Gastro-Esophageal Reflux Disease in a Sample of Healthy Iraqi Population

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ABSTRACT:

BACKGROUND:

Symptoms consistent with GERD occur in more than one third of the American adults on a monthly basis and weekly in as many as 10%, while 4-10% on daily basis

OBJECTIVE:

To survey the prevalence of symptoms of GERD in a sample of healthy Iraqi population sample.

METHOD:

Prospective study from Jan 2000- Jun 2000 at the deferent wards of Al-Yarmook teaching hospital, Baghdad.

Questionnaires were distributed to 950 healthy persons of different age group attending Al-Yarmouk teaching or visiting their patient at the hospital.

The questionnaire included:

Taking full history of symptoms suggestive of GERD, including habits and Body Mass Index.

RESULTS:

Heartburn was experienced by 239 (40.6%) once or more in their life, 30.6% on monthly basis, 11% on weekly basis, 8.3% on daily basis.6.2% of the respondents fulfill the criteria of the European expert panel (EPAGE) criteria for diagnosis of symptomatic GERD.

CONCLUSION:

Symptomatic GERD is common in our population.

Chronic duration of the illness was recognized in one third of them predisposing them to the risk of barrett's esophagus.

Early referral is indicated for better diagnosis to prevent serious complications.

KEY WORDS: gastro-esophageal reflux disease,heart burn.

INTRODUCTION:

DEFINITION

GERD is described as any symptomatic or histopathological alteration resulting from episodes of gastroesophageal reflux, Reflux esophagitis describes the subset of GERD patient with histopathological changes of the esophageal mucosa[1]. The clinical diagnosis of GERD is fairly straight forward, if the patient reports a substernal burning sensation radiating upwards the neck, which is promptly relived (albeit transiently) by the ingestion of antacids [2,5].

EPIDEMIOLOGY

Symptoms consistent with GERD occur in more than one third of the American adults on a monthly basis and weekly in as many as 10%, while 4-10% on daily basis [2,3,5,6]. Spechler reviewed the epidimiology and natural history of GERD in Orlando and he reported that 20-40% of the adults population experienced heartburn which is the cardinal symptom of GERD, but only some 2% of adults have objective evidence of reflux esophagitis, the incidence of GERD increases with the age, rising dramatically after 40 years of age[7]. Also there is a wide geographical variation in prevalence[5,7]. While the complications of the GERD (ulcer, stricture and barretts esophagus) are found in up to 20% of patient with esophagitis. The annual mortality of GERD is 1 death per 100 000 patients[8]. 33% Healthy Britons had experienced heartburn; 10% had monthly basis symptoms and 3% had daily symptoms [8].In Finland Isolari *et. al.* estimated the prevalence of symptoms suggestive of GERD in an adult population by questionnaires concerned with the heartburn, regurgitation,

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dysphagia, chest pain and upper abdominal pain, as well as medication and medical consultation for these symptoms. Where they found, that 9% had experienced heartburn on the day of response and 15%, 21% and 27% during the preceding week, month and year, respectively[9].Further more at Northeast Scotland, Brunner *et. al.* found a rapid rise in the incidence of symptomatic reflux begging in the forth decade of life. Of the 34% of the general practice population in (U.K.) reporting significant heartburn, the majority (65%) of the patient did not consult their GP.32% of these patients, those who accepted to be endoscoped, had esophagitis and 4% have Barrett esophagus [1].Loof in Sweden studied the incidence of esophagitis based on a review endoscopy reports of patient ≥16 years over 2 years period, reported that The incidence of reflux esophagitis was 120/100000 per year and the incidence of Barrett esophagus was 1.7/100 000. Around 2/3 of reflux disease patient will have no mucosal breaks, while esophageal acid exposure values recognizes between half to 2/3 of endoscopy negative patient in the Lind et al study [1].Goh *et. al.*, reviewed GERD in Asia, and mentioned that, this disease occurs more frequently in Europe and North America than in Asia, but its prevalence is now increasing in many Asian countries. Many reasons have been suggested for the lower prevalence of GERD in Asia, Low dietary fat and genetically determined factors, such as body mass index and maximal acid output may be important. Other dietary factors appear to be less relevant. Increased intake of carbonated drinks or aggravating medicine may influence the increasing rates of GERD in some Asian countries but no strong evidence links other factors such as the age of the population, smoking or alcohol consumption to GERD [10].In a study carried by Ho *et. al.* in Singapore while studying the prevalence of gastrointestinal symptoms in multiracial Asian population, with particular reference to reflux type symptoms, they concluded a big difference in the reflux type symptom in relation to ethnic group, which were more common among Indians (7.5%) than Malays (3%) or Chinese (0.8%) [11].

CLINICAL FEATURE AND DIGNOSIS:

The typical symptoms of GERD include heartburn and/or regurgitation after meal, especially after copious fatty meal aggravated by recumbence or bending and relieved by antacid, other symptoms such as epigastric pain, burning non cardiac pain, belching, nausea or vomiting dysphagia, odynophagia respiratory symptoms, ENT symptoms are frequently reported, none of these is specifically related to GERD [1,12,20].

The presence of heartburn and acid regurgitation together as a dominant complaint had a sensitivity of 78% and specificity of 60% for the presence of GERD as defined by prolonged esophageal monitoring[8].It has been estimated that as many as 80% of asthmatics has GERD and this is not related to the use of medications affecting the LES, the medical or surgical therapy for reflux esophagitis leads to the disappearance of asthma[21]. Nearly half of patients with angina like chest pain but normal coronary arteries by angiography have GERD demonstrated by ambulatory pH testing [5].

COMPLICATIONS OF GERD :

1-*Esophagitis*.

2-***Barretts esophagus***

3-*Anemia*

4-*Benign esophageal stricture*[1,5,6,8,22-24].

THE AIM OF THE STUDY:

This study was performed to establish a basic general information and data about symptoms suggestive of GERD in the same healthy Iraqi sample for the following two reasons

PATIENTS AND METHODS:

The study was conducted at Al Yarmook teaching hospital during the period between Jan. 2000 – Jun. 2000. Healthy visitors and companions of patients admitted to the different wards of the hospital were selected randomly for the questionnaire, those on regular drugs intake for different reasons or those known to have chronic diseases were excluded.A questionnaire were prepared which included detailed history of the symptoms of GERD .The definition of terms used by the European expert panel on appropriateness of gastrointestinal endoscopy (EPAGE; Lausanne, Switzerland) were applied in our study as follows: Gastroesophageal reflux disease (GERD): describes any symptomatic clinical condition or mucosal alteration resulting from episodes of GER. Symptoms must be present at least twice a week. Typical symptoms of GERD include heart burn and/or regurgitation after meal, especially after copious fatty meal, aggravated by recumbence or bending and relieved by antacids.

The person is considered over weight if his BMI≥ 25 [25]. The questionair included the following questions;

RESULTS:

Nine hundred and fifty questionnaires were distributed, only 588 responded to the interview and questionnaires ,their age ranges from 10 years to 80 years.

239 (40.6%) subjects reported to have heart burn at least once or more in their life, 180 (30.6%) of them reported the symptom at least on monthly basis, 65 (11%) subjects had symptoms twice weekly, 49 (8.3%) persons had symptoms on daily basis, will only 37 (6.2%) persons fulfilled the criteria of EPAGE.Table 1 demonstrates the different characteristics of the symptomatic GERD groups according to age, sex, B.M.I., Alcohol intake, smoking and tea ingestion in comparison to the total respondents. Subjects were divided into 4 age groups. The youngest was 10 years and the eldest was 80 years, accordingly the age groups were 67 for the age group 10-18 years, 414 for the age group 18-39 years, 95 for the age group 40-59 years, and 12 for the age group ≥ 60 years (Figure 1).21/37 (56.7%) of the symptomatic GERD were males (Figure 2). 29/37 (78.3%) were non-smokers and none of them were alcohol drinkers, however 21/37 (56.7%) were drinking tea ≥ 3 cups daily (Figure 3).High percentage (54%) of those with BMI>25 were with symptomatic GERD compared to 46% of those without GERD, which was statistically significant (P=0.029) (Figure 3). Those having a history of symptomatic GERD for more or equal to 5 years are 10/37 (27%). Similarly, 27% had their symptoms for 1 to 5 years.

As regard the relation of symptoms to different types of meals, 27/37 (72.9%) of symptomatic GERD were aggravated by fatty meal, 15/37 (40.5%) by spicy meal, 11/37 (29.1%) by sweet, 8/37 (21.6%) by carbohydrates and by protein diet 2/37 (5.4%).

Table 1: The correlation of the symptomatic GERD group with total surveyed respondents in relation to age, sex, B.M.I. and habits.

		Total respondents	GERD group		P value
			No.	%	
Age	10 – 18	67	1	1.4	P=0.049
	18-39	414	24	5.8	
	40-59	95	10	10.6	
	≥ 60	12	2	16.6	
Sex	Male	262	21	8	P = 0.012
	Female	326	16	4.9	
BMI	≥25 (High)	219	20	9.1	P=0.029
	<25	369	17	4.6	
Smoking	Current or ex-smoker	95	8	8.4	P=0.035
	Non-smoker	493	29	5.8	
Alcohol	Yes	11	-	-	-
	No	577	37	6.4	
Tea	≥ 3/day	237	21	8.4	P=0.037
	< 3 /day	351	16	4.8	

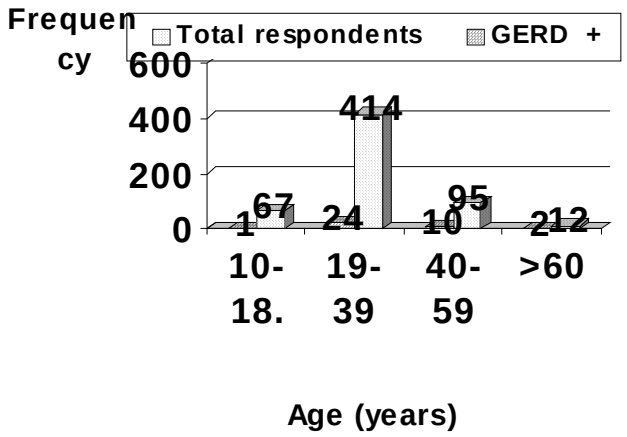

Figure 1: The age distribution of the total respondents and GERD group.

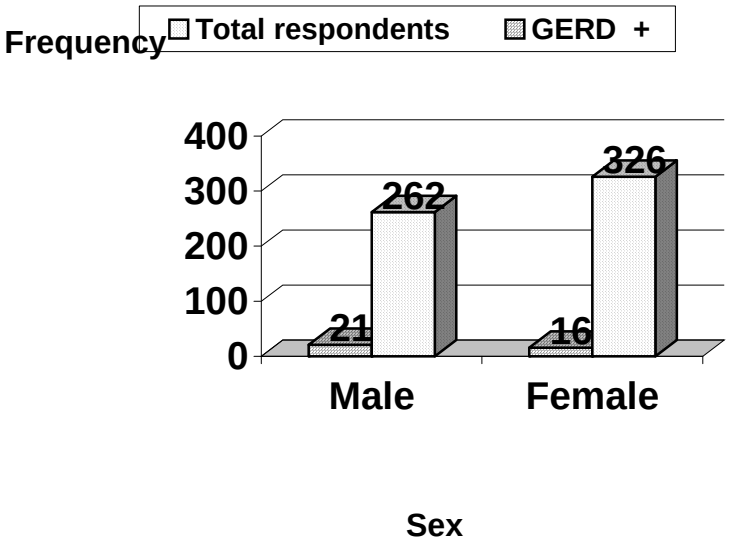

Figure 2: The sex distribution of the total respondents and GERD group.

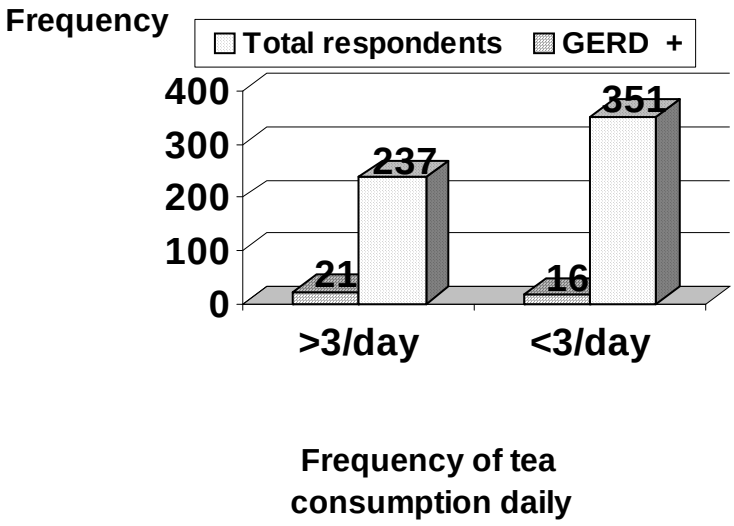

Figure 3: The Tea consumption of the total respondents and GERD group.

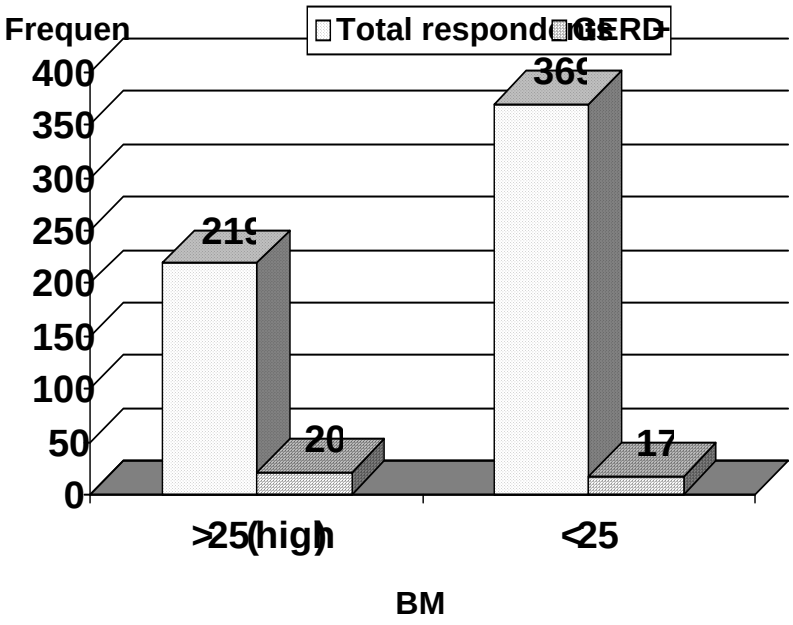

Figure 4: The BMI distribution of the total respondents and GERD group.

DISCUSSION:

GERD is an extremely common clinical problem, our study showed that (40.6%) of the surveyed group reporting heart burn or acid regurgitation in the past year or more, in a similar way, a community study in the USA showed that almost 40% of American adults reported heart burn on monthly basis [8], (30.6%) of our analyzed group of the population reported experience of heart burn on monthly basis and (11%) of them on weekly basis, (6.2%) of the surveyed group have symptomatic GERD (fulfilling the criteria of EPAGE) [1], comparing them to the USA population, (10-20%) of them had it on weekly basis and (4-10%) on daily basis. The results seems to be comparable, similarly these results are consistent to the finding of Ho *et. al.* in Indian ethnic group were they found (7.5%) have symptomatic GERD [11].

Table 1 shows a significantly higher rate of symptomatic GERD in those ≥ 40 years (middle aged and old aged group) in comparison to young age group, these results are similar to the results found by Mold et. al. and those of Look et. al. in USA [2]. The symptomatic GERD is more prominent in those having high B.M.I., this finding is similar to the studies carried by Fisher *et al.* and Ruhle & Everhart in USA, which demonstrate a significant correlation between B.M.I. and GERD [12,27]. However Lagergen *et al.* from Sweden, had different results which demonstrates no significant correlation between high B.M.I. and symptomatic GERD [13]. The same table shows a higher prevalence of symptomatic GERD in male (8%) in comparison to female (4.9%), similarly Sonnberg in USA stated that more severe GERD occur in men in comparison to female [20].

Peterson reported equivalent results concerning the difference of symptomatic GERD between the two genders [19]. No significant result could be deduced in regard of alcohol habit as non of the GERD group used to drink, similarly, Al-Kassir *et. al.* study demonstrated no significant correlation of symptoms of GERD with alcohol [20]. However in the Western countries alcohol is stated as one of the predisposing causes for GERD [8,30,31]. The relation between smoking and symptomatic GERD was not significant in our study, in contrast to the results shown by Al-Kassir *et. al.* in their study [29]. Tea drinking more than three times daily were reported by a higher percent of symptomatic GERD (8.4%) compared to only (4.8%) of those who drink tea less than 3 / day (P=0.0123). Symptoms aggravation with food showed an obvious correlation between fatty meal (72.9%) and spicy meal (40.5%) with symptomatic GERD. These results are similar to what is stated about the diet effect on symptomatic GERD in the Western countries [4]. As regard the duration of the symptoms, it is important to mention that those with a history of heartburn ≥ 5 years are only 30 subjects from 118 subjects who stated the duration of their symptoms, one third of them where having complete criteria of GERD. This may have an important implication on the decision and follow of such persons when we consider the fact the (22%) of GERD persons having 5 years or more of their symptoms of GERD are at risk of Barret esophagus changes [5].

CONCLUSION & RECOMMENDATIONS:

- Symptomatic GERD is common in our studied group of population.
- GERD is predominant in male gender and people above 40 years of age.
- Fatty, spicy meals, sweets and heavy tea drinking exacerbate symptoms suggestive of GERD.
- B.M.I. is higher in symptomatic GERD group.
- Almost one third of symptomatic GERD group had their symptoms for 5 years or more, which predispose them for Barrett esophagus.
- This study emphasizes the importance of education of both the medical personnel and the public for definitive diagnosis and management of subjects with symptoms suggestive of GERD to prevent complications.
- Further future research is much needed to evaluate the size of this problem, endoscopicaly, histopathology and probably esophageal pH monitoring.

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