NCSBN Medication List

1. Alpha Blockers
   DESCRIPTION
   These medications cause vasodilation by blocking the binding of norepinephrine to the smooth muscle receptors in blood vessels.

   Uses:
   To prevent, treat or improve symptoms in conditions such as hypertension, benign prostatic hyperplasia (BPH), Raynaud's disease, scleroderma, and pheochromocytoma.

   EXAMPLES
   doxazosin (Cardura)
   prazosin (Minipress)
   tamsulosin (Flomax)
   terazosin (Hytrin)

   Nice to know: alpha blockers are usually prescribed only when other antihypertensives are not working

   Really important: significant dizziness and syncope are common with the first dose (AKA first dose effect)

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2. Angiotensin Converting Enzyme (ACE) Inhibitors
   DESCRIPTION
   These medications slow the activity of the angiotensin converting enzyme (ACE), decreasing the production of angiotensin II. As a result, blood vessels relax and dilate, blood pressure lowers, and more oxygen-rich blood reaches the heart.

   Uses:
   Control blood pressure, treat heart failure, and help prevent stroke.

   EXAMPLES
   benazepril* (Lotensin)
   captopril (Capoten)
   enalapril* (Vasotec)
   fosinopril (Monopril)

lisinopril* (Prinivil, Zestril)
moexipril (Univasc)
perindopril (Aceon)
quinapril (Accupril)
ramipril (Altace)
trandolapril (Mavik)

Good to know: can cause a permanent dry cough

Really important: Warning! these drugs can cause angioedema a rare complication that may rapidly lead to cardiac arrest

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3. Angiotensin Receptor Blockers (ARBs)
DESCRIPTION
These medications block the action of angiotensin II by preventing angiotensin II from binding to angiotensin II receptors on blood vessels. As a result, blood vessels dilate and blood pressure drops.

Uses:
Control high blood pressure and treat heart failure.

Slow the progression of kidney disease due to high blood pressure or diabetes.

EXAMPLES
candesartan (Atacand)
irbesartan (Avapro)
losartan (Cozaar)
olmesartan* (Benicar)
valsartan* (Diovan)

Good to know: ARBs are used for people who cannot tolerate ACE inhibitors (not a substitute for ACE inhibitors and do not prolong life the way ACE inhibitors do)

Really important: Women who are pregnant should not take ARBs b/c they cause birth defects (pregnancy category D)

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4. Anti-Alzheimer's Agents
DESCRIPTION
These medications:

May prevent the breakdown of acetylcholine by blocking the activity of acetylcholinesterase (cholinesterase inhibitors).

Help regulate the activity of glutamate, a chemical involved in the processing, storage and retrieval of information (NMDA receptor antagonists).

Uses:
Treat mild-to-moderate Alzheimer's disease (donepezil, rivastigmine, and galantamine).

Memantine is used treat moderate-to-severe Alzheimer's disease.

EXAMPLES
cholinesterase inhibitor
donepezil* (Aricept)
galantamine (Razadyne)
rivastigmine* (Exelon)

NMDA receptor antagonist
memantine* (Namenda)

Really important: these drugs only postpone the worsening of symptoms. there is no cure for Alzheimer's disease

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5. Anti-Infectives – Aminoglycosides
DESCRIPTION
These medications are bactericidal; they inhibit protein synthesis in bacteria and compromise the structure of the bacterial cell wall.

Uses:
Treat and prevent severe infections, such as septicemia and severe urinary tract infections.

Treat hospital-acquired respiratory infections, caused by aerobic, gram-negative bacteria, e.g.,

as Escherichia coli and Klebsiella species.

EXAMPLES
amikacin (Amikin)
gentamicin (Garamycin)
kanamycin (Kantrex)
neomycin (Neo-Fradin)
streptomycin (Streptomycin)
tobramycin (Nebcin, TOBI)

Good to know: aminoglycosides can be fairly toxic, so they are given for a short period of time. After initial tx the client is switched to a less toxic anti-infective (once the causative agent of infection is identified)

Really important: a common side effect is hearing loss. Gentamicin toxicity is the most common cause of bilateral vestibulopathy (damage to both inner ears). Symptoms of toxicity include imbalance and oscillopsia.

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6. Anti-Infectives – Cephalosporins
DESCRIPTION
These medications belong to a group of broad spectra, semi-synthetic beta-lactam antibiotics derived from the mold Cephalosporium. Like penicillin, they interfere with bacterial cell wall synthesis.

Uses:
Treat and prevent a wide variety of bacterial infections, including respiratory tract infections, skin and soft-tissue infections, and urinary tract infections.

EXAMPLES
1st Generation
cefadroxil (Duricef)
ceFAZolin (Ancef)
cephalexin* (Keflex)

2nd Generation
cefaclor (Raniclor, Ceclor)
cefOXitin (Mefoxin)

cefprozil (Cefzil)
cefuroxime (Ceftin, Zinacef)

3rd Generation
cefdinir* (Omnicef)
cefixime (Suprax)
cefoperazone (Cefobid)
cefotaxime (Claforan)
cefpodoxime (Vantin)
ceftAZidime (Fortaz, Tazicef)
ceftibuten (Cedax)
ceftizoxime (Cefizox)
ceftRIAXone (Rocephin)

4th Generation
cefepime (Maxipime)

Nice to know: used as an alternative to patients allergic to penicillins

Really important: cefprozil contains phenylalanine and should not be prescribed for clients with PKU

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7. Anti-Infectives – Fluoroquinolones
DESCRIPTION
These medications are bactericidal; they are the only class of antimicrobial agents in clinical use that directly inhibit DNA synthesis in bacteria.

Uses:
Treat wide range of infections of the sinuses, skin, lungs, ears, airways, urinary tract, bones, and joints caused by gram-negative and gram-positive organisms.

Prevent and treat anthrax.

EXAMPLES
ciprofloxacin* (Cipro)
gemifloxacin (Factive)
levofloxacin* (Levaquin)

moxifloxacin (Avelox)
norfloxacin (Noroxin)
ofloxacin (Floxin)

Really important: BBW! Fluoroquinolones use increases the likelihood of tendonitis & tendon rupture.

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8. Anti-Infectives – Macrolides
DESCRIPTION
These medications are bacteriostatic. They inhibit bacterial growth and reproduction by interfering with their ability to make proteins.

Uses:
Treat various systemic and local bacterial infections of the respiratory tract, gastrointestinal tract, and soft tissues.

Treat severe acne and sexually transmitted infections.

Prevent pertussis (whooping cough), as well as endocarditis in dentistry.

EXAMPLES
azithromycin* (Zithromax)
clarithromycin (Biaxin)
dirithromycin (Dynabac)
erythromycin (E-Mycin)
troleandomycin (Tao)

Good to know: Azithromycin "Z-pak" consists of 6 capsules prepakaged in a blister card. Patient takes 2 capsules for the 1st day followed by 1 capsule for the remaining 4 days

Really important: older patients who take CCB are at risk for hypotension or shock if they take erthyromycin or clarithromycin. if a macroglide is required these patients should be prescribed azithromycin

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9. Anti-Infectives - Penicillins

DESCRIPTION
These medications belong to a class of antibiotics called beta-lactams, which exert bactericidal action by inhibiting bacterial cell wall production. Currently this group includes more than 20 antibiotics.

Uses:
Treat and prevent of wide range of bacterial infections including streptococcal infections, syphilis and Lyme disease.

EXAMPLES
Aminopenicillins
amoxicillin* (Amoxil)
ampicillin (Principen, Omnipen)

Extended spectrum penicillins
carbenicillin (Geocillin)
piperacillin (Pipracil)
ticarcillin (Ticar)

Natural penicillins
penicillin G (generic)
penicillin V* (Pen-VK)
Penicillinase-resistant penicillins

dicloxacillin (Dynapen)
nafcillin (generic)
oxacillin (generic)

Really important: in rare cases an allergy to penicillin can cause an anaphylactic reaction. Medical first aid includes: cariopulmonary assessment and supportive measures (including Oxygen), IM epinephrine, assessing & securing airway, IV normal saline, inhaled beta 2 agonist (albuterol), antihistamines (H1 & H2 antagonists)

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10. Anti-Infectives - Sulfonamides
DESCRIPTION
These bacteriostatic medications provide a broad spectrum of activity against both gram-positive and gram-negative bacteria.

Uses:
Treat urinary tract infections.

Treat some types of bacterial pneumonia (Pneumocystis Carinii) and shigellosis.

Treat some protozoal infections.

EXAMPLES
mafenide (Sulfamylon)
sulfacetamide ophthalmic (Bleph10)
sulfamethizole (Thiosulfil Forte)
sulfaSALAzine (Azulfidine)
sulfisoxazole (Gantrisin)
trimethoprim-sulfamethoxazole* (Septra, Bactrim)

Really important: groups at higher risk include those who metabolize these medication more slowly and those with immune problems (AIDS) reactions can rage from hives to photosensitivity to life threatneing anaphylaxis

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11. Anti-Infectives - Tetracyclines
DESCRIPTION
These broad spectrum anti-infectives exert their bacteriostatic effect by inhibiting protein synthesis in bacteria.

Uses:
Treat respiratory tract infections.

Treat acne and skin infections, genital infections (syphilis, chlamydia), and urinary tract infections.

Treat Lyme disease, mycoplasmal infections and rickettsial infections and the infection that causes stomach ulcers (caused by Helicobacter pylori).

EXAMPLES
demeclocycline (Declomycin)
doxycycline* (Vibramycin)

minocycline (Minocin)
oxytetracycline (Terramycin)
tetracycline (Sumycin)

Nice to know: should be taken on empty stomach (1 hr before or 2 hrs after meals/snacks) with a full glass of water (no dairy products)

Really important: may decrease effectiveness of some oral contraceptives

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12. Antianginals - Nitrates
DESCRIPTION
These vasodilators dilate the blood vessels, improve blood flow and allow more oxygen-rich blood to reach the heart muscle. They also relax the veins.

Uses:
Treat and prevent attacks of (acute) angina.

EXAMPLES
isosorbide dinitrate (Dilatrate-SR, Sorbitrate, Isordil)
isosorbide mononitrate* (ISMO, Monoket, Imdur)
nitroglycerin (Nitro-Dur, Nitro-Bid, Nitrostat)

Good to know: can cuase dizziness, headaches & hypotension

Really important: Warning! patients should NOT take Viagara or Cialis within 24-36 hrs of taking nitrates. Combination can cause significant and dangerous drop in blood pressure

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13. Antianxiety Agents
DESCRIPTION
These medications act at many levels in the central nervous system (CNS), producing an anxiolytic effect. They may produce CNS depression. The effects may be mediated by GABA (an inhibitory neurotransmitter).

Uses:
Treat of Generalized Anxiety Disorder (GAD) and Panic Disorder.

Manage anxiety associated with depression.

EXAMPLES
Antidepressants (SSRI)
PARoxetine* (Paxil)
venlafaxine* (Effexor)
Antidepressants (tricyclic)
doxepin (SINEquan)

Antihistamine
hydrOXYzine (Atarax, Vistaril)
Benzodiazepines
ALPRAZolam* (Xanax)
busPIRone (Buspar, Vanspar)
chlordiazePOXIDE (Librium)
diazepam* (Valium)
LORazepam* (Ativan)
! midazolam (Versed)
oxazepam (Serax)

Herbals
kava-kava (herbal)
lemon verbena (herbal)
valerian (herbal)

Tranquilizer
meprobomate (Equanil)

Really important: alprazolam appears on Beers List (inappropriate meds for the elderly)

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14. Antiarrhythmics
DESCRIPTION
These medications are generally classified by their effects on cardiac conduction tissue (Class IA, IB, IC, II, III, IV). They:

Slow down the heart (the calcium channel blockers, digoxin, and beta-blockers).

Slow the heart's electrical impulses by blocking the heart's potassium channels (amiodarone, sotalol, dofetilide).

Uses:
Suppress potentially lethal cardiac arrhythmias.

EXAMPLES
Class IA
disopyramide (Norpace)
procainamide (Pronestyl)
quiNIDine (Quinidine Sulfate)

Class IB
! lidocaine (Xylocaine)
mexiletine (Mexitil)
phenytoin (Dilantin)

Class IC
flecainide (Tambocor)
propafenone (Rythmol)

Class II (Beta-blockers)
acebutolol (Sectral)
! propranolol (Inderal)
sotalol (Betapace)

Class III
! amiodarone (Cordarone)
dofetilide (Tikosyn)
ibutilide (Corvert)

Class IV (Calcium-channel blockers)
diltiazem* (Cardizem, Dilacor, Tiazac, and others)
verapamil* (Calan, Covera, Isoptin, Verelan)

Other
! digoxin* (Lanoxin)
dronedarone (Multaq)

Good to know: digoxin has a narrow therapeutic range (0.5 – 2 ng/mL). Patients with low potassium levels can develop digoxin toxicity even when levels are not elevated. Common symptoms of toxicity include dizziness w/o vertigo, confusion, visual changes (blurred, serring yellow or green halos) irregular heartbeat, headache, and dyspnea

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15. Antiasthmatics
DESCRIPTION
These medications:

Relax the smooth muscles that line the airway (bronchodilators).

Block the inflammation that narrows the airways (corticosteroids).

Counteract substances that cause the air passages to constrict and secrete mucus (leukotriene modifiers).

Prevent allergic reactions or asthma symptoms.

Uses:
Manage acute and chronic episodes of reversible bronchoconstriction associated with asthma.

Treat acute attacks (short-term control) and decrease incidence and intensity of future attacks (long-term control).

EXAMPLES
Adrenergics
albuterol* (Proventil, Ventolin, Proair, AccuNeb)
! EPINEPHrine (EpiPen, Primatene, Nephron, Adrenalin)
Bronchodilators
theophylline (Theo-Dur, Slo-Bid, Aerolate, and others)
Corticosteriods
budesonide (Entocort EC, Pulmicort)
ciclesonide (Omnaris)
Herbals
eucalyptus (herbal)
Leukotriene antagonists

montelukast* (Singulair)
zafirlukast (Accolate)
Mast cell stabilizers
cromolyn nebulized solution (NasalCrom)
Monoclonal antibodies
omalizumab (Xolair)
Other
albuterol & ipratropium* (Combivent)

Good to know: advise patients to use albuterol 1st if using other inhalation meds and wait 5 mins before administering another inhalant med. rinse mouths with water after each inhalation dose and regularly clean the mouth piece

Really important: inject Epipen directly through clothing into the outer thigh and hold in place for 10 seconds to deliver all the medication

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16. Anticoagulants
DESCRIPTION
These medications inhibit clotting factor synthesis, inhibit thrombin, or interfere with blood platelet formation.

Uses:
Prevent or treat blood clots associated with stroke, heart attack, heart valve disease, coronary artery disease, heart failure, arrhythmia, atrial fibrillation, deep vein thrombosis, and pulmonary embolism

EXAMPLES
! heparin (generic)
! warfarin* (Coumadin)
Indirect factor Xa inhibitor
! fondaparinux (Arixtra)
LMWH
! dalteparin (Fragmin)
! enoxaparin (Lovenox)
! tinzaparin (Innohep)
Thrombin inhibitors
! argatroban (generic)

! bivalirudin (Angiomax)
! dabigatran* (Pradaxa)
! desirudin (Iprivask)
! lepirudin (rDNA)

Nice to know: Foods rich in Vitamin K (leafy green veggies) can reduce the effectiveness of anticoagulation drug therapy

Good to know: ask patients if they are using herbal remedies (ginseng & St. johns wort can decrease Pt/INR ginkgo biloba, garlic chamomiles and licorice root can increase PT/INR)

Really important: therapeutic range of effectiveness of anticoagulant is approximately 1.5–2.5 times the normal lab values. Be sure to know the lab results before administering anticoagulants.

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17. Anticonvulsants

DESCRIPTION
These medications depress central nervous system function. They target specific neurochemical processes, suppress excess neuron function, and regulate electrochemical signals in the brain (for instance, GABA inhibitors).

Uses:
Help control epileptic seizures.

Treat neuropathic pain (associated with diabetes, shingles, and fibromyalgia), migraine headaches, and bipolar disorder.

EXAMPLES
Barbiturates
mephobarbital (Mebaral)
PENTobarbital (Nembutal)
PHENobbarbital (Luminal, Solfoton)

Benzodiazepines
clonazePAM* (KlonoPIN)
clorazepate (Tranxene)
diazepam* (Valium)

GABA analogues
gabapentin* (Neurontin)
pregabalin* (Lyrica)
tiaGABine (Gabitril)
Hydantoins
ethotoin (Peganone)
fosphenytoin (Cerebyx)
phenytoin (Dilantin)

Other
carBAMazepine (TEGretol)
lamoTRigine (LaMICtal)
OXcarbazepine (Trileptal)
topiramate (Topamax)
valproic acid (Depakote)
Oxazolidinediones
trimethadione (Tridione)

Nice to know: these meds should not be discontinued suddenly b/c they may cause insomnia or seizures

Really important: BBW! some anticonvulsants (carbamazepine) may cause fatal dermatologic reactions including Steven-Johnson syndrome. Patients of Chinese ancestry are at highest risk to develop these reactions.

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18. Antidepressants – Cyclic
DESCRIPTION
These medications inhibit the nerve cell's ability to reuptake serotonin and norepinephrine, resulting in increased levels of these neurotransmitters in the brain. They also block the action of acetylcholine and histamine (causing many of the side effects of these meds).

Uses:
Relieve depression and help treat obsessive compulsive disorder and bedwetting.

Off-label uses include panic disorder, bulimia, and chronic pain (migraine, diabetic neuropathy & post-herpetic neuralgia).

EXAMPLES
amitriptyline* (Elavil)
amoxapine (Asendin)
desipramine (Norpramin)
doxepin (SINEquan)
imipramine (Tofranil)
maprotiline (Ludiomil)
nortriptyline (Pamelor)
protriptyline (Vivactil)
trimipramine (Surmontil)

Really important: these drugs are one of the leading causes of death by drug overdose in the US (due to lethal cardiac complications)

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19. Antidepressants – Monoamine Oxidase Inhibitors (MAOIs)
DESCRIPTION
These medications prevent the enzyme monamine oxidase from breaking down the neurotransmitters norepinephrine and serotonin (also known as monoamines) in the brain.

Uses:
Treat depression.

EXAMPLES
isocarboxazid (Marplan)
phenelzine (Nardil)
selegiline (Ensam, Eldepryl, Zelapar)
tranylcypromine (Parnate)

Good to know: MAOIs & tyramine can cause a sharp increase in blood pressure. patients taking MAOIs should avoid foods and meds with high levels of tyramine (such as cheese, wines, pickles, decongestants & other OTC meds)

Really important: mixing st. john's wort with an MAOI can cause high levels of serotonin (serotonin syndrome) resulting in confusion, rapid or irregular heartbeat, dilated pupils, fever and unconsciousness. ask clients regarding herbal usage to tx their depression.

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20. Antidepressants – Selective Serotonin Reuptake Inhibitors (SSRIs)
DESCRIPTION
These medications block the reabsorption (reuptake) of serotonin.

Uses:
Primarily treat moderate-to-severe depression and chronic fatigue syndrome.

Treat premenstrual dysphoric disorder, obsessive-compulsive disorder, panic disorder, post-traumatic stress disorder, and generalized anxiety disorder.

EXAMPLES
citalopram* (CeleXA)
escitalopram* (Lexapro)
FLUoxetine* (PROzac)
PARoxetine* (Paxil)
sertraline* (Zoloft)

Nice to know: can cause weight gain of 10 pounds or more! 1 out of 4 people'

Really important: BBW! All antidepressants have warnings about their use and an increased risk of suicidal thinking or attempts in children and adolescents.

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21. Antidepressants – Serotonin and Norepinephrine Reuptake Inhibitors (SNRIs)
DESCRIPTION
These medications block or delay the reuptake of serotonin and norepinephrine by the presynaptic nerves. The increased levels of these neurotransmitters elevates mood.

Uses:
Treat depression, anxiety disorder, panic disorder and other mood disorders.

EXAMPLES
desvenlafaxine* (Pristiq)
duloxetine* (Cymbalta)
milnacipran (Savella)
venlafaxine* (Effexor)

Good to know: nausea = most frequent side effect (causing some people to stop tx)

Really important: use of aspirin, NSAIDs, or anticoagulants (warfarin) while taking these & other antidepressants may increase risk of bleeding

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22. Antidiabetics – Insulins

DESCRIPTION

This medication is used in the treatment of type 1 diabetes mellitus and may be used to treat type 2 diabetes mellitus.

Uses:

Rapid-acting insulin covers meals eaten at the same time as the injection.

Short-acting insulin covers meals eaten within 30 to 60 minutes.

Intermediate-acting insulin covers about half of the day or overnight (and is often combined with rapid- or short-acting insulin).

Long-acting insulin covers about one full day.

EXAMPLES

Intermediate-acting

! NPH insulin (N) (HumuLIN-N, NovoLIN-N)

Long-acting

! insulin detemir* (Levemir)

! insulin glargine* (Lantus)

Rapid-acting

! insulin aspart* (NovoLOG)

! insulin glulisine (Apidra)

! insulin lispro* (HumaLOG)

Short-acting

! human insulin (Velosulin)

! regular insulin (R) (HumuLIN-R, NovoLIN)

Really important: Regular insulin is the ONLY insulin given IV piggyback; an infusion pump is required. The RN will monitor blood glucose levels at least every hour.

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23. Antidiabetics – Oral Agents
DESCRIPTION
These medications:

Stimulate insulin release from the beta cells of the pancreas (sulfonylureas and meglitinides).

Improve insulin's ability to move glucose into cells, especially muscle cells (biguanides).

Enhance insulin effectiveness in both muscle and adipose tissue (thiazolidinediones).

Block enzymes that help digest starches, slowing the rise in blood sugar (alpha-glucosidase inhibitors)

Block an enzyme that deactivates a protein (GLP-1), which will keep insulin circulating in the blood (DPP-4 inhibitors).

Uses:
Treat type 2 diabetes mellitus.

EXAMPLES
Alpha-Glucosidase Inhibitors
! acarbose (Precose)
! miglitol (Glyset)

Biguanides
! metFORMIN* (Glucophage)
Dipeptidyl peptidase-4 (DPP-4) inhibitors
! sitaGLIPtin* (Januvia)

Meglitinides
! nateglinide (Starlix)
! repaglinide (Prandin)

Sulfonylureas

! glimepiride (Amaryl)
! glipiZIDE (Glucotrol)
! glyBURIDE* (DiaBeta, Micronase)

Thiazolidinediones
! pioglitazone* (Actos)
! rosiglitazone (Avandia)

Really important: glyburide can cause people to sunburn more easily. patients should be warned to wear protective clothing and use SPF 30+ when they are outdoors

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24. Antidiarrheals
DESCRIPTION
These medications:

Slow the passage of stools through the intestines (loperamide).

Decrease the secretion of fluid into the intestine and inhibit the activity of bacteria (bismuth subsalicylate).

Uses:
Control and relieve symptoms of acute and chronic nonspecific diarrhea.

EXAMPLES
bismuth subsalicylate (Kaopectate, Pepto-Bismol)
diphenoxylate & atropine (Lomotil)
kaolin & pectin (Kapectolin)

Antispasmodics
loperamide (Imodium A-D)

Bulk-forming laxatives
polycarbophil (Equalactin, FiberCon)

Opiate
! paregoric (generic)

Somatostatin analog
octreotide (SandoSTATIN)

Really important: subsalicylate can cause a serious and sometimes fatal condition called Reyes syndrome in children. Do NOT five bismuth subsalicylates to children or teens.

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25. Antiemetics
DESCRIPTION
These medications:

Inhibit the chemoreceptor trigger zone in the medulla by blocking dopamine receptors (for example, metoclopramide).

Decrease the sensitivity of the vestibular apparatus (for example, meclizine).

Block the effects of serotonin in the brain and small intestine (5-HT3 receptor antagonists).

Uses:
Manage the various causes of nausea and vomiting, including surgery, anesthesia, antineoplastic and radiation therapies, and motion sickness.

EXAMPLES
5-HT3 antagonists
dolasetron (Anzemet)
granisetron (Sancuso)
nabilone (Cesamet)
ondansetron (Zofran)
palonosetron (Aloxi)

Anticholinergics
scopolamine (Transderm-Scop)

Cannabinoids
dronabinol (Marinol)

Herbals
ginger (herbal)

Neurokinin antagonists
aprepitant (Emend)

Other
dimenhyDRINATE (Dramamine, Dimetabs)
meclizine (Antivert, Bonine)
metoclopramide (Reglan)

Phenothiazines
chlorproMAZINE (Thorazine)
perphenazine (Trilafon)
prochlorperazine (Compro)
! promethazine* (Phenergan)
thiethylperazine (Norzine, Torecan)

Really important: ondansetron can even prevent the anticipatory nausea and vomiting associate with cytotoxic drugs. comes in a tablet that rapidly dissolves in saliva.

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26. Antifungals
DESCRIPTION
These medications are also called antimycotic agents. They kill or inactivate fungi.

Uses:
Treat systemic, localized, or topical fungal infections (including yeast infections).

EXAMPLES
Azole antifungals (the triazoles and imidazoles)
butoconazole (Gynazole)
clotrimazole (Lotrisone)
fluconazole* (Diflucan)
itraconazole (Sporanox)
ketoconazole (Feoris, Nizoral)
miconazole (Aloe Vesta, Cruex)
oxiconazole (Oxistat)
posaconazole (Noxafil)
sertaconazole (Ertaczo)

sulconazole (Exelderm)
tioconazole (Monistat-1)
voriconazole (Vfend)

Echinocandins
anidulafungin (Eraxis)
caspofungin (Cancidas)
micafungin (Mycamine)

Herbals
goldenseal (herbal)

Miscellaneous antifungals
butenafine (Mentax)
ciclopirox (Loprox, Penlac Nail Lacquer)
flucytosine (Ancobon)
terbinafine (LamISIL)
tolnaftate (Absorbine Jr.)

Polyenes
! amphotericin B deoxycholate (Amphocin, Fungizone)
nystatin (Mycostatin)

Really important: azole antifungals can cause liver damage. Instruct patients to notify their health care provider if they notice ab pain, fever, diarrhea, fatigue, anorexia, jaundice, dark urine, or pale stools.

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27. Antihistamines

DESCRIPTION

These medications compete with histamine for histamine receptor sites. When they occupy the histamine receptor sites, they prevent histamine from causing allergic symptoms.

Uses:

Relief of symptoms associated with allergies (including rhinitis, urticaria and angioedema).

Adjunctive therapy in anaphylactic reactions.

Treat insomnia (diphenhydramine), motion sickness (dimenhydrinate and meclizine), Parkinson-like reactions (diphenhydramine), and other nonallergic conditions.

EXAMPLES
azelastine (Astelin)
bepotastine (Bepreve)
cetirizine (Zyrtec)
chlorpheniramine (Chlor-Trimeton)
clemastine (Tavist Allergy)
cyproheptadine (Periactin)
desloratadine (Clarinex)
dimenhyDRINATE (Dramamine, Dimetabs)
diphenhydrAMINE (Benadryl, Sominex, Nytol, Midol PM, Unisom Nighttime Sleep-Aid)
doxepin (SINEquan)
fexofenadine* (Allegra)
hydrOXYzine (Atarax, Vistaril)
levocetirizine (Xyzal)
loratadine (Alavert, Claritin, Tavist ND, Dimetapp ND)
meclizine* (Antivert, Bonine, Dramamine Less Drowsy Formula)
olopatadine nasal spray (Patanase)
! promethazine* (Phenergan)
triprolidine (Zymine)

Good to know: advise patient to change positions slowly, appears on the Beers list (inappropriate meds for the elderly)

Really important: be sure to determine WHY medication was ordered since (diphenhydramine) has multiple uses

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28. Antihyperuricemics / Antigout
DESCRIPTION
Also called antigout agents, these medications work to either correct overproduction or underexcretion of uric acid.

Uses:
Treat gout

EXAMPLES
allopurinol (Zyloprim)
pegloticase (Krystexxa)
rasburicase (Elitek)

Really important: anaphylaxis and infusion reactions have been reported during and after administration of pegloticase. Premedicate clients with antihistamines and corticosteroids

---

29. Antineoplastics
DESCRIPTION
These medications:

Inhibit or prevent the development, maturation or spread of neoplastic cells by various different mechanisms of action.

Damage the DNA of cancer cells.

Interfere with the cancer cell's metabolism or affect cell division.

Create an unfavorable environment for cancer cell growth (hormones).

Uses:
Treat various solid tumors, lymphomas, and leukemias.

Prescribed for some autoimmune disorders (such as rheumatoid arthritis).

EXAMPLES
Alkylating agents
! chlorambucil (Leukeran)
! cyclophosphamide (Cytoxan, Endoxan, Neosar)

Antiestrogens
tamoxifen (Soltamox)

Antimetabolites
! 5-fluorouracil (5-FU)
! methotrexate (Rheumatrex, Trexall)

Antitumor antibiotics
mitomycin (generic)

Enzymes
! asparaginase (Elspar)

Human recombinant interleukin-2
! aldesleukin (Proleukin)

Monoclonal antibodies
! alemtuzumab (Campath)
! trastuzumab (Herceptin)

Plant alkaloids
! vinBLAStine (Velban)
! vinCRIStine (Oncovin)

Really Important: Health care workers should limit their exposure to these medications. All personal who handle these drugs must receive info and training about health hazards and must be monitored in a medical surveillance program

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30. Antiparkinsonian Agents
DESCRIPTION
These medications replenish dopamine. They also mimic the role of dopamine or block the effects of other chemicals that cause problems in the brain when dopamine levels drop.

Uses:
Relieve the symptoms of parkinsonism including tremor or trembling in the hands, arms, legs, jaw, and face; stiffness or rigidity of the arms, legs, and trunk; bradykinesia; poor balance and coordination.

EXAMPLES
biperiden (Akineton)

Anticholinergics
benztropine (Cogentin)

trihexyphenidyl (Artane, Trihexane)

Carbidopa/levodopa therapy
carbidopa & levodopa (Sinemet)

COMT inhibitors
entacapone (Comtan)
tolcapone (Tasmar)

Dopamine agonists
apomorphine (Apokyn)
bromocriptine (Parlodel)
pramipexole (Mirapex)
rOPINrole (Requip)
rotigotine (Neupro)

MAO-B inhibitors
rasagiline (Azilect)
selegiline (Ensam, Eldepryl, Zelapar)

Other
amantadine (Symmetrel)
rivastigmine (Exelon)

Really important: anticholinergics are often needed to control the EPS effects of antiparkinsonian drugs however these drugs may cause confusion and hallucinations in individuals over age 70 and should be avoided for these clients

---

31. Antiplatelet Agents
DESCRIPTION
These medications block the formation of blood clots by preventing the clumping of platelets.

Uses:
Treat and prevent thromboembolic events, such as stroke, myocardial infarction, or peripheral vascular disease.

Prescribed after devices are placed inside the heart or blood vessels, such stents and artificial

heart values.

EXAMPLES
aspirin (Bayer)

Adenosine diphosphate (ADP) receptor inhibitors
clopidogrel* (Plavix)
prasugrel* (Effient)
ticlopidine (Ticlid)

Adenosine reuptake inhibitors
dipyridamole (Persantine)

Glycoprotein IIb IIIa inhibitors
! abciximab (ReoPro)
! eptifibatide (Integrilin)
! tirofiban (Aggrastat)

Herbals
ginkgo (herbal)

Phosphodiesterase inhibitors
cilostazol (Pletal)

Really important: glycoprotein IIb IIIa inhibitors are the most potent antiplatelet therapy agents available and can cause serious or life threatening bleeding. Patients should seek immediate help if they experience purple patches on the skin or other signs of bleeding

---

32. Antipsychotics
DESCRIPTION
These medications block a specific subtype of the dopamine receptor (the D2 receptor). The 2nd generation not only block D2 receptors, but also a specific subtype of serotonin receptor (5HR2A receptor).

Uses:
Treat acute and chronic psychosis, especially when accompanied by increased psychomotor activity.

Off-label uses include Tourette's syndrome, substance abuse, stuttering, obsessive-compulsive disorder, post-traumatic stress disorder, depression, bipolar disorder and personality disorders.

EXAMPLES
Atypical (or 2nd generation) antipsychotics
aripiprazole* (Abilify)
clozapine (Clozaril)
olanzapine* (ZyPREXA)
paliperidone (Invega)
QUEtiapine* (SEROquel)
risperiDONE (RisperDAL)
ziprasidone (Geodon)

Others
iloperidone (Fanapt)
prochlorperazine (Compro)
thioridazine (Mellaril)

Typical antipsychotics
chlorproMAZINE (Thorazine)
fluphenazine (Permitil, Prolixin)
haloperidol (Haldol)
loxapine (Loxitane)
molindone (Moban)
perphenazine (Trilafon)
pimozide (Orap)
thiothixene (Navane)
trifluoperazine (Stelazine)

Really important: BBW! conventional antipsychotic drugs can increase the risk of death for elderly people who have lost touch with reality due to dementia. they are not approved for treating dementia related psychosis.

---

33. Antirheumatics

DESCRIPTION
These medications treat rheumatoid arthritis. They relieve pain (analgesics), reduce inflammation (NSAIDs & steroids), and control the underlying disease (disease modifying rheumatoid arthritis drugs or DMARDs & biologic drugs).

Uses:
Long-term solutions to control symptoms of rheumatoid arthritis (RA) by slowing down joint destruction and preserving joint function (DMARDs).

Target specific components of the immune system (biologic agents – IM or IV only). These may be used alone, but are often given with other DMARDs to increase the benefits and limit potential side effects.

EXAMPLES
Biologic response modifiers (anti-TNF)

adalimumab* (Humira)
certolizumab pegol (Cimzia)
etanercept* (Enbrel)
golimumab (Simponi)
infliximab (Remicade)

DMARDs
azathioprine (Imuran, Azasan)
cycloSPORINE (Neoral, SandIMMUNE)
gold sodium thiomalate (Myochrysine)
hydroxychloroquine (Plaquenil)
leflunomide (Arava)
! methotrexate (Rheumatrex, Trexall)
sulfaSALAzine (Azulfidine)

Other biologics
abatacept (Orencia)
anakinra (Kineret)
riTUXimab (Rituxan)
tocilizumab (Actemra)

Good to know: Tell clients who take sulfasalazine that their urine, tears, and sweat may

develop an orange tinge which can stain clothing and contact lenses

Really important: most significant side effect of biologic agents is an increased risk of all types of infections, including TB. Clients must have a TB skin test prior to starting therapy. Stop tx if the client develops an active infection or has a high fever.

---

34. Antitubercular
DESCRIPTION
These medications have various actions that affect mycobacteria, with most having bactericidal (for example, rifampin) and/or bacteriostatic (for example, isoniazid) actions.

Uses:
Treat and prevent tuberculosis (TB).

EXAMPLES
Combination drugs
rifampin & isoniazid & pyrazinamide (Rifater)

Primary agents
ethionamide (Trecator SC)
isoniazid (INH, Nydrazid)
rifampin (Rifadin)
rifapentine (Priftin)

Second line agents
capreomycin (Capastat)
cycloSERINE (Seromycin)
ethambutol (Myambutol)
pyrazinamide (PZA) (generic)
streptomycin (generic)

Third line agents (Aminoglycosides)
kanamycin (Kantrex)

Good to know: Rifampin can cause reddish-orange discoloration of saliva, sweat, tears, feces, urine and skin. Clients should not wear contact lenses while taking this medication

Really important: Rifampin & isoniazid are the most effective drugs used to tx TB and area always used together usually for at least 4 months.

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35. Antiulcer Agents

DESCRIPTION

These medications block the secretion of gastric acid by the gastric parietal cells (PPIs). They also stop the action of histamine on the gastric parietal cells, which inhibits the secretion of gastric acid (H-2 receptor blockers).

Uses:

Treat and prevent peptic ulcer and gastric hypersecretory conditions, e.g., Zollinger-Ellison syndrome.

Manage the symptoms of gastroesophageal reflux disease (GERD).

Treat recurrent gastric and duodenal ulcers caused by Helicobacter pylori infections (a combined antibiotic and gastric acid suppression therapy).

EXAMPLES

Anti-infective (Penicillins)
amoxicillin* (Amoxil)

Herbal
comfrey (herbal)

Histamine H2-receptor antagonists
cimetidine (Tagamet)
famotidine* (Pepcid)
nizatidine (Axid)
ranitidine (Zantac)

Mucosal protective
aluminum hydroxide (Amphojel)
aluminum hydroxide & magnesium hydroxide (Maalox, Mylanta)
bismuth subsalicylate (Kaopectate, Pepto-Bismol)
sucralfate (Carafate)

Other
clarithromycin (Biaxin)
metroNIDAZOLE (Flagyl)
misoprostol (Cytotec)
propantheline (Pro-Banthine)
sodium bicarbonate (Baking Soda, Neut)

Proton pump inhibitors (PPIs)
dexlansoprazole* (Dexilant)
esomeprazole* (NexIUM)
lansoprazole (Prevacid)
omeprazole* (PriLOSEC)
pantoprazole* (Protonix)
RABEprazole (Aciphex)

Really important: sucralfate (a substituted sugar molecule with no nutritional value) has been used for the prevention of stress ulcers commonly seen in burn victims. It reacts w/ existing stomach acid to form a thick coating that covers the surface of an ulcer and protects from further damage. it does not inhibit gastric acid production.

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36. Antivirals

DESCRIPTION
These medications are designed to work in one of two ways – they either inhibit the ability to multiply or they mimic the virus attachment protein, disrupting the replication process.

Uses:
Prevent, manage and/or treat viral infections, such as HIV, herpes simplex and cytomegalovirus, pneumonia, measles and mumps, and influenza strains (including swine flu).

EXAMPLES
cidofovir (Vistide)
foscarnet (Foscavir)
ganciclovir (Cytovene)
valGANciclovir (Valcyte)

Anti-herpetic agents
acyclovir (Zovirax)

famciclovir (Famvir)
valACYclovir (Valcyte)

Anti-influenza agents
amantadine (Symmetrel)
oseltamivir* (Tamiflu)
rimantadine (Flumadine)
zanamivir (Relenza)

Nucleoside analogues
adefovir (Hepsera)
entecavir (Baraclude)
lamiVUDine (Epivir)
penciclovir (Denavir)
ribavirin (Copegus, Rebetol, Virazole)
telbivudine (Tyzeka)

Purine nucleosides
vidarabine (Vira-A)

Nice to know: antiviral drugs work best when started 2 days after becoming sick. they reduce the severity of symptoms and shorten the length of illness but will not cure the disease

Really important: Zanamivir is not recommended for clients with asthma or COPD due to the risk of serious and fatal bronchospasm. clients who are allergic to milk proteins or lactose should not use this drug

---

37. Benzodiazepines
DESCRIPTION
These medications depress the CNS, probably by potentiating GABA, which is an inhibitory neurotransmitter. These are all Schedule IV drugs.

Uses:
Produce sedation or induce sleep.

Relieve anxiety and muscle spasms.

Prevent seizures.

EXAMPLES
ALPRAZolam* (Xanax)
chlordiazePOXIDE (Librium)
clonazePAM* (KlonoPIN)
clorazepate (Tranxene)
diazepam* (Valium)
estazolam (ProSom)
flumazenil (Romazicon)
flurazepam (Dalmane)
LORazepam* (Ativan)
! midazolam (Versed)
oxazepam (Serax)
quazepam (Doral)
temazepam (Restoril)
triazolam (Halcion)

Good to know: Flunitrazepam (Rohypnol) is a benzo not legally marketed in the US. AKA roofies "date rape" drug

Really important: older clients taking these drugs have an increased risk of falls & may experience cognitive impairment

---

38. Beta-Adrenergic Blocking Agents (Beta Blockers)
DESCRIPTION
These medications block norepinephrine and epinephrine from binding to beta receptors on nerves. By blocking the effects of these neurotransmitters, they reduce heart rate and reduce blood pressure by dilating blood vessels.

Uses:
Treat hypertension, heart failure, arrhythmias, and angina (but not for immediate relief).

Treat glaucoma (ophthalmic).

Prevent future heart attacks in heart attack patients.

Prevent migraine headaches.

EXAMPLES
acebutolol (Sectral)
atenolol* (Tenormin)
betaxolol (Kerlone)
bisoprolol* (Zebeta)
carteolol (Cartrol)
carvedilol* (Coreg)
! esmolol (Brevibloc)
! labetalol (Trandate)
! metoprolol* (Lopressor, Toprol-XL)
nadolol (Corgard)
nebivolol* (Bystolic)
penbutolol (Levatol)
pindolol (Visken)
propranolol (Inderal)
sotalol (Betapace)
timolol (Timoptic)

Really important: Warning! Clients should contact their physician before they discontinue their medication. Abrupt withdrawal can cause severe exacerbation of angina and cause heart attacks or sudden death

---

39. Bone Resorption Inhibitors
DESCRIPTION
These medications bind to hydroxyapatite in bone and inhibit bone resorption by decreasing the number and activity of osteoclasts.

Uses:
Prevent and treat osteoporosis in postmenopausal women and due to other causes, such as Paget's disease of the bone and corticosteroid therapy.

EXAMPLES
alendronate* (Fosamax)
calcitonin-salmon (Miacalcin)
etidronate disodium (Didronel)

ibandronate (Boniva)
raloxifene* (Evista)
risedronate* (Actonel)
tiludronate (Skelid)

Good to know: Must be taken on an empty stomach, in the AM, and with a full glass of water. Remain sitting upright for 30 minutes and avoid strenuous activity to prevent heartburn

Really important: Although benefits are great, serious problems have been reports with bone healing, especially dental surgery.

---

40. Bronchodilators

DESCRIPTION

These medications relax bronchial smooth muscle, making the airways larger and allowing air to pass through the lungs. They may also increase mucociliary clearance (beta agonists).

Uses:

Short-acting medications act as asthma "rescue" medications.

Long-acting medications are used to control asthma daily in conjunction with an inhaled steroid.

EXAMPLES

EPINEPHrine (EpiPen, Primatene, Nephron, Adrenalin)

Anticholinergics

ipratropium (Atrovent)
tiotropium* (Spiriva)

Beta agonists (long-acting)

arformoterol (Brovana)
formoterol (Foradil)
salmeterol (Serevent)

Beta agonists (short-acting)

albuterol* (Proventil, Ventolin, Proair, Accuneb)
levalbuterol* (Xopenex)

metaproterenol (Alupent)
pirbuterol (Maxair)
terbutaline (Brethine)

Combination (inhaled steroid + long acting beta agonist)
! budesonide & formoterol* (Symbicort)
fluticasone & salmeterol* (Advair)

Leukotriene synthesis inhibitors
montelukast* (Singulair)
zafirlukast (Accolate)
zileuton (Zyflo)

Methylxanthines
aminophylline (Phyllocontin, Truphylline)
theophylline (Theo-Dur, Slo-Bid, Aerolate, and others)

Nice to know: when clients use both an inhaled steroid and inhaled bronchodilator, they should use the bronchodilator first to open up the airways then wait a few minutes and use the steroid so it can penetrate the lungs more effectively. Rinse and spit after using the inhalers

Good to know: in an emergency setting, they are primarily used for treating smoking related COPD (emphysema)

Really important: the dose of theophylline must be individualized on the basis of peak theophylline concentration measurements (therapeutic level is between 10–20 mcg/mL). Draw peak serum theophylline levels 15 to 30 minutes after administering IV loading dose. Ensure diazepam is readily available to treat seizures.

---

41. Calcium Channel Blockers (CCBs)
DESCRIPTION
These medications slow the rate at which calcium passes into the heart muscle and into the vessel walls. This relaxes the vessels and allows blood to flow more easily through them, lowering blood pressure.

Uses:
Treat hypertension, angina, and abnormal heart rhythms (atrial fibrillation, paroxysmal

supraventricular tachycardia).

Treat post-MI clients who cannot tolerate beta-blockers.

EXAMPLES
amLODipine* (Norvasc)
bepridil (Vascor)
diltiazem* (Cardizem)
felodipine (Plendil)
isradipine (DynaCirc)
niCARdipine (Cardene)
NIFEdipine (Adalat, Procardia XL)
niMODipine (Nimotop)
nisoldipine (Sular)
verapamil* (Isoptin)

Really important: Educate clients about not eating grapefruit or drinking grapefruit juice when taking these meds. Combination causes a higher bioavailability of the drug and can be toxic.

---

42. Central Nervous System Stimulants
DESCRIPTION
These medications increase physical activity, mental alertness, and attention span. The exact mechanism of action is not known.

Uses:
Improve concentration and focus for those with attention-deficit hyperactivity disorder (ADHD).

Decrease appetite and promote weight loss.

Alleviate sleep disorders, including narcolepsy, Shift Work Sleep Disorder, and jet lag.

EXAMPLES
amphetamine & dextroamphetamine (Adderall)
benzphetamine (Didrex)
caffeine (NoDoz, Vivarin)
dexmethylphenidate (Focalin)

dextroamphetamine (Dexedrine)
diethylpropion (Tenuate)
lisdexamfetamine* (Vyvanse)
methylphenidate* (Concerta, Ritalin)

Really important: CNS stimulants may cause sudden death in individuals with heart defects or serious heart problems. Ask patient whether anyone in their family has irregular heartbeat or has died suddenly.

---

43. Corticosteroids

DESCRIPTION

These medications mimic the effect of hormones produced naturally by the adrenal glands. When the dose exceeds the body's usual hormone levels, they will suppress inflammation, as well as the immune system. Also used for their antineoplastic activity.

Uses:

Oral forms treat inflammation and pain associated with arthritis and autoimmune diseases (such as lupus, Crohn's).

Inhaled medications treat asthma and allergies.

Topical application helps heal skin conditions.

Injected forms treat the pain and inflammation of arthritis, gout and other inflammatory diseases.

EXAMPLES

beclomethasone (Qvar)
betamethasone (Celestone)
budesonide (Entocort EC, Pulmicort)
cortisone (Cortone Acetate)
dexamethasone (Decadron)
flunisolide (AeroBid)
fluticasone* (Flonase, Flovent)
methylPREDNISolone* (Medrol, Depo-Medrol)
mometasone furoate* (Nasonex)
prednisoLONE (Orapred, Prelone)

predniSONE* (Sterapred)

Nice to know: should decrease sodium and increase both potassium and calcium in their diets. they should avoid grapefruit and grapefruit juice since they may increase serum levels of these medications

Good to know: take in the morning with food to coincide with the body's normal secretion of cortisol

Really important: clients on these meds should not receive a "live" vaccine. They should call doctor if they are exposed to chicken pox or measles (can be fatal in people using a steroid)

---

44. Diuretics - Loop

DESCRIPTION

These medications work in the ascending limb of the loop of Henle (where magnesium & calcium are reabsorbed). Disrupted reabsorption causes increased urine production, which lowers blood volume and results in lowered blood pressure. Also causes the veins to dilate, which lowers blood pressure mechanically.

Uses:

Treat acute pulmonary edema and manage edema.

Reduce intracranial pressure and treat hyperkalemia.

EXAMPLES

bumetanide (Bumex)
ethacrynic acid (Edecrin)
furosemide* (Lasix)
torsemide (Demadex)

Nice to know: most common adverse effect is hypotension

Good to know: patients taking loop diuretics may require supplemental potassium, folic acid and vitamin

---

45. Diuretics - Thiazide

DESCRIPTION
These medications are derived from a chemical called benzothiadiazine. They work in the distal convoluted tubule by decreasing the kidney's reabsorption of sodium and chloride (which results in increased urine production) and help dilate blood vessels.

Uses:
Alone or in combination with loop diuretics, treat hypertension or edema due to heart failure or other causes.

EXAMPLES
chlorothiazide (Hygroton, Diuril)
hydrochlorothiazide* (HydroDIURIL)
indapamide (Lozol)
metolazone (Zaroxolyn)

Nice to know: increase urination so take early in the day

Good to know: Thiazide diuretics tend to raise blood sugar levels

Really important: most diuretics are sulfa drugs, be sure to check for allergies prior to administration

---

46. Diuretics – Osmotic

DESCRIPTION
These medications are low-molecular-weight substances that produce a rapid loss of sodium and water by inhibiting their re-absorption in the kidney tubules and the loop of Henle. They increase plasma osmolality, which increases diffusion of water from the intraocular and cerebrospinal fluids.

Uses:
Manage cerebral edema to decrease intracranial pressure.

EXAMPLES
mannitol (Osmitrol)
urea (generic)

Really important: most serious adverse effect is fluid/electrolyte imbalance. Fluid loss leads to significant dehydration and w/o adequate fluid replacement, can lead to hypernatremia.

---

47. Diuretics – Potassium-Sparing

DESCRIPTION

These medications conserve potassium in clients receiving thiazide or loop diuretics. They decrease sodium reabsorption in the collecting tubules of the kidneys.

Uses:

Treat clients with heart failure, since they do not significantly lower blood pressure.

EXAMPLES

aMILoride (Midamor)
eplerenone (Inspra)
spironolactone (Aldactone)
triamterene (Dyrenium)

Really important: spironolactone (Aldactone) acts like a progesterone in the body causing side effects like impotence, irregular menses, amenorrhea, hirsutism and deepening of the voice

---

48. Immunizing Agents

DESCRIPTION

Immunizing biological antimicrobial agents (biologicals) are any substance or organism that provokes an immune response when introduced into the body.

Uses:

Prevent, treat or cure infectious diseases.

EXAMPLES

Active immunizing agents
bacille Calmette–Guerin (BCG) vaccine (Theracys)
diphtheria and tetanus toxoids and acellular pertussis adsorbed (DTaP) (Daptacel)
haemophilus b conjugate vaccine (Hib) (ActHIB)
hepatitis A virus vaccine (Havrix, Vaqta)
hepatitis B virus vaccine (Engerix-B)
herpes zoster vaccine* (Zostavax)

human papillomavirus vaccine* (Gardasil)
influenza virus vaccines (many different ones)
measles, rubella, mumps virus vaccine (M-M-RII)
meningococcal polysaccharide bacterial vaccine (Menactra)
poliovirus vaccines (Ipol)
rabies virus vaccine (Imovax Rabies)
rotavirus vaccine (Rotarix)
smallpox virus vaccine (Dryvax)
tetanus toxoid (TE Anatoxal Berna)
typhoid bacterial vaccine (Vivotif)
varicella virus vaccine (Varivax)
yellow fever virus vaccine (YF-VAX)

Passive immunizing agents
antivenin (many different ones)
cytomegalovirus immune globulin (Cytogam)
digoxin immune FAB (DigiFab)
hepatitis B immune globulin (BeyHep B)
rabies immune globulin (BayRab)
respiratory syncytial virus immune globulin (Respigam)
Rho(D) immune globulin (RhoGAM)
tetanus immune globulin (HyperTET S/D)
varicella zoster immune globulin (Varizig)

Really important: a rubella (german measles) infection can cause miscarriage, pretermbirth and stillbirth as well as many birth defects, which is why women should avoid getting pregnant for 4 weeks after vaccination. pregnant women should not get the measles vaccines or any of the combination products MMR that include the live virus

---

49. Immunosuppressants
DESCRIPTION
These medications inhibit cell-mediated immune responses.

Uses:
Prevent transplantation rejection reactions

Manage selected autoimmune diseases (for example, nephritic syndrome of childhood and

severe rheumatoid arthritis).

EXAMPLES
azathioprine (Imuran, Azasan)
basiliximab (Simulect)
chlorambucil (Leukeran)
cyclophosphamide (Cytoxan, Endoxan, Neosar)
cycloSPORINE (Neoral, SandIMMUNE)
daclizumab (Zenapax)
! methotrexate (Rheumatrex, Trexall)
muromonab-CD3 (Orthoclone OKT3)
mycophenolate mofetil (CellCept)
mycophenolic acid (Myfortic)
pimecrolimus (Elidel)
sirolimus (Rapamune)
tacrolimus (Prograf)
thalidomide (Thalomid)

Really important: Warning! There is risk of severe life threatening birth defects caused by thalidomide. It must not be taken by women who are pregnant or who could become pregnant. Male clients taking thalidomide should not donate sperm

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50. Laxatives
DESCRIPTION
These medications are typically classified as either bulk-forming agents, osmotics, salines, stimulant laxatives or stool softeners.

Uses:
Treat or prevent constipation.

Prepare the bowel for radiologic or endoscopic procedures.

EXAMPLES
methylnaltrexone bromide (Relistor)

Bulk-forming agents
polycarbophil (Equalactin, FiberCon)

psyllium (Metamucil)

Osmotics
glycerin suppositories (generic)
lactulose (Chronulac, Cephulac, Cholac)
polyethylene glycol (Miralax)

Salines
magnesium chloride (Mag 64, Mag-SR)
magnesium gluconate (Mag-G, Magonate)
magnesium hydroxide (Milk of Magnesia)
phosphate/biphosphate (Fleet Enema, OsmoPrep)

Stimulant laxatives
bisacodyl (Dulcolax)
sennosides (Senokot)

Stimulant laxatives (Herbal)
aloe (herbal)

Stool softeners
docusate sodium (Colace, Surfak)

Good to know: docusate is often used after a heart attack or pos-op when straining to have a bowel movement should be avoided

Really important: advise client that laxatives should not be used when constipation is accompanied by ab pain, fever, nausea or vomiting

---

51. Lipid-Lowering Agents
DESCRIPTION
Reduce LDL (the "bad" or "lousy") cholesterol by inhibiting the enzyme in the liver (HMG-CoA reductase) responsible for making cholesterol; shrink, stabilize and prevent rupture of fatty plaques and formation of clots; and prevent inflammation (statins).

Reduce LDL by binding to bile acid and preventing absorption of cholesterol from the small intestine (bile acid sequestrants).

Prevent cardiovascular disease in patients with elevated triglycerides and low HDL when diet and lifestyle changes are unsuccessful (fibric acid agents).

Uses:
Reduce blood lipids in an effort to reduce the morbidity and mortality of atherosclerotic cardiovascular disease (along with diet and exercise).

EXAMPLES
Bile Acid Sequestrants
cholestyramine (Questran)
colesevelam* (Welchol)
colestipol (Colestid)

Fibric Acids
fenofibrate (Tricor)
fenofibric acid (Trilipix)
Gemfibrozil (Lopid)

HMG CoA Reductase Inhibitors
atorvastatin* (Lipitor)
pitavastatin (Livalo)
pravastatin* (Pravachol)
rosuvastatin* (Crestor)
simvastatin* (Zocor)

Other
ezetimibe* (Zetia)
ezetimibe & simvastatin* (Vytorin)

Really important: "Statins" can occasionally cause muscle pain/weakness due to muscle enzyme creatine kinase leaking into the blood stream

---

52. Minerals/Electrolytes/pH Modifiers
DESCRIPTION
These medications correct imbalances minerals and electrolytes or make the urine more

alkaline (pH modifiers).

Uses:
Prevent and treat deficiencies or excesses of electrolytes.

Prevent crystals from forming in the urine and inhibit the formation of kidney stones (acidifiers and alkalinizers).

Treat pre-eclampsia and eclampsia (magnesium sulfate).

Some of these meds neutralize gastric acid.

EXAMPLES
Alkalinizing agents
sodium bicarbonate (Baking Soda, Neut)

Calcium salts
calcium acetate (Eliphos)
calcium carbonate (Caltrate)
! calcium chloride (generic)
calcium citrate (Citracal)
! calcium gluconate (generic)
calcium lactate (Ridactate)

Magnesium salts
magnesium sulfate (generic)

pH modifiers
potassium citrate (Urocit-K)
! potassium phosphate (Neutra-Phos-K)

Phosphate supplements
sodium phosphate (OsmoPrep)

Potassium salts
potassium bicarbonate (Effervescent Potassium)
potassium bicarbonate & potassium citrate (K-Lyte)
potassium chloride* (K-Dur, Klor-Con)

Really important: alhtough primarily used to treat conditions resulting from calcium deficiency (such as tetany), calcium gluconate is also used to relieve muscle cramping from black widow spider bits. It is the antidote for magnesium sulfate over dosage.

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53. Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

DESCRIPTION

These medications block the cyclooxygenase (COX-1 & COX-2) enzymes and reduce prostaglandins throughout the body, reducing inflammation, pain, and fever.

Uses:

Control mild-to-moderate pain, reduce fever, and to treat various inflammatory conditions, such as osteoarthritis.

EXAMPLES

COX-2 selective inhibitors
celecoxib* (CeleBREX)

Salicylates
aspirin (Bayer)

Traditional NSAIDs
diclofenac (Cataflam, Voltaren)
diflunisal (Dolobid)
etodolac (Lodine)
ibuprofen* (Motrin, Advil)
indomethacin (Indocin)
ketoprofen (Actron, Orudis)
ketorolac (Toradol)
nabumetone (Relafen)
naproxen* (Aleve, Naprosyn)
piroxicam (Feldene)

Nice to know: NSAIDs increase bleeding & should be stopped prior to surgery

Really important: NSAIDs (w/ the exception of aspirin) increase the risk of heart attack/stroke. the risk may occur within a few weeks or using NSAIDs and increase w/ longer use

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54. Nonopioid Analgesics
DESCRIPTION
These medications target and block the chemical substances released by the brain (particularly prostaglandin) in response to injury.

Uses:
Control mild-to-moderate pain and/or fever.

EXAMPLES
acetaminophen (Tylenol)
chondroitin sulfate (Chondroitin)
phenazopyridine (Pyridium, Urogesic)
salsalate (Amigesic, Disalcid)

Barbiturate + NSAID
butalbital & acetaminophen (Phrenilin)

Botanical medical food
flavocoxid (Limbrel)

Herbals
capsaicin (Icy Hot Arthritis Therapy, ArthriCare for Women)

NSAIDs
choline & magnesium salicylates (Trilisate)
diclofenac (Cataflam, Voltaren)
diflunisal (Dolobid)
etodolac (Lodine)
fenoprofen (Naprofen)
ibuprofen (Motrin, Advil)
ketoprofen (Actron, Orudis)
ketorolac (Toradol)
magnesium salicylate (Doans Pills, Bayer Select Backache Pain Formula)
meclofenamate (Meclomen)

meloxicam* (Mobic)
naproxen* (Aleve, Midol Extended Relief)
Radiopharmaceutical
samarium sm153 lexidronam (Quadramet)
strontium-89 chloride (Metastron)

Salicylates
aspirin (Bayer)

Really important: acetaminophen is found in more than 600 OTC drugs. Educate clients to read labels and reinforce the recommended max daily dose is 4000 mg

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55. Opioid Analgesics
DESCRIPTION
These medications interact with opioid receptors in the central nervous system, acting as agonists of endogenously occurring opioid peptides (enkephalins and endorphins). This action alters perception and response to pain. They can be categorized as long-acting, short-acting, or rapid-onset agents.

They are all Schedule II drugs.

Uses:
Manage of moderate-to-severe pain.

EXAMPLES
! alfentanil (Alfenta)
! buprenorphine (Buprenex)
! butorphanol (Stadol)
! codeine* (generic)
! fentaNYL (Duragesic)
! HYDROcodone* (Norco, Vicodin)
! HYDROmorphone (Dilaudid, Exalgo)
! levorphanol (LevoDromoran)
! meperidine (Demerol)
! methadone (Dolophine)
! morphine (generic)
! nalbuphine (Nubain)

! oxyCODONE* (OxyContin, Percocet)
! oxymorphone (Opana ER)
! pentazocine (Talwin)
! remifentanil (Ultiva)
! SUFentanil (Sufenta)
! tapentadol (Nucynta)
! traMADol* (Rybix, Ryzolt, Ultram)

Really important: opioid antagonist drug naloxone (Narcan) is given IV push to reverse respiratory depression of opioid drugs.

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56. Sedatives/Hypnotics
DESCRIPTION
These medications moderate activity and excitement while inducing a calming effect (and may be anxiolytic). They induce drowsiness and sleep.

Most are Schedule IV drugs.

Uses:
Provide sedation, usually prior to procedures.

Selected agents are useful as anticonvulsants, skeletal muscle relaxants, adjuncts in general surgery and adjuncts for the treatment of alcohol withdrawal syndrome.

EXAMPLES
Barbiturates
amobarbital (Amytal)
PENTobarbital (Nembutal)
PHENobarbital (Luminal, Solfoton)
secobarbital (Seconal)

Benzodiazepines (intermediate-acting)
estazolam (ProSom)
LORazepam* (Ativan)
temazepam (Restoril)

Benzodiazepines (long-acting)

clorazepate (Tranxene)
diazepam* (Valium)
flurazepam (Dalmane)

Benzodiazepines (short-acting)
! midazolam (Versed)
oxazepam (Serax)
triazolam (Halcion)

Herbals
chamomile (herbal)
dill (herbal)
kava-kava (herbal)
lemon verbena (herbal)
valerian (herbal)

Other
! chloral hydrate (Somnote)
chlordiazePOXIDE (Librium)
! dexmedetomidine (Precedex)
droperidol (Inapsine)
eszopiclone* (Lunesta)
hydrOXYzine* (Atarax, Vistaril)
! promethazine* (Phenergan)
ramelteon (Rozerem)
zaleplon (Sonata)
zolpidem* (Ambien)

Really important: Warning! Even a slight overdose of one of the older barbiturates can induce coma and death (due to profound CNS depression) However, an OD of a benzo or the new non benzo sedative hypnotics will typically produce anesthesia w/o risk unless combines with ETOH

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57. Skeletal Muscle Relaxants
DESCRIPTION
These medications act centrally on the spinal cord or brain stem and inhibit neuronal transmission; dantrolene is the only one that acts directly on skeletal muscle. They are

typically classified by their pharmacologic properties as either anti-spasticity or antispasmodic agents.

Uses:
Treat spasticity associated with spinal cord diseases (such as cerebral palsy, multiple sclerosis) or lesions.

Relieve symptoms of acute painful musculoskeletal conditions (as adjunctive therapy).

EXAMPLES
Antispasticity agents
baclofen (Lioresal)
dantrolene (Dantrium)
tiZANidine (Zanaflex)

Musculoskeletal agents
carisoprodol* (Soma, Soprodal, Vanadom)
chlorzoxazone (Parafon Forte DSC)
cyclobenzaprine* (Flexeril)
metaxalone (Skelaxin)
methocarbamol (Robaxin)
orphenadrine (Norflex)

Other
diazepam* (Valium)

Good to know: IV dantrolene is used to tx & prevent malignant hyperthermia. Since it's an inherited disease ask if any family members died suddenly during surgery

Really important: Carisoprodol is listed as one of the most abused mood-altering substances in the US. It is used to prolong the duration and increase the effects of alcohol or narcotics and to take the edge off the jittery feeling associated w/ cocaine use.

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58. Thrombolytics
DESCRIPTION
These medications convert plasminogen to plasmin, which then degrades fibrin in clots.

Uses:
Acute management of coronary thrombosis (MI), massive pulmonary emboli, deep vein thrombosis, and arterial thromboembolism

EXAMPLES
! alteplase (Activase)
! reteplase (Retavase)
! streptokinase (Streptase)
! tenecteplase (TNKase)
! urokinase (Abbokinase)

Really important: Alteplase is used in mgmt of acute ischemic stroke in adults. Tx should be initiated w/n 3 hours after onset of stroke symptoms (and after confirmation of no intracranial bleeding)

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59. Tocolytic Agents
DESCRIPTION
These medications inhibit uterine contractions and suppress pre-term labor.

Uses:
Pre-term labor.

EXAMPLES
! magnesium sulfate ($MgSO_4$) (generic)

Beta-mimetics
terbutaline (Brethine)

Calcium Channel Blockers
nifedipine (Adalat, Procardia)

Non-Steroidal Anti-Inflammatory Drugs
indomethacin (Indocin)

Good to know: most tocolytics are effective in stopping labor for 48 to 72 hours which allows time to implement other interventions to improve neonatal outcome

Really important: BBW! prolonged use (more than 48 hrs) by pregnant women is associated w/ cardiac problems, hyperglycemia, hypokalemia, and death

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60. Vascular Headache Suppressants
DESCRIPTION
These medications:

Directly stimulate alpha-adrenergic and serotonergic receptors, producing vascular smooth muscle vasoconstriction (ergot derivatives).

Narrow dilated blood vessels and block nerves from transmitting signals of pain to the brain (5-HT1 agonists).

Uses:
Treat vascular headaches (migraines and cluster headaches).

EXAMPLES
5-HT1 agonists
almotriptan (Axert)
eletriptan (Relpax)
frovatriptan (Frova)
naratriptan (Amerge)
rizatriptan (Maxalt)
SUMAtriptan (Imitrex)
ZOLMitriptan (Zomig)

Beta blockers
propranolol (Inderal)
timolol (Timoptic)
Calcium channel blocker
verapamil* (Calan, Covera, Isoptin, Verelan)

Ergots
dihydroergotamine (D.H.E. 45)
ergotamine (Ergomar)

Herbals

feverfew (herbal)

Really important: the serotonin receptor agonists do not prevent migraines. Taken at the first signs of a migraine, they prevent symptoms from getting worse. The ergots also help stop migraine attacks.

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61. Vasopressors

DESCRIPTION

These medications are potent vasoconstrictors that produce a rise in blood pressure (specifically, an increase in mean arterial pressure).

Uses:

Control blood pressure in hypotensive states, such as (cardiogenic, septic) shock, drug reactions, spinal anesthesia.

Prolong anesthesia.

Treat certain heart rhythm problems, including cardiac arrest.

EXAMPLES

DOPamine (generic)
EPINEPHrine (EpiPen, Primatene, Nephron, Adrenalin)
midodrine (ProAmatine)
norepinephrine (Levophed)
! phenylephrine (Neo-Synephrine)

Really important: to reduce risk of local necrosis, phentolamine (an alpha blocker) may be added to IV solutions containing norepinephrine into a large vein, such as an antecubital vein

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62. Vitamins

DESCRIPTION

These organic compounds, present in minute amounts in foods, are essential for normal growth and development. Fat-soluble vitamins are stored in the liver and excreted via the feces; water-soluble vitamins are not stored in the body and are excreted in the urine.

Uses:
Dietary supplement.

Treat vitamin deficiency.

Treat skin conditions.

EXAMPLES:
Fat soluble
cholecalciferol/D3 (Drisdol, Calciferol)
vitamin A (Lumitene, Aquasol A, Retinol)
vitamin E (Aquasol E, Aquavite-E)
vitamin K (Mephyton, AquaMephyton)

Water soluble
ascorbic acid/C (Cenolate, Vita C)
B-complex vitamin (Slo-Niacin)
cyanocobalamin/B12 (CaloMist, Nascobal)
folic acid (Folvite)
niacin/B3 (Niacor, Niaspan)
pyridoxine/B6 (Aminoxin, Nestrex)
thiamine/B1 (Thiamilate)

Really important: Vitamin B12 which is found almost exclusively in animal products is necessary to produce red blood cells and prevent anemia. Vegans should take B12 supplements.