

A view of gastroesophageal reflux disease: Non-specific symptoms

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ABSTRACT

Aim: The aim of this study was to describe the frequency of non-specific symptoms of gastroesophageal reflux and association of these symptoms with gastroesophageal reflux disease (GERD) in Iranian population.

Background: GERD is a common gastrointestinal disorder, worldwide. Some patients with GERD have no symptoms while others may have non-specific symptoms.

Patients and methods: This study was designed as a cross-sectional and population based evaluation that was conducted on 782 cases that selected by random sampling in northeast region of Tehran province. Relation between non-specific symptoms and GERD was assessed using χ^2 test. The odds ratios (OR) and 95% CI were calculated for each symptom.

Results: Most common non-specific symptom in subjects under study, was abdominal pain with a female preponderance. Abdominal pain, globus sensation, cough & dyspnea, and halitosis were statistically associated to GERD. There was no relationship between age and non-specific symptoms.

Conclusion: In summary, this study showed that non-specific symptoms are common in our country that strongly related to gastroesophageal reflux disease, therefore, these symptoms should be considered as a basic in diagnostic procedure.

Keywords: *Non-specific symptoms, Reflux, Globus sensation, Cough, Iran.*

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INTRODUCTION

GERD is a highly prevalent disorder and is one of the most common gastrointestinal (GI) illnesses encountered in clinical practice (1). Epidemiological studies have shown that the prevalence of GERD symptoms in developed countries ranges from 10% to 48% (2, 3).

GERD affects all age groups, although older adults most often seek treatment. Certain complications vary by gender, race, and ethnicity.

For instance, men are about twice as likely to be affected by esophagitis and nearly 10 times more likely to be affected by Barrett's esophagus (4, 5).

The diagnosis of GERD refers to a variable clinical picture that results from the reflux of stomach and duodenal contents into the esophagus, manifesting as a combination of symptoms and signs (6). Heartburn (pyrosis) and acid regurgitation are the typical symptoms of GERD (7, 8).

Some patients with GERD have no symptoms while others may have non-specific symptoms

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including angina-like pain or airway induced symptoms (9). While symptoms will provide the basis for diagnosis in most patients, GERD symptoms in some patients must be differentiated from those related to gastric disorders, infectious and motor disorders of the esophagus, and biliary tract disease (10). For example, coronary artery disease should be considered early in individuals with a compatible history and presentation (11).

Although many symptoms have been linked to GERD in clinical studies, there is very little information from population-based studies (2). To date, the few studies conducted on atypical symptoms have focused on some particular symptom, such as chest pain (3, 8). This study sought to describe the frequency of non-specific symptoms of gastroesophageal reflux and association of these symptoms with GERD in a population based study.

PATIENTS and METHODS

This study was designed as a community-based and cross-sectional evaluation that was conducted during May to December 2006 in Firoozkouch and Damavand cities, in the northeast region of Tehran province, Iran. A total of 800 adult persons were drawn up from these cities randomly by cluster sampling. Heartburn and acid regurgitation were considered to be the main symptoms of GERD. Only symptoms occurring in the past year before the interview were considered. 1) Heartburn: a burning pain or burning sensation behind the sternum in the chest. 2) Acid Regurgitation: a bitter or sour-tasting fluid reflux into the throat or mouth. 7 non specific symptoms consist of abdominal pain, cough & dyspnea, globus sensation, nausea & vomiting, dysphagea, hoarseness and halitosis were asked from participants.

Then trained health personnel from local health centre referred to each selected case, door-to-door and face-to-face, and asked them to participate in

the interview. Before the interview survey, the interviewer explained the purpose of these questions to all eligible individuals and requested their participation. The individuals were informed that attending the interview was not compulsory. Informed consent for enrolment was obtained, and patient anonymity was preserved. The research protocol was approved by the Ethics Committee of Research Center for Gastroenterology and Liver Diseases, Shaheed Beheshti Medical University. Participants were excluded if they were pregnant, had records of experiencing major psychotic episodes, mental retardation or dementia and hiatal hernia. Finally, 782 individuals participated in this study.

Relation between non-specific symptoms and GERD was assessed using χ^2 test. The odds ratios (OR) and 95% confidence interval (CI) were calculated for each symptom. All calculations were performed by using SPSS.V.13 software and all P values were two tailed, with the level of statistical significance specified at 0.05.

RESULTS

Out of the 782 cases that reviewed; a female preponderance was observed (66.2% females versus 33.8% males).

The mean age of cases was 43.44 ± 6.83 years. Most common non-specific symptom in subjects under study was abdominal pain. Also, patients suffered from cough and dyspnea (25.1%), halitosis (21.9%), hoarseness (18.2%) and globus sensation (15.2%).

Abdominal pain, globus sensation, cough & dyspnea, and halitosis were observed significantly in GERD patients rather than other cases, for example, globus sensation among individuals with GERD was approximately fourfold higher than others (Table 1).

There was no relationship between age and non-specific symptoms in both group-with or without GERD. Cough & dyspnea, and hoarseness

were seen common in females with reflux comparing to males with GERD. Females with or without reflux were suffered from globus sensation rather than males, but no significant difference was seen between male and female regarding abdominal pain, nausea& vomiting, dysphagia, and halitosis (Table 2).

Table 1. Association between GERD and non-specific symptoms

		Reflux		OR [‡]	95% CI [†]	
		with	without		Lower	Upper
Abdominal pain	Yes	110	218	1.44*	1.05	1.96
	No	118	336			
Nausea & vomiting	Yes	8	22	0.88	0.39	2.01
	No	220	532			
Dysphagea	Yes	7	15	1.14	0.46	2.83
	No	221	539			
Globus sensation	Yes	67	52	4.02*	2.68	6.01
	No	161	502			
Cough & dyspnea	Yes	84	112	2.30*	1.64	3.23
	No	144	442			
Hoarseness	Yes	47	95	1.25	0.85	1.85
	No	181	459			
Halitosis	Yes	66	105	1.74*	1.22	2.45
	No	162	449			

*statistically is significant; † Confidence interval; ‡ Odds ratio

DISCUSSION

Our results indicated that non-specific symptoms could be representing an important public health problem. Also, our findings showed a clear association between non specific symptoms and gastroesophageal reflux.

In contrast to other researches, in our study dysphagea was not a common symptom and there was no relationship between dysphagea and gastroesophageal reflux (12, 13). This is may be due to diagnostic procedure in present study. Diagnostic of dysphagea needed to perform endoscopy but it was not possible for us to perform this procedure for all of these subjects during this period of time, thus we overlooked this procedure and evaluated our sample according to the symptoms.

Abdominal pain was most common symptoms in subjects under study and this symptom in patients with GERD was observed rather than others (3, 14).

Globus, especially frequent in otorhinolaryngology clinics (15), has been linked with GERD symptoms in some studies (16), but the evidence is not consistent (17). Globus

Table 2. Association between GERD and non-specific symptoms according to sex

		With reflux			without reflux		
		Female	Male	OR (95%CI)*	Female	Male	OR (95%CI)
Abdominal pain	No	82	36	1.12 (0.61-2.06)	207	129	1.56 (0.89-2.74)
	Yes	79	31		147	71	
Nausea & vomiting	No	154	66	3 (0.36-6.16)	339	193	1.22 (0.46-3.36)
	Yes	7	1		15	7	
Dysphagea	No	155	66	2.55 (0.29-7.42)	342	197	2.28 (0.63-8.16)
	Yes	6	1		12	3	
Globus sensation	No	102	57	4.05 (1.81- 9.08)	307	192	5.75 (2.25-14.73)
	Yes	58	8		46	5	
Cough & dyspnea	No	93	48	2.03 (1.08-3.84)	274	165	1.49 (0.94-2.34)
	Yes	67	17		79	32	
Hoarseness	No	122	58	2.58 (1.09-6.13)	297	159	0.79 (0.50-1.24)
	Yes	38	7		56	38	
Halitosis	No	111	50	1.47 (0.75-2.87)	286	161	1.05 (0.67-1.64)
	Yes	49	15		67	36	

*Odds ratio (95% Confidence interval)

sensation is a highly prevalent disorder, being suffered by close on 6% for British women (17); 7% (13) and 12% (18) in the United States; 14% in Argentina (19); 8.1% in Asian populations (8); and 16 and 20% in Scandinavian countries (20, 21). Clearly, in our study globus was more frequent among women and displayed a strong association with typical GERD symptoms.

Hoarseness evidence two notable differences in our study compared with earlier studies: a higher prevalence (18.2%) in contrast to the results of Locke et al. (13) (14.8%) and Wong et al. (8) (6.4%), and a greater frequency in women. As for the relationship with typical GERD symptoms, our results are similar to those in the literature, without any clear relationship between hoarseness and GERD. This lack of association between hoarseness and GERD may be attributable to two reasons: first, there might be in fact no such association because GERD might be responsible for only a few cases of such non-specific symptoms; second, these non-specific symptoms may be associated with 'silent' GERD. Studies with esophageal pH monitoring, particularly in patients with otorhinolaryngology symptoms, support this third hypothesis (22).

It has been speculated that GERD is a risk factor for extraesophageal pulmonary complications. The relation between GERD and cough, and other pulmonary diseases is unclear (1). Epidemiologic studies showed a moderate association between GERD and a range of pulmonary symptoms such as cough (23-26). Our study demonstrated a strong association between GERD and cough and dyspnea, but there were no data to answer the question of whether or not reflux precedes onset of cough. Better-designed prospective cohort studies may provide further insight.

Halitosis was third commonest symptom in our study that affects 21.9% of subjects under study. Frequency of halitosis in the present study was higher than in similar studies (27-30) in

individuals with GERD and was observed to be about twice of those found in other gastrointestinal patients.

The limitations of this study were that the analysis relied on interviews and questionnaires, the underlying causes of symptoms could not be determined, and the response rate of males was lower than females. The main reason for this low response rate was a social predilection not to participate in medical studies. However, the study was conducted randomly based on a per capita sample, gender and age being evenly distributed. We considered that the selection of subjects was likely to be adequate, and as we adjusted for potential demographic confounders in the analyses, bias should have been minimal.

In conclusion, this study showed that non-specific symptoms being common in our country are strongly related to gastroesophageal reflux disease, therefore these symptoms should be considered as a basic in diagnostic procedures.

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