



ANTIBIOTIC SAFETY

Allergy alternatives · adverse effects · what to monitor

CHECK

before you give

PENICILLIN ALLERGY

- **True (IgE) allergy** - anaphylaxis, urticaria, angio-oedema, wheeze - avoid all β -lactams if severe
- **Non-severe** - isolated rash / GI upset - a cephalosporin or carbapenem is usually safe
- **Cross-reactivity** - cephalosporins ~1-2% (side-chain dependent); carbapenems < 1%; AZTREONAM none*

IF SEVERE ALLERGY, USE

by target

- **Gram-negative / Pseudomonas** → aztreonam, ciprofloxacin, aminoglycoside
- **Gram-positive / MRSA** → vancomycin, linezolid, clindamycin
- **Anaerobes** → metronidazole, clindamycin
- **Atypicals** → macrolide, doxycycline

* except ceftazidime (shared side chain)

ADVERSE EFFECTS & MONITORING

Drug	Avoid / caution	Key adverse effects	Monitor
Vancomycin	renal; with pip-tazo	nephrotoxicity, infusion reaction, ototoxicity	AUC 400-600, renal
Aminoglycosides	renal, myasthenia, pregnancy	nephrotoxic, IRREVERSIBLE ototoxicity, NM block	levels, renal daily
Linezolid	SSRIs / MAOIs; > 14 days	thrombocytopenia, serotonin syndrome, neuropathy	FBC (platelets) weekly
Piperacillin-tazo	with vancomycin (AKI)	AKI, hypokalaemia, C. difficile	renal, potassium
Carbapenems	renal; VALPROATE ($\downarrow$ levels)	seizures (high dose / renal), C. difficile	renal dose-adjust
Ceftriaxone	neonate + calcium	biliary sludge, cytopenias, C. difficile	-
Fluoroquinolones	QT, aneurysm, myasthenia	QT, tendon rupture, dysglycaemia, aortic dissection	QTc, glucose
Macrolides	QT-prolonging drugs	QT prolongation, GI upset	QTc
Metronidazole	alcohol, 1st-tri pregnancy	disulfiram reaction, neuropathy (prolonged)	-
Clindamycin	-	C. difficile (classic), diarrhoea	watch C. difficile
Co-trimoxazole	G6PD, renal, late pregnancy	hyperkalaemia, $\uparrow$ creatinine, marrow, SJS	K, renal, FBC
Antifungals	azoles: QT, CYP interactions	echinocandin well tolerated; azole hepatotoxic	LFTs, QTc (azole)
Daptomycin	statins; NOT for lung	myopathy ($\uparrow$ CK), eosinophilic pneumonia	CK weekly
Colistin / polymyxin	renal, neurotoxicity	nephrotoxicity, neurotoxicity, paraesthesia	renal, levels

ALWAYS: therapeutic drug monitoring for vancomycin (AUC) & aminoglycosides (levels) · check renal function daily and dose-adjust / CRRT · any antibiotic can cause C. difficile · check QTc with fluoroquinolone + macrolide + azole combinations.

PEARLS & PITFALLS

- Most 'penicillin allergy' is not true allergy - a cephalosporin or carbapenem is usually safe unless it was anaphylaxis.
- Watch renal function with vancomycin + piperacillin-tazobactam together - the combination raises AKI risk.
- Aztreonam has no penicillin cross-reactivity - a good Gram-negative option in severe allergy.
- Clindamycin, cephalosporins and fluoroquinolones are the classic triggers of C. difficile.

References: Memory aid, not a substitute · doses per local formulary · IDSA / BNF / Sanford Guide.

Educational aid; verify doses against local protocol and patient factors.

roundsrx.com

roundsrx Infographic Series · #30

