

Clinical Pearls

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Rifampin: Not Just for Infections Anymore

Cholestasis is a condition where bile cannot flow from the liver into the duodenum. It occurs secondary to many etiologies including primary biliary cirrhosis, gallstones, biliary trauma, and abdominal masses just to name a few. Pruritis, from the Latin verb *prurire*, or “to itch”, is a common symptom of cholestasis. Cholestatic pruritis is related to a number of chemical stimuli (“pruritogens,”) including bile acids and histamine which act together to cause an itching sensation throughout the body.

Rifampin is a semi-synthetic antibiotic produced by *Streptomyces mediterranei* and has actually been studied for the treatment of pruritis secondary to cholestasis. Being a potent inducer of the cytochrome P450 drug-oxidizing system, it is thought that rifampin can induce the hepatic metabolism of endogenous pruritogens, and compete with bile acids for re-uptake back into the liver, eliminating their detergent effects. It has also been suggested that rifampin, via its antimicrobial actions, reduces the synthesis of bile acids produced by bacteria in the intestinal lumen.

This is of course an off-label use of rifampin. The dose should start at 150 mg daily and subsequently be increased to a maximum of 600 mg daily based on clinical need. Obvious concerns include antibiotic resistance, drug interactions, and potential drug-induced hepatotoxicity. Therefore, it is generally recommended as a second line agent for cholestatic pruritis in patients that fail first line therapy (first line = cholestyramine and/or antihistamines).

References:

- 1) Mela M, Mancuso A, Burroughs AK. Review article: pruritis in cholestatic and other liver diseases. *Aliment Pharmacol Ther.* 2003; 17:857-70.
- 2) Cies JJ, Giamalis JN. Treatment of cholestatic pruritis in children. *Am J Health Sys Pharm.* 2007; 64: 1157-62.

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