International Surgery Journal
Bansod AN et al. Int Surg J. 2021 Feb;8(2):631-636
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20210375

Original Research Article

A study of upper gastrointestinal endoscopy in management of acute upper gastrointestinal bleed

Atish N. Bansod*, Amarsingh Shingade, Sarvagya Mishra

Department of Surgery, Indira Gandhi Government Medical College, Nagpur, Maharashtra, India

Received: 22 October 2020
Revised: 24 December 2020
Accepted: 04 January 2021

***Correspondence:**
Dr. Atish N. Bansod,
E-mail: atish6267@gmail.com

ABSTRACT

Background: Upper gastrointestinal bleeding (UGIB) is life threatening emergency that remains a common cause of hospitalization worldwide. In spite of tremendous advancement in management of upper gastrointestinal bleeding (UGIB) over past two decades, it carries considerable mortality, morbidity. The present study was undertaken to know the clinical profile, endoscopic profile, intervention, outcome and mortality of upper GI bleed.
Methods: A total of 110 patients of UGIB were evaluated over a period of 30 months for etiology of UGIB like peptic ulcer, variceal bleeding, gastritis, Barrett's esophagus and malignancy. Therapeutic Intervention (Band ligation, glue injection, clipping etc.) was done as required on case to case basis.
Results: Hematemesis was the most common symptom with 62(56.36%) patients. 85(77.27%) patients were presented during first episode of their bleeding. Esophageal varices 50 (45.45%) was the most common diagnosis and the most common past history was alcohol intake 48 (43.63%). 55 (50%) patients required only medical (Pharmacological) management and 50 (44.54%) patients require endoscopic management. 102 (92.72%) were improved and subsequently discharged while 8 (7.27%) patients expired during the course of treatment.
Conclusions: Endoscopic examination is an important modality in both diagnosis and managing UGIB and helps to reduce morbidity, mortality and also need for surgery of the disease significantly.

Keywords: Endoscopy, Hematemesis, Upper gastrointestinal bleeding (UGIB), Varices

INTRODUCTION

Upper gastrointestinal bleeding is considered as gastrointestinal (GI) hemorrhage from a source proximal to the ligament of Treitz.[1] It is a common gastrointestinal emergency presenting as hematemesis and/or melena and rarely as hematochezia. It is a globally prevalent problem affecting both the genders and people of all ethnic groups. The incidence of upper gastrointestinal hemorrhage varies between 50 to 150/ 1,00,000 population.[2] Bleeding from the upper gastrointestinal tract is approximately five times more common than the lower gastrointestinal tract.[2] Common causes of upper GI hemorrhage are esophageal varices, peptic ulcer disease, erosive gastritis, Mallory Weiss tear, and uncommon causes include malignancy, angiodysplasia, Dieulafoy's lesion.[3] Patients can be stratified as having either variceal or non-variceal sources of upper GI hemorrhage as these two have different treatment algorithms and prognosis.

There has been tremendous advancement in pharmacological and endoscopic interventions in the management of upper GI bleeding over the past two decades. Despite advancements in diagnosis and therapeutic intervention mortality from acute upper G.I. bleed remains 10-15%.[4]

Effective treatment depends on proper identification of the source of bleeding and prompt administration of therapy. Gastrointestinal endoscopy remains the

diagnostic and therapeutic procedure of choice for upper gastrointestinal bleeding.[5] Upper GI endoscopy (UGD) is the preferred investigative procedure of UGIB because of its accuracy in bleeding point identification (if done within 24 hours of hematemesis, OGD scopy can identify a source in 80-85% cases), low complications rate, and its role as a therapeutic intervention.[6] The present study was undertaken to know the endoscopic profile, intervention, and outcome of intervention and mortality of upper GI bleed. Source in 80-85% cases), low complications rate, and its role as a therapeutic intervention, and outcome of intervention and mortality of upper GI bleed.

METHODS

It was a prospective study conducted in the Department of General Surgery, Indira Gandhi Government Medical College, Nagpur from June 2016 to November 2018 in which 110 patients of Upper GI bleeding (UGIB) were evaluated. Sample size was considered by including all patients admitted in the hospital in the mentioned duration with the history of hematemesis and /or Melena. Informed written consent was taken from the patient (or legally acceptable relative). All adult patients and pediatric age group patients above the age of 5 years with a history of acute upper GI bleed were part of the study while children below the age of 5 years and immunocompromised patients were excluded from the study. Detailed history regarding the nature of bleeding, symptoms of nausea, vomiting, dysphagia, regurgitation, heartburn, abdominal pain, appetite, weight gain or loss, recent changes in bowel habits before the bleed, ingestion of drugs over the preceding 48 hrs and frequent ingestion over the preceding months and habit of consumption of alcohol. After a general examination, the abdomen was examined for any area of tenderness, palpable masses, ascites, and rectal examination was also done. After initial resuscitation, hemodynamic stabilization of patient and correction of blood loss, and electrolyte imbalance patient were subjected to upper G.I. endoscopy. In the study, the upper GI endoscope used was PENTAX EPK-100p. Local anesthesia was achieved using a spray of 10% xylocaine spray. The scope was introduced through the mouth to pass the upper esophageal sphincter into the esophagus, then the stomach, and finally the duodenum. The fundus of the stomach was examined by retroversion of the scope.

When a gastric ulcer or any other suspicious lesion was seen, a biopsy was taken for histopathology studies. Endoscopic gastritis was judged to be present if mucosal erosion, hyperemia, ulcers were seen in the stomach. Besides, the presence of red stripes especially in the antrum was considered an endoscopic sign of gastritis. Barrett's esophagus was judged to be present if the typical macroscopic appearance of the pale epithelium was present in the distal esophagus. Any lesion whether ulcerative or growth with irregular margins and surface were regarded as suspicious for malignancy and biopsy was taken for histological study. Therapeutic Intervention (Band ligation, glue injection, clipping, etc.) was done as required on case to case basis.

RESULTS

Hematemesis was the most common symptom at the time of initial presentation of UGIB with 62 (56.36%) patients followed by patients with both hematemesis and melena concomitantly 38 (34.54%). 10 (9.09%) patients were presented with melena only, none of the patients present with hematochezia (Table 1).

Table 1: Clinical presentation.

Clinical presentation	No. of patients	Percentage
Hematemesis	62	56.36
Malena	10	9.09
Hematemesis+Malena	38	34.54
Total	110	100

A total 85 (77.27%) patients were presented during the first episode of their bleeding, while 25 (22.72%) patients in our study had the previous history of UGIB. Less number of recurrent bleeding cases found may be due to adequate treatment during the first time (Table 2).

Table 2: Nature of bleeding/number of attacks.

Nature of bleeding	No. of patients	Percentage
Acute /First attack	85	77.27
Recurrent attack	25	22.72
Total	110	100

Figure 5 and 6 showing Esophageal varices 50 (45.45%) found to be the most common diagnosis followed by peptic ulcer disease 40 (36.35%) in which duodenal ulcer was seen in 25 (22.72%) cases and gastric ulcer in 15 (13.63%). Erosive gastritis and Mallory Weiss tear were seen in 7.27% and 6.36% patients respectively (Table 3). Figure 1 and 2 showing esophageal carcinoma and carcinoma stomach respectively on endoscopy. (2.72%). Figure 7 showing Esophagitis (1.81%).

Table 3: Endoscopic diagnosis of cases.

Endoscopic finding	No of patient	Percentage
Esophageal varices	50	45.45
Duodenal ulcer	25	22.72
Gastric ulcer	15	13.63
Erosive gastritis	8	7.27
Dieulafoys lesion	0	0
Esophagitis	2	1.81
Mallory Weiss tear	7	6.36
Malignancy	3	2.72

A total of 50 patients were diagnosed with esophageal varices, in that 5 (10%) patients were found to have grade-I and II esophageal varices and 45 (90%) patients found to have grade-III and IV varices. In peptic ulcer disease, 7 (17.5%) patients found to have grade-I, 25 (62.5%) patients found to have grade-II and 8 (20%) patients found to have grade-III Forrest classification.

The most common history associated with UGIB was alcohol intake as 48 (43.63%) patients had a history of alcohol intake. 12 (10%) patients had a history of NSAIDs intake, 20 (18.18%) patients had a history of acid peptic disease, 32 (29.09%) patients had a history of smoking, 8 (7.2%) patients had a history of diabetes mellitus, 10 (9.09%) patients had a history of hypertension and 26 (23.63%) patients had no antecedent positive history (Table 4).

Table 4: Comorbidities related to disease.

History	No. of patients (%)
12	10.4
20	18.18
48	43.63
32	29.09
8	7.2
10	9.09
26	23.63

20 (18.18%) patients' hemoglobin was above 11 gm /dl, 22 (20%) patients' hemoglobin was between 9-11gm /dl and this patient does not need any blood transfusion. 46 (41.01%) patients' hemoglobin was in the range of 7-9 gm /dl and 22 (20%) patients' hemoglobin level was less than 7 gm/dl. Patients having hemoglobin below 9 gm /dl required blood transfusion among them 46 (41.81%) patients were transfused with 1-2 whole blood /packed red cells (PRC), 12 (10.09%) patients were transfused with 3-4 packed red cells (PRC) and 10 (9.09%) patients were transfused with more than 4 blood products (Table 5).

Table 5: Haemoglobin of the patient presented with acute UGIB.

Haemoglobin level	No of patients	Percentages
>11	20	18.18
9-11	22	20
7-9	46	41.01
<7	22	20

Table 6: Timing of endoscopy vs detection of bleeding points.

Timing	No. of cases	Active bleeding Percentage
Within 24 hours	42	83.33
24-48 hours	46	65.21

In this study, when endoscopy was done within 24 hours of UGIB, 83.33% were diagnosed with active bleeding as a finding. It reduced to 65.21% when endoscopy was done within 24- 48 hours of an episode of UGIB. It further reduced to 36.36% when endoscopy was done after 48 hours post UGIB (Table 6).

Figure 3 showing endoscopic band ligation and Figure 4 showing endoscopic clip ligation. After 48 hours 55 (50%) patients only required medical management, 45 (40%) patients were treated with endoscopic band ligation along with medical management, 5 (4.45%) patients were treated with endoscopic clip application along with medical management and 5 (4.45%) patients required surgical intervention (Table 7).

Table 7: Various treatment modalities have been given to the patients.

Treatment	Patients	Percentage
Medical (pharmacological management only)	55	50
Endoscopic band ligation with medical treatment	45	40
Endoscopic clip application with medical treatment	5	4.54
Surgical intervention	5	4.54

As far as the outcome is concerned 102 (92.72%) were improved and subsequently discharged, 8 (7.27%) patients expired during treatment despite all measures in this study (Table 8).

Table 8: Outcome inpatient admitted with UGIB.

Outcome	Number of patients	Percentage
Discharged/improved	102	92.72
Expired	8	7.27
Total	110	100

Figure 1: Esophageal carcinoma.

Figure 2: Carcinoma Stomach.

Figure 3: Endoscopic band ligation.

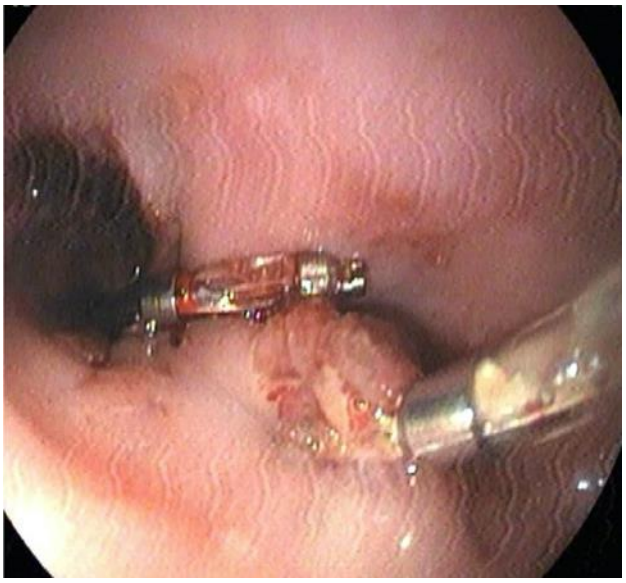

Figure 4: Endoscopic clip application.

Figure 5: Esophageal varices grade III.

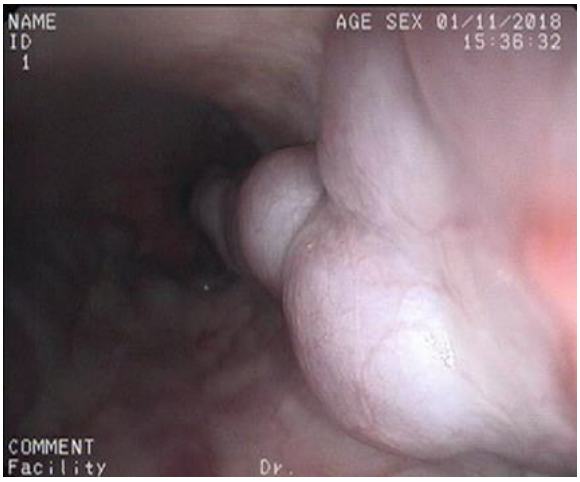

Figure 6: Esophageal varices.

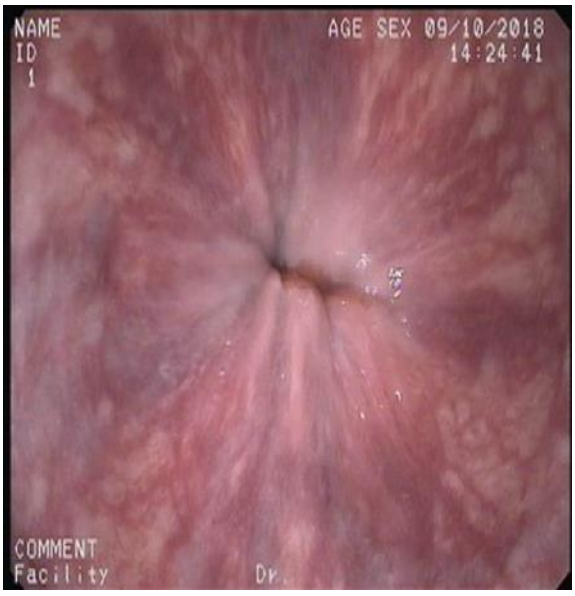

Figure 7: Esophagitis.

DISCUSSION

Hematemesis is a frightening symptom and maximum patients in this study presented early with hematemesis. It was the commonest presenting symptom. Anand et al 2014, in their study of UGIB observed hematemesis in 27.19 % patients, isolated melena in 12.28 % patients, both hematemesis and melena in 59.64 % of patients.[7] While Pranaya Kumar et al 2015 to 2016, found hematemesis in 17 % of patients, isolated melena in 63 % patients, both hematemesis and melena in 20 % of patients.[8] We found fewer recurrent bleeding cases which may be due to the first attack being adequately managed to leave negligible chances of recurrent bleed. Maximum patients in this study were secondary to portal hypertension and varices which require repeated endoscopic surveillance and lifelong management. Generally, despite adequate counselling patients are negligent to stop alcohol, smoking, and NSAIDs abuse leading to the incidence of rebleeding. 1st episode of UGIB if managed properly and patients are counseled properly and patients comply with necessarily advised, then chances of recurrent UGIB decreases significantly. Pranaya Kumar et al 2016 found out that 58% of patients presented with a first episode of UGIB and 42% presented with a history of recurrent attack of UGIB.[8] In the present study, we found esophageal varices as the most common cause (45.45%) of UGIB followed by duodenal ulcer (22.72%) and gastric ulcer (13.63%). In the study of Parvez et al 2018 most common cause of UGIB was peptic ulcer (40.05%) followed by esophageal varices (33.8%).[9] Shah et al 2016 found that most common cause of UGIB was esophageal varices (46.3%), followed by Mallory Weiss tear (18.3%) while Deewan et al 2014 stating that most common cause of UGIB was esophageal varices (47.5%) followed by gastric ulcer (19.16%).[10,11]

Overall it has been observed that esophageal varices and peptic ulcer disease are the commonest cause of UGIB with regional variation. In the present study of management of UGIB, it was seen that the most relevant history with UGIB was alcohol (43%) and history of NSAIDs intake and smoking are seen in 10 % and 29 % respectively. History of alcoholism is more in our study in comparison to other studies like Pranaya Kumar et al (2016), were 26% of patients had a history of alcohol intake, one other study conducted by Kashyap et al had a history of alcoholism in only 4.5 % of patients.[8,12] History of NSAIDs abuse was less in our study in comparison to other studies like Pranaya Kumar 2016 where 26 % of patients had a history of NSAIDs abuse and 38.7% of patients had a history of NSAIDs abuse in the study conducted by Kashyap et al 2005.[8,12] History of smoking was more in our study that is 29% of patients had a history of smoking compared to other studies like in Pranaya Kumar et al and Kshayap et al had 11% and 26% respectively.[8,12] In our study, it was seen that, when endoscopy was done within 24 hours of an episode of UGIB, 83.33 % of patients show active bleeding. It reduced to 65.21% when endoscopy was done within 24-48 hours of an episode of UGIB. It further reduced to 36.36 % when endoscopy was done after 48 hours post UGIB. These results are closer to study series of Pranaya Kumar 2016 having 85.7% cases with active bleeding in first 24 hours and 63% cases shows active bleeding when endoscopy was done beyond 24 and up to 72 hours, Spiller R.C. et al 1983 having 85-95% cases in first 24 hours.[8,13] As per our study, we can say that 50% of patients could be managed by medical management only after the endoscopic diagnosis of UGIB and they did not require endoscopic and surgical intervention.

While rest can be managed endoscopically like endoscopic variceal band ligation, hemoclip application. Surgical management like laparotomy with oversewing of bleeding vessels was required only in 4.5% patients. The study conducted by Limboo et al 2013 shows that 58.5% of patients responded to medical management after diagnosis while medical plus endoscopic treatment after endoscopic diagnosis was required in 35.7% patients.[14] After comparison of different studies, it can be seen that finding of the present study with regards to treatment pattern in the form of either medical management or medical plus endoscopic treatment or surgical treatment is nearly comparable with Limboo et al and Anand et al.[7,14] Though it is seen that Limboo et al could manage more patients with medical management only and endoscopic intervention was required in fewer patients as compared to present study while in the study conducted by Anand et al it was seen that medical plus endoscopic treatment was required in more patients as compared to present study because in his study incidence of esophageal varices was more than the finding of present study requiring more endoscopic interventions.[14]

We observed that 92.7% of patients had an uneventful recovery and the mortality rate in the present study is 7.27%. Uneventful recovery was 97.4% in the study of Parvez et al 2018, it was 94.17% in the study of Mahajan et al 2017 and 95.8% in the study of Deewan et al 2014.[9,11,15] Hence it can be said that if patients present early and early endoscopic diagnosis and intervention are done then there is a significant decrease in mortality rate.

A larger sample size would have given a better incidence of upper GI bleed which is a limitation of the study.

CONCLUSION

Hematemesis is the commonest mode of presentation of UGIB and usually maximum patients present to the hospital with the first episode of UGIB. Esophageal varices and peptic ulcer disease are the commonest cause of UGIB overall with anemia as the commonest clinical sign in which more than half of patients require blood transfusion as a part of treatment. Early presentation and emergency UGI endoscopy reduce morbidity and mortality of the disease. Medical management is still the rule which should be supplemented with therapeutic

endoscopic intervention in the form of endoscopic variceal band ligations for esophageal varices, endoscopic clip application for bleeding gastric and duodenal ulcer. Surgical intervention requires only in few cases. Endoscopic examination if done earlier within 24-48 hours of the onset of UGIB directs a targeted treatment towards the cause of UGIB and helps to reduce morbidity and mortality of the disease significantly.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee IGGMC Nagpur

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Cite this article as: Bansod AN, Shingade A, Mishra S. A study of upper gastrointestinal endoscopy in management of acute upper gastrointestinal bleed. Int Surg J 2021;8:631-6.