

# Frequency of Peptic Ulcer Bleed in Cirrhotic Patients

Peptic Ulcer  
Bleed in  
Cirrhotic  
Patients

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## ABSTRACT

**Objective:** To determine the frequency of peptic ulcer bleeds (PUB) in these patients.

**Study Design:** Retrospective descriptive study

**Place and Duration of Study:** This study was conducted at the Gastroenterology department of Qazi Hussain Ahmed Medical Complex, Nowshera and Lady Reading Hospital, Peshawar Khyber Pakhtunkhwa. The study period spanned from January 2018 till December 2023.

**Methods:** All In this retrospective study, cirrhotic patients above 12 years of age who presented with upper GI bleed and underwent upper GI endoscopy were included. Child-Pugh scoring system was employed for the classification of the severity of liver disease. All the analysis of collected data was done by employing IBM SPSS version 24.

**Results:** Totally, 166 cirrhotic patients with UGIB were included in this research. Variceal bleeding was seen in 89.2% of cases and peptic ulcer bleed was in 10.8% of the cases in our study. Bleed occurred predominantly in decompensated cirrhotic patients.

**Conclusion:** This study demonstrated the higher frequency of peptic ulcer bleeding in cirrhotic patients, highlighting the necessity for primary peptic ulcer prevention with a proton pump inhibitor in high-risk patients.

**Key Words:** peptic ulcer bleed (PUB), variceal bleed, upper gastrointestinal bleed (UGIB)

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## INTRODUCTION

Peptic ulcer disease (PUD) remains a significant global health concern, and upper gastrointestinal (GI) bleed is a frequent and life threatening problem of PUD. This condition poses a critical risk particularly to the patients with liver cirrhosis. Based on data from various parts of the world, peptic ulcer bleeds (PUB) account for approximately one-third of all upper GI bleed cases in cirrhotic patients<sup>1, 2</sup>. However, due to the predominant presence of varices, peptic ulcer bleeds often go unrecognized in these patients, leading to substantial morbidity and mortality<sup>3</sup>.

The interplay between liver cirrhosis and peptic ulcer bleeding (PUB) creates a unique clinical challenge. Cirrhotic patients are more susceptible to gastrointestinal hemorrhage due to coagulopathy, thrombocytopenia, endothelial and platelet dysfunction,

bacterial infection, renal insufficiency, and hemodynamic changes. Additionally, portal hypertension in these patients contributes to the development of gastroesophageal varices and portal hypertensive gastropathy<sup>4,5</sup>. These factors, together with superimposed *Helicobacter pylori* infection, smoking, stress, and medications like NSAIDs, collectively heighten the risk of PUB in cirrhotic patients<sup>6</sup>. The occurrence of portal hypertensive gastropathy and varices can obscure the diagnosis and complicate the therapeutic approach to PUD in these patients<sup>7</sup>.

Understanding the frequency and impact of peptic ulcer bleeds in patients with liver cirrhosis is crucial for improving clinical outcomes. Therefore, our study was done with the aim to study the frequency of peptic ulcer bleeds (PUB) in these patients and to identify proper measures that could mitigate the burden of this life-threatening complication.

## METHODS

This study was retrospective descriptive carried out at Gastroenterology department, Qazi Hussain Ahmed Medical Complex, Nowshera and Lady Reading Hospital, Peshawar Khyber Pakhtunkhwa. The study period spanned from January 2018 till December 2023. All cirrhotic patients above 12 years of age who presented with upper GI bleed and underwent upper GI endoscopy were included in the study. Patients with bleeding causes other than esophageal varices or peptic ulcers were not included. Liver cirrhosis was diagnosed

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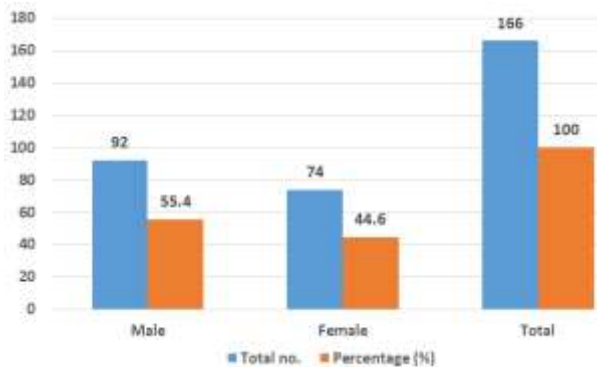
on the basis of clinical, laboratory, and imaging results. Child-Pugh scoring system (Class A, B, or C), was employed for the classification of the severity of liver disease. The data sampling technique used was non-probability consecutive sampling and the hospital ethical committee granted approval to the study.

A pre-made proforma was used for recording of all the information, including name, age, gender, and other details pertaining to medical history. IBM SPSS version 24 was used for all data analysis that was performed. Frequency and percentages for factors, like etiology and gender were calculated. Chi-square test was used to compare the distribution of bleeding types across Child-Pugh classes.

**RESULTS**

Totally, 166 cirrhotic patients with UGIB were included in this research. Our study showed male predominance (55.5%) (graph 1), which suggests a potential gender disparity in the prevalence or risk factors associated with upper GI bleeding in cirrhotic patients.

Variceal bleeds are significantly more common than peptic ulcer bleeds (PUB) among cirrhotic patients, accounting for 89.2% of cases, consistent with the known complications of portal hypertension in cirrhosis. Although less common, peptic ulcer bleeds are still significant, comprising 10.8% of the cases in our study (table 1).



**Figure No. 1: Gender distribution**

A substantial proportion of patients fall into the more severe categories of liver disease: 41.0% in Class B and 52.4% in Class C. Only 6.6% of the patients are in Child class A. The high number of patients in Child-Pugh Classes B and C (93.3%, n=155) indicates that a majority of the study population has advanced liver disease, which correlates with higher risks of complications such as variceal bleeding (table 2).

Six patients in our study from child class A had peptic ulcer bleed, whereas 5 had variceal bleed. Similarly, 8 patients from child B and 4 patients from child class C had peptic ulcer bleed (table 3). The association between bleed with various Child-Pugh classes was significant statistically (p<0.05). (table 3).

**Table No. 1: Etiology of Bleed**

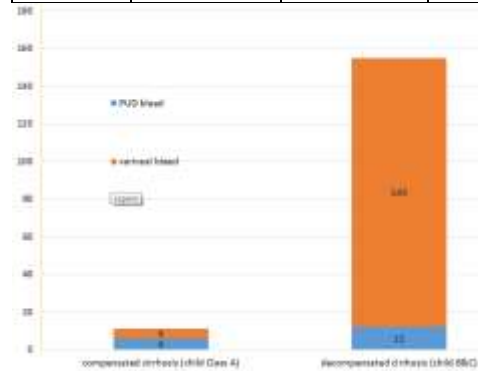
Etiology	No. of cases	Percentage (%)
Varices	148	89
Peptic ulcer	18	11
Total	166	100

**Table No. 2: Child class wise detail**

Total no. of cases	Child class A	Child class B	Child class C
166	11	68	87

**Table No. 3: Bleeding type according to Child-Pugh Class**

Child-Pugh Class	Variceal Bleed	Peptic Ulcer Bleed	Total	P value
A	5 (45.5%)	6 (54.5%)	11	0.01
B	60 (88.3%)	8 (11.7%)	68	0.001
C	83 (95.5%)	4 (4.5%)	87	0.001
Total	148 (89%)	18 (11%)	166	



**Figure No. 2: bleeding type according to severity of cirrhosis**

**DISCUSSION**

This study provides a comprehensive analysis of the frequency and clinical characteristics of upper gastrointestinal (GI) bleeding in liver cirrhosis patients, with a particular focus on peptic ulcer bleed. The findings reveal significant insights into the gender distribution, types of bleeding, and severity of liver disease within this patient population.

The majority of the patients experiencing upper GI bleeding in this study were male (55.5%), which is consistent with previous research indicating a higher prevalence of liver cirrhosis and its complications among males. Study by Ardevol et al, and Luo JC et al, showed male predominance with 68 and 67% respectively<sup>1,8</sup>. Similar findings (68%) were also seen in a study by Svoboda P et al<sup>7</sup>. This gender disparity may be attributed to higher rates of risk factors such as alcohol consumption and viral hepatitis among men. The predominance of male patients underscores the need for targeted screening and preventive measures in this demographic group.

The analysis shows that variceal bleeding is the most frequent cause of upper GI bleeding in patients with cirrhosis, accounting for 89.2% of cases. This finding aligns with the well-documented association between portal hypertension and the development of gastroesophageal varices in cirrhosis. Study by Ardevol et al and Gado A et al showed variceal bleed in 82% of the cases.<sup>1,8</sup>

In contrast, peptic ulcer bleeding (PUB), although less frequent (10.8% of cases) in our study as compared to variceal bleed, remains a significant clinical concern. Studies from rest of the world showed comparatively high frequency (20-30%) of PUB in cirrhotic patients<sup>9,10</sup>. Study by Ardevol et al. and Gado A et al., showed PUB in 18% of the cases, which is more in comparison to our study<sup>1,11</sup>. A local study by Bilal A et al, showed high frequency of PUB in cirrhotic patients (34%)<sup>12</sup>.

The majority of the study population had advanced liver disease, with 41.0% classified as Child-Pugh Class B and 52.4% as Class C. Only a small fraction (6.6%) were in Class A. The findings are almost similar to study conducted by Ardevol et al<sup>1</sup>. This distribution indicates that patients with more severe liver dysfunction are at a higher risk of upper GI bleeding, both variceal and peptic ulcer-related. Advanced liver disease is associated with multiple hemostatic abnormalities, including thrombocytopenia, coagulation factor deficiencies, and portal hypertension, all of which contribute to the increased risk of bleeding complications.

## CONCLUSION

In conclusion, this study provides valuable insights into the epidemiology and clinical characteristics of upper GI bleeding in patients with liver cirrhosis. The high prevalence of peptic ulcers in these patients underscores the importance of prophylactic use of proton pump inhibitors in high-risk individuals and the early elimination of risk factors such as *H. pylori* infection. Effective management of peptic ulcer bleeds is crucial to reducing morbidity and mortality in cirrhotic patients. Therefore, cirrhotic patients with upper GI bleeding (UGIB) should be treated according to both peptic ulcer bleed and variceal bleed protocols until endoscopy confirms the source of the bleed.

### Author's Contribution:

Concept & Design of Study:	Hamid Ullah
Drafting:	Hashmatullah Khan, Asfandyar Khan
Data Analysis:	Abbas Masood, Mujahid Aslam
Revisiting Critically:	Hamid Ullah, Hashmatullah Khan
Final Approval of version:	Hamid Ullah

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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