



Journal Homepage: - [www.journalijar.com](http://www.journalijar.com)

## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/13968

DOI URL: <http://dx.doi.org/10.21474/IJAR01/13968>



### RESEARCH ARTICLE

#### CLINICAL PROFILE AND OUTCOME OF PATIENTS WITH UPPER GASTROINTESTINAL BLEEDING PRESENTED TO A TERTIARY CARE TEACHING HOSPITAL IN PROVINCE 1 OF NEPAL

A.K Yadav<sup>1</sup>, B. Pradhan<sup>2</sup>, S.R Niraula<sup>3</sup>, D. Piyush<sup>2</sup>, A. Yadav<sup>1</sup>, V. Shrivastav<sup>1</sup> and S. Bajracharya<sup>2</sup>

1. Department of General Practice and Emergency Medicine.
2. Department of Gastroenterology and Hepatology.
3. Community Medicine and Public Health B.P.Koirala Institute of Health Sciences, Dharan, Nepal.

#### Manuscript Info

##### Manuscript History

Received: 25 October 2021

Final Accepted: 29 November 2021

Published: December 2021

##### KEY WORD:

Bleeding; endoscopy; peptic ulcer disease; upper gastrointestinal bleeding; varices.

#### Abstract

##### Introduction:-

It refers to intraluminal gastrointestinal tract bleeding (as Haematemesis, Malena, Haematochezia, Occult gastrointestinal bleeding, Features of blood loss or anaemia) from the esophagus, stomach, or duodenum at the ligament of Treitz presented as light headedness, syncope, angina, or dyspnea. Risk factors that are associated with acute upper gastrointestinal bleeding are helicobacter pylori infection, non steroidal anti-inflammatory drugs (NSAIDs) and liver disease, Peptic ulcer diseases, esophageal varices etc.

The incidence of upper GI bleeding is 2-fold greater in males than in females, in all age groups; however, the death rate is similar in both sexes. Bleeding from the upper GI tract is approximately 4 times as common as bleeding from the lower GI tract. It leads to huge economic costs to patients and to the healthcare system.

Upper GI endoscopy is the gold standard investigation of choice in the diagnosis and treatment of upper gastrointestinal bleeding and can be life saving.

##### Objectives:-

- 1) To evaluate the common causes, various spectrum, clinical severity and outcomes of the patients presented with upper gastrointestinal bleeding.
- 2) To evaluate the role of the Upper Gastro Intestinal (UGI) endoscopy in patients with upper gastrointestinal bleeding.

##### Method:-

Randomly selected 121 discharged file of UGI bleed patients from emergency ward were retrospectively studied thoroughly of previous 12 months to detect clinico-demography profile, different causes, spectrum of disease, clinical severity, and outcome of the patients and its application of UGI endoscopy.

##### Result:-

Out of 121 patients, most vulnerable age group for upper gastrointestinal bleeding is between 40-60 years. Male (77%), Janajati ethnic groups 52% (83) and illiterate people from plain region (84%) specially from sunsari district were predominant population. Regarding personal habit, smoker 73% (88) and chronic alcohol user especially homemade alcohol 50.4% (61) were most common person to have UGI bleed. Out of 121 patients, 69.4% (84) had anaemia prior to procedure. 87% (107) referred from Emergency ward and most of them had presented as 30.5% (37) haematemesis, 24.7% (30) Melaena, 12.4% (15) haematemesis and melaena both.

Duodenal ulcer 46(33.5%) was the most common endoscopic finding, followed by duodenal ulcer 43(31.6%), esophageal varices 14 (11.6%), acute erosive/ haemorrhagic gastropathy 11 (12.2%),

Relation between gender and outcome, among male 88% improved and discharged, 12% not improved while among female, 90% improved and discharged 10% not improved. Among age group, Age less than 60 years 88% improved and discharged, 12% not improved while more than 60 years among age group, 93.6% improved and discharged 6.4% not improved. Among smokers/ past smoker 91% improved and discharged, 9% not improved while among non-smokers, 90% improved and discharged 10% not improved. Among Alcohol users, 93% improved and discharged, 7% not improved while among non-alcohol users, 84% improved and discharged 16% not improved.

90% (109) had improved with discharge, 0.8% (1) advised for surgery or intervention, 4.1% (5) went on LAMA (left against medical advice), 5% (6) went on DOPR (discharge on persistent request). 76% (92) had no mortality recorded whereas 0.8% (1) had mortality.

**Conclusion:-** It is a common and potentially life-threatening medico-surgical emergency that remains a common cause of morbidity and mortality worldwide. Thus, Upper GI endoscopy is the gold standard investigation of choice in the diagnosis and treatment of upper gastrointestinal bleeding and can be life saving tool.

Copy Right, IJAR, 2021,. All rights reserved.

**Corresponding Author:- A.K Yadav**

Address:- Department of General Practice and Emergency Medicine.

**Introduction:-**

The upper gastrointestinal bleeding (UGIB) is defined as bleeding within the intraluminal gastrointestinal tract from any location between the upper oesophagus to the duodenum proximal to the ligament of Treitz<sup>1</sup>. Bleeding from the gastrointestinal tract may present in five ways: 1) passage of fresh blood/ coffee coloured vomitus (haematemesis), 2) black tarry stools malena, 3) bright red coloured stools (haematochezia), 4) occult gastrointestinal bleeding, and 5) features of blood loss or anaemia such as light headedness, syncope, angina, or dyspnoea<sup>1</sup>.

It is one of the common medical emergencies worldwide, accounting for high morbidity and mortality<sup>2</sup>. Peptic ulcer diseases account for majority of acute upper gastrointestinal bleeding (AUGIB) followed by varices.<sup>3</sup>

It is estimated that 1 – 2% of all acute admissions are due to gastrointestinal bleed (GI)<sup>4</sup>. More than 350,000 hospital admissions are attributable to upper gastrointestinal bleeding, which has an overall mortality rate of 10%.

Despite the fact that more than 75% of cases of bleeding ceases spontaneously and require only supportive measures, however, few of the patients require further intervention, which often involves the combined efforts of gastroenterologists, surgeons, and interventional radiologists<sup>5</sup>.

Risk factors that are associated with acute upper gastrointestinal bleeding are helicobacter pylori infection, drugs like non steroidal anti-inflammatory drugs (NSAIDs), anticoagulants, Mallory Weiss tears and various Liver diseases<sup>6</sup>

Various study showed that the incidence of upper GI bleeding is 2-fold greater in males than in females, in all age groups; however, the death rate is similar in both sexes. Bleeding from the upper gastrointestinal bleeding (GI) tract is approximately 4 times as common as bleeding from the lower gastrointestinal bleeding tract.

Upper GI endoscopy is the most valuable initial procedure of choice for the evaluation of acute upper gastrointestinal bleeding. Early endoscopy allows not only the detection of cause and source of bleeding but also gives estimation of the risk of recurrent bleeding and potentially enables various therapeutic options. Different studies have shown that early endoscopy is associated with lower healthcare costs and improved medical outcomes. However, upper gastrointestinal bleeding endoscopic findings are nondiagnostic in about 10% of cases<sup>7</sup>

BPKIHS hospital which is also a University teaching hospital provides health services largely to the rural community population of a diverse ethnic backgrounds and cultural practices.

There are very few published studies in upper GI bleeding particularly from the health institutions at urban areas. The study of upper GI bleeding at rural community settings in Nepal is scarce. The aim of this study was to study the clinical Profile and outcome of patients with upper gastrointestinal bleeding presented to a tertiary care teaching hospital in Province 1 of Nepal.

**Materials and methods**

This study was conducted in the B.P. Koirala institute of health science (BPKIHS), Dharan, Nepal from Jan 2020 to Jan 2021 after clearance from ethical committee. This is a retrospective

study of upper gastrointestinal bleeding patients who underwent oesophagogastroduodenoscopy. All clinico-epidemiological data was reviewed and analyzed. The inclusion criteria for the study were the presence of any one of the following: 1) haematemesis 2) melena or both 3) nasogastric aspirate of blood; and 4) recent onset anaemia with positive occult blood were taken as the clinical definition of upper GI bleeding. The patients with upper gastrointestinal bleeding but inadequate information on registry were excluded.

One hundred and twenty one patients who presented with features of acute upper gastrointestinal bleeding i.e. haematemesis, melena or syncope were enrolled randomly irrespective of age, sex or co morbidities to detect clinico-demography profile (different causes, spectrum of disease, clinical severity) and outcome of the patients with application of UGI endoscopy tool. Data management and statistical work up was performed by using software SPSS 13 version.

**Results:** This is a hospital based descriptive observational study. The present study comprised of 121 patients of acute upper gastrointestinal bleeding (AUGI) bleeding. Out of 121 patients, most vulnerable age group for upper gastrointestinal bleeding is between 40-60 years. Seventy seven (64 %) were Male and forty four (36 %) were female with M: F = 1.75:1. Janajati ethnic groups, eighty three (52 %) and illiterate people from plain region (84%) specially from sunsari district were predominant population shown in (Table 1).

Regarding personal habit, smoker eighty eight (73 %) and chronic alcohol user specially homemade alcohol sixty-one (50.4 %) were most common person to have upper gastrointestinal bleeding (UGI) bleed. Out of 121 patients, eighty four (69.4%) had anaemia prior to procedure. Mostly hundred seven (87%) were referred from Emergency ward.

Thirty seven (30.5 %) presented as haematemesis, thirty patients (24.7%) presented as Melena and while Fifteen patients (12.4%) presented as haematemesis and melena both shown in (Table 2).

Upper GI Endoscopy was done in all the patients to identify the cause of bleeding shown in (Table 3). Majority of the patients had Duodenal ulcer forty six (33.5%) , followed by gastric ulcer forty three (31.6%), oesophageal varices fourteen (11.6%), acute erosive/ hemorrhagic gastropathy eleven (12.2%) etc.

Relation between gender and outcome, among male 88% improved and discharged, 12% not improved while among female, 90% improved and discharged 10 % not improved. Among age group, Age less than 60 years 88% improved and discharged, 12% not improved while more than 60 years among age group, 93.6% improved and discharged 6.4 % not improved.

Among smokers/ past smoker 91% improved and discharged, 9% not improved while among non- smokers, 90% improved and discharged 10% not improved. Among Alcohol users, 93% improved and discharged, 7% not improved while among non- alcohol users, 84% improved and discharged 16% not improved.

One hundred nine patients (90%) recovered and discharged from the hospital, one (0.8 %) advised for surgery or intervention, five (4.1%) went on LAMA, Six (5%) went on DOPR. Ninety-two (76 %) had no mortality recorded whereas one patient (0.8 %) had mortality shown in (Table 4).

**Table 1: Age / age group and Sex composition of the patients**

	Male	Female	total
	77(66.6%)	44	121
>40 Years	21	17%	
40-60 years	53	43.8%	
<60 years	47	38.8	

**Table 2: Clinical presentation of patients with Upper GI bleeding**

Clinical presentation	Number and percent
Haematemesis	37 (30.5%)
Melaena	30(24.7%)
Haematemesis and melaena	15(12.4%)
feature of blood loss (Anaemia)	13( 5%)
Abdominal discomfort	12(4.7%)
Change in bowel habbit,	7 (2.7%)
Reflux symptoms	2(0.8%)
weight loss/lump	1.2%(3)
Total	121

**Table 3: Causes of upper GI bleeding**

Endoscopy findings	Number	percent
Normal findings	8	6.6
Duodenal ulcer	46	33.5
Gastric ulcer	43	31.6
Oesophageal varices	2	1.7
Acute erosive/haemorrhagic gastropathy	11	12.2
growth	7	7.8
Vascular lesion	3	3.3
Mallori's weis tear	1	1.1
Fundal varices	1	1.1
Total	121	100.0

**Table 4: Outcome of bleed**

	Frequency	percent
Improved and discharge	109	91.1
Need for surgery or Any	1	0.8

intervention		
LAMA	5	4.1
DOPR	6	5
total	121	100
Mortality	9	6.6

## DISCUSSION

Nepal is a country with inhabitant of diversely heterogeneous population. It has also a wide range of customs and cultural practices with different life-styles and health-related behaviours which may influence the development of a particular disease and might also predispose to cause of gastrointestinal bleeding. Upper gastrointestinal haemorrhage (UGIB) is a prevalent and clinically significant condition with important implications for health care costs worldwide.

Despite the advent of endoscopy and endoscopic therapy, the accessibility of the patients to medical centers with experienced medical staff and adequate equipment is still limited in developing country like Nepal. Moreover, it is possible that many patients be admitted late in the course of the bleeding episode, while others may never reach the hospital.

Acute upper gastrointestinal bleeding is a common life-threatening emergency resulting in a large number of hospital admissions. The incidence of upper GI bleeding appears to be decreasing due to the prescription of proton pump inhibitors (PPI) and efforts to eradicate *Helicobacter pylori* infections. But in south East Asian countries it appears to be increasing in particular groups of patients, such as those with a history of heavy alcohol consumption and unhealthy life style.

The incidence of upper gastrointestinal bleeding is estimated to range from 50 to 160 cases per 100 000 populations in developed countries like United States. In the United Kingdom and west of Scotland, the overall incidence of acute upper GI haemorrhage is 103 and 172 cases per 100,000 adults per year respectively<sup>2, 10</sup> whereas the incidence in Denmark and Netherlands is 37 and 48/100 000 adults respectively<sup>3, 16</sup>

However, the incidence rates from most of the developing countries including Nepal are largely unknown. However, In Nepal, there are only very few hospital-based published studies which have studied the incidence and clinical profile of upper GI bleeding.

Although upper GI bleeding has been reported to be around forty four (44 %) this was more common in elderly population which is consistent with abroad study. A previous study from Nepal which looked into the endoscopic findings in patients with upper gastrointestinal bleeding showed that the mean age of patients was around 50 years.<sup>9, 15</sup>

Our study showed that male patients were more likely to have acute upper gastrointestinal bleeding (AUGIB) as compared to females (Males 64% and female 36 %.) Similar study done in Nepal showed that male predominance was reported by Bhattarai et al as 71% and Gurung et al as 64.4% respectively<sup>9, 15</sup> Similarly in other studies also male to female ratio 3:1 and 3.2:1 which are consistent with various international findings (70.1% male in Jamaican study, 79% male in Sudan study, 78.4% males reported by Kashyap et al and 59% in UK audit.)<sup>18, 19, 20</sup>

A prospective study published in 2013 also had results similar to our study in which males were commonly afflicted by acute upper gastrointestinal bleeding (AUGIB) males than females (58% vs. 42%; P=0.05).<sup>10</sup>

Alcohol and smoking in association with helicobacter pylori infection have been found as the risk factors for causing peptic ulcer disease.<sup>11</sup> Alcohol can be a contributory risk factor in almost one third of patients with acute upper gastrointestinal bleeding (AUGIB).<sup>12</sup> In our study also observed that alcohol and smoking has been associated with acute upper gastrointestinal bleeding which is consistent with other international studies. Upper gastrointestinal bleeding has been shown to more common in janajati ethnic group compared to other ethnic groups. One of previous Nepalese study showed that oesophageal varices found to be significantly higher in Mongolian origin; and this association was speculated to be due to higher frequency of alcohol consumption in this ethnic population.<sup>15</sup> In Nepal, various risk factors like smoking and heavy alcohol consumption that are commoner in male population might have some role in the contribution to UGI bleeding.

Our study showed that non variceal (Peptic ulcer) causes of acute upper gastrointestinal bleeding were more common than variceal bleeding which constitutes of about 65% of all cases, which is consistent with findings in other countries abroad which reports vary from (19% to as high as 50%)<sup>4, 5, 11</sup> From Indian study, Anand et al reported that the incidence of peptic ulcer disease 38.5% and Rao et al reported 28%.<sup>21, 22</sup>

A study done in 2010 from Nepal showed that Duodenal ulcer and gastric ulcer accounted for forty three (43%) of patients. This was followed by variceal bleeding which occurred in twenty three (23%) patients. This observation is similar to various recently published studies.<sup>13, 14, 15</sup> Whereas our study showed that Duodenal ulcer forty six (33.5%) was the most common endoscopic finding followed by Gastric ulcer, forty three (31.6%), oesophageal varices 14 (11.6%). In our study showed that duodenal ulcers were more common than gastric ulcer and still account for the majority of patients with acute upper gastrointestinal bleeding (AUGIB).

The various surveys showed that the most common bleeding lesion identified at upper GI endoscopy was peptic ulcer disease, duodenal ulcer being more common than gastric ulcer<sup>16, 17</sup> which is consistent with our study too. The incidence of bleeding from peptic ulcer disease in US is 60%.<sup>23</sup>

Other less common causes as esophagitis, erosive mucosal diseases, esophageal varices Mallory-Weiss tears etc were also observed in this study. From Nepal, 33.3% esophageal varices have been reported by Bhattarai et al and 15.6% by Gurung et al in their respective studies.<sup>9, 15</sup> This may be attributed to adaptation of modern life style and unhealthy food practices.

Regarding clinical presentation, our study showed that higher proportions of patients with ulcer disease are likely to present with haematemesis alone (31%) as compared to Melaena (25%), or both haematemesis and melaena (12.4%), whereas another study showed that higher proportions of patients with ulcer disease are likely to present with melena alone (45%) as compared to presenting with haematemesis with or without melena.<sup>8</sup>



*Regarding outcome*, Our study showed that one hundred nine (90%) had improved with discharge, one (0.8 %) advised for surgery or intervention, five 4.1% went on LAMA, six 5% went on DOPR from our hospital and 7 patients (6.6%) expired.

*In view of mortality aspects*: Despite advances in therapy, the case-fatality rate has remained unchanged. In the different population based surveys regarding mortality related to acute upper gastrointestinal bleeding (AUGIB), mortality ranges between 3% to 14% . Indian study (Kashyap et al and Kaliyamurthy et al showed an overall mortality rate range from 3.6% to 5.7%<sup>19,24</sup>

In a UK, mortality from acute upper gastrointestinal bleeding (AUGIB) was found between 8% to 14%. In a Greece study, mortality for acute UGIB was only 3.1% in the period 2000–2001 whereas a Canadian prospective study, mortality ranges between 3.5%. to 5.5% in the period 1999–2001.. Mortality is increasing with increasing age and is significantly higher in patients with co-morbidities.

*Regarding endoscopic findings*, our study showed that 7% had normal endoscopy whereas in other study aboard showed that 11% of upper gastrointestinal bleed had normal endoscopic finding.<sup>9,16</sup>

*Limitations of our study*: Our study has a few limitations. It was retrospective descriptive type. The sample size was small and done in a single centre. The larger prospective study would help to verify or refute the findings of our study results.

## **Conclusion**

Upper gastrointestinal bleeding is a common clinical problem and found commonly at middle age group people. Peptic ulcer disease is still the most common cause of upper gastrointestinal bleeding. Upper gastrointestinal (UGI) Endoscopy tool helps in diagnosis and treatment of most of the upper gastrointestinal bleed.

## **References**

1. Loren L. Gastrointestinal bleeding. In: Braunwald E, Fauci AS, Dasper DL, Hauser SL, Longo DL, Jameson JL (editors). Harrison's Principle of Internal medicine. USA: McGraw- Hill Companies Inc; 2005.p.235.
2. Silverstein FE, Gilbert DA, Tedesco FJ et al. The national ASGE survey on upper gastrointestinal bleeding. I. Study design and baseline data. *Gastrointestinal Endoscopy*. 1981;27:73-9.
3. Palmer K. Acute upper gastrointestinal bleeding. *Medicine*. 2011;39(2):94–100. [Full Text]
4. Palmer ED. Upper gastrointestinal haemorrhage. *JAMA*. 1975;231:853-5.
5. Fallah MA, Prakash C, Edmundowicz S. Acute gastrointestinal bleeding. *Med Clin North Am*. 2000;84(5):1183-208.

6. Hearnshaw SA, Logan RFA, Palmer KR, et al. Outcomes following early red blood cell transfusion in acute upper gastrointestinal bleeding. *Aliment Pharmacol Ther.* 2010;32(2):215–24. [PubMed]
7. da Silveira EB, Lam E, Martel M, Bensoussan K, Barkun AN. The importance of process issues as predictors of time to endoscopy in patients with acute upper-GI bleeding using the RUGBE data. *Gastrointestinal Endosc.* 2006;64(3):299-309.
- 8 Kim JJ, Sheibani S, Park S, et al. Causes of bleeding and outcomes in patients hospitalized with upper gastrointestinal bleeding. *J Clin Gastroenterol.* 2014; 48(2):113–8. [Full Text]
- 9 Bhattarai J, Acharya P, Barun B, et al. Comparison of endoscopic findings in patients from different ethnic groups undergoing endoscopy for upper gastrointestinal bleed in eastern Nepal. *Nepal Med Coll J.* 2007;9(3):173-5. [PubMed]
- 10 Hreinnsson JP, Kalaitzakis E, Gudmundsson S, et al. Upper gastrointestinal bleeding: incidence, etiology and outcomes in a population-based setting. *Scand J Gastroenterol.* 2013;48(4):439-47. [Full Text]
- 11 Mustafa M, Menon J, Muiandy RK, et al. Risk Factors, Diagnosis, and Management of Peptic ulcer Disease. *IOSR-JDMS.* 2015;14(7):40–6. [Full Text]
12. Satarasinghe RL, Silva AD, Arulnithy K, et al. Aetiology and other features of a cohort of adult Sri Lankans presenting with upper gastrointestinal bleeding (UGIB). *J Ceylon College Physic.* 2011;41:57-60. [Full Text]
- 13 Masclee GMC, Valkhoff VE, Coloma PM, et al. Risk of upper gastrointestinal bleeding from different drug combinations. *Gastroenterology.* 2014;147(4):784-792. [PubMed]
- 14 Parvez MN, Goenka MK, Tiwari IK, et al. Spectrum of upper gastrointestinal bleed: An experience from Eastern India. *Journal of Digestive Endoscopy.* 2016;7(2):55. [Full Text]
15. Gurung RB, Joshi G, Gautam N, et al. Upper gastro-intestinal bleeding: aetiology and demographic profile based on endoscopic examination at Dhulikhel Hospital, Kathmandu University Hospital. *Kathmandu Univ Med J.* 2010;8(30):208-11. [PubMed]
16. Gilbert DA, Silverstein FE, Tedesco FJ. The national ASGE survey on upper gastrointestinal bleeding. III. Endoscopy in upper gastrointestinal bleeding. *Gastrointest Endosc* 1981;27:94-102.



17. Gostout CJ, Wang KK, Ahlquist DA, Clain JE, Hughes RW, Larson MV, Petersen BT, Schroeder KW, Tremaine WJ, Viggiano TR. Acute gastrointestinal bleeding. Experience of a specialized management team. *J Clin Gastroenterol* 1992;14:260-7.
18. Salih H, Ibnouf M.A.M, Siddig A, Masaad A. Rockall score of the acute upper gastrointestinal bleeding patients the experience in Sudan. *Sudan JMS*. 2009; 4: 232-5.
19. Hearnshaw SA, Logan RFA, Lowe D, Travis SPL, Murphy MF, Palmer KR. Acute upper gastrointestinal bleeding in the UK: patient characteristics, diagnoses and outcomes in the 2007 UK audit. *Gut* 2011;60:1327-35.
20. Kashyap R, Mahajan S, Sharma B, Jaret P, Patial RK, Rana S, et al. Clinical Profile of Acute Upper Gastrointestinal Bleeding at Moderate Altitude. *JACM*. 2005; 6(3): 224-8
21. Anand CS, Tandon BN, Nundy S. The causes, management and outcome of upper gastrointestinal haemorrhage in an Indian hospital. *British Journal of Surgery*. 1983; 70: 209-11.
22. Rao THSG, Pande GK, Sahni P, Nundy S. The management of upper gastrointestinal haemorrhage in a tropical country. *Archives of Emergency Medicine*. 1991; 8: 169-76.
23. Albeldawi M, Qadeer MA, Vargo JJ. Managing acute upper GI bleeding, preventing recurrences. *Cleveland Clinic Journal*. 2010; 77:131-42.
24. Kaliamurthy M, Lee MG, Mills M, Murphy T. Upper Gastrointestinal Bleeding: A Jamaican Perspective. *West Indian Med J*. 2011; 60(3): 289-92.