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The Clinical Profile of Endoscopically Verified Gastroesophageal Reflux Disease in a Tertiary Care Teaching Hospital: A Cross-Sectional Study

Dharampaul Jain[1], Shyam Sunder Nagpal[2]

[1]Assistant Professor, Department of Medicine, World College of Medical Sciences and Research, Jhajjar, Haryana, India, [2]Assistant Professor, Department of General Surgery, World College of Medical Sciences and Research, Jhajjar, Haryana, India.

Abstract

Background: Gastroesophageal reflux disease (GERD) is one of the most common gastrointestinal chronic disorders. GERD is described as symptoms or mucosal injury caused by aberrant stomach content reflux into the esophagus or beyond. The normal physiological process of retrograde flow of gastric contents from the stomach to the esophagus is known as gastroesophageal reflux. **Subjects and Methods:** Total of 87 patients had gastro-esophageal reflux disease as determined by upper gastrointestinal endoscopy. This study comprised patients who had been diagnosed with gastro-esophageal reflux disorder (GERD) after an upper gastrointestinal endoscopy. The upper gastrointestinal endoscopy (UGI scopy) was once thought to be the gold standard diagnostic technique for the diagnosis of gastroesophageal reflux disease. **Results:** 29 patients (33.3 percent) had no co-morbidities, 39 patients (44.8 percent) had three co-morbidities, and 19 patients (21.8 percent) had three co-morbidities. Heartburn symptoms were nonexistent in 24 patients (27.6%), daily episodes in 17 patients (19.5%), >2 episodes per week in 37 patients (42.5%), and fewer than 2 episodes per week in 9 individuals in the current study (10.3 percent). Regurgitation was nonexistent in 25 patients (28.7%), daily episodes in 15 patients (17.2%), >2 occurrences per week in 23 patients (26.4%), and fewer than 2 episodes per week in 24 patients in our study (27.6 percent). In the study, retrosternal chest pain was not seen in 28 (32.2%) of the 87 GERD patients, daily episodes were seen in 18 (20.7%), >2 episodes per week in 12 (13.8%), and fewer than 2 episodes per week in 29 patients (33.3 percent). Dysphagia was nonexistent in 62 patients (71.3%), daily episodes in 17 patients (19.5%), >2 occurrences per week in 5 patients (5.7%), and fewer than 2 episodes per week in 3 patients in this study (3.4 percent). **Conclusion:** The prevalence of GERD complications was 29.9%, with the sequence of erosive esophagitis > Barrett's esophagus > Esophageal stricture. A patient's age indicates a higher risk of problems. Heartburn, regurgitation, and retrosternal chest pain on a daily basis indicate a higher chance of failing.

Keywords: Endoscopy, Gastroesophageal reflux disease and Esophagitis.

Corresponding Author: Dr. Shyam Sunder Nagpal, Assistant Professor, Department of General Surgery, World College of Medical Sciences and Research, Jhajjar, Haryana, India.

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Introduction

Gastroesophageal reflux disease (GERD) is one of the most common gastrointestinal chronic disorders.[1,2] GERD is described as symptoms or mucosal injury caused by aberrant stomach content reflux into the esophagus or beyond.[3] The normal physiological process of retrograde flow of gastric contents from the stomach to the esophagus is known as gastroesophageal reflux (GER). GERD is not a medical condition. It happens numerous times a day with no signs or symptoms of mucosal injury. The failure of the anti-reflux barrier causes GERD. GERD occurs when stomach contents flow freely into the esophagus, causing reflux symptoms such as heartburn and regurgitation.[4] It's a multifaceted procedure. GERD has a negative impact on one's quality of life. GERD can be divided into two types using endoscopy: non-erosive reflux disease and erosive esophagitis. Erosive esophagitis is categorized from A to D according to the Los Angeles classification. It can manifest itself in a variety of ways, ranging from gastrointestinal (common) to extra-gastrointestinal (rare) symptoms. Heartburn, regurgitation, and retrosternal chest discomfort are all common gastrointestinal complaints. Bronchial asthma, laryngitis, hoarseness of voice, persistent cough, sore throat, and tooth erosions are examples of extra-gastrointestinal symptoms. Diverse research on various populations and lifestyle backgrounds had previously been described in the literature, but data from our portion of the country was few. As a result, more research based on data from our part of the country are required. Long-term untreated GERD can lead to serious consequences such esophageal ulcers, Barrett's esophagus, and esophageal stricture. However, diverse inference has been proposed regarding the relationship between clinical, lifestyle, and endoscopic features and GERD problems, prompting further investigation. GERD has been more common in the previous two decades.[5] Because many people with GERD are asymptomatic, it's difficult to determine the exact prevalence rate. With data based on esophagitis, the prevalence could be underestimated (mucosal damage). It is not practicable to measure the pH of the esophagus on a wide scale. Gallup performed a

demographic poll in the United States and discovered that 44 percent of respondents reported heartburn at least once a month.[6] Heartburn was found to be prevalent in 42 percent of people in Olmsted County, Minnesota, while acid regurgitation was found to be prevalent in 45 percent of people. Weekly symptoms were experienced by 20% of the patients.[7] Although the frequency of GERD is higher in western countries and is increasing in India, there have been little investigations on the condition in India.[8] In the United States, GERD had the largest annual direct expenditures ($9.3 billion).[9] Prevalence estimates for GERD ranged from 18.1% to 27.8% in North America, 8.8% to 25.9% in Europe, 2.5 percent to 7.8% in East Asia, 8.7% to 33.1 percent in the Middle East, 11.6 percent in Australia, and 23.0% in South America.[10] In one study, 7.6% of Indian participants experienced severe GERD symptoms.[11] In another study, 22.2 percent of people in southern India had GERD.[12] GERD affects both men and women equally, however esophagitis and barrett's esophagus are more common in men. The prevalence of GERD issues rises with age, possibly as a result of accumulated acid damage to the esophagus over time.[13] According to one study, the prevalence of GERD has risen in tandem with the rise in obesity.[14] On the other hand, a Swedish study of older adult men found no link between GERD and obesity.[15] Another major study found that regardless of BMI, there is a link between GERD symptoms and abdominal diameter.[16] Heartburn and acid regurgitation are regarded to be fairly specific symptoms for GERD diagnosis.[17] Large meals, spicy foods, alcohol, citrus fruits, chocolates, and lipids can all cause heartburn. Bending over or lying down in a supine position might increase heartburn.[18] A study found that in GERD patients, acute auditory stress can worsen heartburn symptoms.[19] Another study found that GERD patients who are sleep deprived are hyperalgesic, suggesting a possible cause for enhanced GERD symptoms intensity.[20] A third of GERD patients are psychologically upset, according to another study.[21] Nighttime heartburn can induce sleep deprivation and interfere with the next day's job. Other symptoms of gastroesophageal reflux disease include acid regurgitation and dysphagia. The regurgitation of acidic liquid with ease, especially after a heavy meal and exacerbated by a recumbent or stooping position, is strongly diagnostic of gastroesophageal reflux disease.[17] More than 30% of patients with gastroesophageal reflux disease suffer with dysphagia.[22] Burping, water brash, nausea, odynophagia, hiccups, and vomiting are less common symptoms of gastroesophageal reflux disease.[23] A sudden emergence of salty or sour fluid in the mouth is known as water brash. It is not regurgitated fluid; it is released in reaction to acid from the salivary glands. The majority of elderly patients with gastroesophageal reflux disease (GERD) have no symptoms. The reason for this is that the reflux material is less acidic, and some patients have a lower pain threshold.[24] Many older individuals present with GERD issues first, although having had the condition for a long time. One-third of people with Barrett's esophagus were acid-insensitive at the time of diagnosis.[25] Upper GI endoscopy is the gold standard for diagnosing esophagitis and determining the severity of the condition. It also rules out any other possible causes of symptoms. Only 20-60% of GERD patients with esophagitis had esophagitis at upper GI endoscopy, according to pH testing.[26] Erythema and edema are the first signs of acid reflux in endoscopy; they are generic and are reliant on the endoscopic picture quality.[27] Hemorrhage, esophageal ulcers, and esophageal perforation are all complications of GERD. The study's goals were to define the GERD symptom profile and use endoscopy to assess the consequences of GERD.

Subjects and Methods

This present observational study was conducted in the Department of Medicine at World College of Medical Sciences and Research in collaboration with Department of Surgery during the period from September,2017 to August,2019. The study was approved by the World College of Medical Sciences and Research at Jhajjar, institutional ethical council. Patients diagnosed with Gastro-esophageal reflux disease (GERD) based on upper gastrointestinal endoscopy were included in this study (UGI scopey). A total of 87 patients had gastro-esophageal reflux disease as determined by upper gastrointestinal endoscopy. This study comprised patients who had been diagnosed with gastro-esophageal reflux disorder (GERD) after an upper gastrointestinal endoscopy. The upper gastrointestinal endoscopy (UGI scopy) was once thought to be the gold standard diagnostic technique for the diagnosis of gastroesophageal reflux disease. This study comprised a total of 87 GERD patients who had their symptoms confirmed by a UGI scopy. Patients were briefed on the trial and given the opportunity to give their informed consent. Patients were then interviewed for demographic information, lifestyle information, and symptomatology information. In the predesigned proforma, the gathered patient information and endoscopic findings were recorded.

Inclusion criteria

- Patients with Gastro-esophageal reflux disease (GERD) who are above 20 years old and have had a UGI scopy.

Exclusion criteria

- Age <20 years, presence of mass lesion in esophagus or stomach, presence of esophageal varices, history of corrosive ingestion, pregnant women, terminally ill patients and mentally challenged were excluded from the study.
- The collected information was coded and entered into a Microsoft Excel spreadsheet. SPSS version 22.0 statistical software was used to examine the data. The acquired data was examined using descriptive statistics. The chi-square test or Fischer exact test were used to compare categorical variables, which were reported as percentages. The comparison analysis was done using an independent sample 't' test, and continuous variables were reported as

mean standard deviation (SD). Statistical significance was defined as a probability value (p value) of less than or equal to 0.05.

Results

This study included 87 patients who were diagnosed with gastro-esophageal reflux disorder (GERD) after undergoing a UGI scopy. The collected data of 87 patients was evaluated using descriptive statistics. Patients with GERD were 56.32±13.55 years old on average (range: 20-78 years). In addition, the authors split the 87 GERD patients into two groups: GERD with complications (26(29.9%) patients) and GERD without complications (61(70.1%) patients), and compared the research variables between the two groups. GERD with complications had a mean age of 56.04 ± 13.4 years (range: 38-75 years), while GERD without complications had a mean age of 56.6 ± 13.7 years (range: 41-78 years). In the current study, 64 patients (73.6 percent) were males and 23 patients (26.4 percent) were females in [Figure 1].

Table 1: Shows the age, body mass indexand complications

Demographics Variables	Gastroesophageal Reflux Disease		P value
	With Complications	Without complications	
Age in year	56.04 ±13.4	56.6 ±13.7	0.01
Weight in kg	68.24 ±17.2	69.34 ±17.4	0.54
Height in cm	182.36 ±46.6	180.42 ±44.2	0.21
Body Mass Index	29.2 ± 5.4	28.4 ± 3.6	0.01

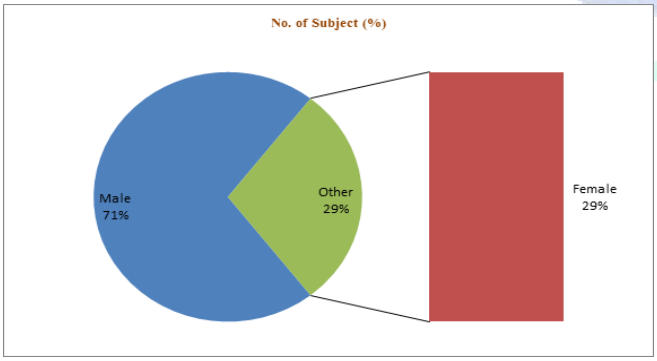

Figure 1: Shows the frequency of male and female.

Body mass index was 25 in 61 patients (70.1%) and 25 in 26 patients (70.1%) in this study of 87 GERD patients (29.9 percent). In the current study, 29 patients (33.3 percent) had no co-morbidities, 39 patients (44.8 percent) had three co-morbidities, and 19 patients (21.8 percent) had three co-morbidities. Heartburn symptoms were nonexistent in 24 patients (27.6%), daily episodes in 17 patients (19.5%), >2 episodes per week in 37 patients (42.5%), and fewer than 2 episodes per week in 9 individuals in the current study (10.3 percent). Regurgitation was nonexistent in 25 patients (28.7%), daily episodes in 15 patients (17.2%), >2 occurrences per week in 23 patients (26.4%), and fewer than 2 episodes per week in 24 patients in our study (27.6 percent). In the study, retrosternal chest pain was not seen in 28 (32.2%) of the 87 GERD patients, daily episodes were seen in 18 (20.7%), >2 episodes per week in 12 (13.8%), and fewer than 2 episodes per week in 29 patients (33.3 percent). Dysphagia was nonexistent in 62 patients (71.3%), daily episodes in 17 patients (19.5%), >2 occurrences per week in 5 patients (5.7%), and fewer than 2 episodes per week in 3 patients in this study (3.4 percent). In the current study, out of 87 GERD patients, 52 (59.8%) had a smoking history, while 35 had none (40.2 percent). The authors defined a positive smoking history as smoking less than two cigarettes per week. Alcohol intake history was reported in 58 patients (66.7 percent) and absent in 29 participants in this analysis of 87 GERD patients (33.3 percent). Positive alcohol history was defined as a weekly intake of less than 90 milliliters. In the current study, 25 (28.7%) of the 87 GERD patients were vegetarians, and 62 (71.3%) were on a mixed vegetarian/non-vegetarian diet. Patients were classified as having a varied diet if they had any type of meat at a frequency of two servings per week, according to the authors. In this study, 57 patients (65.5 percent) had a history of eating spicy foods, while 30 patients had no such history (34.5 percent). In this study, out of 87 GERD patients, 37 (42.5%) had a history of eating fried foods, while 50 had none (57.5 percent). Positive history was defined as two dishes per week by the authors. In the current investigation, there was no history of tea/coffee intake in 21 patients (24.1%), regular intake (>3 cups/day) in 42 patients (48.3%), and infrequent intake in 24 patients (27.6%) of the 87 GERD patients. In this study, 14 patients (16.1%) had esophageal ulcers, 7 patients (8.04%) had Barrett's esophagus, 5 patients (5.7%) had esophagealstricture, and 61 patients (70.1%) had no problems. The patients' age and BMI (both p=0.01) demonstrated a significant statistical difference between the GERD with complication and GERD without complication groups. Heartburn, regurgitation, retrosternal chest discomfort, and dysphagia were shown to be significantly different between the two groups (p0.05), however the number of comorbidities was not.

Discussion

Based on the occurrence of difficulties, the authors separated 87 GERD patients into two groups: GERD with complications and GERD without complications. The authors compared the two groups' demographic, symptomatology, lifestyle, and endoscopic data. The authors discovered a strong link between GERD with complications and GERD without complications in terms of heart burn, regurgitation, and retrosternal chest pain in this investigation. Daily occurrences of heartburn (p0.05) are thought to indicate a significant risk of GERD problems. Regurgitation (p0.05) and retrosternal chest discomfort (p0.05) show a similar pattern. In this study, the authors discovered that 70.1 percent of the patients had a BMI of 25 and 29.9% had a BMI of 25, but a comparable study by Jacobson BC et al indicated that GERD symptoms aggravation is more common in individuals with a BMI of 25.[28] According to this study, 69

percent of 87 GERD patients had linked co-morbidities, with 44.8 percent having three co-morbidities and 21.8 percent having three co-morbidities. This data backs up a recent study by Moraes-Filho JPP et al, who hypothesized a substantial link between co-morbidities and GERD, as well as their worsening effect.[29] Erosive esophagitis with ulcers, Barrett's esophagus, and esophageal stricture are all GERD complications. Previous research by Spechler SJ et al. found that esophageal cancer is the most common GERD consequence, necessitating repeated endoscopic screening for Barrett's esophagus development.[30]

Chait MM et al. hypothesized that 20% of persons with GERD suffer significant problems, according to another study. According to the results of the study, 29.9% of the patients had difficulties (16.1 percent esophageal ulcer, 8.04 percent Barrett's esophagus, and 5.7 percent esophageal stricture), whereas the remaining 72 percent had no complications.[31]

Conclusion

In summary, GERD symptoms were not present in all of the study participants. In this study, the prevalence of GERD complications was 29.9%, with the sequence of erosive esophagitis > Barrett's esophagus > Esophageal stricture. A patient's age indicates a higher risk of problems. Heartburn, regurgitation, and retrosternal chest pain on a daily basis indicate a higher chance of failing.

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