Gastroenteritis Linked to *H. pylori* Transmission

BY TIMOTHY F. KIRN
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CHICAGO — How is *Helicobacter pylori* transmitted in industrial countries with adequate sanitation?

Exposure to an infected person who is vomiting may be one way, according to findings from a large, 4-year study of California families with an index case of gastroenteritis.

The study found that the chance of acquiring *H. pylori* was 2.2 times higher when a person was exposed to a person with *H. pylori* infection who also had a case of infectious gastroenteritis than it was when a person lived with an *H. pylori*–infected individual who did not have infectious gastroenteritis.

The chance rose to 2.6 times if the *H. pylori*–infected person had vomiting with the gastroenteritis. Diarrhea also increased the risk, but only 2.0-fold, Sharon Perry, M.D., said at the annual Digestive Disease Week.

Figuring out how *H. pylori* is transmitted has been a "Holy Grail" of epidemiology for 20 years, said Dr. Perry, an epidemiologist at the Parsonnet Laboratory of the Division of Geographic Medicine and Infectious Diseases at Stanford University.

"This is not the Holy Grail study, but we may have visited the scene of the crime," she said.

The study was conducted by contacting families in which an individual was seen for an episode of infectious gastroenteritis at any one of 15 clinics in the San Francisco Bay area. Of all the cases seen, 909 families agreed to participate in the study and were visited twice—first around the time of the gastroenteritis and again 3 months later. The family members were questioned, and stool and serology samples were collected.

Most of the families were Hispanic and lived in fairly crowded circumstances, Dr. Perry said.

Among 1,792 household contacts of a person with gastroenteritis, the study found 30 cases of individuals who were not infected with *H. pylori* at the first visit but were 3 months later, for an overall annualized rate of infection of 7%.

Seven of those new cases occurred in households without a person already infected with *H. pylori*, for an annualized rate of 4% for those households.

Thirteen new cases occurred in households were there was a person infected with *H. pylori* already, but that person was not the one who had infectious gastroenteritis, for an annualized infection rate of 7%. And 10 new cases occurred in households were a person infected with *H. pylori* initially was the same one who had infectious gastroenteritis, for an annualized infection rate of 11%, Dr. Perry said.

Half the new cases occurred in children less than 2 years of age. ■

Levofloxacin Looks Effective for Eradication of H. pylori

BY TIMOTHY F. KIRN
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CHICAGO — Levofloxacin-based therapy is superior to the other commonly used antibiotic combinations for *Helicobacter pylori* eradication, both as first and as second-line treatment, according to presentations at the annual Digestive Disease Week.

Levofloxacin-based therapy is becoming popular as salvage therapy after initial antibiotic therapy has failed, as occurs in perhaps 25% of initial treatments, said Richard J. Saad, M.D., of the division of gastroenterology at the University of Michigan, Ann Arbor. But reports on its efficacy rate have varied, and it has not been clear how triple therapy using levofloxacin compares with the more standard quadruple therapy used for patients who have failed eradication.

So Dr. Saad and colleagues performed a metaanalysis of trials reported since 2002.

Their analysis showed that triple treatment with levofloxacin (Levaquin), amoxicillin, and a proton-pump inhibitor for 10 days was 40% more likely to result in *H. pylori* eradication than quadruple therapy with bismuth subsalicylate, tetracycline, metronidazole, and a proton-pump inhibitor.

The analysis indicated that the levofloxacin-based therapy has a success rate of 87%, compared with a rate of 60% for standard quadruple therapy, Dr. Saad said.

Patients who used a levofloxacin also were 52% less likely to have side effects, and 70% less likely to discontinue therapy due to side effects.

In addition, the analysis showed that 10 days treatment with the levofloxacin-based therapy was significantly superior to 7 days (an eradication rate of 87%, vs. 68%), and that twice daily dosing of the levofloxacin (250 mg) was somewhat better than once daily dosing (500 mg), but only marginally so. Dr. Saad reported no conflicts of interest concerning the medications studied.

In a separate presentation, levofloxacin-based initial therapy had a higher eradication rate than two other commonly used combinations, Antonio Gasbarrini, M.D., said at the meeting.

His group found that a 7-day course of treatment with levofloxacin (500 mg, once daily), clarithromycin (500 mg, twice daily), and esomeprazole (20 mg, twice daily) resulted in eradication of *H. pylori* in 87 out of 100 patients, said Dr. Gasbarrini, of Gemelli Hospital, Catholic University of the Sacred Heart, Rome.

In comparison, a 7-day course of treatment with clarithromycin (500 mg, twice daily), amoxicillin (1 g, twice daily), and esomeprazole (20 mg, twice daily) resulted in eradication in 75 out of 100 patients, and a 7-day course of clarithromycin (500 mg, twice daily), metronidazole (500 mg, twice daily), and esomeprazole (20 mg, twice daily) resulted in eradication in 72 out of 100 patients.

Antibiotic resistance is the main reason initial treatment of *H. pylori* fails, and the known resistance rates in Italy (10%-30%) probably justify using the levofloxacin-based regimen as the first-line therapy, said Dr. Gasbarrini, who reported no conflicts of interest. ■

CLINCAL CAPSULES

Screening Tests for Gastric Ca

A combination of a test for serum pepsinogen status and antibodies to *Helicobacter pylori* may be a good way to screen patients who are at risk for gastric cancer, according to the results of a prospective cohort study.

Hirotsugo Watabe of the University of Tokyo and associates followed 6,983 Japanese individuals for nearly 5 years after an initial, routine health check-up. Gastric cancer developed in 7 (0.04%) of 3,324 patients with normal pepsinogen status and a negative *H. pylori* antibody test, 6 (0.06%) of 2,134 patients with normal pepsinogen status and *H. pylori* positivity, 18 (0.36%) of 1,082 patients with pepsinogen status indicative of gastric atrophy and *H. pylori* positivity, and 12 (0.60%) of 443 patients with pepsinogen status indicative of gastric atrophy and a negative *H. pylori* test (Gut 2005;54:764-8).

The significant, independent risk factors for developing gastric cancer were being members of the latter two study groups, as well as being older than 60 years and of male gender. The highest annual incidence rates of the cancer were recorded in men (1.8%) and women (1.5%) older than 60 years with pepsinogen status indicative of atrophy and negative *H. pylori* results. It is known that the *H. pylori* burden drops substantially and that the *H. pylori* antibodies disappear in patients with an atrophic level of pepsinogen.

The investigators defined pepsinogen status as atrophic when the serum level of pepsinogen I was 70 ng/mL or less and the pepsinogen I/II ratio was 3 or less. The patients had an average of 5.1 annual endoscopic exams.

Evidence of Gastric Ca Prevention?

Treating *Helicobacter pylori* infection does appear to prevent stomach cancer, according to an 8-year study from China.

Liya Zhou, M.D., of the department of gastroenterology at the Third Hospital at Beijing University and colleagues followed 552 individuals living in an area with a high incidence of gastric cancer, in Shandong Province. The participants had been part of an *H. pylori* eradication trial. Almost half had been treated in the trial, of whom 89% had become *H. pylori* negative at the end of treatment, Dr. Zhou reported at the annual Digestive Disease Week.

At 8 years, there were 6 cases of gastric cancer among the 306 individuals who had not been treated or who had not been treated successfully, and there was 1 case among the 246 individuals who had been treated successfully.

The patients also underwent endoscopy at 8 years, and the endoscopy findings showed that successfully treated patients had much less of the type of pathologic atrophy and irritation that may be associated with *H. pylori* infection.

H. pylori Boosts Healing With PPI

The presence of *Helicobacter pylori* infection has significant positive effects on the rate of healing during proton pump inhibitor therapy in patients with erosive gastroesophageal reflux disease and the rate of complete resolution of heartburn in patients with nonerosive reflux disease, reported Peter Malfertheiner, M.D., of Otto-von-Guericke University, Magdeburg, Germany, and his colleagues.

Among 2,867 patients with erosive gastroesophageal reflux disease in a prospective study, those who did not have Barrett's esophagus (BE) had a higher rate of healed erosions after 8 weeks of treatment with esomeprazol than those with BE (91% vs. 72%). In the 417 patients with BE, those who tested positive for *H. pylori* infection at baseline had a significantly greater healing rate at 8 weeks than patients who tested negative for the infection (83% vs. 70%) (Gut 2005;54:746-51).

In the same study, 2,740 patients had nonerosive reflux disease. After 8 weeks of treatment, patients who tested positive for *H. pylori* infection at baseline were slightly more likely to have complete resolution of heartburn than patients who tested negative for the infection (68% vs. 64%).

Statins May Curb Colorectal Ca Risk

The use of statins for at least 5 years appears to be associated with a significant, 47% reduction in the relative risk of developing colorectal cancer, according to findings from a case-control study.

Jenny N. Poynter of the University of Michigan, Ann Arbor, and her associates reported on 1,953 patients with colorectal cancer and 2,015 control patients from Israel. The results did not change substantially when the investigators compared unmatched and matched control patients with those who had colorectal cancer. The association also remained unchanged after making adjustments for age, sex, ethnic group, sports participation, hypercholesterolemia, history of colorectal cancer in a first-degree relative, vegetable consumption, and use of aspirin or other nonsteroidal antiinflammatory drugs. The most commonly used statins—simvastatin (Zocor) and pravastatin (Pravachol)—were associated with similar relative reductions in the risk of colorectal cancer (N. Engl J. Med. 2005; 352:2184-92).

"It is too early to recommend statins as chemopreventive agents against colorectal cancer outside the context of a clinical trial," wrote Ernest Hawk, M.D., and Jaye L. Viner, M.D., of the National Cancer Institute, in an editorial (N. Engl. J. Med. 2005;352:2238-9).

—Jeff Evans and staff reports