



Helicobacter pylori

PIC QUESTION OF THE WEEK: 6/11/07

Q: What is meant by a *sequential* regimen in relation to the treatment of *H. pylori* infection?

A. The presence of *Helicobacter pylori* (*H. pylori*) is associated with a number of gastrointestinal disorders including peptic ulcer disease, gastric adenocarcinoma, chronic atrophic gastritis, and gastric mucosa-associated lymphoid tissue (MALT) lymphoma. In patients with peptic ulcer disease, eradication of the organism usually results in healing of lesions and prevention of disease recurrence. Treatment normally involves combinations of antimicrobials such as amoxicillin and clarithromycin in conjunction with proton pump inhibitors (PPIs). Tetracycline is an occasional component of these regimens and metronidazole is also incorporated, especially in patients with allergy to penicillin. Although some two-drug regimens (PPI plus antimicrobial) are FDA labeled for the indication, most guidelines suggest use of a triple combination (PPI plus two antimicrobials). In some cases of resistance, four-drug regimens such as Helidac® (bismuth subsalicylate, metronidazole, tetracycline, plus a PPI or H₂ antagonist) have proven successful in eradicating *H. pylori*. Recently, another four-drug regimen has been approved by the FDA. Pylera® contains bismuth subcitrate potassium, metronidazole, and tetracycline. The drugs are contained within one capsule, thus easing drug administration. Pylera® is administered in conjunction with any PPI. Because of the increasing frequency of *H. pylori* resistance to antimicrobials such as clarithromycin and metronidazole, alternative treatment combinations have been suggested. Sequential regimens reduce the length of treatment of individual agents while introducing an antimicrobial to which the organism has not been exposed. There is some evidence that sequential use of two antimicrobial regimens may be more effective than a standard 10-14 day course of a single group of drugs. The most commonly cited sequential regimen consists of rabeprazole (Aciphex®) 20 mg daily plus amoxicillin 1 g twice daily for five days. This is followed by another five-day course of clarithromycin 500 mg and tinidazole (Tindamax®) 500 mg twice daily along with rabeprazole. A similar regimen that substitutes pantoprazole (40 mg twice daily) for rabeprazole has recently been published. Eradication rates in these studies are consistently ≥ 90%. Sequential regimens are being cited more frequently in the literature, but have yet to be endorsed by the American College of Gastroenterology which has not updated its treatment guidelines for *H. pylori* since 1998.

References:

- Vaira D, Zullo A, Vakil N, et al. Sequential therapy versus standard triple-drug therapy for *Helicobacter pylori* eradication. *Ann Intern Med* 2007;146:556-63.
- Zullo A, Vaira D, Vakil N, et al. High eradication rates of *Helicobacter pylori* with a new sequential treatment. *Aliment Pharmacol Ther* 2003;17:719-26.
- Howden CW, Hunt RH. Guidelines for the management of *Helicobacter pylori* infection. *Am J Gastroenterol* 1998;93:2330-8. <http://www.acg.gi.org/physicians/guidelines/ManagementofHpylori.pdf>. Accessed June 4, 2007

Lynn M. Bellini and Emily J. Hughes, Pharmacy Clerkship Students

The PIC Question of the Week is a publication of the Pharmaceutical Information Center, Mylan School of Pharmacy, Duquesne University, Pittsburgh, PA 15282 (412.396.4600).