

Endoscopic and histologic findings in Iranian patients with heartburn

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Background: Heartburn is a common manifestation of gastroesophageal reflux disease. Barrett's esophagus and esophageal adenocarcinoma, known complications of this disease, appear to be less prevalent in Asia than in Western countries. We looked for endoscopic and histologic evidence of Barrett's esophagus in Iranian patients with heartburn. **Methods:** During September 2001 to September 2003, endoscopy was done in all patients with heartburn, either lasting longer than 3 months (n=1182) or for 1-3 months but resistant to 4 weeks of omeprazole therapy (n=66). Biopsy was taken from columnar-lined mucosa above the GE junction, at 5 cm above the Z line in normal-appearing mucosa, and from any abnormal areas. **Results:** Of the 1248 patients (mean age 45 [SD 15.5] years, 750 men; duration of heartburn 68 [SD 87.5] months), 960 (66.5%) had erosive esophagitis and 30 (2.4%) had Barrett's esophagus, including 10 and 20 with long- and short-segment involvement, respectively. Of 134 patients with normal-appearing mucosa, 122 had histologic evidence of esophagitis. **Conclusion:** Barrett's esophagus may be less common in Iran than in Western countries, despite presence of severe heartburn and erosive esophagitis. [*Indian J Gastroenterol* 2005;24:236-238]

Symptoms of gastroesophageal reflux disease (GERD) are one of the commonest complaints in the Western population.¹ In a study of 216,720 adults in the United States, GERD was the most common (59%) chronic acid-related disorder.²

Patients with long-standing GERD are susceptible to Barrett's esophagus (BE).³ BE is defined as intestinal-type metaplasia of the mucosa lining the tubular esophagus and excludes intestinal metaplasia of the cardia.⁴ This specialized columnar epithelium may be complicated by adenocarcinoma.^{4,5} The incidence of adenocarcinoma of the esophagus has risen rapidly in the US and Western Europe,⁶ and has nearly quadrupled during the past two decades.^{7,8} Several risk factors including cigarette smoking and obesity may have contributed to this trend.⁹ A simultaneous decline in the frequency of *Helicobacter pylori* infection suggests that this infection may

protect against the development of GERD, BE and esophageal adenocarcinoma.^{8,10,11}

In Asia, complications of GERD such as BE and esophageal adenocarcinoma are believed to be less common than in the Western population.¹¹ In view of this, and a high rate of *H. pylori* infection (>85% in most areas) in the Iranian population,^{12,13} we studied clinical, endoscopic and histological findings in patients with heartburn.

Methods

During September 2001 to September 2003, all patients referred to our gastroenterology clinic with heartburn were enrolled. Those who had symptoms at least once daily, either for longer than 3 months (1182 cases; 94.7%), or for 1-3 months but with no response to 4 weeks' therapy with omeprazole 40 mg twice daily (66 cases; 5.3%), underwent endoscopic examination. Severity of esophagitis was graded according to the Los Angeles classification.¹⁴

At least four biopsies were taken from the mucosa below the Z line and above the gastroesophageal junction as well as from any grossly abnormal areas above the GE junction, during endoscopy. Also, four-quadrant biopsies were taken 5 cm above the Z line in case of normal-appearing esophagus. BE was diagnosed by the presence of intestinal-type metaplasia in esophageal biopsy specimens, which were assessed by a pathologist who was unaware of clinical and endoscopic findings. It was classified as long-segment BE (LSBE) if at least 3 cm of the esophagus was lined with columnar epithelium, and as short-segment BE (SSBE) if columnar-lined mucosa involved less than 3 cm of esophagus.⁵ At histology, esophagitis was graded as mild, moderate and severe based on the number of polymorphs in the lamina propria and infiltrating the overlying squamous epithelium of the esophagus.¹⁵

Variables studied were sex, age, duration of heartburn, and existence and type of BE (LSBE or SSBE). Spearman's rank correlation was used to study the relationship of different variables with each other. Statistical analysis was performed using MSTATC software (Michigan State University; Version 1.42).

Results

Endoscopic findings in the 1248 patients included in the study (mean age 44.1 [SD 15.5] years; 750 [60.1%] male) are shown in the Table. The mean duration of heartburn in these patients was 68.1 (SD 87.5) months. The severity of erosive esophagitis was as follows: grade A in 222 (15.4%), grade B in 440 (30.5%), grade C in 212 (14.7%), and grade D in 86 (6.0%) patients. Twenty patients with grade D erosive esophagitis had history of dysphagia and had luminal narrowing at endoscopy.

Of the 298 (20.6%) patients in whom esophageal mucosal biopsies were obtained (pinkish mucosa 104, distal esophageal nodularity 60, and normal mucosa 134), histological examination showed BE in 30 (2.4%) patients; 10 patients had LSBE and 20 had SSBE. Of the 10 patients with LSBE, four had grade D erosive esophagitis, four had esophageal stricture, and two did not have erosive esophagitis. Of 20 patients with SSBE, 16 had endoscopic evidence of esophagitis (grade A 10, grade B 6), and 4 did not have endoscopic esophagitis.

Histological findings in 134 patients with endoscopically normal esophageal mucosa were as follows: mild esophagitis in 54 (4.3%), moderate esophagitis in 60 (4.8%), severe esophagitis in 8 (0.64%), and no pathology in 12 (0.96%) cases.

On multivariate analysis, age, gender and duration of heartburn had no independent relationship with the presence or type of BE.

Discussion

Heartburn is the most commonly recognized manifestation of GERD.¹ It has been suggested that history of heartburn alone is usually sufficient to confirm the diagnosis of GERD.¹¹ In one study, the presence of heartburn had sensitivity of 78% and specificity of 60% for the presence of GERD, as defined by prolonged esophageal pH monitoring.¹⁵ In our study, 66.5% of patients with prolonged or

severe heartburn had various grades of esophageal erosions at endoscopy and 122 patients (9.8%) with normal appearing mucosa had histologic esophagitis.

A major reason for investigating patients with chronic symptoms of GERD is to recognize BE,⁴ a major risk factor for adenocarcinoma.¹⁶ Some experts recommend at least one endoscopy to exclude BE during the lifetime of a patient with GERD. The specific criteria to select patients to screen for BE are not yet defined.⁴

The epidemiology of BE is incompletely described.⁴ Although less than 1% of the general Western population has BE, 5%-15% of those with long-term reflux symptoms will have BE of some length by endoscopic screening;^{1,3,17} 3%-5% of such patients have LSBE and 10%-15% have SSBE.⁸ In a study from the US on 348 persons with heartburn of any duration, 5.7% had SSBE and 2.6% had LSBE.¹⁸ In the current study, 2.4% of our patients had BE, including 0.8% with LSBE and 1.6% with SSBE. Male gender, white race, long history of symptoms (>5 years), and age more than 50 years have been suggested as risk factors for BE in GERD patients.^{4,8,11} The overall prevalence of BE in our population was much lower than that in the Western population, despite prolonged or severe heartburn. It may be explained by a higher prevalence of *H. pylori* infection in the population.

In conclusion, the prevalence of Barrett's esophagus is low in our patients with prolonged or severe heartburn, despite a high prevalence of erosive esophagitis.

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Table: Endoscopic findings in 1248 patients with heartburn

Lesions	Rate (%)	Comment
Erosive esophagitis (EE)	960 (76.9)	
Columnar-type epithelium	104 (8.3)	60 cases with EE
Erosive duodenitis	76 (6.1)	60 cases with EE
Duodenal ulcer	100 (8)	All with EE
Gastric ulcer	4 (0.32)	
Distal esophageal nodularity	60 (4.8)	
Esophageal diverticula	6 (0.5)	
Normal endoscopy	134 (10.7)	

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