



ANTIMICROBIAL DRUG INTERACTIONS

To be used with "Significant Drug Interactions with Antimicrobials"

Antimicrobial Drug Interactions

A Drug interaction is the impact of another substance (such as another medication, nutritional supplement including herbal products, food, or substances used in diagnostic studies) upon a medication. The interactions may alter absorption, distribution, metabolism, or elimination of a medication and these interactions may decrease the effectiveness of the medication or increase the potential for adverse consequences

Warfarin Drug Interactions With Antimicrobials

Warfarin interactions are important because they may:

- Significantly increase warfarin levels associated with life-threatening bleeding, or
- Decrease warfarin to ineffective levels, or
- Increase or decrease the serum concentration of the interacting medication

Monitor residents for bleeding, bruising and INR when taking warfarin with the following medications

Azoles	Cephalosporins	Quinolones	Macrolides
<ul style="list-style-type: none">• Fluconazole• Itraconazole• Ketoconazole• Miconazole• Posaconazole	<ul style="list-style-type: none">• Cefotetan• Cefazolin• Cefoxitin• Ceftriaxone	<ul style="list-style-type: none">• Ciprofloxacin• Levofloxacin• Moxifloxacin• Norfloxacin• Ofloxacin	<ul style="list-style-type: none">• Azithromycin• Clarithromycin• Erythromycin
Penicillins	Tetracyclines	Sulfas	
<ul style="list-style-type: none">• Piperacillin,• Piperacillin/Tazobactam• Amoxicillin• Amoxicillin/Clavulanate• Ampicillin	<ul style="list-style-type: none">• Ampicillin/Sulbactam• Penicillin G• Penicillin G Benzathine• Penicillin G Procaine• Ticarcillin/Clavulanate	<ul style="list-style-type: none">• Tetracycline• Demeclocycline• Doxycycline• Minocycline	<ul style="list-style-type: none">• Trimethoprim/ Sulfamethoxazole (TMP/ SMX)



**ANTIMICROBIAL
STEWARDSHIP**
in LTPAC

Other Significant Drug-Antimicrobial Interactions that Require Resident Monitoring for Adverse Drug Events

- TMP/SMX can reduce the excretion of potassium and may cause hyperkalemia
- Some antimicrobials (ciprofloxacin, levofloxacin, moxifloxacin, clarithromycin, fluconazole, metronidazole, TMP/SMX) taken with sulfonylureas can cause hypoglycemia
- Calcium channel blockers (i.e. diltiazem) taken with macrolide antibiotics may cause hypotension
- Statins (i.e. simvastatin) taken with clarithromycin/erythromycin may increase statin blood concentrations, increasing the risk for rhabdomyolysis, acute kidney injury (AKI), and hyperkalemia
- TMP/SMX taken with phenytoin may increase phenytoin to toxic levels in the elderly
- TMP/SMX taken with spironolactone, ACE inhibitors and ARBs may increase the risk of hyperkalemia
- Digoxin taken with clarithromycin may increase the risk of digoxin toxicity
- Macrolide antibiotics and moxifloxacin may increase the risk of Torsade de Pointes, an atypical rapid ventricular tachycardia with periodic waxing and waning of amplitude of the QRS complexes on the electrocardiogram. It is usually drug related and may be either self-limiting or progressing to ventricular fibrillation

One more tip: Never remove an antimicrobial from the emergency medication supply without checking with the pharmacist for a possible drug-drug interaction