

Descriptive Study of Gastro esophageal Reflux Disease (GERD) During the Last Six Months of 1404 at Khost Provincial Specialty Hospital

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Background: Gastro esophageal reflux disease (GERD) occurs when gastric contents reflux into the esophagus beyond the normal physiological limit, causing symptoms such as heartburn, regurgitation, and dysphagia, with or without mucosal injury. This study aimed to determine the frequency and pattern of GERD among hospitalized patients in the Internal Medicine Department of Khost Provincial Hospital. This descriptive, case-series study was conducted over six months, from 1 Mizan to 29 Hoot 1404. A total of 45,503

patients visited the hospital, of whom 1,602 were admitted to the Internal Medicine ward. Among these, 33 patients were diagnosed with GERD and included in the study. Data regarding demographics, residence, age distribution, risk factors, associated conditions, and complications were collected and analyzed descriptively. GERD accounted for 2% of total admitted cases. Of the 33 patients, 55% were male and 45% female. Regarding residence, 70% were from central districts and 30% from peripheral districts. By age distribution, 13% were under 20 years, 57% between 21–40 years, 21% between 41–60 years, and 9% were older than 60 years. Risk-factor assessment showed 5 patients with positive *H. pylori*, 8 smokers, and 2 patients using NSAIDs. Common symptoms included substernal burning in all patients, chronic cough and sore throat in 11 patients, epigastric pain in 8, dysphagia in 2, anorexia in 3, and nausea/vomiting in 1 patient. Associated conditions included gastric ulcers (4 patients), combined gastric and duodenal ulcer (1), and gastritis (7).

Keywords: *Gastro esophageal reflux disease, Peptic ulcer disease, Gastritis, Helicobacter pylori, NSAIDs.*

Introduction

Gastro esophageal reflux disease (GERD) is defined as the condition in which the contents of the stomach reflux toward the esophagus beyond their normal level, causing a range of symptoms such as heartburn, swallowing difficulties, and regurgitation, either with or without esophageal mucosal injury (1, 2). The global prevalence of GERD is estimated to be around 14% (3). This prevalence varies across regions, ranging from 2.5% to 33.1% in populations of North America, Europe, East Asia, the Middle East, Australia, and South America (4). Among university students, the prevalence ranges from 11.8% to 52.6%. Diagnosis is usually based on upper gastrointestinal endoscopy, esophageal manometry, or 24-hour pH monitoring (5, 6). Typical symptoms include heartburn and regurgitation, while less common symptoms include dysphagia and chest pain. Various mechanisms underlie these symptoms, starting with mucosal irritation followed by activation of afferent sensory nerves. In cases of chest pain, cardiac causes should also be evaluated concurrently. Chronic GERD may lead to persistent dysphagia, strictures, and adenocarcinoma, which can be prevented through early diagnosis and treatment (7). Interestingly, studies have noted a protective role of *Helicobacter pylori* infection against

GERD, Barrett's esophagus, and adenocarcinoma of the gastric cardia and esophagus, rather protective reducing gastric acidity (hypochlorhydria). However, this protective role should not prevent recommendations for *H. pylori* eradication therapy, as its effect on GERD symptoms may vary—improving in some patients, worsening in others, or remaining unchanged. Detailed discussion of this is presented in the final section of the monograph (8, 9). Diagnosis is based on patient history, physical examination, and laboratory investigations. GERD symptoms should be differentiated from other conditions presenting with similar complaints, including infections, medication effects, eosinophilic esophagitis, gastric ulcers, dyspepsia, biliary disorders, alkaline reflux, and esophageal motility disorders. Particular attention must be paid to alkaline reflux due to its potentially life-threatening nature. Other conditions can be differentiated using endoscopy, ultrasound, or other investigations. Differentiation from esophagitis is straightforward, as endoscopy and mucosal biopsy can easily distinguish them. In endoscopic examination, infectious esophagitis usually shows diffuse inflammation, whereas reflux disease primarily affects the distal esophagus; ulcers observed in infectious esophagitis are more widespread. Eosinophilic esophagitis typically forms ring-like structures covered by white exudates. Drug-induced ulcers are usually solitary, deep, located near the cardia, and often found in the distal esophagus. GERD complications are related to chronic esophageal inflammation (bleeding, strictures) and adenocarcinoma (11). Management initially involves lifestyle modifications aimed at controlling symptoms, healing esophagitis, and preventing recurrence and complications. Pharmacologic treatment includes antacids, H₂ receptor antagonists, and proton pump inhibitors. Surgical intervention is indicated when symptoms persist despite PPI therapy or in the presence of Barrett's esophagus (12, 13).

Methodology

This study is descriptive research conducted in the form of a case series. The study population included all patients who visited Khost Provincial Hospital during the last six months of the year 1404 AH, totaling 45,503 individuals. Among them, 33 patients were diagnosed with gastro esophageal reflux disease (GERD). A census sampling method was employed, including all patients who visited the hospital within the specified period. Inclusion criteria encompassed all patients diagnosed with GERD who were admitted to Khost Provincial Hospital during the last six months of 1404 AH. Exclusion criteria included patients diagnosed with GERD in the emergency department who were

discharged without hospital admission, as well as patients admitted before or after the specified six-month period. Data collection involved reviewing patient records (registry books, medical files, and medical records), direct patient examination, history taking, observation, laboratory investigations, and structured questionnaires prepared by the researcher. The collected data were initially organized into tables and graphs using MS Word and MS Excel, and subsequently analyzed to address the study questions, as presented in the following table. Ethical Considerations: Ethical approval was obtained from the Khost Provincial Hospital Review Board. Verbal or written consent was taken from participants. Confidentiality and anonymity of patients were maintained. Data were used only for research purposes.

Results

From the month of Mizan to Hoot in the year 1404 AH, a total of 45,503 patients visited Khost Provincial Hospital, of whom 1,602 patients were admitted, and only 33 patients (2%) had gastro esophageal reflux disease (GERD). gender: 55% were male and 45% were female, place of residence 70% were from central districts, and 30% were from other areas. age Most patients (57%) were aged 21–40 years. Regarding risk factors 25% smoked, 15% were positive for *Helicobacter pylori*, 12% used NSAIDs, and 48% had unknown causes. Comorbidities 27% had gastritis, 24% had gastric ulcers, 10% had duodenal ulcers, 6% had combined ulcers, and 33% had only GERD. Clinical signs and symptoms All patients had sub-sternal burning, 51% had regurgitation, 33% had chronic dry cough, 24% had epigastric pain, 9% had anorexia, 6% had dysphagia, and 3% had nausea or vomiting. Complications: 3% had esophageal stricture, 3% had esophageal cancer, 9% had esophageal ulcers, and 0% had esophageal perforation.

Number of Patients Visiting Khost Provincial Hospital

The table shows various patients visiting the hospital, among whom those admitted with gastro esophageal reflux disease (GERD) are indicated.

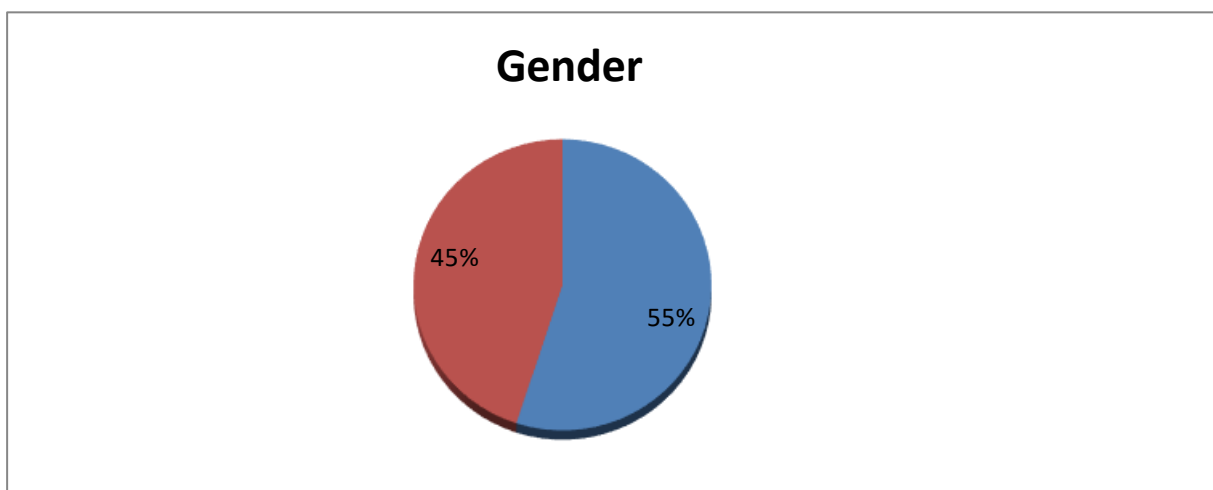
Table 1: Number of Patients Visiting Khost Provincial Hospital

No		Total Patients Visiting	Outpatient Patients	Admitted Patients	Patients Admitted with GERD
١	Count	45503	43901	1607	33
٢	Percentage	100%	96.4%	3.5%	2%

Gender:

Based on gender distribution, the table shows that among the patients admitted with gastro esophageal reflux disease (GERD), 18 were male and 15 were female. The higher number of affected males may be related to various underlying factors.

Figure 1: Graph showing the distribution of GERD cases by gender.



Place of Residence:

Based on the place of residence, 70% of the patients were from central districts, and 30% were from other areas. This indicates that the incidence of this disease is higher in urban regions.

Table 2: Distribution of GERD Cases Based on Place of Residence

No	Place of Residency	Count	Percentage
1	Central Districts (Matun, Ismail Khel, Lakan, Nader Shah Kot, Shamal)	23	70%
2	Zazi Maidan District	2	6%
3	Sabari and Alisher Districts	1	3%
4	Musa Khel District	3	9%
5	Domanda District and neighboring provinces	4	12%
6	Total	33	100%

Age:

With respect to age distribution, most affected patients were young adults, as 57% of the cases occurred in individuals aged 21–40 years.

Table 3: Distribution of GERD Cases by Age

No	Year	Count	Percentage
1	< 20	4	13%
2	40 – 21	19	57%
3	60 – 41	7	21%
4	> 60	3	9%

Risk Factors:

Regarding different lifestyle and clinical risk factors, *Helicobacter pylori* infection was reported positive in five patients, eight patients were smokers, and four patients had a history of using non-steroidal anti-inflammatory drugs (NSAIDs).

Table 4: Distribution of GERD Cases Based on Risk Factors

No	Type of Peptic-Related Risk Factor	Count	Percentage
1	Smoking habit	8	25%
2	<i>Helicobacter pylori</i> positive	5	15%
3	Use of non-steroidal anti-inflammatory drugs	4	12%
4	Unknown cause	16	48%
5	Total	33	100%

Clinical Signs and Symptoms:

Table 5: Percentage Distribution of Various Clinical Signs and Symptoms Among GERD Patients

No	Sign/Symptom	Count	Percentage
1	Substernal and epigastric burning sensation	33	100%
2	Chronic dry cough and sore throat	11	33%
3	Dysphagia	2	6%
4	Loss of appetite	3	9%
5	Epigastric pain	8	24%
6	Nausea and vomiting	1	3%
7	Regurgitation	17	51%

Complications:

Gastro esophageal reflux disease (GERD) has led to several serious complications among the patients studied. Among the 33 patients, 3% developed esophageal stricture, 3% developed esophageal cancer, 9% had esophageal ulcer, and no cases of esophageal perforation were recorded.

Table 6: Complications observed among patients with gastro esophageal reflux disease

No	Type of Complication	Count	percentage
1	Esophageal stricture	1	3%
2	Esophageal CA	1	3%
3	Esophageal perforation	0	0%
4	Esophageal ulcer	3	9%

Discussion

The results of this study indicate that during the year 1404 AH, only 2% of patients at Khost Provincial Hospital were diagnosed with gastro esophageal reflux disease (GERD), which appears lower compared to some international studies. For example, in several

Asian countries, the prevalence of GERD has been reported to range from 10% to 20% (6). This difference may be due to variations in patients' access to healthcare services, availability of diagnostic facilities, and sample size differences. Regarding gender, a slightly higher proportion of male patients was observed in this study (55% male, 45% female), which aligns with other studies showing a slightly higher risk of GERD in men (14). This higher prevalence may be related to smoking and unhealthy dietary habits, which were also observed in our study (25% smokers). In terms of age and place of residence, most patients (57%) were aged 21–40 years, suggesting a link between GERD prevalence and the lifestyle and activity patterns of young adults. Based on residence, 70% of patients were from central districts, indicating that changes in dietary habits and limited access to health services in urban areas may contribute to the higher occurrence of GERD. This finding is consistent with other studies that identify urban residency as a risk factor for increased GERD incidence. The main risk factors identified in this study were the use of NSAIDs, smoking, and *Helicobacter pylori* infection. These findings are consistent with international research, which indicates that these factors play an important role in the development of GERD (15). All patients experienced substernal burning (heartburn), and half of the patients reported regurgitation. These findings are in agreement with other studies, which consider heartburn and regurgitation as hallmark symptoms of GERD. Complications were observed in a small number of patients, including esophageal stricture, esophageal cancer, and esophageal ulcer, while no cases of esophageal perforation were reported. The low incidence of complications may be attributed to early diagnosis and appropriate management, which is consistent with findings from other studies.

Conclusion

This descriptive study, conducted from the month of Mizan to the end of the month of Hoot in the year 1404 AH, included a total of 33 patients diagnosed with gastro esophageal reflux disease (GERD). Regarding gender, 55% of cases occurred in males and 45% in females. In terms of place of residence, the majority of cases (70%) were from central districts, likely due to higher population density and closer proximity to the hospital. With respect to age, most cases (57%) were observed in individuals aged 21–40 years, which may be associated with the daily economic and social challenges faced by young adults. Among potential contributing factors, smoking was the most frequently observed,

accounting for 25% of cases. Regarding comorbid conditions, gastritis was diagnosed alongside GERD in 27% of patients, and gastric ulcers were observed in 24% of patients. Clinically, all patients experienced substernal burning (heartburn), and 33% reported chronic dry cough.

Study Limitations

1. **Diagnostic Bias:** Reliance on clinical diagnosis and medical records, without routine use of gold-standard diagnostic tools (e.g., endoscopy), likely led to an underestimation of the true prevalence.
2. **Sampling Bias:** The study only included admitted patients, excluding outpatients and those treated in the emergency department, which introduces a selection bias towards more severe cases.
3. **Data Completeness:** Incomplete patient medical records and missing laboratory data limited the ability to fully assess all potential risk factors and comorbidities.

Recommendations

1. As the study indicated that smoking is one of the main risk factors for gastroesophageal reflux disease (GERD), it is recommended that the Ministry of Public Health raise public awareness about the dangers of smoking through mass media. Additionally, sectoral ministries should consider increasing import taxes on harmful substances, such as tobacco, to reduce public access to these products.
2. The study showed a higher prevalence of GERD in males compared to females, while some international studies report a higher prevalence in females. It is recommended that the Ministry of Public Health and other relevant research institutions conduct further studies to investigate the reasons for the higher incidence among males in this region.
3. The study was unable to identify all possible risk factors for GERD (e.g., Zollinger-Ellison syndrome, hypercalcemia, and other conditions) due to the lack of advanced laboratory and pathology facilities. It is recommended that the Ministry of Public Health equip hospitals nationwide with such advanced diagnostic tools.

4. The majority of GERD cases occurred in young adults aged 21–40 years, likely related to their economic and social challenges. It is recommended that relevant sectoral ministries address the socioeconomic issues faced by this age group, as a healthy mind resides in a healthy body.
5. During the study, it was observed that patient records were often incomplete, and copies of laboratory tests were frequently missing. It is recommended that all hospital staff ensure patient medical histories are thoroughly and accurately documented.
6. Since this study was conducted only at Khost Provincial Hospital over a short period, it is further recommended that the Ministry of Public Health conduct a more extensive study on this important topic to obtain more generalizable and reliable findings.

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