Update on Rifampin and Rifabutin Drug Interactions

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RIFAMPIN Rifampin is a potent inducer of both the hepatic and intestinal cytochrome P-450 (CYP) enzyme system and the P-glycoprotein (P-gp) transport system. Rifampin intracellular concentrations—and thus the extent to which rifampin is able to induce CYP3A—are strongly correlated with P-gp levels. P-gp is a transmembrane protein that is a member of the adenosine triphosphate-binding cassette family, a group of molecules that control concentrations of both endogenous and exogenous substances across cell membranes by functioning as cellular efflux pumps. P-gp is found at many sites throughout the body that are essential to drug bioavailability and distribution, such as the intestinal lumen, the liver, the kidney, and the blood-brain barrier.6 Why do primary care clinicians need to be aware of interactions with rifampin? Although it is primarily indicated for tuberculosis (TB), rifampin is also used for other infections (eg, as adjunctive antistaphylococcal therapy). In addition, even though health department physicians usually treat TB—and manage any resultant drug interactions—primary care clinicians may add new drugs for concurrent medical problems during the course of rifampin therapy. Table 1 shows some examples of well-documented rifampin interactions that have major clinical relevance. Noteworthy consequences include:

- Unplanned pregnancy resulting from the effect of rifampin on oral contraceptives.
- Loss of transplanted organs attributable to the interaction of rifampin with cyclosporine.

Other potentially important interactions are listed in Table 2. More recently reported rifampin interactions are summarized in Table 3. RIFABUTIN Rifabutin is used with increasing frequency in patients with HIV infection or AIDS, and new drug interactions with this agent continue to be reported. Although rifabutin interactions are usually less dramatic than rifampin interactions, many are clinically significant. Table 4 compares rifabutin and rifampin interactions with antiretroviral therapy. A FINAL CAVEAT When you prescribe rifampin or rifabutin, it is essential to screen for drug interactions. To avoid reduced therapeutic response, therapeutic failure, or toxic reactions when these agents—particularly rifampin—are added to or discontinued from medication regimens, be alert for interactions and manage them appropriately.

References: REFERENCES:
6. Schuetz EG, Schinkel AH, Relling MV, Schuetz JD. P-glycoprotein: a major determinant of


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