Kentucky Antimicrobial Stewardship Innovation Consortium

Educational Pearl

Pick Your Poison: Fluoroquinolone vs. TMP-SMX

Fluoroquinolones and trimethoprim-sulfamethoxazole (TMP-SMX) are generally preferred oral step down options in gram-negative bacteremia.[1] Picking one over the other should take into consideration individual host factors and antibiotic characteristics. Both agents have their pros and cons but when picking your poison, how do they compare?

	Fluoroquinolones	TMP-SMX
Adverse drug events	Tendonitis and tendon rupture Peripheral neuropathy (can be permanent) CNS effects (especially in elderly) QTc prolongation Aortic aneurysm/dissection Dysglycemia Phototoxicity	Acute kidney injury Hyperkalemia Hyponatremia Drug-induced liver injury (rare) Sulfa allergy
C. difficile infection[2,3]	High Risk	Moderate Risk
Antimicrobial resistance considerations	Broad gram-negative spectrum Only oral antibiotics active against *P. aeruginosa* Use associated with ESBL[4] and MRSA[4] emergence	Broad gram-negative spectrum but NOT active against *P. aeruginosa*

See the past KASIC pearls "Why Question a Quinolone," "Know Your Antibiotic: TMP-SMX AKI," and "*C. difficile* Risk and Antibiotics: How Can We Minimize Risk?" for more information!

Takeaway:

Adverse drug events may occur with using either a fluoroquinolone or TMP-SMX. Selecting TMP-SMX over a fluoroquinolone is lower risk for *C. difficile* infection, preserves activity against *P. aeruginosa*, and may lower risk for the emergence of MRSA and ESBL.

References:

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