

B-LACTAMS

inhibit formation of peptidoglycan layer. TARGET: transpeptidase

Penicillins

Cross-links peptides

Penicillin G

Ampicillin

Amoxicillin

hypersensitivity (type I/II)

Piperacillin

Monobactams

Aztreonam

no hypersensitivity

Cephalosporins

Cephalexin

Cefuroxime

Ceftriaxone

Ceftazidime

cefipime

Carbapenems

Imipenem

Meropenem

Seizure - inhibit GABA receptors in brain

+ lactamase inhibitors

Clavulanic acid

tazobactam

hypersensitivity (type I/II)

Polymixin E

(colisten/colisimethate)

Inhibits cell membrane synthesis permeabilizes gram- bacterial cell membranes, allowing water to enter and salt to leave.

GLYCOPEPTIDES

Vancomycin for MRSA

binds end of peptide group to inhibit crosslinking

"Red man" Syndrome

folate Synthesis

Trimethoprim

Competes with dihydrofolate for DHFR binding

megaloblastic anemia

COMBINED

Sulfonamides

Sulfamethoxazole

inhibits pteroate Synthase by competing with PABA

Stevens-Johnson Syndrome - Severe hypersensitivity

Gram- AND Gram+

Fluoroquinolones

Ciprofloxacin

Levofloxacin

Moxifloxacin

Gemifloxacin

1) inhibit DNA gyrase (topo II) during DNA replication, inducing damage.

2) inhibit topo IV, preventing newly replicated circular bacterial DNAs from separating into daughter cells.

AVOID IN PREGNANCY and in Children

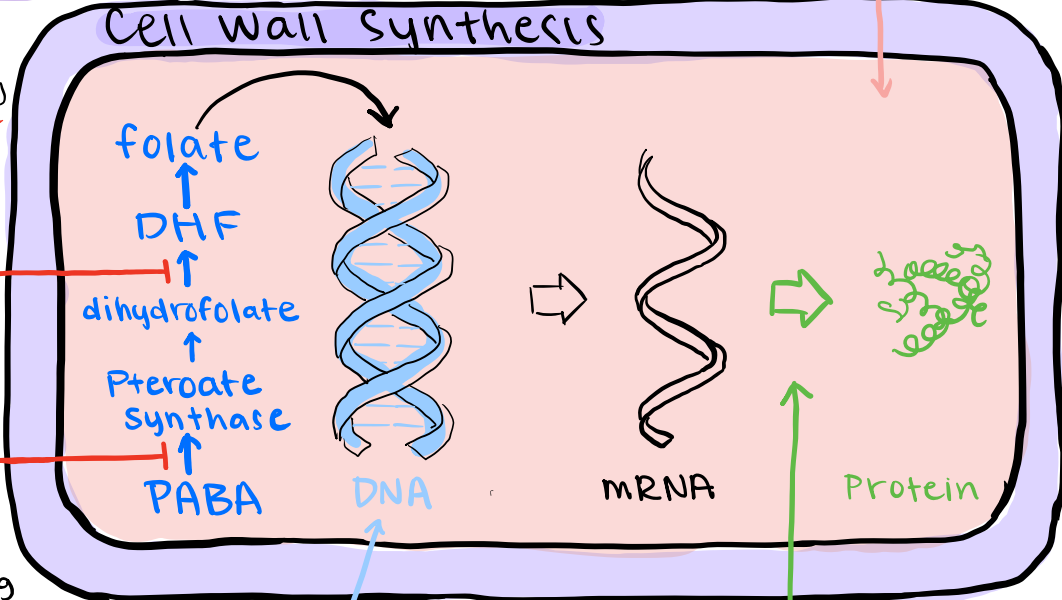
Toxicities: Prolonged QT Nephrotoxicity/ interstitial nephritis

Tendon rupture Hypoglycemia and coma Mental health effects

Susceptibility testing: MIC and MBC

min. conc. to prevent growth

min. conc. to kill species



DNA synthesis

DNA Replication

Fluoroquinolones

Ciprofloxacin

Levofloxacin

Moxifloxacin

Gemifloxacin

Toxicities: Prolonged QT Nephrotoxicity/ interstitial nephritis

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AVOID IN PREGNANCY and in Children

Susceptibility testing: MIC and MBC

min. conc. to prevent growth

min. conc. to kill species

30S subunit

Aminoglycosides

Gentamicin

Tobramicin

Amikacin

Ototoxicity, nephrotoxicity due to accumulation

Tetracyclines

Doxycycline

photosensitivity,

bone/tooth deposition

Preg Cat. D

50S subunit

Macrolides

Erythromycin

Clarithromycin

Azithromycin

Prolonged QT (monitor pts on K+ channel blockers)

Oxazolidinones

Linezolid

thrombocytopenia

Lincosamides

Clindamycin

C. difficile

superinfection

due to gut flora disruption