhythmic agents **Contra:** Quinolone/component sensitivity **Disp:** Tabs 400 mg, inj, ophth 0.5% **SE:** Dizziness, N, QT prolongation, Szs, photosens, tendon rupture

Multivitamins, Oral [OTC] (Table 13, page 243)

Mupirocin (Bactroban) **Uses:** *Impetigo; eradicate MRSA in nasal carriers* **Action:** ↓ bacterial protein synth **Dose:** *Topical:* Apply small amount to area 3 ×/day × 5–14 d. *Nasal:* Apply bid in nostrils × 5d **Caution:** [B, ?] **Contra:** Do not use w/ other nasal products **Disp:** Oint 2%; cream 2% **SE:** Local irritation, rash. **Notes:** Instruct patient to contact health-care provider if no improvement in 3–5 days.

Muromonab-CD3 (Orthoclone OKT3) **WARNING:** Can cause anaphylaxis; monitor fluid status **Uses:** *Acute rejection following organ transplantation* **Action:** Murine Ab, blocks T-cell Fxn **Dose:** Per protocol **Adults.** 5 mg/d IV for 10–14 d. **Peds.** 0.1 mg/kg/d IV for 10–14 d **Caution:** [C, ?/-]w/hx of Szs, PRG, uncontrolled HTN, **Contra:** Murine sensitivity, fluid overload **Disp:** Inj 5 mg/5 mL **SE:** Anaphylaxis, pulm edema, fever/chills w/1st dose (premedicate w/ steroid/APAP/antihistamine) **Notes:** Monitor during inf; use 0.22-micron filter

Mycophenolic Acid (Myfortic) **WARNING:** ↑ Risk of Infxns, possible development of lymphoproliferative disorders **Uses:** *Prevent rejection after renal transplant* **Action:** Cytostatic to lymphocytes **Dose:** **Adults.** 720 mg PO bid; **Peds.** BSA 400 mg/m²: max 720 mg BID; ↓ in renal insuff/neutropenia; take on empty stomach **Caution:** [C, ?/-] **Contra:** Component allergy **Disp:** DR tabs 180, 360 mg **SE:** N/V/D, pain, fever, HA, Infxn, HTN, anemia, leukopenia, edema

Mycophenolate Mofetil (CellCept) **WARNING:** ↑ Risk of Infxns, possible development of lymphoma **Uses:** *Prevent organ rejection after transplant* **Action:** ↓ immunologically mediated inflammatory responses **Dose:** **Adults.** 1 g PO bid; **Peds.** BSA 1.2–1.5 m²: 750 mg PO bid; BSA >1.5 m²: 1 g PO bid; may taper up to 600 mg/m² PO bid; used w/ steroids & cyclosporine; ↓ in renal insuff or neutropenia. **IV:** Infuse over > 2 h. **PO:** Take on empty stomach, do not open capsules **Caution:** [C, ?/-] **Contra:** Component allergy; IV use in polysorbate 80 allergy **Disp:** Caps 250, 500 mg; susp 200 mg/mL, inj 500 mg **SE:** N/V/D, pain, fever, HA, Infxn, HTN, anemia, leukopenia, edema

Nabilone (Cesamet) [CII] **WARNING:** Psychotomimetic rxns, may persist for 72 h following D/C; caregivers should be present during initial use or dosage modification; patients should not operate heavy machinery; avoid alcohol, sedatives, hypnotics, other psychoactive substances **Uses:** *Refractory chemo-induced emesis* **Action:** Synthetic cannabinoid **Dose:** **Adults.** 1–2 mg PO bid 1–3 h before chemo, 6 mg/d max; may continue for 48 h beyond final chemo dose

Caution: [C, ?/-] Elderly, HTN, heart failure, underlying psychiatric illness, substance abuse; high protein binding w/first-pass metabolism may lead to drug interactions **Disp:** Caps 1 mg **SE:** Drowsiness, vertigo, xerostomia, euphoria, ataxia, HA, difficulty concentrating, tachycardia, ↓ BP **Notes:** May require initial dose evening before chemo; Rx only quantity for single cycle

Nabumetone (Relafen) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Arthritis & pain* **Action:** NSAID; ↓ prostaglandins **Dose:** 1000–2000 mg/d ÷ daily–bid w/ food **Caution:** [C (D 3rd tri), +] severe hepatic dz **Contra:** Peptic ulcer, NSAID sensitivity, after CABG surgery **Disp:** Tabs 500, 750 mg **SE:** Dizziness, rash, GI upset, edema, peptic ulcer

Nadolol (Corgard) **Uses:** *HTN & angina* migraine prophylaxis **Action:** Competitively blocks β-adrenergic receptors (β₁, β₂) **Dose:** 40–80 mg/d; ↑ to 240 mg/d (angina) or 320 mg/d (HTN) at 3–7 day intervals; ↓ in renal insuff & elderly **Caution:** [C (1st tri; D if 2nd or 3rd tri), +] **Contra:** Uncompensated CHF, shock, heart block, asthma **Disp:** Tabs 20, 40, 80, 120, 160 mg **SE:** Nightmares, paresthesias, ↓ BP, bradycardia, fatigue

Nafcillin (Nallpen) **Uses:** *Infxns due to susceptible strains of *Staphylococcus* & *Streptococcus** **Action:** Bactericidal β-lactamase-resistant penicillin; ↓ cell wall synth **Spectrum:** Good gram (+) except MRSA and enterococcus, no gram (–), poor anaerobe **Dose: Adults.** 1–2 g IV q4–6h. **Peds.** 50–200 mg/kg/d ÷ q4–6h **Caution:** [B, ?] PCN allergy **Disp:** Inj powder 1, 2 gm **SE:** Interstitial nephritis, D, fever, N **Notes:** No adjustments for renal Fxn

Naftifine (Naftin) **Uses:** *Tinea pedis, cruris, & corporis* **Action:** Allylamine antifungal, ↓ cell membrane ergosterol synth **Dose:** Apply daily (cream) or BID (gel) **Caution:** [B, ?] **Contra:** Component sensitivity **Disp:** 1% cream; gel **SE:** Local irritation

Nalbuphine (Nubain) **Uses:** *Moderate–severe pain; preop & obstetric analgesia* **Action:** Narcotic agonist–antagonist; ↓ ascending pain pathways **Dose: Adults.** 10–20 mg IM or IV q3–6h PRN; max of 160 mg/d; 20 mg max 1 × dose **Peds.** 0.2 mg/kg IV or IM, 20 mg max; ↓ in hepatic insuff **Caution:** [B (D w/prolonged/high doses at term), ?] **Contra:** Sulfite sensitivity **Disp:** Inj 10, 20 mg/mL **SE:** CNS depression, drowsiness; caution w/ opiate use, ↓ BP

Naloxone **Uses:** *Opioid addiction (diagnosis) & OD* **Action:** 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 **Caution:** [B, ?] May precipitate acute withdrawal in addicts **Disp:** Inj 0.4, 1 mg/mL; neonatal inj 0.02 mg/mL **SE:** ↓ BP, tachycardia, irritability, GI upset, pulm edema **Notes:** If no response after 10 mg, suspect nonnarcotic cause

Naltrexone (Depade, ReVia, Vivitrol) **WARNING:** Can cause hepatic injury, contraindicated with active liver disease **Uses:** *EtOH & narcotic addiction* **Action:** Antagonizes opioid receptors **Dose: ETOH and narcotic addiction:** 50 mg/d PO; do not give until opioid-free for 7–10 d; *ETOH dependence:* 380

mg IM q4 wks (Vivitol) **Caution:** [C, M] **Contra:** Acute hepatitis, liver failure, opioid use **Disp:** Tabs 50 mg; inj 380 mg (Vivitol) **SE:** May cause hepatotox; insomnia, GI upset, joint pain, HA, fatigue

Naphazoline (Albalon, AK-Con, Naphcon, others), Naphazoline & Pheniramine Acetate (Naphcon A) **Uses:** *Relieve ocular redness & itching caused by allergy* **Action:** Sympathomimetic (alpha-adrenergic vasoconstrictor) & antihistamine (pheniramine) **Dose:** 1–2 gtt up to qid, 3-day max **Caution:** [C, +] **Contra:** NAG, in children, w/ contact lenses **SE:** CV stimulation, dizziness, local irritation **Disp:** Ophthalmic 0.012, 0.025, 0.1%/15 mL; naphazoline & pheniramine 0.025%/0.3% soln

Naproxen (Aleve [OTC], Naprosyn, Anaprox) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Arthritis & pain* **Action:** NSAID; ↓ prostaglandins **Dose:** *Adults & Peds* >12 y. 200–500 mg bid–tid to 1500 mg/d max; ↓ in hepatic impair **Caution:** [B (D 3rd tri), +] **Contra:** NSAID or ASA triad sensitivity, peptic ulcer, post CABG for pain, 3rd tri PRG **Disp:** Tabs: 220, 250, 375, 500 mg; delayed release: 375 mg, 500 mg; controlled release: 375 mg, 550 mg; susp 125 mL/5 mL. **SE:** Dizziness, pruritus, GI upset, peptic ulcer, edema **Note:** w/ food to ↓ GI upset.

Natriptan (Amerge) **Uses:** *Acute migraine* **Action:** Serotonin 5-HT₁ receptor antagonist **Dose:** 1–2.5 mg PO once; repeat PRN in 4 h; 5 mg/24 hrs max; ↓ in mild renal/hepatic insuff, take w/ fluids **Caution:** [C, M] **Contra:** 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) **WARNING:** Cases of progressive multifocal leukoencephalopathy (PML) reported **Uses:** *Relapsing MS to delay disability and ↓ recurrences* **Action:** Adhesion molecule inhibitor **Dose:** *Adults.* 300 mg IV q4 wk; second-line Tx only **Contra:** PML; immune compromise or w/immunosuppressant **Caution:** [C, ?/–] baseline MRI to rule out PML **Disp:** Vial 300 mg **SE:** Infxn, immunosuppression; infusion rxn precluding subsequent use; HA, fatigue, arthralgia **Notes:** Give slowly to ↓ Rxns; limited distribution (TOUCH risk program); D/C immediately w/signs of PML (weakness, paralysis, vision loss, impaired speech, cognitive ↓); evaluate at 3 and 6 mos, then q 6 mos thereafter

Nateglinide (Starlix) **Uses:** *Type 2 DM* **Action:** ↑ Pancreatic insulin release **Dose:** 120 mg PO tid 1–30 min ac; ↓ to 60 mg tid if near target HbA_{1c} **Caution:** [C, –] w/CYP2C9/3A4 metabolized drug (Table 11) **Contra:** DKA, type 1 DM **Disp:** Tabs 60, 120 mg **SE:** Hypoglycemia, URI; salicylates, nonselective β-blockers may enhance hypoglycemia

Nedocromil (Tilade) **Uses:** *Mild–moderate asthma* **Action:** Anti-inflammatory agent **Dose:** *Inhal:* 2 inhal qid **Caution:** [B, ?/–] **Contra:** Component allergy **Disp:** Met-dose inhal 1.75 mg/spray **SE:** Chest pain, dizziness, dysphonia, rash, GI upset, Infxn **Notes:** Not for acute asthma

Nefazodone **WARNING:** Fatal hepatitis & liver failure possible, D/C if LFT > 3× ULN, do not retreat; closely monitor for worsening depression or emergence of suicidality, particularly in ped pts **Uses:** *Depression* **Action:** ↓ Neuronal uptake of serotonin & norepinephrine **Dose:** Initial 100 mg PO bid; usual 300–600 mg/d in 2 ÷ doses **Caution:** [C, ?] **Contra:** w/MAOIs, pimozide, carbamazepine, alprazolam; active liver disease **Disp:** Tabs 50, 100, 150, 200, 250, 500 mg **SE:** Postural ↓ BP & allergic Rxns; HA, drowsiness, xerostomia, constipation, GI upset, liver failure **Notes:** Monitor LFTs, HR, BP

Nelarabine (Arranon) **WARNING:** Fatal neurotoxicity possible **Uses:** *T-cell ALL or T-cell LBL unresponsive > 2 other regimens* **Action:** Nucleoside analog **Dose:** *Adults.* 1500 mg/m² IV over 2 hr days 1, 3, 5 of 21-day cycle *Peds.* 650 mg/m² IV over 1 hr on days 1–5 of 21-day cycle **Caution:** [D, ?/–] **Disp:** Vial 250 mg **SE:** Neuropathy, ataxia, seizures, coma, hematologic toxicity, GI upset, HA, blurred vision **Notes:** Prehydration, urinary alkalinization, allopurinol before dose; monitor CBC

Nelfinavir (Viracept) **Uses:** *HIV Infxn* **Action:** Protease inhibitor causes immature, noninfectious virion production **Dose:** *Adults.* 750 mg PO tid or 1250 mg PO bid. *Peds.* 25–35 mg/kg PO tid; take w/ food **Caution:** [B, ?] Many drug interactions **Contra:** Phenylketonuria, triazolam/midazolam use or drug dependent on CYP3A4 (Table 11) **Disp:** Tabs 250, 625 mg; powder 50 mg/g; **SE:** Food ↑ absorption; interacts w/ St. John's wort; dyslipidemia, lipodystrophy, D, rash

Neomycin, Bacitracin, & Polymyxin B (Neosporin Ointment) (See Bacitracin, Neomycin, & Polymyxin B Topical, page 46)

Neomycin, Colistin, & Hydrocortisone (Cortisporin-TC Otic Drops); Neomycin, Colistin, Hydrocortisone, & Thonzonium (Cortisporin-TC Otic Susp) **Uses:** *External otitis,* Infxns of mastoid/fenestration cavities **Action:** Antibiotic w/anti-inflammatory **Dose:** *Adults.* 4–5 gtt in ear(s) tid–qid. *Peds.* 3–4 gtt in ear(s) tid–qid **Contra:** component allergy; HSV, vaccinia, varicella **Caution:** [C, ?] **Disp:** Otic gtt & susp **SE:** Local irritation

Neomycin & Dexamethasone (AK-Neo-Dex Ophthalmic, NeoDecadron Ophthalmic) **Uses:** *Steroid-responsive inflammatory conditions of the cornea, conjunctiva, lid, & anterior segment* **Action:** Antibiotic w/ anti-inflammatory corticosteroid **Dose:** 1–2 gtt in eye(s) q3–4h or thin coat tid–qid until response, then ↓ to daily **Caution:** [C, ?] **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

Neomycin & Polymyxin B (Neosporin Cream) [OTC] **Uses:** *Infxn in minor cuts, scrapes, & burns* **Action:** Bactericidal **Dose:** Apply bid–qid **Caution:** [C, ?] **Contra:** Component allergy **Disp:** Cream neomycin 3.5

mg/polymyxin B 10,000 units/g **SE:** Local irritation **Notes:** Different from Neosporin oint

Neomycin, Polymyxin B, & Dexamethasone (Maxitrol)

Uses: *Steroid-responsive ocular conditions w/ bacterial Infxn* **Action:** Antibiotic w/ anti-inflammatory corticosteroid **Dose:** 1–2 gtt in eye(s) q3–4h; apply oint in eye(s) tid–qid **Contra:** Component allergy; viral fungal, TB eye dz **Caution:** [C, ?] **Disp:** Oint neomycin sulfate 3.5 mg/polymyxin B sulfate 10,000 units/dexamethasone 0.1%/g; susp identical/5 mL **SE:** Local irritation **Notes:** Use under supervision of ophthalmologist

Neomycin-Polymyxin Bladder Irrigant [Neosporin GU Irrigant]

Uses: *Continuous irrigant prevent bacteriuria & gram (–) bacteremia associated w/ indwelling catheter* **Action:** Bactericidal; not for *Serratia* or streptococci **Dose:** 1 mL irrigant in 1 L of 0.9% NaCl; cont bladder irrigation w/ 1 L of soln/24 h **Caution:** [D] **Contra:** Component allergy **Disp:** Soln neomycin sulfate 40 mg & polymyxin B 200,000 units/mL; amp 1, 20 mL **SE:** Neomycin ototox or nephrotox (rare) **Notes:** Potential for bacterial/fungal super Infxn; not for inj

Neomycin, Polymyxin, & Hydrocortisone (Cortisporin Ophthalmic & Otic)

Uses: *Ocular & otic bacterial Infxns* **Action:** Antibiotic & anti-inflammatory **Dose:** *Otic:* 3–4 gtt in the ear(s) tid–qid. *Ophth:* Apply a thin layer to the eye(s) or 1 gtt daily–qid **Caution:** [C, ?] **Disp:** Otic susp; ophth soln; ophth oint **SE:** Local irritation

Neomycin, Polymyxin B, & Prednisolone (Poly-Pred Ophthalmic)

Uses: *Steroid-responsive ocular conditions w/ bacterial Infxn* **Action:** Antibiotic & anti-inflammatory **Dose:** 1–2 gtt in eye(s) q4–6h; apply oint in eye(s) tid–qid **Caution:** [C, ?] **Disp:** Susp neomycin 0.35%/polymyxin B 10,000 units/prednisolone 0.5%/mL **SE:** Irritation **Notes:** Use under supervision of ophthalmologist

Neomycin Sulfate (Neo-Fradin, generic)

WARNING: Systemic absorption of oral route may cause neuro/oto/nephrototoxicity may result; respiratory paralysis possible with any route of admin **Uses:** *Hepatic coma, bowel prep* **Action:** Aminoglycoside, poorly absorbed PO; ↓ GI bacterial flora **Dose:** *Adults.* 3–12 g/24 h PO in 3–4 ÷ doses. *Peds.* 50–100 mg/kg/24 h PO in 3–4 ÷ doses **Caution:** [C, ?/–] renal failure, neuromuscular disorders, hearing impair **Contra:** 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 Sulfate, Topical (Myciguent [OTC])

Uses: *Prevent skin infection* **Action:** Topical aminoglycoside **Dose:** Apply to skin and rub in **Caution:** [C, ?/–] **Contra:** Component allergy **Disp:** CRM 0.5% **SE:** Itching, rash, redness

Nepafenac (Nevanac)

Uses: *Inflammation post-cataract surgery* **Action:** NSAID **Dose:** 1 gtt in eye(s) TID 1 day before, and continue 14 days after

surgery **Contra:** NSAID/aspirin sensitivity **Caution:** [C, ?/-] may ↑ bleeding time, delay healing, cause keratitis **Disp:** Susp 3 mL **SE:** Capsular opacity, visual changes, foreign body sensation, inc. IOP **Notes:** Prolonged use ↑ risk of corneal damage; shake well before use; separate from other drops by > 5 min.

Nesiritide (Natreacor) **Uses:** *Acutely decompensated CHF* **Action:** Human B-type natriuretic peptide **Dose:** 2 mcg/kg IV bolus, then 0.01 mcg/kg/min IV **Caution:** [C, ?/-] When vasodilators are not appropriate **Contra:** SBP < 90, cardiogenic shock **Disp:** Vials 1.5 mg **SE:** ↓ BP, HA, GI upset, arrhythmias, ↑ Cr **Notes:** Requires continuous BP monitoring; some studies indicate ↑ in mortality

Nevirapine (Viramune) **WARNING:** Reports of fatal hepatotox even after short-term use; severe life-threatening skin rxns (Stevens-Johnson, toxic epidermal necrolysis, & allergic Rxns); monitor closely during 1st 8 wk of Rx **Uses:** *HIV Infxn* **Action:** Nonnucleoside RT inhibitor **Dose:** **Adults.** Initial 200 mg/d PO × 14 d, then 200 mg bid. **Peds.** < 8 y: 4 mg/kg/d × 14 d, then 7 mg/kg bid. > 8 y: 4 mg/kg/d × 14 d, then 4 mg/kg bid max 200 mg/dose for peds (w/o regard to food) **Caution:** [B, +/-] OCP **Disp:** Tabs 200 mg; susp 50 mg/5 mL **SE:** Life-threatening rash; HA, fever, D, neutropenia, hepatitis. **Notes:** HIV resistance when given as monotherapy; always use in combo w/at least 1 additional antiretroviral agent. Not recommended in women if CD4 > 250 or men > 400 unless benefit > risk of hepatotoxicity

Niacin (Niaspan, Slo-Niacin) **Uses:** *Adjunct in significant hyperlipidemia* **Action:** Nicotinic acid, Vit B₃; ↓ lipolysis; ↓ esterification of triglycerides; ↑ lipoprotein lipase **Dose:** 1–6 g ÷ doses PO tid; 9 g/d max (w/ food) **Caution:** [A (C if doses >RDA), +] **Contra:** Liver Dz, peptic ulcer, arterial hemorrhage **Disp:** SR caps 125, 250, 400, 500 mg; tabs 50, 100, 250, 500 mg; SR tabs 150, 250, 500, 750, 1000 mg; elixir 50 mg/5 mL **SE:** Upper body/facial flushing & warmth; GI upset, flatulence, exacerbate peptic ulcer; HA, paresthesias, liver damage, gout, or altered glucose control in DM. **Notes:** Flushing ↓ by taking aspirin or NSAID 30–60 min prior to dose

Nicardipine (Cardene) **Uses:** *Chronic stable angina & HTN*; prophylaxis of migraine **Action:** 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.** PO: 20–30 mg PO q 8h. IV: 0.5–5 mcg/kg/min; ↓ in renal/hepatic impair **Caution:** [C, ?/-] Heart block, CAD **Contra:** Cardiogenic shock **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* **Action:** Systemic delivery of nicotine **Dose:** Chew 9–12 pieces/d PRN; max 24 pieces/d **Caution:** [C, ?] **Contra:** Life-threatening arrhythmias, unstable angina **Disp:** 2 mg, 4 mg/piece; mint, orange, original flavors **SE:** Tachycardia, HA, GI upset, hiccups **Notes:** Must stop smoking & perform behavior modification for max effect

Nicotine Nasal Spray (Nicotrol NS) Uses: *Aid to smoking cessation, relieve nicotine withdrawal* **Action:** Systemic delivery of nicotine **Dose:** 0.5 mg/actuation; 1–2 sprays/h, 10 sprays/h max **Caution:** [D, M] **Contra:** 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

Nicotine Transdermal (Habitrol, Nicoderm CQ [OTC], Nicotrol [OTC], others) Uses: *Aid to smoking cessation; relief of nicotine withdrawal* **Action:** Systemic delivery of nicotine **Dose:** Individualized; 1 patch (14–21 mg/d), & taper over 6 wk **Caution:** [D, M] **Contra:** Life-threatening arrhythmias, unstable angina **Disp:** Habitrol & Nicoderm CQ 7, 14, 21 mg of nicotine/24 h; Nicotrol 5, 10, 15 mg/24 h **SE:** Insomnia, pruritus, erythema, local site Rxn, tachycardia **Notes:** Nicotrol worn for 16 h to mimic smoking patterns; others worn for 24 h; must stop smoking & perform behavior modification for max effect

Nifedipine (Procardia, Procardia XL, Adalat, Adalat CC)

Uses: *Vasospastic or chronic stable angina & HTN*; tocolytic **Action:** CCB **Dose:** Adults. SR tabs 30–90 mg/d. *Tocolysis:* 10–20 mg PO q4–6h. *Peds.* 0.6–0.9 mg/kg/24 h ÷ tid–qid **Caution:** [C, +] Heart block, aortic stenosis **Contra:** Immediate-release 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

Nilutamide (Nilandron) **WARNING:** Interstitial pneumonitis possible; most cases in 1st 3 mo; follow CXR before Rx Uses: *Combo w/ surgical castration for met CAP* **Action:** Nonsteroidal antiandrogen **Dose:** 300 mg/d PO in ÷ doses × 30 d, then 150 mg/d **Caution:** [not used in females] **Contra:** 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 LFT

Nimodipine (Nimotop) Uses: *Prevent vasospasm following subarachnoid hemorrhage* **Action:** CCB **Dose:** 60 mg PO q4h for 21 d; ↓ in hepatic failure **Caution:** [C, ?] **Contra:** Component allergy **Disp:** Caps 30 mg **SE:** ↓ BP, HA, constipation **Notes:** Give via NG tube if caps cannot be swallowed whole, PO administration only

Nisoldipine (Sular) Uses: *HTN* **Action:** CCB **Dose:** 10–60 mg/d PO; do not take w/ grapefruit juice or high-fat meal; ↓ start doses w/ elderly or hepatic impair **Caution:** [C, ?] **Disp:** ER tabs 10, 20, 30, 40 mg **SE:** Edema, HA, flushing

Nitazoxanide (Alinia) Uses: **Cryptosporidium* or *Giardia*-induced D in pts 1–11 y* **Action:** Antiprotozoal interferes w/ pyruvate ferredoxin oxidoreductase **Spectrum:** *Cryptosporidium*, *Giardia* **Dose:** *Peds* 12–47 mo. 5 mL (100 mg) PO q 12h × 3 d. 4–11 y: 10 mL (200 mg) PO q 12h × 3 d; ≥ 12 y: 500 mg q12^o for 3 days take w/ food **Caution:** [B, ?] **Disp:** 100 mg/5 mL PO susp, 500 tab **SE:** Abd pain **Notes:** Susp contains sucrose, interacts w/ highly protein-bound drugs

Nitrofurantoin (Macrochantin, Furadantin, Macrobid) **WARN-**

ING: Pulm rxns possible **Uses:** *Prevention & Rx UTI* **Action:** Bacteriostatic; interferes w/ carbohydrate metabolism. **Spectrum:** some gram(+)&(-) bacteria; *Pseudomonas*, *Serratia*, & most *Proteus*-resistant **Dose: Adults.** *Suppression:* 50–100 mg/d PO. *Rx:* 50–100 mg PO qid. **Peds.** *Suppression:* 1–2 mg/kg/d div. 1–2 doses, max 100 mg/day. *Rx:* 5–7 mg/kg/24 h in 4 ÷ doses (w/ food/milk/antacid) **Caution:** [B, +] Avoid w/CrCl < 60 mL/min, pregnant at term **Contra:** Renal failure, infants < 1 mo **Disp:** Caps 25, 50, 100 mg; susp 25 mg/5 mL **SE:** GI effects, dyspnea, various acute/chronic pulm rxns, peripheral neuropathy **Notes:** Macrocrystals (Macrochantin) cause < N than other forms

Nitroglycerin (Nitrostat, Nitrolingual, Nitro-Bid Ointment, Nitro-Bid IV, Nitrodisc, Transderm-Nitro, others) **Uses:** *Angina

pectoris, acute & prophylactic therapy, CHF, BP control* **Action:** Relaxes vascular smooth muscle, dilates coronary arteries **Dose: Adults.** *SL:* 1 tab q5 min SL PRN for 3 doses. *Translingual:* 1–2 met-doses sprayed onto PO mucosa q3–5 min, max 3 doses. *PO:* 2.5–9 mg tid. *IV:* 5–20 mcg/min, titrated to effect. *Topical:* Apply ½ in. of oint to chest wall tid, wipe off at night. *TD:* 0.2–0.4 mg/h/patch daily; *IV bolus:* 12.5–25 µg; infuse at 10–20 µg/min. *SL:* 0.3–0.4 mg, repeat q 5 min. *Aerosol spray:* Spray 0.5–1.0 s at 5-min intervals (ECC 2005) **Peds.** 0.25–0.5 mcg/kg/min IV, titrate. **Caution:** [B, ?] Restrictive cardiomyopathy **Contra:** *IV:* Pericardial tamponade, constrictive pericarditis. *PO:* w/ sildenafil, tadalafil, vardenafil, head trauma, NAG **Disp:** SL tabs 0.3, 0.4, 0.6 mg; translingual spray 0.4 mg/dose; SR caps 2.5, 6.5, 9; SR tabs 2.6, 6.5, 9.0 mg; inj 0.1, 0.2, 0.4 mg/mL (premixed); 5 mg/mL injection soln; oint 2%; TD patches 0.1, 0.2, 0.4, 0.6 mg/h; buccal CR 2, 3 mg **SE:** HA, ↓ BP, lightheadedness, GI upset **Notes:** Nitrate tolerance w/ chronic use after 1–2 wk; minimize by providing nitrate-free period daily, using shorter-acting nitrates tid, & removing LA patches & oint before sleep to ↓ tolerance

Nitroprusside (Nipride, Nitropress) **Uses:** *Hypertensive crisis, CHF, controlled ↓ BP periop (↓ bleeding),* aortic dissection, pulm edema **Action:** ↓ Systemic vascular resistance **Dose: Adult & Peds.** 0.5–10 mcg/kg/min IV inf, titrate; usual dose 3 mcg/kg/min **Caution:** [C, ?] ↓ cerebral perfusion **Contra:** 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

Nizatidine (Axid, Axid AR [OTC]) **Uses:** *Duodenal ulcers, GERD, heartburn* **Action:** 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 in ÷ doses, 150 mg bid max; ↓ in renal impair **Caution:** [B, +] **Contra:** H₂-receptor antagonist sensitivity **Disp:** Caps 75 [OTC], 150, 300 mg; sol 15 mg/mL **SE:** Dizziness, HA, constipation, D

Norepinephrine (Levophed) **Uses:** *Acute ↓ BP, cardiac arrest (adjunct)* **Action:** Peripheral vasoconstrictor of arterial/venous beds **Dose: Adults.**

8–30 mcg/min IV, titrate. **Peds.** 0.05–0.1 mcg/kg/min IV, titrate **Caution:** [C, ?] **Contra:** ↓ BP due to hypovolemia **Disp:** Inj 1 mg/mL **SE:** Bradycardia, arrhythmia **Notes:** Correct volume 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 (Femhr)
(See estradiol/ norethindrone acetate)

Norfloxacin (Noroxin, Chibroxin ophthal) **Uses:** *Complicated & uncomplicated UTI due to gram(–) bacteria, prostatitis, gonorrhea,* infectious D, conjunctivitis **Action:** Quinolone, ↓ DNA gyrase, bactericidal **Spectrum:** Broad gram (+) and (–) *E. faecalis*, *E. coli*, *K. pneumoniae*, *P. mirabilis*, *P. aeruginosa*, *S. epidermidis*, *S. saprophyticus* **Dose:** 400 mg PO bid; ; **Gonorrhea:** 800 mg single dose; **Prostatitis:** 400 mg PO bid; **Gastroenteritis, travelers D** 400 mg PO × 3–5 d ↓ w/ renal impair **Adults, Peds > 1 y:** ophthal: 1 gtt each eye qid for 7 d **Caution:** [C, –] Tendinitis/tendon rupture, quinolone sensitivity **Contra:** Hx allergy or tendonitis w/ fluoroquinolones **Disp:** Tabs 400 mg; ophth 3 mg/mL **SE:** Photosens, HA, GI; ocular burning w/ ophth **Notes:** Interactions w/ antacids, theophylline, caffeine; good conc in the kidney & urine, poor blood levels; not for urosepsis

Norgestrel (Ovrette) **Uses:** *PO contraceptive* **Action:** Prevent follicular maturation & ovulation **Dose:** 1 tab/d; begin day 1 of menses **Caution:** [X, ?] **Contra:** Thromboembolic disorders, breast CA, PRG, severe hepatic Dz **Disp:** Tabs 0.075 mg **SE:** Edema, breakthrough bleeding, thromboembolism **Notes:** Progestin-only products have ↑ risk of failure in prevention of PRG

Nortriptyline (Aventyl, Pamelor) **Uses:** *Endogenous depression* **Action:** 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 **Caution:** [D, +/-] NAG, CV Dz **Contra:** TCA allergy, use w/ MAOI **Disp:** Caps 10, 25, 50, 75 mg; soln 10 mg/5 mL **SE:** Anticholinergic (blurred vision, retention, xerostomia) **Notes:** Max effect after 2 wk

Nystatin (Mycostatin) **Uses:** *Mucocutaneous *Candida* Infxns (oral, skin, vaginal)* **Action:** Alters membrane permeability. **Spectrum:** Susceptible *Candida* sp **Dose:** **Adults & children.** PO: 400,000–600,000 units PO “swish & swallow” qid. **Vaginal:** 1 tab vaginally hs × 2 wk. **Topical:** Apply bid–tid to area. **Peds.** Infants: 200,000 units PO q6h. **Caution:** [B (C PO), +] **Disp:** PO susp 100,000 units/mL; PO tabs 500,000 units; troches 200,000 units; vaginal tabs 100,000 units; topical cream/oint 100,000 units/g, powder 100,000 units/gram **SE:** GI upset, Stevens–Johnson synd **Notes:** Not absorbed PO; not for systemic Infxns

Octreotide (Sandostatin, Sandostatin LAR) **Uses:** *↓ severe D associated w/ carcinoid & neuroendocrine GI tumors (eg, VIPoma, ZE synd)*; bleeding esophageal varices **Action:** LA peptide; mimics natural hormone somatostatin **Dose:** **Adults.** 100–600 mcg/d SQ/IV in 2–4 ÷ doses; start 50 mcg daily–bid. **San-**

dostatin LAR (depot): 10–30 mg IM q4wk **Peds**. 1–10 mcg/kg/24 h SQ in 2–4 ÷ doses. **Caution**: [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, hepatitis

Ofloxacin (Floxin, Ocuflax Ophthalmic) **Uses**: *Lower resp tract, skin & skin structure, & UTI, prostatitis, uncomplicated gonorrhea, & *Chlamydia* Infxns; topical (bacterial conjunctivitis; otitis externa; if perforated ear drum > 12 y)* **Action**: Bactericidal; ↓ DNA gyrase. *Broad spectrum gram (+) & (-)*: *S. pneumoniae*, *S. aureus*, *S. pyogenes*, *H. influenzae*, *P. mirabilis*, *N. gonorrhoeae*, *C. trachomatis*, *E. coli* **Dose**: **Adults**. 200–400 mg PO bid or IV q12h. **Adults & Peds > 1 y**. Ophth: 1–2 gtt in eye(s) q2–4h for 2 d, then qid × 5 more d. **Adults & Peds > 12 y**. Otic: 10 gtt in ear(s) bid for 10 d. **Peds 1–12 y**. Otic: 5 gtt in ear(s) for 10 d. ↓ in renal impair, take on empty stomach **Caution**: [C, -] ↓ absorption w/ antacids, sucralfate, Al-, Ca-, Mg-, Fe-, Zn-containing drugs **Contra**: Quinolone allergy **Disp**: Tabs 200, 300, 400 mg; inj 20, 40 mg/mL; ophth & otic 0.3% **SE**: N/V/D, photosens, insomnia, HA, local irritation **Notes**: Ophth form OK in ears

Olanzapine (Zyprexa, Zyprexa, Zydys) **WARNING**: Mortality in elderly w/ dementia-related psychosis **Uses**: *Bipolar mania, schizophrenia,* psychotic disorders, acute agitation in schizophrenia **Action**: Dopamine & serotonin antagonist; **Dose**: *Bipolar/schizophrenia*: 5–10 mg/d, ↑ weekly PRN, 20 mg/d max; *Agitation*: 5–10 mg IMq2–4h PRN, 30 mg day/max **Caution**: [C, -] **Disp**: Tabs 2.5, 5, 7.5, 10, 15, 20 mg; PO disint. tabs 5, 10, 15, 20 mg; Inj 10 mg **SE**: HA, somnolence, orthostatic ↓ BP, tachycardia, dystonia, xerostomia, constipation **Notes**: Takes weeks to titrate dose; smoking ↓ levels; may be confused w/ Zyrtec

Olopatadine (Patanol) **Uses**: *Allergic conjunctivitis* **Action**: H₁-receptor antagonist **Dose**: 1–2 gtt in eye(s) bid –allow 6–8 hours between doses **Caution**: [C, ?] **Disp**: Soln 0.1% 5 mL **SE**: Local irritation, HA, rhinitis **Notes**: wait 10 minutes after drops to insert contacts

Olsalazine (Dipentum) **Uses**: *Maint remission in UC* **Action**: Topical anti-inflammatory **Dose**: 500 mg PO bid (w/ food) **Caution**: [C, M] Salicylate sensitivity **Disp**: Caps 250 mg **SE**: D, HA, blood dyscrasias, hepatitis

Omalizumab (Xolair) **WARNING**: Reports of anaphylaxis 2–24 hours after administration, even in previously treated patients **Uses**: *Moderate–severe asthma in > / ≥12 y w/ reactivity to an allergen & when Sxs inadequately controlled w/ inhaled steroids* **Action**: Anti-IgE Ab **Dose**: 150–375 mg SQ q2–4wk (dose/frequency based on serum IgE level & BW, see package insert) **Caution**: [B, ?/–] **Contra**: 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 medications as indicated

Omega-3 fatty acid [fish oil] (Louaza) **Uses**: *Rx hypertriglyceridemia* **Action**: Omega-3-acid ethyl esters, ↓ thrombus inflammation & triglyc-

erides **Dose:** *Hypertriglyceridemia:* 4 gm/day divided in 1–2 doses **Caution:** Pregnancy risk factor [C,–] w/ anticoagulant use, w/bleed risk **Contra:** Hypersensitivity to components **Disp:** 1000-mg gelcap **SE:** Dyspepsia, N, GI pain, rash, flulike syndrome **Notes:** Only FDA approved fish oil supplement; not for exogenous hypertriglyceridemia (type 1 hyperchylomicronaemia); many OTC products (page 202). D/C after 2 mo if TG levels do not ↓; Previously called “Omacor”

Omeprazole (Prilosec, Zegerid) **Uses:** *Duodenal/gastric ulcers, ZE synd, GERD,* *H. pylori* Infxns **Action:** Proton-pump inhibitor **Dose:** 20–40 mg PO daily–bid; Zegerid powder/mix; in small cup w/ 2 Tbsp H₂O (not food or other liquids) refill and drink **Caution:** [C, –] **Disp:** DR tabs 20 mg; DR caps 10, 20, 40 mg; Zegerid powder for oral susp: 20, 40 mg. Zegerid caps 20, 40 mg **SE:** HA, D **Notes:** Combo (ie, antibiotic) Rx for *H. pylori*, take Zegerid 1 hr before meals

Ondansetron (Zofran, Zofran ODT) **Uses:** *Prevent chemo-associated & postop N/V* **Action:** Serotonin receptor antagonist **Dose:** *Chemo: Adults & Peds.* 0.15 mg/kg/dose IV prior to chemo, then 4 & 8 h after 1st dose or 4–8 mg PO tid; 1st dose 30 min prior to chemo & give on a schedule, not PRN. *Postop: Adults.* 4 mg IV immed pre anesthesia or postop. *Peds.* < 40 kg: 0.1 mg/kg. > 40 kg: 4 mg IV ; ↓ dose w/ hepatic impair **Caution:** [B, +/-] **Disp:** Tabs 4, 8, 24 mg, soln 4 mg/5 mL, inj 2 mg/ml, 32 mg/50 mL; Zofran ODT tab, 4, 8 mg **SE:** D, HA, constipation, dizziness

Oprelvekin (Neumega) **WARNING:** Allergic Rxn w/anaphylaxis reported; D/C w/ any allergic Rxn **Uses:** *Prevent ↓ plt w/ chemo* **Action:** ↑ Proliferation & maturation of megakaryocytes (interleukin-11) **Dose:** *Adults.* 50 mcg/kg/d SQ for 10–21 d. *Peds* > 12 y: 75–100 mcg/kg/d SQ for 10–21 d. < 12 y: Use only in clinical trials. **Caution:** [C, ?/–] **Disp:** 5 mg powder for inj **SE:** Tachycardia, palpitations, arrhythmias, edema, HA, dizziness, insomnia, fatigue, fever, N, anemia, dyspnea, allergic rxns including anaphylaxis

Oral Contraceptives, Biphasic, Monophasic, Triphasic, Progestin Only (Table 6) **WARNING:** Cigarette smoking ↑ risk of serious CV side effects; ↑ risk w/ > 15 cigarettes/day, > 35 y; strongly advise women on OCP to not smoke **Uses:** *Birth control; regulation of anovulatory bleeding; dysmenorrhea; endometriosis; polycystic ovaries; acne* (Note: FDA approvals vary widely, see insert) **Action:** *Birth control:* Suppresses LH surge, prevents ovulation; progestins thicken cervical mucus; ↓ fallopian tubule 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 **Caution:** [X, +] Migraine, HTN, DM, sickle cell Dz, gallbladder Dz; monitor for breast dz, ✓ K⁺ if taking drugs with ↑ K⁺ risk **Contra:** AUB, PRG, estrogen-dependent malignancy, ↑ hypercoagulation/liver Dz, hemiplegic migraine, smokers > 35 y

Disp: 28-d cycle pills (21 active pills + 7 placebo or Fe supplement); 21-d cycle pills (21 active pills) **SE:** Intramenstrual bleeding, oligomenorrhea, amenorrhea, ↑ appetite/wgt gain, ↓ libido, fatigue, depression, mood swings, mastalgia, HA, melasma, ↑ vaginal discharge, acne/greasy skin, corneal edema, N **Notes:** Taken correctly, 99.9% effective for contraception; no STDs prevention, use additional barrier contraceptive; long term, can ↓ risk of ectopic PRG, benign breast Dz, ovarian & uterine CA. *Rx for menstrual cycle control:* Start w/monophasic × 3 mo before switching to another brand; w/continued bleed, change to pill w/↑estrogen; *Rx for birth control:* Choose pill w/ lowest SE profile for particular pt; SEs numerous; due to estrogenic excess or progesterone deficiency; each pill's side effect profile can be unique (see insert); newer extended cycle combo have shorter/fewer hormone free intervals ? ↓ PRG risk; OCP troubleshooting side effects w/suggested OCP:

- *Absent menstrual flow:* ↑ estrogen, ↓ progestin: Brevicon, Necon 1/35, Norinyl 1/35, Modicon, Necon 1/50, Norinyl 1/50, Ortho-Cyclen, Ortho-Novum 1/50, Ortho-Novum 1/35, Ovcon 35
- *Acne:* use ↑ estrogen, ↓ androgenic: Brevicon, Cyclen, Demulen 1/50, Othro-Tri Cyclen, Mircette, Modicon, Necon, Ortho Evra, Yasmin
- *Break-through bleed:* ↑ estrogen, ↑ progestin, ↓ androgenic: Demulen 1/50, Desogen, Estrostep, Loestrin 1/20, Ortho-Cept, Ovcon 50, Yasmin, Zovia 1/50E
- *Breast tenderness or ↑ wgt:* ↓ estrogen, ↓ progestin: Use ↓ estrogen pill than current; Alesse, Levlite, Loestrin 1/20 Fe, Ortho Evra Yasmin
- *Depression:* ↓ progestin: Alesse, Brevicon, Levlite, Modicon, Necon, Ortho Evra, Ovcon 35, Othro-Cyclen, Ortho-TriCyclen Tri-Levlen, Triphasil, Trivora
- *Endometriosis:* ↓ estrogen, ↑ progestin: Demulen 1/35, Loestrin 1.5/30, Loestrin 1/20 Fe, LoOvral, Levlen, Levora, Nordette, Zovia 1/35; continuous w/0 placebo pills or w/ 4 days of placebo pills
- *HA:* ↓ estrogen, ↓ progestin: Alesse, Levlite, Ortho Evra
- *Moodiness/ or irritability:* ↓ progestin: Alesse, Brevicon, Levlite, Modicon, Necon 1/35, Ortho Evra, Ortho-Cyclen, Ortho Tri-Cyclen, Ovcon 35, Tri-Levlen, Triphasil, Trivora
- *Severe menstrual cramping:* ↑ progestin: Demulen 1/50, Desogen, Loestrin 1.5/30, Mircette, Ortho-Cept, Yasmin, Zovia 1/50E, Zovia 1/35E

Orlistat (Xenical, Alli [OTC]). **Uses:** *Manage obesity w/ BMI ≥ 30 kg/m² or ≥ 27 kg/m² w/ other risk factors; type 2 DM, dyslipidemia* **Action:** Reversible inhibitor of gastric & pancreatic lipases. **Dose:** 120 mg PO tid w/ a fat-containing meal; Alli (OTC) 60 mg po tid w/fat containing meals **Caution:** [B, ?] May ↓ cyclosporine & warfarin dose requirements **Contra:** Cholestasis, malabsorption **Disp:** Capsules 120 mg **SE:** Abd pain/discomfort, fatty stools, fecal urgency **Notes:** Do not use if meal contains no fat; GI effects ↑ w/higher-fat meals; supplement w/fat-soluble vitamins

Orphenadrine (Norflex) **Uses:** *Muscle spasms* **Action:** Central atropine-like effects cause indirect skeletal muscle relaxation, euphoria, analgesia

Dose: 100 mg PO bid, 60 mg IM/IV q12h **Caution:** [C, +] **Contra:** NAG, GI obst, cardiospasm, MyG **Disp:** Tabs 100 mg; SR tabs 100 mg; inj 30 mg/mL **SE:** Drowsiness, dizziness, blurred vision, flushing, tachycardia, constipation

Oseltamivir (Tamiflu) **Uses:** *Prevention & Rx influenza A & B* **Action:** ↓ viral neuraminidase **Dose:** *Adults* Treatment 75 mg PO bid for 5 d *Prophylaxis:* 75 mg po daily × 10 D *Peds* PO bid dosing: < 15 kg: 30 mg, 15–23 kg: 45 mg, 24–40 kg: 60 mg; > 40 kg *adult dose.*; ↓ w/ renal impair **Caution:** [C, ?/–] **Contra:** Component allergy **Disp:** Caps 75 mg, powder 12 mg/mL **SE:** N/V, insomnia, reports of neuropsychiatric events in children (self-injury, confusion, delirium) **Notes:** Initiate w/in 48 h of Sx onset or exposure

Oxacillin (Prostaphlin) **Uses:** *Infxns due to susceptible *S. aureus* & *Streptococcus** **Action:** Bactericidal; ↓ cell wall synth. **Spectrum:** Excellent gram(+), poor gram(–) **Dose:** *Adults.* 250–500 mg (2g severe) IM/IV q4–6h. *Peds.* 150–200 mg/kg/d IV ÷ q4–6h; ↓ w/sig renal Dz **Caution:** [B, M] **Contra:** PCN sensitivity **Disp:** Powder for inj 500 mg, 1, 2, 10 g, soln 250 mg/5 mL **SE:** GI upset, interstitial nephritis, blood dyscrasias

Oxaliplatin (Eloxatin) **WARNING:** Administer w/ supervision of physician experienced in chemo. Appropriate management is possible only w/ adequate diagnostic & Rx facilities. Anaphylactic-like Rxns reported **Uses:** *Adjuvant Rx stage-III colon CA (primary resected) & met colon CA w/ 5-FU* **Action:** Metabolized to platinum derivatives, crosslinks DNA **Dose:** Per protocol; see insert. **Pre-medicate:** Antiemetic w/w/o dexamethasone **Caution:** [D, –] see Warning **Contra:** Allergy to components or platinum **Disp:** injection 50, 100 mg **SE:** Anaphylaxis, granulocytopenia, paresthesia, N/V/D, stomatitis, fatigue, neuropathy, hepatotox **Notes:** 5-FU & Leucovorin are given in combo; epi, corticosteroids, & antihistamines alleviate severe Rxns

Oxaprozin (Daypro, Daypro ALTA) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Arthritis & pain* **Action:** NSAID; ↓ prostaglandins synth **Dose:** 600–1200 mg/daily (÷ dose may help GI tolerance); ↓ in renal/hepatic impair **Caution:** [C (D in 3rd tri or near term), ?], peptic ulcer, bleeding disorders **Contra:** ASA/NSAID sensitivity perioperative pain w/CABG **Disp:** Daypro ALTA tab 600 mg; caplets 600 mg **SE:** CNS inhibition, sleep disturbance, rash, GI upset, peptic ulcer, edema, renal failure, anaphylactoid rxn with aspirin triad (asthmatic w/rhinitis, nasal polyps and bronchospasm w/NSAID use)

Oxazepam [C-IV] **Uses:** *Anxiety, acute EtOH withdrawal,* anxiety w/ depressive Sxs **Action:** Benzodiazepine; metabolite of diazepam **Dose:** *Adults.* 10–15 mg PO tid–qid; severe anxiety & EtOH withdrawal may require up to 30 mg qid. *Peds.* 1 mg/kg/d ÷ doses **Caution:** [D, ?] **Contra:** 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 (Trileptal) **Uses:** *Partial Szs,* bipolar disorders **Action:** 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 **Caution:** [C, –] carbamazepine sensitivity; **Contra:** Components sensitivity **Disp:** Tabs 150, 300, 600 mg; Susp 300 mg/5 mL **SE:** ↓ Na⁺, HA, dizziness, fatigue, somnolence, GI upset, diplopia, concentration difficulties, fatal skin/multiorgan hypersensitivity Rxns **Notes:** Do not abruptly D/C, ✓ Na⁺ if fatigued; advise about Stevens–Johnson synd and topic epidermal necrolysis

Oxiconazole (Oxistat) **Uses:** *Tinea cruris, corporis, pedis, versicolor* **Action:** ? ↓ ergosterols in fungal cell membrane **Spectrum:** Most *Epidermophyton floccosum*, *Trichophyton mentagrophytes*, *Trichophyton rubrum*, *Malassezia furfur* **Dose:** Apply thin layer daily- bid **Caution:** [B, M] **Contra:** Component allergy **Disp:** Cream, lotion 1% **SE:** Local irritation

Oxybutynin (Ditropan, Ditropan XL) **Uses:** *Symptomatic relief of urgency, nocturia, incontinence w/ neurogenic or reflex neurogenic bladder* **Action:** Anicholinergic, relaxes bladder smooth muscle, ↑ bladder capacity **Dose: Adults & Peds > 5 y.** 5 mg PO tid–qid; XL 5 mg PO daily; ↑ to 30 mg/d PO (5 & 10 mg/tab). **Peds 1–5 y.** 0.2 mg/kg/dose bid–qid (syrup 5 mg/5 mL); ↓ in elderly; periodic drug holidays OK **Caution:** [B, ?] **Contra:** NAG, MyG, GI/GU obstr, ulcerative colitis, megacolon **Disp:** Tabs 5 mg; XL tabs 5, 10, 15 mg; syrup 5 mg/5 mL **SE:** Anticholinergic (drowsiness, xerostomia, constipation, tachycardia), ER form shell expelled in stool

Oxybutynin Transdermal System (Oxytrol) **Uses:** *Rx OAB* **Action:** Anicholinergic, relaxes bladder smooth muscle, ↑ bladder capacity ↑ **Dose:** One 3.9 mg/d system apply 2x/wk (every 3–4 days) to abdomen, hip, or buttock **Caution:** [B, ?/–] **Contra:** GI/GU obstr, 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 [Dihydrohydroxycodone] (OxyContin, OxyIR, Roxicodone) [C-II] **WARNING:** High abuse potential; controlled release only for extended chronic pain, not for PRN use; 80 mg ER tabs only for opioid tolerant patients **Uses:** *Moderate/severe pain, usually in combo w/ nonnarcotic analgesics* **Action:** Narcotic analgesic **Dose: Adults.** 5 mg PO q6h PRN (immed release); *Mod-severe chronic pain* 10–160 mg PO q12h (extended release) **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 **Caution:** [B (D if prolonged use/near term), M] **Contra:** Allergy, resp depression, acute asthma, ileus w/microsomal morphine **Disp:** Immed-release caps (OxyIR) 5 mg; tabs (Percolone) 5 mg; CR Roxicodone tabs 5, 15, 30 mg; Extended release (OxyContin) 10, 20, 40, 80 mg; liq 5 mg/5 mL; soln conc 20 mg/mL **SE:** ↓ BP, sedation, dizziness, GI upset, constipation, risk of abuse **Notes:** OxyContin for chronic CA pain; do not crush/chew/cut ER prod; sought after as drug of abuse

Oxycodone & Acetaminophen (Percocet, Tylox) [C-II] **Uses:** *Moderate–severe pain* **Action:** 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 q 4–6h PRN, 5 mg/dose max **Caution:** [C (D prolonged use or near term), M] **Contra:** Allergy, 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

Oxycodone & Aspirin (Percodan, Percodan-Demi) [C-II]

Uses: *Moderate–moderately severe pain* **Action:** Narcotic analgesic w/ NSAID **Dose:** *Adults.* 1–2 tabs/caps PO q4–6h PRN. **Peds.** Oxycodone 0.05–0.15 mg/kg/dose q 4–6h PRN, up to 5 mg/dose; ↓ in severe hepatic failure **Caution:** [D prolonged use or near term), M] Peptic ulcer **Contra:** Component allergy, children (< 16 y) with viral infection, resp depression, ileus **Disp:** *Percodan* 4.5 mg oxycodone hydrochloride, 0.38 mg oxycodone terephthalate, 325 mg ASA; *Percodan-Demi* 2.25 mg oxycodone hydrochloride, 0.19 mg oxycodone terephthalate, 325 mg ASA **SE:** Sedation, dizziness, GI upset, constipation

Oxycodone/Ibuprofen (Combunox) [C-II] **WARNING:** May ↑

risk of serious CV events; contra in peri-op CABG pain; ↑ risk of GI events such as bleeding **Uses:** *Short-term (not >7 d) management of acute moderate–severe pain* **Action:** Narcotic w/NSAID **Dose:** 1 tab q6h prn 4 tab max/24 h; 7 days max. **Caution:** [C, –] w/ impaired renal/hepatic Fxn; COPD, CNS depression **Contra:** Paralytic ileus, 3rd tri PRG, allergy to ASA or NSAIDs, where opioids are contraindicated **Disp:** Tabs 5 mg oxycodone/400 mg ibuprofen **SE:** N/V, somnolence, dizziness, sweating, flatulence, ↑ LFTs **Notes:** Monitor renal Fxn; abuse potential w/ oxycodone

Oxymorphone (Opana, Opana ER) [C-II] **WARNING:** (Opana ER)

Abuse potential, controlled release only for chronic pain; do not consume EtOH containing beverages, may cause fatal OD **Uses:** *Moderate/severe pain, sedative* **Action:** Narcotic analgesic **Dose:** 10–20 mg PO q4–6h prn if opioid-naïve or 1–1.5 mg SC/IM q4–6 prn or 0.5 mg IV q4–6h prn; start 20 mg/dose max PO; *Chronic pain:* Extended release 5 mg PO q12h; if opioid-naïve ↑ PRN 5–10 mg PO q12h q3–7 d; take 1h PC or 2h AC; ↓ dose w/ elderly, renal/hepatic impair **Caution:** [B, ?] **Contra:** ↑ ICP, severe resp depression, w/ETOH or liposomal morphine, severe hepatic impair **Disp:** Tab 5, 10 mg; ER 5, 10, 20, 40 **SE:** ↓ BP, sedation, GI upset, constipation, histamine release **Notes:** Related to hydromorphone

Oxytocin (Pitocin) **Uses:** *Induce labor, control postpartum hemorrhage*; promote milk letdown in lactating women **Action:** Stimulate muscular contractions of the uterus & milk flow during nursing **Dose:** 0.0005–0.001 units/min IV inf; titrate 0.001–0.002 units/ min q 30–60 mins. *Breast-feeding:* 1 spray in both nostrils 2–3 min before feeding **Caution:** [Uncategorized, no anomalies expected, +/-] **Contra:** Where vaginal delivery not favorable, fetal distress **Disp:** Inj 10 units/mL; nasal soln 40 units/mL **SE:** Uterine rupture, fetal death; arrhythmias, anaphylaxis, H₂O intox **Notes:** Monitor vital signs; nasal form for breast-feeding only

Paclitaxel (Taxol, Abraxane) **WARNING:** Administration only by physician experienced in chemotherapy; fatal anaphylaxis and hypersensitivity possible; severe myelosuppression possible **Uses:** *Ovarian & breast CA, PCa*, Kaposi sarcoma, NSCLC **Action:** 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 **Caution:** [D, -] **Contra:** Neutropenia < 1500 WBC/mm³; solid tumors, component allergy **Disp:** Inj 6 mg/mL, 5 mg/mL albumin bound (Abraxane) **SE:** ↓ BM, peripheral neuropathy, transient ileus, myalgia, bradycardia, ↓ 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

Palivizumab (Synagis) **Uses:** *Prevent RSV Infxn* **Action:** MoAb **Dose:** *Peds.* 15 mg/kg IM monthly, typically Nov–Apr **Caution:** [C, ?] Renal/hepatic dysfunction **Contra:** Component allergy **Disp:** Vials 50, 100 mg **SE:** URI, rhinitis, cough, ↑ LFT, local irritation

Palifermin (Kepivance) **Uses:** *Oral mucositis w/ BMT* **Action:** Synthetic keratinocyte GF **Dose:** *Phase 1:* 60 mcg/kg IV daily × 3, 3rd dose 24–48 h before chemo *Phase 2:* 60 mcg/kg IV daily × 3, immediately after stem cell infusion **Caution:** [C, ?/–] **Contra:** N/A **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

Palonosetron (Aloxi) **WARNING:** May ↑ QT_c interval **Uses:** *Prevention acute & delayed N/V w/ emetogenic chemo* **Action:** 5HT₃-receptor antagonist **Dose:** 0.25 mg IV 30 min prior to chemo; do not repeat w/in 7 d **Caution:** [B, ?] **Contra:** Component allergy **Disp:** 0.25 mg/5 mL vial **SE:** HA, constipation, dizziness, abd pain, anxiety

Paliperidone (Invega) **WARNING:** Not for dementia-related psychosis **Uses:** *Schizophrenia* **Action:** Risperidone metabolite, antagonizes dopamine receptors **Dose:** 6 mg PO QAM, 12 mg/day max; CrCl 50–79: 6 mg/day max; CrCl 10–49 3 mg/day max **Caution:** [C; ?/–] w/ bradycardia, ↓ K⁺/Mg²⁺, renal/hepatic impair **Contra:** Risperidone hypersensitivity, w/phenothiazines, ranolazine, ziprasidone, prolonged QT, hx arrhythmia **Disp:** ER Tabs 3, 6, 9 mg **SE:** Impaired temp regulation, ↑ QT and HR, HA, anxiety, dizziness, N, dry mouth, fatigue, EPS **Notes:** Do not chew/cut/crush pill

Pamidronate (Aredia) **Uses:** *↑ Ca²⁺ of malignancy, Paget Dz, palliate symptomatic bone metastases* **Action:** ↓ NI & abnormal bone resorption **Dose:** ↑ Ca²⁺ 60 mg IV over 4 h or 90 mg IV over 24 h. *Paget Dz:* 30 mg/d IV slow inf for 3 d **Caution:** [D, ?/–] Avoid invasive dental procedures w/use **Contra:** PRG **Disp:** Inj 30, 60, 90 mg **SE:** Fever, inj site Rxn, uveitis, fluid overload, HTN, abd pain,

N/V, constipation, UTI, bone pain, ↓ K⁺, ↓ Ca²⁺, ↓ Mg²⁺, hypophosphatemia; jaw osteonecrosis, perform dental exam pretherapy

Pancrelipase (Pancrease, Cotazym, Creon, Ultrase) Uses:

Exocrine pancreatic secretion deficiency (eg, CF, chronic pancreatitis, pancreatic insuff), steatorrhea of malabsorption **Action:** Pancreatic enzyme suppl **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 **Caution:** [C, ?/–] **Contra:** Pork product allergy, acute pancreatitis **Disp:** Caps, tabs **SE:** N/V, abd cramps **Notes:** Individualize therapy

Pancuronium (Pavulon) Uses: *Paralysis w/ mechanical ventilation*

Action: Nondepolarizing neuromuscular blocker **Dose: Adults.** 2–4 mg IV q2–4h PRN. **Peds.** 0.02–0.1 mg/kg/dose q2–4h PRN; ↓ in renal/hepatic impair; intubate pt & keep on controlled ventilation; use adequate sedation or analgesia **Caution:** [C, ?/–] **Contra:** Component or bromide sensitivity **Disp:** Inj 1, 2 mg/mL **SE:** Tachycardia, HTN, pruritus, other histamine rxns

Panitumumab (Vectibix) WARNING: Derm toxicity common (89%)

and severe in 12%; can be associated w/ infection (sepsis, abscesses requiring I&D); w/ severe derm toxicity, hold or D/C and monitor for infections; severe infusion rxns (anaphylactic rxn, bronchospasm, fever, chills, hypotension) in 1%; w/ severe rxns, immediately D/C infusion and possibly permanent discontinuation

Uses: * Rx EGFR-expressing metastatic colon CA* **Action:** Anti-EGFR MoAB **Dose:** 6 mg/kg IV inf over 60 min q 14 days; 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 toxicity, hold until < grade 2 toxicity. If improves < 1 mo, restart 50% original dose. If toxicity recurs or resoln > 1 month permanently D/C. If ↓ dose tolerated, ↑ dose by 25% **Caution:** [C; –] D/C nursing during, 2 mo after **Disp:** Vial 20 mg/ml **SE:** Rash, acneiform dermatitis, pruritus, paronychia, ↓ Mg²⁺, abd pain, N/V/D, constipation, fatigue, dehydration, photosens, conjunctivitis, ocular hyperemia, ↑

lacrimation, stomatitis, mucositis, pulm fibrosis, severe derm toxicity, infusion rxns **Notes:** May impair female fertility; ✓ lytes; wear sunscreen/hats, limit sun exposure

Pantoprazole (Protonix) Uses: *GERD, erosive gastritis,* ZE synd, PUD **Action:** Proton-pump inhibitor **Dose:** 40 mg/d PO; do not crush/chew tabs; 40 mg IV/d (not >3 mg/min, use Protonix filter) **Caution:** [B, ?/–] **Disp:** Tabs, delayed release 20, 40 mg; powder for inj 40 mg **SE:** Chest pain, anxiety, GI upset, ↑ LFTs

Paregoric [Camphorated Tincture of Opium] [C-III] Uses:

D, Pain & neonatal opiate withdrawal synd **Action:** Narcotic **Dose: Adults.** 5–10 mL PO daily–qid PRN. **Peds.** 0.25–0.5 mL/kg daily–qid. **Neonatal withdrawal:** 3–6 gtt PO q3–6 h PRN to relieve Sxs X 3–5 d, then taper over 2–4 wk **Caution:** [B (D w/ prolonged use/high dose near term, +)] **Contra:** Toxic Diarrhea; convulsive disorder **Disp:** Liq 2 mg morphine = 20 mg opium/5 mL **SE:** ↓ BP, sedation,

constipation **Notes:** Contains anhydrous morphine from opium; short-term use only

Paroxetine (Paxil, Paxil CR) **WARNING:** Closely monitor for worsening depression or emergence of suicidality, particularly in ped pts **Uses:** *Depression, OCD, panic disorder, social anxiety disorder,* PMDD **Action:** SSRI **Dose:** 10–60 mg PO single daily dose in AM; CR 25 mg/d PO; ↑ 12.5 mg/wk (max range 26–62.5 mg/d) **Caution:** [D, ?/] **Contra:** MAOI **Disp:** Tabs 10, 20, 30, 40 mg; susp 10 mg/5 mL; CR 12.5, 25, 37.5 mg **SE:** Sexual dysfunction, HA, somnolence, dizziness, GI upset, D, xerostomia, tachycardia

Pegfilgrastim (Neulasta) **Uses:** *↓ Frequency of Infxn in pts w/ non-myeloid malignancies receiving myelosuppressive anti-CA drugs that cause febrile neutropenia* **Action:** Granulocyte and macrophage stimulating factor **Dose:** *Adults.* 6 mg SQ × 1/chemo cycle. *Peds.* 100 mcg/kg SQ × 1/chemo cycle **Caution:** [C, M] in sickle cell **Contra:** 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, abd pain, granulocytopenia, neutropenic fever, ↑ LFT & 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 chemo

Peg Interferon Alfa-2a (Pegasys) **WARNING:** Can cause or aggravate fatal or life-threatening neuropsychiatric, autoimmune, ischemic, and infectious disorders. Monitor patients closely **Uses:** *Chronic Hep C w/ compensated liver Dz* **Action:** Biologic response modifier **Dose:** 180 mcg (1 mL) SQ qwk × 48 wk; ↓ in renal impair **Caution:** [C, /?–] **Contra:** Autoimmune hepatitis, decompensated liver Dz **Disp:** 180 mcg/mL inj **SE:** Depression, insomnia, suicidal behavior, GI upset, neutro & thrombocytopenia, alopecia, pruritus **Notes:** May aggravate neuropsychiatric, autoimmune, ischemic, & infectious disorders

Peg Interferon Alfa-2b (PEG-Intron) **WARNING:** Can cause or aggravate fatal or life-threatening neuropsychiatric, autoimmune, ischemic, and infectious disorders. Monitor patients closely **Uses:** *Rx Hep C* **Action:** Immune modulation **Dose:** 1 mcg/kg/wk SQ; 1.5 mcg/kg/wk combined w/ribavirin **Caution:** [C, /?–] w/psychiatric Hx **Contra:** Autoimmune hepatitis, 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/platelets; use immediately or store in refrigerator × 24 h; do not freeze

Pemetrexed (Alimta) **Uses:** *w/ cisplatin in nonresectable mesothelioma* NSCLC **Action:** Antifolate antineoplastic **Dose:** 500 mg/m² IV over 10 min every 3 wk; hold if CrCl <45 mL/min; give w/ vitamin B₁₂ (1000 mcg IM every 9 wk) & folic acid (350–1000 mcg PO daily); start 1 wk before; dexamethasone 4 mg PO bid × 3 start 1 d before each Rx **Caution:** [D, –] w/ renal/hepatic/

BM impair **Contra:** 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/platelets

Pemirolast (Alamast) **Uses:** *Allergic conjunctivitis* **Action:** Mast cell stabilizer **Dose:** 1–2 gtt in each eye qid **Caution:** [C, ?/–] **Disp:** 0.1% (1 mg/ml) in 10-mL bottles **SE:** HA, rhinitis, cold/flu symptoms, local irritation **Notes:** Wait 10 min before inserting contacts

Penbutolol (Levitol) **Uses:** *HTN* **Action:** β -adrenergic receptor blocker, β_1 , β_2 **Dose:** 20–40 mg/d; \downarrow in hepatic insuff **Caution:** [C 1st tri; D if 2nd/3rd tri, M] **Contra:** Asthma, cardiogenic shock, cardiac failure, heart block, bradycardia, COPD, pulm edema **Disp:** Tabs 20 mg **SE:** Flushing, \downarrow BP, fatigue, hyperglycemia, GI upset, sexual dysfunction, bronchospasm

Penciclovir (Denavir) **Uses:** *Herpes simplex (herpes labialis/cold sores)* **Action:** Competitive inhibitor of DNA polymerase **Dose:** Apply at 1st sign of lesions, then q2h while awake \times 4 d **Caution:** [B, ?/–] **Contra:** Allergy, previous Rxn to famciclovir **Disp:** Cream 1% [OTC] **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* **Action:** Bactericidal; \downarrow cell wall synth. **Spectrum:** Most gram (+) (not staphylococci), streptococci, *N. meningitidis*, syphilis, clostridia, & anaerobes (not *Bacteroides*) **Dose: Adults.** 400,000–800,000 units PO qid; IV doses vary depending on indications; range 0.6–24 million units/d in \div 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:** 100,000–300,000 units/kg/24h IV \div q4h; \downarrow in renal impair **Caution:** [B, M] **Contra:** Allergy **Disp:** Tabs 200,000, 250,000, 400,000, 800,000 units; susp 200,000, 400,000 units/5 mL; powder for inj **SE:** Allergic Rxns; interstitial nephritis, D, Szs **Notes:** Contains 1.7 mEq of K^+ /million units

Penicillin G Benzathine (Bicillin) **Uses:** *Single-dose regimen for streptococcal pharyngitis, rheumatic fever, glomerulonephritis prophylaxis, & syphilis* **Action:** Bactericidal; \downarrow cell wall synth. **Spectrum:** See Penicillin G **Dose: Adults.** 1.2–2.4 million units deep IM inj q2–4wk. **Peds.** 50,000 units/kg/dose, 2.4 million units/dose max; deep IM inj q2–4 wk **Caution:** [B, M] **Contra:** 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:** Sustained action, detectable levels up to 4 wk; drug of choice for noncongenital syphilis

Penicillin G Procaine (Wycillin, others) **Uses:** *Infxns of respir tract, skin/soft tissue, scarlet fever, syphilis* **Action:** Bactericidal; \downarrow cell wall

synth. *Spectrum*: PCN G-sensitive organisms that respond to low, persistent serum levels **Dose: Adults.** 0.6–4.8 million units/d in \div doses q12–24h; give probenecid at least 30 min prior to PCN to prolong action. **Peds.** 25,000–50,000 units/kg/d IM \div daily–bid **Caution:** [B, M] **Contra:** Allergy **Disp:** Inj 300,000, 500,000, 600,000 units/mL **SE:** Pain at inj site, interstitial nephritis, anaphylaxis **Notes:** LA parenteral PCN; levels up to 15 h

Penicillin V (Pen-Vee K, Veetids, others) **Uses:** Susceptible streptococci Infxns, otitis media, URIs, skin/soft tissue Infxns (PCN-sensitive staph) **Action:** Bactericidal; \downarrow cell wall synth. *Spectrum:* Most gram (+), including strep **Dose: Adults.** 250–500 mg PO q6h, q8h, q12h. **Peds.** 25–50 mg/kg/25h PO in 4 doses; \downarrow in renal impair; on empty stomach **Caution:** [B, M] **Contra:** 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

Pentamidine (Pentam 300, NebuPent) **Uses:** *Rx & prevention of PCP* **Action:** \downarrow DNA, RNA, phospholipid, & protein synth **Dose: Rx: Adults & Peds.** 4 mg/kg/24 h IV daily for 14–21 d. *Prevention: Adults & Peds >5 y.* 300 mg once q4wk, give via Respigard II neb; \downarrow w/IV in renal impair **Caution:** [C, ?] **Contra:** 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 1st 3 mo; monitor for \downarrow BP following IV dose

Pentazocine (Talwin, Talwin Compound, Talwin NX) [C-IV] **Uses:** *Moderate–severe pain* **Action:** 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. 8–14 y: 30 mg IM q4h PRN; \downarrow in renal/hepatic impair **Caution:** [C (1st tri, D w/ prolonged use/high dose near term), +/-] **Contra:** Allergy, \uparrow 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, others) [C-II] **Uses:** *Insomnia, convulsions,* induce coma following severe head injury **Action:** Barbiturate **Dose: Adults.** *Sedative:* 20–40 mg PO or PR q6–12h. *Hypnotic:* 100–200 mg PO or PR hs PRN. *Induced coma:* Load 5–10 mg/kg IV, then maint 1–3 mg/kg/h IV inf to maint burst suppression on EEG. **Peds.** Hypnotic: 2–6 mg/kg/dose PO hs PRN. *Induced coma:* As adult **Caution:** [D, +/-] Severe hepatic impair **Contra:** 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, \downarrow BP w/ aggressive IV use for cerebral edema; bradycardia, \downarrow BP, sedation, lethargy, resp \downarrow , hangover, rash, Stevens–Johnson synd, blood dyscrasias **Notes:** Tolerance to sedative–hypnotic effect w/in 1–2 wk

Pentosan Polysulfate Sodium (Elmiron) Uses: *Relieve pain/discomfort w/ interstitial cystitis* **Action:** Bladder wall buffer **Dose:** 100 mg PO tid; on empty stomach w/ H₂O 1 h ac or 2 h pc **Caution:** [B, ?/-] **Contra:** Allergy **Disp:** Caps 100 mg **SE:** Alopecia, N/D, HA, ↑ LFTs, anticoagulant effects, thrombocytopenia **Notes:** Reassess after 3 mo

Pentoxifylline (Trental) Uses: *Rx symptoms of peripheral vascular Dz* **Action:** ↓ 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 **Caution:** [C, +/-] **Contra:** Cerebral/retinal hemorrhage **Disp:** Tabs CR 400 mg; Tabs ER 400 mg **SE:** Dizziness, HA, GI upset

Perindopril Erbumine (Aceon) Uses: *HTN,* CHF, DN, post-MI **Action:** ACE inhibitor **Dose:** 4–8 mg/d; 16 mg/day max; avoid w/ food; ↓ in elderly/renal impair **Caution:** [C (1st tri, D 2nd & 3rd tri), ?/-] ACE-inhibitor-induced angioedema **Contra:** Bilateral RAS, primary hyperaldosteronism **Disp:** Tabs 2, 4, 8 mg **SE:** HA, ↓ BP, dizziness, GI upset, cough **Notes:** OK w/ diuretics

Permethrin (Nix, Elimate) [OTC] Uses: *Rx lice/scabies* **Action:** Pediculicide **Dose:** *Adults & Peds.* Lice, saturate hair & scalp; allow 10 min before rinsing; *Scabies:* apply cream head to toe; leave for 8–14 hours, wash w/H₂O **Caution:** [B, ?/-] **Contra:** Allergy **Disp:** Topical lotion 1%; cream 5% **SE:** Local irritation **Notes:** Disinfect clothing, bedding, combs, & brushes, lotion not OK in peds < 2 yrs of age, may repeat after 7 days

Perphenazine (Trilafon) Uses: *Psychotic disorders, severe N,* intractable hiccups **Action:** Phenothiazine, blocks brain dopaminergic receptors **Dose:** *Adults:* Antipsychotic: 4–16 mg PO tid; max 64 mg/d. *Hiccups:* 5 mg IM q6h PRN or 1 mg IV at intervals not < 1–2 mg/min, 5 mg max. *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 bid–qid; ↓ in hepatic insuff **Caution:** [C, ?/-] NAG, severe ↑/↓ BP **Contra:** Phenothiazine sensitivity, BM depression, severe liver or cardiac Dz **Disp:** Tabs 2, 4, 8, 16 mg; PO conc 16 mg/5 mL; inj 5 mg/mL **SE:** ↓ BP, tachycardia, bradycardia, EPS, drowsiness, Szs, photosens, skin discoloration, blood dyscrasias, constipation

Phenazopyridine (Pyridium, others) Uses: *Lower urinary tract irritation* **Action:** Local anesthetic on urinary tract mucosa **Dose:** *Adults.* 100–200 mg PO tid. *Peds* 6–12 y. 12 mg/kg/24 h PO in 3 ÷ doses; ↓ in renal insuff **Caution:** [B, ?] Hepatic Dz **Contra:** Renal failure **Disp:** Tabs 95, 97.2, 100, 200 mg; **SE:** GI disturbances; red-orange urine color (can stain clothing); HA, dizziness, acute renal failure, methemoglobinemia

Phenelzine (Nardil) **WARNING:** Antidepressants increase the risk of suicidal thinking and behavior in children and adolescents w/ major depressive disorder and other psychiatric disorders Uses: *Depression* **Action:** MAOI **Dose:** 15 mg PO tid. *Elderly:* 15–60 mg/d ÷ doses **Caution:** [C, -] Interacts w/ SSRI, ergots, triptans **Contra:** CHF, Hx liver Dz, pheochromocytoma **Disp:** Tabs 15 mg **SE:** Postural ↓ BP; edema, dizziness, sedation, rash, sexual dysfunction, xerosto-

mia, constipation, urinary retention **Notes:** 2–4 wk for effect; avoid tyramine-containing foods (eg, cheeses)

Phenobarbital [C-IV] **Uses:** *Sz disorders,* insomnia, anxiety **Action:** Barbiturate **Dose: Adults.** *Sedative-hypnotic:* 30–120 mg/d PO or IM PRN. *Anticonvulsant:* Load 10–12 mg/kg in 3 ÷ doses, then 1–3 mg/kg/24 h PO, IM, or IV. **Peds.** *Sedative-hypnotic:* 2–3 mg/kg/24 h PO or IM hs PRN. *Anticonvulsant:* Load 15–20 mg/kg ÷ in 2 equal doses 4 h apart, then 3–5 mg/kg/24h PO ÷ in 2–3 doses; ↓ w/CrCl < 10 **Caution:** [D, M] **Contra:** Porphyria, hepatic impair, dyspnea, airway obst **Disp:** Tabs 15, 16, 30, 32, 60, 65, 100 mg; elixir 15, 20 mg/5 mL; inj 30, 60, 65, 130 mg/mL **SE:** Bradycardia, ↓ BP, hangover, Stevens–Johnson synd, blood dyscrasias, resp depression **Notes:** Tolerance develops to sedation; paradoxical hyperactivity seen in ped pts; long half-life allows single daily dosing; Levels: *Trough:* just before next dose; *Therapeutic: Peak* 15–40 mcg/mL; *Toxic Trough* > 40 mcg/mL; ½ life: 40–120h

Phenylephrine, nasal (Neo-Synephrine Nasal) (OTC) **Uses:** *Nasal congestion* **Action:** α-adrenergic agonist **Dose: Adults.** 1–2 sprays/nostril q4h (usual 0.25%) PRN. **Peds.** 6 mo–2 yr: 0.125% 1–2 drops/nostril q3–4h, 2–6 yr: 0.125% 2–3 drops/nostril q3–4h 6–12 yr: 1–2 sprays/nostril q4h 0.25% 2–3 drops **Caution:** [C, +/-] HTN, acute pancreatitis, hepatitis, coronary Dz, NAG, hyperthyroidism **Contra:** Bradycardia, arrhythmias **Disp:** Nasal soln 0.125, 0.25, 0.5, 1%; Liquid 7.5 mg/5 mL; drops 2.5 mg/mL **SE:** Arrhythmias, HTN, nasal irritation, dryness, sneezing, rebound congestion w/ prolonged use, HA **Notes:** Do not use > 3 days

Phenylephrine, ophthalmic (Neo-Synephrine Ophthalmic, AK-Dilate, Zincfrin [OTC]) **Uses:** * Mydriasis, ocular redness [OTC], periop mydriasis, posterior synechiae, uveitis w/posterior synechiae* **Action:** α-adrenergic agonist **Dose: Adults.** *Redness:* 1 gtt 0.12% Q 3–4h PRN; *Exam mydriasis:* 1 gtt 2.5% (15 min–1 h for effect); *Preop* 1 gtt 2.5–10% 30–60 min preop; *Ocular disorders:* 1 gtt 2.5–10% daily-TID **Peds.** As adult, only use 2.5% for exam, preop and ocular conditions **Caution:** [C] may cause late-term fetal anoxia/bradycardia, +/- HTN, w/ elderly w/ CAD, **Contra:** NAG **Disp:** Ophth soln 0.12% (Zincfrin OTC), 2.5, 10%; **SE:** Tearing, HA, irritation, eye pain, photophobia, arrhythmia, tremor

Phenylephrine, oral (Sudafed PE, SudoGest PE, Nasop, Lu-sonal, AH-chew D, Sudafed PE quick dissolve)(OTC) **WARNING:** Prescribers should be aware of full prescribing info before use **Uses:** *Nasal congestion* **Action:** α-adrenergic agonist **Dose: Adults.** 10–20 mg PO q4h PRN, Max 60 mg/d **Peds.** 5 mg PO q4h prn, max 60 mg/day **Caution:** [C, +/-] HTN, acute pancreatitis, hepatitis, coronary Dz, NAG, hyperthyroidism **Contra:** MAOI w/in 14 d, NAG, severe ↑ (BP or CAD, urinary retention) **Disp:** Liquid 7.5 mg/5 mL; drops 2.5 mg/mL; tabs 5, 10 mg; chew tabs 10 mg; tabs OD 10 mg; strips 10 mg. **SE:** Arrhythmias, HTN, HA, agitation, anxiety, tremor, palpitations

Phenylephrine, systemic (Neo-Synephrine) **WARNING:** Prescribers should be aware of full prescribing info before use **Uses:** *Vascular failure in shock, allergy, or drug-induced ↓ BP* **Action:** α-adrenergic agonist **Dose: Adults.** *Mild-moderate* ↓ 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, maint 40–60 mcg/min **Peds.** ↓ BP: 5–20 mcg/kg/dose IV q10–15 min or 0.1–0.5 mcg/kg/min IV inf, titrate to effect. **Caution:** [C, +/-] HTN, acute pancreatitis, hepatitis, coronary Dz, NAG, hyperthyroidism **Contra:** Bradycardia, arrhythmias **Disp:** Inj 10 mg/mL **SE:** Arrhythmias, HTN, peripheral vasoconstriction ↑ w/ oxytocin, MAOIs, & TCAs; HA, weakness, necrosis, ↓ renal perfusion **Notes:** Restore blood volume 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) **Uses:** *Sz disorders* **Action:** ↓ Sz spread in the motor cortex **Dose: Load: Adults & Peds.** 15–20 mg/kg IV, 25 mg/min max or PO in 400-mg doses at 4-h intervals. **Maint: Adults.** Initial, 200 mg PO or IV bid or 300 mg hs; then follow levels. **Peds.** 4–7 mg/kg/24h PO or IV ÷ daily–bid; avoid PO susp (erratic absorption) **Caution:** [D, +] **Contra:** Heart block, sinus bradycardia **Disp:** Dilatin Infatab chew 50 mg; Dilantin/Phenytek capsules 100 mg; capsules, 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. **IV:** ↓ BP, bradycardia, arrhythmias, phlebitis; peripheral neuropathy, rash, blood dyscrasias, Stevens–Johnson synd **Notes:** Levels: *Trough:* just before next dose; *Therapeutic:* Peak 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 hr before and after dose if using oral susp

Physostigmine (Antilirium) **Uses:** *Antidote for TCA, atropine, & scopolamine OD; glaucoma* **Action:** Reversible cholinesterase inhibitor **Dose: Adults.** 0.5–2 mg IV or IM q 20 min. **Peds.** 0.01–0.03 mg/kg/dose IV q15–30 min up to 2 mg total if needed **Caution:** [C, ?] **Contra:** GI/GU obst, CV Dz **Disp:** Inj 1 mg/mL **SE:** Rapid IV admin associated w/Szs; cholinergic side effects; sweating, salivation, lacrimation, GI upset, asystole, changes in HR **Notes:** Excessive readministration can result in cholinergic crisis; crisis reversed w/ atropine

Phytonadione [Vitamin K] (AquaMEPHYTON, others) **Uses:** *Coagulation disorders due to faulty formation of factors II, VII, IX, X*; hyperalimentation **Action:** Cofactor for production of factors II, VII, IX, & X **Dose: Adults & Children.** *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, SQ, or PO **Caution:** [C, +] **Contra:** Allergy **Disp:** Tabs 5 mg; inj 2, 10 mg/mL **SE:** Anaphylaxis from IV dosage; give IV slowly; GI upset (PO), inj site Rxns **Notes:** W/ parenteral Rx, 1st change in PT usually seen in 12–24 h; use makes recoumadinization more difficult

Pimecrolimus (Elidel) **WARNING:** Associated with rare skin malignancies and lymphoma, limit to area, not for age < 2 yr **Uses:** *Atopic dermatitis* refractory, severe perianal itching **Action:** Inhibits T-lymphocytes **Dose:** *Adult and Peds* > 2 yr: Apply bid; use at least 1 wk following resolu **Caution:** [C, ?/–] w/ local Infxn, lymphadenopathy; immunocompromise; avoid < 2 yrs of age **Contra:** Allergy component, < 2 yr **Disp:** Cream 1% **SE:** Phototox, local irritation/burning, flulike Sxs, may ↑ malignancy **Notes:** Use on dry skin only; wash hands after; second-line/short-term use only

Pindolol (Visken) **Uses:** *HTN* **Action:** β-adrenergic receptor blocker, β₁, β₂, ISA **Dose:** 5–10 mg bid, 60 mg/d max; ↓ in hepatic/renal failure **Caution:** [B (1st tri; D if 2nd or 3rd tri), +/-] **Contra:** Uncompensated CHF, cardiogenic shock, bradycardia, heart block, asthma, COPD **Disp:** Tabs 5, 10 mg **SE:** Insomnia, dizziness, fatigue, edema, GI upset, dyspnea; fluid retention may exacerbate CHF

Pioglitazone/Metformin (ActoPlus Met) **WARNING:** Can cause lactic acidosis, which is fatal in 50% of cases **Uses:** *Type 2 DM as adjunct to diet and exercise* **Action:** Combined ↑ insulin sensitivity w/ ↓ hepatic glucose release **Dose:** Initial 1 tab PO daily or bid, titrate; max daily pioglitazone 45 mg & metformin 2550 mg **Caution:** [C, –] Stop w/ radiologic contrast agents **Contra:** Renal impair, acidosis **Disp:** Tabs pioglitazone mg/metformin mg: 15/500, 15/850 **SE:** Lactic acidosis, hypoglycemia, edema, wgt gain, URI, HA, GI upset, liver damage **Notes:** Follow LFTs; ↑ fracture risk in women receiving pioglitazone

Pioglitazone (Actos) **Uses:** *Type 2 DM* **Action:** ↑ Insulin sensitivity **Dose:** 15–45 mg/d PO **Caution:** [C, –] **Contra:** Hepatic impair **Disp:** Tabs 15, 30, 45 mg **SE:** Wgt gain, URI, HA, hypoglycemia, edema, ↑ fracture risk in women

Piperacillin (Pipracil) **Uses:** *Infxns of skin, bone, resp &, urinary tract, abdomen, sepsis* **Action:** 4th-gen PCN; bactericidal; ↓ cell wall synth. **Spectrum:** Primarily gram (+), better *Enterococcus*, *H. influenza*, not staph; gram(–) *E. coli*, *Proteus*, *Shigella*, *Pseudomonas*, not β-lactamase-producing **Dose:** *Adults.* 2–4 g IV q4–6h. *Peds.* 200–300 mg/kg/d IV ÷ q4–6h; ↓ in renal failure **Caution:** [B, M] **Contra:** PCN sensitivity **Disp:** Powder for inj: 2, 3, 4, 40-g **SE:** ↓ Plt aggregation, interstitial nephritis, renal failure, anaphylaxis, hemolytic anemia **Notes:** Often used w/ aminoglycoside

Piperacillin-Tazobactam (Zosyn) **Uses:** *Infxns of skin, bone, resp & urinary tract, abdomen, sepsis* **Action:** PCN plus β-lactamase inhibitor; 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 **Caution:** [B, M] **Contra:** PCN or β-lactam sensitivity **Disp:** Powder for inj: frozen, premix inj 3.25, 3.375, 4.5 g **SE:** D, HA, insomnia, GI upset, serum sickness-like rxn, pseudomembranous colitis **Notes:** Often used in combo w/ aminoglycoside

Pirbuterol (Maxair) **Uses:** *Prevention & Rx reversible bronchospasm* **Action:** β2-adrenergic agonist **Dose:** 2 inhal q4–6h; max 12 inhal/d **Caution:** [C, ?/–] **Disp:** Aerosol 0.2 mg/actuation **SE:** Nervousness, restlessness, trembling, HA, taste changes, tachycardia **Note:** Teach patient proper inhaler technique

Piroxicam (Feldene) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Arthritis & pain* **Action:** NSAID; ↓ prostaglandins **Dose:** 10–20 mg/d **Caution:** [B (1st tri; D if 3rd tri or near term), +] GI bleeding **Contra:** ASA/NSAID sensitivity **Disp:** Caps 10, 20 mg **SE:** Dizziness, rash, GI upset, edema, acute renal failure, peptic ulcer

Plasma Protein Fraction (Plasmanate, others) **Uses:** *Shock & ↓ BP* **Action:** Plasma volume expander **Dose:** 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 **Caution:** [C, +] **Contra:** Renal insuff, CHF **Disp:** Inj 5% **SE:** ↓ BP w/ rapid inf; hypocoagulability, metabolic acidosis, PE **Notes:** 130–160 mEq Na/L; not substitute for RBC

Pneumococcal 7-Valent Conjugate Vaccine (Pneumovax) **Uses:** *Immunization against pneumococcal Infxns in infants & children* **Action:** Active immunization **Dose:** 0.5 mL IM/dose; series of 3 doses; 1st dose age 2 mo; then doses q2mo, 4th dose at age 12–15 mo **Caution:** [C, +] **Contra:** Thrombocytopenia **Contra:** Diphtheria toxoid sensitivity, febrile illness **Disp:** Inj **SE:** Local rxns, arthralgia, fever, myalgia

Pneumococcal Vaccine, Polyvalent (Pneumovax-23) **Uses:** *Immunization against pneumococcal Infxns in pts at high risk (eg, all = 65 y of age)* **Action:** Active immunization **Dose:** 0.5 mL IM. **Caution:** [C, ?] **Contra:** Do not vaccinate during immunosuppressive therapy **Disp:** Inj 0.5 mL **SE:** Fever, inj site Rxn, hemolytic anemia, thrombocytopenia, anaphylaxis

Podophyllin (Podocon-25, Condylox Gel 0.5%, Condylox) **Uses:** *Topical therapy of benign growths (genital & perianal warts [condylomata acuminata], *papillomas, fibromas)* **Action:** Direct antimitotic effect; exact mechanism unknown **Dose:** *Condylox gel & Condylox:* Apply bid for 3 consecutive d/wk for 4 wk; 0.5 mL/day max; *Podocon-25:* Use sparingly on the lesion, leave on for 1–4 h, thoroughly wash off **Caution:** [X, ?] Immunosuppression **Contra:** 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, significant absorption; anemias, tachycardia, paresthesias, GI upset, renal/hepatic damage **Notes:** Podocon-25 applied by the clinician; do not dispense directly to patient

Polyethylene Glycol [PEG]-Electrolyte Soln (GoLYTELY, CoLyte) **Uses:** *Bowel prep prior to examination or surgery* **Action:** Osmotic cathartic **Dose:** *Adults.* Following 3–4-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 **Caution:** [C, ?] **Contra:** GI obst, bowel perforation, megacolon, ulcerative colitis **Disp:** Powder for reconst to 4 L **SE:** Cramping or N, bloating **Notes:** 1st BM should occur in approximately 1 h; **Note:** Chilled soln more palatable

Polyethylene Glycol [PEG] 3350 (MiraLax) **Uses:** *Occasional constipation* **Action:** Osmotic laxative **Dose:** 17 g powder (1 heaping Tbsp) in 8 oz (1 cup) of H₂O & drink; max 14 d **Caution:** [C, ?] R/O bowel obst before use

Contra: GI obst, allergy to PEG **Disp:** Powder for reconst; bottle cap holds 17 g
SE: Upset stomach, bloating, cramping, gas, severe D, hives **Notes:** Can add to H₂O, juice, soda, coffee, or tea

Polymyxin B & Hydrocortisone (Otobiotic Otic) **Uses:** *Superficial bacterial Infxns of external ear canal* **Action:** Antibiotic/anti-inflammatory combo **Dose:** 4 gtt in ear(s) tid–qid **Caution:** [B, ?] **Disp:** Soln polymyxin B 10,000 units/hydrocortisone 0.5%/mL **SE:** Local irritation **Notes:** Useful in neomycin allergy

Posaconazole (Noxafil) **Uses:** *Prevent *Aspergillus* and *Candida* Infxns in severely immunocompromised* **Action:** ↓ cell membrane ergosterol synth **Dose:** *Adult. Invasive fungal prophylaxis:* 200 mg PO TID; *Oropharyngeal candidiasis:* 100 mg PO daily × 13 days, if refractory 40 mg PO BID; *Peds > 13 yr.* 200 mg PO TID; w/meal **Caution:** [C, ?] multiple drug interactions; ↑ QT, cardiac diseases, severe renal/liver impair **Contra:** Component hypersensitivity; w/many drugs including alfuzosin, astemizole, alprazolam, phenothiazines, terfenadine, triazolam, others **Disp:** Sol 40 mg/mL **SE:** ↑ QT, ↑ LFTs, hepatic failure, fever, N/V/D, HA, abd pain, anemia, ↓ plt, ↓ K⁺ rash, dyspnea, cough, anorexia, fatigue **Notes:** Monitor LFTs, CBC, electrolytes

Potassium Citrate (Urocit-K) **Uses:** *Alkalinize urine, prevention of urinary stones (uric acid, calcium stones if hypocitraturic)* **Action:** Urinary alkalinizer **Dose:** 1 packet dissolved in H₂O or 15–30 mL after meals and at bedtime 10–20 mEq PO tid w/ meals, max 100 mEq/d **Caution:** [A, +] **Contra:** Severe renal impair, dehydration, ↑ K⁺, peptic ulcer; w/K⁺sparing diuretics, salt substitutes **Disp:** 540, 1080 mg tabs **SE:** GI upset, ↓ Ca²⁺, ↑ K⁺, metabolic alkalosis **Notes:** Tabs 540 mg = 5 mEq, 1080 mg = 10 mEq

Potassium Citrate & Citric Acid (Polycitra-K) **Uses:** *Alkalinize urine, prevent urinary stones (uric acid, Ca stones if hypocitraturic)* **Action:** Urinary alkalinizer **Dose:** 10–20 mEq PO tid w/ meals, max 100 mEq/d **Caution:** [A, +] **Contra:** Severe renal impair, dehydration, ↑ K⁺, peptic ulcer; w/ use of K⁺-sparing diuretics or salt substitutes **Disp:** Soln 10 mEq/5 mL; powder 30 mEq/packet **SE:** GI upset, ↓ Ca²⁺, ↑ K⁺, metabolic alkalosis

Potassium Iodide [Lugol Soln] (SSKI, Thyro-Block) **Uses:** *Thyroid storm,* ↓ vascularity before thyroid surgery, block thyroid uptake of radioactive iodine, thin bronchial secretions **Action:** Iodine suppl **Dose:** *Adults & Peds > 2 y. Preop thyroidectomy:* 50–250 mg PO tid (2–6 gtt strong iodine soln); give 10 d preop. *Peds 1 y. Thyroid crisis:* 300 mg (6 gtt SSKI q8h). *Peds < 1 y:* ½ adult dose **Caution:** [D, +] ↑ K⁺, TB, PE, bronchitis, renal impair **Contra:** Iodine sensitivity **Disp:** Tabs 130 mg; soln (SSKI) 1 g/mL; Lugol soln, strong iodine 100 mg/mL; syrup 325 mg/5 mL **SE:** Fever, HA, urticaria, angioedema, goiter, GI upset, eosinophilia

Potassium Supplements (Kaon, Kaochlor, K-Lor, Slow-K, Micro-K, Klorvess, others) **Uses:** *Prevention or Rx of ↓ K⁺*

(eg, diuretic use) **Action:** K⁺ suppl **Dose:** *Adults.* 20–100 mEq/d PO ÷ daily–bid; IV 10–20 mEq/h, max 40 mEq/h & 150 mEq/d (monitor K⁺ levels frequently w/ high-dose IV). **Peds.** Calculate K⁺ deficit; 1–3 mEq/kg/d PO ÷ daily–qid; IV max dose 0.5–1 mEq/kg/h **Caution:** [A, +] Renal insuff, use w/ NSAIDs & ACE inhibitors **Contra:** ↑ K⁺ **Disp:** PO forms (Table 7); inj **SE:** GI irritation; bradycardia, ↑ K⁺, heart block **Notes:** Mix powder & liq w/ beverage (unsalted tomato juice, etc); follow K⁺; Cl⁻ salt OK w/ alkalosis; w/ acidosis use acetate, bicarbonate, citrate, or gluconate salt

Pramipexole (Mirapex) **Uses:** *Parkinson Dz* **Action:** Dopamine agonist **Dose:** 1.5–4.5 mg/d PO, initial 0.375 mg/d in 3 ÷ doses; titrate slowly **Caution:** [C, ?/–] ↓ renal impair **Contra:** Component allergy **Disp:** Tabs 0.125, 0.25, 0.5, 1, 1.5 mg **SE:** Postural ↓ BP, asthenia, somnolence, abnormal dreams, GI upset, EPS

Pramoxine (Anusol Ointment, ProctoFoam-NS, others) **Uses:** *Relief of pain & itching from hemorrhoids, anorectal surgery*; topical for burns & dermatosis **Action:** Topical anesthetic **Dose:** Apply freely to anal area q3h **Caution:** [C, ?] **Disp:** [OTC] All 1%; foam (Proctofoam-NS), cream, oint, lotion, gel, pads, spray **SE:** Contact dermatitis, mucosal thinning w/ chronic use

Pramoxine + Hydrocortisone (Enzone, Proctofoam-HC) **Uses:** *Relief of pain & itching from hemorrhoids* **Action:** Topical anesthetic, anti-inflammatory **Dose:** Apply freely to anal area tid–qid **Caution:** [C, ?/–] **Disp:** Cream pramoxine 1% acetate 0.5/1%; foam pramoxine 1% hydrocortisone 1%; lotion pramoxine 1% hydrocortisone 0.25/1/2.5%, pramoxine 2.5% & hydrocortisone 1% **SE:** Contact dermatitis, mucosal thinning with chronic use

Pravastatin (Pravachol) **Uses:** *↓ Cholesterol* **Action:** HMG-CoA reductase inhibitor **Dose:** 10–80 mg PO hs; ↓ in significant renal/hepatic impair **Caution:** [X –] w/ gemfibrozil **Contra:** Liver Dz or persistent LFT ↑ **Disp:** Tabs 10, 20, 40, 80 mg **SE:** Use caution w/ concurrent gemfibrozil; HA, GI upset, hepatitis, myopathy, renal failure

Prazosin (Minipress) **Uses:** *HTN* **Action:** 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/day in 3 div doses; max 0.5 mg. kg/day **Caution:** [C, ?] **Contra:** Component allergy, concurrent use of PDE-5 inhibitors **Disp:** Caps 1, 2, 5 mg; Tabs ER 2.5, 5 mg ER **SE:** Dizziness, edema, palpitations, fatigue, GI upset **Notes:** Can cause orthostatic ↓ BP, take the 1st dose hs; tolerance develops to this effect; tachyphylaxis may result

Prednisolone [See Steroids page 191 and Table 3, page 227]

Prednisone [See Steroids page 191 and Table 3, page 227]

Pregabalin (Lyrica) **Uses:** *DM peripheral neuropathy pain; postherpetic neuralgia; fibromyalgia; adjunct w/adult partial onset seizures* **Action:** 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; *Epilepsy:* Start 150 mg/d (75 mg bid or 50 mg tid) may ↑ to max 600 mg/d; ↓ w/ renal insuffic; w/ or w/o food **Caution:** [X, -] w/ significant renal impair (see insert), w/elderly & severe CHF avoid abrupt D/C **Contra:** PRG **Disp:** Caps 25, 50, 75, 100, 150, 200, 225, 300 mg **SE:** Dizziness, drowsiness, xerostomia, edema, blurred vision, wgt gain, difficulty concentrating **Notes:** w/ D/C, taper over at least 1 wk

Probenecid (Benemid, others) **Uses:** *Prevent gout & hyperuricemia; prolongs levels of PCNs & cephalosporins* **Action:** Uricosuric, renal tubular blocker of organic anions **Dose:** *Adults. Gout:* 250 mg bid × 1 wk, then 0.5 g 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 **Caution:** [B, ?] **Contra:** High-dose ASA, moderate–severe renal impair, age <2 y **Disp:** Tabs 500 mg **SE:** HA, GI upset, rash, pruritus, dizziness, blood dyscrasias **Notes:** Do not use during acute gout attack

Procainamide (Pronestyl, Pronestyl SR, Procanbid) **WARNING:** Positive ANA titer or SLE w/prolonged use; only use in life-threatening arrhythmias; hematologic toxicity can be severe, follow CBC **Uses:** *Supraventricular/ventricular arrhythmias* **Action:** Class 1A antiarrhythmic (Table 10) **Dose:** *Adults. Recurrent VF/VT:* 20 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. *Chronic dosing:* 50 mg/kg/d PO in ÷ doses q4–6h; *Recurrent VF/VT:* 20–50 mg/min IV; max total 17 mg/kg. *Others:* 20 mg/min IV until one these: arrhythmia stopped, hypotension, QRS widens > 50%, total 17 mg/kg; then 1–4 mg/min (ECC 2005) *Peds. Chronic maint:* 15–50 mg/kg/24 h PO ÷ q3–6h; ↓ in renal/hepatic impair **Caution:** [C, +] **Contra:** Complete heart block, 2nd- or 3rd-degree heart block w/o pacemaker, torsades de pointes, SLE **Disp:** Tabs & caps 250, 500 mg; SR tabs 500, 750, 1000 mg; 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; NAPA+ procaine 5–30 mcg/mL *Toxic* >10 mcg/mL; NAPA+ procaine > 30 mcg/mL; ½ life: procaine 3–5 h, NAPA 6–10 h

Procarbazine (Matulane) **WARNING:** Highly toxic; handle w/ care **Uses:** *Hodgkin Dz,* NHL, brain & lung tumors **Action:** Alkylating agent; ↓ DNA & RNA synth **Dose:** Per protocol **Caution:** [D, ?] W/ EtOH ingestion **Contra:** 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, azoospermia, cessation of menses

Prochlorperazine (Compazine) Uses: *N/V, agitation, & psychotic disorders* **Action:** Phenothiazine; blocks postsynaptic dopaminergic CNS receptors **Dose:** *Adults.* *Antiemetic:* 5–10 mg PO tid–qid or 25 mg PR bid or 5–10 mg deep IM q4–6h. *Antipsychotic:* 10–20 mg IM acutely or 5–10 mg PO tid–qid 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 ÷ tid–qid **Caution:** [C, +/-] NAG, severe liver/cardiac Dz **Contra:** Phenothiazine sensitivity, BM suppression; age < 2 years old or wt < 9 kg **Disp:** Tabs 5, 10, 25 mg; SR caps 10, 15 mg; syrup 5 mg/5 mL; supp 2.5, 5, 25 mg; inj 5 mg/mL **SE:** EPS common; Rx w/ diphenhydramine or benztropine

Promethazine (Phenergan) Uses: *N/V, motion sickness* **Action:** Phenothiazine; blocks CNS postsynaptic mesolimbic dopaminergic receptors **Dose:** *Adults.* 12.5–50 mg PO, PR, or IM bid–qid PRN. *Peds.* 0.1–0.5 mg/kg/dose PO or IM q2–6h PRN **Caution:** [C, +/-] use w/ agents w/ respiratory depressant effects **Contra:** Component allergy, NAG, age < 2 yrs **Disp:** Tabs 12.5, 25, 50 mg; syrup 6.25 mg/5 mL, 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, respiratory depression in children

Propafenone (Rythmol) **WARNING:** Excess mortality or nonfatal cardiac arrest rate possible; avoid use in asymptomatic and symptomatic non-life-threatening ventricular arrhythmias **Uses:** *Life-threatening ventricular arrhythmias, AF* **Action:** Class IC antiarrhythmic (Table 10) **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 **Caution:** [C, ?] w/ amprenavir, ritonavir, MI w/in 2 yrs, w/ liver/rerenal impair **Contra:** Uncontrolled CHF, bronchospasm, cardiogenic shock, AV block w/o pacer, **Disp:** Tabs 150, 225, 300 mg; ER 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) Uses: *PUD,* symptomatic Rx of small intestine hypermotility, spastic colon, ureteral spasm, bladder spasm, pylorospasm **Action:** Antimuscarinic **Dose:** *Adults.* 15 mg PO ac & 30 mg PO hs; ↓ in elderly. *Peds.* 2–3 mg/kg/24h PO ÷ tid–qid **Caution:** [C, ?] **Contra:** NAG, ulcerative colitis, toxic megacolon, GI/GU obst **Disp:** Tabs 7.5, 15 mg **SE:** Anticholinergic (eg, xerostomia, blurred vision)

Propofol (Diprivan) Uses: *Induction & maint of anesthesia; sedation in intubated pts* **Action:** Sedative–hypnotic; mechanism unknown; acts in 40 sec **Dose:** *Adults Anesthesia:* 2–2.5 mg/kg (also ECC 2005), then 0.1–0.2 mg/kg/min inf; *ICU sedation:* 5 mcg/kg/min IV × 5 min, ↑ PRN 5–10 mcg/kg/min q5–10min 5–50 mcg/kg/min cont inf; *Peds.* Anesthesia: 2.5–3.5 mg/kg induction; then 125–300 mcg/kg/min; ↓ in elderly, debilitated, ASA II/IV pts **Caution:** [B, +] **Contra:** If general anesthesia contraindicated, sensitivity to egg, egg products, soybeans, soybean products **Disp:** Inj 10 mg/mL **SE:** May ↑ triglyc-

erides w/ extended dosing; ↓ BP, pain at site, apnea, anaphylaxis **Notes:** 1 mL has 0.1 g fat

Propoxyphene (Darvon); Propoxyphene & Acetaminophen (Darvocet); & Propoxyphene & Aspirin (Darvon Compound-65, Darvon-N + Aspirin) [C-IV] **WARNING:** Excessive doses alone or in

combo w/ other CNS depressants can be cause of death; use w/ caution in depressed or suicidal patients **Uses:** *Mild-moderate pain* **Action:** Narcotic analgesic **Dose:**

1-2 PO q4h PRN; ↓ in hepatic impair, elderly **Caution:** [C (D if prolonged use), M] Hepatic impair (APAP), peptic ulcer (ASA); severe renal impair, Hx ETOH abuse

Contra: Allergy, suicide risk, Hx drug abuse **Disp:** *Darvon:* Propoxyphene HCl caps 65 mg. *Darvon-N:* Propoxyphene napsylate 100-mg tabs. *Darvocet-N:* Propoxyphene

napsylate 50 mg/APAP 325 mg. *Darvocet-N 100:* Propoxyphene napsylate 100 mg/APAP 650 mg. *Darvon Compound-65:* Propoxyphene HCl caps 65-mg/ASA 389

mg/caffeine 32 mg. *Darvon-N w/ASA:* Propoxyphene napsylate 100 mg/ASA 325 mg **SE:** OD can be lethal; ↓ BP, dizziness, sedation, GI upset, ↑ levels on LFTs

Propranolol (Inderal) **Uses:** *HTN, angina, MI, hyperthyroidism, essential tremor, hypertrophic subaortic stenosis, pheochromocytoma; prevents mi-

graines & atrial arrhythmias* **Action:** β-adrenergic receptor blocker, β₁, β₂; only β-blocker to block conversion of T₄ to T₃ **Dose: Adults. Angina:** 80-320 mg/d PO

÷ bid-qid or 80-160 mg/d SR. *Arrhythmia:* 10-80 mg PO tid-qid 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 tid-qid. *MI:* 180-240 mg PO ÷ tid-qid. *Migraine prophylaxis:* 80 mg/d ÷ qid-tid, ↑ weekly

160-240 mg/d ÷ tid-qid max; wean if no response in 6 wk. *Pheochromocytoma:* 30-60 mg/d ÷ tid-qid. *Thyrotoxicosis:* 1-3 mg IV × 1; 10-40 mg PO q6h. *Tremor:*

40 mg PO bid, ↑ PRN 320 mg/d max; 0.1 mg/kg slow IV push, divided 3 equal doses q 2-3 min, max 1 mg/min; repeat in 2 min PRN (*ECC 2005*) **Peds. Arrhythmia:**

0.5-1.0 mg/kg/d ÷ tid-qid, ↑ PRN q3-7d to 60 mg/d max; 0.01-0.1 mg/kg IV over 10 min, 1 mg max. *HTN:* 0.5-1.0 mg/kg ÷ bid-qid, ↑ PRN q3-7d to 2

mg/kg/d max; ↓ in renal impair **Caution:** [C (1st tri, D if 2nd or 3rd tri), +] **Contra:** Uncompensated CHF, cardiogenic shock, bradycardia, 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:** Bradycardia, ↓ BP, fatigue, GI upset, ED

Propylthiouracil [PTU] **Uses:** *Hyperthyroidism* **Action:** ↓ 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 ½ 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:* ½-¾ of initial dose **Caution:** [D, -] **Contra:** Allergy **Disp:** Tabs 50 mg **SE:** Fever, rash, leukopenia, dizziness, GI upset, taste persion, SLE-like synd **Notes:** Monitor pt clinically, ✓ TFT

Protamine (generic) **Uses:** *Reverse heparin effect* **Action:** Neutralize heparin by forming a stable complex **Dose:** Based on degree of heparin reversal;

give IV slowly; 1 mg reverses approx. 100 units of heparin given in the preceding 3–4 h, 50 mg max **Caution:** [C, ?] **Contra:** Allergy **Disp:** Inj 10 mg/mL **SE:** Follow coags; anticoag effect if given w/o heparin; ↓ BP, bradycardia, dyspnea, hemorrhage

Pseudoephedrine (Sudafed, Novafed, Afrinol, others) [OTC]

Uses: *Decongestant* **Action:** Stimulates α -adrenergic receptors w/ vasoconstriction **Dose:** *Adults.* 30–60 mg PO q6–8h *Peds.* 4 mg/kg/24 h PO \div qid; ↓ in renal insuff **Caution:** [C, +] **Contra:** Poorly controlled HTN or CAD, w/MAOIs **Disp:** Tabs 30, 60 mg; caps 60 mg; SR tabs 120, 240 mg; liq 7.5 mg/0.8 mL, 15, 30 mg/5 mL **SE:** HTN, insomnia, tachycardia, arrhythmias, nervousness, tremor **Notes:** Found in many OTC cough/cold preparations; OTC restricted distribution

Psyllium (Metamucil, Serutan, Effer-Syllium) Uses: *Constipation & colonic diverticular Dz* **Action:** Bulk laxative **Dose:** 1 tsp (7 g) in glass of H₂O PO daily–tid **Caution:** [B, ?] Effer-Syllium (effervescent psyllium) usually contains K⁺ caution w/ renal failure; phenylketonuria (in products w/ aspartame) **Contra:** Suspected bowel obst **Disp:** Granules 4, 25 g/tsp; powder 3.5 g/packet, Caps 0.52g (3 g/6 caps), wafers 3.4 g/dose **SE:** D, abd cramps, bowel obst, constipation, bronchospasm

Pyrazinamide (generic) Uses: *Active TB in combo w/ other agents* **Action:** Bacteriostatic; unknown mechanism **Dose:** *Adults.* 15–30 mg/kg/24 h PO \div tid–qid; max 2 g/d; dosing based on lean body wgt; ↓ dose in renal/hepatic impairment *Peds.* 15–30 mg/kg/d PO \div daily–bid; ↓ w/ renal/hepatic impair **Caution:** [C, +/-] **Contra:** 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 *MMWR* for latest TB recommendations; dosage regimen differs for “directly observed” therapy

Pyridoxine [Vitamin B₆] Uses: *Rx & prevention of vitamin B₆ deficiency* **Action:** Vitamin B₆ supl **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 \times 3 wk **Caution:** [A (C if doses exceed RDA), +] **Contra:** Component allergy **Disp:** Tabs 25, 50, 100 mg; inj 100 mg/mL **SE:** Allergic Rxns, HA, N

Quetiapine (Seroquel, Seroquil XR) WARNING: Closely monitor pts for worsening depression or emergence of suicidality, particularly in ped pts; ↑ mortality in elderly with dementia-related psychosis **Uses:** *Acute exacerbations of schizophrenia* **Action:** Serotonin & dopamine antagonism **Dose:** 150–750 mg/d; initiate at 25–100 mg bid–tid; slowly ↑ dose; XR: 400–800 mg PO QPM, start 300 mg/day, ↑ 300 mg/day, 800 mg day max ↓ dose w/ hepatic & geriatric pts **Caution:** [C, -] **Contra:** Component allergy **Disp:** Tabs 25, 50, 100, 200, 300, 400 mg; 200, 300, 400 XR **SE:** Confusion w/ nefazodone; HA, somnolence, ↑ wgt, ↓ BP, dizziness, cataracts, neuroleptic malignant synd, tardive dyskinesia, ↑ QT interval

Quinapril (Accupril) WARNING: ACE inhibitors used during PRG can cause fetal injury & death **Uses:** *HTN, CHF, DN, post-MI* **Action:** ACE inhibitor

Dose: 10–80 mg PO daily; ↓ in renal impair **Caution:** [D, +] w/ RAS, volume depletion **Contra:** ACE inhibitor sensitivity, angioedema, PRG **Disp:** Tabs 5, 10, 20, 40 mg **SE:** Dizziness, HA, ↓ BP, impaired renal Fxn, angioedema, taste perversion, cough

Quinidine (Quinidex, Quinaglute) **Uses:** *Prevention of tachyarrhythmias, malaria* **Action:** Class 1A antiarrhythmic **Dose: Adults.** AF/flutter conversion: After digitalization, 200 mg q2–3h × 8 doses; ↑ daily to 3–4 g max or nl rhythm. **Peds.** 15–60 mg/kg/24 h PO in 4–5 ÷ doses; ↓ in renal impair **Caution:** [C, +] w/ ritonavir **Contra:** Digitalis tox & AV block; conduction disorders **Disp:** Sulfate: Tabs 200, 300 mg; SR tabs 300 mg. Gluconate: 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; Toxic >10 mcg/mL; ½ life: 6–8h; sulfate salt 83% quinidine; gluconate salt 62% quinidine; use w/ drug that slows AV conduction (eg, digoxin, diltiazem, β-blocker)

Quinupristin-Dalfopristin (Synercid) **Uses:** *Vancomycin-resistant Infxns due to *E. faecium* & other gram(+)* **Action:** ↓ ribosomal protein synth. **Spectrum:** Vanco-resistant *Enterococcus faecium*, methicillin-susceptible *Staphylococcus aureus*, *Streptococcus pyogenes*; not against *Enterococcus faecalis* **Dose: Adults & Peds.** 7.5 mg/kg IV q8–12h (central line preferred); incompatible w/ NS or heparin; flush IV w/ dextrose; ↓ w/ hepatic failure **Caution:** [B, M] Multiple drug interactions (eg, cyclosporine) **Contra:** Component allergy **Disp:** Inj 500 mg (150 mg quinupristin/350 mg dalfopristin) 600 mg (180 quinupristin/420 mg dalfopristin) **SE:** Hyperbilirubinemia, inf site Rxns & pain, arthralgia, myalgia

Rabeprazole (AcipHex) **Uses:** *PUD, GERD, ZE* *H. pylori* **Action:** Proton-pump inhibitor **Dose:** 20 mg/d; may ↑ to 60 mg/d; *H. pylori* 20 mg PO bid × 7 days (w/amoxicillin and clarithromycin); do not crush/chew tabs **Caution:** [B, ?/–] **Disp:** Tabs 20 mg ER **SE:** HA, fatigue, GI upset

Raloxifene (Evista) **Uses:** *Prevent osteoporosis* **Action:** Partial antagonist of estrogen, behaves like estrogen **Dose:** 60 mg/d **Caution:** [X, –] **Contra:** Thromboembolism, PRG **Disp:** Tabs 60 mg **SE:** Chest pain, insomnia, rash, hot flashes, GI upset, hepatic dysfunction

Ramipril (Altace) **WARNING:** ACE inhibitors used during PRG can cause fetal injury & death **Uses:** *HTN, CHF, DN, post-MI* **Action:** ACE inhibitor **Dose:** 2.5–20 mg/d PO ÷ daily–bid; ↓ in renal failure **Caution:** [D, +] **Contra:** ACE-inhibitor-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* **Action:** Vascular endothelial growth factor inhibitor **Dose:** 0.5 mg intravitreal inj qmo **Caution:** [C, ?] Hx thromboembolism **Contra:** periocular infxn **Disp:** Inj **SE:** Endophthalmitis, retinal detachment/hemorrhage, cataract, intraocular inflammation, conjunctival hemorrhage, eye pain, floaters, eye pain

Ranitidine Hydrochloride (Zantac) Uses: *Duodenal ulcer, active benign ulcers, hypersecretory conditions, & GERD* **Action:** 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.** 0.75–1.5 mg/kg/dose IV q6–8h or 1.25–2.5 mg/kg/dose PO q12h; ↓ in renal insuff/failure **Caution:** [B, +] **Contra:** Component allergy **Disp:** Tabs 75 [OTC], 150, 300 mg; Caps 150, 300 mg; Effervescent tabs 150 mg; syrup 15 mg/mL; inj 25 mg/mL **SE:** Dizziness, sedation, rash, GI upset **Notes:** PO & parenteral doses differ

Ranolazine (Ranexa) Uses: *Chronic angina* **Action:** ↓ ischemia-related Na⁺ entry into myocardium **Dose: Adults.** 500 mg PO bid to 1000 mg PO bid **Contra:** w/hepatic impair, CYP3A inhibitors (Table 11); w/ agents that ↑ QT interval; ↓ K⁺ **Caution:** [C, ?/–] HTN may develop w/renal impairment **Disp:** SR tabs 500 mg **SE:** Dizziness, HA, constipation, arrhythmias **Notes:** Not first line; use w/amlodipine, nitrates, beta blockers

Rasagiline mesylate (Azilect) Uses: *Early Parkinson disease monotherapy; levodopa adjunct w/advanced dz* **Action:** MAO B inhibitor **Dose: Adults.** Early dz: 1 mg PO daily, start 0.5 mg PO daily w/levodopa; ↓ w/CYP1A2 inhibitors or hepatic impair **Contra:** MAOIs, sympathomimetic amines, meperidine, methadone, tramadol, propoxyphene, dextromethorphan, mirtazapine, cyclobenzaprine, St. John's wort, sympathomimetic vasoconstrictors, general anesthetics, SSRIs **Caution:** [C, ?] Avoid tyramine-containing foods; moderate/severe hepatic impairment **Disp:** Tabs 0.5, 1 mg **SE:** Arthralgia, indigestion, dyskinesia, hallucinations, ↓ wgt, postural ↓ BP, N, V, constipation, xerostomia, rash, sedation, CV conduction disturbances **Notes:** Rare melanoma reported; do periodic skin exams; d/c 14 days prior to elective surgery; initial ↓ levodopa dose recommended

Rasburicase (Elitek) Uses: *Reduce ↑ uric acid due to tumor lysis (peds)* **Action:** Catalyzes uric acid **Dose: Peds.** 0.15 or 0.20 mg/kg IV over 30 min, daily × 5 **Caution:** [C, ?/–] Falsely ↓ uric acid values **Contra:** Anaphylaxis, screen for G6PD deficiency to avoid hemolysis, methemoglobinemia **Disp:** 1.5 mg inj **SE:** Fever, neutropenia, GI upset, HA, rash **Note:** Place blood test tube for uric acid level on ice to stop enzymatic rxn; removed by dialysis

Repaglinide (Prandin) Uses: *Type 2 DM* **Action:** ↑ pancreatic insulin release **Dose:** 0.5–4 mg ac, PO start 1–2 mg, ↑ to 16 mg/d max; take pc **Caution:** [C, ?/–] **Contra:** DKA, type 1 DM **Disp:** Tabs 0.5, 1, 2 mg **SE:** HA, hyper-/hypoglycemia, GI upset

Retapamulin (Altabax) Uses: *Topical Rx impetigo in patients > 9 mo* **Action:** Pleuromutilin antibiotic; *Spectrum:* *S. aureus* (MRSA), *S. pyogenes* **Dose:** Apply BID × 5 days **Caution:** [B; ?] **Disp:** 10 mg/1 g **SE:** Local irritation

Retepase (Retavase) Uses: *Post-AMI* **Action:** Thrombolytic **Dose:** 10 units IV over 2 min, 2nd dose in 30 min, 10 units IV over 2 min; 10 units IV bolus over 2 min; 30 min later, 10 units IV bolus over 2 min NS flush before and after

each dose (ECC 2005) **Caution:** [C, ?/–] **Contra:** Internal bleeding, spinal surgery/trauma, Hx CNS AVM, uncontrolled ↓ BP, sensitivity to thrombolytics **Disp:** Inj 10.8 units/2 mL **SE:** Bleeding, allergic rxns

Ribavirin (Virazole, Copegus) **WARNING:** Monotherapy for chronic Hep C ineffective; hemolytic anemia possible, teratogenic and embryocidal **Uses:** *RSV Infxn in infants [Virazole]; Hep C (in combo w/ interferon alfa-2b [Copegus])* **Action:** Unknown **Dose:** RSV: 6 g in 300 mL sterile H₂O, inhale over 12–18 h. Hep C: 600 mg PO bid in combo w/ interferon alfa-2b (see Rebetron) **Caution:** [X, ?] May accumulate on soft contact lenses **Contra:** PRG, autoimmune hepatitis, CrCl < 50 mL/min **Disp:** Powder for aerosol 6 g; tabs 200, 400, 600 mg, caps 200 mg, soln 40 mg/mL, **SE:** Fatigue, HA, GI upset, anemia, myalgia, alopecia, bronchospasm **Notes:** Virazole aerosolized by a SPAG; monitor Hbg/Hct; PRG test monthly

Rifabutin (Mycobutin) **Uses:** *Prevent *M. avium* complex Infxn in AIDS pts w/ CD4 count < 100* **Action:** ↓ DNA-dependent RNA polymerase activity **Dose:** **Adults.** 150–300 mg/d PO. **Peds.** 1 y: 15–25 mg/kg/d PO. 2–10 y: 4.4–18.8 mg/kg/d PO. 14–16 y: 2.8–5.4 mg/kg/d PO **Caution:** [B; ?/–] WBC < 1000/mm³ or platelets < 50,000/mm³; ritonavir **Contra:** Allergy **Disp:** Caps 150 mg **SE:** Discolored urine, rash, neutropenia, leukopenia, myalgia, ↑ LFTs **Notes:** SE/interactions similar to rifampin

Rifampin (Rifadin) **Uses:** *TB & Rx & prophylaxis of *N. meningitidis*, *H. influenzae*, or *S. aureus* carriers*; adjunct w/ severe *S. aureus* **Action:** ↓ 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 **Caution:** [C, +] Amprenavir, multiple drug interactions **Contra:** 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* **Action:** ↓ DNA-dependent RNA polymerase. **Spectrum:** *M. tuberculosis* **Dose:** **Intensive phase:** 600 mg PO 2 ×/wk for 2 mo; separate doses by > 3 days. **Continuation phase:** 600 mg/wk for 4 mo; part of 3–4 drug regimen **Caution:** [C, red-orange breast milk] ↓ protease inhibitor efficacy, antiepileptics, β-blockers, CCBs **Contra:** 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:** *Travelers' diarrhea (noninvasive strains of *E. coli*) in patients > 12 y* **Action:** Not absorbed, derivative of rifamycin. **Spectrum:** *E. coli* **Dose:** 1 tab PO daily × 3 d **Caution:** [C, ?/–] Hx allergy; pseudomembranous colitis **Contra:** Allergy to rifamycins **Disp:** Tabs 200 mg **SE:** Flatulence, HA, abd pain, GI distress, fever **Notes:** D/C if Sx worsen or persist > 24–48 h, or w/ fever or blood in stool

Rimantadine (Flumadine) Uses: *Prophylaxis & Rx of influenza A viral Infxns* Action: 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 **Caution:** [C, -] w/ cimetidine; avoid w/PRG,breast-feeding **Contra:** Component & amantadine allergy **Disp:** Tabs 100 mg; syrup 50 mg/5 mL **SE:** Orthostatic ↓ BP, edema, dizziness, GI upset, ↓ Sz threshold. **Note:** See CDC (MMWR) for current Influenza A guidelines

Rimexolone (Vexol Ophthalmic) Uses: *Postop inflammation & uveitis* Action: Steroid Dose: *Adults & Peds > 2 y.* Uveitis: 1-2 gtt/h daytime & q2h at night, taper to 1 gtt q4h; *Postop:* 1-2 gtt qid ≤2 wk **Caution:** [C, ?/-] Ocular Infxns **Disp:** Susp 1% **SE:** Blurred vision, local irritation **Notes:** Taper dose

Risedronate (Actonel w/calcium) Uses: *Paget Dz; Rx/prevent glucocorticoid-induced/postmenopausal osteoporosis* Action: 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; 30 min before 1st food/drink of the day; stay upright for at least 30 min after **Caution:** [C, ?/-] Ca supls & antacids ↓ absorption **Contra:** Component allergy, ↓ Ca²⁺, esophageal abnormalities, unable to stand/sit for 30 min, CrCl < 30 mL/min **Disp:** Tabs 5, 30, 35, 75 mg; Risedronate 35 mg (4 tabs)/calcium carbonate 1250 mg (24 tabs) **SE:** HA, D, abd pain, arthralgia; flulike Sxs, rash, esophagitis, bone pain **Notes:** Monitor LFT, Ca²⁺, PO³⁺, K⁺

Risperidone, parenteral (Risperdal Constra) WARNING: Not approved for dementia-related psychosis; ↑ mortality risk in elderly dementia pts on atypical antipsychotics; most deaths due to CV or infectious events Uses: Schizophrenia Action: Benzisaxazole antipsychotic Dose: 25 mg q 2 weeks IM may ↑ to max 50 mg q2 weeks; w/renal/hepatic impair start PO Risperdal 0.5 mg PO bid × 1 wk titrate weekly **Caution:** [C, -], ↑ BP w/ antihypertensives, clozapine **Contra:** Component allergy **Disp:** Inj 25, 37.5, 50 mg/vial **SE:** See risperidone **Note:** Long-acting injection

Risperidone, oral (Risperdal, Risperdal M-Tab) WARNING: ↑ mortality in elderly with dementia-related psychosis Uses: *Psychotic disorders (schizophrenia),* dementia of the elderly, bipolar disorder, mania, Tourette disorder, autism Action: Benzisoxazole antipsychotic Dose: *Adults.* 0.5-6 mg PO bid; M-Tab 1-6 mg/d start 1-2 mg/day, titrate q 3-7 days *Peds/Adolescents.* 0.25 mg PO bid, ↑ q5-7d; ↓ start dose w/elderly, renal/hepatic impair **Caution:** [C, -], ↑ BP w/ antihypertensives, clozapine **Contra:** Component allergy **Disp:** Tabs 0.25, 0.5, 1, 2, 3, 4mg; soln 1 mg/mL, M-Tab (orally disintegrating) 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, blood dyscrasias, cholestatic jaundice, wgt **Notes:** Several weeks for effect

Ritonavir (Norvir) WARNING: Life-threatening adverse events when used with certain nonsedating antihistamines, sedative hypnotics, antiarrhythmics,

or ergot alkaloids due to inhibited drug metabolism **Uses:** *HIV* **Actions:** Protease inhibitor; ↓ 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.** 250 mg/m² titrate to 400 mg bid (adjust w/ amprenavir, indinavir, nelfinavir, & saquinavir); w/ food **Caution:** [B, +] w/ ergotamine, amiodarone, bepridil, flecainide, propafenone, quinidine, pimozide, midazolam, triazolam **Contra:** Component Allergy **Disp:** Caps 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

Rivastigmine (Exelon) **Uses:** *Mild–moderate dementia in Alzheimer Dz* **Action:** Enhances cholinergic activity **Dose:** 1.5 mg bid; ↑ to 6 mg bid, w/ ↑ at 2-wk intervals (w/ food) **Caution:** [B, ?] w/ β-Blockers, CCBs, smoking, neuromuscular blockade, digoxin **Contra:** 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, wgt loss (in 18–26%) **Notes:** Swallow capsules whole, do not break/chew/crush; avoid EtOH

Rivastigmine transdermal (Exelon) **Uses:** * Mild/moderate Alzheimer's and Parkinson's disease dementia* **Action:** Acetylcholinesterase inhibitor **Dose:** Initial 4.6-mg patch/day applied to back, chest, upper arm, ↑ 9.5 mg after 4 wks if tolerated **Caution:** [?; ?] sick sinus synd, conduction defects, asthma, COPD, urinary obst, seizures **Contra:** Hypersensitivity to rivastigmine, other carbamates **Disp:** Transdermal patch 5 cm² (4.6 mg/24 hr), 10 cm² (9.5 mg/24 hr) **SE:** N/V/D

Rizatriptan (Maxalt, Maxalt MLT) **Uses:** *Rx acute migraine* **Action:** Vascular serotonin receptor agonist **Dose:** 5–10 mg PO, repeat in 2 h, PRN, 30 mg/d max **Caution:** [C, M] **Contra:** Angina, ischemic heart Dz, ischemic bowel Dz, hemiplegic/basilar migraine, uncontrolled HTN, ergot or serotonin 5HT-1 agonist use w/in 24 hr, MAOI use w/in 14 d **Disp:** Tab 5, 10 mg; MLT: OD tabs 5, 10 mg. **SE:** Chest pain, palpitations, nausea, vomiting, asthenia, dizziness, somnolence, fatigue

Rocuronium (Zemuron) **Uses:** *Skeletal muscle relaxation during rapid-sequence intubation, surgery, or mechanical ventilation* **Action:** Nondepolarizing neuromuscular blocker **Dose:** *Rapid sequence intubation:* 0.6–1.2 mg/kg IV. *Continuous inf:* 5–12.5 mcg/kg/min IV; adjust/titrate based on monitoring; ↓ in hepatic impair **Caution:** [C, ?] Aminoglycosides, vancomycin, tetracycline, polymyxins enhance blockade **Contra:** Component or pancuronium allergy **Disp:** Inj preservative free 10 mg/mL **SE:** BP changes, tachycardia

Ropinirole (Requip) **Uses:** *Rx of Parkinson Dz, restless leg synd* **Action:** Dopamine agonist **Dose:** Initial 0.25 mg PO tid, weekly ↑ 0.25 mg/dose, to 3 mg max, max 4 mg for RLS **Caution:** [C, ?/–] Severe CV, renal, or hepatic impair **Contra:** Component allergy **Disp:** Tabs 0.25, 0.5, 1, 2, 3, 4, 5 mg **SE:** Syncope,

postural ↓ BP, N/V, HA, somnolence, dosed-related hallucinations, dyskinesias, dizziness **Notes:** D/C w/ 7-day taper

Rosiglitazone (Avandia) **Uses:** *Type 2 DM* **Action:** Thiazolidinedione; ↑ insulin sensitivity **Dose:** 4–8 mg/d PO or in 2 ÷ doses (w/o regard to meals) **Caution:** [C, –] w/ ESRD, CHF, edema, **Contra:** DKA, severe CHF, ALT > 2.5 ULN **Disp:** Tabs 2, 4, 8 mg **SE:** may ↑ CV & cancer risk; weight gain, hyperlipidemia, HA, edema, fluid retention, worsen CHF, hyper-/hypoglycemia, hepatic damage w/ ↑ LFTs **Notes:** Not rec in class III, IV heart dz

Rosuvastatin (Crestor) **Uses:** *Rx primary hypercholesterolemia & mixed dyslipidemia* **Action:** HMG-CoA reductase inhibitor **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) **Caution:** [X, ?/–] **Contra:** Active liver Dz, unexplained ↑ LFT **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 patients

Rotavirus vaccine, live, oral, pentavalent (RotaTeq) **Uses:** *Prevent rotavirus gastroenteritis* **Action:** Active immunization **Dose:** *Peds.* Single dose PO at 2, 4, and 6 mo **Caution:** [?, ?] **Disp:** Oral susp 2-mL single-use tubes **SE:** D, V, **Notes:** Begin series by 12 wks and conclude by 32 wks of age

Salmeterol (Serevent Diskus) **WARNING:** Long-acting β-2 agonists, such as salmeterol, may ↑ the risk of asthma-related death. Should not be used alone, only as additional therapy for patients not controlled on other asthma medications **Uses:** *Asthma, exercise-induced asthma, COPD* **Action:** Sympathomimetic bronchodilator, β₂-agonist **Dose:** *Adults & Peds* ≥ 12 y. 1 diskus-dose inhaled bid **Caution:** [C, ?/–] **Contra:** Acute asthma; w/in 14 d of MAOI **Disp:** 50 mcg/dose, dry powder discus, metered dose inhaler, 21 mcg/activation **SE:** HA, pharyngitis, tachycardia, arrhythmias, nervousness, GI upset, tremors **Notes:** Not for acute attacks; also prescribe short-acting β-agonist

Saquinavir (Fortovase, Invirase) **WARNING:** Invirase and Fortovase not bioequivalent/interchangeable; must use Invirase in combo w/ zidovudine, which provides saquinavir plasma levels = to those w/Fortovase **Uses:** *HIV Infxn* **Action:** HIV protease inhibitor **Dose:** 1200 mg PO tid w/in 2 h pc (dose adjust w/ zidovudine, delavirdine, lopinavir, & nelfinavir) **Caution:** [B, +] w/ ketoconazole, statins, sildenafil **Contra:** w/ rifampin, severe hepatic impair, allergy, sun exposure w/o sunscreen/clothing, triazolam, midazolam, ergots, **Disp:** Caps 200, tabs 500 mg **SE:** Dyslipidemia, lipodystrophy, rash, hyperglycemia, GI upset, weakness, **Notes:** Take 2 h after meal, avoid direct sunlight

Sargamostim [GM-CSF] (Leukine) **Uses:** *Myeloid recovery following BMT or chemo* **Action:** Recombinant GF, activates mature granulocytes & macrophages **Dose:** *Adults & Peds.* 250 mcg/m²/d IV for 21 d (BMT) **Caution:** [C, ?/–] Lithium, corticosteroids **Contra:** > 10% blasts, allergy to yeast, concurrent

chemo/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

Scopolamine, Scopolamine transdermal and ophthalmic (Scopace, Transderm-Scop)

Uses: *Prevent N/V associated w/ motion sickness, anesthesia, opiates; mydriatic,* cycloplegic, Rx uveitis & iridocyclitis **Action:** Anticholinergic, inhibits iris and ciliary bodies, antiemetic **Dose:** 1 mg/ 72 hr, 1 patch behind ear q3d; apply > 4 h before exposure; cycloplegic 1–2 gtt 1 h pre, uveitis 1–2 gtt up to QID max; ↓ in elderly **Caution:** [C, +] w/APAP, levodopa, ketoconazole, digitalis, KCl **Contra:** NAG, GI or GU obst, thyrotoxicosis, paralytic ileus **Disp:** Patch 1.5 mg, (releases 1 mg over 72 hrs), ophth 0.25% **SE:** Xerostomia, drowsiness, blurred vision, tachycardia, constipation **Notes:** Do not blink excessively after dose, wait 5 min before dosing other eye; anti-emetic activity w/ patch requires several hours

Secobarbital (Seconal) [C-II] **Uses:** *Insomnia, short-term use,* pre-anesthetic agent **Action:** Rapid-acting barbiturate **Dose:** *Adults.* 100–200 mg HS, 100–300 mg preop. *Peds.* 2–6 mg/kg/dose, 100 mg/max, ↓ in elderly **Caution:** [D, +] CYP2C9, 3A3/4, 3A5/7 inducer (Table 11); ↑ tox w/ other CNS depressants **Contra:** Porphyria, w/voriconazole, PRG **Disp:** Caps 50, 100 mg **SE:** Tolerance in 1–2 wk; resp depression, CNS depression, porphyria, photosens

Selegiline, oral (Eldepryl, Zelapar) **Uses:** *Parkinson Dz* **Action:** MAOI **Dose:** 5 mg PO bid; 1.25–2.5 OD tabs PO qam (before breakfast w/o liquid) 2.5 mg/day max; ↓ in elderly **Caution:** [C, ?] w/ drugs that induce CYP3A4 (Table 11) (eg, phenytoin, carbamazepine, nafcillin, phenobarbital, and rifampin); avoid w/ antidepressants **Contra:** w/meperidine, MAOI, dextromethorphan, general anesthesia w/in 10 d, pheochromocytoma **Disp:** Tabs/caps 5 mg; OD Tabs 1.25 mg **SE:** N, dizziness, orthostatic ↓ BP, arrhythmias, tachycardia, edema, confusion, xerostomia **Notes:** ↓ carbidopa/levodopa if used in combo; see transdermal form

Selegiline, transdermal (Emsam) **WARNING:** May ↑ risk of suicidal thinking and behavior in children and adolescents with major depression disorder **Uses:** *Depression* **Action:** MAOI **Dose:** *Adults.* Apply patch daily to upper torso, upper thigh, or outer upper arm **Contra:** Tyramine-containing foods w/ 9- or 12-mg doses; serotonin-sparing agents **Caution:** [C, –] ↑ carbamazepine and oxcarbazepine levels **Disp:** ER Patches 6, 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 due to *dandruff*;* tinea versicolor **Action:** 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 **Caution:** [C, ?]

Contra: Open wounds **Disp:** Shampoo [OTC]; 2.5% lotion **SE:** Dry or oily scalp, lethargy, hair discoloration, local irritation **Notes:** Do not use more than 2 \times /wk

Sertaconazole (Ertaczo) **Uses:** *Topical Rx interdigital tinea pedis* **Action:** Imidazole antifungal. **Spectrum:** *Trichophyton rubrum*, *T. mentagrophytes*, *Epidermophyton floccosum* **Dose: Adults & Peds > 12.** Apply between toes & immediate surrounding healthy skin bid \times 4 wk **Caution:** [C, ?] **Contra:** Component allergy **Disp:** 2% cream **SE:** Contact dermatitis, dry/burning skin, tenderness **Notes:** Use in immunocompetent pts; not for oral, intravaginal, ophthalmic use

Sertraline (Zoloft) **WARNING:** Closely monitor pts for worsening depression or emergence of suicidality, particularly in ped pts **Uses:** *Depression, panic disorders, obsessive-compulsive disorder (OCD), posttraumatic stress disorders (PTSD),* social anxiety disorder, eating disorders, premenstrual disorders **Action:** \downarrow neuronal uptake of serotonin **Dose: Adults. Depression:** 50–200 mg/d PO. **PTSD:** 25 mg PO daily \times 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 **Caution:** [C, ?/–] w/ haloperidol (serotonin synd), sumatriptan, linezolid, hepatic impair **Contra:** MAOI use w/in 14 d; concomitant pimozide **Disp:** Tabs 25, 50, 100, 150, 200 mg; 20 mg/mL oral **SE:** Activate manic/hypomanic state, \downarrow wgt, insomnia, somnolence, fatigue, tremor, xerostomia, N/D, dyspepsia, ejaculatory dysfunction, \downarrow libido, hepatotox

Sevelamer (Renagel) **Uses:** * \downarrow serum phosphorus in ESRD* **Action:** Binds intestinal PO^{3+} **Dose:** 2–4 capsules PO tid w/ meals; adjust based on PO^{3+} , max 4 g/dose **Caution:** [C, ?] **Contra:** Hypophosphatemia, Bowel obst **Disp:** Capsules 403 mg, tabs 400, 800 mg **SE:** BP changes, N/V/D, dyspepsia, thrombosis **Notes:** Do not open/chew capsules; may \downarrow fat-soluble vitamin absorption; give other meds 1h before or 3 h after; 800 mg sevelamer = 667 mg Ca acetate

Sibutramine (Meridia) [C-IV] **Uses:** *Obesity* **Action:** Blocks uptake of norepinephrine, serotonin, dopamine **Dose:** 10 mg/d PO, may \downarrow to 5 mg after 4 wk **Caution:** [C, –] w/SSRIs, lithium, dextromethorphan, opioids **Contra:** MAOI w/in 14 d, uncontrolled HTN, arrhythmias **Disp:** Caps 5, 10, 15 mg **SE:** HA, insomnia, xerostomia, constipation, rhinitis, tachycardia, HTN **Notes:** Use w/ low-calorie diet, monitor BP & HR

Sildenafil (Viagra, Revatio) **Uses:** *Viagra:* *Erectile dysfunction,* *Revatio:* *Pulm artery HTN* **Action:** \downarrow Phosphodiesterase type 5 (responsible for cGMP breakdown); \uparrow cGMP activity to relax smooth muscles & \uparrow 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 \times d; \downarrow if > 65 y; avoid fatty foods w/ dose; *Revatio Pulm HTN:* 20 mg PO tid **Caution:** [B, ?] CYP3A4 inhibitors (Table 11) **Contra:** W/nitrates or if sex activity not advised; retinitis pigmentosa; hepatic/severe renal impair **Disp:** Tabs (Viagra) 25, 50, 100 mg, tabs (Revatio) 20 mg **SE:** HA; flushing; dizziness; blue haze visual change, hearing loss **Notes:** Cardiac events in absence of nitrates debatable

Silver Nitrate (Dey-Drop, others) Uses: *Removal of granulation tissue & warts; prophylaxis in burns* Action: Caustic antiseptic & astringent Dose: *Adults & Peds.* Apply to moist surface 2–3 × wk for several wks or until effect **Caution:** [C, ?] **Contra:** Do not use on broken skin **Disp:** Topical impregnated applicator sticks, soln 0.5, 10, 25, 50%; ophth 1% amp; topical ointment 10% **SE:** May stain tissue black, usually resolves; local irritation, methemoglobinemia **Notes:** D/C if redness or irritation develop; no longer used in US for newborn prevention of GC conjunctivitis

Silver Sulfadiazine (Silvadene, others) Uses: *Prevention & Rx of Infxn in 2nd- & 3rd-degree burns* Action: Bactericidal Dose: *Adults & Peds.* Aseptically cover the area w/ 1/6-in. coating bid **Caution:** [B unless near term, ?-] **Contra:** Infants < 2 mo, PRG near term **Disp:** Cream 1% **SE:** Itching, rash, skin discoloration, blood dyscrasias, hepatitis, allergy **Notes:** Systemic absorption w/ extensive application

Simethicone (Mylicon, others) [OTC] Uses: Flatulence Action: De-foaming, alters gas bubble surface tension action Dose: *Adults & Peds.* > 2 yrs. 40–125 mg PO pc & hs PRN; 500 mg/D max *Peds.* < 2 yr: 20 mg PO QID PRN, 2–12 yr 40 mg PO QID PRN, > 12 yr—adult **Caution:** [C, ?] **Contra:** GI Intestinal perforation or obst **Disp:** [OTC] Tabs 80, 125 mg; caps 125 mg; Softgels 125, 166, 180 mg, susp 40 mg/0.6 mL, Chew tabs 80, 125 mg **SE:** N/D **Notes:** Available in combo products OTC

Simvastatin (Zocor) Uses: ↓ Cholesterol Action: HMG-CoA reductase inhibitor Dose: *Adult.* 5–80 mg PO; w/ meals; ↓ in renal insuff *Peds.* 10–17 y: 10 mg, 40 mg/daily max. **Caution:** [X, -] Avoid concurrent use of gemfibrozil **Contra:** PRG, liver Dz **Disp:** Tabs 5, 10, 20, 40, 80 mg **SE:** HA, GI upset, myalgia, myopathy (muscle pain, tenderness or weakness with creatine kinase 10 × ULN), hepatitis **Notes:** Combo with ezetimibe/simvastatin; follow LFTs

Sirolimus [Rapamycin] (Rapamune) **WARNING:** Use only by physicians experienced in immunosuppression; immunosuppression w/lymphoma ↑ Infxns risk; do not use in lung transplant (fatal bronchial anastomotic dehiscence) Uses: *Prophylaxis of organ rejection in new tx pts.* Action: ↓ T-lymphocyte activation Dose: *Adults >40 kg.* 6 mg PO on day 1, then 2 mg/d PO. *Adults <40 kg & Peds ≥ 13 y.* 3 mg/m² load, then 1 mg/m²/d (in H₂O/OJ; no grapefruit juice w/sirolimus); take 4 h after cyclosporine; ↓ in hepatic impair **Caution:** [C, ?-] Grapefruit juice, ketoconazole **Contra:** Component allergy **Disp:** Soln 1 mg/mL, tab 1, 2 mg **SE:** HTN, edema, CP, fever, HA, insomnia, acne, rash, ↑ cholesterol, GI upset, ↑↓ K⁺, Infxns, blood dyscrasias, arthralgia, tachycardia, renal impair, hepatic artery thrombosis, graft loss & death in de novo liver transplant (↑ hepatic artery thrombosis), delayed wound healing **Notes:** Levels not needed except in liver failure (trough 9–17 ng/mL)

Sitagliptin (Januvia) Uses: *Type 2 DM* Action: Dipeptidyl peptidase-4 (DDP-4) inhibitor, ↑ insulin synth/release Dose: 100 mg PO daily; ↓ w/renal im-

pair **Caution:** [B, ?] **Contra:** DKA, Type 1 DM **Disp:** Tabs 25, 50, 100 **SE:** URI, HA, D, abd pain, arthralgia

Sitagliptin/metformin (Janumet) **WARNING:** Associated w/ lactic acidosis **Uses:** *Adjunct to diet and exercise in type 2 DM * **Action:** See individual agents **Dose:** 1 tab PO bid, titrate; 100 mg sitagliptin & 2000 mg metformin/day max; w/ meals **Caution:** [B, ?/–] **Contra:** Type 1 DM, DKA **Disp:** Tabs 50/500, 50 mg/1000 mg **SE:** Nasopharyngitis, N/V/D, flatulence, abd discomfort, dyspepsia, asthenia, HA **Notes:** Hold w/contrast study; ✓ Cr, CBC

Smallpox Vaccine (Dryvax) **WARNING:** Acute myocarditis and other infectious complications possible; contra in immunocompromised, eczema or exfoliative skin conditions, infants < 1 Yr **Uses:** Immunization against smallpox (Variola virus) **Action:** Active immunization (live attenuated cowpox virus) **Dose:** Adults (routine nonemergency) or all ages (emergency): 2–3 punctures w/ bifurcated needle dipped in vaccine into deltoid, posterior triceps muscle; ✓ site for Rxn in 6–8 d; if major Rxn, site scabs, & heals, leaving scar; if mild/equivocal Rxn, repeat w/ 15 punctures **Caution:** [X, N/A] **Contra:** Nonemergency use, febrile illness, immunosuppression, Hx eczema & their household contacts. **Emergency:** No absolute contraindications **Disp:** Vial for recons: 100 million pock-forming units/mL **SE:** Malaise, fever, regional lymphadenopathy, encephalopathy, rashes, spread of inoculation to other sites administered; Stevens–Johnson synd, eczema vaccinatum w/ severe disability **Notes:** Avoid infant contact for 14 d; intradermal use only

Sodium Bicarbonate [NaHCO₃] **Uses:** *Alkalinization of urine,* RTA, *metabolic acidosis, ↑ K⁺, TCA OD* **Action:** Alkalinizing agent **Dose:** Adults. **Cardiac arrest:** Initiate ventilation, 1 mEq/kg IV bolus; repeat ½ dose q 10 min PRN (ECC 2005); **Metabolic acidosis:** 2–5 mEq/kg IV over 8 h & PRN based on acid–base status. **Alkalinize urine:** 4 g (48 mEq) PO, then 1–2 g q4h; adjust based on urine pH; 2 amp/1 L D₅W at 100–250 mL/h IV, monitor urine pH & serum bicarbonate. **Chronic renal failure:** 1–3 mEq/kg/d. **Distal RTA:** 1 mEq/kg/d PO. **Peds > 1 y:** Cardiac arrest: See Adult dosage. **Peds < 1 y:** ECC: Initiate ventilation, 1:1 dilution 1 mEq/mL dosed 1 mEq/kg IV; can repeat w/ 0.5 mEq/kg in 10 min × 1 or based on acid–base status. **Chronic renal failure:** See Adult 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 **Caution:** [C, ?] **Contra:** Alkalosis, ↑ Na⁺, severe pulm edema, ↓ Ca²⁺ **Disp:** Powder, tabs; 300 mg = 3.6 mEq; 325 mg = 3.8 mEq; 520 mg = 6.3 mEq; 600 mg = 7.3 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 bicarb = 50 mEq Na; can make 3 amps in 1 L D₅W to = D₅NS w/ 150 mEq bicarb

Sodium Citrate/Citric Acid (Bicitra) **Uses:** *Chronic metabolic acidosis, alkalinize urine; dissolve uric acid & cysteine stones* **Action:** Urinary alkalin-

izer **Dose:** *Adults.* 2–6 tsp (10–30 mL) diluted in 1–3 oz H₂O pc & hs. *Peds.* 1–3 tsp (5–15 mL) diluted in 1–3 oz H₂O pc & hs; best after meals **Caution:** [C, +] **Contra:** Aluminum-based antacids; severe renal impair or Na-restricted diets **Disp:** 15- or 30-mL unit dose: 16 (473 mL) or 4 (118 mL) 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 bicarb

Sodium Oxybate (Xyrem) [C-III] **WARNING:** Known drug of abuse even at recommended doses; confusion, depression, resp. depression may occur **Uses:** *Narcolepsy-associated cataplexy* **Action:** Inhibitory neurotransmitter **Dose:** *Adults & Peds ≥ 16 y:* 2.25 g PO qhs, second dose 2.5–4 h later; may ↑ 9 g/d max **Caution:** [B, ?/–] **Contra:** Succinic semialdehyde dehydrogenase deficiency; potentiates EtOH **Disp:** 500 mg/mL 180-mL PO soln **SE:** Confusion, depression, ↓ diminished level of consciousness, incontinence, significant V, resp depression, psychiatric Sxs **Notes:** May lead to dependence; synonym for γ-hydroxybutyrate (GHB), abused as a “date rape drug”; controlled distribution (prescriber & pt registration); must be administered when pt in bed

Sodium Phosphate (Visicol) **Uses:** *Bowel prep prior to colonoscopy* **Action:** Hyperosmotic laxative **Dose:** 3 tabs PO w/ at least 8 oz clear liq every 15 min (20 tabs total night before procedure; 3–5 h before colonoscopy, repeat) **Caution:** [C, ?] Renal impair, electrolyte disturbances **Contra:** Megacolon, bowel obst, CHF, ascites, unstable angina, gastric retention, bowel perforation, colitis, hypomotility. **Disp:** Tablets 0.398, 1.102 g **SE:** ↑ QT, ↑ PO₃³⁻, ↓ K⁺, Na, D, flatulence, cramps, abd bloating/pain

Sodium Polystyrene Sulfonate (Kayexalate) **Uses:** *Rx of ↑ K⁺* **Action:** Na⁺/K⁺ ion-exchange resin **Dose:** *Adults.* 15–60 g PO or 30–60 g PR q6h based on serum K⁺. *Peds.* 1 g/kg/dose PO or PR q6h based on serum K⁺ (given w/ agent, eg, sorbitol, to promote movement through the bowel) **Caution:** [C, M] **Contra:** ↑ Na⁺ **Disp:** Powder; susp 15 g/60 mL sorbitol **SE:** ↑ Na⁺, ↓ K⁺, Na retention, GI upset, fecal impaction **Notes:** Enema acts more quickly than PO; PO most effective

Solifenacin (VESicare) **Uses:** *OAB* **Action:** Antimuscarinic, ↓ detrusor contractions **Dose:** 5 mg PO daily, 10 mg/d max; ↓ w/ renal/hepatic impair **Caution:** [C, ?/–] Bladder outflow or GI obst, ulcerative colitis, MyG, renal/hepatic impair, QT prolongation risk **Contra:** NAG, urinary/gastric retention **Disp:** Tabs 5, 10 mg **SE:** Constipation, xerostomia, dyspepsia, blurred vision **Notes:** Interacts w/ azole antifungals; do not ↑ dose w/ severe renal/moderate hepatic impair

Sorafenib (Nexavar) **Uses:** *Advanced RCC* met liver cancer **Action:** Kinase inhibitor **Dose:** *Adults.* 400 mg PO bid on empty stomach **Caution:** [D, –] w/irinotecan, doxorubicin, warfarin; avoid conception (male/female) **Disp:** Tabs 200 mg **SE:** Hand–foot synd; treatment-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 wks; may require ↓ dose (daily or every other day); impaired metabolism w/Asian descent; unknown effect on wound healing, d/c before major surgery

Sorbitol (generic) **Uses:** *Constipation* **Action:** Laxative **Dose:** 30–60 mL PO of a 20–70% soln PRN **Caution:** [B, +] **Contra:** Anuria **Disp:** Liq 70% **SE:** Edema, electrolyte losses, lactic acidosis, GI upset, xerostomia **Notes:** May be vehicle for many liq formulations (eg, zinc, Kayexalate)

Sotalol (Betapace) **WARNING:** Monitor pts for 1st 3 d of Rx to ↓ risks of arrhythmia **Uses:** *Ventricular arrhythmias, AF* **Action:** β-adrenergic-blocking agent **Dose:** *Adults.* 80 mg PO bid; may be ↑ to 240–320 mg/d *Peds. Neonates:* 9 mg/m² tid. 1–19 mo: 20.4 mg/m² tid. 20–23 mo: 29.1 mg/m² tid; = > 2 y: 30 mg/m² tid; to max dose of 90 mg/m² tid ↓ w/ renal impair **Caution:** [B (1st tri) (D if 2nd or 3rd tri), +] **Contra:** Asthma, COPD, bradycardia, ↑ prolonged QT interval, 2nd- or 3rd-degree heart block w/o pacemaker, cardiogenic shock, uncontrolled CHF, CrCl < 40 mL/min **Disp:** Tabs 80, 120, 160, 240 mg **SE:** Bradycardia, CP, palpitations, fatigue, dizziness, weakness, dyspnea **Notes:** Betapace should not be substituted for Betapace AF because of differences in labeling

Sotalol (Betapace AF) **WARNING:** To minimize risk of induced arrhythmia, pts initiated/reinitiated on Betapace AF should be placed for a minimum of 3 d (on their maint dose) in a facility that can provide cardiac resuscitation, continuous ECG monitoring, & calculations of CrCl; Betapace should not be substituted for Betapace AF because of labeling differences **Uses:** *Maintain sinus rhythm for symptomatic A fib/flutter* **Action:** β-adrenergic-blocking agent **Dose:** *Adults.* Initial CrCl > 60 mL/min: 80 mg PO q12h. CrCl 40–60 mL/min: 80 mg PO q24h; ↑ to 120 mg during hospitalization; monitor QT interval 2–4 h after each dose, w/ dose reduction or D/C if QT interval >500 ms. *Peds. Neonates:* 9 mg/m² tid. 1–19 mo: 20 mg/m² tid. 20–23 mo: 29.1 mg/m² tid. = 2 y: 30 mg/m² tid; can double all doses as max daily dose; allow ≈ 36 h between dosage titrations **Caution:** [B (1st tri; D if 2nd or 3rd tri), +] if converting from previous antiarrhythmic therapy **Contra:** Asthma, bradycardia, prolonged QT interval, 2nd- or 3rd-degree heart block w/o pacemaker, cardiogenic shock, uncontrolled CHF, CrCl <40 mL/min **Disp:** Tabs 80, 120, 160 mg **SE:** Bradycardia, 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

Spirolactone (Aldactone) **Uses:** *Hyperaldosteronism, ascites from CHF or cirrhosis* **Action:** Aldosterone antagonist; K⁺-sparing diuretic **Dose:** *Adults.* 25–100 mg PO qid; CHF (NYHA class III–IV) 25–50 mg/d. *Peds.* 1–3.3 mg/kg/24 h PO ÷ bid–qid. *Neonates:* 0.5–1 mg/kg/dose q8h; w/ food **Caution:** [D, +] **Contra:** ↑ K⁺, renal failure, anuria **Disp:** Tabs 25, 50, 100 mg **SE:** ↑ K⁺ & gynecomastia, arrhythmia, sexual dysfunction, confusion, dizziness, D/N/V, abnormal menstruation

Stavudine (Zerit) **WARNING:** Lactic acidosis & severe hepatomegaly w/ steatosis & pancreatitis reported **Uses:** *Advanced HIV* **Action:** Reverse transcriptase inhibitor **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; ↓ in renal insuff failure **Caution:** [C, +] **Contra:** Allergy **Disp:** Caps 15, 20, 30, 40 mg; soln 1 mg/mL **SE:** Peripheral neuropathy, HA, chills, fever, malaise, rash, GI upset, anemias, lactic acidosis, ↑ LFTs, pancreatitis **Notes:** Take w/ plenty of H₂O

Steroids, Systemic (See also Table 3) The following relates only to the commonly used systemic glucocorticoids **Uses:**

Endocrine disorders (adrenal insuff), *rheumatoid disorders, collagen–vascular Dzs, dermatitis, allergic states, cerebral edema,* nephritis, nephrotic synd, immunosuppression for transplantation, ↑ Ca²⁺, malignancies (breast, lymphomas), preop (in any pt who has been on steroids in the previous year, known hypoadrenalism, preop for adrenalectomy); inj into joints/tissue **Action:** Glucocorticoid **Dose:** Varies w/ use & institutional protocols.

- **Adrenal insuff, acute: Adults.** Hydrocortisone: 100 mg IV; then 300 mg/d ÷ q6h; 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 ÷ tid.
- **Adrenal insuff, chronic (physiologic replacement):** May need mineralocorticoid suppl such as Florinef. **Adults.** Hydrocortisone 20 mg PO qAM, 10 mg PO qPM; cortisone 0.5–0.75 mg/kg/d ÷ bid; cortisone 0.25–0.35 mg/kg/d IM; dexamethasone 0.03–0.15 mg/kg/d or 0.6–0.75 mg/m²/d ÷ q6–12h PO, IM, IV. **Peds.** Hydrocortisone: 0.5–0.75 mg/kg/d PO tid; hydrocortisone succinate 0.25–0.35 mg/kg/d IM.
- **Asthma, acute: Adults.** Methylprednisolone 60 mg PO/IV q6h 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 2–4 mg/kg/d IV ÷ tid; dexamethasone 0.1–0.3 mg/kg/d divided q6h.
- **Congenital adrenal hyperplasia: Peds.** Initial hydrocortisone 30–36 mg/m²/d PO ÷ 1/3 dose qAM, 2/3 dose qPM; maint 20–25 mg/m²/d ÷ bid.
- **Extubation/airway edema: Adults.** Dexamethasone 0.5–1 mg/kg/d IM/IV ÷ q6h (start 24 h prior to extubation; continue × 4 more doses). **Peds.** Dexamethasone 0.1–0.3 mg/kg/d ÷ q6h × 3–5 d (start 48–72 h before extubation)
- **Immunosuppressive/antiinflammatory: Adults & Older Peds.** Hydrocortisone: 15–240 mg PO, IM, IV q12h; methylprednisolone: 4–48 mg/d PO, taper to lowest effective dose; methylprednisolone Na succinate: 10–80 mg/d IM. **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.
- **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 qod max 120 mg/d for an additional 28 d; maint 2 mg/kg/dose qod for 28 d; taper over 4–6 wk (max 80 mg/d).

- *Septic shock (controversial): Adults.* Hydrocortisone 500 mg–1 g IM/IV q2–6h. *Peds.* Hydrocortisone 50 mg/kg IM/IV, repeat q4–24 h PRN.
- *Status asthmaticus: Adults & Peds.* Hydrocortisone 1–2 mg/kg/dose IV q6h; then ↓ by 0.5–1 mg/kg q6h.
- *Rheumatic Dz: Adults. Intraarticular:* Hydrocortisone acetate 25–37.5 mg large joint, 10–25 mg small joint; methylprednisolone acetate 20–80 mg large joint, 4–10 mg small joint. *Intrabursal:* Hydrocortisone acetate 25–37.5 mg. *Intraganglial:* Hydrocortisone acetate 25–37.5 mg. *Tendon sheath:* Hydrocortisone acetate 5–12.5 mg.
- *Periop steroid coverage:* Hydrocortisone 100 mg IV night before surgery, 1 h preop, intraop, & 4, 8, & 12 h postop; postop d #1 100 mg IV q6h; postop d #2 100 mg IV q8h; postop d #3 100 mg IV q12h; postop d #4 50 mg IV q12h; postop d #5 25 mg IV q12h; resume prior PO dosing if chronic use or D/C if only periop coverage required.
- *Cerebral edema:* Dexamethasone 10 mg IV; then 4 mg IV q4–6h

Caution: [C, ?/–] **Contra:** Active varicella Infxn, serious Infxn except TB, fungal Infxns **Disp:** Table 3 **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

Streptokinase (Streptase, Kabikinase) **Uses:** *Coronary artery thrombosis, acute massive PE, DVT, & some occluded vascular grafts* **Action:** 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 million units IV over 60 min. *DVT or arterial embolism:* Load as w/ PE, then 100,000 units/h for 72 h; 1.5 million IU in a 1 h inf (ECC 2005) **Peds.** 3500–4000 units/kg over 30 min, then 1000–1500 units/kg/h. *Occluded catheter (controversial):* 10,000–25,000 units in NS to final volume of catheter (leave in for 1 h, aspirate & flush w/ NS) **Caution:** [C, +] **Contra:** Streptococcal Infxn or streptokinase in last 6 mo, active bleeding, CVA, TIA, spinal surgery/trauma in last month, vascular anomalies, severe hepatic/renal Dz, endocarditis, pericarditis, 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 2–5X control, see package for adjustments; antibodies remain 3–6 mo following dose

Streptomycin **WARNING:** Neuro/oto/renal toxicity possible; neuromuscular blockage w/resp paralysis possible **Uses:** *TB,* streptococcal or enterococcal endocarditis **Action:** Aminoglycoside; ↓ protein synth **Dose: Adults. Endocarditis:** 1 g q12h 1–2 wk, then 500 mg q12h 1–4 wk; *TB:* 15 mg/kg/d (up to 1 g), directly observed therapy (DOT) 2 × wk 20–30 mg/kg/dose (max 1.5 gm), DOT 3 × wk 25–30 mg/kg/dose (max 1 g). **Peds.** 15 mg/kg/d; DOT 2 × wk 20–40 mg/kg/dose (max 1 g); DOT 3 × wk 25–30 mg/kg/dose (max 1 g); ↓ w/in renal failure insuff, either IM or IV over 30–60 min **Caution:** [D, +] **Contra:** PRG **Disp:** Inj 400

mg/mL (1-g vial) **SE:** ↑ incidence of vestibular & auditory tox, ↑ neurotoxicity risk in pts w/ impaired renal function **Notes:** Monitor levels: *Peak* 20–30 mcg/mL, *Trough* <5 mcg/mL; *Toxic peak* > 50, *Trough* > 10; IV over 30–60 min

Streptozocin (Zanosar) **Uses:** *Pancreatic islet cell tumors* & carcinoid tumors **Action:** DNA–DNA (interstrand) cross-linking; DNA, RNA, & protein synth inhibitor **Dose:** Per protocol; ↓ in renal failure **Caution:** w/renal failure [D, ?/–]

Contra: w/ rotavirus vaccine, PRG **Disp:** Inj 1 g **SE:** N/V/D, duodenal ulcers, depression, ↓ BM rare (20%) & mild; nephrotox (proteinuria & azotemia dose related), hypophosphatemia dose limiting; hypo-/hyperglycemia; inj site Rxns **Notes:** Monitor Cr

Succimer (Chemet) **Uses:** *Lead poisoning (levels > 45 mcg/mL)* **Action:** Heavy-metal chelating agent **Dose:** *Adults & Peds.* 10 mg/kg/dose q8h × 5 d, then 10 mg/kg/dose q12h for 14 d; ↓ in renal impair **Caution:** [C, ?] **Contra:** Allergy **Disp:** Caps 100 mg **SE:** Rash, fever, GI upset, hemorrhoids, metallic taste, drowsiness, ↑ LFTs **Notes:** Monitor lead levels, maintain hydration, may open capsules

Succinylcholine (Anectine, Quelicin, Sucostrin, others)

WARNING: Risk of cardiac arrest from hyperkalemic rhabdomyolysis **Uses:**

Adjunct to general anesthesia, facilitates ET intubation; induce skeletal muscle relaxation during surgery or mechanical ventilation **Action:** Depolarizing neuromuscular blocker; rapid onset, short duration (3–5 min) **Dose:** *Adults.* Rapid sequence intubation 1–2 mg/kg IV over 10–30 s or 2–4 mg/kg IM (*ECC 2005*)

Peds. 1–2 mg/kg/dose IV, then by 0.3–0.6 mg/kg/dose q5min use of CI not OK; ↓ w/ severe renal/hepatic impair **Caution:** See warning [C, M] **Contra:** w/Malignant

hyperthermia risk, myopathy, recent major burn, multiple trauma, extensive skeletal muscle denervation, NAG, pseudocholinesterase deficiency **Disp:** Inj 20, 50, 100 mg/mL **SE:** Fasciculations, ↑ intraocular, intragastric, intracranial pressure, salivation, myoglobinuria, malignant hyperthermia, resp depression, or prolonged apnea; multiple drugs potentiate; CV effects (arrhythmias, ↓ BP, brady/tachycardia) **Notes:** May be given IVP/inf/IM deltoid; hyperkalemic rhabdomyolysis in children with undiagnosed myopathy such as Duchenne muscular dystrophy

Sucralfate (Carafate) **Uses:** *Duodenal ulcers,* gastric ulcers, stomatitis, GERD, preventing stress ulcers, esophagitis **Action:** 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; on empty stomach ac **Caution:** [B, +] **Contra:** Component allergy **Disp:** Tabs 1 g; susp 1 g/10 mL **SE:** Constipation; D, dizziness, xerostomia **Notes:** Aluminum may accumulate in renal failure

Sulfacetamide (Bleph-10, Cetamide, Sodium Sulamyd)

Uses: *Conjunctival Infxns* **Action:** Sulfonamide antibiotic **Dose:** 10% oint apply qid & hs; soln for keratitis apply q2–3h based on severity **Caution:** [C, M] **Contra:** Sulfonamide sensitivity; age <2 mo **Disp:** Oint 10%; soln 10, 15, 30%; topical cream 10%; foam, gel, lotion, pad all 10% **SE:** Irritation, burning; blurred vision, brow ache, Stevens–Johnson synd, photosens

Sulfacetamide & Prednisolone (Blephamide, others) Uses:

Steroid-responsive inflammatory ocular conditions w/ Infxn or a risk of Infxn **Action:** Antibiotic & antiinflammatory **Dose: Adults & Peds >2 y.** Apply oint lower conjunctival sac daily–qid; soln 1–3 gtt 2–3 h while awake **Caution:** [C, ?/–] Sulfonamide sensitivity; age < 2 mon **Disp:** Oint: sulfacetamide 10%/prednisolone 0.5%, sulfacetamide 10%/prednisolone 0.2%, sulfacetamide 10%/prednisolone 0.25%; susp: sulfacetamide 10%/prednisolone 0.25%, sulfacetamide 10%/prednisolone 0.5%, sulfacetamide 10%/prednisolone 0.2% **SE:** Irritation, burning, blurred vision, brow ache, Stevens–Johnson synd, photosens **Notes:** OK ophth susp use as otic agent

Sulfasalazine (Azulfidine, Azulfidine EN) Uses: *Ulcerative colitis, RA, juvenile RA,* active Crohn Dz, ankylosing spondylitis, psoriasis **Action:** Sulfonamide; actions unclear **Dose: Adults.** Initial, 1 g PO tid–qid; ↑ to a max of 8 g/d in 3–4 ÷ doses; maint 500 mg PO qid. **Peds.** Initial, 40–60 mg/kg/24 h PO ÷ q4–6h; maint, 20–30 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; ↓ in renal failure **Caution:** [B (D if near term), M] **Contra:** Sulfonamide or salicylate sensitivity, porphyria, GI or GU obst; avoid in hepatic impair **Disp:** Tabs 500 mg; EC delayed-release tabs 500 mg **SE:** GI upset; discolors urine; dizziness, HA, photosens, oligospermia, anemias, Stevens–Johnson synd **Notes:** May cause yellow-orange skin/contact lens discoloration; avoid sunlight exposure

Sulfipyrazone Uses: *Acute & chronic gout* **Action:** ↓ renal tubular absorption of uric acid **Dose:** 100–200 mg PO bid for 1 wk, ↑ PRN to maint of 200–400 mg bid; max 800 mg/d; take w/ food or antacids, & plenty of fluids; avoid salicylates **Caution:** [C (D if near term), ?/–] **Contra:** Renal impair, avoid salicylates; peptic ulcer; blood dyscrasias, near term PRG, allergy **Disp:** Tabs 100 mg; caps 200 mg **SE:** N/V, stomach pain, urolithiasis, leukopenia **Notes:** Take w/ plenty of H₂O

Sulindac (Clinoril) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding Uses: *Arthritis & pain* **Action:** NSAID; ↓ prostaglandins **Dose:** 150–200 mg bid, 400 mg/day max; w/ food **Caution:** [B (D if 3rd tri or near term), ?] **Contra:** NSAID or ASA sensitivity, w/ ketorolac, ulcer, GI bleeding, 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 (Imitrex) Uses: *Rx acute migraine* **Action:** 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 mg, repeat in 2 h, PRN, 100 mg/d max PO dose; max 300 mg/d. **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. 12–17 y: 5–20 mg, up to 40 mg/d **Caution:** [C, M] **Contra:** Angina, ischemic heart Dz, uncontrolled HTN, severe hepatic impair, ergot use, MAOI use w/in 14 d **Disp:** OD tabs 25, 50, 100 mg; Inj 6, 8, 12 mg/mL; OD tabs 25, 50, 100 mg, orally disintegrating tabs 25, 50, 100 mg; nasal spray 5, 10, 20 mg/spray **SE:** Pain & bruising at site; dizziness, hot flashes, paresthesias, CP, weakness, numbness, coronary vasospasm, HTN

Sunitinib (Sutent) Uses: *Advanced GI stromal tumor refractory/intolerant of imatinib; advanced RCC* Action: Kinase inhibitor Dose: Adults. 50 mg PO daily × 4 wks, followed by 2 wk holiday = 1 cycle; ↓ to 37.5 mg w/CYP3A4 inhibitors (Table 11), to ↑ 87.5 mg w/CYP3A4 inducers Contra: w/atazanavir Caution: [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, seizures, adrenal insufficiency, N/V/D, skin discoloration, oral ulcers, taste perversion, hypothyroidism Notes: Monitor CBC, platelets, chemistries, cardiac funct at baseline ↓ dose in 12.5-mg increments if not tolerated

Tacrine (Cognex) Uses: *Mild-moderate Alzheimer dementia* Action: Cholinesterase inhibitor Dose: 10-40 mg PO qid to 160 mg/d; separate doses from food Caution: [C, ?] Contra: Previous tacrine-induced jaundice Disp: Caps 10, 20, 30, 40 mg SE: ↑ LFT, HA, dizziness, GI upset, flushing, confusion, ataxia, myalgia, bradycardia Notes: Serum conc > 20 ng/mL have more SE; monitor LFTs

Tacrolimus [FK 506] (Prograf, Protopic) WARNING: ↑ risk of infection and lymphoma Uses: *Prevent organ rejection,* eczema Action: Macrolide immunosuppressant Dose: Adults. IV: 0.05-0.1 mg/kg/d cont inf. PO: 0.15-0.3 mg/kg/d ÷ 2 doses. Peds. IV: 0.03-0.05 mg/kg/d as cont inf. PO: 0.15-0.2 mg/kg/d PO ÷ q 12 h. Adults & Peds. Eczema: Apply bid, continue 1 wk after clearing; ↓ in hepatic/renal impair Caution: [C, -] w/ cyclosporine; avoid topical if < 2 yrs of age Contra: Component allergy, castor oil allergy w/ IV form Disp: Caps 0.5, 1, 5 mg; inj 5 mg/mL; oint 0.03, 0.1% SE: Neuro & nephrotox, HTN, edema, HA, insomnia, fever, pruritus, ↓/↑ K⁺, hyperglycemia, GI upset, anemia, leukocytosis, tremors, paresthesias, pleural effusion, Szs, lymphoma Notes: Monitor levels; reports of ↑ cancer risk; topical use for short term/second line

Tadalafil (Cialis) Uses: *Erectile dysfunction* Action: PDE5 inhibitor, increases cGMP and NO levels; relaxes smooth muscles, dilates cavernosal arteries Dose: Adults. 10 mg PO before sexual activity w/o regard to meals (range 5-20 mg max) 1 dose/72 h; ↓ 5 mg (10 mg max) w/ renal/ & hepatic insuff Caution: [B, -] w/CYP3A4 inhibitor (Table 11) Contra: Nitrates, α-blockers (except tamsulosin), severe hepatic impair Disp: 5-, 10-, 20-mg tabs SE: HA, flushing, dyspepsia, rhinitis, back pain, myalgia hearing loss Notes: Longest acting of class (36 h)

Talc (Sterile Talc Powder) Uses: *↓ recurrence of malignant pleural effusions (pleurodesis)* Action: Sclerosing agent Dose: Mix slurry: 50 mL NS w/ 5-g vial, mix, distribute 25 mL into two 60-mL syringes, volume to 50 mL/syringe w/ NS. Infuse each into chest tube, flush w/ 25 mL NS. Keep tube clamped; have pt change positions q15min for 2 h, unclamp tube Caution: [X, -] Contra: Planned further surgery on site Disp: 5 g powder SE: Pain, Infxn Notes: May add 10-20 mL 1% lidocaine/syringe; must have chest tube placed, monitor closely while tube clamped (tension pneumothorax), not antineoplastic

Tamoxifen WARNING: Cancer of the uterus, stroke, and blood clots can occur Uses: *Breast CA [postmenopausal, estrogen receptor(+)], ↓ reduction of breast CA

in high-risk women, met male breast CA,* ductal carcinoma in situ, mastalgia, pancreatic CA, gynecomastia, ovulation induction **Action:** Nonsteroidal antiestrogen; mixed agonist-antagonist effect **Dose:** 20–40 mg/d (typically 10 mg bid or 20 mg/d) **Prevention:** 10 mg PO bid × 5y **Caution:** [D, -] w/ leukopenia, thrombocytopenia, hyperlipidemia **Contra:** PRG, undiagnosed vag bleeding, Hx thromboembolism **Disp:** Tabs 10, 20 mg, oral soln 10 mg/5 mL **SE:** Uterine malignancy & thrombotic events noted in breast CA prevention trials; menopausal Sxs (hot flashes, N/V) in premenopausal pts; vaginal bleeding & menstrual irregularities; skin rash, pruritus vulvae, dizziness, HA, peripheral edema; acute flare of bone metastasis pain & ↑ Ca²⁺; retinopathy reported (high dose) **Notes:** ↑ risk of PRG in premenopausal women (induces ovulation); brand Nolvadex suspended in US

Tamsulosin (Flomax) **Uses:** *BPH* **Action:** Antagonist of prostatic α-receptors **Dose:** 0.4 mg/d, may ↑ to 0.8 mg PO daily; **Caution:** [B, ?] **Contra:** Female gender **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

Tazarotene (Tazorac, Avage) **Uses:** *Facial acne vulgaris; stable plaque psoriasis up to 20% BSA* **Action:** Keratolytic **Dose:** *Adults & Peds > 12 y.* **Acne:** Cleanse face, dry, & apply thin film daily hs on acne lesions. **Psoriasis:** Apply hs **Caution:** [X, ?/-] **Contra:** Retinoid sensitivity **Disp:** Gel 0.05, 0.1%; Cream 0.05%, 0.1% **SE:** Burning, erythema, irritation, rash, photosens, desquamation, bleeding, skin discoloration **Notes:** D/C w/ excessive pruritus, burning, skin redness or peeling occur until Sxs resolve

Telbivudine (Tyzeka) **WARNING:** May cause lactic acidosis and severe hepatomegaly w/ steatosis when used alone or with antiretrovirals; D/C of the drug may lead to exacerbations of hep B; monitor LFTs **Uses:** *Rx chronic Hep B* **Action:** Nucleoside RT inhibitor **Dose:** CrCl > 50 mL/min: 600 mg PO daily; CrCl 30–49 mL/min: 600 mg q 48 hrs; CrCl < 30 mL/min: 600 mg q 72 hrs; ESRD: 600 mg q 96hrs **Caution:** [B; ?/-]; may cause myopathy; follow closely w/other myopathy causing drugs **Disp:** Tabs 600 mg **SE:** Fatigue, abdominal pain, N/V/D, HA, URI, nasopharyngitis, ↑ LFTs/CPK, myalgia, flulike symptoms, dizziness, insomnia, dyspepsia

Telithromycin (Ketek) **WARNING:** May be associated with pseudomembranous colitis and hepatic failure **Uses:** *Acute bacterial exacerbations of chronic bronchitis, acute bacterial sinusitis; mild-moderate community-acquired pneumonia* **Action:** Unique macrolide, blocks ↓ protein synth; bactericidal. **Spectrum:** *Staphylococcus aureus, Streptococcus pneumoniae, H. influenzae, M. catarrhalis, Chlamydia pneumoniae, M. pneumoniae* **Dose:** *Chronic bronchitis/sinusitis:* 800 mg (2 tabs) PO daily × 5; *Pneumonia:* 800 mg (2 tabs) PO daily × 7–10 d **Caution:** [C, M] pseudomembranous colitis, ↑ QTc interval, MyG exacerbations, visual disturbances, hepatic dysfunction; dosing in renal impair unknown **Contra:** Macrolide allergy, use w/ pimozone, w/myasthenia gravis **Disp:** Tabs 300, 400 mg **SE:** N/V/D, dizziness, blurred vision **Notes:** A CYP450 inhibitor; multiple drug interactions

Telmisartan (Micardis) Uses: *HTN, CHF,* DN Action: Angiotensin II receptor antagonist Dose: 40–80 mg/d Caution: [C (1st tri; D 2nd & 3rd tri), ?/–] Contra: Angiotensin II receptor antagonist sensitivity Disp: Tabs 20, 40, 80 mg SE: Edema, GI upset, HA, angioedema, renal impairment, orthostatic ↓ BP

Temazepam (Restoril) [C-IV] Uses: *Insomnia,* anxiety, depression, panic attacks Action: Benzodiazepine Dose: 15–30 mg PO hs PRN; ↓ in elderly Caution: [X, ?/–] Potentiates CNS depressive effects of opioids, barbs, EtOH, antihistamines, MAOIs, TCAs Contra: NAG 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

Temsirolimus (Torisel Kit) Uses: *Advanced RCC* Action: mTOR inhibitor Dose: 25 mg IV over 30–60 min X1 week; continue until tox or progression; pre med w/25–50 mg Benadryl 30 min before Caution: [D, –]w/CYP3A4 inhib/inducers (Table 11), avoid grapefruit juice, vaccines, immed postop Contra: None Disp: 25 mg/mL w/diluent SE: Hypersensitivity Rxn, rash, asthenia, mucositis, N, edema, anorexia, poor wound healing, bowel perf, ↓ Hct, WBC, plt; ↑ glucose/lipids/ALP/AST/Cr Notes: Hold w/ANC < 1,000/mm³ or plt < 75,000/mm³; monitor Cr, CBC; combine only w/provided diluent for IV admin

Tenecteplase (TNKase) Uses: *Restore perfusion & ↓ mortality w/ AMI* Action: Thrombolytic; TPA Dose: 30–50 mg; see table below Caution: [C, ?], ↑ bleeding w/ NSAIDs, ticlopidine, clopidogrel, GPIIb/IIIa antagonists Contra: Bleeding, CVA, major surgery (intracranial, intraspinal) or trauma w/in 2 mo Disp: Inj 50 mg, reconstitute w/ 10 mL sterile H₂O SE: Bleeding, allergy Notes: Do not shake w/recons; do *not* use w/D₅W

Tenecteplase Dosing

Weight (kg)	TNKase (mg)	TNKase ^a Volume (mL)
<60	30	6
60–69	35	7
70–79	40	8
80–89	45	9
≥90	50	10

^aFrom one vial of reconstituted TNKase.

*Based on data in Haist SA and Robbins JB: *Internal Medicine on Call*, 4th ed, 2005 McGraw-Hill). See also www.fda.gov.

Tenofovir (Viread) **WARNING:** Lactic acidosis & severe hepatomegaly with steatosis, including fatal cases, have been reported with the use of nucleoside analogs alone or in combo w/ other antiretrovirals. Not OK w/ chronic hepatitis; effects in patients co-infected with Hep B & HIV unknown **Uses:** *HIV Infxn* **Action:** Nucleotide RT inhibitor **Dose:** 300 mg PO daily Δ to w/ or w/o meal; CrCl $\Delta \geq 50$ mL/min Δ q24h, CrCl 30–49 mL/min q48H, CrCl 10–29 mL/min 2 \times week **Caution:** [B, ?/–] Didanosine (separate admin times), lopinavir, ritonavir w/ known risk factors for liver Dz **Contra:** Hypersensitivity **Disp:** Tabs 300 mg **SE:** GI upset, metabolic synd, hepatotox; separate didanosine doses by 2 h **Notes:** combo product w/emtricitabine is Truvada

Tenofovir/Emtricitabine (Truvada) **WARNING:** Lactic acidosis & severe hepatomegaly with steatosis, including fatal cases, have been reported with the use of nucleoside analogs alone or in combo w/ other antiretrovirals. Not OK w/ chronic hepatitis; effects in patients co-infected with Hep B & HIV unknown **Uses:** *HIV Infxn* **Action:** Dual nucleotide RT inhibitor **Dose:** 300 mg PO daily w/ or w/o a meal adjust w/ renal impairment **Caution:** w/ known risk factors for liver Dz [B, ?/–] **Contra:** CrCl < 30 mL/min; **Disp:** Tabs: 200 mg emtricitabine/300 mg tenofovir **SE:** GI upset, rash, metabolic synd, hepatotox

Terazosin (Hytrin) **Uses:** *BPH & HTN* **Action:** α 1-blocker (blood vessel & bladder neck/prostate) **Dose:** Initial, 1 mg PO hs; \uparrow 20 mg/d max **Caution:** [C, ?] w/ BB, CCB, ACEI **Contra:** α -antagonist sensitivity **Disp:** Tabs 1, 2, 5, 10 mg; caps 1, 2, 5, 10 mg **SE:** \downarrow BP, & syncope following 1st dose; dizziness, weakness, nasal congestion, peripheral edema, palpitations, GI upset **Notes:** Caution w/ 1st dose syncope; if for HTN, combine w/ thiazide diuretic

Terbinafine (Lamisil) **Uses:** *Onychomycosis, athlete's foot, jock itch, ringworm,* cutaneous candidiasis, pityriasis versicolor **Action:** \downarrow squalene epoxidase resulting in fungal death **Dose:** PO: 250 mg/d PO for 6–12 wk. *Topical:* Apply to area; \downarrow in renal/hepatic impair **Caution:** [B, –] \uparrow effects of drug metab by CYP2D6, liver dz, renal impairment (CrCl < 60) **Disp:** Tabs 250 mg; cream, gel, soln 1%; **SE:** HA, dizziness, rash, pruritus, alopecia, GI upset, taste perversion, neutropenia, retinal damage, Stevens–Johnson synd **Notes:** Effect may take months due to need for new nail growth; do not use occlusive dressings

Terbutaline (Brethine) **Uses:** *Reversible bronchospasm (asthma, COPD); inhibit labor* **Action:** 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 in 4 h; *Met-dose inhaler:* 2 inhal q4–6h. *Premature labor:* Acutely 2.5–10 mg/min/IV, gradually \uparrow as tolerated q10–20 min; maint 2.5–5 mg PO q4–6h until term *Peds.* PO: 0.05–0.15 mg/kg/dose PO tid; max 5 mg/24h; \downarrow in renal failure **Caution:** [B, +] \uparrow tox w/ MAOIs, TCAs; DM, HTN, hyperthyroidism, CV disease, DM, convulsive disorders, \downarrow K⁺ **Contra:** Component allergy **Disp:** Tabs 2.5, 5 mg; inj 1 mg/mL; met-dose inhaler **SE:** HTN, hyperthyroidism, β_1 -adrenergic effects w/ high dose, nervousness, trembling, tachycardia, HTN, dizziness

Terconazole (Terazol 7) Uses: *Vaginal fungal Infxns* Action: Topical triazole antifungal Dose: 1 applicatorful or 1 supp intravag hs × 3–7 d Caution: [C, ?] Contra: Component allergy Disp: Vaginal cream 0.4, 0.8%, vaginal supp 80 mg SE: Vulvar/vaginal burning Notes: Insert high into vagina

Teriparatide (Forteo) WARNING: ↑ osteosarcoma risk in animals, therefore only use in pts for whom the potential benefits outweigh risks Uses: *Severe/refractory osteoporosis* Action: PTH (recombinant) Dose: 20 mcg SQ daily in thigh or abdomen Caution: [C, ?/–] Contra: w/ Paget Dz, prior radiation, bone metastases, ↑ Ca²⁺; caution in urolithiasis Disp: 3-mL prefilled device (discard after 28 d) SE: orthostatic ↓ BP on administration, N/D, ↑ Ca, leg cramps Notes: 2 yr max use; osteosarcoma in animals

Testosterone (AndroGel, Androderm, Striant, Testim) [CIII] Uses: *Male hypogonadism* Action: Testosterone replacement; ↑ lean body mass, libido Dose: All daily *AndroGel*: 5 g gel. *Androderm*: two 2.5-mg or one 5-mg patch daily. *Striant*: 30-mg buccal tabs bid. *Testim*: one 5-g gel tube. Caution: [N/A, N/A] Contra: PCa, male breast CA Disp: *AndroGel, Testim*: 5-gm gel (50-mg test); *Androderm*: 2.5-, 5-mg patches; *Striant*: 30-mg buccal tabs SE: Site Rxns, acne, edema, wgt gain, gynecomastia, HTN, ↑ sleep apnea, prostate enlargement Notes: Injectable testosterone enanthate (Delatestryl; Testro-L.A.) & cypionate (Depo-Testosterone) require inj every 14–28 d with highly variable serum levels; PO agents (methyltestosterone & oxandrolone) associated w/ hepatitis/hepatic tumors; transdermal/mucosal forms preferred

Tetanus Immune Globulin Uses: *Passive tetanus immunization* (suspected contaminated wound w/ unknown immunization status, see also Table 8) Action: Passive immunization Dose: *Adults & Peds*. 250–500 units IM (higher dose w/ delayed Rx) Caution: [C, ?] Contra: Thimerosal sensitivity Disp: Inj 250-unit vial/syringe SE: Pain, tenderness, erythema at site; fever, angioedema, muscle stiffness, anaphylaxis Notes: May begin active immunization series at different inj site if required

Tetanus Toxoid Uses: *Tetanus prophylaxis* Action: Active immunization Dose: Based on previous immunization, Table 8 Caution: [C, ?] Contra: Chloramphenicol use, neurologic Sxs w/ previous use, active Infxn w/ routine primary immunization Disp: Inj tetanus toxoid, fluid, 4–5 Lf units/0.5 mL; tetanus toxoid, adsorbed, 5, 10 Lf units/0.5 mL SE: Local erythema, induration, sterile abscess, chills, fever, neurologic disturbances

Tetracycline (Achromycin V, Sumycin) Uses: *Broad-spectrum antibiotic* Action: Bacteriostatic; ↓ protein synth. Spectrum: Gram (+): *Staph, Strep*; 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 Caution: [D, +] Contra: PRG, antacids, w/ dairy products, 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, pseudotu-

mor cerebri, hepatic impair **Notes:** Can stain tooth enamel & depress bone formation in children

Thalidomide (Thalomid) **WARNING:** Restricted use; use associated w/ severe birth defects and ↑ risk of venous thromboembolism **Uses:** *Erythema nodosum leprosum (ENL),* GVHD, aphthous ulceration in HIV(+) **Action:** ↓ Neutrophil chemotaxis, ↓ monocyte phagocytosis **Dose:** GVHD: 100–1600 mg PO daily. Stomatitis: 200 mg bid for 5 d, then 200 mg daily up to 8 wk. ENL: 100–300 mg PO qhs **Cautions:** [X, –] May ↑ HIV viral load; Hx Szs **Contra:** PRG; sexually active males not using latex condoms, or females not using 2 forms of contraception **Disp:** 50, 100, 200 mg cap **SE:** Dizziness, drowsiness, rash, fever, orthostasis, Stevens–Johnson synd, peripheral neuropathy, Szs **Notes:** MD must register w/ STEPS risk management program; informed consent necessary; immediately D/C if rash develops

Theophylline (Theo24, TheoChron) **Uses:** *Asthma, bronchospasm* **Action:** 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 **Caution:** [C, +] Multiple interactions (eg, caffeine, smoking, carbamazepine, barbiturates, β-blockers, ciprofloxacin, E-mycin, INH, loop diuretics) **Contra:** Arrhythmia, hyperthyroidism, uncontrolled Szs **Disp:** Elixir 80, 15 mL; Soln 80 mg/15 mL; Syrup 80, 150 mg/15 mL; Caps 100, 200, 250 mg; Tabs 100, 125, 200, 250, 300 mg; SR Caps 100, 125, 200, 250, 260, 300 mg; SR tabs 100, 200, 300, 400, 450, 600 mg **SE:** N/V, tachycardia, Szs, nervousness, arrhythmias **Notes:** Levels IV: Sample 12–24 h after inf started; *Therapeutic:* 5–15 mcg/mL; *Toxic* > 20 mcg/mL; ½ life: nonsmoking adults 8 h/children and smoking adults 4 h; Levels PO: Trough just before next dose; *Therapeutic:* 5–15 mcg/mL

Thiamine [Vitamin B₁] **Uses:** *Thiamine deficiency (beriberi), alcoholic neuritis, Wernicke encephalopathy* **Action:** Dietary suppl **Dose:** Adults. *Deficiency:* 100 mg/d IM for 2 wk, then 5–10 mg/d PO 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 **Caution:** [A (C if doses exceed RDA), +] **Contra:** Component allergy **Disp:** Tabs 5, 10, 25, 50, 100, 250, 500 mg; inj 100, 200 mg/mL **SE:** Angioedema, paresthesias, rash, anaphylaxis w/ rapid IV **Notes:** IV use associated w/ anaphylactic Rxn; give IV slowly

Thiethylperazine (Torecan) **Uses:** *N/V* **Action:** Antidopaminergic antiemetic **Dose:** 10 mg PO, PR, or IM daily–tid; ↓ in hepatic failure **Caution:** [X, ?] **Contra:** Phenothiazine & sulfite sensitivity, PRG **Disp:** Tabs 10 mg; supp 10 mg; inj 5 mg/mL **SE:** EPS, xerostomia, drowsiness, orthostatic ↓ BP, tachycardia, confusion

6-Thioguanine [6-TG] (Tabloid) **Uses:** *AML, ALL, CML* **Action:** Purine-based antimetabolite (substitutes for natural purines interfering w/ nucleotide synth) **Dose:** 2–3 mg/kg/d; ↓ in severe renal/hepatic impair **Caution:**

[D, -] **Contra:** Resistance to mercaptopurine **Disp:** Tabs 40 mg **SE:** ↓ BM (leucopenia/thrombocytopenia), N/V/D, anorexia, stomatitis, rash, hyperuricemia, rare hepatotox

Thioridazine (Mellaril) **WARNING:** Dose-related QT prolongation

Uses: *Schizophrenia,* psychosis **Action:** Phenothiazine antipsychotic **Dose:** *Adults.* Initial, 50–100 mg PO tid; maint 200–800 mg/24 h PO in 2–4 ÷ doses. *Peds > 2 y.* 0.5–3 mg/kg/24 h PO in 2–3 ÷ doses **Caution:** [C, ?] Phenothiazines, QT_c-prolonging agents, aluminum **Contra:** Phenothiazine sensitivity **Disp:** Tabs 10, 15, 25, 50, 100, 150, 200 mg; PO conc 30, 100 mg/mL; **SE:** Low incidence of EPS; ventricular arrhythmias; ↓ BP, dizziness, drowsiness, neuroleptic malignant synd, Szs, skin discoloration, photosens, constipation, sexual dysfunction, blood dyscrasias, pigmentary retinopathy, hepatic impair **Notes:** Avoid EtOH, dilute PO conc in 2–4 oz liq

Thiothixene (Navane) **Uses:** *Psychotic disorders* **Action:** Antipsychotic **Dose:** *Adults & Peds > 12 y.* Mild–moderate psychosis: 2 mg PO tid, up to 20–30 mg/d. 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 **Caution:** [C, ?] **Contra:** Phenothiazine sensitivity **Disp:** Caps 1, 2, 5, 10, 20 mg; PO conc 5 mg/mL; inj 10 mg/mL **SE:** Drowsiness, EPS most common; ↓ BP, dizziness, drowsiness, neuroleptic malignant synd, Szs, skin discoloration, photosens, constipation, sexual dysfunction, blood dyscrasias, pigmentary retinopathy, hepatic impair **Notes:** Dilute PO conc immediately before use

Tiagabine (Gabitril) **Uses:** *Adjunct in partial Szs,* bipolar disorder **Action:** Inhibition of GABA **Dose:** *Adults & Peds ≥ 12 y.* Initial 4 mg/d PO, ↑ by 4 mg during 2nd wk; ↑ PRN by 4–8 mg/d based on response, 56 mg/d max; w/food **Caution:** [C, M] **Contra:** Component allergy **Disp:** Tabs 2, 4, 12, 16, 20 mg **SE:** Dizziness, HA, somnolence, memory impair, tremors **Notes:** Use gradual withdrawal; used in combo w/ other anticonvulsants

Ticarcillin (Ticar) **Uses:** Infxns due to gram(–) bacteria (*Klebsiella*, *Proteus*, *E. coli*, *Enterobacter*, *P. aeruginosa*, & *Serratia*) involving the skin, bone, resp & urinary tract, abdomen, sepsis **Action:** 4th-gen PCN, bactericidal; ↓ cell wall synth. **Spectrum:** Some gram (+) (strep, fair enterococcus, not MRSA), gram(–) enhanced w/aminoglycoside use; good anaerobes (*Bacteroides*) **Dose:** *Adults.* 3 g IV q4–6h. *Peds.* 200–300 mg/kg/d IV ÷ q4–6h; ↓ w/in renal insuff failure **Caution:** [B, +] PCN sensitivity, renal impair, Sz hx, Na restriction **Contra:** Allergy to class **Disp:** Inj 1, 3, 6, 20, 30 g **SE:** Interstitial nephritis, anaphylaxis, bleeding, rash, hemolytic anemia **Notes:** Used in combo w/ aminoglycosides

Ticarcillin/Potassium Clavulanate (Timentin) **Uses:** *Infxns of the skin, bone, resp & urinary tract, abdomen, sepsis* **Action:** 4th-gen 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. *Peds.* 200–300 mg/kg/d IV ÷ q4–6h; ↓ in renal failure **Caution:** [B, +/-] PCN

sensitivity **Disp:** Inj 3g/1g vial **SE:** Hemolytic anemia, false + proteinuria **Notes:** Often used in combo w/ aminoglycosides; penetrates CNS with meningeal irritation; see also ticarcillin

Ticlopidine (Ticlid) **WARNING:** Neutropenia/agranulocytosis, TTP, aplastic anemia reported **Uses:** *↓ risk of thrombotic stroke,* protect grafts status post CABG, diabetic microangiopathy, ischemic heart Dz, DVT prophylaxis, graft prophylaxis after renal transplant **Action:** Plt aggregation inhibitor **Dose:** 250 mg PO bid w/ food **Caution:** [B, ?/–], ↑ tox of ASA, anticoagulation, NSAIDs, theophylline **Contra:** Bleeding, hepatic impair, neutropenia, thrombocytopenia **Disp:** Tabs 250 mg **SE:** Bleeding, GI upset, rash, ↑ on LFTs **Notes:** Follow CBC 1st 3 mo

Tigecycline (Tygacil) **Uses:** *Rx complicated skin & soft tissue Infxns, & complicated intraabd Infxns* **Action:** New class: related to tetracycline; **Spectrum:** Broad gram (+), gram (–), anaerobic, some mycobacterial; *E. coli*, *Enterococcus faecalis* (vanco-susceptible isolates), *Staph aureus* (meth-susceptible/resistant), *Strep (agalactiae, anginosus grp, pyogenes)*, *Citrobacter freundii*, *Enterobacter cloacae*, *B. fragilis* group, *C. perfringens*, *Peptostreptococcus* **Dose: Adults.** 100 mg, then 50 mg q12h IV over 30–60 min every 12 h **Caution:** [D, ?] hepatic impair, monotherapy w/ intestinal perf, not OK in peds **Contra:** Component sensitivity **Disp:** Inj 50 mg vial **SE:** N/V, inj site Rxn

Timolol (Blocadren) **WARNING:** Exacerbation of ischemic heart Dz w/ abrupt D/C **Uses:** *HTN & MI* **Action:** β-adrenergic receptor blocker, β₁, β₂ **Dose:** HTN: 10–20 mg bid, up to 60 mg/d. MI: 10 mg bid **Caution:** [C (1st tri; D if 2nd or 3rd tri), +] **Contra:** CHF, cardiogenic shock, bradycardia, heart block, COPD, asthma **Disp:** Tabs 5, 10, 20 mg **SE:** Sexual dysfunction, arrhythmia, dizziness, fatigue, CHF

Timolol, Ophthalmic (Timoptic) **Uses:** *Glaucoma* **Action:** β-blocker **Dose:** 0.25% 1 gt bid; ↓ to daily when controlled; use 0.5% if needed; 1 gtt/d gel **Caution:** [C (1st tri; D 2nd or 3rd), ?/+] **Disp:** Soln 0.25/0.5%; Timoptic XE (0.25, 0.5%) gel-forming soln **SE:** Local irritation

Tinidazole (Tindamax) **WARNING:** Off-label use discouraged (animal carcinogenicity w/ other drugs in class) **Uses:** Adults/children > 3 y. * Trichomoniasis & giardiasis; intestinal amebiasis or amebic liver abscess * **Action:** 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; Amebic liver abscess: 2 g PO daily × 3–5; **Peds.** Trichomoniasis: 50 mg/kg PO, 2 g/day max; Giardiasis: 50 mg/kg PO, 2 g max; Amebiasis: 50 mg/kg PO daily × 3, 2 g/day max; Amebic liver abscess: 50 mg/kg PO daily × 3–5, 2 g/day max; w/ food **Caution:** [C, D in 1st trim; –] May be cross-resistant with metronidazole; Sz/peripheral neuropathy may require D/C; w/ CNS/hepatic impair **Contra:** Metronidazole allergy, 1st trim PRG, w/ EtOH use **Disp:** Tabs 250, 500 **SE:** CNS disturbances; blood dyscrasias, taste disturbances,

N/V, darkens urine **Notes:** D/C EtOH during & 3 d after Rx; potentiates warfarin & lithium; clearance ↓ w/other drugs; crush & disperse in cherry syrup for peds; removed by HD

Tinzaparin (Innohep) **WARNING:** Risk of spinal/epidural hematomas development w/ spinal anesthesia or lumbar puncture **Uses:** *Rx of DVT w/ or w/o PE* **Action:** LMW heparin **Dose:** 175 units/kg SQ daily at least 6 d until warfarin dose stabilized **Caution:** [B, ?] Pork allergy, active bleeding, mild-moderate renal dysfunction **Contra:** Allergy to sulfites, heparin, benzyl alcohol, HIT **Disp:** Inj 20,000 units/mL **SE:** Bleeding, bruising, thrombocytopenia, inj site pain, ↑ LFTs **Notes:** Monitor via Anti-Xa levels; no effect on: bleeding time, plt Fxn, PT, aPTT

Tioconazole (Vagistat) **Uses:** *Vaginal fungal Infxns* **Action:** Topical antifungal **Dose:** 1 applicatorful intravag hs (single dose) **Caution:** [C, ?] **Contra:** Component allergy **Disp:** Vaginal oint 6.5% **SE:** Local burning, itching, soreness, polyuria **Notes:** Insert high into vagina

Tiotropium (Spiriva) **Uses:** Bronchospasm w/ COPD, bronchitis, emphysema **Action:** Synthetic anticholinergic like atropine **Dose:** 1 cap/d inhaled using HandiHaler, *do not* use w/ spacer **Caution:** [C, ?/–] BPH, NAG, MyG, renal impair **Contra:** Acute bronchospasm **Disp:** Inhalation Caps 18 mcg **SE:** URI, xerostomia **Notes:** Monitor FEV₁ or peak flow

Tirofiban (Aggrastat) **Uses:** *Acute coronary synd* **Action:** Glycoprotein IIb/IIIa inhibitor **Dose:** Initial 0.4 mcg/kg/min for 30 min, followed by 0.1 mcg/kg/min; use in combo w/ heparin; **ACS or PCI:** 0.4 (g/kg/min IV for 30 min, then 0.1 µg/kg/min (ECC 2005); ↓ in renal insuff **Caution:** [B, ?/–] **Contra:** Bleeding, intracranial neoplasm, vascular malformation, stroke/surgery/trauma w/in last 30 d, severe HTN **Disp:** Inj 50, 250 mcg/mL **SE:** Bleeding, bradycardia, coronary dissection, pelvic pain, rash

Tobramycin (Nebcin) **Uses:** *Serious gram(–) Infxns* **Action:** Aminoglycoside; ↓ protein synth. **Spectrum:** Gram(–) bacteria (including *Pseudomonas*) **Dose:** **Adults.** 1–2.5 mg/kg/dose IV q8–24h. **Peds.** 2.5 mg/kg/dose IV q8h; ↓ w/ renal insuff **Caution:** [C, M] **Contra:** Aminoglycoside sensitivity **Disp:** Inj 10, 40 mg/mL **SE:** Nephrotox & ototox **Notes:** Follow CrCl & levels; Levels: **Peak:** 30 min after inf; **Trough** < 0.5 h before next dose; **Therapeutic:** **Peak** 5–8 mcg/mL, **Trough** < 2 mcg/mL; **Toxic Peak** > 12 mcg/mL; ½ life: 2 h

Tobramycin Ophthalmic (AKTob, Tobrex) **Uses:** *Ocular bacterial Infxns* **Action:** Aminoglycoside **Dose:** 1–2 gtt q4h; oint bid–tid; if severe, use oint q3–4h, or 2 gtt q30–60 min, then less frequently **Caution:** [C, M] **Contra:** Aminoglycoside sensitivity **Disp:** Oint & soln tobramycin 0.3% **SE:** Ocular irritation

Tobramycin & Dexamethasone Ophthalmic (TobraDex) **Uses:** *Ocular bacterial Infxns associated w/ significant inflammation* **Action:** Antibiotic w/ anti-inflammatory **Dose:** 0.3% oint apply q3–8h or soln 0.3% apply 1–2 gtt q1–4h **Caution:** [C, M] **Contra:** Aminoglycoside sensitivity **Disp:** Oint &

susp 2.5, 5 & 10 mL tobramycin 0.3% & dexamethasone 0.1% **SE:** Local irritation/edema **Notes:** Use under ophthalmologist's direction

Tolazamide (Tolinase) **Uses:** *Type 2 DM* **Action:** Sulfonylurea; ↑ pancreatic insulin release; ↑ peripheral insulin sensitivity; ↓ hepatic glucose output

Dose: 100–500 mg/d (no benefit > 1 g/d) **Caution:** [C, +/-] Elderly, hepatic or renal impair **Disp:** Tabs 100, 250, 500 mg **SE:** HA, dizziness, GI upset, rash, hyperglycemia, photosens, blood dyscrasias

Tolazoline (Priscoline) **Uses:** *Peripheral vasospastic disorders* **Action:**

Competitively blocks α -adrenergic receptors **Dose:** **Adults.** 10–50 mg IM/IV/SQ qid. **Neonates.** 1–2 mg/kg IV over 10–15 min, then 1–2 mg/kg/h (adjust w/ ↓ renal Fxn) **Caution:** Avoid alcohol, w/CAD, renal impairment, CVA, PUD, ↓ BP [C, ?]

Contra: CAD **Disp:** Inj 25 mg/mL **SE:** ↓ BP, peripheral vasodilation, tachycardia, arrhythmias, GI upset & bleeding, blood dyscrasias, renal failure

Tolbutamide (Orinase) **Uses:** *Type 2 DM* **Action:** Sulfonylurea; ↑ pancreatic insulin release; ↑ peripheral insulin sensitivity; ↓ hepatic glucose output

Dose: 500–1000 mg bid; 3 gm/day max; ↓ in hepatic failure **Caution:** [C, +] **Contra:** Sulfonylurea sensitivity **Disp:** Tabs 250, 500 mg **SE:** HA, dizziness, GI upset, rash, photosens, blood dyscrasias, hypoglycemia, heartburn

Tolcapone (Tasmar) **WARNING:** Cases of fulminant liver failure resulting in death have occurred **Uses:** *Adjunct to carbidopa/levodopa in Parkinson Dz*

Action: Catechol-*O*-methyltransferase inhibitor slows levodopa metabolism **Dose:** 100 mg PO TID w/ first daily levodopa/carbidopa dose, then dose 6 & 12 h later; ↓ w/ renal impair **Caution:** [C, ?] **Contra:** Hepatic impair; w/nonselective MAOI **Disp:** Tablets 100 mg, 200 mg **SE:** Constipation, xerostomia, vivid dreams, hallucinations, anorexia, N/D, orthostasis, liver failure, Rhabdomyolysis **Notes:**

Do not abruptly D/C or ↓ dose; monitor LFTs

Tolmetin (Tolectin) **WARNING:** May ↑ risk of cardiovascular events & GI bleeding **Uses:** *Arthritis & pain* **Action:** NSAID; ↓ prostaglandins **Dose:**

200–600 mg PO tid; 2000 mg/d max **Caution:** [C (D in 3rd tri or near term), +] **Contra:** NSAID or ASA sensitivity; use for pain post 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, versicolor* **Action:** Topical antifungal **Dose:** Apply to area bid for 2–4 wk

Caution: [C, ?] **Contra:** 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) **Uses:** *OAB (frequency, urgency, incontinence)* **Action:** Anticholinergic **Dose:** Detrol 1–2 mg PO bid; Detrol LA 2–4 mg/d **Caution:** [C, ?/-] w/ CYP2D6 & 3A/4 inhibitor (Table 11) **Contra:** Urinary retention, gastric retention, or uncontrolled NAG **Disp:** Tabs 1, 2 mg; Detrol LA tabs 2, 4 mg **SE:** Xerostomia, blurred vision, headache, constipation **Notes:**

LA form may see “intact” pill in stool

Topiramate (Topamax) Uses: *Adjunctive Rx for complex partial Szs & tonic-clonic Szs,* bipolar disorder, neuropathic pain, migraine prophylaxis **Action:** Anticonvulsant **Dose: Adults.** Seizures: Total dose 400 mg/d; see insert for 8-wk titration schedule. *Migraine prophylaxis:* titrate 100 m/d total **Peds 2–16 y:** Initial, 1–3 mg/kg/d PO qhs; titrate per insert to 5–9 mg/kg/d; ↓ w/ renal impair **Caution:** [C, ?/–] **Contra:** Component allergy **Disp:** Tabs 25, 50, 100, 200 mg; caps sprinkles 15, 25, 50 mg **SE:** Wgt 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) **WARNING:** Chemo precautions, for use by physicians familiar with chemotherapeutic agents, BM suppression possible **Uses:** *Ovarian CA (cisplatin-refractory), cervical Ca, NSCLC*, sarcoma, ped non-small-cell lung CA **Action:** Topoisomerase I inhibitor; ↓ DNA synth **Dose:** 1.5 mg/m²/d as a 1-h IV inf × 5 days, repeat q3wk; ↓ w/renal impair **Caution:** [D, –] **Contra:** PRG, breast-feeding **Disp:** Inj 4-mg vials **SE:** ↓ BM, N/V/D, drug fever, skin rash

Torsemide (Demadex) Uses: *Edema, HTN, CHF, & hepatic cirrhosis* **Action:** Loop diuretic; ↓ reabsorption of Na⁺ & Cl⁻ in ascending loop of Henle & distal tubule **Dose:** 5–20 mg/d PO or IV; 200 mg/day max **Caution:** [B, ?] **Contra:** Sulfonylurea sensitivity **Disp:** Tabs 5, 10, 20, 100 mg; inj 10 mg/mL **SE:** Orthostatic ↓ BP, HA, dizziness, photosens, electrolyte imbalance, blurred vision, renal impair **Notes:** 20 mg torsemide = 40 mg furosemide

Tramadol (Ultram, Ultram ER) Uses: *Moderate–severe pain* **Action:** Centrally acting analgesic **Dose: Adults.** 50–100 mg PO q4–6h PRN, start 25 mg PO qam, ↑ Q3d to 25 mg PO QID; ↑ 50 mg Q3D, 400 mg/d max (300 mg if > 75 yr); ER 100–300 mg PO daily **Peds.** 0.5–1 mg/kg PO q 4–6h PRN; ↓ w/ renal insuff **Caution:** [C, ?/–] **Contra:** Opioid dependency; w/MAOIs; sensitivity to codeine **Disp:** Tabs 50 mg; ER 10, 20, 30 mg **SE:** Dizziness, HA, somnolence, GI upset, resp depression, anaphylaxis **Notes:** ↓ Sz threshold; tolerance/dependence may develop

Tramadol/Acetaminophen (Ultracet) Uses: *Short-term Rx acute pain (< 5 d)* **Action:** Centrally acting analgesic; nonnarcotic analgesic **Dose:** 2 tabs PO q4–6h PRN; 8 tabs/d max. *Elderly/renal impair:* Lowest possible dose; 2 tabs q12h max if CrCl < 30 **Caution:** [C, –] Szs, hepatic/renal impair, or Hx addictive tendencies **Contra:** Acute intox **Disp:** Tab 37.5 mg tramadol/325 mg APAP **SE:** SSRIs, TCAs, opioids, MAOIs ↑ risk of Szs; dizziness, somnolence, tremor, HA, N/V/D, constipation, xerostomia, liver tox, rash, pruritus, ↑ sweating, physical dependence **Notes:** Avoid EtOH

Trandolapril (Mavik) **WARNING:** Use in PRG in 2nd/3rd tri can result in fetal death **Uses:** *HTN,* CHF, LVD, post-AMI **Action:** ACE inhibitor **Dose:** HTN: 2–4 mg/d; CHF/LVD: 4 mg/d; ↓ w/severe renal/hepatic impair **Caution:**

[D, +] ACE inhibitor sensitivity, angioedema w/ ACE inhibitors **Disp:** Tabs 1, 2, 4 mg **SE:** ↓ BP, bradycardia, dizziness, ↑ K⁺, GI upset, renal impair, cough, angioedema **Notes:** Afro-Americans, min. dose is 2 mg vs 1 mg in Caucasians

Trastuzumab (Herceptin) **WARNING:** Can cause cardiomyopathy and ventricular dysfunction; infusion rxns and pulm toxicity reported **Uses:** *Met breast CA that overexpress the HER2/neu protein* breast Ca adjuvant, w/ doxorubicin, cyclophosphamide, and paclitaxel if pt HER2/neu (+) **Action:** MoAb; binds human EGF receptor 2 protein (HER2); mediates cellular cytotox **Dose:** Per protocol, typical 2 mg/kg/IV/week **Caution:** [B, ?] CV dysfunction, allergy/inf Rxns **Contra:** Live vaccines **Disp:** Inj form 21 mg/mL **SE:** Anemia, cardiomyopathy, nephrotic synd, pneumonitis **Notes:** Inf related Rxns minimized w/ acetaminophen, diphenhydramine & meperidine

Trazodone (Desyrel) **WARNING:** Closely monitor for worsening depression or emergence of suicidality, particularly in pts < 24 yr **Uses:** *Depression,* hypnotic, augment other antidepressants **Action:** Antidepressant; ↓ reuptake of serotonin & norepinephrine **Dose: Adults & Adolescents.** 50–150 mg PO daily–qid; max 600 mg/d. *Sleep:* 50 mg PO, qhs, PRN **Caution:** [C, ?/–] **Contra:** Component allergy **Disp:** Tabs 50, 100, 150, 300 mg **SE:** Dizziness, HA, sedation, N, xerostomia, syncope, confusion, tremor, hepatitis, EPS **Notes:** Takes 1–2 wk for symptom improvement; may interact with CYP3A4 inhibitors to ↑ trazodone concentrations, carbamazepine to ↓ trazodone concentrations

Treprostinil Sodium (Remodulin) **Uses:** *NYHA class II–IV pulm arterial HTN* **Action:** Vasodilation, inhibits plt aggregation **Dose:** 0.625–1.25 ng/kg/min inj cont inf **Caution:** [B, ?/–] **Contra:** Component allergy **Disp:** 1, 2.5, 5, 10 mg/mL inj **SE:** Additive effects w/ anticoagulants, antihypertensives; inf site Rxns; D (25%), N (22%), HA (27%) **Notes:** Initiate in monitored setting; do not D/C or ↓ dose abruptly

Tretinoin, Topical [Retinoic Acid] (Retin-A, Avita, Renova, Retin-A Micro) **Uses:** *Acne vulgaris, sun-damaged skin, wrinkles* (photo aging), some skin CAs **Action:** 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) **Caution:** [C, ?] **Contra:** Retinoid sensitivity **Disp:** Cream 0.02, 0.025, 0.05, 0.1%; gel 0.01, 0.025, microformulation gel 0.1, 0.04%; liq 0.05% **SE:** Avoid sunlight; edema; skin dryness, erythema, scaling, changes in pigmentation, stinging, photosens

Triamcinolone (Azmacort) **Uses:** *Chronic asthma* **Actions:** Topical steroid **Dose:** Two inhalations tid–qid or 4 inhal bid **Caution:** [C, ?] **Contra:** Component allergy **Disp:** Aerosol, metered inhaler 100 mcg spray **SE:** Cough, oral candidiasis **Notes:** Instruct pts to rinse mouth after use; not for acute asthma

Triamcinolone & Nystatin (Mycolog-II) **Uses:** *Cutaneous candidiasis* **Action:** Antifungal & antiinflammatory **Dose:** Apply lightly to area bid; max 25 mg/d **Caution:** [C, ?] **Contra:** Varicella; systemic fungal Infxns **Disp:** Cream

& oint 15, 30, 60, 120 mg **SE:** Local irritation, hypertrichosis, pigmentation changes **Notes:** For short-term use (< 7 d)

Triamterene (Dyrenium) **Uses:** *Edema associated w/ CHF, cirrhosis* **Action:** 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 **Caution:** [B (manufacturer; D ed. opinion), ?/–] **Contra:** ↑ K⁺, renal impair; caution w/other K⁺-sparing diuretics **Disp:** Caps 50, 100 mg **SE:** ↓ K⁺, blood dyscrasias, liver damage, other Rxns

Triazolam (Halcion) [C-IV] **Uses:** *Short-term management of insomnia* **Action:** Benzodiazepine **Dose:** 0.125–0.25 mg/d PO hs PRN; ↓ in elderly **Caution:** [X, ?/–] **Contra:** NAG; cirrhosis; concurrent amprenavir, ritonavir, nelfinavir, itraconazole, ketoconazole, nefazodone **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, do not prescribe > 1 mo supply

Triethanolamine (Cerumenex) [OTC] **Uses:** *Cerumen (ear wax) removal* **Action:** Ceruminolytic agent **Dose:** Fill ear canal & insert cotton plug; irrigate w/ H₂O after 15 min; repeat PRN **Caution:** [C, ?] **Contra:** Perforated tympanic membrane, otitis media **Disp:** Soln 10, 16, 12 mL **SE:** Local dermatitis, pain, erythema, pruritus

Triethylenetriphosphamide (Thio-Tepa, Tespa, TSPA) **Uses:** *Hodgkin Dz & NHLs; leukemia; breast, ovarian CAs, preparative regimens for allogeneic & ABMT w/ high doses, intravesical for bladder CA* **Action:** Polyfunctional alkylating agent **Dose:** 0.5 mg/kg q1–4wk, 6 mg/m² IM or IV × 4 d q2–4wk, 15–35 mg/m² by cont IV inf over 48 h; 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); 1–10 mg/m² (typically 15 mg) IT 1 or 2 X/wk; 0.8 mg/kg in 1–2 L of soln may be instilled intraperitoneally; ↓ in renal failure **Caution:** [D, –] **Contra:** Component allergy **Disp:** Inj 15, 30 mg **SE:** ↓ BM, N/V, dizziness, HA, allergy, paresthesias, alopecia **Notes:** Intravesical use in bladder Ca infrequent today

Trifluoperazine (Stelazine) **Uses:** *Psychotic disorders* **Action:** Phenothiazine; blocks postsynaptic CNS dopaminergic receptors **Dose:** *Adults.* 2–10 mg PO bid. *Peds 6–12 y.* 1 mg PO daily–bid initial, gradually ↑ to 15 mg/d; ↓ in elderly/debilitated pts **Caution:** [C, ?/–] **Contra:** Hx blood dyscrasias; phenothiazine sensitivity **Disp:** Tabs 1, 2, 5, 10 mg; PO conc 10 mg/mL; inj 2 mg/mL **SE:** Orthostatic ↓ BP, EPS, dizziness, neuroleptic malignant synd, skin discoloration, lowered Sz threshold, photosens, blood dyscrasias **Notes:** PO conc must be diluted to 60 mL or more prior to administration; requires several weeks for onset of effects

Trifluridine Ophthalmic (Viroptic) **Uses:** *Herpes simplex keratitis & conjunctivitis* **Action:** Antiviral **Dose:** 1 gt q2h (max 9 gtt/d); ↓ to 1 gtt q4h after healing begins; Rx up to 21 d **Caution:** [C, M] **Contra:** Component allergy **Disp:** Soln 1% **SE:** Local burning, stinging

Trihexyphenidyl (Artane) Uses: *Parkinson Dz* Action: Blocks excess acetylcholine at cerebral synapses Dose: 2–5 mg PO daily–qid Caution: [C, +] Contra: NAG, GI obst, MyG, bladder obstructions Disp: Tabs 2, 5 mg; SR caps 5 mg; elixir 2 mg/5 mL SE: Dry skin, constipation, xerostomia, photosens, tachycardia, arrhythmias

Trimethobenzamide (Tigan) Uses: *N/V* Action: ↓ medullary chemoreceptor trigger zone Dose: Adults. 250 mg PO or 200 mg PR or IM tid–qid PRN. Peds. 20 mg/kg/24 h PO or 15 mg/kg/24 h PR or IM in 3–4 ÷ doses Caution: [C, ?] Contra: Benzocaine sensitivity Disp: Caps 100, 250 mg; supp 100, 200, 300 mg; inj 100 mg/mL SE: Drowsiness, ↓ BP, dizziness; hepatic impair, blood dyscrasias, Szs, parkinsonian-like synd Notes: In the presence of viral Infxns, may mask emesis or mimic CNS effects of Reye's synd

Trimethoprim (Trimplex, Proloprim) Uses: *UTI due to susceptible gram (+) & gram (-) organisms;* suppression of UTI Action: ↓ dihydrofolate reductase. Spectrum: Many gram (+) & (-) except *Bacteroides*, *Branhamella*, *Brucella*, *Chlamydia*, *Clostridium*, *Mycobacterium*, *Mycoplasma*, *Nocardia*, *Neisseria*, *Pseudomonas*, & *Treponema* Dose: Adults. 100 mg/d PO bid or 200 mg/d PO. Peds. 4 mg/kg/d in 2 ÷ doses; ↓ w/ renal failure Caution: [C, +] Contra: Megaloblastic anemia due to folate deficiency Disp: Tabs 100, 200 mg; 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] (Bactrim, Septra) Uses: *UTI Rx & prophylaxis, otitis media, sinusitis, bronchitis* Action: SMX ↓ synth of dihydrofolic acid; TMP ↓ dihydrofolate reductase to impair protein synth. Spectrum: Includes *Shigella*, *P. jiroveci* (formerly *carinii*), & *Nocardia* Infxns, *Mycoplasma*, *Enterobacter sp*, *Staph*, *Strep*, & more Dose: Adults. 1 DS tab PO bid or 5–20 mg/kg/24 h (based on TMP) IV in 3–4 ÷ doses. *P. jiroveci*: 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. *UTI prophylaxis*: 1 PO daily. Peds. 8–10 mg/kg/24 h (TMP) PO ÷ into 2 doses or 3–4 doses IV; do not use in newborns; ↓ in renal failure; maintain hydration Caution: [B (D if near term), +] Contra: Sulfonamide sensitivity, porphyria, megaloblastic anemia w/ folate deficiency, significant 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, Stevens–Johnson synd, blood dyscrasias, hepatitis Notes: Synergistic combo, interacts w/ warfarin

Trimetrexate (Neutrexin) WARNING: Must be used w/ leucovorin to avoid tox Uses: *Moderate–severe PCP* Action: ↓ dihydrofolate reductase Dose: 45 mg/m² IV q24h for 21 d; administer w/ leucovorin 20 mg/m² IV q6h for 24 d; ↓ in hepatic impair Caution: [D, ?/–] Contra: MTX sensitivity Disp: Inj 25, 200 mg/25 mg/vial SE: Sz, fever, rash, GI upset, anemias, ↑ LFTs, peripheral neuropathy, renal impair Notes: Use cytotoxic cautions; inf over 60 min

Triptorelin (Trelstar Depot, Trelstar LA) Uses: *Palliation of advanced PCa* **Action:** LHRH analog; ↓ GNRH w/ continuous dosing; transient ↑ in LH, FSH, testosterone, & estradiol 7–10 d after first dose; w/ chronic/continuous use (usually 2–4 wk), sustained ↓ LH & FSH w/ ↓ testicular & ovarian steroidogenesis similar to surgical castration **Dose:** 3.75 mg IM monthly or 11.25 mg IM q3mo **Caution:** [X, N/A] **Contra:** Not indicated in females **Disp:** Inj depot 3.75 mg; LA 11.25 mg **SE:** Dizziness, emotional lability, fatigue, HA, insomnia, HTN, D, V, ED, retention, UTI, pruritus, anemia, inj site pain, musculoskeletal pain, osteoporosis, allergic Rxns

Tropium Chloride (Sanctura) Uses: *OAB* **Action:** Antimuscarinic, antispasmodic **Dose:** 20 mg PO bid; ↓ w/ renal impair or > 75 y; on empty stomach or 1 h ac **Caution:** [C, ?/–] BOO, GI obst, ulcerative colitis, MyG, renal/hepatic impair **Contra:** NAG, urinary/gastric retention **Disp:** Tabs 20 mg **SE:** Constipation, xerostomia

Urokinase (Abbokinase) Uses: *PE, DVT, restore patency to IV catheters* **Action:** Converts plasminogen to plasmin; causes clot lysis **Dose:** *Adults & Peds. Systemic effect:* 4,400 units/kg IV over 10 min, then 4,400–6,000 units/kg/h for 12 h. *Restore catheter patency:* Inject 5,000 units into catheter & aspirate up to two doses **Caution:** [B, +] **Contra:** Do not use w/in 10 d of surgery, delivery, or organ biopsy; bleeding, CVA, vascular malformation **Disp:** Powder for inj, 250,000-unit vial **SE:** Bleeding, ↓ BP, dyspnea, bronchospasm, anaphylaxis, cholesterol embolism

Valacyclovir (Valtrex) Uses: *Herpes zoster; genital herpes* **Action:** Prodrug of acyclovir; ↓ viral DNA replication. *Spectrum:* Herpes simplex I & II **Dose:** 1 g PO tid. *Genital herpes:* 500 mg bid × 7–10 d. *Herpes prophylaxis:* 500–1000 mg/d; ↓ w/ renal failure **Caution:** [B, +] **Disp:** Caplets 500, 1000 mg **SE:** HA, GI upset, dizziness, pruritus, photophobia

Valganciclovir (Valcyte) Uses: *CMV* **Action:** Ganciclovir prodrug; ↓ viral DNA synth **Dose:** Induction, 900 mg PO bid w/ food × 21 d, then 900 mg PO daily; ↓ in renal dysfunction **Caution:** [C, ?/–] Use w/ imipenem/cilastatin, nephrotoxic drugs **Contra:** Allergy to acyclovir, ganciclovir, valganciclovir; ANC HD < 500/mm²; plt < 25 K; Hgb < 8 g/dL **Disp:** Tabs 450 mg **SE:** BM suppression, headache, GI upset **Notes:** Monitor CBC & Cr

Valproic Acid (Depakene, Depakote) Uses: *Rx epilepsy, mania; prophylaxis of migraines,* Alzheimer behavior disorder **Action:** Anticonvulsant; ↑ availability of GABA **Dose:** *Adults & Peds. Szs:* 30–60 mg/kg/24 h PO ÷ tid (after initiation of 10–15 mg/kg/24 h). *Mania:* 750 mg in 3 ÷ doses, ↑ 60 mg/kg/d max. *Migraines:* 250 mg bid, ↑ 1000 mg/d max; ↓ w/ hepatic impair **Caution:** [D, +] **Contra:** Severe hepatic impair **Disp:** Caps 250 mg; syrup 250 mg/5 mL **SE:** Somnolence, dizziness, GI upset, diplopia, ataxia, rash, thrombocytopenia, hepatitis, pancreatitis, prolonged bleeding times, alopecia, wgt gain, hyperammonemic encephalopathy reported in pts w/ urea cycle disorders **Notes:** Monitor LFTs &

Levels: *Trough*: just before next dose; *Therapeutic: Peak* 50–100 mcg/mL; *Toxic Trough* > 100 mcg/mL; ½ life: 5–20 h; phenobarbital & phenytoin may alter levels

Valsartan (Diovan) **WARNING:** Use during 2nd/3rd tri of PRG can cause fetal harm

Uses: HTN, CHF, DN **Action:** Angiotensin II receptor antagonist **Dose:** 80–160 mg/d, max 320 mg/day **Caution:** [C (1st tri; D 2nd & 3rd tri), ?/–] w/ K⁺-sparing diuretics or K⁺ supls **Contra:** Severe hepatic impair, biliary cirrhosis/obst, primary hyperaldosteronism, bilateral RAS **Disp:** Tabs 40, 80, 160, 320 mg, capsule: 80 mg, 160 mg **SE:** ↓ BP, dizziness

Vancomycin (Vancocin, Vancoled) **Uses:** *Serious MRSA Infxns; enterococcal Infxns; PO Rx of *C. difficile* pseudomembranous colitis* **Action:** ↓ Cell wall synth. **Spectrum:** Gram(+) bacteria & some anaerobes (includes MRSA, *Staphylococcus* sp, *Enterococcus* sp, *Streptococcus* sp, *C. difficile*) **Dose: Adults.** 1 g IV q12h; or 15 mg/kg/dose for colitis 125–500 mg PO q6h. **Peds.** 40–60 mg/kg/24 h IV in ÷ doses q6–12 h. **Neonates.** 10–15 mg/kg/dose q12h; ↓ in renal insuff **Caution:** [C, M] **Contra:** Component allergy; w/ avoid in Hx hearing loss **Disp:** Caps 125, 250 mg; powder 250 mg/5 mL, 500 mg/6 mL for PO soln; powder for inj 500 mg, 1000 mg, 10 g/vial **SE:** Ototoxic & nephrotoxic, GI upset (PO), neutropenia **Notes:** Not absorbed PO, local effect in gut only; give IV dose slowly (over 1–3 h) to prevent “red-man synd” (flushing of head/neck/upper torso); IV product PO for colitis; Levels: *Peak:* 1 h after inf; *Trough* < 0.5 h before next dose; *Therapeutic: Peak* 30–40 mcg/mL, *Trough* < 2 mcg/mL; *Toxic Peak* > 50 mcg/mL, *Trough* > 15 mcg/mL; ½ life: 6–8 h

Vardenafil (Levitra) **WARNING:** May prolong QT_c interval **Uses:** *ED* **Action:** PDE5 inhibitor, increases cGMP and NO levels; Relaxes smooth muscles, dilates cavernosal arteries **Dose:** 10 mg PO 60 min before sexual activity; 2.5 mg if administered w/ CYP3A4 inhibitors (Table 11); max × 1 ≤ 20 mg **Caution:** [B, –] W/ CV, hepatic, or renal Dz **Contra:** Nitrates, ↑ Qtc interval **Disp:** Tabs 2.5, 5, 10, 20 mg tabs **SE:** ↓ BP, HA, dyspepsia, priapism hearing loss **Notes:** Concomitant α-blockers may cause ↓ BP

Varenicline (Chantix) **Uses:** *Smoking cessation* **Action:** Nicotine receptor antagonist **Dose: Adults.** 0.5 mg PO daily × 3 d, 0.5 mg bid × 4 d, then 1 mg PO bid for 12 wks total; after meal w/ glass of water **Caution:** [C, ?/–] ↓ dose w/renal impair **Disp:** Tabs 0.5, 1 mg **SE:** N, V, insomnia, flatulence, unusual dreams **Notes:** Slowly ↑ dose to ↓ N; initiate 1 wk before desired smoking cessation date

Varicella Virus Vaccine (Varivax) **Uses:** *Prevent varicella (chickenpox)* **Action:** Active immunization; live attenuated virus **Dose: Adults & Peds.** 0.5 mL SQ, repeat 4–8 wk **Caution:** [C, M] **Contra:** Immunocompromise; neomycin-anaphylactoid Rxn, blood dyscrasias; immunosuppressive drugs; avoid PRG for 3 mo after **Disp:** Powder for inj **SE:** Mild varicella Infxn; fever, local Rxns, irritability, GI upset **Notes:** OK for all children & adults who have not had chickenpox

Vasopressin [Antidiuretic Hormone, ADH] (Pitressin) **Uses:** *DI; Rx postop abd distension*; adjunct Rx of GI bleeding & esophageal varices; asystole and PEA pulseless VT & VF, adjunct systemic vasopressor (IV drip) **Action:** Posterior pituitary hormone, potent GI and peripheral vasoconstrictor **Dose: Adults & Peds.** DI: 2.5–10 units SQ or IM tid–qid. *GI hemorrhage:* 0.2–0.4 units/min; ↓ in cirrhosis; caution in vascular Dz. *VT/VF:* 40 units IVP X1. *Vasopressor:* 0.01–0.04 units/min **Caution:** [B, +] **Contra:** Allergy **Disp:** Inj 20 units/mL **SE:** HTN, arrhythmias, fever, vertigo, GI upset, tremor **Notes:** Addition of vasopressor to concurrent norepinephrine or epi infs

Vecuronium (Norcuron) **Uses:** *Skeletal muscle relaxation* **Action:** Nondepolarizing neuromuscular blocker; onset 2–3 min **Dose: Adults & Peds.** 0.1–0.2 mg/kg IV bolus (also rapid intubation *ECC 2005*); maint 0.010–0.015 mg/kg after 25–40 min; additional doses q12–15 min PRN; ↓ in severe renal/hepatic impair **Caution:** [C, ?] Drug interactions cause ↑ effect (eg, aminoglycosides, tetracycline, succinylcholine) **Disp:** Powder for inj 10, 20 mg **SE:** Bradycardia, ↓ BP, itching, rash, tachycardia, CV collapse **Notes:** Fewer cardiac effects than succinylcholine

Venlafaxine (Effexor, Effexor XR) **WARNING:** Monitor for worsening depression or emergence of suicidality, particularly in ped pts **Uses:** *Depression, generalized anxiety,* social anxiety disorder; obsessive–compulsive disorder, chronic fatigue synd, ADHD, autism **Action:** Potentiation of CNS neurotransmitter activity **Dose:** 75–375 mg/d ÷ into 2–3 equal doses; ↓ w/renal/hepatic impair **Caution:** [C, ?/–] **Contra:** MAOIs **Disp:** Tabs 25, 37.5, 50, 75, 100 mg; ER caps 37.5, 75, 150 mg **SE:** HTN, ↑ HR, HA, somnolence, GI upset, sexual dysfunction; acetates mania or Szs **Notes:** Avoid EtOH

Verapamil (Calan, Isoptin, Verelan) **Uses:** *Angina, HTN, PSVT, AF, atrial flutter,* migraine prophylaxis, hypertrophic cardiomyopathy, bipolar Dz **Action:** CCB **Dose: Adults.** *Arrhythmias:* 2nd line for PSVT w/ narrow QRS complex & adequate BP 2.5–5 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; 2.5–5.0 mg IV over 1–2 min; repeat 5–10 mg, in 5–30 min PRN; or 5-mg bolus q 15 min (max 30 mg) (*ECC 2005*) **Peds.** < 1 y: 0.1–0.2 mg/kg IV over 2 min (may repeat in 30 min). 1–16 y: 0.1–0.3 mg/kg IV over 2 min (may repeat in 30 min); 5 mg max. *PO:* 1–5 y: 4–8 mg/kg/d in 3 ÷ doses. > 5 y: 80 mg q6–8h; ↓ in renal/hepatic impair **Caution:** [C, +] Amiodarone/β-blockers/flecainide can cause bradycardia; statins, midazolam, tacrolimus, theophylline levels may be ↑; w/ elderly pts **Contra:** Conduction disorders, cardiogenic shock; beta blocker/thiazide combo, dofetilide, pimozide, ranolazine **Disp:** Tabs 40, 80, 120 mg; tablets ER 120, 180, 240 mg; tablets ER 24 Hr 180, 240, mg; inj 5 mg/2 mL **SE:** Gingival hyperplasia, constipation, ↓ BP, bronchospasm, HR or conduction disturbances

Vinblastine (Velban, Velbe) **WARNING:** Chemotherapeutic agent; handle w/ caution **Uses:** *Hodgkin Dz & NHLs, mycosis fungoides, CAs (testis,

renal cell, breast, non-small-cell lung), AIDS-related Kaposi sarcoma,* choriocarcinoma, histiocytosis **Action:** ↓ microtubule assembly **Dose:** 0.1–0.5 mg/kg/wk (4–20 mg/m²); ↓ in hepatic failure **Caution:** [D, ?] **Contra:** Intrathecal use **Disp:** Inj 1 mg/mL in 10 mg vial **SE:** ↓ BM (especially leukopenia), N/V, constipation, neurotox, alopecia, rash, myalgia, tumor pain

Vincristine (Oncovin, Vincasar PFS) **WARNING:** Chemotherapeutic agent; handle w/ caution; Fatal if administered intrathecally **Uses:** *ALL, breast & small-cell lung CA, sarcoma (eg, Ewing tumor, rhabdomyosarcoma), Wilms' tumor, Hodgkin Dz & NHLs, neuroblastoma, multiple myeloma* **Action:** Promotes disassembly of mitotic spindle, causing metaphase arrest **Dose:** 0.4–1.4 mg/m² (single doses 2 mg/max); ↓ in hepatic failure **Caution:** [D, ?] **Contra:** Intrathecal use **Disp:** Inj 1 mg/mL, 5 mg vial **SE:** Neurotox commonly dose limiting, jaw pain (trigeminal neuralgia), fever, fatigue, anorexia, constipation & paralytic ileus, bladder atony; no significant ↓ BM w/ standard doses; tissue necrosis w/ extrav

Vinorelbine (Navelbine) **WARNING:** Chemotherapeutic agent; handle w/ caution **Uses:** *Breast & non-small-cell lung CA* (alone or w/ cisplatin) **Action:** ↓ polymerization of microtubules, impairing mitotic spindle formation; semi-synthetic vinca alkaloid **Dose:** 30 mg/m²/wk; ↓ in hepatic failure **Caution:** [D, ?] **Contra:** Intrathecal use, rotavirus vaccine line **Disp:** Inj 10 mg **SE:** ↓ BM (leukopenia), mild GI, neurotox (6–29%); constipation/paresthesias (rare); tissue damage from extrav

Vitamin B₁ See Thiamine (page 200)

Vitamin B₆ See Pyridoxine (page 178)

Vitamin B₁₂ See Cyanocobalamin (page 69)

Vitamin K See Phytonadione (page 170)

Vitamin, multi See Multivitamins (Table 13)

Voriconazole (VFEND) **Uses:** *Invasive aspergillosis, serious fungal Infxns* **Action:** ↓ ergosterol synth. **Spectrum:** Fungus: *Aspergillus*, *Scedosporium* sp, *Fusarium* sp **Dose:** Adults & Peds ≥ 12 y. IV: 6 mg/kg q12h × 2, then 4 mg/kg bid; may ↓ to 3 mg/kg/dose. PO: < 40 kg: 100 mg q12h, up to 150 mg; > 40 kg: 200 mg q 12 h, up to 300 mg; ↓ w/mild–moderate hepatic impair; IV w/ renal impair X1 dose; PO w/o food **Caution:** [D, ?/–] **Contra:** Severe hepatic impair **Disp:** Tabs 50, 200 mg; susp 200 mg/5 mL; 200 mg inj **SE:** Visual changes, fever, rash, GI upset, ↑ LFTs **Notes:** ✓ for multiple drug interactions (eg, ↑ dose w/ phenytoin)

Vorinostat (Zolinza) **Uses:** *Rx cutaneous manifestations in cutaneous T-cell lymphoma **Action:** Histone deacetylase inhibitor **Dose:** 400 mg PO daily w/food; if intolerant ↓ 300 mg PO day for × 5 days each wk **Caution:** [D; ?/–] w/ warfarin(↑ INR) **Disp:** Caps 100 mg **SE:** N/V/D, dehydration, fatigue, anorexia, dysgeusia, DVT, PE, ↓plt, anemia, hyperglycemia, QTc prolongation, **Notes:** Monitor CBC, lytes (K, Mg, Ca), glucose, & SCr q 2 wks × 2 mo then monthly; baseline, periodic ECGs; drink 2 L fluid/day

Warfarin (Coumadin) Uses: *Prophylaxis & Rx of PE & DVT, AF w/ embolization,* other postop indications **Action:** ↓ Vitamin K-dependent clotting factors in order: VII-IX-X-II **Dose: Adults.** Titrate, INR 2.0–3.0 for most; mechanical valves INR is 2.5–3.5. **ACCP guidelines:** 5 mg initial (unless rapid therapeutic INR needed), may use 7.5–10 mg; ↓ if pt elderly or w/has other bleeding risk factors. **Alternative:** 10–15 mg PO, or IV daily for 1–3 d; maint 2–10 mg/d PO, IV, or follow daily INR initial to adjust dosage (Table 9). **Peds** 0.05–0.34 mg/kg/24 h PO, or IV; follow PT/INR to adjust dosage; monitor vitamin K intake; ↓ w/hepatic impair/elderly **Caution:** [X, +] **Contra:** Severe hepatic/renal Dz, bleeding, peptic ulcer, PRG **Disp:** Tabs 1, 2, 2.5, 3, 4, 5, 6, 7.5, 10 mg; inj **SE:** Bleeding due to overanticoagulation (PT > 3 × control, INR > 5.0–6.0) or injury & therapeutic INR; bleeding, alopecia, skin necrosis, purple toe synd **Notes:** Monitor vitamin K intake (↓ effect); INR preferred test; to rapidly correct overanticoagulation: vitamin K, FFP or both; highly teratogenic. Caution pt on taking w/ other meds, especially ASA. **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, cholestyramine, dicloxacillin, nafcillin, rifampin, sucralfate, high-vitamin K foods

Zafirlukast (Accolate) Uses: *Adjunctive Rx of asthma* **Action:** Selective & competitive inhibitor of leukotrienes **Dose: Adults & Peds ≥ 12 y.** 20 mg bid. **Peds 5–11 y.** 10 mg PO bid (empty stomach) **Caution:** [B, –] Interacts w/ warfarin, ↑ INR **Contra:** Component allergy **Disp:** Tabs 10, 20 mg **SE:** Hepatic dysfunction, usually reversible on D/C; HA, dizziness, GI upset; Churg–Strauss synd **Notes:** Not for acute asthma

Zaleplon (Sonata) [C-IV] Uses: *Insomnia* **Action:** A nonbenzodiazepine sedative/hypnotic, a pyrazolopyrimidine **Dose:** 5–20 mg hs PRN; ↓ w/ renal/hepatic insuff, elderly **Caution:** [C, ?/–] w/ mental/psychological conditions **Contra:** 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* **Action:** ↓ viral neuraminidase **Dose: Adults & Peds > 7 y.** 2 inhal (10 mg) bid for 5 d; initiate w/in 48 h of Sxs **Caution:** [C, M] **Contra:** Pulm Dz **Disp:** Powder for inhal 5 mg **SE:** Bronchospasm, HA, GI upset **Notes:** Uses a Diskhaler for administration

Ziconotide (Prialt) **WARNING:** Psychiatric, cognitive, neurologic impair may develop over several weeks; monitor frequently; may necessitate D/C **Uses:** *IT Rx of severe, refractory, chronic pain* **Action:** N-type CCB in spinal cord **Dose:** 2.6 mcg/d IT at 0.1 mcg/h; may ↑ 0.8 mcg/h to total 19.2 mcg/d by day 21 **Caution:** [C, ?/–] Reversible psychiatric/neurologic impair **Contra:** Psychosis **Disp:** Inj 25, 100 mg/mL **SE:** Dizziness, N/V, confusion, abnormal vision; may require dosage adjustment **Notes:** May D/C abruptly; uses specific pumps; do not ↑ more frequently than 2–3 ×/wk

Zidovudine (Retrovir) **WARNING:** Neutropenia, anemia, lactic acidosis, & hepatomegaly w/ steatosis **Uses:** *HIV Infxn, prevention of maternal HIV transmission of HIV* **Action:** ↓ RT **Dose: Adults.** 200 mg PO tid or 300 mg PO bid or 1–2 mg/kg/dose IV q4h. **PRG:** 100 mg PO 5 ×/d until labor starts; during labor 2 mg/kg over 1 h followed by 1 mg/kg/h until clamping of the cord. **Peds.** 160 mg/m²/dose q8h; ↓ in renal failure **Caution:** [C, ?/–] **Contra:** Allergy **Disp:** Caps 100 mg; tabs 300 mg; syrup 50 mg/5 mL; inj 10 mg/mL **SE:** Hematologic tox, HA, fever, rash, GI upset, malaise, myopathy

Zidovudine & Lamivudine (Combivir) **WARNING:** Neutropenia, anemia, lactic acidosis, & hepatomegaly w/ steatosis **Uses:** *HIV Infxn* **Action:** Combo of RT inhibitors **Dose: Adults & Peds > 12 y.** 1 tab PO bid; ↓ in renal failure **Caution:** [C, ?/–] **Contra:** Component allergy **Disp:** Caps zidovudine 300 mg/lamivudine 150 mg **SE:** Hematologic tox, HA, fever, rash, GI upset, malaise, pancreatitis **Notes:** Combo product ↓ daily pill burden

Zileuton (Zyflo) **Uses:** *Chronic Rx of asthma* **Action:** Inhibitor of 5-lipoxygenase **Dose: Adults & Peds ≥ 12 y.** 600 mg PO qid **Caution:** [C, ?/–] **Contra:** Hepatic impair **Disp:** Tabs 600 mg **SE:** Hepatic damage, HA, GI upset, leukopenia **Notes:** Monitor LFTs every month × 3, then q2–3 mo; take on regular basis; not for acute asthma

Ziprasidone (Geodon) **WARNING:** ↑ mortality in elderly with dementia-related psychosis **Uses:** *Schizophrenia, acute agitation* **Action:** 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 10 mg doses by 2 h & 20 mg doses by 4h (w/ food) **Caution:** [C, –] w/ ↓ Mg²⁺, ↓ K⁺ **Contra:** 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; susp 10 mg/mL **SE:** Bradycardia; rash, somnolence, resp disorder, EPS, wgt gain, orthostatic ↓ BP **Notes:** Monitor lytes

Zoledronic Acid (Zometa, Reclast) **Uses:** *↑ Ca²⁺ of malignancy (HCM), ↓ skeletal-related events in CAP, multiple myeloma, & met bone lesions (Zometa)* *post-menopausal osteoporosis, Paget Dz (Reclast)* **Action:** Bisphosphonate; ↓ osteoclastic bone resorption **Dose: HCM:** 4 mg IV over at least 15 min; may retreat in 7 d if adequate renal Fxn. **Bone lesions/myeloma:** 4 mg IV over at least 15 min, repeat q3–4wk PRN; prolonged w/ Cr ↑; Reclast: 5 mg IV annually **Caution:** [C, ?/–] Loop diuretics, aminoglycosides; ASA-sensitive asthmatics; avoid invasive dental procedures w/ CR **Contra:** Bisphosphonate allergy; w/dental procedures **Disp:** Vial 4 mg, 5 mg **SE:** all are adverse effects ↑ w/ renal dysfunction; fever, flulike synd, GI upset, insomnia, anemia; electrolyte abnormalities, osteonecrosis of jaw **Notes:** Requires vigorous prehydration; do not exceed recommended doses/inf duration to ↓ dose-related renal dysfunction; follow Cr; effect prolonged w/ Cr ↑; avoid oral surgery; dental exam recommended prior to therapy; ↓ dose w/ renal dysfunction

Zolmitriptan (Zomig, Zomig XMT, Zomig Nasal) **Uses:** *Acute Rx migraine* **Action:** 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 **Caution:** [C, ?/–] **Contra:** 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

Zolpidem (Ambien, Ambien CR) [C-IV] **Uses:** *Short-term Rx of insomnia* **Action:** Hypnotic agent **Dose:** 5–10 mg or 12.5 mg CR PO hs PRN; ↓ in elderly (use 6.25 mg CR), hepatic insuff **Caution:** [B, –] **Contra:** Breast-feeding **Disp:** Tabs 5, 10 mg; CR 6.25, 12.5 mg **SE:** HA, dizziness, drowsiness, N, myalgia **Notes:** May be habit-forming; CR delivers a rapid then a longer lasting dose

Zonisamide (Zonegran) **Uses:** *Adjunct Rx complex partial Szs* **Action:** Anticonvulsant **Dose:** Initial 100 mg/d PO; may ↑ to 400 mg/d **Caution:** [C, –] ↑ tox w/ CYP3A4 inhibitor; ↓ levels w/ concurrent carbamazepine, phenytoin, phenobarbital, valproic acid **Contra:** Allergy to sulfonamides; oligohydrosis & hypothermia in peds **Disp:** Caps 25, 50, 100 mg **SE:** Dizziness, drowsiness, confusion, ataxia, memory impair, paresthesias, psychosis, nystagmus, diplopia, tremor, anemia, leukopenia; GI upset, nephrolithiasis, Stevens–Johnson synd; monitor for ↓ sweating & ↑ body temperature **Notes:** Swallow capsules whole

Zoster vaccine, live (Zostavax) **Uses:** * Prevent varicella zoster in adults > 60 yrs* **Action:** Active immunization (live vaccine), to Herpes zoster **Dose:** *Adults.* 0.65 mL SQ **Contra:** Gelatin, neomycin anaphylaxis; untreated TB, immunocompromise **Caution:** [C, ?/–] not for peds **Disp:** SDV **SE:** Inj site rxn, HA

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NATURAL and HERBAL AGENTS

The following is a guide to some common herbal products. These may be sold separately or in combination 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".

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 twice daily **Caution:** May further ↓ lipids &/or BP w/ prescription meds **Contra:** PRG (miscarriage, prematurity reports); lactation **SE:** w/OD, N/V, dizziness, nervous system & visual changes, bradycardia, & (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) **Caution:** 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 twice daily or 6 oz. juice QID Tincture ½–1 tsp up to 3x/day, tea 2–3 tsps of dried flowers per cup; creams-apply topically 2–3 to 3 × s/day PO **Caution:** May ↑ kidney stones in some susceptible individuals, V **SE:** None known **Interactions:** None significant

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 gm daily, 9–12 g PO tab bid. **Caution:** Avoid in PRG & lactation. **SE:** D, photosens, skin cancer. **Interactions:** Anticoagulants (↑ INR w/warfarin).

Echinacea (*Echinacea purpurea*) Uses: Immune system stimulant; prevention/Rx URI of colds, flu; supportive care in chronic infections of the resp/lower urinary tract **Efficacy:** Not established; may ↓ severity & duration of URI **Dose:** Cap 500 mg, 6–9 mL expressed juice or 2–5 g dried root PO **Caution:** Do not use w/ progressive systemic or immune Dzs (eg, TB, collagen–vascular dis-

(Adapted from Haist SA and Robbins JB: *Internal Medicine on Call*, 4th ed., 2005 McGraw-Hill).

orders, MS); may interfere with immunosuppressive therapy, 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.

Ephedra/MaHuang **Uses:** Stimulant, aid in wgt loss, bronchial dilation.

Dose: Not OK due to reported deaths. (> 100 mg/d can be life-threatening). US sales banned by FDA in 2004; bitter orange w/similar properties has replaced this compound in most weight loss supplements

Caution: Adverse cardiac events, strokes, death **SE:** Nervousness, HA, insomnia, palpitations, V, hyperglycemia **Interactions:** Digoxin, antihypertensives, antidepressants, diabetic medications

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 and help w/ secondary MI prevention **Dose:** One FDA approved (see Louaza, page 157); OTC 1500–3000 mg/d; AHA recommends 1 gm/day

Caution: Mercury contamination possible, some studies suggest ↑ cardiac events, **SE:** ↑ bleed risk, dyspepsia, belching, aftertaste **Interactions:** Anticoagulants

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 leaf (standardized to 0.2% of parthenolide) PO **Caution:** Do not use in PRG **SE:** Oral ulcers, gastric disturbance, swollen lips, abd pain; long-term SE unknown. **Interactions:** ASA, warfarin

Garlic (*Allium sativum*) **Uses:** Antioxidant; hyperlipidemia, HTN; anti-infective (antibacterial, antifungal); tick repellent (oral) **Efficacy:** ↓ cholesterol by 4–6%; soln ↓ BP; possible ↓ GI/CAP risk

Dose: 2–5 g, fresh garlic; 0.4–1.2 gm of dried powder; 2–5 mg oil; 300–1000 mg extract or other formulations = equal to 2–5 mg of allicin daily 400–1200 mg powder (2–5 mg allicin) PO

Caution: Do not use in PRG (abortifacient); D/C 7 d preop (bleeding risk) **SE:** ↑ insulin levels, ↑ insulin/lipid/cholesterol levels, anemia, oral burning sensation, N/V/D **Interactions:** Warfarin & ASA (↓ plt aggregation), additive w/ DM agents (↑ hypoglycemia). CYP 450 3A4 inducer (may ↑ cyclosporine, HIV antivirals, oral contraceptives)

Ginger (*Zingiber officinale*) **Uses:** Prevent motion sickness; N/V due to anesthesia **Efficacy:** Benefit in ↓ N/V w/motion or PRG; weak for postop or chemo

Dose: 1–4 g rhizome or 0.5–2 g powder PO daily **Caution:** Pt w/ gallstones; excessive dose (↑ depression, & may interfere w/ cardiac Fxn or anticoagulants) **SE:** Heartburn **Interactions:** Excessive consumption may interfere with cardiac, DM, or anticoagulant meds (↓ plt aggregation) **Dose** Ginger powder

tablets or capsules or fresh cut ginger in doses of 1–4 gms daily by mouth, divided into smaller doses

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 **Caution:** ↑ Bleeding risk (antagonism of plt-activating factor), concerning w/ antiplatelet agents (D/C 3 d preop); reports of ↑ Sz risk **SE:** GI upset, HA, dizziness, heart palpitations, rash **Interactions:** ASA, salicylates, warfarin

Ginseng **Uses:** “Energy booster” general; also for pt undergoing chemo, stress reduction, enhance brain activity & physical endurance (adaptogenic), antioxidant, aid to control type 2 DM; Panax ginseng being studied for E.D. **Efficacy:** Not established **Dose:** 1–2 g of root or 100–300 mg of extract (7% ginsenosides) PO TID **Caution:** w/ cardiac Dz, DM, ↓ BP, HTN, mania, schizophrenia, w/ corticosteroids; avoid in PRG; D/C 7 d preop (bleeding risk) **SE:** Controversial “ginseng abuse synd” w/ high dose (nervousness, excitation, HA, insomnia); palpitations, vaginal 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 **Caution:** 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 therapy

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 **Caution:** Hepatotox risk, banned in Europe/Canada. Not OK in PRG, lactation. D/C 24 h preop (may ↑ sedative effect of anesthetics) **SE:** Mild GI disturbances; rare allergic skin/rash rxns, may ↑ cholesterol; ↑ LFT /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 patients with ↑ endogenous melatonin levels; some evidence for jet lag **Dose:** 1–3 mg 20 min before HS (w/ CR 2 h before hs) **Caution:** 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 hepatitis); 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

Saw Palmetto (*Serenoa repens*) Uses: Rx BPH, hair tonic, PCA prevention (weak 5- α -reductase inhibitor) **Efficacy:** Small—no significant benefit for prostatic Sx **Dose:** 320 mg daily **Caution:** Possible hormonal effects, avoid in PRG, w/ women of childbearing years **SE:** Mild GI upset, mild HA, D w/ large amounts **Interactions:** \uparrow Iron absorption; \uparrow estrogen replacement effects

St. John's Wort (*Hypericum perforatum*) Uses: Mild–moderate depression, anxiety, gastritis, insomnia, vitiligo; anti-inflammatory; immune stimulant/anti-HIV/antiviral **Efficacy:** Variable; benefit w/ mild–moderate 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. Common preps: 300 mg PO tid (0.3% hypericin) **Caution:** Excess doses may potentiate MAOI, cause allergic rxn, not OK in PRG **SE:** Photosens, xerostomia, dizziness, constipation, confusion, fluctuating mood w/ chronic use **Interactions:** Do not use w/ prescription antidepressants, (especially MAOI); \uparrow cyclosporine efficacy (may cause rejection), digoxin (may exacerbate CHF), protease inhibitors, theophylline, oral contraceptives; cytochrome P450 3A4 enzyme inducer; 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 $\frac{1}{2}$ cup boiling H₂O, tincture 15–20 drops in H₂O, oral 400–900 mg at bedtime (combined w/ OTC sleep product Aluna) **Caution:** None known **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*) Uses: Improve sexual vigor, Rx ED **Efficacy:** Variable **Dose:** 1 tablet = 5.4 mg PO tid (use w/ physician supervision) **Caution:** Do not use w/ renal/hepatic Dz; may exacerbate schizophrenia/mania (if pt predisposed). α_2 -adrenergic antagonist (\downarrow BP, abd distress, weakness w/ high doses), OD can be fatal; salivation, dilated pupils, arrhythmias **SE:** Anxiety, tremors, dizziness, high BP, \uparrow HR **Interactions:** Do not use w/ antidepressants (eg, MAOIs, or similar agents)

Unsafe Herbs with Known Toxicity

Agent	Toxicities
Aconite	Salivation, N/V, blurred vision, cardiac arrhythmias
Aristolochic acid	Nephrotox
Calamus	Possible carcinogenicity
Chaparral	Hepatotox, possible carcinogenicity, nephrotox
"Chinese herbal mixtures"	May contain MaHuang or other dangerous herbs
Coltsfoot	Hepatotox, possibly carcinogenic
Comfrey	Hepatotox, carcinogenic
Ephedra/MaHuang	Adverse cardiac events, stroke, Sz
Juniper	High allergy potential, D, Sz, nephrotox
Kava kava	Hepatotox
Licorice	Chronic daily amounts (> 30 g/mo) can result in ↓ K ⁺ , Na/fluid retention w/HTN, myoglobinuria, hyporeflexia
Life root	Hepatotox, liver cancer
MaHuang/Ephedra	Adverse cardiac events, stroke, Sz
Pokeweed	GI cramping, N/D/V, labored breathing, ↓ BP, Sz
Sassafras	V, stupor, hallucinations, dermatitis, abortion, hypothermia, liver cancer
Usnic acid	Hepatotox
Yohimbine	Hypotension, abdominal distress, CNS stimulation (mania/& psychosis in predisposed individuals)

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Tables

TABLE 1
Quick Guide to Dosing of Acetaminophen Based on the Tylenol Product Line

	Suspension ^a Drops and Original Drops 80 mg/0.8 mL Dropperful	Chewable ^a Tablets 80- mg tabs	Suspension ^a Liquid and Original Elixir 160 mg/5 mL	Junior ^a Strength 160-mg Caplets/ Chewables	Regular ^b Strength 325-mg Caplets/ Tablets	Extra Strength ^b 500-mg Caplets/ Gelcaps
Birth–3 mo/ 6–11 lb/ 2.5–5.4 kg	$\frac{1}{2}$ dppr ^c (0.4 mL)					
4–11 mo/ 12–17 lb/ 5.5–7.9 kg	1 dppr ^c (0.8 mL)		$\frac{1}{2}$ tsp			
12–23 mo/ 18–23 lb/ 8.0–10.9 kg	$1\frac{1}{2}$ dppr ^c (1.2 mL)		$\frac{3}{4}$ tsp			
2–3 y/24–35 lb/ 11.0–15.9 kg	2 dppr ^c (1.6 mL)	2 tab	1 tsp			
4–5 y/36–47 lb/ 16.0–21.9 kg		3 tab	$1\frac{1}{2}$ tsp			

6–8 y/48–59 lb/ 22.0–26.9 kg	4 tab	2 tsp	2 cap/tab		
9–10 y/60–71 lb/ 27.0–31.9 kg	5 tab	2½ tsp	2½ cap/ tab		
11 y/72–95 lb/ 32.0–43.9 kg	6 tab	4 tsp	3 cap/tab		
Adults & children ≥ 12 y ≥ 96 lb ≥ 44.0 kg			4 cap/tab	1 or 2 caps/ tabs	2 caps/ gel

^aDoses should be administered 4 or 5 times daily. Do not exceed 5 doses in 24 h.

^bNo more than 8 dosage units in any 24-h period. Not to be taken for pain for more than 10 days or for fever for more than 3 days unless directed by a physician.

^cDropperful.

TABLE 2
Local Anesthetic Comparison Chart for Commonly Used Injectable Agents

Agent	Proprietary Names	Onset	Duration	Maximum Dose	
				mg/kg	Volume in 70-kg Adult ^a
Bupivacaine	Marcaïne	7–30 min	5–7 h	3	70 mL of 0.25% solution
Lidocaine	Xylocaine, Anestacon	5–30 min	2 h	4	28 mL of 1% solution
Lidocaine with epinephrine (1:200,000)		5–30 min	2–3 h	7	50 mL of 1% solution
Mepivacaine	Carbocaine	5–30 min	2–3 h	7	50 mL of 1% solution
Procaine	Novocaine	Rapid	30 min–1 h	10–15	70–105 mL of 1% solution

^aTo calculate the maximum dose if not a 70-kg adult, use the fact that a 1% solution has 10 mg of drug per milliliter.

TABLE 3
Comparison of Systemic Steroids (See also page 191)

Drug	Relative Equivalent Dose (mg)	Relative Mineralocorticoid Activity	Duration (h)	Route
Betamethasone	0.75	0	36–72	PO, IM
Cortisone (Cortone)	25	2	8–12	PO, IM
Dexamethasone (Decadron)	0.75	0	36–72	PO, IV
Hydrocortisone (Solu-Cortef, Hydrocortone)	20	2	8–12	PO, IM, IV
Methylprednisolone acetate (Depo-Medrol)	4	0	36–72	PO, IM, IV
Methylprednisolone succinate (Solu-Medrol)	4	0	8–12	PO, IM, IV
Prednisone (Deltasone)	5	1	12–36	PO
Prednisolone (Delta-Cortef)	5	1	12–36	PO, IM, IV

TABLE 4
Topical Steroid Preparations

Agent	Common Trade Names	Potency	Apply
Alclometasone dipropionate	Aclovate, cream, oint 0.05%	Low	bid/tid
Amcinonide	Cyclocort, cream, lotion, oint 0.1%	High	bid/tid
Betamethasone			
Betamethasone valerate	Valisone cream, lotion 0.01%	Low	qd/bid
Betamethasone valerate	Valisone cream 0.01, 0.1%, ointment, lotion 0.1%	Intermediate	qd/bid
Betamethasone dipropionate	Diprosone cream 0.05%	High	qd/bid
Betamethasone dipropionate, augmented	Diprosone aerosol 0.1%		
	Diprolene oint, gel 0.05%	Ultrahigh	qd/bid
Clobetasol propionate	Temovate cream, gel, oint, scalp, soln 0.05%	Ultrahigh	bid (2 wk max)
Clocortolone pivalate	Cloderm cream 0.1%	Intermediate	qd–qid
Desonide	DesOwen, cream, oint, lotion 0.05%	Low	bid–qid
Desoximetasone			
Desoximetasone 0.05%	Topicort LP cream, gel 0.05%	Intermediate	
Desoximetasone 0.25%	Topicort cream, oint	High	
Dexamethasone base	Aeroseb-Dex aerosol 0.01%	Low	bid–qid
	Decadron cream 0.1%		
Diflorasone diacetate	Psorcon cream, oint 0.05%	Ultrahigh	bid/qid
Fluocinolone			
Fluocinolone acetonide 0.01%	Synalar cream, soln 0.01%	Low	bid/tid
Fluocinolone acetonide 0.025%	Synalar oint, cream 0.025%	Intermediate	bid/tid

Fluocinolone acetonide 0.2%	Synalar-HP cream 0.2%	High	bid/tid
Fluocinonide 0.05%	Lidex, anhydrous cream, gel, soln 0.05%	High	bid/tid oint
Flurandrenolide	Lidex-E aqueous cream 0.05%		
	Cordran cream, oint 0.025%	Intermediate	bid/tid
	cream, lotion, oint 0.05%	Intermediate	bid/tid
	tape, 4 mcg/cm ²	Intermediate	qd
Fluticasone propionate	Cutivate cream 0.05%, oint 0.005%	Intermediate	bid
Halobetasol	Ultravate cream, oint 0.05%	Very high	bid
Halcinonide	Halog cream 0.025%, emollient base 0.1% cream, oint, sol 0.1%	High	qd/tid
Hydrocortisone			
Hydrocortisone	Cortizone, Caldecort, Hycort, Hytone, etc.	Low	tid/qid
	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%		
Hydrocortisone acetate	Corticaine cream, oint 0.5, 1%	Low	tid/qid
Hydrocortisone butyrate	Locoid oint, soln 0.1%	Intermediate	bid/tid
Hydrocortisone valerate	Westcort cream, oint 0.2%	Intermediate	bid/tid

TABLE 4
(Continued)

Agent	Common Trade Names	Potency	Apply
Mometasone furoate	Elocon 0.1% cream, oint, lotion	Intermediate	qd
Prednicarbate	Dermatop 0.1% cream	Intermediate	bid
Triamcinolone			
Triamcinolone acetonide 0.025%	Aristocort, Kenalog cream, ointment, lotion 0.025%	Low	tid/qid
Triamcinolone acetonide 0.1%	Aristocort, Kenalog cream, ointment, lotion 0.1%	Intermediate	tid/qid
Triamcinolone acetonide 0.5%	Aerosol 0.2-mg/2-sec spray Aristocort, Kenalog cream, ointment 0.5%	High	tid/qid

TABLE 5
Comparison of Insulins (See also page 122)

Type of Insulin	Onset (h)	Peak (h)	Duration (h)
<i>Ultra Rapid</i>			
Apidra (glulisine)	Immediate	0.5–1.5	3–5
Humalog (lispro)	Immediate	0.5–1.5	3–5
NovoLog (insulin aspart)	Immediate	0.5–1.5	3–5
<i>Rapid</i>			
Regular Iletin II	0.25–0.5	2–4	5–7
Humulin R	0.5	2–4	6–8
Novolin R	0.5	2.5–5	5–8
Velosulin	0.5	2–5	6–8
<i>Intermediate</i>			
NPH Iletin II	1–2	6–12	18–24
Lente Iletin II	1–2	6–12	18–24
Humulin N	1–2	6–12	14–24
Novulin L	2.5–5	7–15	18–24
Novulin 70/30	0.5	7–12	24
<i>Prolonged</i>			
Ultralente	4–6	14–24	28–36
Humulin U	4–6	8–20	24–28
Lantus (insulin glargine)	4–6	No peak	24
<i>Combination Insulins</i>			
Humalog Mix (lispro protamine/ lispro)	0.25–0.5	1–4	24

TABLE 6 (See also page 158)**Commonly Used Oral Contraceptives** (21 = 21 Active Pills; 28 = 21 Active Pills + 7 Placebo^a)**Monophasics**

Drug (Manufacturer)	Estrogen (mcg)	Progestin (mg)	Iron
Alesse 21, 28 (Wyeth)	Ethinyl estradiol (20)	Levonorgestrel (0.1)	
Aprì 28 (Barr)	Ethinyl estradiol (30)	Desogestrel (0.15)	
Aviane 28 (Barr)	Ethinyl estradiol (20)	Levonorgestrel (0.1)	
Brevicon 28 (Watson)	Ethinyl estradiol (35)	Norethindrone (0.5)	
Cryselle 28 (Barr)	Ethinyl estradiol (30)	Norgestrel (0.3)	
Demulen 1/35 21, 28 (Pfizer)	Ethinyl estradiol (35)	Ethinodiol diacetate (1)	
Demulen 1/50 21, 28 (Pfizer)	Ethinyl estradiol (50)	Ethinodiol diacetate (1)	
Desogen 28 (Organon)	Ethinyl estradiol (30)	Desogestrel (0.15)	
Ethrostep 28 (Warner-Chilcott) ^b	Ethinyl estradiol (20, 30, 35)	Norethindrone acetate (1)	
FemconFe (Warner-Chilcott)	Ethinyl estradiol (35)	Norethindrone (0.4)	75 mg FE
Junel Fe 1/20, 21, 28 (Barr)	Ethinyl estradiol (20)	Norethindrone acetate (1)	7 in 28 day
Junel Fe 1.5/30 21, 28 (Barr)	Ethinyl estradiol (30)	Norethindrone acetate (1.5)	7 in 28 day
Kariva 28 (Barr)	Ethinyl estradiol (20, 0, 10)	Desogestrel (0.15)	
Lessina 28 (Barr)	Ethinyl estradiol (20)	Levonorgestrel (0.1)	
Levlen 21, 28 (Berlex)	Ethinyl estradiol (30)	Levonorgestrel (0.15)	
Levlite 28 (Berlex)	Ethinyl estradiol (20)	Levonorgestrel (0.1)	
Levora 28 (Watson)	Ethinyl estradiol (30)	Levonorgestrel (0.15)	
Loestrin Fe 1.5/30 21, 28 (Warner-Chilcott)	Ethinyl estradiol (30)	Norethindrone acetate (1.5)	7 in 28 day
Loestrin Fe 1/20 21, 28 (Warner-Chilcott)	Ethinyl estradiol (20)	Norethindrone acetate (1)	7 in 28 day

Lo/Ovral 21, 28 (Wyeth)	Ethinyl estradiol (30)	Norgestrel (0.3)	
Low-Ogestrel 28 (Watson)	Ethinyl estradiol (30)	Norgestrel (0.3)	
Microgestin Fe 1/20 21, 28 (Watson)	Ethinyl estradiol (20)	Norethindrone acetate (1)	7 in 28 day
Microgestin Fe 1.5/30 21, 28 (Watson)	Ethinyl estradiol (30)	Norethindrone acetate (1.5)	7 in 28 day
Mircette 28 (Organon)	Ethinyl estradiol (20, 0, 10)	Desogestrel (0.15)	
Modicon 28 (Ortho-McNeil)	Ethinyl estradiol (35)	Norethindrone (0.5)	
MonoNessa 28 (Watson)	Ethinyl estradiol (35)	Norgestimate (0.25)	
Necon 1/50 28 (Watson)	Mestranol (50)	Norethindrone (1)	
Necon 0.5/35, 28 (Watson)	Ethinyl estradiol (35)	Norethindrone (0.5)	
Necon 1/35 28 (Watson)	Ethinyl estradiol (35)	Norethindrone (1)	
Nordette 21, 28 (King)	Ethinyl estradiol (30)	Levonorgestrel (0.15)	
Nortrel 0.5/35 28 (Barr)	Ethinyl estradiol (35)	Norethindrone (0.5)	
Nortrel 1/35 21, 28 (Barr)	Ethinyl estradiol (35)	Norethindrone (1)	
Norinyl 1/35 28 (Watson)	Ethinyl estradiol (35)	Norethindrone (1)	
Norinyl 1/50 28 (Watson)	Mestranol (50)	Norethindrone (1)	
Ogestrel 28 (Watson)	Ethinyl estradiol (50)	Norgestrel (0.5)	
Ortho-Cept 28 (Ortho-McNeil)	Ethinyl estradiol (30)	Desogestrel (0.15)	
Ortho-Cyclen 28 (Ortho-McNeil)	Ethinyl estradiol (35)	Norgestimate (0.25)	
Ortho-Novum 1/35 28 (Ortho-McNeil)	Ethinyl estradiol (35)	Norethindrone (1)	
Ortho-Novum 1/50 28 (Ortho-McNeil)	Mestranol (50)	Norethindrone (1)	
Ovcon 35 21, 28 (Warner-Chilcott)	Ethinyl estradiol (35)	Norethindrone (0.4)	
Ovcon 50 28 (Warner-Chilcott)	Ethinyl estradiol (50)	Norethindrone (1)	
Ovral 21, 28 (Wyeth-Ayerst)	Ethinyl estradiol (50)	Norgestrel (0.5)	
Portia 28 (Barr)	Ethinyl estradiol (30)	Levonorgestrel (0.15)	

TABLE 6
(Continued)

Drug (Manufacturer)	Estrogen (mcg)	Progestin (mg)	Iron
Sprintec 28 (Barr)	Ethinyl estradiol (35)	Norgestimate (0.25)	
Yasmin 28 (Berlex)	Ethinyl estradiol (30)	Drospirenone (3.0)	
Zovia 1/50E 28 (Watson)	Ethinyl estradiol (50)	Ethinodiol diacetate (1.0)	
Zovia 1/35E 28 (Watson)	Ethinyl estradiol (35)	Ethinodiol diacetate (1.0)	

Multiphasics

Cyclessa 28 (Organon)	Ethinyl estradiol (25)	Desogestrel (0.1, 0.125, 0.15)	
Enpresse 28 (Barr)	Ethinyl estradiol (30, 40, 30)	Levonorgestrel (0.05, 0.075, 0.125)	
Necon 10/11 21, 28 (Watson)	Ethinyl estradiol (35)	Norethindrone (0.5, 1.0)	
Necon 7/7/7 (Watson)	Ethinyl estradiol (35)	Norethindrone (0.5, 0.75, 1.0)	
Nortrel 7/7/7 28 (Barr)	Ethinyl estradiol (35)	Norethindrone (0.5, 0.75, 1.0)	
Ortho Tri-Cyclen 21, 28 (Ortho-McNeil) ^b	Ethinyl estradiol (25)	Norgestimate (0.18, 0.215, 0.25)	
Ortho Tri-Cyclen lo 21, 28 (Ortho-McNeil)	Ethinyl estradiol (35, 35, 35)	Norgestimate (0.18, 0.215, 0.25)	
Ortho-Novum 10/11 21 (Ortho-McNeil)	Ethinyl estradiol (35, 35)	Norethindrone (0.5, 1.0)	
Ortho-Novum 7/7/7 21 (Ortho-McNeil)	Ethinyl estradiol (35, 35, 35)	Norethindrone (0.5, 0.75, 1.0)	
Tri-Levlen 28 (Berlex)	Ethinyl estradiol (30, 40, 30)	Levonorgestrel (0.05, 0.075, 0.125)	
Tri-Nessa 28 (Watson)	Ethinyl estradiol (35)	Norgestimate (0.18, 0.215, 0.25)	
Tri-Norinyl 21, 28 (Watson)	Ethinyl estradiol (35, 35, 35)	Norethindrone (0.5, 1.0, 0.5)	
Triphasil 21, 28 (Wyeth)	Ethinyl estradiol (30, 40, 30)	Levonorgestrel (0.05, 0.075, 0.125)	

Tri-Sprintec (Barr)	Ethinyl estradiol (35)	Norgestimate (0.18, 0.215, 0.25)
Trivora-28 (Watson)	Ethinyl estradiol (30, 40, 30)	Levonorgestrel (0.05, 0.075, 0.125)
Velivet (Barr)	Ethinyl estradiol (25)	Desogestrel (0.1, 0.125, 0.15)

Progestin Only

Drug	Estrogen (mcg)	Progestin (mg)
Camila (Barr)	None	Norethindrone (0.35)
Errin (Barr)	None	Norethindrone (0.35)
Jolivette 28 (Watson)	None	Norethindrone (0.35)
Micronor (Ortho-McNeil)	None	Norethindrone (0.35)
Nor-QD (Watson)	None	Norethindrone (0.35)
Nora-BE 28 (Ortho-McNeil)	None	Norethindrone (0.35)
Ovrette (Wyeth-Ayerst)	None	Norgestrel (0.075)

Extended-Cycle Combination

Drug	Estrogen (mg)	Progestin (mcg)	additional pills
Lybrel (Wyeth) 28 day pack	ethinyl estradiol (20)	0.09 levonorgestrel	none
Yaz (Berlex) 28 day pack ^b	ethinyl estradiol (20)	3 drospirenone	4 inert
Loestrin 24 Fe (Warner Chilcott) 28 day pack	ethinyl estradiol (20)	1 norethindrone	4 inert
Seasonique (Duramed) 91 day pack	ethinyl estradiol (30)	0.15 levonorgestrel	7 (10 mcg ethinyl estradiol)
Seasonale (Duramed) 91 day	ethinyl estradiol (30)	0.15 levonorgestrel	7 inert

Based in part on data published in the *Medical Letter* Volume 2 (Issue 24) 2004, Volume 49 (Issue 1266) 2007.

^aThe designations 21 and 28 refer to number of days in regimen available.

^bAlso approved for acne.

TABLE 7
Some Common Oral Potassium Supplements (See also page 173)

Brand Name	Salt	Form	mEq Potassium/ Dosing Unit
Glu-K	Gluconate	Tablet	2 mEq/tablet
Kaochlor 10%	KCl	Liquid	20 mEq/15 mL
Kaochlor S-F 10% (sugar-free)	KCl	Liquid	20 mEq/15 mL
Kaochlor Eff	Bicarbonate/ KCl/citrate	Effervescent tablet	20 mEq/tablet
Kaon elixir	Gluconate	Liquid	20 mEq/15 mL
Kaon	Gluconate	Tablet	5 mEq/tablet
Kaon-Cl	KCl	Tablet, SR	6.67 mEq/tablet
Kaon-Cl 20%	KCl	Liquid	40 mEq/15 mL
KayCiel	KCl	Liquid	20 mEq/15 mL
K-Lor	KCl	Powder	15 or 20 mEq/packet
Klorvess	Bicarbonate/ KCl	Liquid	20 mEq/15 mL
Klotrix	KCl	Tablet, SR	10 mEq/tablet
K-Lyte	Bicarbonate/ citrate	Effervescent tablet	25 mEq/tablet
K-Tab	KCl	Tablet, SR	10 mEq/tablet
Micro-K	KCl	Capsule, SR	8 mEq/capsule
Slow-K	KCl	Tablet, SR	8 mEq/tablet
Tri-K	Acetate/bicar- bonate and citrate	Liquid	45 mEq/15 mL
Twin-K	Citrate/gluconate	Liquid	20 mEq/5 mL

SR = sustained release.

TABLE 8
Tetanus Prophylaxis (See also page 199)

History of Absorbed Tetanus Toxoid Immunization	Clean, Minor Wounds		All Other Wounds ^a	
	Td ^b	TIG ^c	Td ^d	TIG ^c
Unknown or <3 doses	Yes	No	Yes	Yes
=3 doses	No ^e	No	No ^f	No

^aSuch 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.

^bTd = 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.

^cTIG = tetanus immune globulin, 250 units IM.

^dIf only 3 doses of fluid toxoid have been received, then a fourth dose of toxoid, preferably an adsorbed toxoid, should be given.

^eYes, if >10 y since last dose.

^fYes, if >5 y since last dose.

Source: Based on guidelines from the Centers for Disease Control and Prevention and reported in *MMWR*.

TABLE 9
Oral Anticoagulant Standards of Practice

Thromboembolic Disorder	INR	Duration
<i>Deep Venous Thrombosis & Pulmonary Embolism</i>		
Treatment single episode		
Transient risk factor	2–3	3 mo
Idiopathic	2–3	6–12 mo
Recurrent systemic embolism	2–3	Indefinite
<i>Prevention of Systemic Embolism</i>		
Atrial fibrillation (AF) ^a	2–3	Indefinite
AF: cardioversion	2–3	3 wk prior; 4 wk post sinus rhythm
Valvular heart disease	2–3	Indefinite
Cardiomyopathy	2–3	Indefinite
<i>Acute Myocardial Infarction</i>		
High risk patients ^c	2–3 + low dose aspirin	3 mo
<i>Prosthetic Valves</i>		
Tissue heart valves	2–3	3 mo
Bileaflet mechanical valves in aortic position	2–3	Indefinite
Other mechanical prosthetic valves ^b	2.5–3.5	Indefinite

^aWith high-risk factors or multiple moderate risk factors.

^bMay add aspirin 81 mg to warfarin in patients with caged ball or caged disk valves or with additional risk factors.

^cLarge anterior MI, significant heart failure, intracardiac thrombus, and/or history of thromboembolic event.

INR = international normalized ratio.

Source: Based on data published in *Chest* 2004 Sep; 126 (Suppl): 1635–6965.

TABLE 10
Antiarrhythmics: Vaughn Williams Classification

Class I: Sodium Channel Blockade

- A. **Class Ia:** Lengthens duration of action potential (\uparrow the refractory period in atrial and ventricular muscle, in SA and AV conduction systems, and Purkinje fibers)
1. Amiodarone (also class 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 \uparrow of phase 0 of the action potential)
1. Flecainide (Tambocor)
 2. Propafenone
-

Class II: Beta blocker

- D. Amiodarone (also class Ia, III, IV)
E. Esmolol (Brevibloc)
F. Sotalol (also class III)
-

Class III: Prolong refractory period via action potential

- G. Amiodarone (also class Ia, II, IV)
H. Sotalol
-

Class IV: Calcium channel blocker

- I. Amiodarone (also class Ia, II, III)
J. Diltiazem (Cardizem)
K. Verapamil (Calan)
-

TABLE 11
Cytochrome P-450 Isoenzymes and Common Drugs
They Metabolize, Inhibit, and Induce^a

<i>CYP1A2</i>	
Substrates:	Acetaminophen, caffeine, clozapine, imipramine, theophylline, propranolol
Inhibitors:	Most fluoroquinolone antibiotics, fluvoxamine, cimetidine
Inducers:	Tobacco smoking, charcoal-broiled foods, cruciferous vegetables, omeprazole
<i>CYP2C9</i>	
Substrates:	Most NSAIDs (including COX-2), warfarin, phenytoin
Inhibitors:	Fluconazole
Inducers:	Barbiturates, rifampin
<i>CYP2C19</i>	
Substrates:	Diazepam, lansoprazole, omeprazole, phenytoin, pantoprazole
Inhibitors:	Omeprazole, isoniazid, ketoconazole
Inducers:	Barbiturates, rifampin
<i>CYP2D6</i>	
Substrates:	Most β -blockers, codeine, clomipramine, clozapine, codeine, encainide, flecainide, fluoxetine, haloperidol, hydrocodone, 4-methoxy-amphetamine, metoprolol, mexiletine, oxycodone, paroxetine, propafenone, propoxyphene, risperidone, selegiline (deprenyl), thioridazine, most tricyclic antidepressants, timolol
Inhibitors:	Fluoxetine, haloperidol, paroxetine, quinidine
Inducers:	Unknown
<i>CYP3A</i>	
Substrates:	Anticholinergics: Darifenacin, oxybutynin, solifenacin, tolterodine Benzodiazepines: Alprazolam, midazolam, triazolam Ca channel blockers: Diltiazem, felodipine, nimodipine, nifedipine, nisoldipine, verapamil

(continued)

TABLE 11 (continued)
Cytochrome P-450 Isoenzymes and Common Drugs
They Metabolize, Inhibit, and Induce^a

	<p>Chemotherapy: Cyclophosphamide, erlotinib, ifosfamide, paclitaxel, tamoxifen, vinblastine, vincristine</p> <p>HIV protease inhibitors: Amprenavir, atazanavir, indinavir, nelfinavir, ritonavir, saquinavir</p> <p>HMG-CoA reductase inhibitors: Atorvastatin, lovastatin, simvastatin</p> <p>Immunosuppressive agents: Cyclosporine, tacrolimus</p> <p>Macrolide-type antibiotics: Clarithromycin, erythromycin, telithromycin, troleandomycin</p> <p>Opioids: Alfentanil, cocaine, fentanyl, sufentanil</p> <p>Steroids: Budesonide, cortisol, 17-β-estradiol, progesterone</p> <p>Others: Acetaminophen, amiodarone, carbamazepine, delavirdine, efavirenz, nevirapine, quinidine, repaglinide, sildenafil, tadalafil, trazodone, vardenafil</p>
Inhibitors:	Amiodarone, amprenavir, atazanavir, ciprofloxacin, cispripide, clarithromycin, diltiazem, erythromycin, fluconazole, fluvoxamine, grapefruit juice (in high ingestion), indinavir, itraconazole, ketoconazole, nefazodone, nelfinavir, norfloxacin, ritonavir, telithromycin, troleandomycin, verapamil, voriconazole
Inducers:	Carbamazepine, efavirenz, glucocorticoids, macrolide antibiotics, nevirapine, phenytoin, phenobarbital, rifabutin, rifampine, rifampin, St. John's wort

^aIncreased 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 minimize significant drug interactions. CYP3A is involved in the metabolism of >50% of drugs metabolized by the liver.

Based on data from Katzung B (ed): *Basic and Clinical Pharmacology*, 9th ed. McGraw-Hill, New York, 2004; *The Medical Letter*, Volume 47, July 4, 2004; <http://www.fda.gov/cder/drug/drugreactions> (accessed September 16, 2006).

TABLE 12
SSRIs/SNRI/Triptan 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, ↑ HR/temperature, rapid changes in BP, increased body temperature

Class	Drugs
Antidepressants	MAOIs, TCAs, SSRIs, SNRIs, mirtazapine, venlafaxine
CNS stimulants	Amphetamines, phentermine, methylphenidate, sibutramine
5-HT ₁ agonists	Triptans
Illicit drugs	Cocaine, methylenedioxymethamphetamine (ecstasy), lysergic acid diethylamide (LSD)
Opioids	Tramadol, pethidine, oxycodone, morphine, meperidine
Others	Buspirone, chlorpheniramine, dextromethorphan, linezolid, lithium, selegiline, tryptophan, St John's Wort

Management includes removal of the precipitating drugs, and supportive care. To control agitation serotonin antagonists (cyproheptadine or methysergide) can be used. When mild 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. (Boyer EW, Shannon M (2005). "The Serotonin Syndrome". *N Engl J Med* **352** (11): 1112–20)

TABLE 13**Composition of selected multivitamins and multivitamins with mineral and trace element supplements (See also page 148)**

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	Vitamins												
	Fat Soluble				Water Soluble								
	A	D	E	K	C	B ₁	B ₂	B ₃	B ₆	Folate	B ₁₂	Biotin	B ₅
Centrum	70	100	100	31	100	100	100	100	100	100	100	10	100
Centrum Performance	70	100	200	31	200	300	300	200	300	100	300	13	100
Centrum Silver	70	100	150	13	100	100	100	100	150	100	417	10	100
NatureMade Multi	60	100	167	31	200	100	100	100	100	100	100	10	100
Complete NatureMade Multi Daily	60	100	100	NA	100	100	100	100	100	100	100	NA	100
NatureMade Multi Max	60	100	500	50	500	3333	2941	250	2500	100	833	17	500
NatureMade Multi 50+	100	100	200	13	200	200	200	100	200	100	417	10	100
One-A-Day 50 Plus	50	100	110	25	200	300	200	100	300	100	417	10	150
One-A-Day Essential	100	100	100	NA	100	100	100	100	100	100	100	NA	100

TABLE 13 (continued)
Composition of selected multivitamins and multivitamins with mineral and trace element supplements (continued)

	Vitamins													
	Fat Soluble				Water Soluble									
	A	D	E	K	C	B ₁	B ₂	B ₃	B ₆	Folate	B ₁₂	Biotin	B ₅	
244	One-A-Day Maximum	50	100	100	31	100	100	100	100	100	100	100	10	100
	Therapeutic Vitamin	100	100	100	NA	150	200	200	100	150	100	150	10	100
	Theragran-M Advanced Formula High Potency	100	100	200	35	150	200	200	100	300	100	200	10	100
	Theragran-M Premier High Potency	70	100	200	31	200	267	235	125	200	100	150	10	100
	Theragran-M Premier 50 Plus High Potency	70	100	200	13	125	200	176	125	300	100	500	12	150

TABLE 13 (continued)
Composition of selected multivitamins and multivitamins with mineral and trace element supplements (continued)

		Minerals							Trace Elements					
		Ca	P	Mg	Fe	Zn	I	Se	K	Mn	Cu	Cr	Mo	Other
246	NatureMade Multi 50+	20	5	25		100	100	71	2	100	100	100	33	
	One-A-Day 50 Plus	12	NA	25	NA	150	100	150	1	200	100	150	120	Lutein
	One-A-Day Essential	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	One-A-Day Maximum	16	11	25	100	100	100	29	2	175	100	54	213	
	Therapeutic 7 Vitamin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	Theragran-M Advanced Formula High Potency	4	3	26	50	100	100	100	1	100	100	42	100	
	Theragran-M Premier High Potency	17	11	25	100	100	100	286	2	100	175	100	107	Lutein
	Theragran-M Premier 50 Plus High Potency	20	5	25	0	113	100	286	2	175	100	125	100	Lutein

Therapeutic Vitamin + Minerals Enhanced	4	3	25	50	100	100	100	<1	100	100	42	100
Unicap M	6	5	NA	100	100	100	NA	<1	50	100	NA	NA
Unicap Senior	10	8	8	56	100	100	NA	<1	50	100	NA	NA
Unicap T	NA	NA	NA	100	100	100	14	<1	50	100	NA	NA

Common multivitamins available without a prescription are listed. Most chain stores have generic versions of many of the multivitamin supplements listed above; thus, specific generic brands are not listed.¹ Many specialty vitamin combinations are available, but not included in this list. (Examples are B vitamins plus C, supplements for a specific condition or organ, pediatric and infant formulations, and prenatal vitamins.)

Values are listed as percentages of the Daily Value based on Recommended Dietary Allowances of vitamins and minerals based on Dietary Reference Intakes (Food and Nutrition Board, Institute of Medicine, National Academy of Science).

¹Common generic brands (when other than the store name itself) are: Osco Drug Central-Vite (Albertson's); Spectravite (CVS); Kirkland Signature Daily Multivitamin (Costco); Whole Source, PharmAssure (Rite Aid); Central-Vite (Safeway); Member's Mark (Sam's Club); Vitasmart (Kmart); Century (Target); A thru Z Select, Super Aytinal, Ultra Choice (Walgreens) Equate Complete or Spring Valley Century-Vite (Wal-Mart).

Vitamins: B₁ = Thiamine; B₂ = Riboflavin; B₃ = Niacin; B₅ = Pantothenic Acid; B₆ = Pyridoxine; B₁₂ = Cyanocobalamin. Elements: Ca = calcium; Cr = chromium; Cu = copper; Fe = iron; F1 = fluoride; I = iodine; K = potassium; Mg = magnesium; Mn = manganese; Mo = Molybdenum; P = phosphorus; Se = selenium; Zn = zinc; NA = not applicable or not available.

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TIPS FOR SAFE PRESCRIPTION WRITING**

LEGIBILITY

1. Take time to write legibly.
2. Print if this would be more legible than handwriting.
3. Use a typewriter or computer if necessary. In the near future, physicians will generate all prescriptions by computer to 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).

DANGEROUS PRESCRIPTION WRITING PRACTICES

1. **Never use a trailing zero.** Correct: 1 mg; Dangerous: 1.0 mg. If the decimal is not seen, a 10-fold overdose can occur.
2. **Never leave a decimal point “naked.”** Correct: 0.5 mL; Dangerous: .5 mL. If the decimal point is not seen, a 10-fold overdose can occur.
3. **Never abbreviate a drug name** because the abbreviation may be misunderstood or have multiple meanings.
4. **Never abbreviate U for units** as it can easily be read as a zero, thus “6 U regular insulin” can be misread as 60 units. The order should be written as “6 units regular insulin.”
5. **Never use qd** (abbreviation for once a day). When poorly written, the tail of the “q” can make it read qid or four times a day.

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