



Frequency of Gastric Varices in patients with upper gastrointestinal bleeding a single center cross sectional study

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Name of Author:

Jalal Khan¹, Farhana Kayani², Zahoor Ahmed Shah³

Affiliation: ¹Assistant Professor, Medicine, Bolan Medical Complex Hospital, Quetta

²Senior Registrar, Gastroenterology, Bolan Medical Complex Hospital, Quetta

³Assistant Professor, Medicine, Bolan Medical Complex Hospital, Quetta

Corresponding Author:

Dr. Zahoor Ahmed Shah

Assistant Professor, Medicine, Bolan Medical Complex Hospital, Quetta

Email: Drzshah@hotmail.com

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Abstract: Background: Early diagnosing and management of gastric varices improves patient outcomes and reduces morbidity and death.

Aim: The aim of this study was to find out the frequency of gastric varices in patients with upper gastrointestinal bleeding.

Material and method: The present single center cross sectional study was carried out at the department of medicine and gastroenterology Bolan Medical Complex Hospital, Quetta from March 2025 to August 2025 after taking approval from the ethical committee of the hospital. A total of 110 patients of both gender and different age groups (ranged 18-60 years) presented with upper gastrointestinal bleeding were included in this study. The cut-off for blood loss was a drop in hemoglobin by more than 2gm/dl from the previous level or a full blood count with hemoglobin levels less than 11gm/dL. Patients were initially resuscitated with plasma expanders and then underwent upper GI endoscopy following the hospital's guidelines. A comprehensive upper GI endoscopy was conducted. Participants with endoscopic evidence of stomach varices were seen. SPSS version 22 was used for data analysis and were presented in frequency and percentages. **Results:** A total of 110 individuals were examined in this study out of which females were 50(45.4%) and males were 60(54.5%). The mean BMI of the study population was 25 ± 4.670 kg/m² and the mean age was 36 ± 11.3 years. 70(63.6%) of the participants had body mass index 25k or below and 40(36.3%) had above 25k. the most prevalent age group in the study participants was 41-50 years 38(34.5%) followed by age group 31-40 years 30(27.2%) and 51-60 years 22(20%) respectively. Out of the total participants 22(20%) had gastric varices. Gastric varices were stratified by age and gender which were most prevalent in male (25%) as compared to female (20%) (p value =0.211). Age group 41-50 years had the highest number of gastric varices (47%) followed by age group 51-60 years (36.3 %). **Conclusion:** The current study concluded that the frequency of gastric varices in patients with upper gastrointestinal bleeding was most prevalent (20%).

Keywords: Gastric varices, GI endoscopy, upper gastrointestinal

INTRODUCTION

Upper gastrointestinal (UGI) bleed is characterized as bleeding at the Treitz ligament.¹ It is a severe medical issue worldwide, with rates ranging from 48 to 160 episodes per one million individuals per year. Gastroenterologists are usually called upon for it,

which is associated with high rates of morbidity and death.² Advancements in medicine and endoscopic hemostasis have led to better clinical outcomes for these patients.³ Close ward supervision and prompt endoscopic management are crucial for identifying and treating bleeding causes, particularly in high-risk

patients. Predictive risk ratings for UGIB mostly rely on endoscopic data and patient variables. Hematemesis (40-50%) and melena (70-80%) are the most prevalent symptoms, whereas hematochezia (mostly of colonic origin) can cause up to 1000 ml of fresh blood loss, accounting for up to 10% of cases.⁴ Upper gastrointestinal bleeding often resolves on its own, but patients should be evaluated thoroughly and may require both therapeutic and diagnostic endoscopic procedures. Upper gastrointestinal bleeding can be caused by vascular anomalies, peptic ulcers, portal hypertension, erosive gastritis, erosive esophagitis, or Mallory-Weiss tears. Peptic ulcers still cause up to 40% of upper gastrointestinal bleeding in the West, with portal hypertension being the second most common cause (10-20%).⁵ An Egyptian study found that non-variceal sources of bleeding were responsible for 26.1 percent, unknown reasons for 3.8 percent, & variceal cause for 70 percent of cases. Several studies show a 12% annual incidence of variceal hemorrhage. Gastro-duodenal ulcers, such as gastroduodenal erosions (10.6%), Mallory Weiss tears (11.3%), portal gastropathy (14.4%), stomach ulcers (24.4%), and duodenal ulcers (20.6%), are common causes.⁶⁻⁷ Consider the cause of the bleeding (e.g., esophageal varices, gastric ulcer, portal-hypertensive gastropathy, gastric varices, hemorrhagic gastritis, Mallory-Weiss syndrome, etc.), the severity of the bleeding (e.g., hemodynamic impact), the degree of hepatic failure (measured by the Child-Pugh criteria), and the association of the symptoms.⁸ Despite advancements in recent decades, the fatality rate for patients with variceal hemorrhage remains high. Esophageal varices, affecting sixty percent of cirrhotic individuals and resulting in 10-20% inpatient mortality, are the most common side effect of portal hypertension. However, these people may have

different causes of bleeding.⁹ A research by Sibia et al. showed gastric varices in 15.09% of cirrhotic patients with upper gastrointestinal hemorrhage.¹⁰ In Pakistan there is not enough data on the frequency of gastric varices in individuals with upper gastrointestinal bleeding. Therefore the present study was carried out to determine the frequency of gastric varices in patients with upper gastrointestinal bleeding.

Material and method

The present single center cross sectional study was carried out at the department of medicine and gastroenterology Bolan Medical Complex Hospital, Quetta from March 2025 to August 2025 after taking approval from the ethical committee of the hospital. A total of 110 patients of both gender and different age groups (ranged 18-60 years) presented with upper gastrointestinal bleeding were included in this study. The diagnosis of upper GI bleeding was based on the patient's history of hematemesis or melena. The cut-off for blood loss was a drop in hemoglobin by more than 2gm/dl from the previous level or a full blood count with hemoglobin levels less than 11gm/dL. To minimize bias, participants with previous episodes of bleeding diathesis, taking antiplatelet/anticoagulant drugs, or having a peptic ulcer were excluded from the study. Patients were initially resuscitated with plasma expanders and then underwent upper GI endoscopy following the hospital's guidelines. A comprehensive upper GI endoscopy was conducted. Participants with endoscopic evidence of stomach varices were seen. SPSS version 22 was used for data analysis and were presented in frequency and percentages.

Results

A total of 110 individuals were examined in this study out of which females were 50(45.4%) and males were 60(54.5%). The mean BMI of the study population was 25 ± 4.670 kg/m² and the mean age was 36 ± 11.3 years as presented in table 1. 70(63.6%) of the participants had body mass index 25k or below and 40(36.3%) had above 25k. the most prevalent age group in the study participants was 41-50 years 38(34.5%) followed by age group 31-40 years 30(27.2%) and 51-60 years 22(20%) respectively as presented in table 2. Out of the total participants 22(20%) had gastric varices as shown figure 1. Gastric varices were stratified by age and gender which were most prevalent in male (25%) as compared to female (20%) (p value =0.211). Age group 41-50 years had the highest number of gastric varices (47%) followed by age group 51-60 years (36.3 %) as presented in table 3

Table 1. Demographic features of the study population n=110

Features	Mean/ N (%)
Mean age	36 ± 11.3 years
Mean BMI	25 ± 4.670 kg/m ²
Gender	
Female	50(45.4%)
Male	60(54.5%)

Table 2. Distribution of the study population on the basis of BMI and age.

Variables	Frequency/percentage
Body mass index	
Above 25 k	40(36.3%)
25k or below	70(63.6%)
Age in years	
20-30	20(18.1%)
31-40	30(27.2%)
41-50	38(34.5%)
51-60	22(20%)

FIGURE1. FREQUENCY OF GASTRIC VARICES

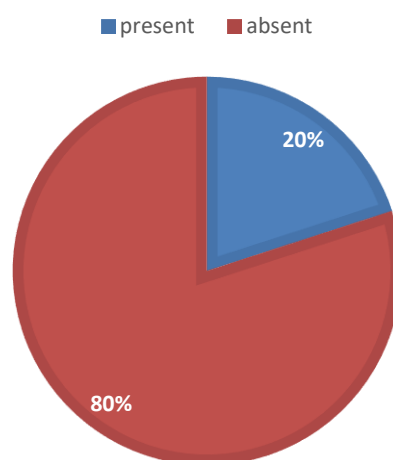


Table 3. Stratification of gastric varices with age gender

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Gender	Gastric varies (n/%		P value
	Yes	No	
Male	15 (25 %)	45(75%)	0.211
Female	10(20%)	38(80%)	
Age groups			
20-30	5 (25%)	15(75%)	0.215
31-40	10 (25%)	30(75%)	
41-50	18 (47%)	20(53%)	
51-60	8 (36.3 %)	14(63.6%)	

DISCUSSION

Upper gastrointestinal bleeding is the most common emergency faced by gastroenterologists in clinical settings. Endoscopic treatments for upper GI bleeding have reduced the need for emergency surgical investigation. Radiological techniques are increasingly being used to control upper gastrointestinal bleeding. Despite several therapeutic treatments, there is still a high fatality rate due to gastrointestinal bleeding. The reported mortality rate hovers around 10%. The high death rate has clinical and budgetary ramifications, including increased inpatient occupancy and costly treatment accessories for endoscopic and radiographic treatments.¹⁰

Understanding the root causes of upper gastrointestinal bleeding, identifying high-risk populations, and addressing the source of bleeding during the initial phase will help reduce fatality rates.¹¹ Upper GI endoscopy, a safe and minimally invasive method, has the potential to significantly reduce the incidence of upper GI bleeding in certain populations. Additionally, it might aid in better classification of individuals with upper GI bleeding. Furthermore, a more effective treatment plan may be developed for these individuals.

For most patients with GI bleeding, an urgent upper GI endoscopy is advised based on their clinical

characteristics.¹² Gastric variceal bleed is a common cause of upper GI bleeding, accounting for 13% to 21% of cases. Sarin classifies gastric varices as either isolated (IGV1) or somewhere in the gastrointestinal tract (IGV2). IGV1 accounts for the majority of bleed. The majority of IGV1 is located in the stomach's fundus, also known as fundal varices.¹³ Portal hypertension is the fundamental cause of fundal varices and associated bleeding. Fundal varices are more severe than esophageal varices due to their tendency to bleed even at lower portal pressure and a higher risk of re-bleeding.¹⁴ The present study was carried out to determine the frequency of gastric varices in patients with upper gastrointestinal bleeding. A total of 110 individuals were examined in this study out of which females were 45.4% and males were 54.5%. The mean BMI of the study population was 25 ± 4.670 kg/m² and the mean age was 36 ± 11.3 years. The gender wise distribution of our study and mean age was similar to the study conducted by Iltaf et al in which male were most prevalent.¹⁵ The frequency of gastric varices was 20%. Our study findings are similar to the study conducted by Hadayat et al in which the prevalence was 19.5%. But the results of our study are not similar to the study carried out by Kazmi et al in which the frequency was 15%.¹⁶ Similar study performed by Iltaf et al in which gastric varices reported 22%. The study results are comparable to those of Mumtaz et al., who found an 18% prevalence of stomach varices. ¹⁷Gastric varices were stratified by age and gender which were most prevalent in male (25%) as compared to female 20%. Age group 41-50 years had the highest number of gastric varices (47%) followed by age group 51-60 years (36.3 %). These findings are similar to the previous study.¹⁶ Our study highlights the significance of identifying stomach varices as a possible cause of UGIB. Current study shows that the overall incidence of stomach varices stays stable.

CONCLUSION

The current study concluded that the frequency of gastric varices in patients with upper gastrointestinal bleeding was most prevalent (20%). Recognizing and managing stomach varices early improves patient outcomes and reduces morbidity and death from UGIB in this high-risk group.

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