

# Study of Endoscopic Findings in First Episode of Upper Gastrointestinal Bleeding

Krishna Raj Adhikari<sup>1\*</sup>, Rajesh Kumar Mandal<sup>2</sup>

<sup>1</sup>Department of Internal medicine, Pokhara Academy of Medical Sciences, Pokhara, Nepal

<sup>2</sup>Department of Internal medicine, Bheri Hospital, Nepalgunj, Nepal

**Keywords:** Endoscopy; Peptic ulcer disease; Upper GI bleeding



*This work is licensed under a Creative Commons Attribution 4.0 Unported License.*

## Abstract

### Background and Aims:

Upper gastrointestinal bleeding (UGIB) is one of the most common and grave emergencies encountered in Emergency department in Tertiary health care centre in our country. Upper endoscopy has a crucial role in the diagnosis and treatment of upper gastrointestinal bleeding. The aim of this study is to assess the endoscopic findings in patients presenting with first episode of UGIB.

### Methods:

This was a hospital based cross sectional study of patients with haematemesis, melena or both who underwent UGI endoscopy at Bir Hospital during January 2019 to January 2020. Patient demographics, site and nature of lesions and risk factors for bleeding were analyzed.

### Results:

Among 72 enrolled patients 48 (66.67 %) were male and 24 (33.3 %) were female. Haematemesis 27% was the most common presenting complaint followed by melena 25.5% and fainting/ dizziness 22.5%. Endoscopy was done in all cases and gastric ulcer disease 27.8% was the commonest cause of first episode of UGI bleeding followed by variceal bleeding, gastric erosion and duodenal ulcer, 25%, 16.7%, 12.5% respectively.

### Conclusions:

Peptic ulcer disease was the most common cause of first episode of UGI bleeding in our context. Among peptic ulcer diseases gastric ulcer was more common than duodenal ulcer. Haematemesis and melena were the commonest clinical presentation of UGI bleeding.

## 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 at the ligament of Treitz. Bleeding from the gastrointestinal tract may present in five ways: 1) Haematemesis, 2) Melena, 3) Haematochezia, 4) Occult gastrointestinal bleeding, and 5) Features of blood loss or anaemia such as light headedness, syncope, angina, or dyspnea.<sup>1</sup>

UGIBs are caused by erosive esophagitis, Mallory Weiss tears, esophageal varices, peptic ulcer disease (PUD), and gastric/

### \*Corresponding Author:

Dr. Krishna Raj Adhikari,  
Department of Internal medicine,  
Pokhara Academy of Medical Sciences, Pokhara, Nepal  
Email: rkrishna2008@yahoo.com Phone: +977-9851153971

duodenal erosion. Lesser common causes include aorto-enteric fistula, hemobilia, angiodysplasia, uremia, and coagulation disorders.<sup>2</sup>

UGIB in emergency situation has comparatively high mortality rate 8-14%, earliest detection prompt management helps to reduce the mortality and morbidity benefits to the patient.<sup>3,4</sup> The aim of this study was to study the aetiology of upper GI bleeding based on endoscopic examinations in relation with demographic characteristics of the patients.

## METHODS

This study was a observational cross-sectional study conducted at Gastroenterology unit, General medicine unit and Hepatology unit of National Academy of Medical Sciences (NAMS), Bir hospital, Kathmandu, Nepal from January 2019 to January 2020 (12 Months). The ethical clearance for the study was taken from Institutional Review Board of NAMS. Ref. No. 705.

Inclusion criteria : Age 18 years or above, patient presented with first episode of melena, hematemesis, stool occult blood positive

Exclusion criteria : Cases of previously diagnosed as variceal bleeding and undergone variceal band ligation, cases of repeated bleeding, patient passing fresh blood in the stool in the form of hematochezia.

Sample size: Sample size was calculated by using the following formula  $n = Z_{\alpha}^2 PQ / d^2$ , Where, n = required sample size,  $Z_{\alpha}$  = z deviate corresponding to desired reliability level (1.96) for 95% reliability, P = estimated proportion in the population (0.05%).<sup>5</sup> The study showed that overall incidence of UGI bleeding is 0.05%

$P = 0.05$ ,  $Q = 100 - 0.05\% = 99.95$ ,  $d = \text{maximum tolerable error} = (5\%)$

$$n = (1.96)^2 \times 0.05 \times 0.99 / (0.05)^2 = 72$$

A written consent was taken from the patient and was enrolled in the study those patient who were presented to Bir hospital with first episodes of UGI bleeding in any form were subjected to endoscopy using video endoscope without any premedication. Trained Gastroenterologist and Hepatologist carried out an upper GI endoscopy.

Statistical Analysis: The data was entered into Microsoft Excel Sheet. Discrete statistics like frequency, percentage were calculated and expressed in tables and diagrams.

## RESULTS

Out of 72 patients 48 (66.67%) were males and 24 (33.33%) were females. The prevalence of Upper gastrointestinal bleeding was

highest in the age group 45 to 65 years with 43%, followed by 25% in age group 65 years and above (Table 1).

Table 1. Demographic distribution of UGI bleeding Patients

Variables		Frequency	Percentage
Sex	Male	48	66.7
	Female	24	33.33
Age group	Less than 25 years	7	10
	25-45 years	16	22
	45-65 years	31	43
	65 years and above	18	25
Occupation	Farmer	49	68.06
	House wife	7	9.72
	Office job	2	2.78
	Others	14	19.44
Residence	Rural	36	50
	Urban	31	43.06
	Semi urban	5	6.94

Table 2. Clinical Data of of UGI bleeding Patients

Variables		Frequency	Percentage
Presenting complains	Hematemesis	55	27
	Melena	52	25.5
	Fainting / dizziness	46	22.5
	Hematochezia	7	3.4
	Jaundice	7	3.4
	Coagulopathy	0	0
	Pallor	36	17.6
Risk factors	Hypertension	2	2.8
	Liver Cirrhosis	1	1.4
	Diabetes Mellitus	1	1.4
	Bleeding disorder	1	1.4
	Drug use	10	13.8
	Coronary Artery Disease	1	1.4
	Heart disease	2	2.8
	Smoking	18	25
	No co morbid condition	36	50

Table 2. shows hematemesis (27%) is the most common presenting complain followed by melena, dizziness or fainting and pallor, 25.5

%, 22.5 %, 17.6 % respectively. Among 72 patients 36 (50%) did not had any above mentioned co-morbidities, 18 (25%) were smoker ,10 (13.8%) were drug user, 2(2.8%) had hypertension,1 (1.4%) had liver cirrhosis and 1(1.4%) was diabetic.

Table 3. Distribution of UGI patient regarding consumption of alcohol

Alcohol consumption	Frequency of patients	Percentage
Yes	31	43
No	41	57
Frequency of consumption of alcohol		
Daily	30	97
Twice weekly	1	3

Table 4. Distribution of UGI Bleed Patients by vital signs

Variables	Frequency	Percentage
Blood Pressure	Less than 90/60 mm of Hg	9 13
	90-120/60-80 mm of Hg	49 68
	120-140 /80-90 mm of Hg	11 15
	Above 140/90 mm of Hg	3 4
Pulse rate	Less than 60 b/min	1 1
	60-100 b/min	63 87.5
	More than 100 b/min	8 11

Table 5. UGI endoscopic findings in patients of UGI Bleeding

UGI Endoscopy findings	No. of patient	Percentage
Mallory weiss tear	6	8.3
Ca Oesophagus	3	4.2
Variceal bleeding	18	25
Gastric ulcer	20	27.8
Gastric erosion	12	16.7
Gastric varices	3	4.2
Duodenal ulcer	9	12.5
Normal	1	1.4

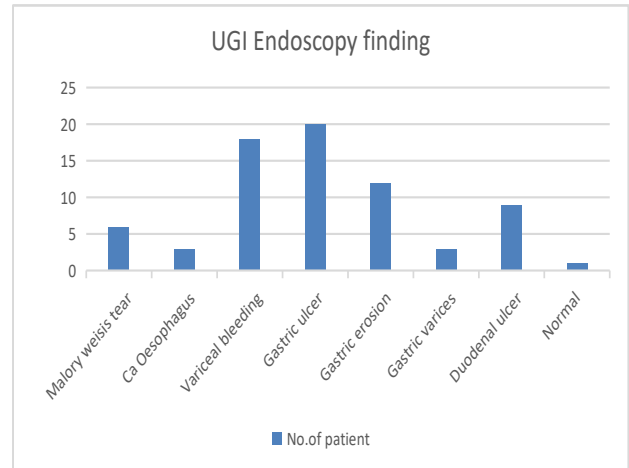


Figure 1. Bar Graph showing findings of UGI Endoscopy

Among 72 patients enrolled in the study who presented first time in emergency with features of UGI bleeding. UGI endoscopy was done and their finding was analyzed. Gastric ulcer was seen in 20 (27.8%) of patient, variceal bleeding in 18(25%) ,gastric erosion in 12(16.7%) ,duodenal ulcer 9(12.5%), Mallory weiss tear 6 (8.3%) ,gastric varices 3(4.2%),ca oesophagus in 3(4.2%) and Normal endoscopic finding in 1 (1.4%) patient.

Table 6. Distribution of UGI Bleed patients with laboratory parameters

Variables value	Frequency	Percentage
Blood Sugar	Less than 54 mg/dl	6 8.3
	54-70 mg/dl	-- -
	70-140 mg/dl	54 75
	140-200 mg/dl	10 13.9
	More than 200 mg/dl	2 2.8
Platelets	Less than 20,000	3 4.2
	20,000-50,000	7 9.7
	50,000 - 1,00,000	10 13.9
	1,00,000 - 1,50,000	18 25
	1,50,000 - 4,00,000	32 44.4
	1,50,000 - 4,00,000	2 2.8
	1,50,000 - 4,00,000	2 2.8
SGOT	5—45IU/dl	45 62.5
	>45 IU/dl	27 37.5

SGPT	5—45IU/dl	47	65.3
	>45 IU/dl	25	34.7
Hemoglobin	Less than 6 gm /dl	16	22
	6-9 gm/dl	30	42
	9-12 gm/dl	17	23.5
	More than 12gm/dl	9	12.5
Stool occult blood test	Positive	64	89
	negative	8	11
Albumin	Less than 3.5 mg/dl	56	78
	More than 3.5 mg/dl	16	22

Most of the patients had low hemoglobin count. Only 12.5% patients had hemoglobin above 12 gm/dl. Stool occult blood test was positive in 89% of the patients suggestive of UGI bleeding.

## DISCUSSION

In the present study 43% of the patients with UGI bleeding were in age group 45 to 65 years, followed by 25% in 65 years and above. A previous study done at Bir Hospital Showed that average age of the patient with upper GI bleeding was 51.6 years.<sup>6</sup> Our finding is supported by findings of another study where 42% patients were in 41 to 60 age group.<sup>7</sup> However a study from Dhulikhel hospital Nepal, 44.4% patients were in age group 15-45 years followed by 36.2% in age group 46-65 years which is different from the present study may be because they have included cases of GI bleeding irrespective of episodes, since most of the cases of chronic liver disease presented with variceal bleeding as a part of portal hypertension, however only first episodes of UGI bleeding was included in our study.<sup>1</sup> Another study from Lalitpur, Nepal also had maximum patients 54% in age group 30-50.<sup>8</sup>

In the present study 66.67% of the patients with UGI bleeding were male which is supported by findings of study at Dhulikhel hospital, Kathmandu where 64.4% were males.<sup>1</sup> Another similar study done in Lahore Medical college Pakistan, 63.6% were male and 36.4% were female.<sup>9</sup> In Nepal various risk factors like smoking and alcohol consumption that are commoner in male population which might have some role in the contribution to UGI bleeding. Similarly male predominance was found in various studies in Nepal and abroad with 80.7%, 72%, 67%, 64% respectively.<sup>8,10,11,12</sup> However few studies also showed female predominance in patients with UGI Bleeding. A study done from Nepal had 79% of females with UGI bleeding.<sup>13</sup> Another study from Bangladesh also had 50.7% females.<sup>7</sup>

43% of the people with UGI Bleeding were alcohol consumer and 25% were smoker. Previous study done in Bir hospital had

shown that 48% were alcohol consumer and 53% were smoker.<sup>6</sup> Similar results were most probably due to the similar patient profile. A study done at JIPMER, Pondicherry, India showed that 32.8% patient consumed alcohol and 20.5% were smoker.<sup>14</sup> Another study from Lalitpur, Nepal showed alcohol consumption was present in 56% and smoking in 66% of the patients with UGI bleeding.<sup>8</sup> Similarly, alcohol was risk factor in 29% followed by NSAIDS in 17%.<sup>7</sup> Alcohol consumption varies due to social and cultural restriction.<sup>15,16</sup>

Hematemesis 27% was the most common presenting complaint followed by Melena 25.5%. Dizziness or fainting was present in 22.5%, pallor in 17.6% and hematochezia and jaundice in 3.4% of patients. The study done in JIPMER, Pondicherry, India had showed that most of the patients presented with bright red vomitus at presentation, 73.2% patients had melena, and 13.6% had haematochezia. History of NSAID intake was observed in 12.6% and 32.8% were alcoholics. 39.4% patients presented with shock which is similar to our study finding regarding to the presentation of case.<sup>14</sup> Hematemesis was the most common presentation 48% followed by melena 37% in previous similar study done in Bir Hospital, Nepal. 10% had history of NSAIDS use and 5% of them were on low dose aspirin therapy.<sup>6</sup> Hematemesis and melena were the most common presenting complaints in numerous studies,<sup>1,10,12,17</sup> which are consistent with our findings.

In the present study out of 72 patients, gastric ulcer was seen in 20 (27.8%) of patient, variceal bleeding in 18(25%), gastric erosion in 12(16.7%), duodenal ulcer 9(12.5%), Mallory weiss tear in 6(8.3%), gastric varices in 3(4.2%), carcinoma esophagus in 3(4.2%) and normal endoscopic finding in 1 (1.4%) patient. A study done in Pakistan Railway General Hospital among 100 cases of UGI bleeding showed that esophageal varices 48% was the most common endoscopic finding in the patient presented with features of GI bleeding however they have included any episodes of GI bleeding patient irrespective of underlying disease and recurrence.<sup>18</sup> The study done in Dhulikhel hospital Nepal among 90 patients of UGI bleeding, Gastric ulcer in 25.6% was the most common endoscopic finding, followed by oesophageal varices 15.6% which is similar to our study population and methods, however they have also included patient with or without previous GI bleeding.<sup>19</sup> Another study from Lahore medical college Pakistan the most common endoscopic finding was esophageal varices in 50.8% patients, followed by gastropathy in 15.6%, gastritis 9.3%, cardio-fundal varices 7.9% and duodenal ulcer 3.6% apart from our study they have analyzed every cases presenting to their hospital emergency with UGI bleeding irrespective of previous history of GI Bleeding.<sup>9</sup> Another study done in College of Medical science, Bharatpur showed Upper Gastrointestinal Bleeding endoscopy revealed esophageal varices 47.5%, peptic ulcer disease 33.3%, erosive mucosal disease 11.6%, Mallory Weiss tear 4.1% and malignancy 3.3%. In that study patients were enrolled irrespective of previous history of GI bleeding and Alcoholic liver

disease. Alcohol consumption is common in our setting leading to variceal bleeding however we have included only the patient with first episode of UGI bleeding.<sup>5</sup>

Another study in Sri Lanka identified severe erosive antral gastritis and duodenitis as the most frequent causes of UGIB, while chronic duodenal and gastric ulcers were less frequent.<sup>19</sup> Peptic ulcer disease 35% followed by oesophageal/gastric Varices 20% was most common endoscopic findings in another similar studies.<sup>20</sup>

## CONCLUSIONS

Hematemesis and melena was the commonest clinical presentation in patients presenting with UGI bleeding. Peptic ulcer disease was the commonest cause of first episode of GI bleeding followed by Variceal bleeding, gastric erosion and Mallory Weiss tear. First episode of GI bleeding was common in 45-65 years age group and was more in male than female. It was seen in both group of patients, with or without alcohol consumption however among alcoholics it was more among daily alcohol consumer.

**LIMITATIONS:** The study was a cross sectional, single centered study conducted over a short period of time. The data may not be generalized to whole population. Larger study should be conducted involving multiple centers.

**CONFLICT OF INTEREST:** None

## REFERENCES

- 1 . Gurung RB, Joshi G, Gautam N, Pant P, Pokhrel B, Koju R, et al. Upper gastro-intestinal bleeding: aetiology and demographic profile based on endoscopic examination at Dhulikhel Hospital, Kathmandu universityHospital. Kathmandu University medical journal (KUMJ). 2010;8(30):208-11.
- 2 . McQuaid KR: Alimentary tract. Current Medical Diagnosis Treatment. Tierney LM, McPhee SJ, Papadakis MA (ed): McGraw Hill, San Francisco; 2004. 531:622.
- 3 . Kim BS, Li BT, Engel A, Samra JS, Clarke S, Norton ID, et al. Diagnosis of gastrointestinal bleeding: A practical guide for clinicians. World journal of gastrointestinal pathophysiology. 2014;5(4):467-78.
- 4 . Jaeckle T, Stuber G, Hoffmann MH, Jeltsch M, Schmitz BL, Aschoff AJ. Detection and localization of acute upper and lower gastrointestinal (GI) bleeding with arterial phase multi-detector row helical CT. European radiology. 2008;18(7):1406-13.
- 5 . Dewan KR, Patowary BS, Bhattarai S. A study of clinical and endoscopic profile of acute upper, gastrointestinal bleeding. Kathmandu University medical journal (KUMJ). 2014;12(45):21.
- 6 . Paudel MS, KC S, Mandal AK, Poudyal NS, Shrestha R, Paudel BN, Chaudhary S. Acute Upper Gastrointestinal Bleeding in a Tertiary Care Centre of Nepal. J Nepal Med Assoc [Internet]. 2017Jun.28 [cited 2020Jan.26];56(206).
- 7 . Mohammad S, Chandio B, Shaikh A, Somroo A, Rizwan A.(March 19, 2019) Endoscopic Findings in Patients Presenting with Upper Gastrointestinal Bleeding. Cureus 11(3): e4280.
- 8 . Sharma Y, Shah J. Endoscopic findings of acute upper gastrointestinal bleeding in a tertiary care hospital. Journal of Patan Academy of Health Sciences, 2(1), 22-25.
9. Malghani WS, Malik R, Chaudhary FMD, Tameez Ud Din A, Shahid M, Ahmad S, et al. Spectrum of Endoscopic Findings in Patients of Upper Gastrointestinal Bleeding at a Tertiary Care Hospital. Cureus. 2019;11(4):e4562.
- 10 . Parvez M, Goenka MK, Tiwari IK, Goenka U. Spectrum of upper gastrointestinal bleed: An experience from Eastern India. J Dig Endosc 2016;7:55-61.
11. Kumar A, Kasturi U, Singh A, Kaur D. Endoscopic profile and clinical outcome of patients presenting with upper gastrointestinal bleeding. International Journal of Advances in Medicine. 2020;7(9):1355.
12. Alatawi A, Aljohani W, Aljayani R, Alblowi Y, Yousuf M, Almutairi H. Findings of Esophagogastroduodenoscopy in Patients Suspected of Upper Gastrointestinal Bleeding Referred to the Main Endoscopy Unit at King Fahad Specialist Hospital. Cureus. 2020.
- 13 .Shrestha U, Sapkota S. Etiology and Adverse Outcome Predictors of Upper Gastrointestinal Bleeding in 589 Patients in Nepal. Digestive Diseases and Sciences. 2013;59(4):814-822.
14. Vishnu Prasad NR, Sheikh Manwar Ali, Vijay Ganapathy, Sreenath G S, Suresh Kumar S, Acute upper gastrointestinal bleeding in a tertiary care hospital in South India - Have we Improved the outcomes?, Tropical Gastroenterology 2016;37(3):168-176.
15. Rahman M, Roy PK, Akhter MA, Saida L, Rahman MT, Hasan M. UGI endoscopy in acute upper gastrointestinal tract haemorrhage. Bangladesh J Medicine. 1995;6:62-6.
16. Griffin MR, Piper JM, Daugherty JR, Snowden M, Ray WA. Nonsteroidal Anti-inflammatory Drug Use and Increased Risk for Peptic Ulcer Disease in Elderly Persons. Annals of Internal Medicine. 1991;114(4):257.
- 17 .Wara P, Stosdkilde H. Bleeding Pattern before Admission as Guideline for Emergency Endoscopy. Scandinavian Journal of Gastroenterology. 1985;20(1):72-78.

18 .Samia Kausar, Shamaila Burney, Zunera Jahanzeb, Muhammad Farooq, Endoscopic Findings in Patients with Upper Gastrointestinal Bleeding at Pakistan Railway General Hospital, Rawalpindi.A Retrospective Review of 100 Cases, JIIMC 2018 Vol. 13, No.3

19 . Satarasinghe R, De Silva A, Arulnithy K, Abeyratne P, Jayawardana M: Aetiology and other features of a cohort of adult Sri Lankans presenting with upper gastrointestinal bleeding (UGIB). JCCP. 2011, 41:57-60. 10.4038/jccp.v41i2.3766

20 . Zaltman C, Souza HSP, Castro MEC, Sobral MFS, Dias PCP, Lemos Jr V. Upper gastrointestinal bleeding in a Brazilian hospital: a retrospective study of endoscopic records. Arq. Gastroenterol. 2002 Apr [cited 2021 Mar 17]; 39(2): 74-80.