

Variceal Bleeding is Leading Cause of Upper GI Bleed: A Study from Northern Part of Pakistan

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ABSTRACT

Background: Upper gastrointestinal bleeding (UGIB) is a leading cause of hospitalization in medical emergencies around the world, with a high death and morbidity rate. In all cases of upper gastrointestinal bleeding, endoscopy is the primary diagnostic tool. Key management of depends on diagnosing the exact cause of disease.

Methodology: This descriptive study was carried out at Gastroenterology Department, PIMS, Islamabad from January 2019 to December 2019. All patients having history of upper gastrointestinal bleed were included in the study. Patients unfit for endoscopy i.e. with perforation, peritonitis, comatose needing intubation and those unwilling to undergo the procedure were excluded. Total 490 patients fulfilled the criterion. The cause of GI bleed was noted upon endoscopy. Data was noted on set performa and further statistical analysis was performed via SPSS v 26.

Results: Among 490 patients, 298 (61%) were males while 192 (39%) were females. Most common age group presenting with upper GI bleed belongs to old age group i.e. had age above 60 years (n=235, 47.9%) followed by 40 to 59 years (n=174, 35.5%). Most common cause of upper GI bleed was found to be variceal bleed (n=292, 59.5%), followed by ulcer bleed (n=88, 18.0%) and stomach cancer (n=28, 6%). In 82 (17%) cases no reason for gastrointestinal bleed could be found out. Chi-square test showed Variceal bleed to be the most significant reason ($\chi^2=65.2$, P-Value<0.001) of Upper GI bleed.

Conclusion: Variceal bleed is the most significant cause of upper GI bleed in our study population. This trend can be attributed to increased prevalence of hepatitis C in Pakistan. Special attention to the patient's symptoms especially with history of HCV can help in early diagnosis and timely management.

Keywords: Variceal Bleed, Upper GI Bleed, Endoscopy, Ulcer, Hepatitis C.

INTRODUCTION

Upper gastrointestinal bleeding (UGIB) is a leading cause of hospitalization in medical emergencies around the world, with a high morbidity and mortality rate. GI bleeding is still one of the most prevalent medical emergencies that necessitates prompt attention, resuscitation, and hospitalization (1).

Hematemesis (blood vomiting) and/or melena are common symptoms of acute upper gastrointestinal (GI) bleeding (2). The initial examination of patients with acute upper GI bleeding includes determining hemodynamic stability and, if necessary, resuscitation. Diagnostic studies (typically endoscopy) are then performed with the purpose of determining the cause of the problem and, if possible, treating it. The initial assessment of individuals who present with GI bleeding is critical. Patients' life can be saved by intensive resuscitation to achieve hemodynamic stability (3,4).

Upper gastrointestinal bleeding usually occurs close to the Treitz ligament (5). Acute presentations can be divided into Hematemesis (around 40% to 50%), in which the bleeding site is close to ligament of treitz, Melena (around 70% to 80%) in which the bleeding site is away from the ligament of treitz; or Hematochezia (approximately 10%) in which there is fresh lower GI bleeding (LGIB) (1). It's a frequent life-threatening medical issue with around 5-15% and in some studies around 6-10% morbidity and death rate (1,6). UGIB is four times as common as LGIB (1). It affects 50-150 people per 100,000 each year (2,3). Males are two times more likely than females in all age

categories, but mortality is equal in both sexes. Patients can arrive with anything from a minor bleed to a major hemorrhage. Bleedings stop spontaneously in about 80-85 percent of cases, but in 15-20 percent of instances, bleeding is persistent or recurring (7). Hemodynamic instability (tachycardia, hypotension), Advancement in age, and the presence of comorbidities are all death predictors (1). Mallory Weiss tears, Erosive esophagitis, peptic ulcer disease (PUD), esophageal varices, and gastric/duodenal erosions are all causes of UGIBs. Uremia, aorto-enteric fistula, angiodysplasia, hemobilia, and coagulation abnormalities are less prevalent causes (1,6,7)

In all cases of upper gastrointestinal bleeding, endoscopy is the primary diagnostic tool(8). Measurements of blood pressure and heart rate, as well as blood tests to establish hemoglobin concentration, are all part of the initial evaluation. Before the source of bleeding can be detected by endoscopy of the upper digestive system with an esophagogastroduodenoscopy, substantial bleeding sometimes necessitates fluid replacement as well as blood transfusion (7).

Because of its safety, upper gastrointestinal endoscopy is the first procedure advised. Upper GI endoscopy has a sensitivity and specificity of 92 to 98 percent and 30 to 100 percent, respectively, for diagnosing UGIB(6). In the current management of UGIB, timely endoscopy is critical. Endoscopic management has been found to lower morbidity, hospital stay, re-bleeding risk, and overall medical expenditures

In Pakistan, there are no large-scale investigations on the prevalence of prevalent causes of UGIB. In our healthcare establishments, endoscopic procedures are not readily available or cheap for the majority of patients. Patients are treated without receiving an endoscopic examination to determine the cause and treated un planned which leads to poor prognosis. Also, no nationwide guidelines are available to deal with UGIB cases. Therefore, the study's goal was to assess the patients admitted with UGIB so that future strategies might be made for a better outcome.

METHODOLOGY

This descriptive study was carried out at Gastroenterology Department, Pakistan Institute of Medical Sciences, Islamabad from January 2019 to December 2019. All patients having history of upper gastrointestinal bleed were included in the study. Patients unfit for endoscopy i.e. with perforation, peritonitis, comatose needing intubation and those unwilling to undergo the procedure were excluded. Total 490 patients fulfilled the criterion. All procedures were

performed by consultant gastroenterologists. Before procedures, patients were told to remain NPO for minimum 6 hours. Then after sterilization, endoscope was introduced to GI tract via oral cavity. The cause of GI bleed was noted. Patients in which procedure could not be completed were also excluded. Data was noted on set performa and further statistical analysis was performed via SPSS v 26. Firstly, data was arranged and values label were given in SPSS v 20. ODDS Ratio and Relative Risk Tests were applied to check associations. Dispersion in quantitative data was analyzed by standard deviation. Statistical significance was checked by P<0.05 values.

RESULTS

Among 490 patients, 298 (61%) were males while 192 (39%) were females. Most common age group presenting with upper GI bleed belongs to old age group i.e. had age above 60 years (n=235, 47.9%) followed by 40 to 59 years (n=174, 35.5%). Figure 1 shows the age (a) and gender (b) wise distribution of study participants.

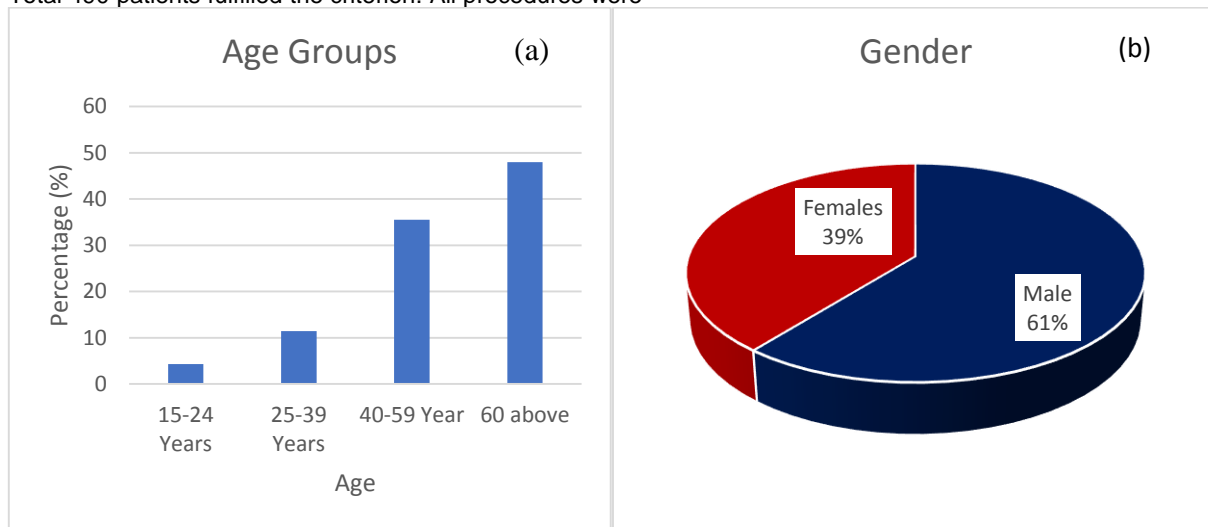


Figure 1 shows the age (a) and gender (b) wise distribution of study participants.

Most common cause of upper GI bleed was found to be variceal bleed (n=292, 59.5%), followed by ulcer bleed (n=88, 18.0%) and stomach cancer (n=28, 6%). In 82 (17%) cases no reason for gastrointestinal bleed could be found out. Chi-square test showed Variceal bleed to be the most significant reason ($\chi^2=65.2$, P-Value<0.001) of Upper GI bleed.

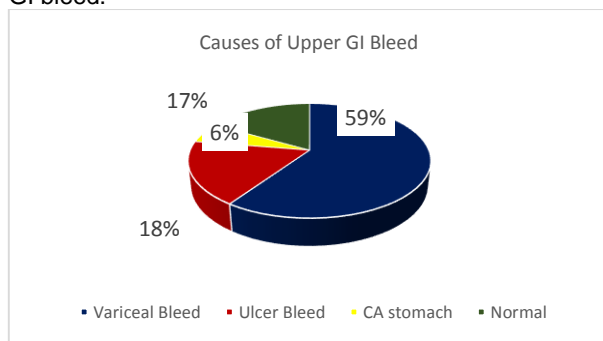


Figure 2 Causes of Upper GI Bleed in study participants.

The trend of pathology distribution was found to be similar for both genders. ODD's Ratio and Relative Risk were checked to find association of gender and cause of bleed. However, no significant association was found between cause of upper gastrointestinal bleed and gender prevalence. Table-1 shows the ODDs ratio and relative risk assessment of causes of upper GI bleed and gender.

Table 1 Association of Gender and Causes of Upper GI Bleed.

Causes	Males	Females	ODDs Ratio	Relative Risk
Variceal Bleed	172	121	1.28, P Value=0.2	1.08, P-Value=0.2
Ulcer Bleed	52	35	0.94, P-Value=0.8	0.95, P-Value=0.8
CA Stomach	19	9	1.49, P-Value=0.4	1.38, P-Value=0.4
None	55	33		
Total	298	192		

DISCUSSION

Upper gastrointestinal bleeding is gastrointestinal blood loss that occurs close to the Treitz ligament. GI bleeding is

still one of the most prevalent medical emergencies that necessitates prompt attention, resuscitation, and hospitalization.

In our present study, majority of the population was male i.e., 61%. This observation is in line with previous studies. In a study conducted in Eastern India, the male to female ratio for patients admitted in a hospital for 2 years was 4:1 with 80.1% men and 19.3% women (9). In another study conducted in Sun Yat Sen university, which collected patients data for 15 years, the percentage of men was 73.28% and women were 26.72% of the patient population (10). Upon division of patients in different age groups, it was clear that UGIB was more prevalent at old age with the highest incidence in 60 years or above followed by the fourth and fifth decades of life. However, this finding somewhat differs with previous studies explaining the demographics of UGIB patients. In a study conducted in the UK, the median age for UGIB patients was 64 years and thus much of the population was below 60 years of age (11). Similarly, a study conducted in Sukkur, Pakistan the highest age group of patients was 41-60 years of age (1). The same pattern was observed in two other studies in Rawalpindi (6) and Faisalabad (7). The study conducted in Rawalpindi showed a mean age of 52.20 years of age and in Faisalabad, the highest age group was much younger population i.e., 20-45 years of age (6,7). This diversity in age groups in different studies suggests that UGIB is not specific to a certain age group rather distributed over a vast age range of patients.

Most of the studies conducted worldwide suggest peptic ulcers to be the most common cause of UGIB (12). In Europe, a study confirmed the presence of 44% peptic ulcer and overall 72% non-variceal ulcer to be the cause of UGIB (13). Similarly, an Iranian study concluded that 52.2% of the UGIB cases under study were due to peptic ulcer, followed by duodenal i.e., 26.4% (14). But this trend differs in Pakistan. In a study conducted in Jamshoro, variceal bleed was the common cause of UGIB followed by peptic ulcer (15). In another study conducted in Lahore, the most common reason was variceal bleeding but they were further divided into variceal bleed due to hepatitis C (80%) and variceal bleed due to hepatitis B (2.9%), followed by peptic ulcer (17.1%) (16). Similar pattern was observed in previously mentioned studies Rawalpindi and Faisalabad (6,7). In this study, a similar pattern was observed with highest case numbers due to variceal bleed followed by ulcer bleed. This continuous pattern in Pakistan of high prevalence of variceal bleed can be attributed to increased prevalence of hepatitis C in Pakistan (17) thus resulting in a different trend as compared to the rest of the world.

CONCLUSION

Variceal bleed is the most significant cause of upper GI bleed in our study population. This trend can be attributed to increased prevalence of hepatitis C in Pakistan. Special attention to the patient's symptoms especially with history of HCV can help in early diagnosis and timely management.

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