



INSIGHTS INTO ENDOSCOPIC PATTERNS IN ACUTE UPPER GASTROINTESTINAL BLEEDING CASES AT TERTIARY CARE HOSPITAL

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Abstract

Background: Acute upper gastrointestinal bleeding (AUGIB) continues to be a major global health emergency that affects millions of people each year, placing a heavy strain on healthcare systems and presenting a serious risk to patient safety.

Objective: This study's main goal was to thoroughly evaluate the endoscopic results in Pakistani patients who were presenting with AUGIB.

Methodology: The research was conducted from 01 June 2023 to 30 November 2023 at the Department of Gastroenterology, MTI MMC Mardan, Pakistan, using a retrospective observational approach. Upper Gastrointestinal endoscopy (OGD) was the main diagnostic method used in patient evaluations, which also included comprehensive physical exams, blood testing, viral hepatitis serology, and abdominal ultrasounds. OGD results were methodically recorded. Age, gender, hepatitis status, and endoscopic results were all included in the data analysis, which was done using SPSS.

Results: In our investigation of 162 patients with Upper Gastrointestinal Bleeding (UGIB), endoscopic results showed differing frequencies of infection: 59.26% (n=96) of patients had Hepatitis C Virus and 25.93% (n= 42) had Hepatitis B Virus, 89.51% (n=145) had Oesophageal Varices, and 14.81% (n=24) had Peptic Ulcer Disease. Oesophageal varices showed significant gender-based disparities, with 39 female patients (26.90%) and 106 male patients (73.10%) (p-value=0.002). There were significant differences (p-value=0.004) in the gastric variations between 26 male patients (54.17%) and 22 female patients (45.83%).

Conclusion: Hepatitis C Virus (HCV) emerges as the leading cause of AUGIB in Pakistan, and esophageal varices dominate endoscopic findings in 89.51% of cases.

Keywords: Gastrointestinal, Bleeding, Endoscopy, Pakistan

Introduction

Acute upper gastrointestinal bleeding (AUGIB) continues to be a major global health emergency that affects millions of people each year, placing a heavy strain on healthcare systems and presenting a serious risk to patient safety [1,2]. It is characterized by the abrupt start of upper gastrointestinal bleeding, which often necessitates an early diagnosis and course of treatment to minimize potentially fatal outcomes [3]. It includes a wide range of conditions, from less common conditions like Mallory-Weiss tears and Dieulafoy lesions to more prevalent conditions like peptic ulcers and esophageal varices [4]. Among the several diagnostic techniques, endoscopy stands out as an essential instrument for pinpointing the bleeding cause, enabling prompt and focused therapeutic approaches [5].

Globally, there are variations in the incidence of AUGIB, which may be attributed to variations in healthcare facilities across different regions as well as variations in population epidemiology [6]. The World Health Organization (WHO) reports millions of instances of gastrointestinal bleeding each year [7], which adds considerably to the worldwide burden of illnesses. Every year, there are 100 instances of upper gastrointestinal bleeding (UGIB) for every 100,000 people [8]. At a rate of around 6%–10%, UGIB occurs four times more often than lower GI bleeding. This emphasizes the need of doing thorough study to improve our comprehension of the various endoscopic findings connected to AUGIB [9].

The AUGIB scene in Pakistan, a nation with particular healthcare issues, has a unique character. Various socio-economic considerations, in addition to resource constraints, add to the difficulty of treating individuals with upper gastrointestinal hemorrhage. This region's particular dietary and cultural practices may contribute to different patterns of upper gastrointestinal bleeding, requiring a customized approach to diagnosis and treatment [10]. Furthermore, the endoscopic results in patients with AUGIB may take on a special significance because to the frequency of infectious disorders like *Helicobacter pylori* in Pakistan [11]. Numerous research endeavors have endeavored to clarify the varied endoscopic manifestations of AUGIB throughout [12]. But there is a dearth of information on Pakistan, which leaves a research vacuum that this study aims to fill.

Objective

This study's main goal was to thoroughly evaluate the endoscopic results in Pakistani patients who were presenting with AUGIB.

Methodology

The Department of Gastroenterology at MTI MMC Mardan, Pakistan, used a retrospective observational study design for this research, which took place over the course of six months, from 01 June 2023 to 30 November 2023. Retrospective methods enable the examination of historical data, offering valuable insights into the endoscopic results in patients experiencing Acute Upper Gastrointestinal Bleeding (AUGIB) during the designated time period.

Inclusion Criteria

All adult patients, irrespective of gender, diagnosed with liver cirrhosis and clinically observed Upper Gastrointestinal Bleeding (UGIB) in vomitus and/or melena were included.

Exclusion Criteria

Patients in shock, with a history of gastrointestinal malignancy or surgery, those with an established lower gastrointestinal cause for hematochezia, patients on anti-ulcer therapy, and those unwilling for the procedure were excluded.

Sample Size Determination

The research, which includes 162 individuals who fit the inclusion criteria, guarantees statistical stability for significant understanding of the various endoscopic manifestations of Acute Upper

Gastrointestinal Bleeding (AUGIB) in the Pakistani populace. With a 95% confidence level, 5% margin of error, and an 11% percentage of Peptic Ulcer Disease (PUD) among patients with Upper Gastrointestinal Bleeding (UGIB) in the setting of liver cirrhosis, the sample size was calculated using the WHO Sample Size Calculator.

Patient Assessment and Investigations

A consultant physician performed a thorough assessment of each patient, with an emphasis on stabilization and resuscitation. To obtain pertinent medical data, pertinent investigations were carried out, including complete blood counts, liver and renal function tests, serum electrolytes, viral hepatitis serology, and abdominal ultrasound examinations. Participants in the research had comprehensive evaluations that included a physical examination, focused laboratory tests, and a review of their medical histories. Upper Gastrointestinal endoscopy (OGD), a tried-and-true technique for locating the cause of upper gastrointestinal bleeding, was the main diagnostic instrument used.

Upper Gastrointestinal Endoscopy (OGD)

Upper Gastrointestinal Endoscopy (OGD) was performed by a consultant gastroenterologist in order to determine the endoscopic findings that are accountable for Upper Gastrointestinal Bleeding (UGIB). The outcomes were methodically recorded using a pre-made proforma. The OGD technique was performed by experienced endoscopists in accordance with established standards. This required passing a flexible endoscope through the mouth to allow for a thorough inspection of the duodenum, stomach, and esophagus. For a complete study, any anomalies or bleeding sources were carefully documented.

Data Analysis

SPSS version 21 was used for data entry and analysis. For numerical data, such as age, mean and standard deviations were computed; for categorical variables, frequency and percentages were determined. Age, gender, hepatitis B and hepatitis C status, and endoscopic results were used to stratify the data. Chi-square tests were used after stratification, with a significance threshold of p -value < 0.05 . A tabular presentation of the results was made.

Ethical Approval and Consent

The Institutional Ethical Review Board at MTI MMC Mardan granted ethical clearance for the project. All participants provided written informed permission that included information about the goals and advantages of the research, emphasized the need to follow ethical guidelines, and guaranteed the preservation of participants' rights and welfare. The dedication to doing research ethically and with proper attention for ethical norms is highlighted by this strict ethical framework.

Results

In our study, 162 participants with upper gastrointestinal bleeding (UGIB) are observed. According to the gender distribution, 37.04% ($n=60$) of the patients were female and 62.96% ($n=102$) of the patients were male (figure 1). The bulk of patients ($n=71$; 43.83%) belonged to the 36–55 age range, followed by 31.48% ($n=51$) for those over 55 and 24.69% ($n=40$) for those in the 18–35 age range (figure 2). Figure 3 illustrates the prevalence of various illnesses among the patients as shown by the endoscopic results. With 59.26% ($n=96$) of cases, the most prevalent virus was the hepatitis C virus, which was followed by the hepatitis B virus with 25.93% ($n=42$). In 89.51% ($n=145$) of the cases, oesophageal varices were found; in contrast, stomach varices ($n=48$) and portal gastropathy ($n=66$) were found in 29.63% and 40.74% of patients, respectively. Furthermore, 14.81% and 13.58% of the cases had gastritis and peptic ulcer disease, respectively, while 3.70% of the patients ($n=6$) had normal endoscopic results.

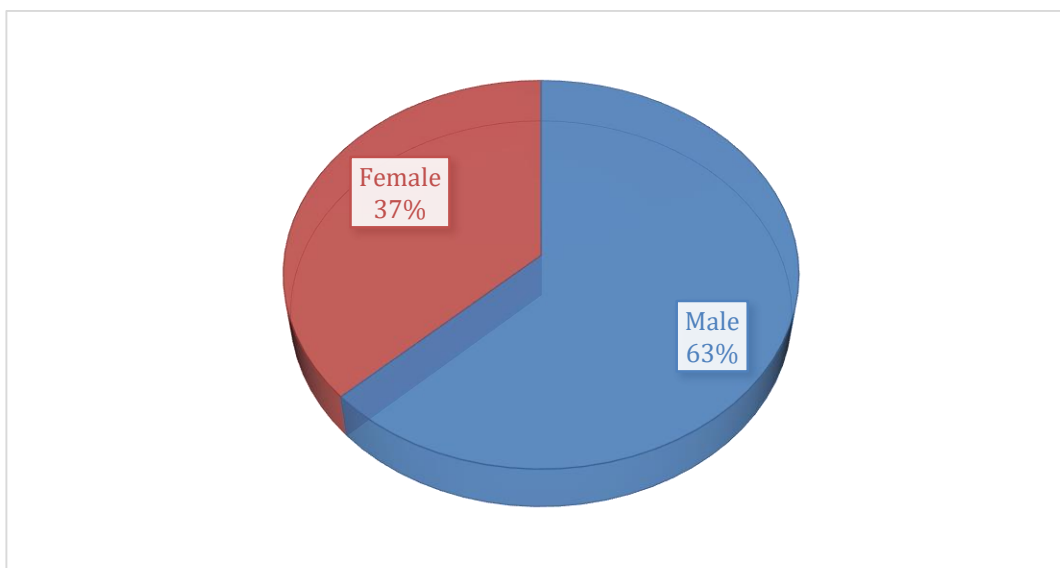


Figure 1: Gender Distribution

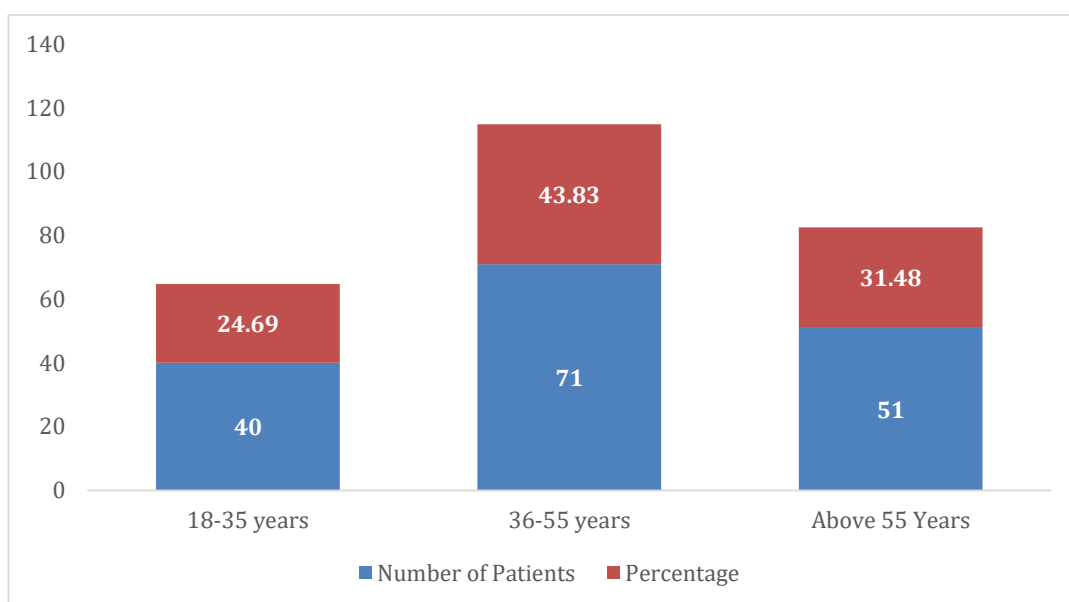


Figure 2: Age Distribution

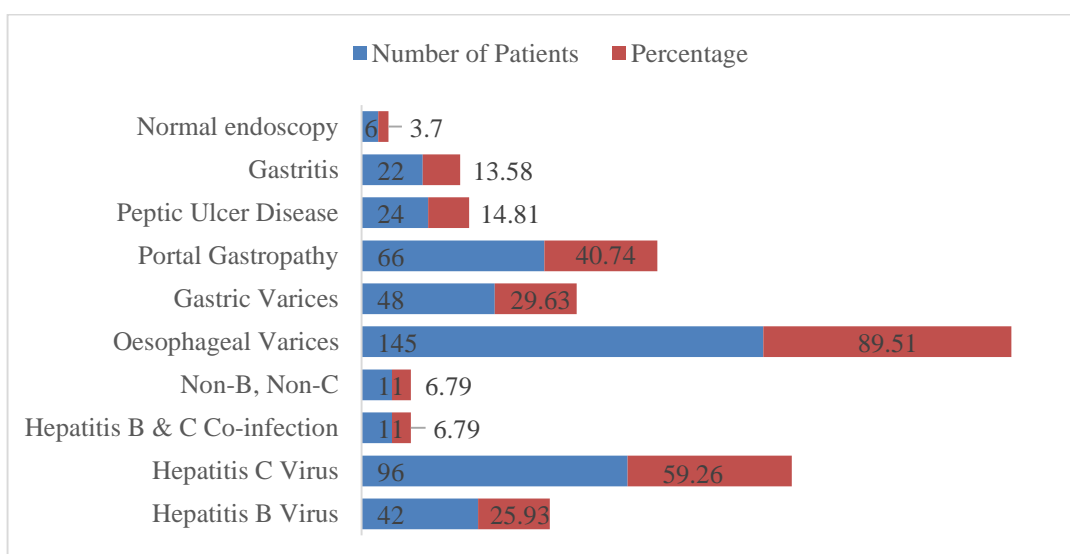


Figure 3: Distribution of Specific Endoscopic Findings in Patients with UGIB

Table 1 in our research shows the frequency of certain endoscopic findings in individuals according to their gender. There was a noteworthy difference (p-value=0.002) in the prevalence of Oesophageal Varices between male patients (n=106; 73.10%) and female patients (n=39; 26.90%). Gastric Varices showed a gender difference, with men accounting for 54.17% (n=26) and females accounting for 45.83% (n=22) (p-value=0.004). Males (n = 42; 63.64%) were more likely than females (n = 24; 36.36%) to have portal gastropathy, although the observed difference was not statistically significant (p-value=0.724). There were no discernible gender differences in the prevalence of gastritis and peptic ulcer disease (p-values=0.529 and 0.318, respectively).

Table 1: Summary: Gender-based Distribution of Specific Endoscopic Findings in Patients with UGIB (n=162)

Endoscopic Findings	Gender	Number of Patients (n)	Percentage (%)	Total Patients	p-value
Oesophageal Varices	Male	106	73.10	145	0.002
	Female	39	26.90		
Gastric Varices	Male	26	54.17	48	0.004
	Female	22	45.83		
Portal Gastropathy	Male	42	63.64	66	0.724
	Female	24	36.36		
Peptic Ulcer Disease	Male	15	62.50	24	0.529
	Female	9	37.50		
Gastritis	Male	10	45.45	22	0.318
	Female	12	54.54		

Table 2 shows the distribution of certain endoscopic findings by age group among patients. The age group between 36 and 55 had the greatest prevalence of esophageal variations (n = 68; 46.9%), followed by the 18 to 35 age group (n = 39; 26.9%) and the above 55 age group (n = 38; 26.2%). P-value=0.21 indicates that the distributional differences were not statistically significant. There were no statistically significant variations seen in the distribution of gastric variables among age groups (p-value=0.86). Similar distribution percentages were seen for portal gastropathy, which had an overall non-significant trend (p-value=0.63). Different age groups showed different prevalences of Peptic Ulcer Disease and Gastritis, however the differences were not statistically significant (p-values=0.71 and 0.32, respectively).

Table 2: Age Distribution of Endoscopic Findings in Patients with UGIB (n=162)

Endoscopic Findings	Age Group (years)	18-35	36-55	Above 55	Total	p-value
Esophageal Varices	Number of Patients	39	68	38	145	0.21
	Percentage	26.9	46.9	26.2		
Gastric Varices	Number of Patients	13	23	12	48	0.86
	Percentage	27.1	47.9	25.0		
Portal Gastropathy	Number of Patients	18	30	18	66	0.63
	Percentage	27.3	45.5	27.3		
Peptic Ulcer Disease	Number of Patients	06	10	08	24	0.71
	Percentage	25.0	41.7	33.3		
Gastritis	Number of Patients	07	06	09	22	0.32
	Percentage	31.8	27.3	40.9		

The distribution of endoscopic findings, broken down by hepatitis B and hepatitis C status, is shown in Table 3 for 162 patients diagnosed with upper gastrointestinal bleeding (UGIB). Hepatitis B: 11 cases, 22.91%; Hepatitis C: 37 cases, 77.09%; p=0.89); Hepatitis B: 15 cases, 22.72%; Hepatitis C: 51 cases, 77.28%; p=0.72); Peptic Ulcer Disease (Hepatitis B: 10 cases, 41.66%; Hepatitis C: 14 cases, 58.34%; p=0.94); and Gastritis (Hepatitis B: 6 cases, 27.28%; Hepatitis C: 16 cases, 72.72%; p=0.81). These numbers highlight possible links between a patient's hepatitis status and certain gastrointestinal disorders in UGIB patients.

Table 3: Distribution of Endoscopic Findings by Hepatitis Status in Patients with UGIB (n=162)

Endoscopic Findings	Hepatitis B Status (n; %)	Hepatitis C Status (n; %)	Total	p-value
Oesophageal Varices	28 (19.31)	117 (80.69)	145	0.14
Gastric Varices	11 (22.91)	37 (77.09)	48	0.89
Portal Gastropathy	15 (22.72)	51 (77.28)	66	0.72
Peptic Ulcer Disease	10 (41.66)	14 (58.34)	24	0.94
Gastritis	6 (27.28)	16 (72.72)	22	0.81

Discussion

AUGIB is a serious medical emergency that requires in-depth knowledge and practical management techniques. We sought to investigate the endoscopic results of patients presenting with AUGIB in our research, which was carried out at the Department of Gastroenterology, MTI MMC Mardan, Pakistan. Our study's demographic distribution showed a preponderance of men, with 62.96% (n=102) of patients being men. This finding is in line with AUGIB trends elsewhere [13, 14]. With 43.83% (n=71) of patients falling within this age range, the age distribution showed a greater prevalence in the 36–55 age group. This finding is consistent with prior research that linked this age range to an elevated risk of gastrointestinal bleeding [15]. In order to enhance early identification and treatment, our results highlight the need of focused interventions and screenings in certain demographic groups. According to our research, the most common cause of AUGIB is Hepatitis C Virus (HCV), which affects 59.26% (n=96) of people. This finding is consistent with Pakistan's distinct epidemiological environment. In contrast, HCV often predominates in worldwide research [16, 17]. Due to socioeconomic considerations and healthcare constraints, Pakistan has a greater incidence of HCV, which highlights the necessity for region-specific methods in controlling AUGIB. In addition, we found that endoscopic results followed a unique pattern: esophageal varices were found in 89.51% (n=145) of cases, while peptic ulcers were found in 14.81% (n=24) of patients. These data show notable differences from previous research [18, 19]. Different risk factors, such as infectious disorders such as *Helicobacter pylori* in Pakistan, might be responsible for these variations [20]. This emphasizes how crucial it is to modify therapy and diagnostic strategies in light of local epidemiological variances.

The results of endoscopic examinations varied significantly depending on gender, with men showing a greater frequency of stomach and esophageal varices. There was a gender difference in the presence of esophageal varices, with 73.10% (n=106) of male patients and 26.90% (n=39) of female patients, and in gastric varices, with 54.17% (n=26) of male patients and 45.83% (n=22) of female patients. This is consistent with other studies linking liver cirrhosis, which is more frequent in men, to a higher variceal prevalence [21]. Nonetheless, the lack of gender disparities in gastritis and peptic ulcers contradicts previous research, indicating the need for more investigation into gender-specific risk factors for these illnesses in the Pakistani setting.

Age-based study showed that there were no statistically significant variations in the prevalence of portal gastropathy, gastric varices, and esophageal varices across age groups. 46.9% (n=68) of the 36–55 age group, 26.9% (n=39) of the 18–35 age group, and 26.2% (n=38) of the above 55 age group had esophageal varices. In contrast, research indicates that the incidence of varices rises with age [22].

Conclusion

To summarize, the study conducted at MTI MMC Mardan in Pakistan provides important new understandings of Acute Upper Gastrointestinal Bleeding (AUGIB). According to the research, the group having 36–55 years of age has a greater frequency and a preponderance of men, which is consistent with worldwide trends. Notably, esophageal varices predominate endoscopic findings in 89.51% of patients, underlining regional differences, and Hepatitis C Virus (HCV) emerges as the primary cause of AUGIB in Pakistan, departing from worldwide norms. Analyses depending on age and gender provide different insights on the frequency of certain endoscopic results. Our research

highlights the need for customized approaches to diagnosis and treatment, taking into account the distinct epidemiological environment of AUGIB in the Pakistani populace.

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