

The Hitchhiker's Guide to Antimicrobials

Don't Panic

BETA-LACTAMS

MOA: interrupt cell wall synthesis by binding PBPs

Bacteriocidal (this may or may not be clinically relevant), Time-Dependant

PENICILLINS

Generic	Brand	T 1/2	Coverage	Spectrum	Side Effects	Monitor	PK/PD	Elimination
NATURAL PENICILLINS								
PCN G aqueous (IV)	Pfizerpen	0.5 h	Gm(+)Strep. pyogenes, Strep. pneumoniae, non-penicillinase-producing <i>Staph. aureus</i> Anaer: selected anaerobic bacteria Misc: <i>Treponema pallidum</i>	Gm(+) Anaer +/-	Hypersensitivity, GI, pancytopenia superinfection, seizures, diarrhea, impaired hemostasis, sodium salts can cause potassium loss via renal tubules, potassium salts can increase potassium levels IV injection of benzathine penicillin G correlates with cardiorespiratory arrest and death	LFTs, CBC, BUN, SCr, lytes	T > MIC	Renal
PCN G Benzathine (IM)	Bicillin LA	1-4 week						
PCN G Procaine (IM)	Wycillin	12-24 h						
PCN G Benzathine + procaine (IM)	Bicillin CR	1-4 week						
PCN V Potassium (PO)	Veetids, Pen-Vee-K	0.5-1 hr						

ANTISTAPHYLOCOCCAL PENICILLINS

Nafcillin (IV)	Unipen; Nafcil	0.5-1 hr	Gm(+): MSSA Staph / not MRSA or MRSE	Gm(+)	Hypersensitivity, GI, pancytopenia, superinfection, neurotoxicity (high dose), nephritis, rarely hepatitis and elevated LFTs Nafcillin can cause mild hypokalemia and, more rarely, hypomagnesemia due to increased sodium absorption in the collecting duct	LFTs, CBC, BUN, SCr, lytes	T > MIC	Renal & Hepatic
Oxacillin (IV)	Bactocil	0.5-1 hr						Renal
Cloxacillin (PO)	Cloxacpen	0.5-1 hr						
Dicloxacillin (PO)	Dycill, Pathocil, Dynapen	0.5-1 hr						

AMINOPENICILLINS

Ampicillin (IV)	Principen	1-1.5 h	Gm(+): <i>Streptococci</i> , most <i>Enterococci</i> , <i>Listeria</i> , <i>H. influenzae</i> Anaer: <i>Clostridia</i> and a variety of other anaerobic bacteria. Same as ampicillin + β-lactamase-producing strains of <i>S. aureus</i> and <i>E. epidermis</i> (not methicillin-resistant strains) Same as amoxicillin + β-lactamase-producing strains. β-lactamase produced by <i>Citrobacter</i> , <i>Enterobacter</i> , <i>Proteus</i> , <i>Pseudomonas</i> , and <i>Serratia</i> species are not generally inhibited by clavulanate.	Gm(+) Aner	Hypersensitivity, GI, superinfection, seizures, enterocolitis, agranulocytosis, hemolytic anemia, immune thrombocytopenia, pseudomembranous colitis, neutropenia, leukopenia, transient increases in transaminases, elevated LFTs, interstitial nephritis, serum sickness Avoid benzyl alcohol in neonates (methemoglobinemia). Avoid in mononucleosis. Case reports of ampicillin-sulbactam-induced nephrotoxicity and AKI have been reported, mainly when used in combo with vancomycin	LFTs, CBC, BUN, SCr	T > MIC	Renal
Amoxicillin (PO)	Amoxil; Trimox	1-1.5 h						
Ampicillin/sulbactam (IV)	Unasyn	1-1.5 h						
Amoxicillin/Clavulan (PO)	Augmentin	1-1.5 h						

EXTENDED-SPECTRUM PENICILLINS

Piperacillin (IV)	Pipercil	1 h	Gm(+): Strep, some Enterococci Gm(+): Nm, some H influenza, some Enterobacteriales (E. coli, Pm, Kleb); <i>Pseudomonas</i> Anaer: <i>Clostridia</i> (no CD) The addition of tazobactam protects Piperacillin from degradation by the beta-lactamases of MSSA, H. influenzae, M. catarrhalis and B. fragilis. It does not increase the activity against P. aeruginosa.	Broad Pseudo Anaer	Hypersensitivity, seizures, colitis, hypokalemia, neutropenia, leukopenia, elevated LFTs, interstitial nephritis	LFTs, CBC, BUN, SCr, lytes	T > MIC	Renal
Piperacillin/Tazobactam (IV)	Zosyn	1 h						
Ticarcillin	Ticar							
Ticarcillin/Clavulanate	Timentin	NO LONGER AVAILABLE IN USA						
Carbencillin	Geocillin							

CEPHALOSPORINS

Generic	Brand	T 1/2	Coverage	Spectrum	Side Effects	Monitor	PK/PD	Elimination
FIRST GENERATION CEPHALOSPORINS								
Cefazolin (IM/IV)	Ancef; Kefzol	2 hr	Gm(+): Strep, Staph Gm(-): some E. coli, P. mirabilis and Klebsiella sp Anaer: Clostridia	Gm(+)	Hypersensitivity, CNS, seizures, colitis, bone marrow depression, neutropenia and leukopenia (granulocytopenia), vaginitis, reduce absorption of vitamin K	LFTs, CBC, BUN, SCr	T > MIC	Renal
Cefadroxil (PO)	Duricef	2 hr		Gm(+)				
Cephalexin (PO)	Keflex	0.5-1 hr		Gm(+)				
SECOND GENERATION CEPHALOSPORINS								
Cefotan (IV/IM)	Cefotan	3-5 h	cephamycins: Gm(+): Low activity against staphylococci Gm(-): More activity against <i>Enterobacter</i> and especially anaerobic Gm(-) like <i>Bacteroides</i> .	Gm(-) Anaer	Same as first gen	LFTs, CBC, BUN, SCr	T > MIC	Renal
Cefoxitin (IV/IM)	Mefoxin	1 h						
Cefuroxime (IM/PO)	Ceftin, Zinacef	1-2 h	Gm(+): Strep, Staph (like 1st gen) Gm(-): E. coli, Kleb, Pm, Hi, Neiss Anaer: Clostridia	Broad				
Cefprozil (PO)	Cefzil	1 h						
Cefaclor (PO)	Ceclor	1 h						
THIRD GENERATION CEPHALOSPORINS								
Cefotaxime (IV/IM)	Claforan	1 h	Gm (+): Strep, S. aureus Gm (-): E. coli, Kleb, Prot, Hi, Neiss, some Eb	Broad	First Generation + arrhythmias Same as first gen. Ceftriaxone may cause hyperbilirubinemic neonates. Avoid use with concurrent hepatic dysfunction Some can cause potassium depletion (cefazidime/avibactam)	LFTs, CBC, BUN, SCr, lytes	T > MIC	Renal
Cefdinir (PO)	Omnicef	2 h						
Cefpodoxime (PO)	Vantin	2-3 h						
Ceftibuten (PO)	Cedax	3-5 h						
Cefixime (PO)	Suprax	3-4 h						
Ceftizoxime (IV/IM)	Cefizox	2 h						
Cefditoren (PO)	Spectracef	1.6 h						
Ceftriaxone (IV/IM)	Rocephin	5-9 h						
Ceftazidime (IV/IM)	Fortaz; Tazicef	2-3 h	Above (less active against Strep, S. aureus than other 3rd gens) + <i>Pseudomonas</i>	Broad but Gm(-)-ish Pseudo				
Ceftazidime/Avibactam (IV)	Avycaz	2-3 h	Difficult to treat <i>Haemophilus</i> , <i>Moraxella</i> and <i>Neisseria</i> pathogens, and infections caused by <i>Acinetobacter</i> and some difficult to treat <i>Pseudomonas</i> . Consult ID.	MDRO Gm(-) Pseudo				
FOURTH GENERATION CEPHALOSPORINS								
Cefepime (IV)	Maxipime	2 h	Gm(+): more active against S. aureus, Gm(-): <i>Pseudomonas</i> , some third-gen-res	Broad Pseudo	First-gen + blurred vision, more incidence of neurotoxicity than rest (encephalopathy, confusion, myoclonus, seizures, reduced levels of consciousness, and coma) especially in renal dysfunction, calcium and phosphorus depletion	LFTs, CBC, BUN, SCr, lytes	T > MIC	Renal
FIFTH GENERATION CEPHALOSPORINS								
Ceftolozane/Tazobactam (IV)	Zerbaxa	2-3 h	Difficult to treat <i>Pseudomonas</i> , <i>E. coli</i> , <i>Citrobacter</i> , <i>Morganella</i> , <i>Proteus</i> , <i>Salmonella</i> , and <i>Serratia</i> .	MDRO Broad Pseudo	hypersensitivity, headache, constipation, hypertension, nausea, and diarrhea, hypokalemia, hypomagnesemia, hypophosphatemia	Scr, BUN, lytes	T > MIC	Renal
Ceftaroline (IV)	Teflaro	3 h	Gm(+): S. aureus, Strep; active against MRSA, VISA, VRSA, hVISA Gm(-): E. coli, Kleb, Prot, Hi, Neiss, some Eb, no MDR organisms or pseudomonas	MDRO Gm (+) MRSA	hypersensitivity, seizures, eosinophilic pneumonia, neutropenia, drug fever, thrombocytopenia, bradycardia, hypokalemia			
SIDEROPHORE CEPHALOSPORIN								

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Cefidericol (IV)	Fetroja	2-3 h	Difficult to treat <i>Acinetobacter</i> , <i>E. coli</i> , <i>Enterobacter</i> , <i>Klebsiella</i> , <i>Pseudomonas</i> and <i>Serratia</i> . ID Consult	MDRO Gm (-) Pseudo	allergic reactions, severe diarrhea caused by <i>C. difficile</i> and seizures	SCR, BUN	T>MIC	Renal
CARBAPENEMS								
Meropenem (IV)	Merrem	1 h	Gm(+): Strep, some EC, List, no MRSA Gm(-): HI, Neiss, Eb, Ecol, Pseudom Anaer: Bacteroides, most other	Broad Anaer Pseudo	hypersensitivity, seizures, headache, elevated LFTs, renal toxicity Beware drug interaction with valproic acid	LFTs, BUN, SCr		Renal
Imipenem/Cilastatin (IV)	Primaxin	1 h						
Ertapenem (IV)	Invanz	4 h	Gm(+): Strep, some EC, List, no MRSA Gram(-) No pseudomonas, BL + HI Anaer: Bacteroides, most other	Broad Anaer	hypersensitivity, seizures, headache, elevated LFTs, renal toxicity Beware drug interaction with valproic acid			
Imipenem-cilastatin-relebactam (IV)	Recarbrio	1 h	Relebactam can restore the activity of imipenem-cilastatin in resistant organisms, including some carbapenem-resistant <i>Klebsiella</i> and <i>Pseudomonas</i>	MDRO Gm (-) Pseudo Anaer	CNS: seizures and other reactions Consider avoiding use for patients on ganciclovir, valproic acid (VPA) or divalproex sodium due to increase risk of seizures Diarrhea, nausea, headache, vomiting, alanine aminotransferase increased, aspartate aminotransferase increased, phlebitis/infusion site reactions, pyrexia, and hypertension	SCR, BUN	T>MIC	Renal
Meropenem-vaborbactam (IV)	Vabomere	1 h	Vaborbactam extends the spectrum of meropenem to include some carbapenem-resistant organisms, including many carbapenem-resistant Enterobacteriaceae (CRE). Not found to expand coverage to carbapenem-resistant <i>Acinetobacter baumannii</i> , <i>Pseudomonas aeruginosa</i> , or <i>Stenotrophomonas maltophilia</i>	MDRO Gm (-) Pseudo Anaer	headache, infusion site reactions, and diarrhea May cause seizure or anaphylaxis Beware drug interaction with valproic acid	SCR, BUN		Renal
MONOBACTAMS								
Aztreonam (IV)	Azactam	1-2 h	Gram(-) <i>HI, Neiss, Eb, Ecoli, Kleb, Pseudomonas</i> Anaer: <i>Bacteroides</i> , most other	Gm (-) Pseudo	pseudomembranouscolitis (rare), seizure, confusion, elevated LFTs, hypotension, transient ECG changes (ventricular bigeminy and PVC), toxic epidermal necrosis, pancytopenia, neutropenia, vaginitis	LFTs, BUN, SCr	T>MIC	Renal
NON-BETA LACTAMS								
Bacteriocidal (this may or may not be clinically relevant)								
Generic	Brand	T 1/2	Coverage	Spectrum	Side Effects	Monitor	PK/PD	Elimination
GLYCOPEPTIDES								
Vancomycin (IV/PO) Interrupts CW synth (binds D-ala) 24-hr AUC/MIC	Vancocin	6 h	Gm(+): Staph/MRSA/Strep/res Anaer: <i>C. difficile</i> Vancomycin has a low Vd and does not achieve great lung penetration	Gm (+) MRSA	Nephro, oto / CV (cardiac arrest), CNS / GI / neutropenia, Derm (infusion reaction, urticaria, macular)	drug levels, BUN, SCr	T>MIC	Renal
Teicoplanin	Targocid		NO LONGER AVAILABLE IN USA					Renal
LIPOLYCOPEPTIDES								
Dalbavancin (IV)	Dalvance	14 days	Gm(+): <i>Streptococcus</i> , <i>Enterococcus</i> , and both MSSA and MRSA	Gm (+) MRSA	hepatic effects, hypersensitivity reactions, infusion reactions	baseline labs	Con>MIC	Renal
Oritavancin (IV)	Orbactiv, Kimyrza	10 days	Gm(+): <i>Streptococcus</i> , <i>Enterococcus</i> , and both MSSA and MRSA, some VRE		hypersensitivity reactions, infusion reactions, headache, nausea			
OTHER								
Cycloserine (PO)	Seromycin	10 h	Reserved mostly for TB	TB	drowsiness, headache, fatigue, rash and fever, acute psychosis, seizures and coma	drug levels, CBC, SCr, BUN, LFTs	T>MIC	Renal
Fosfomycin (PO)	Monurol	6 h	Gm(+): MRSA Gm(-): <i>Pseudomonas aeruginosa</i> , <i>Acinetobacter baumannii</i> , <i>E. coli</i> , <i>Klebsiella pneumoniae</i> , some carbapenemase and ESBL producers UTI only for PO	Broad MRSA Pseudo	diarrhea, nausea, headache, vaginal infections, dizziness, agranulocytosis, hypernatremia, hypokalemia are common with IV which is not in US	baseline labs (PO)	Con>MIC	Renal
CELL MEMBRANE DISRUPTERS								
Polymyxin B (IV)	Poly-Rx	6-12 h	Gm(-): Only used for MDROs (<i>Pseudomonas aeruginosa</i> and <i>Acinetobacter baumannii</i>) with no other options	MDRO Pseudo	Highly nephrotoxicity and neurotoxicity	levels, SCr, BUN, CNS	Con>MIC	Renal
Colistimethate (IV)	Colistin	4-8 h						
Daptomycin (IV) -cidal, forms ion channel Concentration-Dependant	Cubicin	8-9 h	Gm(+): Vanc + some VRE	Gm (+) VRE	CV (edema, tension, stiff), CNS / derm / GI, pm colitis, Hemat / hepatic / renal / resp, Myalgia, arthritis / Ocular / Otic, rhabdomyolysis (monitor CPK) No pulmonary penetration	SCR, BUN, CPK weekly	Con/MIC	Renal
TETRACYCLINES								
MOA: binds 30S								
Bacteriostatic (this may or may not be clinically relevant), Time-Dependant								
Generic	Brand		Coverage	Spectrum	Side Effects	Monitor	PK/PD	Elimination
Tetracycline (PO)	Sumycin	6-12 h			GI effects, yellow discoloration of teeth, teeth demineralization, skeletal growth retardation, intrahepatic cholestasis (rare but often fatal), shock, hyperphosphatemia, acidosis, polyuria, polydipsia, photosensitivity and hyperpigmentation, tinnitus, visual disturbances.	SCR, BUN, CBC		Renal
Doxycycline (IV/PO)	Vibramycin	18 h	Gm(+): some strep, MRSA Gm(-): Chlamydia, HI, Neiss Atypical: <i>Rickettsia</i> , <i>Mycoplasma</i> , <i>Legionella</i>	Broad Atypic MRSA	All tetracyclines are classically associated with a risk of fatty liver and pancreatitis, but this is not usually seen clinically.			
Minocycline (IV/PO)	Dynacin, Minocin	11-22 h			As doxy, plus risk of drug induced lupus. Minocycline is associated with a higher incidence of vestibular toxicities as well.	SCR, BUN, CBC		
Sarecycline (PO)	Seysara	21 h	Gm(+): <i>Cutibacterium acnes</i> Gm(-): Limited, for acne.	Gm(+)			T>MIC	Feces
Omadacycline (IV/PO)	Nuzyra	16 h	Gm(+): <i>S. aureus</i> , including MRSA, and <i>Streptococci</i> , <i>S. pneumoniae</i> , <i>M. catarrhalis</i> , and <i>H. influenzae</i> , may be active against VRE Gm(-): <i>Acinetobacter</i> , <i>Stenotrophomonas</i> , and Enterobacteriaceae producing ESBL. No activity against <i>Pseudomonas</i> , <i>Proteus</i> , or <i>Providencia</i>	MDRO MRSA VRE Broad	GI effects, yellow discoloration of teeth, teeth demineralization, skeletal growth retardation, photosensitivity and hyperpigmentation, intercranial hypertension, <i>C. Diff</i> colitis, vertigo, vaginitis	baseline labs		FMO mediated
Eravacycline (IV)	Xerava	20 h	Gm(+): MRSA, VRE, good gm + coverage Gm(-): Can have CRE and ESBL activity, can cover <i>Acinetobacter baumannii</i> , no <i>Pseudomonas</i> Reserve for suspected or confirmed MDROs.		Sarecycline has lower vestibular rate of AE due to decreased lipophilicity and blood brain barrier penetrance			
GLYCYLCYLINES								
Tigecycline (IV)	Tygacil	27-42 h	Gm(+): MRSA, <i>Enterococcus faecalis</i> Gm(-): ESBL-producing bacteria, <i>Acinetobacter spp.</i> , <i>Stenotrophomonas spp.</i> No pseudomonas. Anaer: good anaerobic activity	MDRO Broad Anaer MRSA	Increased risk for mortality with tigecycline compared with other agents, nausea vomiting, photosensitivity, superinfections, C. Diff, prolongs PT and aPTT ("tigecycline associated coagulopathy")	LFTs, BUN, SCr	T>MIC	Hepatic

AMINOGLYCOSIDES									
MOA: binds 30s and 50s									
Bacteriocidal (this may or may not be clinically relevant), Concentration-Dependant									
Generic	Brand	T/12	Coverage	Main	Side Effects	Monitor	PK/PD	Elimination	
Gentamicin (IV/Oph)	Garamycin	2 h	Gm(+): synergy for some Staph, Strep, Ec Gm(-): Pseudom, E.coli, Prot, HI, Eb						
Tobramycin (IV/Oph)	Nebcin, Tobi	2 h	Aminoglycosides are hydrophilic, with low Vd and don't achieve great lung penetration (may still be used). They are also inactivated by low pHs	Gm (-)	Ototoxicity, nephrotoxicity, ataxia, vertigo, neuromuscular blockade, myasthenia gravis, cramps, tremor, weakness	drug levels, BUN, SCR, Urine output, hearing for those on prolonged therapy	Con>MIC	Renal	
Amikacin (IV)	Amikin	2-3 h							
Plazomicin	Zemdri	3-4 h		Gm(+): Staph, including MRSA Gm(-) E. coli, K. pneumoniae, Enterobacter species Anaer: obligate anaerobes Has reduced activity versus most Pseudomonas and Acinetobacter	Broad MRSA Pseudo				Nephrotoxicity, ototoxicity, neuromuscular blockade, and fetal harm in pregnant mothers
MACROLIDES									
MOA: -binds 50S									
Bacteriocidal and Bacteristatic Depnding on Site and Pathogen (this may or may not be clinically relevant), Time-Dependant									
Generic	Brand	T/12	Coverage		Side Effects	Monitor	PK/PD	Elimination	
Erythromycin (IV/PO/Topical/Oph)	Ery-Tabs	1-2 h	Gm(+): Strep, Staph Gm(-): Chlamydia, Neiss, HI	Broad Atypic	CV (arrhythmias, QT prolongation), CNS / derm / GI, pm colitis, Hematologic / LFT, Jaundice, Oto, tinnitus or transient hearing loss, azith QTc prolongation likely does not increase risk of Torsades without other risks	LFTs, ECG if indicated	T>MIC (but azithro can be Con>MIC)	Renal	
Azithromycin (IV/PO)	Zithromax	68 h	Myc: avium, leprae Atypical: Mycobact, Legionella, Rickettsia						
Clarithromycin (PO)	Biaxin	3-7 h							
Fidaxomicin (PO)	Difficid	11 h	C diff only	C. diff	Nausea, vomiting, or stomach/abdominal pain				fecal
MISC 50S BINDERS									
Linezolid (IV/PO) oxazolidinone bacterostatic	Zyvox	5 h	Gm(+): Vanc + some VRE	Gm (+) MRSA VRE	thrombocytopenia, myelosuppression, colitis, increased BP, QT prolongation, anemia, leukopenia, lactic acidosis, peripheral neuropathy, optic neuropathy, MAOI inhibition, serotonin syndrome, rhabdomyolysis (Linezolid)	CBC weekly, CNS effects	T>MIC	Renal	
Tedizolid (IV) oxazolidinone bacterostatic	Sivextro	12 h	Gm(+): Enterococci, Staphylococci, and Streptococci, MRSA No Gm(-) or Anaer.	Gm (+) MRSA	Monitor closely with concomitant SSRI or other serotonin agents			Hepatic	
Quinupristin/ Dalfopristin (IV) streptogramin	Synercid	1 h	Gm(+): Vanc + some VRE	Gm (+) MRSA VRE	Headache, rthralgia and myalgias, phlebitis, and hyperbilirubinemia	LFTs, BUN, SCR, CBC, bilirubin	Con>MIC	Hepatic	
Clindamycin (IV/PO) lincosamide (closely related to macrolides)	Cleocin	2.4 h	Gm(-): Strep, Staph/MRSA, no EC, some Bacteroides, Clost	Gm (+) MRSA Anaer	CV (hypotension/ QT Prolongation) CNS / Derm/GI, colitis/ hemat / LFT / vaginitis C. difficile associated diarrhea, Stevens-Johnson syndrome	LFTs, BUN, SCR, CBC	T>MIC	Renal and Hepatic	
Lefamulin (PO) pleuromutilin	Xenleta	8-10 h	Gm (+): Streptococcus pneumoniae, Staphylococcus aureus [including MRSA], Enterococcus faecium [including VRE], coagulase negative staphylococci, beta-hemolytic streptococci, viridans group streptococci Gram (-): Haemophilus influenzae, Neisseria gonorrhoeae, Moraxella catarrhalis Atypicals: Mycoplasma pneumoniae, Legionella pneumophila, and Chlamydia pneumoniae, Mycoplasma genitalium	Broad Atypic MRSA VRE	Liver enzyme elevation, nausea, vomiting, diarrhea, injection site reactions, QT interval prolongation, can cause fetal harm, beware use in pregnant women	LFTs, ECG where indicated	Both T>MIC and Con>MIC	Hepatic	
FLUOROQUINOLONES									
MOA: -static, inhibits DNA gyrase (topo IV) and topo IV, ~Concentration-Dependant									
Generic	Brand	T /12	Coverage	Spectrum	Side Effects	Monitor	PK/PD	Elimination	
Moxifloxacin (IV/PO/Otic/Oph)	Avelox	12 h	Gm(+): Staph, Strep (Cipro lacks activity against S. pneumoniae and has lowest MSSA activity), Gm(-): Enterobacteriaceae, H. influenzae, other Haemophilus spp., N. gonorrhoeae, N. meningitidis, M. catarrhalis, Pseudomonas, S. maltophilia, Enterobacterales	Broad Aner Atypic	myalgia, arthritis, tendon rupture, interstitial nephritis QTc prolongation, peripheral neuropathy, encephalopathic changes, Calcium can bind to fluoroquinolone antibiotics. FQs can cause dysglycemia by binding to ATP-sensitive potassium channels of pancreatic islet cells which allow calcium to enter the cells and insulin to be released.	SCR, BUN, blood glucose and ECG if indicated	FQs are both T>MIC and Con>MIC, but usually stated as Con>MIC	Renal	
Ciprofloxacin (IV/PO/Otic)	Cipro	4 h							
Levofloxacin (IV/PO)	Levaquin	6-8 h	Note: Pseudo activity levo < cipro; Moxi for MDRSP but not pseudo Moxi covers anaerobes	Broad Atypic Pseudo					
Ofloxacin (IV/PO/Otic/Oph)	Floxin	4-5 h	Moxi doesn't achieve adequate concentrations in the urine						
Delafloxacin	Baxdela	8-9 h	Gm(+): MRSA Gm(-): Pseudomonas	Broad MRSA Pseudo				nausea, diarrhea, headache, transaminase elevations, and vomiting, tendonitis, tendon rupture, CNS effects, peripheral neuropathy, can worsen existing myasthenia gravis, hypoglycemia (including coma), altered mental health, aortic dissection	
ANTIFOLATES									
TMP/SMX (IV/PO) Prevents THF synth	Bactrim	1-4 h	Gm(+): Staph/MRSA, Strep pneumo Gm(-): some HI, some Eb (E.coli, Salm, Shig, Kleb, Pm)	Broad MRSA	rash, photosensitivity, folate deficiency, loss of appetite, nausea, swollen tongue, tinnitis, Stevens-Johnson syndrome, hypotension, seizures, colitis, hyperkalemia, especially with ACE/ARB	SCR, BUN, lytes	T>MIC	Renal and Hepatic	
MISCELLANEOUS									
Generic	Brand		Coverage		Side Effects	Monitor	PK/PD	Elimination	
Nitrofurantoin (PO) -cidal, lots of mechs, binds to ribosomes, inhibits the synthesis of DNA, RNA, cell wall protein synthesis, and other metabolic enzymes	Macrobid, Macrochantin	1 h	Gm(-): E. coli, Klebsiella, S. saprophyticus, Citrobacter, ESBLs Gm(+): E. faecalis, E. vacuicum, including VRE UTI ONLY	Broad VRE	Interstitial pneumonitis with progressive fibrosis can occur, usually after 6 months of therapy, rare liver injury, peripheral neuropathy, may make urine brown, concentrates in the lower urinary tract while maintaining a low serum concentration, in long courses, G6PD testing may be recommended due to increased risk of anemia with G6PD deficiency	May need CBCs and chest x-rays in long term treatment	T>MIC	Renal	
Metronidazole (IV/PO) -cidal, Cytotoxic Reduction	Flagyl	8 h	Anaer: C. diff, Bacteroides, most other	Anaer	Confusion, peripheral neuropath, GI upset, metallic taste, xerostomia, furry tongue, vaginitis, transient leukopenia and neutropenia, do not give with alcohol, prolonged use can cause severe neurological disturbances	CBC, AST, ALT, CNS effects	Conc>MIC	Hepatic	

O b s t r u c t o r s

N u c l e i c

A c i d