

ORIGINAL ARTICLE

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF GASTROESOPHAGEAL REFLUX DISEASE PATIENTS

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Background: Diseases of gastro-intestinal tract (GIT) are more prominent in our setup. Our life style is a significant risk factor for many diseases especially gastro-esophageal reflux disease (GERD). GERD is a disorder in which there is reflux of acid from stomach upwards to the esophagus more than twice per week. Objective of the study was to find out the socio-demographic characteristics of GERD, possible risk factors associated with this problem and to observe GERD patients in relation with disease occurrence and association with age, gender and area. **Methods:** This cross sectional descriptive study was conducted at Ayub teaching hospital, Abbottabad. The sample size was 300, selected by convenient non-probability technique. Data was collected through a questionnaire and then analyzed by using SPSS-23. **Results:** In our study, total number of patients were 300, out of which 164 (54.7%) were female, 106 (35.3%) were illiterate. Mean age was 35.9±9.6 years, while mean BMI was 29.49±4.8, occupational wise 100 (33.3%) people were unemployed. Frequency of GERD was higher in rural 172 (57.3%) areas, highest frequency was found in group of people who experienced heart burn 2–3 times/week. As far as the use of tobacco and its products is concerned 91 (30.3%) patients smoked it either as cigarette, cigar or Hookah, 110 (36.7%) patients lived a sedentary life. Out of total, 22 were using anticholinergic drugs while 12 have used in past. Regarding NSAIDs and other painkillers use 164 patients were using it, while 62 were also using antidepressants. **Conclusion:** The main determinants of GERD were found to be female gender, low socio-economic status, lack of education, high BMI, sedentary life style, lack of exercise, pregnancy, tobacco use, NSAIDs use and fatty and spicy foods.

Keywords: Gastroesophageal reflux disease, inflammatory bowel syndrome, heart burn

Pak J Physiol 2016;12(3):40–3

INTRODUCTION

Gastro-esophageal reflux disease (GERD) is the disorder which we consider a person is suffer from if he is having reflux of acid from stomach upwards to the esophagus more than twice per week.¹ Once the reflux has occurred, the prognosis depends upon the peristalsis, salivation and the anatomical integrity of the gastro esophageal junction (GEJ). So, defect in any of these mechanisms after the defect in hindering regurgitation exaggerates GERD.²

Caffeine, alcohol and chocolate can cause weakness in lower esophageal sphincter.³ It leads to regurgitation and the acid may even reach to mouth. The problem aggravates by eating food especially spicy food or any food which can cause dyspepsia like fatty, fried foods. Sauces taken with junk food also cause dyspepsia due to the tomato, vinegar and citrus part of it.³ Some medicines and hormones e.g. Theophylline, nitrates, morphine, meperidine, calcium channel blockers, diazepam and barbiturates also decrease the pressure of lower esophageal sphincter (LES).

GERD may be present in pregnancy, overweight people or hiatal hernias. Even progesterone and lying down also decreases the pressure of LES.^{4,5}

The GERD is more prevalent with increasing age. Up to 69 years the rate increases, after which it reverses. Weight loss, irritations in the upper airway, aspirations from the acid into lung parenchyma, increased belching and even sleep disorder can occur as a result of GERD.⁶⁻⁹ As the acid rises and irritates the upper airway, it causes different signs and symptoms like cough, asthma and night sleep problems, irritating lung parenchyma, belching and insomnia.⁷⁻¹⁰

If the typical heart burn occurs more than twice a week, the diagnosis is suggested and the treatment is started.¹ Even though endoscopic changes in the esophageal mucosa represent objective diagnostic criteria, it is less clear what proportion of heartburn sufferers are so affected. Early reports using ambulatory esophageal pH monitoring to define GERD found that 48–79% of patients with pathologic acid exposure had esophagitis.^{11,12}

Avoiding aggravating factors like using extra pillow help in reducing symptoms.⁷ Proton pump inhibitors, antacids, pro-kinetic medicines and histamine H₂ receptor antagonists are effective.¹³ Surgical treatment is reserved for complicated cases only.¹⁴

We conducted the current study in order to find out the socio-demographic characteristics of GERD, possible risk factors associated with this problem and to observe GERD patients in relation with disease occurrence and association with age, gender and area.

SUBJECTS AND METHODS

It was a cross-sectional descriptive study which was done at gastroenterology department of Ayub teaching hospital, Abbottabad, from April, 20, 2016 to July, 20, 2016. A sample of 300 patients were selected (using the sample finding criteria given by WHO) by non-probability convenient sampling technique. Data collection tool was a questionnaire that was distributed to all the participants. The questionnaire was validated from two experts and its reliability was adjusted using SPSS.

Inclusion criteria was the patients admitted in gastroenterology ward of Ayub Teaching Hospital (ATH) and those who were visiting OPD and were diagnosed for GERD were included. Data were taken from patients after written informed consent and ensuring the confidentiality of their data and that the data would be purely used for research purposes. Patients having complaints similar to GERD like those of peptic ulcer disease (PUD), gastritis, gastric carcinoma, age <15 years and those patients who were not willing to participate in study were not excluded. Data were collected through proforma and then analysed by using SPSS-23. Frequency and percentage were calculated for the qualitative variables.

RESULTS

Table-1 shows frequency and percentage of the biographic variables. The highest frequency of GERD was found in jobless people and housewives, and in government servants it was more prevalent than private employees. Moreover, the prevalence of GERD was higher in rural areas and married people.

When patients were asked about symptoms of GERD especially heartburn, highest frequency was found in group of people who experienced heart burn 2-3 times/week, which were 173(57.7%) in number. People with acute type of GERD experiencing heartburn once daily were 112 (37.3%) in number. While 15(5%) didn't answer this question.

Patients were also inquired about their knowledge regarding the diet causing GERD. According to which 196 (65.3%) patients have knowledge of the foods causing GERD, while 104 (34.7%) which is almost every third person, had no idea. Patients also gave a general idea about the diets associated with GERD, detail of which is given in Table-2.

Table-1: Biographic Variables

	Variable	Frequency	Percentage
Age (Years)	15-30	147	49
	30-45	96	32
	>45	57	19.
Education	Illiterate	106	35.3
	Primary	32	10.7
	Secondary	74	24.6
	Intermediate	42	14
	Graduate	46	15.3
Occupation	Unemployed	100	33.3
	Laborer	48	16
	Self-employee	30	10
	Govt. Servant	20	6.7
	Private employee	12	4
	Housewife	66	22
Residence	Rural	172	57.3
	Urban	128	42.7
Marital status	Married	204	68
	un Married	86	28.7
	Widows	6	2
	Divorced/ Separated	4	1.3
Household Monthly income	<25000	53	17.7
	25000-50000	169	56.3
	50,000-100,000	50	16.7
	>100,000	28	9.3

Table-2: Various diets associated with GERD

Diet	Frequency	Percentage
Any Food	27	9.00
Vegetables	3	1.00
Tea	20	6.67
Spicy food	17	5.67
Tea, Spicy food	34	11.33
Fatty Food	18	6.00
Meat	14	4.67
Paratha	12	4.00
Cold drinks	9	3.00
Tea, cold drinks	15	5.00
Rice	4	1.33
Rice, Pulses	5	1.67
Tea, Paratha	15	5.00
Sour Food	6	2.00
Old Reserved food	12	4.00
Sweets, Chocolates	16	5.33
Meat, Spicy food	23	7.67
No Association	50	16.67

Patients were also asked about the time gap between last meal and sleep, according to which 154 (51.3%) patients couldn't sleep in time of less than one hour after the last meal of the day, 76 (25.3%) people, took 30-60 minutes while 70 (23.3%) people took less than 30 minutes. Thus, higher number of people took more time to sleep because of disturbance from GERD.

Deprivation index of the patients was dependent upon employment, car ownership, home ownership and household overcrowding. More than 2/3 of patients, i.e., 218 (72.7%) were found to be deprived according to this criterion while un-deprived were 82 (27.3%) in number.

As far as the use of tobacco and its products is concerned 91% (30%) patients smoked it either as cigarette, cigar or Hookah. As cigarette smokers were in majority among the addicts, they were also asked about the number of cigarettes smoked per day, detail of

which is given in table 3. History of alcohol use showed that most of our study patients 292 (97.3%) out of 300 did not consume alcohol, detail of which is given in Table-3.

Table-3: Descriptive statistics of Smoking and Alcohol intake

Variable		Frequency	Percentage
Use of Tobacco Product	Cigarette/Cigar/Hookah	91	30.3
	Snuff	40	13.3
	No	169	56.4
Smoking history	<5 cigarette/day	40	13.3
	5–10 cigarette/day	24	8.0
	10–20 cigarette/day	18	6.0
	>20 cigarette/day	4	1.3
	No cigarette	214	71.4
Use of Alcohol	No	292	97.4
	Yes	4	1.3
	No Answer	4	1.3

Frequency and percentage of different life styles, exercise habits and personal hygiene are given Table-4. Table 5 shows other disorders associated with GERD.

Table: 4. Life styles, exercise and hygiene

Life style variable	Frequency	Percentage	
Life style	Sedantry	110	36.7
	Physical work	158	52.7
	Office work	16	5.3
	Others	14	4.7
	No answer	2	0.7
Exercise	Regular	122	40.7
	On/Off	62	20.7
	No	116	38.7
Personel Hygiene	Satisfactory	248	82.7
	Unsatisfactory	52	17.3

Table-5: Associated Diseases

Associated Diseases	Frequency	Percentage	
Peptic Ulcer Disease	Yes	66	22.0
	No	234	78.0
Psychiatric disorder/Stress	Yes	94	31.3
	No	206	68.7
Irritable Bowel Syndrome	Yes	34	11.3
	No	266	88.7

Though higher number of patients had no family history of GERD being 196 (65.3%) out of 300 patients. Still as much as a third of the sample had positive family history. These patients were 104 (34.7%) in number. Detail of anti-cholinergic and inhaled bronchodilators, non-steroidal anti-inflammatory drugs (NSAIDS)/other pain killers and antidepressant drugs is given in Table-6.

Table-6: Use of Drugs

Drugs	Using	Not Using	Used in Past	Not Answered
Anticholinergics	22	266	12	-
Inhaled Bronchodilators	14	282	4	-
NSAIDS/Pain Killers	164	134	-	2
Antidepressants	62	238	-	-

DISCUSSION

Out of total 300 patients, female (54.7%) were more affected as compared to males. This point is supported by other studies as well like women accounted for 55 percent of all hospitalizations for GERD in 2005, with the highest percentage occurring in the Southern America (approximately 40.9 female GERD patients seen per 100,000 people).¹⁵ Another study on GERD showed that higher prevalence among women compared to men was not explained by body mass, tobacco smoking, alcohol consumption, dietary factors, or physical exercise.¹⁶ In a similar other study, about 62% of the interviewed patients were women.¹⁷

When patients were asked about symptoms of GERD especially heartburn, highest frequency was found in group of people who experienced heart burn 2-3 times/week, which were 173 (57.7%) patients. People with acute type of GERD experiencing heartburn once daily were 112 (37.3%) in number. Another study shows that 50% of all people questioned regarding GERD symptoms report that they have more heartburn at night, 63% reported difficulty sleeping and 40% of them reported that they could not function perfectly the next day.¹⁸

Though higher number of patients had no family history of GERD, still as much as a third 104 (34.7%) of the sample had positive family history. Other studies have also found such association. For example, a study of the St Thomas' Adult UK Twin Registry demonstrated that GERD was associated significantly with a paternal and maternal history of reflux disease. It also highlighted the higher concordance in prevalence of GERD in monozygotic over dizygotic twins.¹⁹

As far as the use of tobacco and its products is concerned 91 (30%) patients smoked it either as cigarette, cigar or Hookah, among which smoking is most prevalent. This is comparable to other studies which have investigated cigarette smoking and coffee consumption as common factors for GERD. The Georgia Medicaid study revealed that the odds of a GERD diagnosis were increased significantly by observed tobacco use.¹⁹

Inhaled bronchodilators are used by patients of respiratory diseases which can occur in complicated GERD. Our study shows that 14 (4.7%) patients were using inhaled bronchodilators while 4 (1.3%) had used them back at some point in their life. A study with comparable results showed that 34–89% asthmatics have GERD.²⁰ One hundred and sixty four (54.7%) patients gave a positive history of using NSAIDS. Another study reported 33% of their study patients using NSAIDs during the previous 3 months. The lifetime and 3-month prevalence rates of GERD symptoms were 37% and 21% respectively. GERD symptoms were significantly more common among NSAID and aspirin

users than among non-users. Thus, use of NSAID is a significant risk factor for GERD.²¹

Results of our study are supported by national as well as international studies. However, there are some differences which may be due to different in race, diet habits and different life style. Smoking, excess alcohol, irritable bowel syndrome, increasing body mass index, a family history of upper gastrointestinal disease, increasing Townsend deprivation index, anticholinergic drugs, weight gain, antidepressant drugs, inhaled bronchodilators and illiteracy were associated with GERD symptoms.²²

Lifestyle changes, healthier diet and regular exercise should be acquired for relief of symptoms. Moreover acidic food, tea, coffee, fatty and greasy food should be avoided and no heavy meal should be taken near time of sleep. Doctor should be consulted as soon as the symptoms appear. Medications should be taken regularly to avoid the discomfort from this disorder and also for inhibiting its progression into esophageal metaplasia and Barrett's esophagus.

CONCLUSION

The main determinants of GERD were found to be female gender, low socio-economic status, lack of education, high body mass index, sedentary life style, lack of exercise, alcohol abuse, pregnancy, tobacco use, NSAIDs use and fatty, greasy and spicy foods. The prevalence in positive family history cases and sedentary life style was also noted. Rural population was more affected as compared to urban population. Other factors contributing to the symptoms of GERD were carbonated drinks, sweets, rice, coffee, tea, potato chips and meat products.

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Received: 28 Jul 2016

Revised: 25 Sep 2016

Accepted: 26 Sep 2016