Original Article

Clinical Endoscopic Parameters of Upper Gastrointestinal Bleeding

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Abstract

Bckground: upper gastrointestinal bleeding is a potential life threatening condition associated with morbidity and mortality. thus, the present study was carried out evaluate clinico-epidemiological profile of ugib patients and to identify clinical, laboratory and endoscopic parameters which can predict clinical outcomes in patients of ugib. **Material and methods:** the present prospective descriptive hospital based observational study was conducted at a tertiary care teaching hospital catering urban as well as rural population. patients admitted with recent history of upper gi bleeding were selected for the study and were subjected to endoscopy. data regarding demographic details, clinical and investigational reports were collected and analysed using spss version 22. descriptive statistics were obtained using chi-square test. correlation analysis was performed for predicting ugib based on clinical, biochemical and imaging parameters.**Results:** from 87 patients in our study, 5 (5.7%) died before endoscopy being performed during the early course of hospitalization. hence from remaining 82 (94.3%) patients, 46.3% had esophageal varices, mallory-weiss syndrome tear (18.3%), duodenal ulcer (12.2%), gastro-intestinal malignancy (9.8%), esophagitis (6.1%), gastric ulcer (3.7%), and duodenitis (3.7%). **Conclusion:**Endocscopy is a valuable minimal invasive method to diagnose and upper gi bleeding.presence of hematemesis and malaena had significantly higher risk of blood transfusion requirement. more than 2 episodes of hematemesis had higher risk of need of transfusion. similarly higher risk of all the outcomes was found with presence of liver failure, hb < 9.0 gm/dl, and with serum creatinine > 1.4.

Keywords: esophageal varices; hematemesis; upper gastrointestinal bleeding

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INTRODUCTION

Upper gastrointestinal bleeding (UGIB) is a very common condition with an estimated incidence as high as 40-150 cases per 100,000 annually and it continues to be a major cause of hospital admission and mortality throughout the world ranging from 0.9% to 26.5%.[1,2]Upper gastrointestinal bleeding includes hemorrhage originating from the esophagus to the ligament of Treitz. There are many reasons for causing upper GI hemorrhage. Peptic ulcer bleeding causes more than 60 percent of cases of upper gastrointestinal bleeding, whereas esophageal varices attributes approximately 6 percent. Other etiologies include arteriovenous malformations, Mallory-Weiss tear, gastritis and duodenitis, and malignancy.[3] Patients can be stratified as having either variceal or nonvariceal sources of upper GI hemorrhage as the two have different treatment algorithms and prognosis. The primary diagnostic test for evaluation of UGIB is endoscopy.[4]Thus, the present study was carried out evaluate clinico-epidemiological profile of UGIB patients and to identify clinical, laboratory and

endoscopic parameters which can predict clinical outcomes in patiets of UGIB.

MATERIAL AND METHODS

The present prospective descriptive hospital based observational study was conducted at a tertiary care teaching hospital catering urban as well as rural population. It was conducted over a duration 18 months starting from January 2014 to June 2015. At the beginning of the study, approval for the commencement of the study was obtained from institutional ethical committee. Before beginning patient recruitment in to the study, each patient was administered study information guide in a local language that patient understood. If patients had any queries as regards to the study, those were addressed. Thereafter patient were requested to sign an informed consent form for enrolment in to the study. Patients admitted with recent history of upper GI bleeding were selected for the study. Inclusion criteria was patient presented with upper gastrointestinal bleeding (UGIB) irrespective of the etiology and those who were willing to participate in the study. Exclusion criteria consisted of any patients who got admitted and/or given resuscitative measures in other hospital, patients presenting with only melena or hematochezia and revealed normal upper GI endoscopy, patients previously undergone endoscopic or surgical intervention for UGIB, patients with known bleeding disorder and patient receiving any anticoagulants or antiplatelet agents. For the patients who presented with melena or hematochezia (with any other signs suggesting of lower GI bleed), as a diagnostic protocol at our hospital, patients were subjected to upper GI endoscopy to rule out UGIB. If patient had normal endoscopic finding, they were excluded from the study. Data regarding demographic details, clinical and investigational data were collected in case sheets for data collection. Data on any additions like alcoholism, smoking and drug abuse was also noted. Clinical history and examination included any presenting symptoms of the patients along with previous history of hemetemesis, melena, hematochezia or syncope. Clinical history suggestive of possible aetiology of UGIB was obtained. Vital parameters such as pulse rate (betas/min), systolic and diastolic blood pressure and respiratory rate was noted. Pallor, icterus, lymphadenopathy, petechiae, bleeding gums, etc also noted. Signs of cardiac failure like pedal edema, basal crepitations, etc were also noted in CRF. Systemic examination carried out. Any abnormal respiratory sounds, abdominal swelling, abdominal tenderness were noted. Complete blood count, Liver function tests, Coagulation profile and Kidney function test were carried out. Data was analysed using SPSS version 22. Descriptive statistics were obtained using Chi-square test. Correlation analysis was performed for predicting UGIB based on clinical, biochemical and imaging parameters.

RESULTS

Mean age of the population was 45.56 years with range from 22 to 68 years. Males (82.8%) were more frequently affected in our study with M: F ratio was 4.8: 1. GI Bleeding Symptoms (Hematemesis/Malaena/Both) was present in all cases with most patients having single episode (39.1%), two episodes (9.2%) and three episodes (34.5%). Some had 5 (13.8%) or more (2.2%) bouts of hematemesis. Malaena was reported in 80.5% cases which also represents GI bleed. Both hematemesis and malaena were present in 80.5% cases. Hematochezia was found in 3.4% patients in our study. Blood loss in UGIB was associated with shock which was found in 34.5% cases (table 1).Reduced appetite (100%) was another major symptom in our study. Reduced duration of sleep (79.3%) and altered sleep pattern (9.2%) were reported in study population. This is possibly due to recurrent bleeding and discomfort associated with bleeding episodes. Altered bowel movements (35.6%), distention of abdomen (25.3%) and pain in abdomen (23%) were prominent GI symptoms. Variety of diseases causing bleeding may present with such abdominal symptoms. Vomiting was present in 8% cases whereas jaundice was complained by 4.6% patients. In our study, 16.1% patients had history of NSAIDs consumption.

Table 1: Demographic details and clinical features among Upper gastrointestinal bleeding (UGIB)

Mean Age	**45.56 years**
Gender	M: F= 4.8: 1
hematemesis	single episode (39.1%), two episodes (9.2%), three episodes (34.5%), 5 or more (16%)
Malaena	80.5%
Hematochezia	3.4%
Blood loss in UGIB associated with shock	34.5%
History of NSAIDs consumption	16.1%

Table 2: Clinical and laboratory parameters in prediction of outcomes

Parameter	Risk of outcomes (Odds Ratio, 95% CI)			
	Transfusion	**Rebleeding**	**Intervention**	**Death**
Male	1.28* (0.9 to 1.7)	0.9 (0.8 to 1.3)	1.15 (0.9 to 1.3)	1.07 (0.8 to 1.3)
Age > 60	1.01 (0.3 to 3.4)	1.05 (0.3 to 2.9)	0.6 (0.2 to 2.0)	-
Hematemesis > 2 episodes	2.8* (1.3 to 6.2)	1.3 (0.9 to 2.0)	1.0 (0.6 to 1.5)	1.2 (0.7 to 1.8)
Hematemesis + Malaena	1.4* (1.03 to 2.1)	1.4 (1.1 to 1.8)	1.2 (1.0 to 1.5)	1.2 (1.0 to 1.5)
Shock	13.5* (1.9 to 92.7)	3.1* (1.7 to 5.8)	1.9* (1.3 to 2.9)	2.3* (1.6 to 3.3)
Liver Failure	4.6* (1.6 to 13.5)	3.1* (1.7 to 5.4)	3.5* (2.2 to 5.4)	2.0* (1.5 to 2.8)
Hb: 9 or less	-	1.9* (1.4 to 2.6)	1.6* (1.2 to 1.9)	1.5* (1.2 to 1.7)
Platelets < 1.5 Lac/cmm	1.8* (0.8 to 4.16)	1.2 (0.6 to 2.1)	1.8* (1.0 to 3.0)	1.0 (0.5 to 2.0)
INR (international normalized ratio) > 1.4	1.4 (0.6 to 3.6)	1.8 (0.9 to 3.7)	1.7 (0.9 to 3.1)	2.2* (1.2 to 4.0)
Serum creatinine > 1.4	5.75* (0.8 to 40.7)	2.3 (0.8 to 6.0)	2.8* (1.2 to 6.6)	2.8* (1.3 to 6.1)

*P<0.05, significant, Chi square test

Personal Habits: Alcoholism (71.3%), smoking (35.6%) and tobacco chewing (5.7%) were common habits noted in study population.

Clinical Signs

Pallor was evident in 81.6% cases. Icterus was evident in 48.3% patients. In our study, 19.5% patients had clubbing. Oedema feet was found in 26.4% and hepatic encephalopathy in 6.9% patients.

Comorbidities

Liver failure (48.3%), renal failure in 9.2% cases, systemic arterial hypertension in 4.6% cases. These were 35.6% patients in our study who had one or more signs of liver disease.

Gynaecomastia and loss pubic hairs were in equal number of patients and found in 77.42% There can be testicular atrophy which was seen in 25.80% patients in our study.Hepatic encephalopathy was present in 29.03% patients who had stigmata of liver disease.

Table 2 describes the risk of clinical outcomes as assessed in relation some of the clinical and laboratory parameters. With male gender was found to be at significantly higher risk of need of blood transfusion (Odds Ratio: 1.28 [0.9 to 1.7], p<0.05) but there was no higher risk for other outcomes. Age above 60 was not associated with increase in risk of any outcomes. More than 2 episodes of hematemesis had higher risk of need of

transfusion (OR: 2.8, p<0.05) but was not observed for other outcomes. Presence of hematemesis and malaena had significantly higher risk of transfusion requirement (OR: 1.4, P<0.05). Although risk for other outcomes was on higher side, but it did not reach statistical significance. Presence of shock was strong predictor of all the outcomes and risk was significantly higher for need of transfusion (OR: 13.5), rebleeding (OR: 3.1), intervention (OR: 1.9) and death (OR: 2.3). Similarly higher risk of all the outcomes was found with presence of liver failure, Hb < 9.0 gm/dL, and with serum creatinine > 1.4 except for rebleeding which did not reach statistical significance. Platelet below < 1.5 lac/cmm had significantly high risk of intervention requirement but risk for other outcomes did not reach statistical significance. Although INR of > 1.4 had higher risk of transfusion need, rebleeding and intervention need, it was not statistically significant but significance was found for death outcome (OR: 2.2).Table 3 shows endoscopic diagnosis. From 87 patients in our study, 5 (5.7%) died before endoscopy being performed during the early course of hospitalization. Hence from remaining 82 (94.3%) patients, 46.3% had esophageal varices and it was the most common finding on endoscopy. Other major findings responsible for UGIB in our study were Mallory-Weiss syndrome tear (18.3%), duodenal ulcer (12.2%), gastro-intestinal malignancy (9.8%), Esophagitis (6.1%), gastric ulcer (3.7%), and duodenitis (3.7%).

Table 3: Endoscopic Diagnosis

Endoscopic finding	Present Study (n=82)
Oesophageal varices	38 (46.3)
Mallory Weiss tear	15 (18.3)
Duodenal ulcer	10 (12.2)
Gastric malignancy	8 (9.8)
Oesophagitis	5 (6.1)
Gastric ulcer	3 (3.7)
Duodenitis	3 (3.7)

DISCUSSION

Upper gastrointestinal bleeding is a potential life threatening condition and is defined as bleeding from a source proximal to the ligament of Treitz. [5,6] The present study found that UGIB was more common in young to middle aged individuals than old age. Also male were more commonly affected than female. Hematemesis was seen in all patients, while malena was second most common presentation of UGIB. Hematochazia was least common symptom. Hematemesis (either red blood or coffee-ground emesis) suggests bleeding proximal to the ligament of Treitz. The presence of frankly bloody emesis suggests moderate to severe bleeding that may be ongoing, whereas coffee-ground emesis suggests more limited bleeding. The majority of cases presenting with melena (black, tarry stool) bleeding originates from structures proximal to the ligament of Treitz (90 percent), though it may also originate from the small bowel or right colon. Melena may be seen with variable degrees of blood loss, being seen with as little as 50 mL of blood.[7]Among other presentations syncope was seen in significant numbers of patients followed by shock in approximately one-third number of patients. Reduced appetite, reduced sleep duration were also major accompanied symptoms. 16.1% had history of NSAID consumption. Pallor , icterus and ascites were major signs observed in patients. Liver failure was most common comorbid condition identified followed by renal failure. Stigmata of liver disease was evident in those who were found to have oesophageal varices endoscopically, about third of the patients who had liver stigmata also had hepatic encephalopathy. Endoscopically, oesophageal varices were most common lesions identified followed by Mallory Weiss tears, peptic ulcer and GI malignancy.Reduced duration of sleep (79.3%) and altered sleep pattern (9.2%) were reported in study population. This is possibly due to recurrent bleeding and discomfort associated with bleeding episodes.Mortality from UGIB has remained stable (5% to 10%) over the past decades despite improvements in the diagnosis and management of acute cases; the cause may be an aging population and comorbidities. Factors such as increasing age, length of hospital stay, emotional (shock) state on admission, and underlying comorbidities impact overall mortality.[6] Tammaro L et al[1] investigated gastrointestinal bleeding (UGIB) patients before endoscopy using a clinical scoring method. Patients were stratified according to a simple clinical score, according to which patients were divided into high-risk, intermediate-risk and low-risk. Endoscopy was performed in all cases within 2 hours and overall, stigmata of recent haemorrhage (SRH) were detected in 27% cases. SRH occurred more

frequently in high risk patients than in intermediate or low risk patients. Older age and presence of comorbidities were more frequently detected in high risk patients.Anand D et al[4] evaluated clinical, endoscopic profile and associated mortality in patients presenting with UGIB and reported that variceal bleed was the most common cause of UGIB, followed by peptic ulcer bleed with overall mortality was seen in 21.05% of cases; however, majority of mortality was seen in portal hypertension related bleeding. Rathod JB et al[8] evaluated Upper gastrointestinal bleeding patients and reported acute erosive gastritis (34%) as the most common cause followed by portal hypertension (24%) and peptic ulcer (22%).On comparison with lower gastrointestinal bleeding, patients with acute LGIB are significantly less likely to experience shock (35% vs. 19%, respectively), require fewer blood transfusions (64% vs. 36%) and have a significantly higher hemoglobin level (61% vs. 84%) as comparative to patients with acute upper gastrointestinl bleeding.[9] Rapid assessment and resuscitation should precede the diagnostic evaluation in unstable patients with severe bleeding. Risk stratification is based on clinical assessment and endoscopic findings. Early upper endoscopy (within 24 hours of presentation) is recommended in most patients because it confirms the diagnosis and allows for targeted endoscopic treatment, including epinephrine injection, thermocoagulation, application of clips, and banding. Endoscopic therapy results in reduced morbidity. Although administration of proton pump inhibitors does not decrease mortality, risk of rebleeding, or need for surgery, it reduces stigmata of recent hemorrhage and the need for endoscopic therapy. Despite successful endoscopic therapy, rebleeding can occur in 10 to 20 percent of patients; a second attempt at endoscopic therapy is recommended in these patients. Arteriography with embolization or surgery may be needed if there is persistent and severe bleeding.[3] Aggressive medical resuscitation while initiating an evaluation to localize the site of blood loss remains the key to successful management of acute gastrointestinal bleeding. A multidisciplinary approach with early involvement of a gastroenterologist, surgeon, and radiologist can be extremely helpful in the management of these patients.[10]

CONCLUSION

Endoscopy is a valuable minimal invasive method to diagnose and treat upper GI bleeding. The present study reported oesophageal varices as the most common lesions identified followed by Mallory Weiss tears, peptic ulcer and GI malignancy. Presence of hematemesis and malaena had significantly higher risk of blood transfusion requirement. More than 2 episodes of hematemesis had higher risk of need of transfusion. Similarly higher risk of all the outcomes was found with presence of liver failure, Hb < 9.0 gm/dL, and with serum creatinine > 1.4.

REFERENCES

1. Tammaro L, Di Paolo MC, Zullo A, Hassan C, Morini S, Caliendo S, Pallotta L. Endoscopic findings in patients with upper gastrointestinal bleeding clinically classified into three risk groups prior to endoscopy. World J Gastroenterol 2008;14(32):5046-50.

2. Stanley AJ. Update on risk scoring systems for patients with upper gastrointestinal haemorrhage. World J Gastroenterol 2012;18(22): 2739-2744.

3. Wilkins T, Khan N, Nabh A, Schade RR. Diagnosis and Management of Upper Gastrointestinal Bleeding. Am Fam Physician. 2012;85(5):469-76.

4. Anand D, Gupta R, Dhir M, Ahuja V. Clinical and endoscopic profile of patients with upper gastrointestinal bleeding at tertiary care center of North India. Journal of Digestive Endoscopy 2014;5(4):139-43.

5. Kim J. Management and prevention of upper GI bleeding. Gastroenterology and Nutrition Series PSAP-VII (2012):7-26. Available at: https://www.accp.com/docs/bookstore/psap/p7b11sample01.pdf Last accessed as on 22 February 2016.

6. Masoodi M, Saberifiroozi M. Etiology and Outcome of Acute Gastrointestinal Bleeding in Iran: A Review Article. Middle East Journal of Digestive Diseases. 2012;4(4):193-198.

7. Saltzman JR. Available at: http://www.uptodate.com/contents/approach-to-acute-upper-gastrointestinal-bleeding-in-adults. Last accessed as on 22 February 2016.

8. Rathod JB, Shah DK, Yagnik BD, Yagnik VD. Upper gastrointestinal bleeding: audit of a single center experience in Western India. Clinics and Practice 2011;1(4):e132.
9. Dar IA, Dar WR, Khan MA, Kasana BA, Sofi NU, Hussain M, et al. Etiology, clinical presentation, diagnosis and management of lower gastrointestinal bleed in a Tertiary Care Hospital in India: A retroprospective study. J Dig Endosc 2015;6:101-9.
10. Fallah MA, Prakash C, Edmundowicz S. Acute gastrointestinal bleeding. Med Clin North

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