Fatima Abdur-Rahman, Yuliya Shaposhnikova, Vira Zlatkina

helicobacter pylori infection: the latest in diagnosis and treatment

Kharkiv National Medical University (Department of clinical pharmacology)
Kharkiv, Ukraine

Helicobacter pylori is strongly linked to peptic ulcer disease and is classified as a group 1 carcinogen by the World Health Organization's International Agency for Research on Cancer.

The aim of this study was to review and update general practitioners on recommendations for testing and treating H. pylori infection, practical aspects of diagnostic methods, proof of cure testing to prove eradication, and the management of eradication failure and recurrent infection.

Materials and methods. We were conducted selection, referencing and the following synthesis of more than 35 medical articles devoted to modern methods of diagnosis and treatment of H. pylori infection.

Results and discussion. H. pylori is present in 95% of patients with duodenal ulcers and in 70% of those with gastric ulcers. It is typically transmitted via the fecal-oral route during early childhood and persists for decades. The bacterium is a known cause of gastric and duodenal ulcers and is a risk factor for mucosa-associated lymphoid tissue (MALT) lymphoma and gastric adenocarcinoma.

The history and physical examination are important to identify patients at risk of ulcer, perforation, bleeding, or malignancy. However, a systematic review of models using risk factors, history, and symptoms found that they did not reliably distinguish between functional dyspepsia and organic disease. Therefore, the test-and-treat strategy for H. pylori is recommended for patients with dyspepsia who have no alarm symptoms such as unexplained weight loss, progressive dysphagia, odynophagia, recurrent vomiting, family history of gastrointestinal cancer, overt gastrointestinal bleeding, abdominal mass, iron deficiency anemia, or jaundice. Endoscopy is recommended for patients who are 55 years or older, or who have alarm symptoms.

Urea breath tests require the ingestion of urea labeled with the nonradioactive isotope carbon 13 or carbon 14.Specificity and sensitivity approach 100%. Stool antigen tests using monoclonal antibodies are as accurate as urea breath tests if a validated laboratory based monoclonal test is used. They are cheaper and require less equipment than urea breath tests.

Eradication of H. pylori is recommended in all patients with PUD. First-line therapy should have an eradication rate of more than 80%. Because pretreatment susceptibility is rarely known to the primary care physician, therapy must be chosen empirically based on regional bacterial resistance patterns, local recommendations, and drug availability. Test of cure for all patients after therapy is neither cost-effective nor practical. Indications for eradication testing with the urea breath test or stool antigen test include H. pylori–associated ulcer, continued dyspeptic symptoms, H. pylori–associated MALT lymphoma, andresection for gastric cancer. When indicated, eradication testing should be performed at least four weeks after completion of therapy.

The most important predictors of treatment failure with H. pylori eradication therapy include poor compliance and antibiotic resistance. After two failed eradication attempts, current guidelines advocate antimicrobial sensitivity testing. Culture should be performed in specialised laboratories, as the procedure is technically demanding. Several studies have shown that higher eradication rates are obtained when antibiotics are chosen based on susceptibility testing, and this seems to be a cost effective approach.

Conclusions. Eradication rates may also be lower with 7 versus 14-day regimens. Bismuth-containing quadruple regimens for 7–14 days are another first-line treatment option. Sequential therapy for 10 days has shown promise in Europe but requires validation in North America. The most commonly used salvage regimen in patients with persistent H. pylori is bismuth quadruple therapy. Recent data suggest that a PPI, levofloxacin, and amoxicillin for 10 days is more effective and better tolerated than bismuth quadruple therapy for persistent H. pylori infection.