

Endoscopic Diagnosis in Patients with Acute Upper Gastrointestinal Bleeding

Ghulam Mujtaba Shah¹, Anwar Ali Jamali², Riaz Ahmad Khokhar³, Shohabudin Rind⁴

¹ Demonstrator Physiology (FCPS-Gastroenterology), PUMHS, Lakhari Endoscopic Suit, Nawabshah

² Assistant Professor Medicine, PMCH, Nawabshah

^{3,4} Post Graduate Resident in Gastroenterology, Isra University of Medical Sciences, Hyderabad

ABSTRACT

Objective: To determine the causes of acute upper gastrointestinal bleeding using upper gastrointestinal endoscopy.

Patients and Method: This cross-sectional study was conducted at Peoples University of Medical and Health Sciences (PUMHS), Lakhari Endoscopic suit, Nawabshah from Jan 2015 to March 2016. Patients presenting with acute upper gastrointestinal bleeding were inducted in the study. After stabilizing the patients, upper gastrointestinal endoscopy was performed. Data was entered and analyzed by statistical software package SPSS version 10.0. Mean \pm SD was calculated for quantitative variables and qualitative variables like gender and endoscopic findings were expressed as frequencies and percentages.

Results: Out of 208 patients, 139 (67%) were males and 69 (33%) were females. Mean age of the patients was 52.77 ± 14.5 SD years. Haematemesis was the main presenting complaint followed by melena. Bleeding related to portal hypertension was present in 112 (53.84%) patients, followed by peptic ulcer disease in 74 (35.57%) patients. Malignant lesions were present in 11 (5.28%) patients while miscellaneous lesions were found in 11 (5.28%) patients.

Conclusion: Gastro esophageal variceal bleeding was the leading cause of upper GI bleeding followed by ulcerative disease.

Keywords: Endoscopy, Esophageal Varices, Peptic Ulcer Disease, Upper gastrointestinal bleeding

Author's Contribution

¹Conception, Synthesis and Planning of the research-²⁻⁴Active participation in active methodology Interpretation and discussion, Analysis .

Address of Correspondence

Dr. Ghulam Mujtaba Shah
mian.scientist@yahoo.com

Article info.

Received: April 3, 2017
Accepted: May 29, 2017

Cite this article: Shah GM, Jamali AA, Khokhar RA, Rind S, Endoscopic Diagnosis in Patients with Acute Upper Gastrointestinal Bleeding. JIMDC. 2017; 6(2):83-86.

Funding Source: Nil

Conflict of Interest: Nil

Introduction

Acute upper gastrointestinal bleeding is defined as bleeding from a source proximal to the ligament of treitz. It is a common medical emergency and remains a major cause of morbidity and mortality. Upper gastrointestinal bleeding (UGIB) remains to be the commonest cause of critical care hospital admissions, accounting for 6-13% mortality. The incidence of UGIB is 2-fold greater in males than in females, in every age group, although the death rate is comparable in the both genders. The UGIB has been observed by an increasing frequency in older people, with a concurrent relationship with significant co-

morbidities that augment mortality. Mortality amplify with older age (>60 years).

Over the past 10-30 years there has been a minimal to no change in mortality rates.² In an international study, there has been a decrease in mortality from 11% to 7% in France, however no decrease in mortality was found in Greece.³ According to the American Society for Gastrointestinal Endoscopy (ASGE) and a large multicenter study, increasing mortality of 14.4% has been found in elderly population with increased male preponderance.^{4,5} In a study from Spain, UGIB was six times more common than lower GI bleeding.⁶

Upper Gastrointestinal Endoscopy remains to be an initial recommended procedure in early diagnosis and management of UGIB. It reduces duration of hospitalization, recurrence rate of bleeding, number of transfusions, reduced resources and need of surgical intervention. The diagnosis becomes easier when the patient present with hematemesis. Even in the absence of hematemesis, 40 to 50% of patients in the emergency room with GI bleeding have an upper GI source.⁷⁻⁹ The main causes of bleeding are usually the peptic ulcers (50.6%; gastric ulcer in 24.4%, duodenal ulcer in 20.6%, and combined gastroduodenal ulcer in 5.6%), congestive gastropathy (2.5%), Mallory–wies tears (11.3%), drug-induced mucosal damage (1.9%).¹⁰ In different studies, variceal bleeding is also a common cause with nearly 20% of patients presenting with acute UGIB.¹¹⁻¹³ The common complication among patients with acute UGIB is a risk of re-bleeding (1.9%), and mortality may thus reach up to 13.8%.⁶ Sung et al, in a large randomized controlled trial found re-bleeding in 5.9% of the patients receiving treatment for acute bleeding than placebo 10.3%.¹⁴

Patients and Methods

This cross-sectional study was conducted at Department of Medicine PUMHS, Lakyari Endoscopic unit Nawabshah from January 2015 to March 2016. Permission was taken from hospital ethical committee. Sample size of 208 patients was calculated by 95% confidence level with 7% confidence interval, using Creative Research System sample size calculator. Non-probability, convenient sampling technique was used. All patients presenting with upper gastrointestinal hemorrhage in emergency department were inducted in the study. Patients having history of bleeding disorders or who refused to give consent were excluded from study. The Written consent of patients /attendants was taken. History, examination and routine investigations were carried out. Blood was arranged after grouping and cross match. Gastric lavage with Levine tube was done and blood was replaced whenever required. After stabilizing the patient, upper gastrointestinal endoscopy was performed within 24 hours after pre-medications. Pre-medications included, combination of narcotic and benzodiazepine and were administered by the expert gastroenterologist. The instrument used for the endoscopy was standard forward

viewing conventional Fiber-optic Flexible Endoscope (GIF 130, GIF 140) Olympus Japan with a large bore dual channel, one for water lavage and other for suction. The procedure of endoscopy was performed by experienced gastroenterologist and researcher. After the procedure, patients were followed for re-bleeding and for other complications up to second day of hospital stay. Strict instruction to patients and their relatives were given for proper OPD follow up after first week and second week. Patients requiring surgical treatment for UGIB were referred to respective unit after endoscopy. Data was analyzed by statistical software package SPSS version 10.0. Descriptive statistics including patient's age, gender, and admission number were entered. Mean \pm SD was calculated for age and frequency of qualitative variables like gender and endoscopic findings was expressed as frequencies and percentages.

Results

Out of 208 patients, 139 (67%) were males and 69 (33%) were females with male to female ratio of 2.01:1. Mean age of the patients was 52.77 ± 14.5 SD years and age range of 15 -90 years. Mean hemoglobin of the patients was $8.43 \text{ gms/dl} \pm 1.47$ SD (Table 1).

Table 1: Baseline information of the patients in the study group (n=208)

Variables		Result
Age (years)	Mean \pm SD	52.77 \pm 14.5
Hemoglobin (g/dl)	Mean \pm SD	8.43 \pm 1.47
Male	Number (%)	139 (67)
Female	Number (%)	69(33)

Regarding presenting complaint, hematemesis was the most common presentation followed by melena and mixed presentation (Table 2).

Table 2: Presenting complaints of patients in the study group (n=208)

Presenting complaints	Frequency N (%)
Hematemesis	142(68)
Melena	62(30)
Mixed	4(2)

Pattern of acute upper gastrointestinal bleeding in patients is presented in table 3. As shown in the table, the most common cause of GI bleeding was portal hypertension seen in 53.85% patients, followed by

ulcerative lesions seen in 35.57% patients and malignant lesions seen in 5.29% cases.

Cause	Frequency N (%)
Portal hypertension	112(53.85)
Esophageal varices	96(46.15)
Fundal varices	14(6.73)
Portal hypertensive gastropathy	2(0.96)
Ulcerative disease	74(35.57)
Duodenal ulcers	31(14.90)
Gastric erosions	16(7.70)
Gastric ulcers	16(7.70)
Mixed lesions	11(5.28)
Malignant lesions	11(5.29)
Esophageal growth	2(0.96)
Gastric growth	8(3.85)
Duodenal growth	1(0.48)
Dieulafoy lesion	3(1.44)
Miscellaneous lesions	8(3.85)

Discussion

Upper gastrointestinal bleeding (UGIB) is the most frequent complication occurring in gastroenterology with mortality rate from 4-15%.¹⁵⁻¹⁶ Nearly more than 300,000 hospital admissions and about 30,000 deaths per annum in America have a source from upper gastrointestinal tract.¹⁷ In our study upper gastrointestinal bleeding was one of the most common cause of emergency admissions. Upper gastrointestinal endoscopy is the urgent primary diagnostic and therapeutic tool for the patients presenting with hematemesis.¹⁸⁻²⁰ It precisely describes the bleeding site, ascertains the specific cause and also provides information that will assist in predicting the outcome. It also specifically accedes to treatments to stop bleeding and reduces the risk of re-bleeding. In clinical trials, also these endoscopic parameters were used to determine the efficacy of treatment.¹³ In our study, endoscopy was done to determine the cause of bleeding and also for endoscopic and other management. In this study, the most common cause of upper gastrointestinal bleeding was portal hypertension related varices and gastropathy seen in 53.84% cases and 46.1% cases of esophageal varices.

Elwakil et al have found variceal bleeding to be the most common presentation in emergency room reported in 70.1% cases,²¹ these patients presented with hematemesis and melena. Whereas Ahmed et al reported 43 % cases of bleeding caused by esophageal varices.¹² This variation from Elwakil et al study was because the study was conducted in Egypt where the chronic liver disease has different prevalence from our region. However, the results of study conducted by Ahmed et al study are comparable with our results. Najam un Nasir et al in their study from Mayo Hospital Lahore also found esophageal varices to be the commonest (54%) cause of acute upper GI bleed.²²

The second commonest cause was peptic ulcer disease as in our study which was observed in 74 (35.57%) cases. Bhutta et al has found 34% cases of peptic ulcer disease with upper GI bleeding.²³ Different studies have reported peptic ulcer disease being more common than esophageal varices.^{23,24} In different studies the reported incidence of peptic ulcer disease is 31-67%.²⁵⁻²⁸ These endoscopic findings are comparable with our study.

Other causes of UGIB included 8 cases (3.84%) of reflux esophagitis, Mallory Weiss tears, one case of gastric tumor and three cases (1.44%) of Dieulafoys lesion. Bhutta et al found 18.4% cases of deudenitis, gastric erosions and erosive gastritis.^{22,23} This high number is due to inclusion of gastric erosions which has been mentioned separately in our study. Ahmed et al in his study also found reflux esophagitis in 9 % cases.¹² In our study GI neoplasms as a cause of bleeding was present in 11(5.28%) patients. Sohail Bhutta et al reported Carcinoma Stomach, Carcinoma Esophagus, Ampullary Carcinoma in 2.8% cases.²³ A Nepalian study conducted by Dewan KR et al reported malignancy in 3.3% cases as the cause of upper GI bleed.²⁸ In our study, the main presentation of patients was hematemesis observed in 68.2%, followed by melena in 29.8% cases and both hematemesis and melena in 2% cases and various international data also supported our finding.²⁹

Conclusion

Portal hypertension including portal gastropathy, esophageal varices and fundal varices remained the most common causes of upper gastrointestinal bleeding on endoscopy followed by peptic ulcer disease.

Acknowledgement: Authors acknowledge the support of Mr. Rana Shakil Ahmad, Clinical Research Executive from Medical Affairs, PV and Clinical Research department of Getz Pharma in review of the manuscript.

References

1. Holster IL, Kuipers EJ. Management of acute nonvariceal upper gastrointestinal bleeding: current policies and future perspectives. *World J Gastroenterol*. 2012; 18(11):1202-7.
2. Acute upper GI bleeding, NICE Clinical Guideline (June 2012).
3. Lanás A, Perez-Aisa MA, Feu F, Ponce J, Saperas E, Santolaria S, et al. A nationwide study of mortality associated with hospital admission due to severe gastrointestinal events and those associated with nonsteroidal antiinflammatory drug use. *Am J Gastroenterol*. 2005; 100(8):1685-93.
4. Cerulli MA. Upper Gastrointestinal Bleeding. E-medicine Updated: 2013.
5. Pilotto A, Maggi S, Noale M, Franceschi M, Parisi G, Crepaldi G. Development and validation of a new questionnaire for the evaluation of upper gastrointestinal symptoms in the elderly population: a multicenter study. *J Gerontol A BiolSci Med Sci*. 2010;65(2):174-8.
6. Alatise OI, Aderibigbe AS, Adisa AO, Adekanle O, Agbakwuru AE, Arigbabu AO. Management of overt upper gastrointestinal bleeding in a low resource setting: a real world report from Nigeria. *BMC Gastroenterology*. 2014;14(1):210.
7. Sostres C, Gargallo CJ, Lanás A. Nonsteroidal anti-inflammatory drugs and upper and lower gastrointestinal mucosal damage. *Arthritis research & therapy*. 2013; 15(3):S3.
8. Witting MD, Magder L, Heins AE, Mattu A, Granja CA, Baumgarten M. ED predictors of upper gastrointestinal tract bleeding in patients without hematemesis. *Am J Emerg Med*. 2006;24(3):280-5.
9. Witting MD, Magder L, Heins AE, Mattu A, Granja CA, Baumgarten M. Usefulness and validity of diagnostic nasogastric aspiration in patients without hematemesis. *Ann Emerg Med*. 2004;43 (4): 525-32.
10. González-González JA, García-Compeán D, Vázquez-Elizondo G, Garza-Galindo A, Jáquez-Quintana JO, Maldonado-Garza H. Nonvariceal upper gastrointestinal bleeding in patients with liver cirrhosis. Clinical features, outcomes and predictors of in-hospital mortality. A prospective study. *Ann Hepatol*. 2011; 10(3):287-95.
11. Morales UC, Sierra SS, Hernández HA, Arango DA, Lopez GA. Upper gastrointestinal bleeding: risk factors for mortality in two urban centres in Latin America. *Revista española de enfermedades digestivas: organo oficial de la Sociedad Española de Patología Digestiva*. 2011; 103(1):20-4.
12. Ahmad I, Atif MA, Mustafa G. Upper gastrointestinal endoscopy: indications and outcome experience at Sheikh Zayed Hospital Rahim Yar Khan. *J Sheikh Zayed Med Coll*. 2010;1(1):27-29.
13. Abbasi A, Bhutto AR, Butt N, Munir SM, Dhillon AK. Frequency of portal hypertensive gastropathy and its relationship with biochemical, haematological and endoscopic features in cirrhosis. *J Coll Physicians Surg Pak*. 2011; 21(12):723-6.
14. Sung JJ, Barkun A, Kuipers EJ, et al.; Peptic Ulcer Bleed Study Group. Intravenous esomeprazole for prevention of recurrent peptic ulcer bleeding: a randomized trial. *Ann Intern Med*. 2009;150(7):455-64.
15. Laine L. Upper gastrointestinal bleeding. *Clinical Update American Society of Gastrointestinal Endoscopy*. 2007; 14(3):1-4.
16. Marmo R, Koch M, Cipolletta L, Capurso L, Pera A, Bianco MA, et al. Predictive factors of mortality from nonvariceal upper gastrointestinal hemorrhage: a multicenter study. *Am J Gastroenterol* 2008; 103(7): 1639-47.
17. Cappell MS, Friedel D. Initial management of acute upper gastrointestinal bleeding: from initial evaluation up to gastrointestinal endoscopy. *Med Clin North Am*. 2008; 92(3):491-509.
18. Ahmad SI, Atif MA. Upper GI Endoscopy - A review of 500 cases at Sheikh Zayed Medical College/Hospital Rahim Yar Khan. *Pak J Med Health Sci*. 2007; 1(4):137-9.
19. Mumtaz K, Majid S, Shah H, Hameed K, Ahmed A, Hamid S, Jafri W. Prevalence of gastric varices and results of sclerotherapy with N-butyl 2 cyanoacrylate for controlling acute gastric variceal bleeding. *World J Gastroenterol*. 2007; 13(8):1247-51.
20. Cappell MS. Therapeutic endoscopy for acute upper gastrointestinal bleeding. *Nat Rev Gastroenterol Hepatol*. 2010; 7(4):214-29.
21. Elwakil R, Reda MA, Abdelhakam SM, Ghoraba DM, Ibrahim WA. Causes and outcome of upper gastrointestinal bleeding in Emergency Endoscopy Unit of Ain Shams University Hospital. *J Egypt Soc Parasitol*. 2011;41(2):455-67
22. Nasir NU, Nadeem MA, Imran M, Hussain I. Oesophageal varices vs peptic ulcer: A study of 100 patients. *Pak J Gastroenterol*. 1998; 12 (1-2):53-56.
23. Bhutta S, Jamil M, Aziz K, Uddin W. An etiological study of upper gastrointestinal bleeding. *J Rawal Med Coll*. 2012; 16(1):31-3.
24. Chung IK, Lee DH, Kim HU, Sung IK, Kim JH; Korean College of Helicobacter and Upper Gastrointestinal Research; Guidelines of treatment for bleeding peptic ulcer disease. *Korean Association of Gastroenterology. Korean J Gastroenterol*. 2009; 54(5):298-308.
25. Holster IL, Kuipers EJ. Management of acute nonvariceal upper gastrointestinal bleeding: current policies and future perspectives. *World J Gastroenterol*. 2012; 18(11):1202-7.
26. Theocharis GJ, Thomopoulos KC, Sakellaropoulos G, Katsakoulis E, Nikolopoulou V. Changing trends in the epidemiology and clinical outcome of acute upper gastrointestinal bleeding in a defined geographical area in Greece. *J Clin Gastroenterol*. 2008; 42(2):128-33.
27. Hearnshaw SA, Logan RF, Lowe D, Travis SP, Murphy MF, Palmer KR. Use of endoscopy for management of acute upper gastrointestinal bleeding in the UK: results of a nationwide audit. *Gut*. 2010; 59(8):1022-9.
28. Sarwar S, Dilshad A, Khan AA, Alam A, Butt AK, Tariq S, et al. Predictive value of Rockall score for rebleeding and mortality in patients with variceal bleeding. *J Coll Physicians Surg Pak*. 2007; 17(5):253-6.
29. Dewan KR, Patowary BS, Bhattarai S. A Study of Clinical and Endoscopic Profile of Acute Upper Gastrointestinal Bleeding. *Kathmandu Univ Med J*. 2015; 12(1):21-25.