



PIC QUESTION OF THE WEEK: 6/19/06

Q: Is there a reason for not using sulfasalazine in a patient receiving oral typhoid vaccine?

A: Typhoid fever is an acute, potentially life-threatening illness caused by the bacteria *Salmonella typhi* (*S. typhi*). Fever, sometimes up to 103° - 104° F, is one of the hallmarks of the disease. Symptoms include weakness, abdominal cramps, headache, and loss of appetite. Typhoid fever is transmitted by contaminated food, beverages, or water used for drinking or washing food. It is endemic in many non-industrialized regions of the world, especially Asia, Africa, Central and South America, and the Caribbean. Typhoid can be prevented by using one of two available vaccines. The intramuscular product (Typhim Vi) contains purified Vi capsular polysaccharide while the oral preparation consists of the live, attenuated Ty21a strain of *S. typhi*. The oral product is administered every other day for four days while the injection is given only once. Oral immunization should be completed at least one week before travel while the parenteral dose should be administered at least two weeks before exposure to typhoid bacterium. Antimicrobial agents, including sulfonamides, may inhibit growth of the Ty21a strain of *S. typhi*. This could result in a less than optimal immune response to the vaccine. It is generally recommended that oral vaccine not be administered for ≥ 24 hours after use of any antimicrobial agent. Mefloquine (Lariam) is frequently used to prevent malaria during foreign travel. It too should not be administered within 24 hours of the use of oral typhoid vaccine. Antimicrobials should not interfere with immune response to the injectable capsular polysaccharide vaccine. A significant portion of sulfasalazine is cleaved by colonic bacteria to sulfapyridine and 5-aminosalicylic acid (5-ASA; mesalamine). The systemically absorbed sulfapyridine could reduce viability of the Ty21a strain of *S. typhi* and decrease a patient's overall immune response. A MEDLINE search failed to identify cases where simultaneous use of sulfasalazine resulted in therapeutic failure of oral typhoid vaccine. However, the precaution against combined use of antimicrobial agents is included in all general references related to the drug as well as reviews of typhoid fever.

References:

- CDC. Travelers' Health: Yellow Book. Typhoid fever. <http://www2.ncid.cdc.gov/travel/yb/utills/ybGet.asp?section=dis&obj=typhoid.htm> (accessed 2006 June 10)
- CDC. Typhoid immunization recommendations of the ACIP. MMWR 1994;43(RR14):1-7. <http://www.cdc.gov/mmwr/preview/mmwrhtml/00035643.htm> (accessed 2006 June 10)

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The PIC Question of the Week is a publication of the Pharmaceutical Information Center, Mylan School of Pharmacy, Duquesne University, Pittsburgh, PA 15282

