

## 100 Essential Drugs

### Acetaminophen (Tylenol®)

**MOA:** inhibits prostaglandin synthesis in CNS;

**I:** antipyretic/ analgesic, no anti-inflammatory activity DOC for children with viral infections, e.g. chicken pox

**UT:** centrilobular hepatic necrosis (can be countered with N-acetyl cysteine)

### Allopurinol

**MOA:** inhibits xanthine oxidase

**I:** anti-hyperuricemic drug

**UT:** hypersensitivity reaction, skin rash

### Alprazolam (Xanax®)

**MOA:** GABA receptor agonist

**I:** benzodiazepine of choice for panic disorders, Tx of agoraphobia

**UT:** addiction (with protracted withdrawal)

### Amiodarone

**MOA:** (Class III antiarrhythmic) increases action potential duration and refractory period

**I:** Tx of life-threatening supraventricular and ventricular tachyarrhythmias

**UT:** pulmonary fibrosis, pts. may see halos in periphery due to corneal deposits

### Amoxicillin

**MOA:** beta lactam antibiotic which inhibits bacterial cell wall synthesis

**I:** antibacterial for non-penicillin's-producing strains of Streptococci, Staphylococci, *H. influenzae*, *E. coli*, *P. mirabilis*, uncomplicated gonococcal infections, and otitis media

**UT:** hypersensitivity reactions

### Amphotericin B

**MOA:** polyene antifungal, binds to membrane ergosterol to induce pore formation

**I:** DOC for systemic mycoses

**UT:** nephrotoxicity

### Acetylsalicylic acid [ASA] (Aspirin)

**MOA:** NSAID, inhibits cyclo-oxygenase

**I:** anti-inflammatory/ antipyretic, DOC for rheumatoid arthritis

**UT:** GI bleeding, Reye's syndrome

### Atropine

**MOA:** competitive muscarinic receptor blocker

**I:** used to increase heart rate [HR] & for Tx of cholinesterase inhibitor-induced toxicity

**UT:** insufficient dose may cause paradoxical slowing of HR

### **Azidothymidine [AZT] (zidovudine)**

**MOA:** nucleoside inhibitor (thymidine analog) of reverse transcriptase, terminates viral DNA synthesis

**I:** part of highly active antiretroviral therapy (HAART), Tx. of HIV, AIDS

**UT:** bone marrow suppression

### **Azithromycin**

**MOA:** macrolide antibiotic, bacteriostatic, binds 50s ribosomal subunit, blocks translocation

**I:** antibacterial, DOC for *C. trachomatis* urethritis, Tx of Legionella, Neisseria, and Mycoplasma infections

**UT:** rash in mononucleosis (like ampicillin)

### **Bleomycin**

**MOA:** attacks phosphodiester bonds of DNA, causing strand breakage

**I:** antineoplastic agent, especially for Tx of testicular tumors

**UT:** pulmonary fibrosis

### **Bromocriptine**

**MOA:** dopamine receptor agonist

**I:** anti-Parkinsonism drug, Tx of hyperprolactinemia

**UT:** exacerbates psychiatric illness

### **Captopril**

**MOA:** ACE inhibitor

**I:** anti-hypertensive, Tx of CHF, post myocardial infarction therapy

**UT:** dry cough, angioedema; fetal damage

### **Ceftriaxone**

**MOA:** 3<sup>rd</sup> generation cephalosporin, beta-lactam inhibitor of bacterial cell wall synthesis, blocks terminal cross-linking of bacterial cell wall peptidoglycan and activates cell wall autolytic enzymes (can cross blood brain barrier and is resistant to beta lactamases)

**I:** active against Gram negative infections (nosocomial infections, Lyme disease, *Neisseria gonorrhoeae*) and bacterial meningitis

**UT:** can cause a positive Coombs' test

### **Chloroquine**

**MOA:** antimalarial drug, inhibits breakdown of heme in the plasmodial digestive tract

**I:** drug of choice against falciparum malaria, Tx of extraintestinal amebiasis (especially hepatic amebiasis)

**UT:**

### **Chlorothiazide**

**MOA:** prototype thiazide diuretic, binds to Cl<sup>-</sup> channel in the distal convoluted tubule of the nephron, inhibiting NaCl reabsorption

**I:** antihypertensive drug, used for Tx of CHF, nephrotic syndrome, and hypercalciuria

**UT:** hypokalemia

### **Chlorpromazine**

**MOA:** neuroleptic agent, antagonist at alpha 1 adrenergic, dopamine, and 5HT<sub>2</sub> receptors in the CNS (blocks alpha 1 and 5HT similarly, but both more than D<sub>2</sub>, and blocks D<sub>2</sub> more than D<sub>1</sub>)

**I:** low potency drug used for Tx of schizophrenia or psychotic symptomatology

**UT:** contraindicated in pts. with seizure disorders (may lower seizure threshold)

### **Cholestyramine (Questran®)**

**MOA:** anion exchange resin which binds negatively-charged bile acids and bile salts, decreasing enterohepatic recirculation and increasing their excretion in the feces

**I:** antihyperlipidemic agent used for Tx of type IIa and IIb hyperlipidemias

**UT:** constipation and impaired absorption of fat-soluble vitamins

### **Cimetidine (Tagamet®)**

**MOA:** prototype H<sub>2</sub> receptor antagonist, which reversibly binds to gastric parietal cells and inhibits acid secretion

**I:** Tx of peptic ulcer disease, GERD, and Zollinger-Ellison syndrome

**UT:** inhibits hepatic cytochrome p450, leading to increased concentrations of other drugs and may have antiandrogenic effects, such as gynecomastia, galactorrhea, and decreased sperm count

### **Ciprofloxacin**

**MOA:** inhibition of bacterial DNA gyrase

**I:** used for Gram negative infections, effective against gonorrhoeae, urinary tract infections, soft tissue infections, diarrheal diseases

**UT:** pediatric Achilles tendon rupture

### **Clindamycin**

**MOA:** irreversibly binds the 50s ribosomal subunit, interfering with amino acid transfer of the growing peptide

**I:** Tx of anaerobic bacterial infections (lung abscesses, intra-abdominal infections, and orthopedic infections)

**UT:** may cause pseudomembranous enterocolitis

### **Clonidine**

**MOA:** alpha 2 adrenergic agonist

**I:** Tx of hypertension, opiate withdrawal, benzodiazepine withdrawal

**UT:** sexual dysfunction

## **Clozapine**

**MOA:** neuroleptic agent with high affinity for 5HT<sub>2</sub> and D<sub>4</sub> receptors

**I:** effective in treating refractory schizophrenia pts. or tardive dyskinesia

**UT:** may cause agranulocytosis

## **Cocaine**

**MOA:** inhibits reuptake of catecholamines

**I:** has been used as topical anesthetic in the nose and throat

**UT:** strong abuse potential, respiratory depression and coronary spasm

## **Colchicine**

**MOA:** plant alkaloid, which binds to tubulin, causing depolymerization of microtubules (decreasing migration of granulocytes to affected areas and inhibiting mitosis and cell division)

**I:** used as an antineoplastic agent, used in Tx of gout

**UT:** peripheral neuritis, alopecia

## **Cromolyn sodium**

**MOA:** inhibits mast cell degranulation

**I:** prophylactic anti-inflammatory used in the Tx of asthma

**UT:** (only minimal systemic toxicity)

## **Cyclophosphamide**

**MOA:** alkylating agent which is activated by cytochrome p450 and then reacts with (alkylates) DNA

**I:** autoimmune disorders and bone marrow transplants

**UT:** hemorrhagic cystitis

## **Cyclosporine**

**MOA:** decreases synthesis of IL-2 by activated T-cells

**I:** immunosuppressant, prevents rejection of allergenic transplants, Tx of graft vs. host disease and selected autoimmune disorders

**UT:** nephrotoxicity

## **Diazepam (Valium®)**

**MOA:** GABA receptor agonist

**I:** Tx of anxiety, skeletal muscle relaxant, preanesthetic medication, status epilepticus

**UT:** addiction (with protracted withdrawal)

## **Diethylstilbestrol [DES]**

**MOA:** works via a steroid hormone mechanism

**I:** the “morning after pill”, can be used to prevent pregnancy when administered at high doses (24-72 hrs.)

**UT:** rare, clear cell cervical or vaginal adenocarcinoma among daughters of women who took it during early pregnancy

## **Digoxin**

**MOA:** reversibly binds and inhibits Na<sup>+</sup>/K<sup>+</sup> ATPase, leading to positive inotropy

**I:** used for Tx of CHF, A-V nodal depression (to control the ventricular response to paroxysmal supraventricular tachycardia) and atrial fibrillation or flutter

**UT:** life-threatening cardiac arrhythmias

## **Diltiazem**

**MOA:** Class IV antiarrhythmic drug, calcium channel blocker

**I:** used for angina resulting from vasospasm, used for Tx of arrhythmias (supraventricular tachycardias) and mild to moderate hypertension

**UT:** (generally safe)

## **Diphenhydramine (Benadryl®)**

**MOA:** first generation antihistamine (H1 receptor blocker)

**I:** DOC for urticaria and allergic rhinitis, used for Tx of insomnia

**UT:** (minor abuse potential)

## **Dobutamine**

**MOA:** beta 1 adrenergic receptor agonist

**I:** used for CHF, promotes increased cardiac output with little change in myocardial oxygen demand

**UT:** (quite safe in lower doses)

## **Doxorubicin**

**MOA:** anthracycline antibiotic which intercalates DNA, binds to cell membranes and generates oxygen free radicals through lipid peroxidation

**I:** antineoplastic agent

**UT:** cardiotoxicity

## **Edrophonium (Tensilon®)**

**MOA:** competitive inhibitor of acetylcholinesterase

**I:** used to Dx myasthenia gravis

**UT:** (only as may relate to brevity of effect)

## **Epinephrine**

**MOA:** alpha and beta adrenergic agonist

**I:** DOC for anaphylaxis, used in Tx of asthma, cardiac arrest, enhances effect of local anesthetics

**UT:** (excessive dosing may precipitate hypertensive crisis)

## **Erythromycin**

**MOA:** macrolide antibiotic, binds 50s ribosome interfering with protein synthesis

**I:** alternative to penicillin in allergic patients, first choice for treatment of Legionella and M. pneumoniae, second choice for treatment of syphilis and Chlamydial infections

**UT:** sensorineural hearing loss in large doses, inhibition of cytochrome p450

## **Estrogen**

**MOA:** works via a steroid hormone mechanism

**I:** oral contraceptive, replacement therapy for postmenopausal women, primary hypogonadism and hypopituitarism, dysmenorrhea, dysfunctional uterine bleeding, and as a palliative treatment of prostatic carcinoma (reduce growth rate of metastases)

**UT:** thromboembolic phenomena

## **Finasteride**

**MOA:** 5-alpha reductase inhibitor, inhibits conversion of testosterone to dihydrotestosterone in target tissues

**I:** Tx of benign prostatic hypertrophy and male pattern baldness

**UT:** gynecomastia for Proscar®, not Propecia® (a dosing difference X5)

## **Fluoxetine**

**MOA:** selective serotonin reuptake inhibitor

**I:** indicated for depression, panic disorders, obsessive compulsive disorders, post traumatic stress disorders, and bulimia nervosa

**UT:** inhibits cytochrome p450, potentially fatal serotonin syndrome (hyperthermia, muscle rigidity, myoclonus, rapid changes in vital signs and mental status) when combined with monoamine oxidase inhibitors

## **Folic acid**

**MOA:** cofactor which participates in one carbon transfer for DNA and methionine synthesis

**I:** used in tx. of folate deficiency, used as a dietary supplement for women of child-bearing age to prevent neural tube defects

**UT:** ~

## **Furosemide (Lasix®)**

**MOA:** prototype loop diuretic, inhibits reabsorption of Na<sup>+</sup>, K<sup>+</sup>, and Cl<sup>-</sup> in the ascending thick limb of the loop of Henle by blocking Na/K/Cl cotransporter

**I:** used in CHF, pulmonary edema, renal and liver failure, severe hypertension, and hypercalcemia

**UT:** hypokalemia, ototoxicity, allergic interstitial nephritis

## **Gentamicin**

**MOA:** irreversibly binds 30s ribosome, resulting in inhibition of the initiation of protein synthesis

**I:** active against aerobic Gram negative bacteria, used for serious infections, used topically in burns infected with Pseudomonas and ocular infections

**UT:** ototoxicity and nephrotoxicity

### **Haloperidol (Haldol®)**

**MOA:** dopamine receptor antagonist (especially high affinity for D2) in mesolimbic and mesocortical areas

**I:** psychotic symptomatology or schizophrenia , severe manic or agitated episodes, and Tourette's syndrome

**U:** may cause Parkinsonism, akathisia, dystonia, tardive dyskinesia, hyperprolactinemia, and neuroleptic malignant syndrome (muscle rigidity, fever, diaphoresis, myoglobinuria, metabolic acidosis)

### **Heparin**

**MOA:** accelerates antithrombin III binding to thrombin and antithrombin III, inactivates thrombin, as well as factors IXa, Xa, XIa, XIIa, and kallikrein; inhibits clot formation, but does not dissolve existing clots (only drug that produces anticoagulation within minutes)

**I:** used in pts. at high risk for thrombosis and pulmonary emboli, used to stop ongoing thrombosis, used in the acute phase of myocardial infarction

**UT:** thrombocytopenia

### **Hydralazine**

**MOA:** direct relaxation of vascular smooth muscle, greater effect on arterioles than venules

**I:** used for moderate to severe essential hypertension, CHF (in combination with oral nitrates)

**UT:** lupus-like syndrome with positive antinuclear antibody(ANA) (in slow acetylators)

### **Ibuprofen (Advil®)**

**MOA:** NSAID, inhibits cyclooxygenase

**I:** analgesic, anti-inflammatory, antipyretic drug

**UT:** nephrotoxicity

### **imipramine**

**MOA:** prototype tricyclic antidepressant, decreases reuptake of norepinephrine and serotonin in the CNS

**I:** for Tx of severe major depression

**UT:** antimuscarinic effects, orthostatic hypotension

### **Indinavir**

**MOA:** inhibits viral protease thereby preventing formation of functional reverse transcriptase

**I:** part of HAART Tx of HIV and AIDS

**UT:** thrombocytopenia

## **Indomethacin**

**MOA:** NSAID, inhibits prostaglandin-forming cyclooxygenase

**I:** used for the closure of patent ductus arteriosus, used for moderate to severe rheumatoid arthritis, osteoarthritis, ankylosing spondylitis, Bartter's syndrome, tendinitis, bursitis, acute gout, dysmenorrhea, DOC for Reiter's syndrome

**UT:** blood dyscrasias, hepatotoxicity, contraindicated in pregnant women

## **Insulin, regular**

**MOA:** binds to tyrosine kinase receptors on surface of cells, promoting anabolic reactions within target cells, promotes translocation of GLUT transporters to plasma membrane

**I:** IDDM, NIDDM, diabetic ketoacidosis, hyperosmolar hyperglycemic nonketotic coma

**UT:** hypoglycemia

## **Isoniazid [INH]**

**MOA:** inhibits mycolic acid synthesis of mycobacterial cell wall

**I:** for Tx and prevention of tuberculosis

**UT:** lupus-like syndrome with positive ANA (slow acetylators)

## **Isoproterenol**

**MOA:** beta agonist

**I:** Tx of bronchial asthma, bradycardia

**UT:** sinus tachycardia

## **isotretinoin**

**MOA:** mechanism unknown (appears to inhibit sebaceous gland size and function)

**I:** treatment of severe cystic acne that is recalcitrant to standard therapy

**UT:** teratogenic

## **Ketoconazole**

**MOA:** blocks synthesis of fungal cell membrane ergosterol

**I:** Tx of coccidioidomycosis, histoplasmosis, blastomycosis, paracoccidiomycosis, mucocutaneous candidiasis

**UT:** suppression of Cytochrome P-450

## **Levodopa**

**MOA:** dopamine precursor (converted by dopa decarboxylase)

**I:** usually given with carbidopa for the Tx of Parkinson's disease

**UT:** hyperkinetic movement disorders, psychotic behavior

## **Levothyroxine**

**MOA:** activation of nuclear non-histone protein receptors attached to DNA, increasing transcription of mRNA

**I:** DOC for Tx of hypothyroidism

**UT:** ~

## **Lidocaine**

**MOA:** decreases automaticity in Purkinje fibers and ventricular tissue by blocking inactivated Na<sup>+</sup> channels, favoring phase III repolarization

**I:** primary therapy for ventricular arrhythmias, local anesthetic

**UT:** cimetidine and propranolol increase its toxicity

## **Lithium**

**MOA:** for antidepressant effect: it may decrease supersensitivity of dopamine receptors, increase acetylcholine, enhance 5-HT activity for depression; for anti-mania effect: it may prevent recycling of phosphoinositides, thereby causing depletion of IP3 and DAG, which diminishes excess catecholamines and 5-HT

**I:** used in the treatment of mania, depression, and bipolar disorder (mood stabilizer)

**UT:** teratogenic (not for pregnant women or nursing mothers), interstitial nephritis, nephrogenic diabetes insipidus

## **Losartan**

**MOA:** angiotensin II receptor blocker

**I:** antihypertensive drug

**UT:** used for Tx of hypertension; fetal damage

## **Lovastatin (Mevacor®)**

**MOA:** HMG CoA reductase inhibitor

**I:** Type IIa and IIb hyperlipoproteinemia and secondary hyperlipoproteinemia

**UT:** elevated liver enzymes, rhabdomyolysis

## **Meperidine (Demerol®)**

**MOA:** opioid receptor agonist

**I:** used for analgesia

**UT:** (relative) mydriasis

## **Methotrexate**

**MOA:** folic acid analogue, blocks dihydrofolate reductase, resulting in decreased dTMP, therefore decreased DNA and protein synthesis

**I:** anti-neoplastic agent, also rheumatoid arthritis, abortion, ectopic pregnancy, psoriasis

**UT:** pneumonitis, fatty liver, myelosuppression

## **Methylphenidate**

**MOA:** stimulates release of catecholamines (crosses the blood brain barrier)

**I:** CNS stimulant, stimulates mood and alertness and depresses appetite, tx. of ADHD

**UT:** significant abuse potential in *non*-ADHA subjects

## **Metoprolol**

**MOA:** beta 1 adrenergic receptor blocker

**I:** Tx of hypertension, tachyarrhythmias, heart disease

**UT:** ~

## **Metronidazole**

**MOA:** mechanism of action involves entry into the cells of the infectious organism where it is chemically reduced and products of reduction cause death by interacting with DNA and interfering with cell division

**I:** amebic infections, DOC for trichomoniasis and giardiasis, Tx of *Bacteroides fragilis*, *Clostridium difficile*, and *Gardnerella vaginalis*

**UT:** disulfiram-like reaction with alcohol consumption, avoid in pregnant women

## **Morphine**

**MOA:** primary activity at opioid mu receptors

**I:** used in Tx of severe pain

**UT:** contraindicated with sedative hypnotics, MAO inhibitors, and antipsychotics

## **Nafcillin**

**MOA:** beta lactam antibiotic, inhibits bacterial synthesis by preventing peptidoglycan cross-linking (penicillinase resistant)

**I:** Tx of penicillin-resistant Staphylococcal and Streptococcal infections

**UT:** acute tubulo-interstitial nephropathy [ATIN] (though much less than methicillin)

## **Naloxone**

**MOA:** opioid receptor antagonist with very high affinity at mu receptors, but can also block kappa and delta

**I:** used for Tx of acute opioid overdose

**UT:** ~

## **Nifedipine**

**MOA:** calcium channel blocker

**I:** used in mild to moderate hypertension, used in Tx of coronary vasospasm

**UT:** Raynaud's phenomenon

## **Nitroglycerine**

**MOA:** coronary vasodilatation and systemic venous pooling to reduce preload and vasodilatation, secondary to metabolism of nitrates to NO which activates guanylate cyclase and increases cGMP

**I:** indicated for angina, coronary vasospasm, Prinzmetal's angina, CHF, short term management of hypertension

**UT:** postural hypotension, reflex tachycardia

### **Nitroprusside**

**MOA:** directly relaxes vascular smooth muscle via nitric oxide, increasing cGMP (relaxes arterioles and venules)

**I:** used for hypertensive emergencies, acute CHF, severe mitral regurgitation with pulmonary congestion

**UT:** thiocyanate poisoning

### **Octreotide**

**MOA:** somatostatin analogue

**I:** controls excessive hormone secretion in acromegaly, glucagonemia, and insulinoma

**UT:** ~

### **Omeprazole**

**MOA:** irreversibly inhibits the gastric parietal cell H<sup>+</sup>/K<sup>+</sup> ATPase

**I:** Tx of gastroesophageal reflux disease, peptic ulcer disease, Zollinger-Ellison syndrome

**UT:** ~

### **Phentolamine**

**MOA:** competitive and reversibly blocks alpha adrenergic receptors

**I:** used in hypertensive crisis associated with pheochromocytoma

**UT:** orthostatic hypotension

### **Phenoxybenzamine**

**MOA:** irreversibly blocks alpha adrenergic receptors by covalent attachment

**I:** used in pheochromocytoma, hypertensive crisis secondary to monoamine oxidase overdose, prophylaxis for Raynaud's phenomenon

**UT:** inhibits ejaculation, may cause orthostatic hypotension

### **Phenylephrine**

**MOA:** alpha 1 adrenergic receptor agonist

**I:** nasal decongestant, used for hypotension, to prolong local anesthetic, to terminate paroxysmal atrial tachycardias, and as a mydriatic

**UT:** tissue necrosis

### **Phenytoin**

**MOA:** inhibits voltage-gated Na<sup>+</sup> channels

**I:** effective in many forms of epilepsy except absence seizures, also useful in Tx of trigeminal neuralgia, limited use as an antiarrhythmic

**UT:** gingival hyperplasia, hirsutism

### **Physostigmine**

**MOA:** cholinesterase inhibitor

**I:** used in tx. of glaucoma

**UT:** ~

### **Pilocarpine**

**MOA:** direct-acting muscarinic receptor agonist

**I:** topically used for narrow and open-angle glaucoma to reduce intraocular pressure

**UT:** ~

### **Potassium chloride**

**MOA:** involved in maintenance of cellular membrane potential

**I:** antiarrhythmic Tx of hypokalemia

**UT:** arrhythmias

### **Praziquantel**

**MOA:** antihelminthic drug, increases membrane permeability of susceptible worms to calcium, resulting in paralysis of the parasite

**I:** DOC for all trematode infections, also active in cestode infections

**UT:** eosinophilia

### **Prednisone**

**MOA:** enters target cells and binds to cytosolic receptor, steroid-receptor complex is translocated to the nucleus where it regulates the synthesis of specific proteins

**I:** used as an anti-inflammatory and immunosuppressant agent, when long-term therapy is needed

**UT:** (exogenous) Cushing's syndrome

### **Procainamide**

**MOA:** Class IA antiarrhythmic drug, blocks activated Na<sup>+</sup> channels, thereby slowing rate of phase 0 depolarization and conduction

**I:** used for atrial arrhythmias and ventricular arrhythmias, including ventricular ectopic beats

**UT:** lupus-like syndrome with positive ANA

### **Propranolol**

**MOA:** beta adrenergic receptor antagonist

**I:** Tx of hypertension, angina, arrhythmias post MI

**UT:** use with caution in diabetics, may cause impotence

### **Propylthiouracil**

**MOA:** inhibits thyroid peroxidase-catalyzed reactions, also inhibits peripheral deiodination of T<sub>4</sub> and T<sub>3</sub>

**I:** used in Tx of thyrotoxicosis

**UT:** maculopapular pruritic rash, agranulocytosis

## **Quinidine**

**MOA:** Class IA antiarrhythmic drug, blocks activated Na<sup>+</sup> channels, decreasing the rate of cardiac conduction by decreasing the rate of phase 0 depolarization, also blocks muscarinic and alpha 1 receptors

**I:** used for atrial arrhythmias and ventricular arrhythmias, including ventricular ectopic beats

**UT:** patient must be pretreated with beta blocker, digitalis, or Ca<sup>2+</sup> channel blocker to avoid possible increase in ventricular response to atrial flutter; may cause *les torsades de pointes*, and cinchonism

## **Sildenafil citrate**

**MOA:** inhibits phosphodiesterase

**I:** Tx of erectile dysfunction

**UT:** affects color vision causing difficulty in blue/green discrimination

## **Spirolactone**

**MOA:** blocks aldosterone action by competitively binding to its receptor

**I:** used in combination with K<sup>+</sup> losing diuretics to maintain proper K<sup>+</sup> balance, useful in presence of high aldosterone levels, used in the diagnosis and treatment of primary hyperaldosteronism, used in treatment of polycystic ovary disease and female hirsutism

**UT:** gynecomastia

## **Streptokinase**

**MOA:** no enzymatic action, forms complexes with plasminogen, streptokinase/plasminogen complex can then cleave free plasminogen into plasmin

**I:** used for Tx of deep vein thrombosis (DVT), pulmonary embolism, unclogging of catheters and shunts, and acute MI; hypersensitivity reactions, anaphylaxis

**UT:** hemorrhagic stroke

## **Tamoxifen**

**MOA:** competitive antagonist to estrogen at receptors in the breast, partial agonist at other estrogen receptors

**I:** used to reduce recurrence of estrogen-receptor-positive breast cancer, particularly in postmenopausal women

**UT:** ~

## **Terfenadine**

**MOA:** histamine receptor blocker (H<sub>1</sub>) (2nd generation antihistamine)

**I:** used to prevent or treat symptoms of allergic reactions, without causing drowsiness

**UT:** metabolism is easily inhibited by many hepatic microsomal enzyme inhibitors, and high concentrations may cause torsades de pointes

## **Thalidomide**

**MOA:** mechanism unknown

**I:** sedative drug, has important immunomodulatory actions, recently reintroduced for leprosy, useful in tx. of skin manifestations of lupus

**UT:** teratogenic, causes phocomelia

## **Theophylline (aminophylline)**

**MOA:** phosphodiesterase inhibitor, results in higher concentrations of intracellular cAMP

**I:** Tx of bronchial asthma

**UT:** “narrow therapeutic window”

## **Tranlycypromine-**

**MOA:** monoamine oxidase inhibitor

**I:** used in Tx of depression, phobias, narcolepsy, and panic attacks

**UT:** avoid tyramine-containing foods

## **Trimethoprim/Sulfamethoxazole**

**MOA:** synergistic combination, acts as an inhibitor of two sequential steps in the synthesis of folic acid, sulfamethoxazole inhibits PABA incorporation into folic acid, while trimethoprim inhibits the reduction of dihydrofolic acid to tetrahydrofolic acid

**I:** UTIs, shigellosis, salmonellosis, respiratory infections caused by *H. influenzae*, *Streptococcus pneumoniae* and *Pneumocystis carinii*, typhoid and paratyphoid fevers, and *Isospora belli*

**UT:** Steven-Johnson syndrome, blood dyscrasias

## **Vancomycin**

**MOA:** inhibits cell wall synthesis by binding to D-Ala-D-Ala, thus preventing its incorporation into peptidoglycan

**I:** active against Gram positive bacteria only, used in Tx of *C. difficile* pseudomembranous colitis, MRSA, and enterococcal infections in penicillin allergic patients, and penicillin-resistant pneumococci, also used w/ gentamicin for *S. faecalis* and *S. viridans* endocarditis

**UT:** rapid infusion may cause facial and neck erythema (“red man syndrome”), ototoxicity, and nephrotoxicity

## **Vasopressin**

**MOA:** increases water reabsorption in the collecting ducts of the kidney by binding to ADH receptor

**I:** used in the treatment of central diabetes insipidus

**UT:** ~

## **Verapamil**

**MOA:** calcium channel blocker

**I:** used for mild to moderate hypertension, supraventricular tachyarrhythmias, migraine headache prophylaxis

**UT:** significant negative inotrope

## **Warfarin**

**MOA:** derivative of Coumarin, interferes with synthesis of vitamin K-dependent clotting factors (factors II, VII, IX, X, protein C, protein S)

**I:** indications similar to heparin, but not useful for rapid anticoagulation

**UT:** warfarin skin necrosis

## **Zafirlukast**

**MOD:** leukotriene receptor antagonist (LTD4)

**I:** used in Tx of asthma

**UT:** hepatotoxicity

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