

**GASTRO-ESOPHAGEAL REFLUX SYMPTOMS IN OUT PATIENTS
ATTENDING SOHAG UNIVERSITY HOSPITAL.**

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SUMMARY

Background and aims: Gastro-oesophageal reflux symptoms are common in different populations. Heartburn and acid regurgitation are the cardinal symptoms of GERD. However, little is known about the prevalence and symptom pattern of GERD in the Egyptian community. We aimed to study the frequency and risk factors of GERD symptoms in patients attending the Tropical Medicine and Gastroenterology and the Internal Medicine outpatients clinics at Sohag University Hospital whatever their chief complaint. **Patient and METHODS:** 660 consecutive who first attended the out patients Tropical medicine and Gastroenterology outpatient clinic and internal medicine outpatient clinic at Sohag University Hospital, were asked to respond to the F-scale questionnaire regardless of their chief complaints. **RESULTS:** Of 660 subjects, 374 (56.7%) patient were identified as GERD according to their F-scale score (>7). Although GERD symptoms are common in adults of all ages, the prevalence of GERD was highest in the 40-50 years age group and the age group >60 years had the lowest prevalence for both males and females. The relation of risk factors to the presence or absence of GERD, we found that there is significance difference between GERD and non GERD group as regarding pregnancy (75.0%), drinking coffee and tea (65.0%), eating spicy foods (67.0%) and drugs as NSAIDS (70.8%) (P value= 0.000). But there is no significant difference as regarding gender (p value= 0.374) and smoking (p value= 0.420). **Conclusions:** GERD symptoms are common in Egyptian outpatients. Using the F-scale questionnaire is easy and useful for epidemiologic studies. Coffee, tea, spicy food, NSAID and pregnancy are risk factors for GERD in this population. Life style modification is essential for management of GERD in our population.

INTRODUCTION

Gastroesophageal reflux is defined as involuntary passage of gastric contents into the esophagus. This can be a normal physiological event that occurs mainly after meals during daytime in healthy people. It becomes pathologic when it is frequent, prolonged and/or causing symptoms (1). There are several mechanisms responsible for gastroesophageal reflux. The most important one is the transient lower esophageal sphincter relaxation (TLESR). It is a 3-35 seconds abrupt period of complete sphincter relaxation usually against a background of normal sphincter tone. It may occur independent of swallowing and is considered as a major

mechanism for GER (2). The "defective basal contraction of the lower esophageal sphincter" or low basal sphincter tone permits retrograde escape of gastric content. This accounts for a minority of reflux episodes and usually occurs in patients with severe GER (3).

A transient increase in intra-abdominal or gastric pressure will also cause reflux. In most normal individuals, some degree of GER occurs post-prandially due to rise in intra-gastric pressure with relaxation of lower esophageal sphincter when synchronized with swallowing. It has long been held that delay in gastric emptying results in the extended retention of acidified gastric contents in the stomach during the postprandial period. This availability of material in the stomach to reflux may increase the likelihood of GERD (4).

Obesity is a major risk factor (5,6). Symptoms may be aggravated by spicy or fatty foods, caffeine, smoking, alcohol, citrus fruits, recumbency or bending forward (7,8). GERD may also be provoked by certain medications such as calcium channel blockers and may be mimicked by other drugs such as bisphosphonates and non-steroidal anti-inflammatory drugs (NSAIDs) (9). GERD is frequently worse during pregnancy (3).

GERD is usually diagnosed by history. Symptoms typically include retrosternal burning and may also include sour or bilious regurgitation, belching, hypersalivation, and epigastric or chest pain (10).

Increasingly recognized are extraesophageal symptoms such as chronic cough, laryngeal irritation and wheezing, particularly when they occur at night (8,11). Certain symptoms ('alarm features') require prompt endoscopy. These include dysphagia, weight loss, gastrointestinal blood loss (acute or chronic), persistent vomiting or failure to respond to an adequate trial of therapy (10,12).

Recently, the prevalence of GERD is also increasing in the Japanese population with a high prevalence of atrophic gastritis (13). Although GERD symptoms are common in adults of all ages, the prevalence of reflux esophagitis is increasing with age, when evaluated endoscopically (14). However, limitations in the available diagnostic tests and a bias in subjects tested may result in a lower prevalence of GERD. Since the symptoms are accompanied by endoscopic esophagitis in up to 50% of individuals with GERD (15,16), and endoscopy is routinely used in patients with dyspeptic symptoms in Japan, it has been difficult to diagnose GERD accurately by endoscopy. Furthermore, accurate quantitative estimates of the prevalence of GERD are difficult to obtain because GERD symptoms vary, and there has been no gold standard for the diagnosis of GERD (4,17).

So recently, multiple simple methods have been developed to score GERD symptoms. One of them is the F-SCALE (Frequency Scale). Results using this scale have been shown to correlate with endoscopic findings. Diagnosis on the

basis of history is simple and non-invasive and it has been favored in general practice (18).

PATIENT AND METHOD

Patients:

Between February 2010 and January 2011, 660 consecutive patients (262 men and 398 women with a mean age of 33 years), who first attended the out patients Tropical medicine and Gastroenterology outpatient clinic and internal medicine outpatient clinic at Sohag University Hospital , were enrolled in the present study regardless of their chief complaint. Informed consent was obtained from all patients.

Methods:

All of the patients who first attend our hospital were asked to respond to the F-scale questionnaire regardless of their chief complaints. The questionnaire is a self-report instrument, written in simple and easy-to understand language, containing 12 questions. As reported previously by Kusano et al., 2004, the following definitions were used to identify symptoms in the F-scale (18): Do you get heartburn?; Does your stomach feel bloated?; Does your stomach ever feel heavy after meals?; Do you sometimes subconsciously rub your chest with your hand?;Do you ever feel sick after meals?; Do you get heartburn after meals?; Do you have an unusual sensation in your throat?; Do you feel full while eating meals?; Do some things get stuck when you swallow?; Do you get bitter liquid coming up into your throat?; Do you get heartburn if you bend over?; Do you burp a lot?

Symptom frequency will be measured on the following scale: Never = 0; occasionally = 1; sometimes = 2; often = 3; and always = 4. If the patient scores more than 7 points, GERD is considered to be present.

We will also ask on the presence of risk factors of GERD as: Smoking, coffee and tea, drug history of analgesia as NSAIDS, spicy food, Pregnancy in females.

Statistical analysis: The data was processed and analyzed using the Statistical Package of Social Sciences (SPSS) version 9. Frequency, percentage, mean and standard deviation were calculated. Chi square was used to compare percentages; T-test was used to compare means, P value significant at level < 0.05.

RESULTS

From February 2010 to January 2011, A total of 660 patients, who first attended the out patients Tropical medicine and Gastroenterology outpatient clinic and internal medicine outpatient clinic at Sohag University Hospital, of them 262 male (39.7%) and 398 female (60.3%) of them 24 (6.1%) was pregnant. The mean age±SD was 34.19±14.34 years for males and 32.77±14.06 years for females. Some of the total patients have special habits as, 72 (10.9%) of them were

smokers, 286 (43.3%) were drinking excessive coffee and tea, 212 (32.1%) received drugs as NSAIDS and 224 (33.9%) were eating spicy foods. All of GERD symptoms which are fulfilled in the questionnaire were significant (P value= 0.000) for all GERD groups than non GERD groups, and the most frequent GERD symptom in all patients was bloating of the stomach. This symptom was also the most frequent when we looked at each gender separately (Male/ Female= 142/ 208). The frequency of this symptom in different age groups as shown in table (1) and figure (1).

Table (1): Frequency of occurrence of GERD symptoms among GERD+ and GERD- persons.

GERD symptoms	GERD + (n=374)		GERD- (n=286)		Total (n=660)		P value
	No	%	No	%	No	%	
Get heart burn	343	91.7%	138	48.3%	481	72.8%	0.00
Stomach feel bloated	350	93.6%	166	58.0%	516	78.2%	0.00
Stomach ever feel heavy after meals	338	90.4%	148	71.7%	486	73.6%	0.00
Sometimes subconsciously rub your chest with your hand	192	51.3%	42	14.7%	234	35.5%	0.00
Feel sick after meals	338	90.4%	120	42.0%	458	69.4%	0.00
Get heartburn after meals	316	84.5%	112	39.2%	428	64.8%	0.00
Have an unusual sensation in your throat	214	57.2%	34	11.9%	248	37.6%	0.00
Feel full while eating meals	312	83.4%	150	52.4%	462	70.0%	0.00
Some things get stuck when you swallow	148	39.6%	32	11.2%	180	27.3%	0.00
Get bitter liquid coming up into your throat	228	61.0%	74	13.9%	302	45.8%	0.00
Get heartburn if you bend over	184	49.2%	20	7.0%	204	30.9%	0.00
Burp a lot	232	62.0%	74	13.9%	306	46.4%	0.00

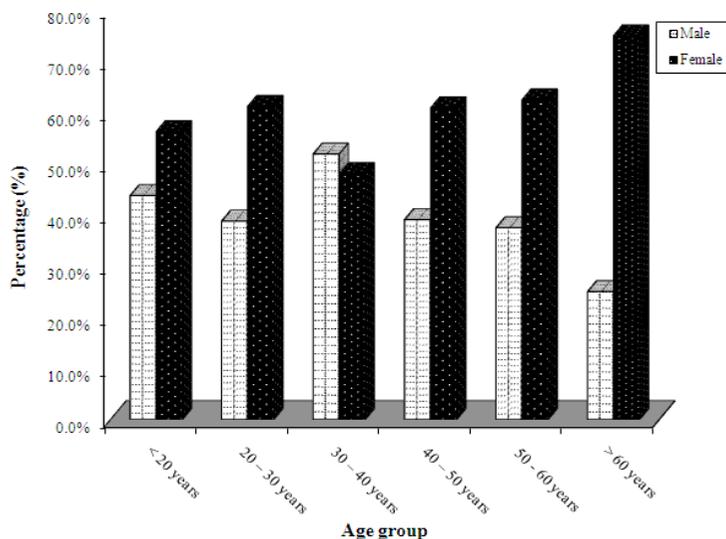


Figure (1): The most frequent GERD symptom (stomach feel bloated) among GERD +ve patients in different age groups (males and females together)

When the cutoff point for diagnosis of GERD was >7 , the proportion of GERD symptoms was 374 (56.7%) [154 male (58.8%) and 220 female (55.3%)], when the cutoff point increased to >9 , the proportion was 332 (50.3%) [134 for males and 198 for females] and when the cutoff point increased to >19 , the proportion was decreased to 176 (26.7%) [62 for males and 114 for females]. As shown in table (2).

Table (2): The proportion of GERD symptoms when a cutoff point for diagnosing GERD is more than 7-points, 9-points and 19-points.

Gender	Male GERD+ (n=154/262)		Female GERD+ (n=220/398)		Total (n=374/660)	
	no.	%	no.	%	no.	%
Score						
> 7	154	58.8%	220	55.3%	374	56.7%
> 9	134	51.1%	198	49.7%	332	50.3%
> 19	62	23.7%	114	28.6%	176	26.7%

As shown in fig (2), when the cutoff point is >7 , the age differences are significant for GERD and the frequency of GERD was more in the age group 40-

50 years old (60.5%). While the age group > 60 years old had the lowest prevalence (47.4%). When the cut-off point was raised to > 9, the prevalence of GERD was also highest in the same age group (40-50 years old) (55.3%) and less frequent among age group > 60 years old (26.3%), and also more for females for most of different age groups. When the cut-off point was raised to >19, the prevalence of GERD was again highest in the same age group more in age group 40-50 years old (44.7%) followed by age group 30-40 years old (31.4%), and also more for females for most of different age groups.

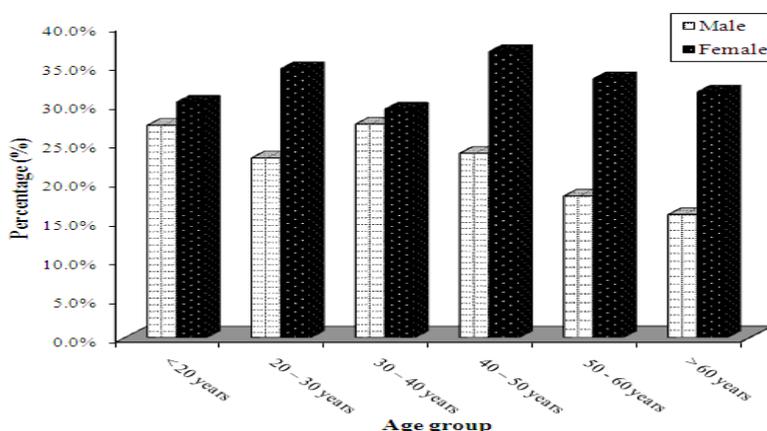


FIG (2): The prevalence of GERD symptoms in different age groups when the cutoff point is > 7

Among 660 patient, a total of 374 (56.7%) patient were identified as having GERD according to their F- Scale (Score > 7). Of them 154 male (58.8%) and 220 female (55.3%). The relation of risk factors to the presence or absence of GERD, we found that there is significance difference between GERD and non GERD group as regarding pregnancy in females (75.0%), drinking coffee and tea (65.0%), eating spicy foods (67.0%) and drugs as NSAIDS (70.8%) (P value= 0.000). But there is no significant difference as regarding gender (p value= 0.374) and smoking (p value= 0.420), as shown in table (3).

Table (3): Relation of risk factors to the presence of GERD

Parameter		GERD- n=286		GERD+ n=374		P value	Odd's Ratio
		n	%	N	%		
Gender	Males (n= 262)	108	41.2%	154	58.8%	P= 0.347	1.07
	Females (n= 398)	178	44.7%	220	55.3%		
Smoking	Yes (n= 72)	28	38.9%	44	61.1%	P= 0.420	1.09
	No (n=588)	138	43.9%	330	56.1%		
Tea and coffee	Yes (n=286)	100	35.0%	186	65.0%	P= 0.00	1.3
	No (n=374)	186	49.7%	188	50.3%		
NSAI Drugs	Yes (n=212)	62	29.2%	150	70.8%	P= 0.00	1.42
	No (n=448)	224	50.0%	224	50.0%		
Spices	Yes (n=224)	74	33.0%	150	67.0%	P= 0.00	1.3
	No (n=436)	212	48.6%	224	51.4%		
Pregnancy in females	Yes (n=24)	6	13.0%	18	75.0%	P= 0.045	1.39
	No (n=374)	172	46.0%	202	54.0%		

DISCUSSION

GERD refers to the abnormal exposure of esophageal mucosa to gastric contents. Although GERD symptoms affect 10%-29% of the population in Western countries (19), endoscopic esophagitis is less prevalent, and is reported to occur in up to 2% of individuals (20, 21). Only one-third of GERD patients have endoscopic positive findings, while others have no obvious mucosal breaks, even though GERD symptoms are present (22). Furthermore, up to 49% of endoscopically diagnosed cases of reflux esophagitis present with symptoms other than heartburn or acid regurgitation (23).

Thus, accurate diagnosis of GERD is difficult with currently accepted criteria including symptoms of heartburn and/or acid regurgitation. Recently, it has

been reported that the prevalence of endoscopic esophagitis is increasing in Japan (24,13), with most patients diagnosed as having mild esophagitis, classified into grade A and B in the Los Angeles Classification (13) system. In addition, since the majority of Japanese GERD patients present with mild symptoms (25), most of them may not seek consultation with a gastroenterologist. Nandurkar et al., 2005 reported that only about half of the patients with GERD symptoms in a community seek health care over a 10-year period and only 19% of them had endoscopy (26).

Isolauri and Laippala, 1995 showed that medication was used by only 16% of subjects with symptoms in Norway (27). Based on these previous reports, it is difficult to evaluate a genuine prevalence of GERD in the Sohag University Hospital population when the study is conducted in the gastroenterology unit of the hospital alone. Therefore, the present study was carried out in the Tropical medicine and Gastroenterology outpatient clinic and internal medicine outpatient clinic at Sohag University Hospital to accurately estimate prevalence of GERD symptoms.

Although GERD symptoms in the general population are less common in the East compared to the West (28). Since H pylori infection may result in hypochlorhydria, as seen in individuals with atrophic gastritis, H pylori-infected patients seem to be at lower risk of developing GERD (29), as is generally observed in Japan where there is a high prevalence of H pylori infection. Several reports showed an increasing trend of GERD in Asian countries in recent years (28,30).

Although it has been thought that low acid secretion would be associated with a lower prevalence of GERD in the Far East, (Lim et al., 2005) demonstrated that gastric acid secretion in Japan is rising in both H pylori-positive and -negative individuals (31). Actually, decreasing prevalence of Hp was observed in many countries (Banatvala et al., 1993 and Roosendaal et al., 1997) (32,33) as well as in Japan (Asaka et al., 1992) (34). A decreasing prevalence of H pylori infection, which is positively correlated with age, may influence the age distribution of GERD (Fujiwara et al., 2005, Wong and Kinoshita, 2006) (35,36).

In our study the prevalence of GERD was highest in the 40-50 years age group (60.5%) and decreased with age. Watanabe et al, 2007 reported different findings that the prevalence of GERD was highest in the 20-29 years age group and decreased with age (41), while Fujiwara et al., 2005 reported that the prevalence of GERD symptoms was relatively higher in the 40-49 years age group and lower in the > 60 years age group (35). However, as reported by Wong and Kinoshita, 2006, age and male sex are considered to be risk factors for heartburn and acid regurgitation even in Asia (36).

There have been a few reports that the prevalence of endoscopic esophagitis or GERD symptoms among men reached a peak when they were in

their 20 s. It has been reported in Singapore, China (28), Argentina (37), Japan (35), USA (38), and Germany that middle age subjects have GERD symptoms most frequently (39). For endoscopically proven erosive esophagitis, Shimazu et al., 2005 demonstrated that its prevalence was more frequent in older individuals (40), whereas Mishima et al., 2005 showed that there were no significant differences in age between subjects with and without erosive esophagitis (30).

For women, the prevalence of GERD increased with age and was higher than in males in the elderly (13). Although heartburn and acid regurgitation are known to be specific for GERD. Mishima et al., 2005 showed that only 51 of 195 patients with endoscopically proven esophagitis had GERD symptoms. This difference may be due to the vague term 'heartburn' (30). In addition, when the symptoms do not reach the threshold required to define 'disease', the patient may not report having heartburn. Such patients might not seek consultation with a gastroenterologist. Finally, severe esophagitis is less common in Japan (25).

The positive rate for GERD was 154 of 262 men and 220 of 398 women, and the prevalence was higher in females than in males at most of age groups in the present study. These results coincident with those results done by Watanabe et al., 2007 (41). whereas Studies that examined the influence of gender on the prevalence of GERD symptoms have found no differences (42,43), female predominance (26,35,44) or male predominance (45).

An epidemiological study on GERD could be considered accurate only when the whole study population undergoes invasive procedures. However, this would dramatically reduce the number of participants and prejudice the response rate of the study. The F-scale, therefore, seems to be the most appropriate test for general practice patients in the management of GERD because there is no requirement of endoscopy. About 4% of the population consults a general practitioner each year because of dyspepsia (46), whereas GERD symptoms are more common in 10%-20% of the population reporting heartburn on a weekly basis in community studies (42, 43).

Although increasing attention has been paid recently to the epidemiology of GERD, the lack of a standard definition and of a diagnostic gold standard may make interpretation of data more complex. In the present study, the prevalence of GERD symptoms was 56.7%, higher than if GERD is diagnosed by the presence of single specific symptoms, such as heartburn or regurgitation. This suggests that diagnosis by key items is not sufficient to determine a person's level of GERD and that a multidimensional approach, which covers all symptom aspects, is needed.

The F-scale includes two types of symptoms: one is possibly caused by gastro esophageal reflux (Do you get heartburn?; Do you sometimes subconsciously rub your chest with your hand?; Do you get heartburn after meals?; Do you have an unusual sensation in your throat?; Do you get bitter liquid coming

up into your throat?" and Do you get heartburn if you bend over); And the other is due to dysmotility of the upper gastrointestinal tract (Does your stomach feel bloated?; Does your stomach ever feel heavy after meals?; Do you ever feel sick after meals?; Do you feel full while eating meals?; Do some things get stuck when you swallow?; Do you burp a lot?;).

In a study done by Watanabe et al., 2007, he showed that according to the F- SCALE when the cutoff point was > 7 was diagnostic and significant to GERD (41), as in our study, we found that according to F- SCALE when the cutoff point was > 7 was diagnostic and significant for the diagnosis of GERD.

In our study GERD prevalence is affected by pregnancy, as 75.0% of the pregnant females included in the study have GERD. Katz and Castell, 1998 report that, heartburn is a common symptom that occurs frequently during pregnancy (47), in any trimester, nearly 80% of mothers-to-be experience mild to severe GERD symptoms at some point of their pregnancy, caused mainly by hormonal and physical changes related to the growing fetus inside them. Severity also increased throughout pregnancy. The presentation of GERD in pregnancy does not differ from that of the general population (48), and the diagnosis of GERD during pregnancy is made in much the same fashion as in nonpregnant patients.

Spicy foods do not cause GERD, although they seem to worsen GERD symptoms in some people. Food (in general) can make GERD worse. This is because food fills the stomach and induces more transient relaxations of the lower esophageal sphincter. In addition, all meals stimulate acid production in the stomach to aid digestion and can increase reflux into the esophagus in GERD sufferers. Any very large meal might be expected to produce heartburn in some people. The spicy food story is so compelling, however, that GERD sufferers often relate a spicy (or greasy) meal to their symptoms (49), But in our results GERD symptoms is affected by eating spicy foods 67.0% ($P= 0.00$).

In relation to lifestyle, smoking has often been cited as a risk factor for GERD. According to Nocon et al., 2006 and Mostaghni et al., 2009, smoking was a risk factor for GERD and was dose-dependent by increasing intra-abdominal pressure, reducing LES pressure, and decreasing bicarbonate secretion in saliva, thereby reducing saliva's pH neutralizing effect (39,50). Our results showed that there is no significant difference ($P= 0.420\%$) in reflux symptoms in both cigarette smokers and non smokers and this can be explained by decreased number of smokers among the population study.

In our study drinking tea and coffee affect the prevalence of GERD 65.0% ($P= 0.000$), But our results are not similar to those did by Chang et al., 1997 who found no link between coffee or tea consumption and the incidence of GERD (51). There was also no affect of tea or coffee on GERD (39). Although tea has been shown to increase acid secretion but it does not contribute to GERD. Some studies

have observed an association between the use of aspirin or NSAIDs and presence of GERD (52), whereas others have not (42,53). A higher consumption of NSAIDs and aspirin were visible in subjects with GERD. In our study, the use of NSAIDs is considered one of the risk factors for GERD 70.0% (P= 0.00).

REFERENCES

- 1) **Gibson PG, Henry RL, Loughlan JL.** Gastroesophageal reflux and asthma in adults and children. *The Cochrane Library* 1999;3:1-16.
- 2) **Dent J.** Patterns of lower esophageal sphincter function associated with gastroesophageal reflux. *Am J Med* 1997;103: 29s-32s.
- 3) **Saberi-Firoozi M, Khademolhosseini F, Yousefi M, Mehrabani D, Zare N, Heydari ST.** Risk factors of gastroesophageal reflux disease in Shiraz, southern Iran. *World J Gastroenterol* 2007; 13: 5486-5491.
- 4) **Kahrilas PJ.** Diagnosis of symptomatic gastroesophageal reflux disease. *Am J Gastroenterol* 2003; 98: S15-S23.
- 5) **Hampel H, Abraham NS, El-Serag HB.** Meta-analysis: obesity and the risk for gastroesophageal reflux disease and its complications. *Ann Intern Med* 2005 Aug 2;143(3):199-211.
- 6) **Jacobson BC, Somers SC, Fuchs CS, et al.** Body-mass index and symptoms of gastroesophageal reflux in women. *N Engl J Med* 2006 Jun 1;354(22):2340-2348.
- 7) **Kaltenbach T, Crockett S, Gerson LB.** Are lifestyle measures effective in patients with gastroesophageal reflux disease? An evidence-based approach. *Arch Intern Med* 2006 May 8;166(9):965-971.
- 8) **Kaltenbach JE.** Gastroesophageal reflux disease. *Best Practice & Research Clinical Gastroenterology* 2007;21(4):609-631.
- 9) **Leong R, Chan F.** Drug-induced side effects affecting the gastrointestinal tract. *Expert Opin Drug Saf* 2006;5(4):585.
- 10) **Armstrong D, Marshall JK, Chiba N, et al.** Canadian Consensus Conference on the management of gastroesophageal reflux disease in adults - update 2004. *Can J Gastroenterol* 2005 Jan;19(1):15-35.
- 11) **Chang AB, Lasserson TJ, Kiljander TO, et al.** Systematic review and meta-analysis of randomised controlled trials of gastro-oesophageal reflux interventions for chronic cough associated with gastro-oesophageal reflux. *BMJ* 2006 Jan 7;332(7532):11-17.
- 12) **Jones R.** Gastro-oesophageal reflux disease: a re-appraisal. *Br J Gen Pract* 2006 Oct;56(531):739-740.
- 13) **Furukawa N, Iwakiri R, Koyama T, Okamoto K, Yoshida T, Kashiwagi Y, Ohyama T, Noda T, Sakata H, Fujimoto K.** Proportion of reflux esophagitis

in 6010 Japanese adults: prospective evaluation by endoscopy. *J Gastroenterol* 1999; 34: 441-444.

- 14) **Johnson DA, Fennerty MB.** Heartburn severity underestimates erosive esophagitis severity in elderly patients with gastroesophageal reflux disease. *Gastroenterology* 2004; 126: 660-664.
- 15) **Ronkainen J, Aro P, Storskrubb T, Johansson SE, Lind T, Bolling-Sternevald E, Graffner H, Vieth M, Stolte M, Engstrand L, Talley NJ, Agreus L.** High prevalence of gastroesophageal reflux symptoms and esophagitis with or without symptoms in the general adult Swedish population: a Kalixanda study report. *Scand J Gastroenterol* 2005; 40: 275-285.
- 16) **Jaspersen D, Kulig M, Labenz J, Leodolter A, Lind T, Meyer-Sabellek W, Vieth M, Willich SN, Lindner D, Stolte M, Malfertheiner P.** Prevalence of extra oesophageal manifestations in gastro-oesophageal reflux disease: an analysis based on the ProGERD Study. *Aliment Pharmacol Ther* 2003; 17: 1515-1520.
- 17) **DeVault KR, Castell DO.** Updated guidelines for the diagnosis and treatment of gastroesophageal reflux disease. The Practice Parameters Committee of the American College of Gastroenterology. *Am J Gastroenterol* 1999; 94: 1434-1442.
- 18) **Kusano M, Shimoyama Y, Sugimoto S, Kawamura O, Maeda M, Minashi K, Kuribayashi S, Higuchi T, Zai H, Ino K, Horikoshi T, Sugiyama T, Toki M, Ohwada T, Mori M.** Development and evaluation of FSSG: frequency scale for the symptoms of GERD. *J Gastroenterol* 2004; 39: 888-891.
- 19) **Holtmann G.** **Reflux disease:** the disorder of the third millennium. *Eur J Gastroenterol Hepatol* 2001; 13: S5-S11.
- 20) **Kagevi I, Lofstedt S, Persson LG.** Endoscopic findings and diagnoses in unselected dyspeptic patients at a primary health care center. *Scand J Gastroenterol* 1989; 24: 145-150.
- 21) **Mansi C, Savarino V, Mela GS, Picciotto A, Mele MR, Celle G.** Are clinical patterns of dyspepsia a valid guideline for appropriate use of endoscopy? A report on 2133 dyspeptic patients. *Am J Gastroenterol* 1993; 88: 1011-1015.
- 22) **Dent J.** Gastro-oesophageal reflux disease. *Digestion* 1998; 59: 433-445.
- 23) **Klauser AG, Schindlbeck NE, Muller-Lissner SA.** Symptoms in gastro-oesophageal reflux disease. *Lancet* 1990; 335: 205-208.
- 24) **El-Serag HB, Sonnenberg A, Jamal MM, Inadomi JM, Crooks LA, Feddersen RM.** Corpus gastritis is protective against reflux oesophagitis. *Gut* 1999; 45:181-185.

- 25) **Okamoto K, Iwakiri R, Mori M, Hara M, Oda K, Danjo A, Ootani A, Sakata H, Fujimoto K.** Clinical symptoms in endoscopic reflux esophagitis: evaluation in 8030 adult subjects. *Dig Dis Sci* 2003; 47: 2236-2240.
- 26) **Nandurkar S, Locke GR 3rd, Murray JA, Melton LJ 3rd, Zinsmeister AR, Dierkhising R, Talley NJ.** Rates of endoscopy and endoscopic findings among people with frequent symptoms of gastro-esophageal reflux in the community. *Am J Gastroenterol* 2005; 100: 1448-1455.
- 27) **Isolauri J, Laippala P.** Prevalence of symptoms suggestive of gastro-oesophageal reflux disease in an adult population. *Ann Med* 1995; 26: 67-70.
- 28) **Chen M, Xiong L, Chen H, Xu A, He L, Hu P.** Prevalence, risk factors and impact of gastroesophageal reflux disease symptoms: a population-based study in South China. *Scand J Gastroenterol* 2005; 39: 759-767.
- 29) **El-Omar EM, Oien K, El-Nujumi A, Gillen D, Wirz A, Dahill S, Williams C, Ardill JE, McColl KE.** Helicobacter pylori infection and chronic gastric acid hyposecretion. *Gastroenterology* 1997; 113: 15-24.
- 30) **Mishima I, Adachi K, Arima N, Amano K, Takashima T, Moritani M, Furuta K, Kinoshita Y.** Prevalence of endoscopically negative and positive gastroesophageal reflux disease in the Japanese. *Scand J Gastroenterol* 2005; 39: 1005-1009.
- 31) **Lim SL, Goh WT, Lee JM, Ng TP, Ho KY.** Changing prevalence of gastroesophageal reflux with changing time: longitudinal study in an Asian population. *J Gastroenterol Hepatol* 2005; 20: 995-1001.
- 32) **Banatvala N, Mayo K, Megraud F, Jennings R, Deeks JJ, Feldman RA.** The cohort effect and Helicobacter pylori. *J Infect Dis* 1993; 168: 219-221
- 33) **Roosendaal R, Kuipers EJ, Buitenwerf J, van Uffelen C, Meuwissen SG, van Kamp GJ, Vandenbroucke-Grauls CM.** Helicobacter pylori and the birth cohort effect: evidence of a continuous decrease of infection rates in childhood. *Am J Gastroenterol* 1997; 92: 1470-1472.
- 34) **Asaka M, Kimura T, Kudo M, Takeda H, Mitani S, Miyazaki T, Miki K, Graham DY.** Relationship of Helicobacter pylori to serum pepsinogens in an asymptomatic Japanese population. *Gastroenterology* 1992; 102: 760-766.
- 35) **Fujiwara Y, Higuchi K, Shiba M, Yamamori K, Watanabe Y, Sasaki E, Tominaga K, Watanabe T, Oshitani N, Arakawa T.** Differences in clinical characteristics between patients with endoscopy-negative reflux disease and erosive esophagitis in Japan. *Am J Gastroenterol* 2005; 100: 753-758.
- 36) **Wong BC, Kinoshita Y.** Systematic review on epidemiology of gastroesophageal reflux disease in Asia. *Clin GastroenterolHepatol* 2006; 4: 388-397.

- 37) **Chiocca JC, Olmos JA, Salis GB, Soifer LO, Higa R, Marcolongo M.** Prevalence, clinical spectrum and atypical symptoms of gastro-oesophageal reflux in Argentina: a nationwide population-based study. *Aliment Pharmacol Ther* 2005; 22: 320-332.
- 38) **Majumdar SR, Soumerai SB, Farraye FA, Lee M, Kemp JA, Henning JM, Schrammel P, LeCates RF, Ross-Degnan D.** Chronic acid-related disorders are common and underinvestigated. *Am J Gastroenterol* 2003; 98: 2399- 2404.
- 39) **Nocon M, Labenz J, Willich SN.** Lifestyle factors and symptoms of gastro-oesophageal reflux -- a populationbased study. *Aliment Pharmacol Ther* 2006; 23: 169-174.
- 40) **Shimazu T, Matsui T, Furukawa K, Oshige K, Mitsuyasu T, Kiyomizu A, Ueki T, Yao T.** A prospective study of the prevalence of gastroesophageal reflux disease and confounding factors. *J Gastroenterol* 2005; 39: 866-87.
- 41) **Watanabe T, Urita Y, Sugimoto M, Miki K.** Gastro-esophageal reflux disease symptoms are more common in general practice in Japan. *World J Gastroenterol* 2007; 13(30): 4119-4123.
- 42) **Locke GR 3rd, Zinsmeister AR, Talley NJ, Fett SL, Melton LJ 3rd.** Familial association in adults with functional gastrointestinal disorders. *Mayo Clin Proc* 2000; 75: 907-912.
- 43) **Diaz-Rubio M, Moreno-Elola-Olaso C, Rey E, Locke GR 3rd, Rodriguez-Artalejo F.** Symptoms of gastro-oesophageal reflux: prevalence, severity, duration and associated factors in a Spanish population. *Aliment Pharmacol Ther* 2004; 19: 95-105.
- 44) **Raiha I, Impivaara O, Seppala M, Knuts LR, Sourander L.** Determinants of symptoms suggestive of gastroesophageal reflux disease in the elderly. *Scand J Gastroenterol* 1993; 27: 1011-1014.
- 45) **Kay L, Jorgensen T, Jensen KH.** Epidemiology of abdominal symptoms in a random population: prevalence, incidence, and natural history. *Eur J Epidemiol* 1994; 10: 559-566.
- 46) **Heikkinen M, Pikkarainen P, Takala J, Julkunen R.** General practitioners' approach to dyspepsia. Survey of consultation frequencies, treatment, and investigations. *Scand J Gastroenterol* 1996; 30: 647-652.
- 47) **Katz PO, Castell DO.** Gastroesophageal reflux disease during pregnancy. *Gastro Clin N Amer*, 1998; 26: 152-167.
- 48) **Richter JE.** Review article: the management of heartburn in pregnancy. *Alim Pharmacol Therapeut*, 2005; 22: 748-757.
- 49) **Akbar A, Yiangou Y, Facer P, Walters JR, Anand P, Ghosh S.** Increased capsaicin receptor TRPV1 expressing sensory fibres in irritable bowel syndrome and their correlation with abdominal pain. *Gut*. 2008; 57:923–928.

- 50) Mostaghni A, Mehrabani D, Khademolhosseini F, Masoumi SJ, Moradi F, Zare N, Saberi-Firoozi M. Prevalence and risk factors of gastroesophageal reflux disease in Qashqai migrating nomads, southern Iran. World J Gastroenterol 2009; 15: 961-965.
- 51) Chang CS, Poon SK, Lien HC, Chen GH. The incidence of reflux esophagitis among the Chinese. Am J Gastroenterol 1997; 92: 668-671.
- 52) Kotzan J, Wade W, Yu HH. Assessing NSAID prescription use as a predisposing factor for gastroesophageal reflux disease in a Medicaid population. Pharm Res 2001; 18: 1357-1362.
- 53) Haque M, Wyeth JW, Stace NH, Talley NJ, Green R. Prevalence, severity and associated features of gastroesophageal reflux and dyspepsia: a population-based study. N Z Med J 2000; 113: 178-181

الملخص العربي

أعراض الارتجاع المعدي - المريئي لدى المرضى المترددين علي العيادات الخارجية بمستشفى سوهاج الجامعي.

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- الغرض:- دراسة معدل انتشار أعراض الارتجاع المعدي-المريئي ودراسة عوامل الخطورة المحتملة المسببة له لدى المرضى المترددين على العيادات الخارجية بجامعة سوهاج.

- المرضى والطرق:- ٦٦٠ مريض من هؤلاء المترددين علي العيادات الخارجية لطب المناطق الحارة والجهاز الهضمي والباطنة العامة لأول مرة خضعوا لملا استمارة استبيان (F-Scale) بغض النظر عن شكاوهم الرئيسية.

- النتائج:- من بين ٦٦٠ شخص وجدنا ٣٧٠ مريض يعانون من أعراض الارتجاع المعدي-المريئي طبقا لنتائج (F-Scale) حيث أنهم حصلوا على قيمة أكبر من ٧. وبالرغم من انتشار أعراض المرض بين البالغين من جميع الأعمار، فقد وجدنا أن الفئة العمرية بين ٤٠-٥٠ عاما هي الأكثر عرضة للمرض، والفئة العمرية أكبر من ٦٠ عاما أقلها انتشارا. ومن عوامل الخطورة التي وجدناها مسببة للمرض هي الحمل في السيدات، الإفراط في تناول الشاي والقهوة، الأكل الحار، تناول العقاقير مثل الأسبرين والمسكنات.

- الخلاصة:- أعراض الارتجاع المعدي- المريئي منتشرة بين المصريين وأن استخدام استمارة الاستبيان (F-Scale) تعتبر طريقة سهلة ومفيدة للدراسات الاحصائية ويعتبر الإفراط في تناول الشاي والقهوة، الأكل الحار، تناول العقاقير مثل الأسبرين والمسكنات، والحمل في السيدات من أهم العوامل المسببة للمرض.