

Original Article**Profiles and Inhospital Outcomes of Patients with Acute Upper Gastrointestinal Bleeding in a Tertiary Care Center**Shekhar Poudel¹, Rahul Devkota, Anubhav Sharma, Rohit Kumar Karna, Sareen Shrestha, Sujan Chandra Poudel

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Article Received: 15th October, 2022; Accepted: 25th December, 2022; Published: 31st December, 2022DOI: <https://doi.org/10.3126/jonmc.v11i2.50904>**Abstract****Background**

Acute upper gastrointestinal bleeding is one of the common and life threatening condition presenting in emergency. The aim of the present study was to determine the clinical profile and in-hospital outcomes in these patients admitted at a tertiary care center in Kathmandu, Nepal.

Materials and Methods

This is a descriptive, observational study conducted over 9 months (October 2021– July 2022). All consecutive patients aged 16 years and above admitted in the hospital ward with the history of acute bleeding were included in the study after informed consent. Demographic data, clinical, laboratory and endoscopic data were noted during the hospital stay. Statistical analysis was done used SPSS v.24.


Results

The mean age of our study population (N = 132) was 46.92 years. Among 132 patients who underwent endoscopy, 43.9% had portal hypertension related bleeding, 41.7% had ulcer related bleeding, 5.3% had malignancies, 3% had corrosive intake. No etiology was found in 3 patients. Hematemesis with melena was the most common mode (53.8%) of presentation to the hospital. Shock was present in 25% of patients at presentation to the hospital. In-hospital re-bleeding rate and mortality were 12.7% and 9.8% respectively.

Conclusion

Portal hypertension related bleeding followed by ulcers related bleeding is the common cause of acute upper gastrointestinal bleeding. In-hospital mortality was 9.8%.

Keywords: Endoscopy, Hematemesis, Portal hypertension

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Introduction

Acute upper gastrointestinal bleeding (AUGIB) is one of the common medical emergencies with significant mortality and morbidity [1]. Early diagnosis and management can be life saving in most of the cases. Though there are numerous etiologies which can lead to acute bleeding but variceal and peptic ulcer bleeding are relatively common – [2]. Bleeding from proximal bowel i.e. proximal to ligament of Treitz is generally considered as upper gastrointestinal bleeding [3]. Patient usually presents to emergency department with hematemesis or melena. Early suspicion of AUGIB should be made in patient with risk factors like portal hypertension and non-steroids anti-inflammatory agents (NSAIDs) intake, when they develop unexplained altered sensorium, hypotension and tachycardia [4, 5].

With the changing lifestyles, alcohol consumption habits, increased use of NSAIDs and anti-coagulants, declining hepatotropic chronic viral infections and advancement of therapies including *Helicobacter pylori* (*H. pylori*) eradications and efficient antiviral against Hepatitis B and C; the etiology and outcomes of upper gastrointestinal bleeding have changed significantly [68]. Not only this, there has been significant variation in etiology and outcomes of AUGIB with hospital setup and geographic areas [2, 8].

Most of the previous studies on upper gastrointestinal bleeding are mainly focused on plain elucidation of patient profile only. Short term prognosis after being admitted with medical or endoscopic therapies has not been studied in most of the previous studies [2, 9-11]. In this study we studied the clinical profile as well as in hospital outcomes of the patients admitted with acute upper gastrointestinal bleeding.

Materials and Methods

This is a single center descriptive observational study done at Kathmandu Medical College and Teaching Hospital (KMCTH), Kathmandu, Nepal, a tertiary level medical center. All consecutive patients with clinical evidence of AUGIB, admitted at Gastroenterology and Internal Medicine department were included in the study. Patients were included for study from October 27th 2021 to 15th July 2022. Data collection was started after approval from the institutional ethics committee (Ref: 1110202104). Informed written consent was taken from all patients whenever possible, if not then from close relatives. Sample size was calculated using the formula $S = Z^2 \times P \times (1-P)/M^2$, where $Z = 1.96$ at 95% confidence interval, $P = 9\%$ preva-

lence rate at tertiary care center, and $M = 5\%$ margin of error [12]. Thus sample size of 132 was taken after adjusting 5% margin of error.

All the patients of age 16 or above who gave the informed written consent for enrollment were evaluated for their symptoms and signs as well endoscopic, radiological and laboratory findings. Patients with thrombocytopenic and coagulopathy related bleeding were excluded from the study unless concurrent other etiologies were detected. Patients with evidence of chronic gastrointestinal bleed with duration of more than two weeks also were excluded. Most possible cause of current bleeding was considered based on investigations when, patient presented with multiple findings, for example, varices with ulcers on endoscopy and/or other investigations.

All the patients presenting with clinical features of AUGIB were admitted and started on medical therapy as required. Basic investigations including complete blood counts (CBC), liver biochemical tests (LFT), coagulation profile, chest X-ray (CXR) ultrasound abdomen (USG) and upper gastrointestinal endoscopy (UGIE) done in all patients. All endoscopic procedures were done within twenty-four hours of admission after hemodynamic stabilization. Further investigations for finding the etiology and severity including CT scan, colonoscopy were done as per requirement. All patients were started on standard medical therapy as per patient's clinical condition and possible etiology. Intravenous (IV) fluids with Ringer's lactate or normal saline were started in all patients. IV vasopressors – octreotide or terlipressin was started for variceal bleeding and pantoprazole in infusion (80 mg bolus followed by 8mg/hour) was started for non-variceal bleed. Both vasopressors and pantoprazole infusion were started if etiology was doubtful till the final diagnosis was made. PRBC (packed red blood cells) transfusion were done as per standard protocol i.e. presence of ongoing bleeding, shock or hemoglobin level below 7 g/dl without active bleed and < 9g/dl with cardiovascular risk factors [13].

Normally distributed continuous variables were expressed in mean \pm SD, whereas other continuous variables were expressed in median (IQR). Categorical variables were expressed as percentage. Data were entered and analyzed with IBM SPSS Version 24 IBM Corp, Armonk, New York, USA.

Results

Total of 132 patients with AUGIB were admitted



during the study period. Median age was 46.92 years with the range of 16 to 98 years. Male and female population was 76 and 56 respectively. Eighteen patients presented with hematemesis only, 33 patients with melena only, 71 with both hematemesis and melena and 10 patients presented with signs and symptoms of severe anemia and shock including dizziness and syncope. Baseline hemoglobin at presentation to the hospital was 8.47 g/dl. Shock was present in 33 (25%) patients at presentation (Table 1).

Table 1: Baseline Characteristics

Variables	Average/Frequency (%)
Age (years)	46.9 ± 14.9
Sex	
Male	76 (57.6%)
Female	56 (42.4%)
Presentation	
Hematemesis (H)	18 (13.6%)
Melena (M)	33 (15%)
Both (H + M)	71 (53.8%)
Other	10 (7.6%)
Hemoglobin (g/dl)	8.47 ± 2.76
Hematocrit (%)	25.4 ± 8.3
Platelets (10 ⁹ /L)	126 ± 13.5
INR	1.42 ± 0.73
Shock at Presentation	33 (25%)

Portal hypertensive and peptic ulcer related bleed were the common cause of bleeding. Among portal hypertensive bleed, esophageal variceal bleeding was the commonest cause (40 patients) followed by gastric varices (8.3%) and PHG (portal hypertensive gastropathy) related bleeding (5.3%). Among ulcer related bleeding gastric ulcer was the commonest (22 patients) followed by duodenal ulcers (15.2%) and esophageal ulcers (9.8%). Malignant etiology of AUGIB was found in 7 patients (5.3%). No etiology could be detected despite multiple endoscopic and radiologic investigations in 3 patients (Table 2).

Table 2: Etiologies of Acute Upper Gastrointestinal Bleeding

Etiology	Frequency	Percent (%)
Esophageal Varix	40	30.3
Gastric Varix	11	8.3
PHG/PHD	7	5.3
Esophageal Erosion/Ulcer	13	9.8
Gastric Ulcer	22	16.7
Duodenal Ulcer	20	15.2
Dieulafoy Lesion	2	1.5
Angiodysplasia	1	0.7
Corrosive Intake	4	4
Malignancy	7	5.3
Pseudo-aneurysm	2	1.5
Idiopathic	3	2.3

Abbreviations: PHG – portal hypertensive gastropathy, PHD – portal hypertensive duodenopathy

After being admitted all patients underwent UGI endoscopy. Out of 55 patients who required blood transfusion, 20 patients required more than 2 PRBC transfusions. Eighty-one patients were managed conservatively with standard medical management, whereas 42 required endoscopic management while 7 required surgery and 2 patients were managed with intervention radiology. Mean duration of hospital stay was 4.68 days. Seventeen (12.9%) patients had re-bleeding during the hospital stay. In-hospital mortality was 9.8% (13 patients) (Table 3).

Table 3: In Hospital management and Outcomes

Variables	Average/Frequency
Duration of Hospital Stay (Days)	4.68 ± 2.76
PRBC Transfusion	
No requirement	77 (58.3%)
1-2 Units	35 (26.5%)
>2 units	20 (15.2%)
Final Management	
Conservative	81 (61.4%)
Endoscopic	42 (31.8%)
Surgical	7 (5.3%)
Intervention Radiology	2 (1.5%)
Re-bleeding During Hospital Stay	17 (12.96%)
In hospital Mortality	13 (9.8%)

Abbreviations: PRBC – packed red blood cells

Discussion

The etiology and outcomes of acute gastrointestinal bleeding have temporal and geographical variations. Despite recent advances in diagnostic modalities and management, there is no significant improvement in the morbidity and mortality in GI bleeding in the past 50 years. Most of the patients with AUGIB have some underlying serious comorbid conditions, which contribute this high mortality. This study was done to show the current trend in clinical and endoscopic profile of the patient in a tertiary care center in Kathmandu. Regarding demographic data of the patients, average age of the patients in our study was 46.92 years with male and female percentage being 57.6 and 42.4 respectively. The median age of 46.92 years in our study was comparable to most of the previous studies but age variability was much better (range: 16-98) in our study – [2, 10]. Compared to most of previous studies where male prevalence was more than 70%, our study had only of 57.6%. Studies done by Shyam Sundar et al., Bodh et al., Surendran et al. had shown male prevalence of 73.7%, 74.6%, 77.5% respectively [2, 11, 14]. But, similar study done by Bhattarai et al. revealed male and female prevalence of 58.2 and 41.8% respectively, which was comparable to our study [10].



Hematemesis and melena was the most common mode (53.8%) of presentation in our patient population, followed by melena only (25%) and hematemesis only (13.6%). Study from Nepal by Bhattarai et al. showed prevalence of 40%, 30.5% and 20.5% for melena only, both and hematemesis only which was comparable but, Bodh et al. had shown melena (94%) as the most common presenting symptom for AUGIB [2, 10]. While Mahajan et al. study showed hematemesis and melena as the most common presentation [15]. It is likely that, late presentation of our patients with variceal bleeding as most common cause make both symptoms to be present at the time of admission. Shock requiring resuscitation was present in 30% of our patients at presentation which showed the severity with which our patients used to get admitted. Study done by Shyam Sundar et al. had shown 42.3% patient with hemodynamic instability, though no clear details was given regarding its severity [11].

Portal hypertension related bleeding were the most common etiology of AUGIB bleeding among our patients (58 patients – 43.9%) followed by upper gastrointestinal ulcers (41.7%). Esophageal varices were the most common etiology of hospital admission (34.1%), followed by gastric ulcers (16.7%) and duodenal ulcers (15.2%). The etiological prevalence varies highly among the Western and Asian studies where peptic ulcer diseases comprises almost half of the patients in west but, variceal bleeding relatively being more common among Asian studies [6, 7, 16]. Study by Wuertth et al. had shown peptic ulcers comprising 47% of all etiology of upper gastrointestinal bleeding [8]. Though, they have not differentiated acute from chronic upper gastrointestinal bleeding but variceal bleeding still comes down on their list. Studies from South Asian studies have shown higher prevalence of variceal bleeding, even up to 75% in one of the study [9]. Studies done by Surendran et al have shown 51.4% patient having variceal bleeding as the etiology while study by Bodh et al. showed only 26.2% having variceal bleeding as the etiology [2, 13]. This extreme level of variation can be due to the hospital setup (primary versus tertiary), population profile and geographical differences (western versus eastern countries and rural versus urban population).

Regarding outcomes of patient most of the studies have shown in hospital mortality between 5-10% [2, 14]. A study done by Zaltman et al. had shown the mortality as high as 15.34% with re-bleeding rate of 9.1% [17]. Our study showed 12.96% of re-bleeding rate and 9.8% of the mortality which was comparable to many of the previ-

ous studies. Nevertheless, studies have shown improvement in outcomes of the patient with AUGIB over the time [18]. Review done by Carbonell et al. from the clinical records of patients with cirrhosis due to variceal bleeding during the years 1980, 1985, 1990, 1995, and 2000, showed steadily decreased in in-hospital mortality over the study period (42.6%, 29.9%, 25%, 16.2%, and 14.5% in 1980, 1985, 1990, 1995, and 2000, respectively)[19].

This, study have number of limitations including small sample size, limited duration of follow up and lack of comparative data on etiology and comorbidities with outcomes of the patient. Done in a tertiary referral center, it cannot actually reflect the community level picture of the acute upper gastrointestinal bleeding. Nevertheless, this study can show the current profiles of the patient at a tertiary level hospital where most of the cases are actually managed.

Conclusion

Acute upper gastrointestinal bleeding is a major gastrointestinal emergency with variceal bleeding being the most common etiology. Despite the advancement in diagnosis and management impatient re-bleeding and mortality are still high.

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Conflict of interest: None

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