

# Antimicrobial/Anticoagulant Interaction Reference for Community Pharmacists

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 is listed in the table below.<sup>1</sup>

**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.<sup>1</sup>*

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 $\alpha/\beta$ , 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

It is important that patients are educated properly on their new medication regimen. When a provider issues a prescription for an antimicrobial, they do not always properly schedule a follow-up INR. When counseling on antimicrobials for patients on chronic warfarin therapy, there are questions that would help ensure the proper care of the patient:

**1. Was this medication prescribed by the same provider that manages your warfarin?**

- If no, contact the warfarin prescriber to notify them of the antimicrobial prescription.

**2. Do you have an INR scheduled in the next 7 days?**

- If no, contact the warfarin prescriber to schedule an INR.

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

