

# MANAGEMENT OF *HELICOBACTER PYLORI*-ASSOCIATED DISEASES: SURVEY OF ATTITUDES AND APPLIED ALGORITHMS IN PRIMARY HEALTH CARE IN BOSNIA AND HERZEGOVINA

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**SUMMARY** – The aim of the study was to identify key decision points in the management of *Helicobacter (H.) pylori*-associated diseases by general practitioners (GPs) in Bosnia and Herzegovina (BH), in relation to standard protocols. A questionnaire especially designed for this survey was distributed to 500 randomly selected primary health care physicians in Bosnia and Herzegovina. Two hundred and sixty-four of them responded (response rate 53%), and their answers were included in the study and analyzed. It appears that the most important source of information about *H. pylori* management were pharmaceutical industry-sponsored symposia (53%). The main obstacle in the application of full-scale worldwide accepted diagnostic and therapeutic protocols was the lack of inexpensive and easy-to-get diagnostic test. Seventy-one percent of GPs treated *H. pylori* infection in their practice. Of those who prescribed eradication therapy only 9% had the evidence of infection by rapid urease test before starting eradication. More than two-thirds of the surveyed GPs prescribed *H. pylori* eradication therapy, but only one tenth based such therapeutic decision on the positive evidence for the presence of *H. pylori* infection because of the lack of proper laboratory test.

**Key words:** *Helicobacter infection – drug therapy; Anti-bacterial agents – therapeutic use; Gastroenterology – education; Health – knowledge – attitudes – practice*

## Introduction

The discovery of *Helicobacter (H.) pylori* induced new strategies in the management of *H. pylori*-associated diseases such as chronic gastritis, gastric and duodenal ulcer, gastric carcinoma, and MALT lymphoma. There is a worldwide trend that its diagnosis and treatment should be transferred to primary health care (PHC) level<sup>1</sup> because the new diagnostic protocols are simple and reliable, and new pharmaceuticals omnipresent and efficient. The diagnostic and therapeutic algorithm based on random multilevel international studies has been accepted as the Maastricht 2-2000 Consensus Report.

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Received January 27, 2006, accepted in revised form August 17, 2006

In Bosnia and Herzegovina (BH) as a transition country, the only diagnostic tool to make the diagnosis of *H. pylori* at PHC level is rapid urease test. Other diagnostic methods such as serology, histology, culture and urea breath test are available in clinical settings and in private practice. The main objective of this study was to identify the factors influencing the decision making process in the management of *H. pylori*-associated diseases in PHC in BH.

## Methods

The study was cross-sectional. A questionnaire was created to serve the purposes of this survey (Table 1). Some questions consisted of appropriate and inappropriate options to examine real attitude in the management of *H. pylori* in PHC. To enforce good response rate, we stressed that the survey was not a test of knowledge

Table 1. Questionnaire concerning management of *Helicobacter pylori*-associated diseases by general practitioners in Bosnia and Herzegovina

**Question 1. What is the most important source of your information about the management of HP-associated diseases?**

- medical journals
- communication with local gastroenterologist
- symposia and lectures sponsored by pharmaceutical companies
- Internet

**Question 2. Would you eradicate HP infection in patients with:**

(multiple answers allowed)

- ulcer disease
- functional dyspepsia
- gastroesophageal reflux disease (GERD)
- patients having first-degree relative with gastric cancer
- on patients' demand

**Question 3. What is the major obstacle in HP management?**

- insufficient information about it
- impossibility of diagnostic testing
- inability of patients to buy prescribed drugs

**Question 4. Do you eradicate HP in your practice?**

- yes
- no

**Question 5. Do you confirm HP infection before drug prescription?**

- yes
- no

**Question 6. Which drug or drug combination do you use in HP eradication?**

- proton pump inhibitor (PPI)-based triple drug regimen
- PPI-based double drug regimen
- some other drug or drug combination (name it)

but an assessment of opinions. The questionnaire was distributed and collected from February to April 2004. Of 500 distributed questionnaires, 264 (52.8%) were fully answered and returned. The questionnaire was anonymous and its completion took about 15 minutes. The questionnaire consisted of 6 questions and was test-

ed in a pilot study with 28 physicians. We focused our survey on: 1) identification of the principal information source about *H. pylori* detection and treatment; 2) consistent description of the approach to *H. pylori* eradication in *H. pylori*-associated diseases; 3) physicians' opinion about the most prominent obstacle to the proper management of *H. pylori*-related diseases; 4) applied algorithms of eradication in the current practice; 5) diagnostic *H. pylori* confirmation before drug prescription; and 6) the preferred eradication protocol.

## Results

The majority of respondents (141/264; 53.4%) reported that the most important source of information about the management of *H. pylori*-associated diseases were symposia sponsored by pharmaceutical companies, 76 (28.8%) pointed to printed medical journals as the major information source, 34 (12.9%) stressed good communication with their local gastroenterologist, and only 13 (4.9%) gathered all kind of electronic information from the Internet, including articles from medical journals and web sites (Fig. 1).

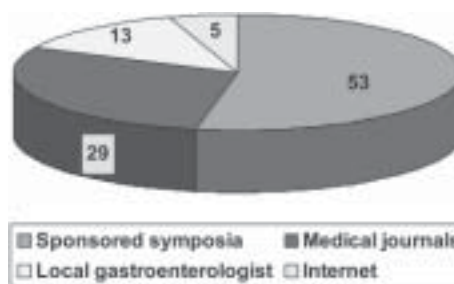


Fig. 1. Most important sources of information to general practitioners in Bosnia and Herzegovina on the management of *Helicobacter pylori*-associated diseases (in %).

Almost all GPs (253/264; 95.8%) claimed that they would eradicate *H. pylori* in patients with ulcer disease, 111 (42.1%) in patients with gastroesophageal reflux disease (GERD), 61 (23.1%) in patients having a close relative with gastric cancer in their family history, 55 (20.8%) in functional dyspepsia, and 7 (2.7%) would prescribe medicaments on patients' demand (Fig. 2).

One hundred and sixty-seven (63%) physicians stressed the poorly available and expensive diagnostic tests as a major obstacle in *H. pylori* management; 82 (31%) as the main problem reported the patients' low-

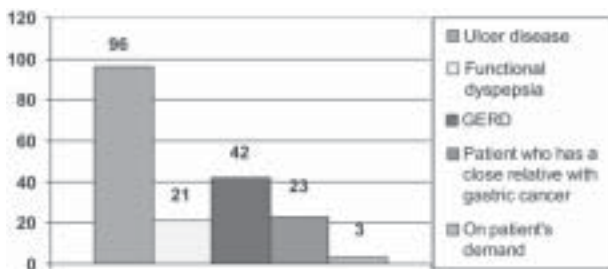


Fig. 2. Approach to eradication of *Helicobacter pylori* by general practitioners in Bosnia and Herzegovina (in %).

income status, which prevented them to buy the prescribed drugs as the treatment for *H. pylori* infection is not covered by health insurance, and only 15 (6%) claimed that the lack of information about the management of *H. pylori* infection was a serious obstacle to proper treatment (Fig. 3).

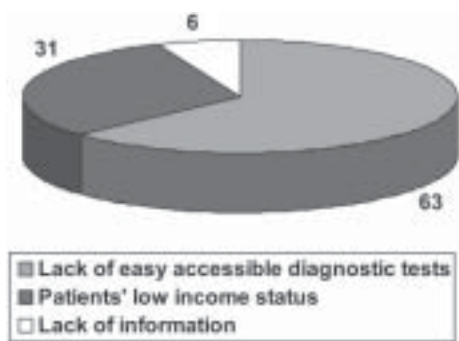


Fig. 3. General practitioners' opinion on major obstacles to proper management of *H. pylori*-related diseases in Bosnia and Herzegovina (in %).

The majority of PHC physicians (188/264; 71.2%) claimed that they regularly and routinely eradicated *H. pylori* infection in their practice (Fig. 4). On the other

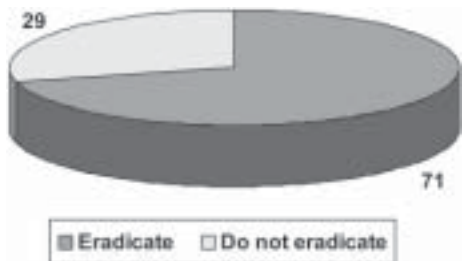


Fig. 4. Percent of general practitioners claiming they regularly and routinely eradicated *H. pylori* infection in their practice in Bosnia and Herzegovina.

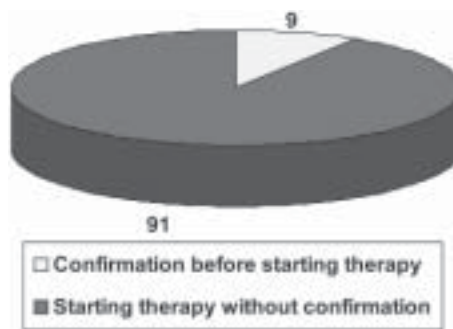


Fig. 5. Confirmation of the presence of *H. pylori* infection by rapid urease test by general practitioners who prescribed eradication therapy in Bosnia and Herzegovina (in %).

hand, of those who prescribed eradication therapy only 17/188 (9.0%) had had positive evidence for *H. pylori* infection by rapid urease test before they started the treatment (Fig. 5). In other words, only 6.4% (17/264) of all surveyed physicians both confirmed the existence of *H. pylori* and introduced the eradication protocol to treat it.

Four-fifths of PHC physicians who prescribed eradication therapy (154/188; 81.9%) used a proton pump inhibitor (PPI)-based triple drug regimen, 21 (11.2%) PPI-based double therapy, 9 (4.8%) histamine 2 receptor antagonist-based double drug regimen, and 4 (2.1%) prescribed some antimicrobial agents (Fig. 6).

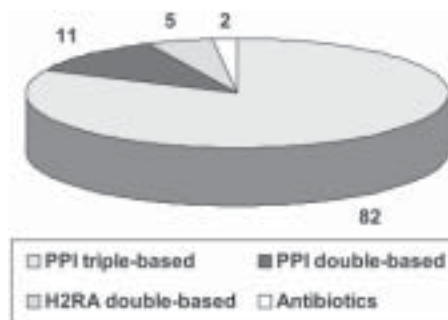


Fig. 6. Treatment for *Helicobacter pylori* used by general practitioners in Bosnia and Herzegovina (in %).

### Discussion

Information from symposia sponsored by pharmaceutical industry is the main source of information in BH, so that knowledge about therapy could probably be biased. In Scandinavian countries, most PHC physicians pointed to the national medical journal as the most important source of information<sup>2</sup>. Pharmaceutical compa-

nies in BH, following their market strategies, are prone to suggest eradication therapy, whether or not the evidence for the presence of *H. pylori* has been confirmed. Such an approach may be acceptable in case of duodenal ulcers because the presence of *H. pylori* is confirmed in 95% of these patients<sup>3</sup>, whereas in all other circumstances the search for the evidence for the presence of *H. pylori* is mandatory.

The approach to eradication of *H. pylori*-associated diseases in BH is otherwise similar to the approach in developed countries. In Nordic countries, 90% of gastroenterologists and GPs would eradicate *H. pylori* in duodenal or gastric ulcers, and 57% would treat *H. pylori*-positive non-ulcer dyspepsia<sup>2</sup>. In the area of Barcelona, 96% of PHC physicians would eradicate *H. pylori* in gastric and duodenal ulcers, and 15% in functional dyspepsia<sup>4</sup>. In Italy, 64% of GPs blindly eradicate *H. pylori* in ulcer disease and 66% in functional dyspepsia, most of them using proton pump inhibitor triple based therapy<sup>5</sup>.

Rapid urease test is the only *H. pylori* assay used in BH which is rarely used in PHC. In such circumstances, many PHC physicians are prone to start eradication therapy without confirmation of *H. pylori* infection. In Singapore, 50% of GPs prescribe eradication therapy and 70% of them would confirm *H. pylori* infection before prescription. The poor access to diagnostic laboratories equipped to confirm the infection was the main reason for withholding eradication<sup>3</sup>. In Samsun, Turkey, 15.6% of PHC physicians reported that they had never used any test for *H. pylori*<sup>6</sup>. Serology and urea breath test are available to 48% and 42% of Hungarian PHC physicians, respectively<sup>7</sup>.

An up-to-date eradication treatment has to be based on recommendations resulting from the Maastricht 2-2000 Consensus Report<sup>8</sup>. Still, a number of PHC physicians, almost 1/5 (18%) of them in BH, are prone to prescribe an obsolete, non-(PPI)-based triple drug regimen. A survey of PHC physicians from 29 countries has shown that PPI-based triple treatment was prescribed by 89% of respondents<sup>9</sup>. In Peru, 60% of GPs used inappropriate protocols for *H. pylori* eradication<sup>10</sup>. Only 70% of hospitalized Medicare patients with peptic ulcer disease who tested positive for *H. pylori* were treated with antimicrobial therapy<sup>11</sup>. The situation has changed in the last few years. According to Sharma and Howden<sup>12</sup>, in the United States PHC physicians recommend treatment for *H. pylori* positive duodenal and gastric ulcer in 90% and 82% of cases, respectively. According to

O'Connor<sup>13</sup>, GPs were adopting *H. pylori* eradication therapy for peptic ulcer later than gastroenterologists, and more often were prescribing therapy of doubtful efficacy. In the U.S., 50% of PHC physicians and 29% of gastroenterologists started anti-secretory therapy in patients with peptic ulcer disease without testing for the presence of *H. pylori*<sup>14</sup>. Information on *H. pylori* has become common medical knowledge in BH much later than in developed world. First reports on the significance of *H. pylori* were disseminated among PHC physicians in Nordic countries in 1992<sup>2</sup>, and in BH after 1997, because of scientific isolation caused by war.

Better education could improve the understanding of *H. pylori*-associated diseases and change the practice of PHC physicians. Additional efforts will be needed to educate PHC physicians properly about the world-wide adopted current principles in the *H. pylori* diagnosis and treatment<sup>15</sup>, since at present an unacceptably high number of them treat their patients in non-evidence based manner, too often using regimens of questionable efficacy.

The endeavors to change PHC physicians' attitudes should be disseminated through regional medical journals<sup>2</sup>. Similar attention should be paid when designing curricula at postgraduate training centers or in the frame of Continuing Medical Education. Specific education programs based on the development of practical skills, such as testing and treating *H. pylori* infection, could be surely an added value. Official restrictions should be applied against ineffective, expensive, and obsolete eradication regimens.

Proper education can certainly eradicate therapeutic options of questionable value; still scarce diagnostic resources in BH will remain the main obstacle to the comprehensive *H. pylori* management. As the availability of diagnostic equipment increases the number of *H. pylori* eradicating GPs, pharmaceutical industry should be highly motivated to help them purchase such devices, especially the non-invasive urea breath test.

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#### Sažetak

### LIJEČENJE BOLESTI UDRUŽENIH S *HELICOBACTER PYLORI*: PREGLED STAVOVA I ALGORITAMA U PRIMARNOJ ZDRAVSTVENOJ SKRBI U BOSNI I HERCEGOVINI

M. Mimica

Cilj studije bio je utvrditi ključne odluke u liječenju bolesti udruženih s *Helicobacter (H.) pylori* koje donose liječnici opće prakse u Bosni i Hercegovini u odnosu na standardne protokole. Anketni list izrađen upravo za ovaj pregled razaslan je 500 nasumce odabranih liječnika opće prakse u Bosni i Hercegovini, od kojih je 264 (53%) odgovorilo; njihovi su odgovori uključeni u studiju i analizirani. Analiza je pokazala kako su simpoziji uz potporu farmaceutske industrije najvažniji izvor podataka o liječenju *H. pylori* (53%). Glavna prepreka primjeni cjelokupnog širom svijeta prihvaćenog dijagnostičkog i terapijskog protokola je nedostatak jeftinog i lako dostupnog dijagnostičkog testa. Sedamdesetjedan posto liječnika opće prakse liječi infekciju *H. pylori* u svojim ordinacijama. Od onih koji propisuju liječenje iskorjenjivanjem samo ih 9% ima dokaze infekcije dobivene brzim testom ureaze prije uvođenja terapije iskorjenjivanjem. Više od dvije trećine liječnika opće prakse iz ove studije je propisivalo terapiju iskorjenjivanja *H. pylori*, ali ih je zbog nedostatka odgovarajuće laboratorijske pretrage samo jedna desetina takvu terapijsku odluku temeljila na sigurnim dokazima prisutnosti infekcije *H. pylori*.

Ključne riječi: *Infekcija Helicobacter – liječenje lijekovima; Antibakterijski lijekovi – terapijska primjena; Gastroenterologija – izobrazba; Zdravlje – znanje – stavovi – praksa*