Anti Microbial Drugs Names

Penicillins
Cephalosporins
Macrolides
Fluoroquinolones
Glycopeptide Antibiotic
Sulfonamides and Trimethoprim

Penicillins

Drug Name

Penicillin G, Penicillin V, Amoxicillin, Ampicillin

Common Name

Almost all end in “cillin”

Indications (why we use the drug)

Pneumonia
Meningitis
Endocarditis
Pharyngitis
Syphilis
Prophylaxis- against bacterial endoca-rditis in at-risk clients prior to dental procedures

Potential Side Effects

Diarrhea, epigastric distress, nausea, vomiting, rash, pain at IM injection site, phlebitis at IV injection site

Life threatening Side Effects

Allergic reaction(anaphylaxisis)
amoxicillin specific : seizures (high doses), clostridium difficile (CDIF) assoc. diarrhea

Penicilins (cont)

Nursing Implications

-Ask about allergies to penicillins
-monitor for allergic reaction
assess for infection before and after therapy
-obtain specimen for culture BEFORE therapy
-monitor for bowl function for CDIF and report to PCP
-monitor kidney function(nephrotic)
-if PT is taking PO(by mouth)penicillins advise PT to take with food and finish entire course of antibiotic , even if symptoms are resolved

mechanism of action

Binds to bacterial cell wall membrane, causing a cell death . Known as “beta--lactam”

Notes

1st class if antibiotics
high levels of antibiotic resistance to early penicillins

Fluoroquinolines

Drug Names

Ciprofloxacin
Ofloxacin
Moxifloxacin
Levofloxacin
Norfloxacin

Name Commonality

Almost all end in “oxacin”

Fluoroquinolines (cont)

Indication

-UTI
-respiratory infections
-GI tract infections
-Infections of bones, joints, skin, soft tissues
-Anthrax prophylaxis in those that have inhaled anthrax spores

Potential Side Effects

Dizziness, headache, insomnia, diarrhea, nausea, Achilles’ tendon rupture, phototoxicity (severe sunburn)

Life threatening Side Effects

Elevated intracranial pressure(ICP)
seizures
suicidal thoughts
hepatoxicity
Clostriudim Difficule (CDIF) assoc. diarrhea
hypersensitivity reaction
SJS
Torsade de Pointes

Nursling Implications

-Monitor for allergic reaction
-Assess for infection before and after therapy
-Obtain specimen for culture before therapy
-Monitor for skin rash and SJS
-Monitor bowel function for CDIF assoc. diarrhea
-Advise PT to observe and report swelling, pain, or inflammation at Achilles’ tendon side and to stop taking med
-Teach PT to avoid prolonged sun exposure

Mechanism of Action

Inhibit enzymes necessary for bacterial DNA replication (DNA gyrase and topois-omerase IV)

Cephalosporins

Drug Name

1st gen: Cephalexin
2nd gen: Cefaclor
3rd gen:Ceftraixone
4th gen: Cefepime
5th gen: Ceftaroline

Name Commonaility

All start with “cef”

Indications

Note: dependent on generation
-skin and skin structure infections
-bone and joint infections
-complicated and uncomplicated UTIs
-Gynecological infections
-lower respiratory tract infections
- intra-abdominal infections
-septicemia
-meningitis
-Otitis Media
-Perioperative (surgery) prophylaxis

Potential Side Effects

Pain at IM injection site
phlebitis at IV injection site
rash

Life threatening Side Effects

Seizures(at high doses), CDIF associated diarrhea, allergic reaction (anaphylaxis), SJS(Steven-Johnson Syndrome)

Cephalosporins (cont)

Nursing Implications

-Ask about Allergies both Cephalosporins and Penicillins
-monitor for allergic reactions
-assess for infection before and after therapy
-Obtain specimen for culture before therapy
-Monitor bowel fucntion for CDIF assoc. diarrhea
-Monitor for skin rash frequently and discontinue at 1st sign of use(SJS)
-Monitor for kidney fucntion(nephrotic)

Mechanism of Action

Bind to the bacterial cell wall membrane causing cell death . (Aka beta-lactam)

Note: each generation is likely to reach cerebrospinal fluid(CSF), less susceptible to antibiotic resistance and more effective against gram-negative organisms.

Common-class because they are broad--spectrum , well tolerated, and easy to administer.

Sulfonamides & Trimethoprim

Drug Names

Trimethoprim-sulfamethoxazole
Sulfadiazine
Trimethoprim

Name Commonailty

N/A

Indications

-UTI
-Otitis Media
-Chancroid
-Pertussis (Whooping cough) -
-Shingellosis
-Pneumocystic jirovecii pneumonia
-Bronchitis

Sulfonamides & Trimethoprim (cont)

Potential Side Effects

Nausea, vomiting, rash, phlebitis

Life threatening Side Effects

CDIF assoc diarrhea
Hepatic Necrosis
erythema multiforme
toxic epidermal necrolysis
Agranulocytosis
Aplastic Anemia
Hypersensitivity reaction
SJS

Nursing Implications

-Assess for infection before and after therapy
-Obtain Specimen for culture before therapy
-Monitor IV site closely
-Monitor for allergic reaction
-Do not administer to PT w/ allergy to sulfa drugs, thiazide diuretics, loop diuretics, solfonylurea-type oral hypoglycemics(glipizide)
-Assess for rash and stop at sign of SJS
-Encourage liberal fluid intake
-Monitor urine output
-DO NOT give to women who are pregnant or breastfeeding, or to infants younger than 2 months
-Monitor K+ levels (hyperkalemia)
-Obtain regular CBC to monitor for hematologic disorders {{nl} -Monitor bowel fucntion for CDIF assoc diarrhea and provide to PCP

Mechanism of Action

Inhibits bacterial growth by stopping synthesis of tetrahydrofolate, which is essential for DNA, RNA, and protein production

Macrolides

Drug Name

Erythromycin
Azithromycin
Clarithromycin

Name Commonalitiy

Almost all end in “mycin”

Indications

Alternative for PTs who have a penicillin allergy
Legionnaries’ Disease
Pertuesis(whooping cough) and other respiratory infections
acute diphtheria
chlamydial infections
Pneumonia (due to Mycoplasma pneumoniae)
Streptococcal infections

Potential Side Effects

Abdominal Pain
Diarrhea
Nausea
Vomitting

Life-Threatening Side Effects

Ventricular arrhythmias
Torases de Pointes
Hepatoxicicity
CDIF assoc. diarrhea
acute generalized exanthermatous pustulosis
drug reaction with eosinophilia and systemic symptoms(DRESS)
SJS
toxic epidermal necrolysis

Macrolides (cont)

Nursing Implications

-Monitor for allergic reactions
-Assess for infection before and after therapy
-Obtain specimen for culture before therapy
-Monitor for skin rash frequently and discontinue at first sign of SJS
-May cause increase in certain labs (serum bilirubin, AST,ALT,LDH, alkaline phophatase)
-administer with meals
-monitor for CDIF assoc. diarrhea and report to PCP
-monitor for ototoxicity
-monitor for dysrhythmias
-Erythromycin inhibits metabolism if antihistamines, theophylline, Carbam-azepine, warfarin, and digoxin

Mechanism of Action

Inhibits bacterial protein synthesis

Glycopeptide Antibiotic

Drug Names

Vancomycin

Name Commonality

N/A

Glycopeptide Antibiotic (cont)

indications

-Treatment of potential life-threatening infections when less toxic antiFestive are contraindicated
-Particularly useful in staphylococcal infections (MRSA, methicillin resistant staphylococcus aureus)
-Endocarditis
-Meningitis
-Pneumonia
-Septicemia
-Soft tissue infections in Pt who have allergies to penicillins or infections w/penicillin resistance

Potential Side Effects

Nephrotoxicity, phlebitis, Nausea, Vomitting, Hypotension, Ototoxicity

Life Threatening Side Effects

Hypersensitivity reaction(Anaphylaxis)

Nursing Implications

-Assess for infection before and after therapy
-Obtain specimen for culture before therapy
-Monitor IV site closely (vanxomycin very irritating) and rotate infusion site
-Monitor BP during therapy for hypote-nsion
-Monitor for otoxcicity (toxic to ear and auditory nerve)
-Monitor for nephrotoxicity
-Monitor for allergic reaction

Mechanism of Action

Binds to bacterial cell wall, resulting in cell death