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A STUDY OF CLINICAL AND ENDOSCOPIC PROFILE OF PATIENTS WITH ACUTE UPPER GASTROINTESTINAL BLEEDING IN A TERTIARY CARE REFERRAL CENTER OF KERALA, SOUTH INDIA

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ABSTRACT

Background: Acute Upper Gastrointestinal Bleeding is a common medical emergency with a hospital mortality of approximately 10 percent. The presentation of bleeding depends on the amount and location of hemorrhage and the endoscopic profile varies according to different etiology. Despite advancements in medical intervention UGIB still carries considerable morbidity, mortality and economic burden on health care system. **Aims:** The aim was to study the clinical and endoscopic profile of patients presenting with acute UGIB admitted, at our Gastroenterology center. **Methods:** A hospital based, prospective study was conducted in Gastroenterology unit of Medical Trust Hospital Kochi –Kerala, one of the tertiary care referral centre in South India over a period of one year, from march 2016 to march 2017. During this study period, 120 patients were identified who came to Emergency Department with UGIB and were subjected to endoscopy to identify the etiology. The clinical and endoscopic profile was analyzed and mortality pattern was studied. **Results:** The present study comprised of 120 patients of acute UGI bleeding. The age ranged from 14 to 88 years, mean age being 48.76+17.19. Ninety patients (75%) were male and 30 patients (25%) were female with M: F = 3:1. Eighty six patients (71.7%) presented with both hematemesis and malena, while 24 patients (20%) presented with only hematemesis and 10 patients (8.3%) presented with only melana. Upper Gastrointestinal endoscopy revealed esophageal varices in 57 patients (47.5%), Peptic ulcer disease in 40 (33.3%), Mallory Weiss tear in 10 (8.3%), Erosive mucosal disease 6 (5%), malignancy in 4 (3.2%) and GAVE (2.5%). Comorbidities were present in 43.3%. 11 patients (9.1%) expired. Risk factors for death being heavy alcoholic consumption, advanced

cirrhosis, massive rebreeding, and associated co morbidities. **Conclusions:** Acute Upper Gastrointestinal bleeding is a medical emergency. In the present study, variceal bleed was the most common cause of UGIB, followed by peptic ulcer bleed. However, majority of mortality was seen in portal hypertension related bleeding. Urgent, appropriate hospital management definitely helps to reduce morbidity and mortality.

KEYWORDS: Upper gastrointestinal bleed, Portal Hypertension, Peptic ulcer, UGI Endoscopy, Co morbidities.

INTRODUCTION

Upper gastrointestinal bleeding (UGIB) is a common gastrointestinal (GI) emergency presenting as hematemesis and/or melena and rarely as hematochezia and is associated with significant morbidity and mortality.[1] The incidence of UGIB varies between 40 and 150/100,000 population and increases appreciably with age. More than 350,000 patients are hospitalized each year in the United States for UGIB[2] and mortality rates of 5% to 11% have been reported representing a serious and life‑threatening entity.[3] There are many causes for upper GI hemorrhage. Patients can be stratified as having either variceal or nonvariceal sources of upper GI hemorrhage as the two have different treatment algorithms and prognosis.[4] The primary diagnostic test for evaluation of UGIB is endoscopy. Early endoscopy and endoscopic appearance of certain lesions helps to guide care and thereby reduce the costs and duration of hospitalization.[5] At present, there is a paucity of data on clinical and endoscopic profile of patients of UGIB and their risk factors for mortality from South India and particularly from this region Ernaculum, Kochi – Kerala. Therefore, this study was planned with an aim to identify clinical and endoscopic profile of patients with UGIB coming to Emergency Department of our hospital and to study the factors associated with mortality in this group of patients.

MATERIAL AND METHODS

A Hospital based, Prospective study was conducted at Gastroenterology Department, Medical Trust Hospital, a tertiary care referral centre in Kochi- Kerala over a period of one year, from March 2016 to March 2017. The Study was conducted after the research protocol was approved by the institute's research committee. Patients were included in the study only after obtaining written informed consent, The data analyzed included the detail history of GI bleeding (hematemesis, melena, hematochezia), risk factors for liver disease including

alcoholism and history for intake of anti-platelet agents / anticoagulants or non-steroidal anti-inflammatory drugs use and presence of co-morbid conditions such as diabetes mellitus, coronary artery disease, renal failure, etc., All patients underwent thorough physical examination, routine blood and radiological investigations and hemodynamic stabilization with intravenous fluids and blood and blood products, including fresh frozen plasma and platelet concentrates. Patients with past history of chronic liver disease or clinical suspicion of liver disease were started on intravenous vasoconstrictor therapy in the form of Terlipressin / Octreotide. All patients of UGIB were started on intravenous proton pump inhibitors infusion in an emergency department. Patients were subjected to upper GI endoscopy as soon as possible after hemodynamic stabilization and endoscopy were done in the majority of patients within 24 h of admission. During endoscopy, band ligation was done for bleeding large esophageal varices, and N-butyl cyanoacrylate glue was injected in bleeding gastric varices. For bleeding peptic ulcer, diluted adrenaline injection was injected around the ulcer base, endoscopic clipping or electric heat coagulation was done. Co morbidities or complications of cirrhosis were managed with the standard protocols. Patients were observed in hospital for rebleed for at least 5 to 7 days.

Collected data were analyzed using statistical methods such as mean, standard deviation (SD), per value, Chi-square test. The results were displayed in tables with categorical variables presented as numbers and percentages, and the continuous variables presented as mean ± SD. The data were analyzed using SPSS Version 22. $P < 0.05$ was considered significant.

RESULTS

This is a hospital based prospective and descriptive study. The present study comprised of 120 patients of acute UGI bleeding. The age ranged from 14 to 88 years, mean age being 48.76+17.19. Ninety patients (75%) were male and 30 patients (25%) were female with M: F = 3:1. Eighty six patients (71.7%) presented with both hematemesis and malena, while 24 patients (20%) presented with only hematemesis and 10 patients (8.3%) presented with only malenic stools. History of Heavy Alcoholic consumption was seen in 76 patients (63.3%), NSAID intake in 22 (18.3%), and Antiplatelets intake in 10 (8.3%){Table 1}.

Upper GI Endoscopy was done in all the patients to identify the cause of bleeding **(Table 2).** Majority of the patients 57 (47.5%) had variceal bleed, where 55 patients were cirrhotics and

2 patients were non cirrhotic. Peptic ulcer disease was detected in 40 patients (33.3%). Mallory Weiss tear was seen in 10 patients (8.3%). Erosive mucosal disease was found in 6 patients (5.0%). Four patients (3.3%) secondary to malignancy (Ca Stomach) and GAVE in 3 (2.5%) patients respectively.

The Associated comorbidities were seen in 52 patients, most common among them was GI /Hepatobiliary in 17 patients (32.6%), followed by Renal in 17.3%, CVS in 11.5%, Neurological 7.6%, Respiratory and others in 15.3% each (Table 3).

Table 1: Demographic and clinical features of patients presenting with upper gastrointestinal bleeding (n = 120).

	Number of Patients	Percentage (%)
Male Patients	**90**	**75 %**
Female patients	**30**	**25 %**
Alcohol intake	**76**	**63.3 %**
NSAIDs* intake	**22**	**18.3 %**
Aspirin usage	**10**	**8.3 %**
Alcohol + NSAIDs	**12**	**10. 0%**
Hematemesis	**24**	**20. 0%**
Melanic stools	**10**	**8.3 %**
Hematemesis + Melana	**86**	**71.7 %**

Table 2: Endoscopic Findings of patients with upper gastrointestinal bleeding.

Endoscopic Diagnosis	Number of Patients	Percentage (%)
Variceal Bleeding	**57**	**47.5%**
Esophageal Varices	55	45.8%
Gastric Varices	2	1.6%
Peptic Ulcer Disease	**40**	**33.3%**
Gastric Ulcer	20	16.6%
Duodenal Ulcer	18	15%
Both (GU+DU)	2	1.6%
Mallory Weiss Tear	**10**	**8.3%**
Gastric erosions / Erosive Gastritis	**6**	**5.0 %**
Gastric antral Vascular ectasia (GAVE)	**3**	**2.5%**
Malignancy (CA - Stomach)	**4**	**3.3%**

Table 3: Co morbidities associated with upper gastrointestinal bleeding (n = 52).

Co morbidities	No of Patient	Percentage
GI and Hepatobiliary	**17**	**32.6%**
Cardiovascular	**6**	**11.5%**
Renal	**9**	**17.3%**
Neurological	**4**	**7.6%**
Respiratory	**8**	**15.3%**

Others	**8**	**15.3%**
Total	**52**	**100%**

DISCUSSION

The mean age is variably reported in different series. In the present study, mean age was 48.76+17.19 which is similar to studies reported by from Nepal Gurung et al and Hussein et al that showed mean age 45.32+18.47 years and 44.6 years respectively.[6,7] From India, Anand et al reported mean age being 41 years and Rao et a l reported a mean age of 43 years, from West Indies, Kaliamurthy et al reported higher mean age of 55 years.[8-10] Recent published UK audit showed even higher mean age of 64.4.[11]

In our study male patients were 75% and female 25%. Bhattarai et al from Nepal also reported male predominance of 71% and Gurung et al 64.4%.[6,12] Similarly in other studies also male to female ratio 3:1 and 3.2:1, 70.1% male in Jamaican study, 79% male in Sudan study, 78.4% males reported by Kashyap et al and 59% in UK audit.[7-11,13]

Greater number of patients in our study presented with both Hemetemesis and melanic stools i.e 86 patients (71.7%), hemetemesis alone in 24 (20%) and melana only in 10 patients (8.3%). In the present study 26 patients (21.7%) had hypotension (systolic blood pressure <90 mm Hg) which was similar to 20% reported by Bessa et al.[14]

The commonest endoscopic finding was bleeding from esophageal and gastric varices (57 patients, 47.5%) where the cause of esophageal varices in 56 patients was cirrhosis of liver and in one patient was non cirrhotic portal hypertension (EHPVO). Only two patient had bleeding gastric varices. Few studies showed esophageal varices as a leading cause of bleeding. From Nepal, 15.6% esophageal varices have been reported by Gurung et al and 33.3% by Bhattarai et al in their respective studies.[6,12] In India, Anand et al investigated 408 patients of UGI bleed and found that 45.5% had esophageal varices and another study done by Rao et al showed esophageal varices as the most common cause (51%).[8,9]

The second common cause in our study was peptic ulcer disease detected in 40 patients (33.3%). Anand et al reported an incidence of 38.5% and Rao et al reported 28%.[8,9] In Pakistan, Bhutta et al reported 30.6% where another study by Adam etal showed much lower incidence of 19.7%.[15,16] Similar result was seen in UK audit 2007 in which the incidence was 36%.[11] In our study Mallory weiss tear was the third most common cause of UGI Bleed, seen in 10 patients (8.3%). Kashyap et al reported Mallory Weiss tear as a cause of upper GI

bleeding in 12 patients (10.8%) and Bhutta et al reported in 2 patients (1.4%).[13,16] Erosive mucosal disease was seen in 6 patients (5%). Anand et al and Rao et al found erosive mucosal disease in 9%.[8,9] Malignancy was seen in 4 patients (3.2%) respectively. 3 of our patient had vascular ectasia as a cause of upper GI bleed.

Despite advances in therapy, the case-fatality rate has remained unchanged at 7% to 10%. In our study, 109 patients (90.8%) recovered and discharged from the hospital and 11 patients (9.1%) expired. 9 patients who expired had cirrhosis of liver with portal hypertension and esophageal variceal bleeding with Child Pughs C. The 2 patient had haemorhagic gastritis and valvular heart disease with congestive cardiac failure and pancytopenia. Rao et al investigated 1480 patients of upper GI bleeding between 1976 to 1989 where 1080 patients were treated conservatively and a very high mortality rate (162 patients: 15%) was noted which was attributed to massive esophageal variceal bleeding with portal hypertension and unavailability of blood in time.[9] Hussein et al investigated 238 patients and found a mortality rate of 3.4%. Kashyap et al studied 111 patients at Simla (India) and showed an overall mortality rate of 3.6% and all patients had esophageal variceal bleed.[7,13] Kaliamurthy et al reported a mortality rate of 5.7% and UK Audit 2007 reported 10%.[10,11]

Our patients had various comorbidities (43.3%) including gastrointestinal, cardiovascular, renal, pulmonary, neurological, and others like diabetes, liver disease etc. All the expired cases had Rockall score of > 6, various comorbities and massive bleeding. In the expired group, 7 patients had developed hepatic encephalopathy Grade IV, SBP and HRS. 2 patient had bilateral lower lobe pneumonia, sepsis with septic shock and 1 patient developed massive hemorrhagic stroke. 1 patient had underlying CKD with very low WBC count and developed severe hospital acquired pneumonia.

CONCLUSION

In this study, portal HTN related esophageal and fundal varices (47.5%) were the most common cause of UGIB followed by peptic ulcer related bleed (33.3%). Mortality because of UGIB was seen in 9.1%. The factors associated with increased mortality in our study were: Advanced Cirrhotic (CHILD Class C), underlying co morbidities, prolonged INR, elevated serum creatinine level, rebreeding during the hospital stay and hemoglobin of <10 g%. Urgent, appropriate hospital management definitely helps to reduce morbidity and mortality.

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