Section: General Medicine

Original Research Article

CLINICAL PROFILE OF PATIENTS WITH UPPER GI BLEED AT A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Upper gastrointestinal bleeding (UGIB) is a common medical emergency associated with significant morbidity and mortality. Early identification of its clinical profile and underlying etiology is essential for timely diagnosis, appropriate management, and improved patient outcomes. The aim is to study the clinical profile of patients presenting with upper gastrointestinal bleeding at a tertiary care hospital.

Materials and Methods: This prospective observational study was conducted in the Department of General Medicine, Maharishi Markandeshwar Institute of Medical Science and Research, Mullana, after obtaining institutional ethical approval. A total of 100 adult patients (≥18 years) presenting with hematemesis and/or melena were enrolled after informed consent. Detailed clinical history, physical examination, laboratory investigations, ultrasonography, and upper gastrointestinal endoscopy were performed in all patients. Data were analyzed using IBM SPSS Statistics version 31.0, and a p-value <0.05 was considered statistically significant.

Results: The majority of patients were aged ≥60 years (31.0%), with a male predominance (77.0%). Melena was the most common presenting symptom (73.0%), followed by hematemesis (44.0%). Chronic liver disease was the most frequent comorbidity (71.0%), while 41.0% of patients were chronic alcohol consumers. The mean hemoglobin level was 8.99 ± 2.16 g/dL. Endoscopy revealed esophageal varices in 71.0% of patients, including large varices in 41.0%, while gastric and duodenal ulcers accounted for 16.0% and 10.0% of cases, respectively. Ultrasonography demonstrated chronic liver disease in 71.0% of patients.

Conclusion: Chronic liver disease with portal hypertension was the predominant cause of upper gastrointestinal bleeding in the study population. Early clinical evaluation, prompt endoscopic diagnosis, and timely therapeutic intervention are crucial for reducing morbidity and improving patient outcomes.

Keywords: Upper gastrointestinal bleeding, Hematemesis, Melena, Chronic liver disease, Esophageal varices, Portal hypertension, Upper gastrointestinal endoscopy.

INTRODUCTION

Upper gastrointestinal bleeding (UGIB) is one of the most common and potentially life-threatening medical emergencies encountered in clinical practice. It is defined as bleeding originating proximal to the ligament of Treitz, including the esophagus, stomach, and duodenum. Patients typically present with hematemesis, coffee-ground vomiting, melena, or, in severe cases, hematochezia associated with hemodynamic instability. Despite substantial advances in endoscopic techniques,

pharmacological therapy, and critical care management, UGIB continues to be associated with significant morbidity, mortality, prolonged hospitalization, and increased healthcare expenditure worldwide.[1,2] Recent epidemiological data suggest that the incidence of UGIB remains considerable, particularly among elderly individuals and those with multiple comorbid conditions, although mortality has gradually declined because of improvements in early diagnosis and multidisciplinary management. The etiology of UGIB varies according to geographic region, underlying disease burden, and patient characteristics. Broadly, UGIB is categorized into variceal and non-variceal bleeding. Non-variceal causes include peptic ulcer disease, erosive gastritis, duodenitis, Mallory–Weiss tears, malignancy, vascular malformations, and Dieulafoy's lesions, whereas variceal bleeding most commonly results from portal hypertension secondary to chronic liver disease and cirrhosis. In developing countries, particularly in South Asia, chronic liver disease associated with alcohol abuse and viral hepatitis continues to account for a large proportion of UGIB cases. Conversely, in many developed nations, peptic ulcer disease remains the leading cause, although its incidence has declined owing to Helicobacter pylori eradication and widespread proton pump inhibitor use.[3,4]

Several risk factors contribute to the development of UGIB, including advanced age, chronic liver disease, alcohol consumption, non-steroidal anti-inflammatory drug (NSAID) use, antiplatelet or anticoagulant therapy, chronic kidney disease, and cardiovascular disorders. Patients with cirrhosis are particularly vulnerable because portal hypertension predisposes them to esophageal and gastric varices, while impaired hepatic synthetic function results in coagulopathy and thrombocytopenia, increasing the severity of bleeding episodes. Clinical assessment should therefore include a detailed evaluation of presenting symptoms, hemodynamic status, laboratory parameters, associated comorbidities, and risk factors to guide timely intervention and improve outcomes.[5,6]

Upper gastrointestinal endoscopy remains the cornerstone for both diagnosis and treatment of UGIB. Current international guidelines recommend early endoscopy, preferably within 24 hours of presentation after initial resuscitation, as it accurately identifies the bleeding source, permits endoscopic hemostatic therapy when indicated, and facilitates risk stratification. Therapeutic modalities such as endoscopic variceal ligation, injection therapy, thermal coagulation, hemoclipping, and topical hemostatic agents have significantly improved clinical outcomes. Concurrent medical management, including proton pump inhibitors for non-variceal bleeding and vasoactive agents with prophylactic antibiotics for variceal bleeding, further reduces the risk of rebleeding and mortality.[6–8]

Understanding the clinical profile of patients presenting with UGIB is essential for identifying disease patterns, determining the underlying etiology, recognizing high-risk patients, and optimizing resource utilization in tertiary care hospitals. Information regarding demographic characteristics, clinical presentation, laboratory abnormalities, endoscopic findings, and associated comorbidities provides valuable insights into regional disease trends and helps formulate evidence-based management strategies. Since the etiological spectrum of UGIB varies across populations because of differences in socioeconomic status, alcohol consumption, prevalence of chronic liver disease, and healthcare access, institution-specific data remain highly relevant for improving patient care and reducing adverse outcomes.[2,9,10]

The aim of this study was to evaluate the clinical profile of patients presenting with upper gastrointestinal (GI) bleeding at a tertiary care hospital by assessing their demographic characteristics, clinical presentation, associated risk factors, comorbidities, laboratory and endoscopic findings, and etiological spectrum, with the objective of providing a comprehensive understanding of the disease pattern to facilitate early diagnosis, appropriate management, and improved patient outcomes.

MATERIALS AND METHODS

Study Design: Prospective observational study.

Study Population: Adult patients (>18 years) presenting with features of upper gastrointestinal (GI) bleeding (hematemesis and/or melena) to the Department of General Medicine were enrolled consecutively after obtaining written informed consent.

Sample Size: A total of 100 patients were included in the study.

Study Duration: 18 months (November 2024 to May 2026).

Study Place: The study was conducted in the Department of General Medicine, Maharishi Markandeshwar Institute of Medical Science and Research (MMIMSR), Mullana, after obtaining approval from the Institutional Ethics Committee.

Inclusion Criteria

1. Patients aged 18 years and above.
2. Patients presenting with upper gastrointestinal bleeding, manifested as hematemesis and/or melena.
3. Patients willing to provide written informed consent.

Exclusion Criteria

1. Patients with fresh bleeding per rectum due to lower gastrointestinal causes such as Crohn's disease, ulcerative colitis, carcinoma colon, or hemorrhoids (piles).
2. Patients with known bleeding or coagulation disorders.

3. Patients unwilling to participate in the study.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using IBM SPSS Statistics version 31.0. Quantitative variables were expressed as mean ± standard deviation (SD), while qualitative variables were presented as frequency and percentage. Comparisons between two groups were performed using the student's t-test for continuous variables. The Chi-square test or Fisher's exact test was used for categorical variables, wherever appropriate. Univariate and multivariate analyses were performed to identify predictors of mortality among patients with upper GI bleeding. A p-value <0.05 was considered statistically significant.

RESULTS

Table 1: Demographic Characteristics and Clinical Presentation of Patients

Variable	Category	n	%
Age Group (years)	<30	5	5
	30–39	30	30
	40–49	17	17
	50–59	17	17
	≥60	31	31
Gender	Male	77	77
	Female	23	23
Clinical Presentation	Melena	73	73
	Hematemesis	44	44
	Abdominal distension	12	12
	Abdominal pain	6	6
	Jaundice	3	3
	Altered sensorium	2	2

Table 2: Baseline Characteristics, Comorbidities and Alcohol Consumption

Variable	Category	n	%
Comorbidities	Chronic liver disease	71	71
	Hepatitis B infection	16	16
	Diabetes mellitus	13	13
	Hepatitis C infection	12	12
	Hypertension	10	10
Alcohol Consumption	Chronic alcoholic	41	41
	Non-alcoholic	35	35
	Reformed alcoholic	14	14
	Occasional alcoholic	10	10
Ascites	No ascites	29	29
	Minimal	6	6
	Mild	20	20
	Moderate	38	38
	Gross	7	7

Table 3: Clinical and Laboratory Characteristics of the Study Population

Parameter	Mean ± SD
Systolic BP (mmHg)	112.64 ± 15.37
Diastolic BP (mmHg)	68.00 ± 9.89
Pulse rate (beats/min)	86.83 ± 14.25
Respiratory rate (breaths/min)	15.69 ± 2.20
SpO_2 (%)	96.36 ± 2.09
Temperature (°F)	96.09 ± 11.22
Random blood sugar (mg/dL)	125.32 ± 32.34
Hemoglobin (g/dL)	8.99 ± 2.16
Platelet count (×10³/µL)	112.12 ± 99.43
Total bilirubin (mg/dL)	3.05 ± 3.50
SGOT (U/L)	56.58 ± 42.55
SGPT (U/L)	33.60 ± 22.96
Serum albumin (g/dL)	2.97 ± 0.69
INR	1.52 ± 0.49

Table 4: Endoscopic and Ultrasonographic Findings

Investigation	Finding	n	%
Upper GI Endoscopy	Esophageal varices	71	71
	Small esophageal varices	30	30
	Large esophageal varices	41	41
	Gastric ulcer	16	16
	Duodenal ulcer	10	10
	Combined gastric & duodenal ulcer	3	3

	Variceal bleeding treated with EVL	36	36
Ultrasound Abdomen	Chronic liver disease	71	71
	Splenomegaly	23	23
	Normal liver	29	29

Table 5: Association Between Presenting Complaints and Ultrasonographic Findings

Presenting Complaint	Chronic Liver Disease (n=71)	Normal Liver (n=29)	Total
Melena only	35 (49.3%)	8 (27.6%)	43 (43.0%)
Hematemesis only	6 (8.5%)	18 (62.1%)	24 (24.0%)
Both melena and hematemesis	30 (42.3%)	3 (10.3%)	33 (33.0%)
Total	71 (100%)	29 (100%)	100 (100%)

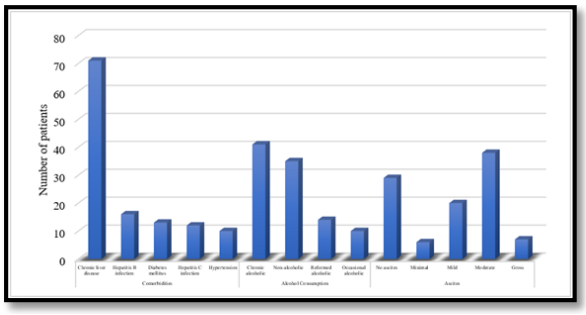

Figure 1: Baseline Characteristics, Comorbidities and Alcohol Consumption

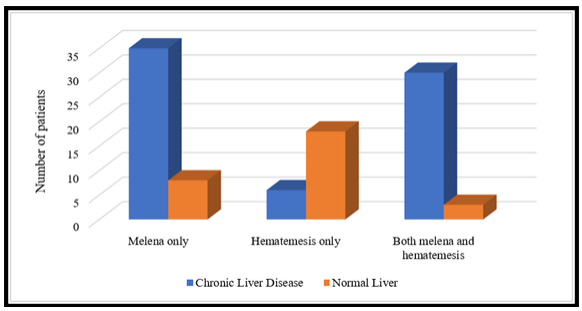

Figure 2: Association Between Presenting Complaints and Ultrasonographic Findings

A total of 100 patients with upper gastrointestinal bleeding were included in the study. The largest proportion of patients belonged to the ≥60 years age group (31.0%), followed by the 30–39 years age group (30.0%). Patients aged 40–49 years and 50–59 years each constituted 17.0%, whereas only 5.0% of patients were younger than 30 years. The study population showed a marked male predominance, with 77.0% males and 23.0% females.

Regarding clinical presentation, melena was the most frequent presenting symptom, observed in 73.0% of patients, followed by hematemesis in 44.0%. Less common manifestations included abdominal distension (12.0%), abdominal pain (6.0%), jaundice (3.0%), and altered sensorium (2.0%). These findings indicate that melena was the predominant mode of presentation, while neurological and hepatic decompensation features were relatively uncommon at admission.

Among the associated comorbid conditions, chronic liver disease (CLD) was the most prevalent, affecting 71.0% of the study population. Viral hepatitis was also frequently encountered, with hepatitis B virus (HBV) infection present in 16.0% and hepatitis C virus (HCV) infection in 12.0% of patients. Other medical comorbidities included diabetes mellitus in 13.0% and hypertension in 10.0% of patients.

Regarding alcohol consumption, 41.0% of patients were chronic alcohol consumers, 35.0% were non-alcoholics, 14.0% were reformed alcoholics, and 10.0% reported occasional alcohol intake. The high proportion of chronic alcohol consumption corresponded with the high prevalence of chronic liver disease observed in the study population.

Assessment of ascites demonstrated that moderate ascites was the most common finding, present in 38.0% of patients, followed by no ascites in 29.0%, mild ascites in 20.0%, gross ascites in 7.0%, and minimal ascites in 6.0%. These findings indicate that a considerable proportion of patients presented with evidence of portal hypertension and advanced liver disease.

The mean systolic blood pressure of the study population was 112.64 ± 15.37 mmHg, while the mean diastolic blood pressure was 68.00 ± 9.89 mmHg, suggesting relative hemodynamic stability in most patients at presentation. The mean pulse rate was 86.83 ± 14.25 beats/min, respiratory rate 15.69 ± 2.20 breaths/min, oxygen saturation 96.36 ± 2.09%, and body temperature 96.09 ± 11.22°F.

Laboratory evaluation revealed a mean random blood sugar of 125.32 ± 32.34 mg/dL. The mean hemoglobin concentration was 8.99 ± 2.16 g/dL, indicating significant anemia among patients presenting with upper gastrointestinal bleeding. The mean platelet count was 112.12 ± 99.43 $\times 10^3/\mu L$, suggestive of thrombocytopenia in a substantial proportion of patients, likely secondary to chronic liver disease and hypersplenism.

Liver function tests demonstrated a mean total bilirubin level of 3.05 ± 3.50 mg/dL, mean SGOT of 56.58 ± 42.55 U/L, and mean SGPT of 33.60 ± 22.96 U/L. The mean serum albumin concentration was 2.97 ± 0.69 g/dL, reflecting impaired hepatic synthetic function. The mean international normalized ratio (INR) was 1.52 ± 0.49, indicating the presence of coagulation abnormalities in many patients. Overall, the laboratory profile was consistent with significant hepatic dysfunction in the majority of study participants.

Upper gastrointestinal endoscopy revealed that esophageal varices were the most common lesion, identified in 71.0% of patients. Among these, 41.0% had large esophageal varices, while 30.0% had small esophageal varices. Variceal bleeding requiring

endoscopic variceal ligation (EVL) was performed in 36.0% of patients.

Non-variceal causes of bleeding included gastric ulcer in 16.0%, duodenal ulcer in 10.0%, and combined gastric and duodenal ulcers in 3.0% of patients. These findings indicate that variceal bleeding secondary to portal hypertension constituted the predominant etiology of upper gastrointestinal hemorrhage in the present study.

Ultrasonographic examination further supported these findings, with 71.0% of patients demonstrating features of chronic liver disease, while 23.0% had splenomegaly. Only 29.0% had a normal liver on ultrasonography. The close concordance between endoscopic and ultrasonographic findings highlights the major contribution of chronic liver disease and portal hypertension to upper gastrointestinal bleeding in this cohort.

Analysis of presenting symptoms according to ultrasonographic findings demonstrated distinct clinical patterns. Among patients with chronic liver disease, melena alone was the most frequent presentation, occurring in 35 patients (49.3%), followed by both melena and hematemesis in 30 patients (42.3%), whereas hematemesis alone was relatively uncommon (6 patients; 8.5%).

Conversely, among patients with a normal liver on ultrasonography, hematemesis alone was the predominant presenting complaint, occurring in 18 patients (62.1%), followed by melena alone in 8 patients (27.6%), while both melena and hematemesis were observed in only 3 patients (10.3%).

Overall, 43.0% of the study population presented with melena alone, 24.0% with hematemesis alone, and 33.0% with both melena and hematemesis. These findings suggest that patients with chronic liver disease were more likely to present with melena, either alone or in combination with hematemesis, whereas isolated hematemesis was more commonly observed among patients without ultrasonographic evidence of chronic liver disease.

DISCUSSION

The present prospective observational study evaluated the clinical profile of 100 patients presenting with upper gastrointestinal bleeding (UGIB) at a tertiary care hospital. Age distribution revealed that the majority of patients were elderly, with 31% aged ≥60 years, followed closely by 30% in the 30–39-year age group. This finding suggests that UGIB predominantly affects older adults, likely because of the cumulative burden of chronic liver disease, peptic ulcer disease, long-term alcohol consumption and non-steroidal anti-inflammatory drugs (NSAIDs). Increasing age has also been associated with multiple comorbidities and impaired physiological reserve, contributing to a greater risk of gastrointestinal hemorrhage and adverse outcomes.

A similar age distribution was reported by Bhunia et al,[11] who observed that most patients with UGIB belonged to the fifth and sixth decades of life, emphasizing that advancing age significantly increases susceptibility to gastrointestinal bleeding due to chronic hepatic and gastrointestinal disorders. Likewise, Yousif et al,[12] in a tertiary-care study from Bahrain, found that the mean age of patients with UGIB was above 55 years, with elderly individuals constituting the largest proportion of admissions. The slightly younger age distribution observed in the present study may reflect the higher prevalence of alcohol-related chronic liver disease in the study population.

The present study demonstrated a marked male predominance (77%), with females accounting for only 23% of cases. Similar observations have been reported across several recent studies, indicating that males are disproportionately affected by UGIB. This may be explained by higher rates of alcohol consumption, smoking, chronic liver disease, viral hepatitis, and NSAID exposure among men.

Alghamdi et al,[13] reported that approximately three-fourths of patients admitted with UGIB were males, while Abdullah et al,[14] similarly documented a male predominance exceeding 70% among hospitalized UGIB patients. The findings of the present study are therefore consistent with current international literature.

With regard to clinical presentation, melena was the commonest presenting symptom (73%), whereas hematemesis was present in 44% of patients. Approximately one-third of patients experienced both manifestations simultaneously. Melena generally reflects slower or intermittent upper gastrointestinal bleeding, whereas hematemesis usually indicates more active bleeding. The predominance of melena in the present study may indicate delayed hospital presentation or intermittent bleeding episodes before admission.

Comparable findings were reported by Bhunia et al,[11] who identified melena as the most frequent presenting complaint among patients with UGIB, followed by hematemesis. Similarly, Yousif et al,[12] observed that melena either alone or combined with hematemesis constituted the commonest presentation in patients with variceal bleeding. These similarities reinforce that melena continues to be the predominant symptom of UGIB across different populations.

Less common presenting manifestations in the current study included abdominal distension (12%), abdominal pain (6%), jaundice (3%), and altered sensorium (2%). These features were predominantly observed among patients with advanced chronic liver disease and portal hypertension. Similar observations have been described by Alghamdi et al,[13] who reported that hepatic decompensation features were considerably less frequent than overt gastrointestinal bleeding but were associated with increased disease severity and poorer prognosis.

The present study demonstrated that chronic liver disease (71%) was by far the commonest associated comorbidity among patients with UGIB. In contrast, diabetes mellitus (13%), hypertension (10%), HBV infection (16%), and HCV infection (12%) were less frequently encountered. The predominance of chronic liver disease indicates that variceal hemorrhage secondary to portal hypertension remains the principal cause of upper gastrointestinal bleeding in this region.

These observations closely agree with those of Yousif et al,[12] who reported chronic liver disease as the leading underlying condition among patients presenting with acute UGIB. Likewise, Bhunia et al,[11] found that cirrhosis and portal hypertension accounted for the majority of admissions for upper gastrointestinal hemorrhage in Eastern India. The consistency of these findings highlights the continued burden of chronic liver disease in developing countries.

Alcohol consumption showed a strong association with UGIB in the present study. Forty-one percent of patients were chronic alcohol consumers, while 35% reported no alcohol intake, 14% were reformed alcoholics, and 10% consumed alcohol occasionally. Chronic alcohol intake is well recognized as a major contributor to hepatic fibrosis, cirrhosis, portal hypertension, and esophageal varices, all of which predispose patients to recurrent gastrointestinal bleeding.

Comparable findings were documented by Abdullah et al,[14] who observed chronic alcohol consumption in approximately 40–45% of patients with variceal bleeding. Alghamdi et al,[13] similarly concluded that alcohol abuse remained one of the strongest modifiable risk factors for chronic liver disease–related UGIB. The findings of the present study therefore support existing evidence linking excessive alcohol intake with severe upper gastrointestinal hemorrhage.

Assessment of ascites revealed that moderate ascites (38%) was the commonest finding, followed by mild ascites (20%), gross ascites (7%), and minimal ascites (6%), while 29% of patients had no ascites. The high prevalence of ascites further supports the predominance of decompensated chronic liver disease in the study population. Ascites develops because of portal hypertension and impaired hepatic synthetic function and is considered an important marker of advanced liver disease.

Similar findings were reported by Bhunia et al,[11] who observed moderate-to-severe ascites in nearly one-third of cirrhotic patients presenting with UGIB. Yousif et al,[12] also found ascites to be a frequent clinical manifestation among patients with portal hypertensive bleeding, emphasizing its value as an indicator of disease severity and poor prognosis.

Overall, the demographic characteristics, clinical presentation, comorbidity profile, alcohol consumption pattern, and distribution of ascites observed in the present study are consistent with contemporary literature and reaffirm that chronic liver disease with portal hypertension remains the predominant underlying condition among patients presenting with upper gastrointestinal bleeding in tertiary care settings.

The present study evaluated the clinical and laboratory profile of patients admitted with upper gastrointestinal bleeding (UGIB), which provides important information regarding the severity of blood loss, underlying liver dysfunction, and overall physiological status at presentation. The mean systolic blood pressure was 112.64 ± 15.37 mmHg, while the mean diastolic blood pressure was 68.00 ± 9.89 mmHg, suggesting that the majority of patients were hemodynamically stable following initial resuscitation. The mean pulse rate of 86.83 ± 14.25 beats/min and respiratory rate of 15.69 ± 2.20 breaths/min were also within acceptable limits for most patients, although a subset presented with features suggestive of significant blood loss. These findings highlight the importance of prompt fluid resuscitation before definitive endoscopic management.

A prospective study by Kaymak et al,[15] similarly observed that most patients with acute UGIB maintained stable vital parameters following early resuscitation, whereas patients presenting with hypotension and tachycardia experienced significantly higher mortality and rebleeding rates. Likewise, Cumaoglu et al,[16] demonstrated that abnormalities in admission vital signs, particularly hypotension and tachycardia, were independent predictors of adverse clinical outcomes in UGIB. These observations support the findings of the present study, emphasizing that initial hemodynamic assessment remains fundamental in determining disease severity and guiding management.

An important laboratory finding in the present study was the mean hemoglobin level of 8.99 ± 2.16 g/dL, indicating moderate to severe anemia in a substantial proportion of patients. Acute blood loss, chronic occult bleeding, hypersplenism associated with portal hypertension, and nutritional deficiencies are likely contributors to this finding. Significant anemia has consistently been recognized as one of the strongest indicators of severe upper gastrointestinal hemorrhage and the need for blood transfusion.

Comparable findings were reported by Kaymak et al,[15] who observed significantly lower hemoglobin concentrations among patients with poor clinical outcomes and demonstrated that hemoglobin-based indices were useful predictors of mortality and recurrent bleeding. Similarly, Cumaoglu et al,[16] found that low admission hemoglobin was independently associated with increased in-hospital mortality among patients with UGIB. These observations reinforce the importance of early hemoglobin assessment for risk stratification and timely transfusion therapy.

The present study also demonstrated a mean platelet count of 112.12 ± 99.43 $\times 10^3/\mu L$, indicating thrombocytopenia in many patients. This finding is

consistent with the high prevalence of chronic liver disease in the study population, where hypersplenism, reduced thrombopoietin synthesis, and bone marrow suppression commonly result in decreased platelet counts. Thrombocytopenia further increases the risk of persistent bleeding and adversely affects hemostasis.

Similar observations were reported by Cumaoglu et al,[16] who found significantly lower platelet counts among non-survivors compared with survivors of UGIB. Their study concluded that thrombocytopenia reflects advanced portal hypertension and poor hepatic reserve and should be considered during early prognostic assessment. Recent evidence has also suggested that platelet-based inflammatory indices provide additional prognostic information in patients presenting with acute gastrointestinal hemorrhage.

Liver function tests in the present study further reflected the predominance of chronic liver disease. The mean total bilirubin level was 3.05 ± 3.50 mg/dL, mean SGOT 56.58 ± 42.55 U/L, mean SGPT 33.60 ± 22.96 U/L, and mean serum albumin 2.97 ± 0.69 g/dL. These findings indicate impaired hepatocellular function and reduced hepatic synthetic capacity among a large proportion of patients. Hypoalbuminemia, in particular, reflects advanced cirrhosis and has been consistently associated with poor clinical outcomes in UGIB.

A study by Kaymak et al,[15] demonstrated that serum albumin was a strong predictor of 30-day mortality and rebleeding, with lower albumin levels significantly associated with adverse outcomes. Likewise, Choi et al,[17] showed that combining the international normalized ratio (INR) with serum albumin into the Prothrombin Time–Albumin Ratio (PTAR) provided excellent prognostic value for identifying critically ill patients with upper gastrointestinal bleeding. Their findings highlight the importance of evaluating hepatic synthetic function in patients with UGIB, particularly in populations where variceal bleeding predominates.

The present study reported a mean INR of 1.52 ± 0.49, indicating mild to moderate coagulopathy in many patients. Elevated INR is common in chronic liver disease because of impaired synthesis of clotting factors and has been associated with increased bleeding severity and poorer prognosis. Coagulation abnormalities, together with thrombocytopenia, contribute substantially to recurrent hemorrhage and the need for blood product transfusion.

Choi et al,[17] similarly reported that increasing INR values were associated with greater disease severity and mortality among patients presenting to emergency departments with UGIB. More recently, Cumaoglu et al,[16] also demonstrated that elevated INR independently predicted in-hospital mortality after adjustment for demographic and clinical variables. These findings are in agreement with the present study and emphasize the clinical significance of coagulation assessment during the initial evaluation of patients with upper gastrointestinal bleeding.

Overall, the clinical and laboratory profile observed in the present study reflects the predominance of chronic liver disease and portal hypertension among patients with UGIB. The presence of anemia, thrombocytopenia, hypoalbuminemia, hyperbilirubinemia, elevated liver enzymes, and prolonged INR indicates advanced hepatic dysfunction and identifies patients at increased risk for adverse outcomes. These findings are consistent with contemporary international literature and underscore the importance of comprehensive laboratory assessment for early risk stratification, prognostic evaluation, and optimization of therapeutic management.

Upper gastrointestinal endoscopy remains the gold standard for identifying the source of bleeding and guiding therapeutic intervention in patients with upper gastrointestinal bleeding (UGIB). In the present study, esophageal varices were the predominant endoscopic finding, identified in 71% of patients. Among these, 41% had large esophageal varices, while 30% had small esophageal varices. Furthermore, 36% of patients underwent endoscopic variceal ligation (EVL) for active variceal bleeding. These findings clearly indicate that portal hypertension secondary to chronic liver disease constituted the principal etiology of UGIB in the study population. The predominance of variceal bleeding observed in the present study differs from many Western reports, where peptic ulcer disease remains the leading cause of UGIB, but closely reflects the disease pattern commonly reported from developing countries where alcohol-related cirrhosis and chronic viral hepatitis are highly prevalent.

Similar observations were reported by Lynrah et al,[18] who found esophageal varices to be one of the most frequent endoscopic lesions among patients undergoing evaluation for UGIB in a tertiary care hospital. Their study emphasized that early upper gastrointestinal endoscopy is essential for prompt diagnosis and effective endoscopic therapy, particularly in patients with portal hypertension. Likewise, Gong et al,[19] demonstrated that endoscopic variceal ligation remains the cornerstone of treatment for acute variceal hemorrhage and significantly reduces the risk of recurrent bleeding when combined with standard pharmacological therapy. Their findings support the high utilization of EVL observed in the present study and reinforce its role as the preferred endoscopic intervention for bleeding esophageal varices.

In addition to variceal lesions, gastric ulcers (16%), duodenal ulcers (10%), and combined gastric and duodenal ulcers (3%) were identified as important non-variceal causes of bleeding. Although their frequency was considerably lower than that of esophageal varices, peptic ulcer disease continues to contribute substantially to the overall burden of UGIB. Similar findings have been described by Lynrah et al,[18] who reported gastric and duodenal

ulcers as the commonest non-variceal causes of bleeding after esophageal varices. These observations indicate that both variceal and non-variceal etiologies should always be considered during endoscopic evaluation, particularly in tertiary care settings where patients often present with multiple risk factors.

Ultrasonographic examination in the present study further strengthened the endoscopic findings. Chronic liver disease was identified in 71% of patients, while 23% had splenomegaly and 29% showed a normal liver on ultrasonography. The coexistence of chronic liver disease and splenomegaly reflects advanced portal hypertension, which is the principal mechanism underlying the development of esophageal varices. Similar findings have been reported by Musa et al,[20] who highlighted that portal hypertension resulting from cirrhosis remains the leading cause of variceal hemorrhage worldwide and emphasized the importance of imaging modalities in identifying chronic liver disease and associated complications. Their review concluded that ultrasonographic evidence of cirrhosis and splenomegaly correlates closely with the presence of clinically significant portal hypertension and gastroesophageal varices.

The present study demonstrated a clear relationship between presenting symptoms and underlying liver pathology. Among patients with ultrasonographic evidence of chronic liver disease, melena alone was the commonest presentation (49.3%), followed by both melena and hematemesis (42.3%), whereas hematemesis alone was relatively uncommon (8.5%). In contrast, among patients with a normal liver on ultrasonography, hematemesis alone predominated (62.1%), followed by melena alone (27.6%) and combined hematemesis with melena (10.3%).

These findings suggest that patients with portal hypertensive bleeding often experience prolonged or intermittent gastrointestinal blood loss, resulting in melena either alone or in combination with hematemesis. Conversely, isolated hematemesis appears to be more characteristic of non-variceal bleeding, particularly peptic ulcer disease and erosive gastroduodenal lesions. This difference in clinical presentation is clinically relevant because it assists physicians in anticipating the likely underlying etiology before endoscopy.

Comparable observations were reported by Lynrah et al,[18] who found that melena was more frequently associated with variceal bleeding secondary to chronic liver disease, whereas isolated hematemesis occurred more commonly in patients with non-variceal upper gastrointestinal lesions. Similarly, Musa et al,[20] emphasized that the clinical presentation of UGIB often reflects the severity and source of bleeding, with patients suffering from portal hypertension commonly exhibiting recurrent melena due to repeated episodes of variceal hemorrhage.

Overall, the endoscopic, ultrasonographic, and clinical findings observed in the present study consistently indicate that chronic liver disease with portal hypertension was the predominant underlying pathology responsible for upper gastrointestinal bleeding in this cohort. The high prevalence of esophageal varices, frequent requirement for endoscopic variceal ligation, ultrasonographic evidence of cirrhosis and splenomegaly, and the predominance of melena among patients with chronic liver disease collectively support the central role of portal hypertension in the pathogenesis of UGIB. These findings are in close agreement with recent international studies and further emphasize the importance of early endoscopic evaluation, timely therapeutic intervention, and comprehensive management of chronic liver disease to reduce morbidity, recurrent bleeding, and mortality.

CONCLUSION

Upper gastrointestinal bleeding remains a significant medical emergency requiring prompt diagnosis and timely intervention. The present study demonstrated that the majority of patients were elderly males, with melena being the most common presenting symptom. Chronic liver disease emerged as the predominant underlying comorbidity, with a high prevalence of alcohol use, highlighting portal hypertension as the principal etiological factor. Laboratory findings frequently revealed anemia, thrombocytopenia, hypoalbuminemia, and coagulation abnormalities, reflecting advanced hepatic dysfunction. Endoscopic evaluation identified esophageal varices as the leading cause of bleeding, while ultrasonography further confirmed chronic liver disease in most patients. Early upper gastrointestinal endoscopy proved invaluable in establishing the diagnosis and facilitating therapeutic interventions such as endoscopic variceal ligation. A comprehensive clinical assessment, supported by laboratory investigations and imaging, is essential for appropriate risk stratification and management. Early recognition of the underlying etiology and multidisciplinary treatment can substantially reduce morbidity, prevent recurrent bleeding, and improve overall patient outcomes.

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