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Research Article

**GASTRO-ESOPHAGEAL REFLUX DISEASE AND ITS RISK
FACTORS AMONG LOCAL POPULATION OF PAKISTAN****Dr. Noreena Baloch¹, Dr. Anam Riaz¹, Dr. Hafsah Rabbani²**¹Tehsil Headquarters Hospital Taunsa Sharif District Dera Ghazi Khan, ²District Headquarters Hospital Sahiwal.**Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract**

Introduction: Gastro-esophageal reflux disease (GERD) is one of the most common diseases in Europe and the United States, and affects severely the quality of life pertinent to such symptoms as heartburn and acid regurgitation.
Objectives of the study: The main objective of the study is to analyze the gastro-esophageal reflux disease and its risk factors among local population of Pakistan.

Material and methods: This cross sectional study was conducted in Nishtar Hospital Multan during July 2019 to January 2020. The data was collected from 500 patients of both male and female. Patients presenting with typical symptoms of GERD, over a period of six months were enrolled. Information on patient demography, medical history, family history, prescription patterns, lifestyle factors and dietary habits were collected using a standard DCF.

Results: The data were collected from 500 patients. Approximately one quarter of the participants reported having received 13 or more years of education. There were 101 (9.4 %) participants reporting a history of pan masala chewing, among whom 67 were men and 34 women. Smoking was more common than pan masala chewing (156 out of 1072, 14.6 %), and there were only three women among the ever smokers. In the present study, we surveyed the six items including the cardinal symptoms (heartburn and regurgitation) and atypical symptoms (nausea, night sleep disturbance, stomach pain, and additional medication) to define the presence of GERD.

Conclusion: It is concluded that the risk factors predisposing for GERD in the study population include increasing age and BMI, living in urban area, lower educational level, and pan masala chewing.

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INTRODUCTION:

Gastro-esophageal reflux disease (GERD) is one of the most common diseases in Europe and the United States, and affects severely the quality of life pertinent to such symptoms as heartburn and acid regurgitation. The prevalence of GERD referring to those with symptoms at least once per week, varies greatly with ethnicity and geography: 18.1–27.8 % in North America, 8.8–25.9 % in Europe, and 2.5–7.8 % in East Asia, as estimated from 28 studies [1]. However, there is a paucity of epidemiological data on the prevalence of GERD in general populations in Southern India. Previous population-based surveys conducted in Europe and North America have adopted a symptom-based approach [2].

Gastroesophageal reflux disease (GERD) is a common affliction and also the major upper gastrointestinal (GI) problem in Western countries with 10-20% of population reporting weekly symptoms of GERD [3]. In Asia, the prevalence of symptom-based GERD during 2005-2010 was 5.2-8.5% in Eastern Asia and 6.3-18.3% in Iran the country with most studies on GERD prevalence in South Central Asia. Hospital-based studies on GERD from Pakistan have reported a prevalence of 22.2% and 24.0%. The total direct and indirect cost of GERD per patient, estimated in purchasing power parity dollars (PPP\$) from a study in Iran in 2011, is PPP\$97.70 and PPP\$13.7, respectively [4].

GERD influences the general health, daily and social functioning, and physical and emotional activities. It strongly affects the health-related quality of life with frequent interruptions during sleep, work, and social activities. GERD is defined as a condition which develops when the reflux of stomach contents causes troublesome symptoms and/or complications [5]. Symptoms are considered 'troublesome' if they adversely affect an individual's well-being. The characteristic symptoms of GERD are heartburn and acid regurgitation [6].

Objectives of the study:

The main objective of the study is to analyze the gastro-esophageal reflux disease and its risk factors among local population of Pakistan.

MATERIAL AND METHODS:

This cross sectional study was conducted in Nishtar Hospital Multan during July 2019 to January 2020. The data was collected from 500 patients of both male and female. Patients presenting with typical symptoms of GERD, over a period of six months were enrolled. Information on patient demography, medical history, family history, prescription patterns, lifestyle factors and dietary habits were collected using a standard DCF. Current or historical evidence included laboratory, endoscopic and radiological findings or past history/diagnosis. For each patient, information was collected by the physicians on 32 variables. Information was collected regarding age, sex, height, weight, residential areas, educational level, religion, and the habits of pan masala chewing and cigarette smoking. The study participants were categorized into three subgroups according to the different scales of body-mass index (BMI), determined by the weight in kilograms divided by the square of height in meters (kg/m^2); BMI < 25 was referred as normal and served as reference, 25–29.9 as overweight and ≥ 30 as obese.

Statistical analysis:

A chi-square test was used to examine the difference in the distribution of the fracture modes (SPSS 19.0 for Windows, SPSS Inc., USA).

RESULTS:

The data were collected from 500 patients. Approximately one quarter of the participants reported having received 13 or more years of education. There were 101 (9.4 %) participants reporting a history of pan masala chewing, among whom 67 were men and 34 women. Smoking was more common than pan masala chewing (156 out of 1072, 14.6 %), and there were only three women among the ever smokers. Baseline characteristics of participants are displayed in Table 01.

Table 01: Basic characteristics of the study participants

| Characteristics | | No. of subjects (%) |
|---------------------------------------|----------------|---------------------|
| Age (y) | Median (range) | 42 (20–86) |
| | 20–29 | 173 (16.1) |
| | 30–39 | 277 (25.8) |
| | 40–49 | 275 (25.7) |
| | 50–59 | 198 (18.5) |
| | ≥60 | 149 (13.9) |
| Sex | Men | 335 (31.3) |
| | Women | 737 (68.7) |
| BMI (kg/m ²) ^a | <25 | 709 (66.1) |
| | 25–29.9 | 298 (27.8) |
| | ≥30 | 65 (6.1) |
| | Unknown | 2 |
| Domicile | Rural | 731 (68.2) |
| | Urban | 341 (31.8) |
| Educational level (years) | Low (0–8) | 344 (33.0) |
| | Middle (9–12) | 446 (42.7) |
| | High (≥13) | 254 (24.3) |
| | Unknown | 28 |
| Pan masala chewing | Never | 970 (90.6) |
| | ever chewer | 101 (9.4) |
| | Unknown | 1 |
| Cigarette smoking | Never | 913 (85.4) |
| | ever smoker | 156 (14.6) |
| | Unknown | 3 |

In the present study, we surveyed the six items including the cardinal symptoms (heartburn and regurgitation) and atypical symptoms (nausea, night sleep disturbance, stomach pain, and additional medication) to define the presence of GERD.

Table 02: Frequency distribution of symptoms of GERD patients

| Symptoms | 1 day (mild) | 2–3 days (moderate) | 4–7 days (severe) |
|----------------------------|--------------|---------------------|-------------------|
| Heartburn | 90 (8.4) | 113 (10.5) | 80 (7.5) |
| Acid regurgitation | 66 (6.2) | 71 (6.6) | 57 (5.3) |
| Stomach pain or discomfort | 61 (5.7) | 69 (6.4) | 916 (85.5) |
| Nausea | 46 (4.3) | 61 (5.7) | 950 (88.6) |
| Night sleep disturbance | 53 (4.9) | 42 (3.9) | 14 (1.4) |
| Additional medication | 30 (2.8) | 41 (3.8) | 28 (2.6) |

DISCUSSION:

This cross-sectional study has shown a high prevalence of GERD (22.2 %) in a general population. In our study, we observed a positive relationship of GERD with increasing age. A previous national multicenter study, conducted in China showed that the prevalence of reflux esophagitis increased with age [7]. However, the association between GERD and age

is controversial. Several studies observed a positive relationship, whereas other studies have reported an inverse association, or a lack of relationship.

Our finding of a positive association between increasing BMI and the risk of GERD is consistent with the results of many other studies. For example, a cross-sectional study showed that obesity increased

the risk of GERD, partly explained by increasing esophageal acid exposure [8]. Another study indicated that the risk of GERD appeared to be linked directly to BMI, regardless of whether a person is of normal weight or overweight.

Not surprisingly, subjects living in an urban community have a consistent and higher risk of GERD compared to those living in a rural community [9]. We speculate that subjects living in an urban area are susceptible to psychosocial factors contributing to the high prevalence of GERD as demonstrated in many previous studies. Our study also showed that subjects with higher educational level (≥ 13 years) had a lower prevalence of GERD. This is in line with findings observed in Albania and another study among monozygotic twins, which showed that lower educational level may increase the risk of GERD in women but not in men [10].

CONCLUSION:

It is concluded that the risk factors predisposing for GERD in the study population include increasing age and BMI, living in urban area, lower educational level, and pan masala chewing. Omeprazole was the preferred drug both in patients with a history of symptoms and those reporting symptoms for the first time. Underlying risk factors like consumption of spicy foods, and high BMI were widely prevalent in patients with GERD symptoms.

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