

## Clinically Useful Antibiotics - Non-β-lactams

J. Durbin, C. Hermos, Z. Wangu

rev 4-2024

	Drug ↓	Organism →	G+			G-		G-		G-		Enteric G-	Pseudomonas	Anaerobes		Atypicals	
		Staph Aureus MSSA    MRSA	Streptococci β    Pneumo    Entero		H. influenzae β-lac +    β-lac -		Neisseria Mening    GC		M. catarrhalis β-lactamase +		(E. coli, Klebs, Proteus, Etc.) (Scale 0-4)		<u>Aeruginosa</u>	Oral	Gut	(M.pneumoniae, Legion, Chlamydia pneu)	
Aminoglycosides	<b>Amikacin</b> (Amikin)										4+						
	<b>Gentamicin</b> (Garamycin) <small>(Used with azithro for GC in cephalo-allergic pts)</small>						Yes as part of dual tx				4+	±					
	<b>Tobramycin</b> (Nebcin) <small>(Better than gentamicin for Pseudomonas)</small>										4+	+					
Macrolides	<b>Azithromycin</b> (Zithromax) ☺ <small>(used for same organisms as Erythro; also toxo &amp; MAI; no longer treatment of choice for chlamydia, dual therapy for GC no longer recommended)</small>	±	±	±	+	+			+		First-line for traveler's diarrhea					⊕, but no longer first-line for <i>C trachomatis</i> (except in neonates). <i>M genitalium</i> may be resistant.	
	<b>Clarithromycin</b> (Biaxin) (NF)	±	±	±	+	+			+							⊕	
	<b>Erythromycin</b> (rarely used) <small>(bacteriostatic, mostly used for Legionella, Pertussis, Mycoplasma, Chlamydia, side effects include GI upset, phlebitis)</small>	±	±	±													
Fluoroquinolones	<b>Ciprofloxacin</b> (Cipro) <small>(cartilage damage in baby beagles)</small>	±	±	±	+	+	prophylaxis	No	+		3+	⊕				+	
	<b>Levofloxacin</b> (Levaquin) <small>(good for G+, q24 hrs dosing)</small>	+	Limited use in select cases only	+	+	+		No	+		3+	±				+	
	<b>Moxifloxacin</b> (Avelox) (NF)	+	Limited use in select cases only	+	+	+		No	+		3+	±	+	+		⊕ including resistant <i>M genitalium</i>	
Tetracyclines	<b>Doxycycline</b> (Vibramycin, Doryx) <small>(drug of choice for most stages of Lyme in all ages, incl up to 21 d of tx for &lt;=8 yrs)</small>	+	+	±				⊕	+		2+						⊕, first-line for <i>C trachomatis</i> (except in neonates). <i>M genitalium</i> may be resistant.
	<b>Minocycline</b> (Minocin) <small>(used for acne, can be associated with severe side effects incl delayed reactions, lupus-like syndrome)</small>																
	<b>Tetracycline</b> (Sumycin) (rarely used)												+	+			
Miscellaneous	<b>Chloramphenicol</b> (Chloromycetin) <small>(idiosyncratic rare irreversible aplastic anemia; dose-related toxicity causing reversible BM suppression)</small>	±			+	+	±	+	+		2-3+			+	+		
	<b>Clindamycin</b> (Cleocin) ☹ <small>(bacteriostatic, not for endocarditis, not good for SNA; C. diff risk)</small>	+	± (84%)	± (85%)	+	±								⊕	+		
	<b>Daptomycin</b> (Cubicin) Not for PNA		+			±											
	<b>Linezolid</b> (Zyvox) expensive		+			+											
	<b>Metronidazole</b> (Flagyl) ☹													±	⊕		
	<b>Trimethoprim-Sulfamethoxazole</b> (Bactrim, Sulfatrim ☹, Septra)	+	+			±				+		2+					
<b>Vancomycin</b> (Vancocin) <small>(not absorbed PO, good for SNA)</small>	+	⊕			+	+	+										

+ - Generally useful

± - Potentially useful

⊕ - A drug of choice

☺ - Tastes good

☹ - Tastes bad - **ask pharmacy to flavor**

NF - Nonformulary at UMass

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	Organism →	G+		G+			G-		G-	G-	Enteric G-	Pseudomonas	Anaerobes	
		Staph Aureus		Streptococci			H. influenzae		Neisseria	M. catarrhalis	(E. coli, Proteus, Etc.)	Aeruginosa	Oral	Gut
Drug	↓	MSSA	MRSA	β	Pneumo	Entero	β-lac +	β-lac -	Mening	GC	β-lactamase +	(Scale 0-4)	(Strep, Staph, Bacteroides)	B. fragilis
Penicillins	Penicillin (PCN-resistant S. pneumo due to altered PCN cell wall binding proteins) ☹️			⊕	+				+					
	Ampicillin IV			⊕	⊕	⊕		⊕						±
	Amoxicillin PO (better absorption) ☺️											1/2+		
	Ampicillin + Sulbactam (Unasyn)										⊕	2+		⊕
	Amox + Clav (Augmentin) PO ☹️													⊕
	Dicloxacillin (Dynapen) PO													
	Nafcillin (Unipen, Nafcil) semi-synthetic PCNs													
Oxacillin (Prostaphlin) semi-synthetic PCNs (NF)														
Piperacillin + Tazobactam (Zosyn) **				+	+	±	+	+			+	3+	⊕	+
Cephalosporins	1 IV: Cefazolin (Kefzol, Ancef)			⊕								1+		
	PO: Cephalexin (Keflex) ☺️													
	2 IV: Cefuroxime (Zinacef) not really used in Peds			+	⊕		⊕	⊕			⊕	2+		
	PO: Cefuroxime (Ceftin) ☹️ not really used in Peds													
	IV: Cefoxitin (Mefoxin)								+			2+		+
	3 IV: Ceftriaxone (Rocephin) q24h			±			⊕	⊕	⊕	⊕	+	3+		
	Cefotaxime (Claforan) 1st month of life (shortage in US since 2015)													
	PO: Cefpodoxime (Vantin) ☹️												3+	
	Cefdinir (Omnicef) ☺️ (NF)			±			+	+			+			
	IV: Ceftazidime (Fortaz, Tazicef) - no longer drug of choice for febrile neutropenia (use cefepime, pip-tazo instead)			±			±	±	+	+		3+	⊕	
4 Cefepime (Maxipime) q12h			+			+	+			+	3-4+	+		
5 Ceftaroline (Teflaro) - Spectrum similar to CTX, plus covers MRSA, VISA (vanc-intermediate Staph aureus), PCN/CTX-resistant S pneumo										⊕				
Monobactams	Aztreonam (Azactam)													
	(Use with allergy to PCN/Cephalo)						+	+			+	3+	⊕	
Carbapenems	Ertapenem (Invanz) q12-24h - only carbapenem that doesn't cover Pseudomonas!			+			+	+			+	4+		+
	Imipenem/Cilastatin (Primaxin)** - used for ESBL			+			+	+			+	4+	⊕	+
	Meropenem (Merrem)** - used for ESBL						±						+	+

+ - Generally useful   ± - Potentially useful   ⊕ - A drug of choice   ☹️ - Tastes good   ☺️ - Tastes bad - ask pharmacy to flavor   NF - Nonformulary at UMass   \*\* - Generally used only for pseudomonas / resistant GNR