

Endoscopic Findings in Patients with Dyspepsia in Iran

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Abstract

Background: It is necessary to know the causes of dyspepsia to establish the therapeutic approach. Dyspepsia is a frequent syndrome our country, while there are restrictions to endoscopy and high prevalence of *Helicobacter pylori* (*H. pylori*) infection. This study was conducted to evaluate the endoscopic findings of the syndrome, in an outpatient screening clinic of the Baqiyatallah Hospital in Tehran, Iran.

Material and methods: Between 20 March and 20 November 2015 and according to Rome III criteria, outpatients with uninvestigated dyspepsia, answered Dyspepsia Hong Kong Index Questionnaire and underwent esophagogastroduodenoscopy. The Rapid Urease Test was applied to fragments of the antral mucosa, and epidemiological data were collected from the studied population. Normal endoscopic findings were analyzed with different variables to verify statistically significant associations.

Results: Eventually 400 patients (57.5% males and 42.5% females) with the mean age of 51.32±17.98 years were evaluated. About 55% of them were smokers and 45% used NSAID. *H. pylori* (80%) were the most endoscopic findings between Endoscopic findings. Among positive and negative *H. pylori* patients, 56.25% and 50% were smokers respectively. All patients with gastric adenocarcinoma (100%) and 13.2% patients without gastric adenocarcinoma were with fundus, body or antrum ulcer.

Conclusions: Predominance of functional disease was showed in our setting by the endoscopic diagnosis of uninvestigated dyspepsia. Although the prevalence of *H. pylori* was high, cancer was an uncommon finding.

Keywords: Dyspepsia; *Helicobacter pylori*; Endoscopy; Adenocarcinoma

Introduction

Dyspepsia is a prevalent complaint in general and gastrointestinal clinics [1-6], with a prevalence of up to about 30% among adults in Iran [7]. Dyspepsia is a complex condition, including upper gastrointestinal tract with chronic and recurrent symptoms, including epigastric pain, discomfort, including postprandial fullness and early satiety, which may overlap with heartburn and regurgitation [6,8]. The symptoms of dyspepsia could be occurred due to an important structural pathology such as chronic peptic ulcer disease, gastro-esophageal reflux, malignancy or it can also present as functional dyspepsia (without evidence of organic cause). Over 80% of the population are affected by dyspepsia at some time in their life [9] Worldwide investigations have shown that the prevalence of dyspepsia is in the range of 14.5-45% [2,10-13].

Only 75% of the dyspepsia experts, 73% of gastroenterologists and 59% of primary care providers adhere to dyspepsia best practices; so different medics have different views of dyspepsia. Providing of adequate treatment following common dyspepsia guidelines without a common diagnostic language may be unable [14]. Comparing the prevalence rate of dyspepsia in different time periods or places is almost impossible due to the quick presentation of dyspepsia diagnostic criteria [15]. Due to structural upper gastrointestinal (UGI) tract diseases like peptic ulcer, erosive esophagitis, luminal strictures and malignancy in structural dyspepsia esophagogastroduodenoscopy is the method of choice in differential diagnosis between structural and functional dyspepsia. It is possible that endoscopy is considered as the first approach in dyspepsia [16] the establishment of this procedure for every dyspeptic patient may not be a practical approach because it has burdensome expenses on health system [17]. It should also be recognized that a large percentage of uninvestigated dyspepsia are functional cases [18]. Therefore the use of endoscopy in

uninvestigated dyspepsia is still a controversial subject in the world [19].

Materials and Methods

This prospective, cross-sectional study was carried out between 20 March and 20 November 2015. Four hundred patients, who presented with uninvestigated dyspepsia, were selected using a convenience sampling method in Baqiyatallah Hospital in Tehran, Iran. Dyspepsia Hong Kong Index Questionnaire was completed to evaluate symptoms. Questionnaire form included questions about the severity of 12 findings: Stomach pain, upper abdominal bloating, upper abdominal dull ache, stomach pain before a meal, stomach pain when anxious, vomiting, nausea, belching, acid regurgitation, heartburn, and feeling of acidity in the stomach and loss of appetite. The cut-off point selected was ≥ 16 . The sensitivity at the ≥ 16 cut-off point was 82% with a specificity of 83% [20]. Dyspepsia is a chronic and recurrent epigastric pain or discomfort (including postprandial fullness and early satiety) with or without heartburn and regurgitation. Patients with gastro-esophageal reflux disease (GERD), predominant symptoms such as heartburn or acid regurgitation alone, inflammatory bowel disease, malignancy or advanced liver disease were excluded from the study.

Endoscopic findings were recorded and to rule out *Helicobacter pylori* and malignancies, gastric biopsies were incurred.

The endoscopic findings were divided into normal or abnormal. Gastritis, duodenitis, peptic and duodenal ulcer, hiatus hernia, malignancy and others considered as abnormal findings. Upper gastrointestinal (UGI) endoscopy was diagnosed by a gastroenterologist with 10 years of experience.

Ethical considerations

This study was approved by the ethics committee of the Baqiyatallah University of Medical Sciences. Individuals were asked to sign an informed consent form before Endoscopy. All the terms of the Helsinki declaration were considered.

Statistical analysis

Variables were measured as the frequency and percentage, and Fisher's test was used to determination of the relation between dyspeptic organic findings and the variables, with a p-value < 0.05 being considered statistically significant. Organic dyspeptic findings were analyzed with the variables by simple and multiple binary logistic regressions, and then odd ratios and its 95% confidence intervals were presented. Regression coefficient values were used to determination of score for endoscopy.

Results

Eventually, 400 patients (57.5% males and 42.5% females) with the mean age of 51.32 ± 17.98 years were evaluated. About 55% of them were smokers and 45% used NSAID.

Table 1 shows the description of the symptoms.

According to **Table 2**, positive *H. pylori* (80%) were the most endoscopic findings between Endoscopic findings. Among positive and negative *H. pylori* patients, 56.25% and 50% were smokers respectively. There was no statistically significant relation between *H. pylori* status and smoking ($P=0.75$).

Between positive and negative *H. pylori* patients 53.1% and 12.5% used NSAID respectively. There was a significant relation between use of NSAID and *H. pylori* status ($P=0.03$).

All patients with gastric adenocarcinoma (100%) and 13.2% patients without gastric adenocarcinoma were with fundus, body or antrum ulcer. There was a statistically significant relation between gastric adenocarcinoma and ulcer in fundus, body, and antrum ($P<0.01$) (**Table 3**).

Table 1: Description of the symptoms.

Symptoms Onset	<6 months	7.50%
	6-12 months	15%
	1-3 years	30%
	3-6 years	27.50%
	6-9 years	17.50%
	>9 years	2.50%
Stomach pain when anxious	None	2.50%
	Mild	20%
	Moderate	15%
	Severe	12.50%
loss of appetite	None	7.50%
	Mild	12.50%
	Moderate	45%
	Severe	12.50%
Upper abdominal bloating	None	7.5%
	Mild	40%
	Severe	20%
	Extreme	32.50%
Upper abdominal dull ache	Mild	0%
	Moderate	17.50%
	Severe	55%
Stomach pain before meal	None	27.50%
	Mild	10%
	Moderate	52.50%
	Severe	27.50%
	Extreme	10%

Acid regurgitation	Mild	15%
	Moderate	20%
	Severe	40%
	Extreme	25%
vomiting	None	72.50%
	Mild	10%
	Moderate	10%
	Severe	2.50%
Nausea	None	5%
	Mild	37.50%
	Moderate	37.50%
	Severe	7.50%
Stomach pain	None	12.50%
	Mild	17.50%
	Moderate	32.50%
	Severe	25%
Belching	None	25%
	Mild	5%
	Moderate	35%
	Severe	42.50%
Heart burn	None	17.5%
	Mild	7.50%
	Moderate	35%
	Severe	30%
Feeling of acidity in stomach	None	27.50%
	Mild	12.50%
	Moderate	47.50%
	Severe	30%
	None	10%
	Mild	
	Moderate	
	Severe	

gastric adenocarcinoma so that all patients with gastric adenocarcinoma showed fundus, body or antrum ulcers.

Table 2: Endoscopic findings (*Others esophagus findings: Candidiasis and esophagus varices).

Normal Endoscopy (35%)		
Esophagus	Non erosive esophagitis	0%
	Erosive esophagitis	7.50%
	Barrett	2.50%
	Ulcer	0%
	Hiatal Herniation	37.50%
	Adenocarcinoma	2.50%
	Reflux esophagitis	25%
	Others*	2.50%
Stomach		
Gastritis	Erythematous	17.50%
	Erosive	15%
	Nodular	5%
	Atrophic	7.50%
Ulcer	Fundus, body and antrum	17.50%
	Prepyloric	10%
Malignancy	Adenocarcinoma	5%
	Lymphoma	2.50%
	Others	0%
Duodenum		
Duodenitis	Erythematous	17.50%
	Erosive	15%
	Ulcer	22.50%
	Others	0%

Table 3: Gastric malignancies and gastric ulcer.

Gastric Malignancies	Gastric Adenocarcinoma		Gastric Lymphoma	
	Yes	No	Yes	No
Fundus, body or antrum ulcer	100%	13.20%	0%	17.90%
P-value	0.002		0.64	
Prepyloric Ulcer	0%	15%	0%	10.30%
P-value	0.62		0.73	

Based on Azzam et al. [21] study, the most common abnormal endoscopy findings included

Gastritis (52%) and malignancy rate were about 2.6%. Prevalence of gastritis in Sahin et al. [22] was 48.4%. In Choomsri et al. [23] study, significant endoscopic lesions were

Discussion

We found that the most patients reported moderate intensity in most symptoms, except belching and acid regurgitation. Positive *H. pylori* was the most endoscopic finding that showed a significant relation with the use of NSAID ($P=0.03$). After *H. Pylori*, Gastritis was the most common findings with a prevalence rate of 45%. Prevalence of normal endoscopy in a recent study was 35%. Our study also showed the prevalence of esophageal and gastric malignancies included esophageal adenocarcinoma, gastric adenocarcinoma and gastric lymphoma 2.5%, 5% and 2.5% respectively. We found fundus, body and antrum ulcer of the main cause of

found in 7% of the patients in the form of gastric ulcers, and only 1% was diagnosed to have gastric cancer. In a recent study, after *H. Pylori*, Gastritis was the most common findings (45%), but our malignancy rate was higher (10%). These outcomes suggest that in patients complaining of dyspeptic symptoms in general; gastritis may be present and a gastric ulcer may be detected.

Although primary gastrointestinal lymphoma is a rare disease, the stomach is the most frequent site of involvement for this neoplasm [24]. The site of gastrointestinal lymphoma in all of the recent patients was the stomach.

The prevalence of gastro-esophageal reflux has grown seriously in the recent decade. This increase is especially seen in the western world so that the risk of esophageal adenocarcinoma increased in 19-30% of the population [25]. In this study, gastro-esophageal reflux was diagnosed in 25% of patients; that was higher than of the findings of a recent meta-analysis, based on the Rome criteria [18].

Previous studies reported a high frequency of positive *H. pylori* in Iranian population and also in dyspeptic patients so that 57-91% of Iranians are *H. pylori* positive [26-29] and about 50% of dyspeptic patients in Shokrzadeh [30] study were with positive *H. Pylori*. Our prevalence rate was 80%. The low availability of non-invasive tests for detection leads to this high prevalence of infection, which prevent the use of the proposed approach of test and treat strategy for undiagnosed dyspepsia. *H. pylori* eradication treatment always costs highly and is sophisticated. Also, it has a limited efficiency of 88% [31] and according to previous studies; Iran is an endemic area of *H. pylori* [26].

This study also reported the rate of normal endoscopy about 54%, while this rate in our study was 35% that was near to reported rate of Sahin et al. study (32.9%) [22]. Which means that the majority of our dyspeptic patients had a positive endoscopy. Therefore endoscopic evaluation of dyspeptic patients seems to be necessary. This finding was reported by Sahin et al. [22] too. However, some previous studies reported that most patients with dyspepsia have no detectable abnormality [32,33]. Thus, they did not recommend endoscopic evaluation as an initial step in the management of patients with dyspepsia [34,35].

This study faced with limitations such as relatively small sample size and the small number of significant endoscopic lesions, resulting in difficulties to detect any clinically significant differences. In this study, we insist on the need for international dyspepsia guidelines while doing the upper gastrointestinal endoscopy.

Conclusion

In conclusion, the findings of the present study confirmed selective upper gastrointestinal endoscopy in patients with dyspepsia. In Iran, as a country with high prevalence of *H. pylori* infection, the most frequent cause of uninvestigated dyspepsia is gastritis, whereas gastric cancer is a rare finding. *H. pylori* may be associated with chronic gastritis. Further

studies are needed to support this relation and to find prognostic markers for the abnormal findings in our patient population.

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