TETRACYCLINES

Indications	Rickettsial infections (rocky mountain spotted fever), chlamydia, lyme disease, mycoplasmal infections, chronic severe acne, cholera, gastric/duodenal ulcer caused by H. pylori
PK	Excreted in bile, urine, breast milk, undergo entero-hepatic circulation
GI	GI, deposition of drug in bones and teeth, liver failure, phototoxicity, vertigo, avoid in pregnant

TETRACYCLINES

SHORT	CHLORTETRACYCLINE	
	TETRACYCLINE	
	OXYTETRACYCLINE	
INTERMEDIATE	DEMECLOCYCLINE	treats SIADH
	METHACYCLINE	
LONG	DOXYCYCLINE	treat infections in pts with anuria (eliminates via bile, feces)
	MINOCYCLINE	achieves high CNS concentrations in the absence of inflammation, metabolized in liver

MACROLIDES/KETOLIDES

AZITHROMYCIN	show cross-resistance with erythromycin longest t1/2 **Advantages:** less GI disturbances
CLARITHROMYCIN	show cross-resistance with erythromycin **Advantage:** lower incidence of GI disturbances, less frequent dosing
ERYTHROMYCIN	MOA: Interferes with aminoacyl translocation, preventing the transfer of the tRNA bound at the A site of the 50S rRNA complex to the P site of the rRNA complex Destroyed by gastric acid and must be **enteric coated** shortest t1/2

MACROLIDES/KETOLIDES (cont)

TELITHROMYCIN	Effective against macrolide-resistant organisms **Indications:** respiratory tract infections, including community-acquired bacteria pneumonia, acute exacerbations of chronic bronchitis, sinusitis and strepto pharyngitis

Indications: community acquired pneumonia (mycoplasma, legionella, chlamydia), pertussis, campylobacter jejuni gastroenteritis, MAC (azalides)

PK: Well distributed, CNS penetration limited except with inflammation.
Most of drug is concentrated in the liver and excreted in the bile, some inactivated in the liver by demethylation.

AE: GI, jaundice, ototoxicity

Bacteriostatic, bactericidal at high doses

OTHERS

CLINDAMYCIN	**Indications:** pencillin-resistant anaerobic infections **Clinical use:** SSTI **Pharmacology:** high bone concentrations **Toxicity:** diarrhea, allergy, skin rashes, pseudomembranous colitis caused by overgrowth of C. diff
CHLORAMPHENICOL	**Indications:** Rickettsiae (typhus and Rocky Mountain spotted fever); bacterial meningitis **Clinical use:** eye infections **AE:** GI disturbances, gray baby syndrome, aplastic anemia **PEARL:** Because of its toxicity and resistance, its use is restricted to life-threatening infections for which no alternative exists

STREPTOGRAMINS

QUINUPRISTIN-DALFOPRISTIN	**AE:** venous irritation, athralgia and myalgia, hyperbilirubinemia

OXAZOLIDINONES

LINEZOLIDE	**PK:** completely absorbed, widely distributed throughout the body, excreted renally and non-renally **AE:** GI upset

AMINOGLYCOSIDES

STREPTOMYCIN	2nd line agent for the treatment of tuberculosis in combination with other agents to prevent emergence of resistance **AE:** vestibular disturbances
GENTAMICIN	Intrathecal **Indications:** mainly used in combo for severe infections (sepsis and pneumonia) caused by resistant strains of gram negative bacteria, infected burns/woulds/lesions, prevention of catheter infections
GENT+B-LACTAM	Synergistic effect against pseudomonas, proteus, enterobacter, klebsiella, serratia, stenotrophomonas, and other gram negative rods that are resistant to multiple antibiotics
TOBRAMYCIN	Inhalation Cautioned in pts with preexisting renal, vestibular or hearing disorders
STREPTO+PCN	Used for tuleremia and enterococcal carditis
KANAMYCIN (topical only)	Kanamycin-resistant strains may be cross-resistant to amikacin
AMIKACIN	Semisynthetic derivative of kanamycin, less toxic **Indications:** tx microorganisms resistant to gentamicin and tobramycin
NEOMYCIN (topical only)	**Indications:** reduce the risk of infections during bowel surgery

AMINOGLYCOSIDES (cont)

SPECTINOMYCIN	**Indications:** alternative treatment for drug-resistant gonorrhea or gonorrhea in pcn-allergic pts No cross-resistance with other drugs used in gonorrhea **AE:** pain at injection site, fever, nausea

AE: **Ototoxicity** (reversible), **nephrotoxicity** (reversible), neuromuscular blockade

PK: Levels in most tissue are low. No CNS penetration. High accumulation in renal cortex and lymph of inner ear. Excreted into the urine by glomerular filtration. Accumulation occurs in patients with renal failure, not metabolized

Used against aerobic gram negative bacilli
Exhibit concentration-dependent killing
Postantibiotic effect