# Antimicrobial/Anticoagulant Interaction Reference for Clinicians

Interactions between warfarin and antimicrobials can be placed into four broad categories: direct effect on the metabolism of warfarin, disruption of intestinal flora, vitamin K catabolism, and unknown interactions.

The most significant interaction that results in an elevated INR and increased risk of bleeding have been seen with antimicrobials that affect the metabolism of warfarin (azole antifungals, sulfamethoxazole/trimethoprim, macrolides, and quinolones). A summary of warfarin-antimicrobial interactions are listed in the table below.[1]

Ensuring that patients understand the risk of concomitant use and know when to follow-up is extremely important in preventing adverse drug events.

**It is suggested that warfarin patients have a follow-up INR evaluation**

- *Within 3–7 days after beginning antimicrobial therapy.*
- *Repeat 7–28 days post-discontinuation of therapy, based on the pharmacokinetics of the particular antimicrobial prescribed.*[1]

| Anticoagulation Effect | Antimicrobial Agent |
|---|---|
| Major Increase in INR | cefotetan, chloramphenicol, fluconazole, fluoroquinolones, itraconazole, ketoconazole, macrolides, mefloquine, metronidazole, miconazole (oral/topical/suppository), oseltamivir, proguanil, quinine, sulfamethoxazole/trimethoprim, sulfisoxazole, telithromycin, tetracyclines, tinidazole, and voriconazole |
| Moderate Increase in INR | aminoglycosides, amoxicillin, ampicillin, atovaquone, interferon α/β, isoniazid, oxacillin, penicillin, piperacillin, and ticarcillin |
| Moderate Decrease in INR | dicloxacillin, griseofulvin, nafcillin, and nevirapine |
| Major Decrease in INR | ribavirin, rifabutin, rifampin, and rifapentine |
| Increase or Decrease in INR | atazanavir, darunavir, fosamprenavir, indinavir, nelfinavir, ritonavir, saquinavir, terbinafine, and tipranavir |

[1] PL Detail-Document, Antimicrobial Drug Interactions and Warfarin. Pharmacist's Letter/Prescriber's Letter. August 2012

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