Gastroenterology and Hepatology from bed to bench. ***2008;1(1):25-31***

ORIGINAL ARTICLE

Endoscopic evaluation of patients with dyspepsia: results from the large endoscopic data

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ABSTRACT

Aim: To evaluate endoscopic results of a large number of Iranian patients with dyspepsia.

Background: Dyspepsia is quite common among adults and has a great impact on the patient's quality of life. The present study was designed to investigate the structure of dyspepsia and to determine existing symptoms and endoscopic findings.

Patients and methods: Over a period of 14 months (April 2003– June 2004), 940 consecutive outpatients referred for upper gastrointestinal endoscopy because of dyspepsia. The value of the criteria distinguishing between the two major diagnostic groups, peptic ulcer and non-ulcer dyspepsia, was assessed by comparing the group of non-ulcer dyspepsia with the group of patients with peptic ulcer.

Results: Ulcer-like presentation (69.3%) was the predominant symptom. Totally, 133 (14.1%) have peptic ulcer disease (PUD). Alcohol use and smoking were significantly higher in PUD group. H.Pylori was higher in PUD (68.4% in PUD versus 41.5% in NUD, p=0.000).

Conclusion: Regardless of numerous studies and trials, dyspepsia still remains a controversial issue. The analysis of the data of the overall patient population remains the subject of future research

Keywords: *Dyspepsia, Helicobacter pylori, Peptic ulcer disease, Non- ulcer disease, Iran.*

(Gastroenterology and Hepatology from bed to bench 2008;1(1):25-31).

INTRODUCTION

Dyspepsia is not a diagnosis, but merely a cluster of symptoms believed to be referable to the upper gastrointestinal tract (1-4). According to the Rome consensus the term dyspepsia refers to persistent or recurrent upper abdominal pain or discomfort, supposed to be referable to the upper gastrointestinal tract (5). The consensus meeting excluded patients with heartburn or acid regurgitation as the predominant symptom, as these symptoms were thought to be predictive of gastro-oesophageal reflux disease (GORD) (6). Dyspepsia is quite common among Western adult population with prevalence rates ranging from 19% up to 41% in several epidemiological studies while it has a great impact on the patient's quality of life (7-9). Although most dyspeptics do not seek medical attention, half of them regularly use over the counter drugs (10,11). About one out of every four subjects with dyspepsia consults his general practitioner (9,10,12,13) and 25% of these patients are referred for further investigations (endoscopy, ultrasonography, etc) or to a secondary care

Received: 10 June 2007 *Accepted*: 26 November 2007
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physician (about 10%) but the majority of patients are managed empirically by their general practitioner (9,10,14-16) . Endoscopy is the most appropriate investigation to detect pathological lesions in the upper alimentary tract as well as the presence of H pylori. (17,18). Immediate endoscopy in patients with dyspepsia results in a definite diagnosis from the outset and ensures that the patient receives the most appropriate treatment. It is evident that in most patients with dyspepsia no underlying disease can be identified. Several studies, however, have shown that even then an endoscopy may have its merits. A negative endoscopy may have a significant reassuring effect and may result in a decreased use of medication and in fewer medical consultations (19-21). Investigating all dyspeptic patients by endoscopy, however, is not feasible in view of the high incidence of dyspepsia and the limited availability of endoscopic facilities.

Several studies have shown that dyspeptic symptoms are nonspecific for differentiating between diagnoses (22-25). However, the initial management plan in primary care has to be established on clinical grounds. Recent studies suggest that analysis of predominant symptoms and overlapping digestive syndromes can identify dyspepsia subgroups with different underlying pathophysiological features and aid in selecting appropriate treatment, especially in presence of gastro-esophageal reflux disease (26). Meanwhile, clinical prediction models of various causes of dyspepsia have been published (27). It is mostly conducted in non-primary care settings of Western countries with a known H. pylori prevalence of less than 50% among the population (28).

Iran is a country with a high prevalence of H. pylori infection and related diseases such as chronic gastritis, peptic ulcer, and gastric cancer (29). Whether the high prevalence of H. pylori infection influences the clinical presentation of the organic diseases of the upper gastrointestinal tract is unknown. Altogether, dyspepsia is an important health issue and constitutes a significant clinical problem in primary care.

The aim of the study was to investigate the patterns of dyspepsia and to determine existing symptoms and endoscopic findings in patients referred for upper endoscopy in a country with a high prevalence of H. pylori infection.

PATIENTS and METHODS

Over a period of 14 months (April 2003–June 2004), 940 consecutive outpatients referred to gastroenterology clinic of Jahrom university of medical sciences for upper gastrointestinal endoscopy because of dyspepsia. Dyspepsia was defined as persistent or recurrent abdominal pain or abdominal discomfort, centered in the upper abdomen, with duration of at least 3 months. Discomfort was characterized by early satiety, fullness, nausea, retching, upper abdominal bloating, and anorexia (30,31). The following exclusion criteria were applied at baseline: use of antibiotics, bismuth compounds, or proton pump inhibitors four weeks prior to endoscopy, current anticoagulant therapy, jaundice, bleeding, and anemia. Demographic data, NSAIDs use, smoking and alcohol use during the recent month was obtained by the investigator. The pattern of dyspepsia was categorized as ulcer-like, dysmotility-like or unspecified.

Patients were examined using an Olympus endoscope (Olympus, Tokyo, Japan). The circumscribed break of considerable depth (>5mm) in the mucosa, covered with exudate, present in the prepyloric, pyloric, or duodenal bulb region, was classified as duodenal ulcer. Gastric ulcer was diagnosed when the above described mucosal defect was located at the angulus or above. Biopsies were taken if any pathology (gastric ulcer, polyps, erosions, cancer) was suspected. Two biopsies from corpus, one from greater curve, the other from lesser curve, two from antrum, one from anterior wall, and one from posterior wall were

taken for histological assessment. Formalin fixation, Giemsa, and haematoxylin-eosin staining were used. Non-ulcer dyspepsia was used as the clinical diagnosis to characterize patients with normal or minor, clinically irrelevant, endoscopic findings.

The study was carried out in accordance with the Helsinki Declaration and was approved by the Ethics Committee of the Jahrom University of Medical Sciences. All patients were requested to fill an informed content.

Statistical analysis was achieved using SPSS 11.5 for Windows (SPSS Inc., Chicago, IL, USA). All collected demographic and clinical parameters were analyzed. The significance of differences between the groups, peptic ulcer and non-ulcer dyspepsia, was tested with Fisher's exact test or chi-square test, when appropriate.

P-value of 0.05 was considered the significance level. A logistic regression model developed to predict PUD from NUD using a forward conditional manner, including age (reference: above 40 years old), sex (reference: male), NSAIDs use, smoking, H.pylori positivity and alcohol use.

RESULTS

The study population included 442 males and 498 females with the mean age (± standard deviation) of 39.4±14.9 years. Men were slightly older than women (41.0±15.2 versus 37.9±14.4 years, P=0.001). Most of the cases (73%) aged 21 to 50 years (table 1).

Table 2. *Characteristics of dyspepsia in PUD and NUD patients, Jahrom, Iran*

	All patients (n= 940)	PUD (n=133)	NUD (n=807)	P-value
Sex				
Male	442 (47%)	90 (67.7%)	352 (43.6%)	0.000
Female	498 (53%)	43 (32.3%)	455 (56.4%)	0.000
Pattern of dyspepsia				
Ulcer-like	651 (69.3%)	129 (97%)	522 (64.7%)	0.000
Dysmotility-like	142 (15.1%)	0	142 (17.6%)	0.000
Unspecified	147 (15.6%)	4 (3%)	143 (17.7%)	0.000
Risk factors				
Alcohol use	74 (7.9%)	19 (14.3%)	55 (6.8%)	0.003
NSAIDs use	97 (10.3%)	20 (15%)	77 (9.5%)	0.054
Smoking	163 (17.3%)	36 (27.1%)	127 (15.7%)	0.001
Helicobacter pylori positivity	426 (45.3%)	91 (68.4%)	335 (41.5%)	0.000

Table 1. *Age distribution of dyspeptic patients by endoscopic finding and H.pylori results, Jahrom, Iran*

Age groups (Years)	All patients (n=940)	Endoscopic finding*		H.pylori**	
		PUD (n=133)	NUD (n=807)	Positive (n=426)	Negative (n=514)
18-20	73 (7.8%)	3 (2.3%)	70 (8.7%)	37 (8.7%)	36(7%)
21-30	254 (27)	26 (19.5%`)	228 (28.3%)	111(26.1%)	143(27.8%)
31-40	256 (27.2%)	38 (28.6%)	218 (27%)	106(24.9%)	150(29.2%)
41-50	177 (18.8%)	34 (25.6%)	143 (17.7%)	76(17.8%)	101(19.6%)
51-60	86 (9.1%)	13 (9.8%)	73 (9%)	48(11.3%)	38(7.4%)
61-70	55 (5.9%)	13 (9.8%)	42 (5.2%)	24(5.6%)	31(6%)
>70	39 (4.1%)	6 (4.5%)	33 (4.1%)	24(5.6%)	15(2.9%)

PUD: Peptic ulcer disease, **NUD**: Non-ulcer disease
* P=0.008, **P=0.084

Ulcer-like presentation was the predominant or the most bothersome symptom for 69.3% of the patients thus being the most frequent complaint (table 2).

Totally, 133 (14.1%) patients had peptic ulcer disease (PUD) while the remaining were categorized as non-ulcer disease (NUD). Duodenal and gastric ulcer were found in 11.1% and 3.1%, respectively. One patient (0.1%) has both duodenal and gastric ulcer. Gastric cancer was confirmed in one 70-year-old male patient by histologic evaluation. Alcohol use and smoking were significantly higher in PUD group (table 2). PUD was more common in patients aged 31-50 years, while NUD was higher among younger adults (21-40 years) (table 1).

The overall frequency of H.Pylori was 45.3 %. H.Pylori was found more frequently among PUD patients when compared with NUD (68.4% versus 41.5%, p=0.000). There was no significant association between H.pylori and risk factors. H.pylori was less common in subjects with alcohol intake (43.2% in alcohol versus 45.5% of non-alcohol users, p=0.7) and NSAIDs ingestion (43.3% in NSAIDs versus 45.6% in non-NSAIDs users, P=0.7), but it was higher in smokers (46.6% in smokers versus 45% in non- smokers, P=0.7), however, none of the abovementioned risk factors did reach the statistically significant level. Furthermore, we did not find age-related increment in H.pylori frequency (table 1). In a multivariate logistic regression analysis including age (reference: above 40 years old), sex (reference: male), NSAIDs use, smoking, H.pylori positivity and alcohol use; H.pylori (OR: 3.19, 95% CI: 2.13-4.76), sex (OR: 2.86, 95% CI:1.92-4.28), NSAIDs use (OR: 1.83, 95%CI:1.04-3.22) and age above 40 years old (OR:1.55:, 95%CI:1.05-2.28) entered the final model.

DISCUSSION

The current study utilizes non-randomly selected subjects and therefore doesn't avoid the inherent bias that may result from studies, which have involved volunteers or attendants at health clinics, but it provides us to study a large number of dyspeptic patients who met the inclusion criteria for endoscopy.

Dyspepsia is a frequent reason for attending primary care consultations (10). The consensus meeting excluded patients with heartburn or acid regurgitation as the predominant symptom, as these symptoms were thought to be predictive of gastro-oesophageal reflux disease (GORD) (32). Nevertheless, many studies on dyspepsia used other definitions and some do include patients with predominant heartburn (9-12). Unfortunately, this limits us to compare our results with others.

Many dyspeptic patients consult their general practitioner mainly because of fear of possible serious disease and sometimes mere reassurance may be sufficient (12,13,33,34). If the symptoms do not abolish spontaneously, it has been proposed to prescribe a trial of treatment, reserving endoscopy for those patients who do not respond or whose symptoms recur after stopping treatment (14-16,35). This strategy has been promoted by several organizations of both primary and secondary care physicians (2,36,37).

The most frequent symptom was ulcer-like symptoms such as epigastric pain. This is in agreement with studies performed in Estonia (38) and Mumbai, however, they had applied heart burn equal to dyspepsia (39). Nevertheless, we studied patients who were subjected for endoscopy, therefore, it is expected to have further patients suffering from epigastric pain. Although there was a significant difference between PUD and NUD groups regarding the pattern of dyspepsia, many of patients with ulcer-like symptoms were categorized in NUD group (64.7%). Classifying dyspepsia on the basis of the predominant symptom (ulcer-like, dysmotility-like, or reflux-like) was not proved useful, since, except for reflux-like dyspepsia

which is characteristic of gastroesophageal reflux disease, the symptoms are not predictive of either the underlying cause or the response to specific therapies (23).

Like other studies, NUD was the most frequent finding in upper GI endoscopy. In up to 60 percent of patients with dyspepsia, the diagnostic evaluation discloses no underlying organic cause (18,40). Such patients are labeled as having non-ulcer or functional dyspepsia. This disorder is considered to be part of a continuum of functional gastrointestinal disorders that include irritable bowel syndrome, functional heartburn, and non-cardiac chest pain. The pathophysiology of non-ulcer dyspepsia is poorly understood (41,42).

Prior investigators have reported peptic ulcer disease to occur more frequently in men (7,43), however, some other studies disagreed (44,45). In our study, peptic ulcer disease was more common among males. In the present study patients of both groups suffered from smoking, alcohol consumption, NSAIDs use and H. pylori infection. Konturek et al. noted that H. pylori infection, NSAID use, smoking and age play major roles in the pathogenesis of peptic ulcerations and there is a negative interaction between H. pylori and NSAID on duodenal ulcers, suggesting that H. pylori reduces the development of these ulcers in NSAID users (46). On the other hand, about 20% of peptic ulcers occur in patients regardless of H. pylori or NSAID use (idiopathic ulcers). Although gastric cancer is a health concern among dyspeptics, the likelihood of this disease is low in populations.

In our study the frequency of H. pylori was less than previous population-based study (29). It could be in part explained by recent blind treatment of H.pylori in most dyspeptics. The clinical significance of H. pylori in upper gastrointestinal disorders has been confirmed by prior studies. This infection plays an important role in the pathogenesis of acute and chronic gastritis, peptic ulcer disease, gastric adenocarcinoma, and mucosa associated tissue lymphoma (47). The relationship between H. pylori and dyspepsia, in absence of peptic ulcer, has continued to be a matter of controversy (48,49). Although available evidence indicates the absence of a strong association between H. pylori and dyspepsia, there is yet insufficient evidence to confirm or refute existence of a moderate association. The fact that the prevalence of H. pylori infection among dyspeptics was similar to that in general population rather confirms the absence of the connection between the infection and dyspepsia.

In conclusion, there are slight differences in the profile of upper gastrointestinal diseases, especially dyspeptic complaints in a country with high prevalence of H. pylori infection in comparison with areas with lower prevalence (39). Interestingly, approximately half of the NUD patients are not infected by H pylori (50). According to the multivariate logistic regression analysis, H. pylori infection, male sex, NSAIDs use and age above 40 years old are associated with PUD development. Regardless of numerous studies, dyspepsia still remains a controversial issue.

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