Retrospective Study of Clinical Profile, Endoscopic Profile and in Hospital Mortality in Acute Upper Gastrointestinal Bleeding in Tertiary Care Centre in South India

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ABSTRACT

Introduction: Acute gastrointestinal (GI) bleeding is a life-threatening emergency that remains a common cause of hospitalization worldwide. The aetiology of acute upper gastrointestinal bleed (UGIB) varies with each geographical region. Study aimed to analyse clinical profile, endoscopic profile and in-hospital mortality in patients with acute upper gastrointestinal bleeding.

Material and methods: This was a retrospective analysis conducted in a Tertiary care centre in Bangalore. In this study we analysed the records of consecutive patients admitted with Upper Gastro-Intestinal bleeding over period of three years from January 2016 till January 2019.

Results: We analysed two thirty consecutive patients diagnosed with acute upper gastrointestinal bleeding, 77.4% patients were males and 22.6% were females, mean age of presentation was 49.10 years. Most of the patients, one seventy-three (75%) were between the age group of 31-70 years. Melena was the most common symptom 80.4% followed by hematemesis 47%. History of chronic alcohol intake was noted in ninety three (40.4%) and smoking in sixty five (28.3%), medication history depicted that sixteen (6.92%) patients were on NSAIDS; fifteen (6.49%) patients were on anti-platelet drugs, five (2.1%) patients were on steroids, one (0.4%) patient was on Newer Oral Anti Coagulants.

Conclusion: The present study reported peptic ulcer disease as the most common cause of upper GI bleeding, followed by portal hypertension related bleeding. The most common endoscopic lesions reported were esophageal varices, followed by duodenal ulcer. Upper G.I endoscopy is an important modality in both diagnosis and therapy in upper G.I bleed, concomitant medical and Endoscopic therapy may reduce mortality, morbidity and also the need for surgery/ interventional radiology assisted haemostasis.

Keywords: Clinical Profile, Endoscopic Profile, Acute Upper Gastrointestinal Bleeding

INTRODUCTION

Acute gastrointestinal (GI) bleeding is a life-threatening emergency that remains a common cause of hospitalization worldwide. Early recognition and appropriate management protocols, significantly reduces morbidity and mortality. The demarcation between the upper and lower gastro-intestinal tract (GIT) is the duodeno-jejunal junction or the attachment of the ligament of Treitz. Bleeding proximal to the ligament of Treitz is called upper gastrointestinal bleeding (UGIB). The incidence of upper GI bleed ranges from 50 to 150/100,000 population annually, and time trend analyses suggest that aged people constitute an increasing proportion of those presenting with acute upper GI bleed.[1] Bleeding from the upper gastrointestinal tract (GIT) is approximately 4 times as common as bleeding from the lower GIT and is a major cause of morbidity and mortality. Mortality rates from UGIB are 6-10% overall.[2]

As many as 70% of acute upper GI bleed episodes occur in patients older than 60 years, and the incidence increases with age probably because of the increased consumption of non-steroidal anti-inflammatory drugs (NSAIDs), which provoke ulcerogenesis, in elderly patients.[3,4] 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 genders.[5] Mortality rates ranging from 12% to 35% for those aged over 60 years, compared with <10% for patients younger than 60 years of age, have been reported in previous studies.[4,5]

Patients can be divided as having either variceal or non-variceal sources of upper GI hemorrhage as the two have different management protocols and prognosis.[6] The primary diagnostic test for evaluation of upper GI bleeding is endoscopy. Endoscopy for upper GI bleed has a sensitivity of 92%–98% and specificity of 30%–100%.[6] It also offers the opportunity for interventions such as band ligation, clipping, sclerotherapy, and biopsy of lesions.

The aetiology of upper gastro-intestinal bleeding (UGIB) may vary in different geographical regions. Epidemiological data are helpful in knowing the burden of the problem, the aetiology, and severity of the disorder which ultimately helps in making strategies to combat morbidity and mortality.

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The advances in medical practice in recent decades have influenced the aetiology and management of UGIB. There are only a few recent epidemiological surveys regarding acute UGIB in India.[7]

Study aimed to analyse clinical profile, endoscopic profile and in-hospital mortality in patients with acute upper gastrointestinal bleeding.

MATERIAL AND METHODS

This was a retrospective analysis conducted in Vydehi Institute of Medical sciences and Research centre, which is a Tertiary care centre in East Bangalore. In this study we analysed the records of consecutive patients admitted with Upper Gastro-Intestinal bleeding over period of three years from January 2016 till January 2019. In this study we found data of two thirty patients which satisfied the Inclusion criteria required for the study.

Acute UGI bleed was defined as a hematemesis or the passage of melena. Hematemesis was defined as vomiting of blood, blood clots, or coffee ground vomitus as reported by the patient or the patient' s family members or witnessed by nursing or medical staff. Melena was defined as passage of dark, tarry stools, or fresh blood as reported by the patient or the patient's family members or witnessed by nursing or medical staff or discovered on rectal examination.

All UGI endoscopies were carried out by physicians qualified to perform diagnostic and therapeutic UGI endoscopies. Endoscopy was performed using Olympus GIF Q150L video endoscope (Tokyo, Japan).

Patients were selected subject to their fulfilling the following criteria:

Inclusion criteria

1. Patients who have experienced acute UGI bleed- who had presented within 5 days of onset of hematemesis and/or melena
2. Age ≥ 16 years

Exclusion criteria

1. Incomplete data available in the records
2. Patients who were discharged against medical advice
3. Patients who had cardio-pulmonary resuscitation in other centre, before presenting to our Tertiary centre.

Endoscopic attempts at haemostasis were carried out in accordance with institutional protocol:

1. Esophageal varices (large, > 5 mm): endoscopic variceal ligation using Omniview multiband ligator-MBLS-6 (Medelec systems New Delhi, India)
2. Esophageal varices (small, < 5 mm) and post EVL scar bleeding: endoscopic sclerotherapy using sodium tetradecyl sulphate injection (60mg/2ml, Samarth Life sciences Pvt Ltd, Mumbai, India): injected intra-/paravariceally through 23 G sclerotherapy needle (Indovasive, Biorad medisys pvt ltd, Pune, India).
3. Gastric varices: Intravariceal injections of N-butyl cyanoacrylate glue (Samarth Life sciences Pvt Ltd, Mumbai, India), through 21G sclerotherapy needle (Indovasive, Biorad medisys pvt ltd, Pune, India).
4. Gastric antral vascular ectasia: argon plasma coagulation using ERBE VIO APC™ machine (Erbe Elektromedizin GmbH, Tübingen, Germany) and argon gas flow 1 L/min at a 30 W power setting
5. Peptic ulcer with active bleed or non-bleeding visible vessel: endoscopic injection of adrenaline (1:10000 dilution) in 4 quadrants of ulcer along with endoscopic application of Instinct™ Endoscopic Hemoclip (Cook Medical, Bloomington, IN, USA)
6. Peptic ulcer with adherent clot: endoscopic injection of adrenaline (1:10000 dilution) in 4 quadrants of ulcer
7. Peptic ulcer with flat spot or clean base: no endotherapy

Pharmacotherapy administered to these patients was as follows:

1. Esophageal varices: intravenous injection of terlipressin 2 mg bolus, followed by 1 mg 6 hourly for 5 days OR intravenous injection of octreotide 100 mcg bolus, followed by 50 mcg/h infusion for 5 days
2. Peptic ulcer with active bleed or non-bleeding visible vessel or adherent clot: intravenous injection of pantoprazole 80mgbolus followedby8mg/h continuous infusion for72 hours
3. Peptic ulcer with flat spot or clean base: pantoprazole 40 mg PO once daily for 8 weeks

STATISTICAL ANALYSIS

Data was entered into Microsoft excel data sheet and was analyzed using SPSS 22 version software. Categorical data was represented in the form of Frequencies and proportions. Chi-square test or Fischer's exact test (for 2x2 tables only) was used as test of significance for qualitative data. Continuous data was represented as mean and standard deviation. Independent t test was used as test of significance to identify the mean difference between two quantitative variables

RESULTS

In this retrospective study, we analysed two thirty consecutive patients diagnosed with gastrointestinal bleeding, one seventy-eight patients (77.4%) patients were male and fifty-two patients (22.6%) were female, mean age of presentation was 49.10 years, the youngest age at presentation was 16 years and the oldest patient in our present study was 87 years. Most of the patients, one seventy-three (75%) were between the age group of 31-70 years. Melena was the most common symptom, one eighty-five (80.4%) out of the 230 patients had melena. One hundred and eight (47%) of the patients had hematemesis, vomiting in one hundred and three (44.8%), weight loss was noted in thirty (13.0%), and haematochezia in twelve (5.2%) patients.

History of chronic alcohol intake was noted in ninety three (40.4%) and smoking in sixty five (28.3%), medication history depicted that sixteen (6.92%) patients were on NSAIDS; fifteen (6.49%) patients were on anti-platelet drugs, five (2.1%) patients were on steroids, one (0.4%) patient was on Newer oral anticoagulants. Among 230 patients, chronic liver disease was present in seventy six

(33.0%) patients, Fifty one (22.2%) had diabetes mellitus, forty (17.4%) had hypertension, chronic kidney disease in twelve (5.2%) and Ischemic heart disease in twelve (5.2%) patients. In patients with PUD related bleed, on multivariate analysis the risk factors like intake of NSAID, anti-platelet and smoking reached statistical significance and in portal

Age	49.10+ 16.25
Gender-male	173(77.4%)
Male to Female	3.42:1
Symptoms	
Melena	185(80.4%)
Hematemesis	108(47%)
Dyspepsia	71(30.9%)
Weight loss	30(13%)
Hematochezia	12(5.2%)
Vomiting	103(44.8%)
Co-morbid illness	
Chronic Liver disease	76(33%)
Type II Diabetes Mellitus	51(22.2%)
Hypertension	17(7.4%)
Ischemic Heart Disease	12(5.2%)
Chronic Kidney disease	12(5.2%)
Chronic Pancreatitis	4(1.7%)
Risk factors with statistical significance	
Variceal bleeding- Presence of Chronic liver disease	p value <0.001
Non-variceal bleeding- smoking, intake of NSAID and antiplatelets	p value <0.001
Time For Endoscopy from the onset of symptoms	
<12 hours	34(14.8%)
12-24 hours	74(32.2%)
>24-48 hours	81(35.2%)
>48-72 hours	32(13.9%)
>72 hours upto 5 days	9(3.9%)
Endoscopic Diagnosis	
Peptic ulcer disease	93(40.4%)
Variceal bleeding	86(37.4%)
Mallory Weis tear	7(3%)
Reflux oesophagitis	8(3.5%)
Hemosuccus Pancreas	5(2.2%)
Post ERCP bleed	6(2.6%)
Angioectesia	3(1.3%)
Gastro-oesophageal malignancy	5(2.2%)
No cause found	17(7.4%)
Endoscopic Haemostasis	
No intervention done	98(42.6%)
Endoscopic variceal ligation	65(28.3%)
Endoscopic Sclerotherapy using Sclerosant	9(3.9%)
Endoscopic Sclerotherapy+Glue injection	1(0.4%)
Endoscopic Glue Injection	9(3.9%)
Adrenaline injection and Hemoclip application	30(13%)
Endoscopic Adrenaline injection	12(5.2%)
Argon photo coagulation	4(1.7%)
Rate of Rebleeding and mortality	
Within 24 hours	6(2.6%)
Within 48 hours	11(4.8%)
Mortality within 5 days	7(3%)
Enteroscopy	
Distal Duodenal (D4) ulcer with bleed	
Jejunal Polyps	
Jejunal Pseudopolyps and Stricture-Crohn's disease	
Jejunal Ulcers	
Mid-Jejunal polypoid ulcerated lesion-GIST	
Distal Jejunal mass lesion-GIST	
Jejunal strictures	
Normal visualised mucosa	

Table-1: Profile of patients enrolled in the study

hypertension related bleed presence of cirrhosis was statistically significant compared to non-cirrhotic portal hypertensive bleed.

Time for endoscopy ranged from <12 hours to >72 hours, out of which in thirty-four (14.8%) was carried out within <12 hours, 74 (32.2%) was carried out within 12 to 24 hours, eighty-one (35.2%) was carried out within 24 to 48 hours, thirty-two (13.9%) was carried out within 48 to 72 hours and 9 (3.9%) in >72 hours.

On Endoscopy, seventy-four (32.2%) had esophageal varices and portal hypertension, forty-three (18.7%) had gastric ulcer, three (1.3%) had angioectasia, five (2.2%) hemosuccus pancreas, six (2.6%) had post ERCP bleed, fifty (21.7%) had duodenal ulcer, eight (3.5%) had reflux esophagitis, seven (3.0%) had Mallory weis tear, four (1.7%) had esophageal and gastric varices, eight (3.5%) had gastric varices, four (1.7%) had carcinoma stomach, one (0.4%) had carcinoma oesophagus. No lesions were identified in seventeen (7.4%) patients, out of whom 8 patients agreed for further investigations and patients were subjected to single balloon enteroscopy (SBE). On SBE 1 patient had distal duodenal ulcer, 6 patients had jejunal lesion as described in the table-1 and in 1 patient no lesion was identified even on contrast enhanced computed tomography.

Terlipressin was started in forty nine (21.3%) patients, octreotide was started in two (0.9%) and PPI was started in eighty one (35.2%) patients. Endoscopic haemostasis was achieved by endoscopic variceal ligation in sixty five (28.3%), dual therapy (inj.adrenaline 1:10,000 dilution + hemoclip application) in thirty (13%), inj. adrenaline (1:10,000 dilution) alone was used in twelve (5.2%), and by endoscopic sclerotherapy (sclerosant injection) in nine (3.9%), endoscopic glue injection was done in nine (3.9%) and no interventions was done in ninety eight (42.6%) patients.

Re-bleeding after endoscopic treatment was noted in six (2.6%) patients within 24 hours, and eleven (4.8%) patients had re-bleeding within 72 hours, surgical intervention/ interventional radiology assisted haemostasis was achieved in 5(2.2%). Mortality within 5 days of endoscopic treatment was noted in 7 (3.0%) patients.

DISCUSSION

In our study, patients were between the age group of 16 to 87 years. The mean age of patients in our study was 49.10 years, which is similar to the study from eastern India[11], but lesser than western studies.[12] Incience of upper G.I bleeding was higher in male patients (male: female ratio 3.42:1) which is similar to Indian and Western studies.[10,12] The most common clinical presentation in the present study was melena which was present in 80.4%, followed by hematemesis 47%, and 28.3% patients presented with both hematemesis and melena. It was found that the most common etiology for upper G.I bleed in our study was peptic ulcer disease (40.4%) patients, followed by variceal bleeding/portal hypertension related bleeding (37.4%) which is similar to the study by Parvez M et al[8] and data from the west where PUD related bleed is common than variceal/portal hypertensive bleed, however in study by Mahajan P et al and Banerjee A et al portal hypertension related bleeding was the commonest cause of bleeding.[7,14] Increasing age (>50 years), significant alcohol intake and presence of cirrhosis was associated with higher portal hypertensive bleed, and in PUD related bleed, age >46 years, smoking, intake of NSAID and anti-platelets were associated with increased bleeding risk. Chronic liver disease was the commonest co-morbidity (33%), followed by Diabetes mellitus (22.2%) similar to study by Parvez M et al.[8]

Patients were treated according to institution protocol, PPI bolus dose and infusion was started in almost all the patients (91.21%) patients with PUD related bleeding, Terlipressin was commonly used drug (57%) in patients with variceal bleeding and octreotide was used in two patients, 15% patients with variceal bleeding patients did not receive terlipressin or octreotide because of the contraindication. EVL (87.8%) was the commonly used technique in case of esophageal variceal bleeding and dual therapy (Inj adrenaline 1:10,000 and Hemoclip application) was the commonly used technique for achieving hemostasis in patients with non variceal bleed, this is similar to study by Banerjee A et al.[14] Rockall score was predictive of rebleeding within 24 hours, however there was no correlation between Rockall score and rebleed within 72 hours and mortality within 5 days in our study. Short-term mortality (< 5 days) was 3% in our study, which is similar to study by Banerjee A et al in which overall 5 day mortality was 3.2%. Among the patients with symptoms of upper G.I bleed, no lesions were identified on upper G.I endoscopy, however in patients who underwent further evaluation, lesion was identified in distal duodenum and jejunum 87.5% of patients. Overall the need for surgery/intervention radiology assisted hemostasis in our study (2.2%) was slightly lower than the study by Banerjee A et al. In multivariate analysis no factors were predictive of mortality.[14]

CONCLUSION

The present study reported peptic ulcer disease as the most common cause of upper GI bleeding, followed by portal hypertension related bleeding. The most common endoscopic lesions reported were esophageal varices, followed by duodenal ulcer. Upper G.I endoscopy is an important modality in both diagnosis and therapy in upper G.I bleed, concomitant medical and Endoscopic therapy may reduce mortality, morbidity and also the need for surgery/ interventional radiology assisted hemostasis.

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