Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: www.saspublishers.com

OPEN ACCESS

Medicine

Etiological Spectrum, Clinical Profile and Prognostic Factors in Non-Variceal Upper Gastrointestinal Bleed

Vipin Goyal[1], Shinu Singla[2*]

[1]Doctorate Of Medicine, Medical Gastroenterology, Sri Aurobindo Medical College & Pg Institute, Indore
[2]Senior Resident Dept. Of Neurology, King George Medical College, Lucknow Uttar Pradesh India

DOI: 10.36347/sjams.2019.v07i06.037 | **Received:** 16.06.2019 | **Accepted:** 26.06.2019 | **Published:** 30.06.2019

***Corresponding author:** Shinu Singla

Abstract **Original Research Article**

Introduction: UGI bleed is defined as bleed occurring proximally to ligament of trietz common emergency presentation accounting for mortality rate of 10%. Worldwide peptic ulcer disease is the commonest cause. ***Material and methods*:** 2-year prospective observational study was performed on 201 patients presenting with hemetemesis. Detailed history, examination and laboratory tests were performed. The statistical analysis of the data was performed. ***Results*:** Out of 201 patients, 125 (62.4%) patients were having varices and 76 (37.6%) had no varices. Mean age of the non-variceal population was 43.58years. Patients at presentation having tachycardia and hypotension had significantly increased risk of mortality in non-variceal patients (p=0.012). Patients requiring endoscopic intervention had significantly increased mortality (p=0.001). Patient having rockall score of ≥3 had significantly increased mortality in non-variceal patients. ***Conclusion*:** We found variceal bleed to be the commonest cause of hemetemesis. Mean age of the patients having non-variceal bleed was 5th decade. We observed gastritis as the commonest cause of non-variceal bleed. Tachycardia and hypotension on presentation, requiring blood transfusion, rockall score ≥ 3, requiring endoscopic intervention and those who rebleed have poor prognosis.

Keywords: Non-variceal bleed, Rockall score.

INTRODUCTION

Acute upper gastrointestinal (UGI) bleed is defined as the bleed occurring proximally to ligament of trietz [1, 2]. Acute UGI bleed is a common medical emergency with a mortality rate of around 10% [3]. A study in United Kingdom estimated the incidence rate of around 50-150 per 100,000 population. UGI bleed can present as hemetemesis or melena. Hemetemesis is defined as vomitus containing blood while melena is used as the term for the black tarry stools, formed by degradation of the hemoglobin to hematin by the intestinal bacteria. Melena requires > 60 ml of blood leaked proximally to ligament of trietz and requires more than 8 hrs of intestinal transit time [4]. In 80% of patients, UGI bleed is self-limited without specific therapy [1]. The mortality rises to 30-40% in the remaining 20% of the patients who continue to bleed.

Worldwide, peptic ulcer disease is the commonest cause accounting for nearly 50-70% of the cases of UGI bleed, followed by esophageal varices (6-39%), Mallory weiss (2-8%) and drug induced (mostly NSAID). Other causes include neoplasm, gastroduodenal erosions and arteriovenous malformations [5]. Rockall Scoring system is used to predict the mortality and to identify the patients at high risk for rebleed and mortality in non-variceal bleed [6].

MATERIAL AND METHODS

This is a hospital based, prospective observational study done in all patients presenting to emergency with acute upper gastrointestinal bleeding (UGIB) during April 2016 to March 2018. Since the study was an observational study to collect the existing data, no attempt was made to make changes in the existing method of managing these patients and an attempt was made to collect all the available data prospectively. Patients were resuscitated initially followed by history regarding the complaints of the patient were recorded. Clinical examination was done to look for pallor, icterus, pedal edema, splenomegaly, ascites and signs for liver failure. Ryle's tube was

inserted and rectal examination was done to look for melena. Relevant blood investigations were done. Viral markers were done in cirrhotic patients. Radiological investigations like ultrasound, chest x-ray and ct abdomen were done whenever necessary.

In all patients, associated comorbidities were also recorded. Patients diagnosed having non-variceal bleedingwere started on proton pump inhibitor infusion. Blood and blood products were transfused whenever necessary. Upper GI Endoscopy was done using videoscope (Olympus, GIF Type Q 150, and Tokyo, Japan). Endoscopic adrenaline injection and cauterization were applied in bleeding peptic ulcer patients. Patients with recurrent bleeding, not responding to endoscopic treatment was considered for surgery. Any morbidity or mortality occurring in the patients was also recorded. In patients with non-variceal bleed, rockall scoring system was used to predict the prognosis and risk of rebleeding by dividing the patients into two groups i.e. Group I with score <3 and Group II with score ≥3.

Erosion is defined as the mucosal breakage of <5 mm. Ulcer was defined as mucosal disruption of ≥ 5 mm or submucosal extension.Patient having fall of Hb below 7gm/dl was considered for blood transfusion (restrictive strategy).

Study Analysis

Univariate analysis for the associations between clinical parameters and the morbidity and mortality of UGIB was carried out using the $\chi 2$ test or Fisher's exact test for categorical variables. Continuous variables were compared using Student `t` test. A p value < 0.05 was considered statistically significant. Multivariate Analysis with Logistic regression to identify independent parameters was performed and is presented with odds ratio and 95% confidence interval. Statistical analysis was done using SPSS version 17.0.

Results

Study included 201 patients out of which 125 patients were patients having varices and 76 were found to have no varices. The mean age of the non-variceal population was 43.58years. Male: Femaleratio was 1.5: 1 in our study group. Comorbities were seen in about 25 % patients. Blood transfusion was required in one-sixth of the patients while one-tenth patients died. Rebleed was seen in 4% of the patients within 3 months. Two patients had underlying CLD presenting as non-variceal bleed.At presentation, one-third patients have tachycardia and 8% have hypotension during the hospital course. Four percent patients underwent endoscopic intervention (Table 1).

On endoscopy, most common finding seen is gastric hyperemia (43%) followed by esophagitis in one-fourth patients. Most patients having esophagitis have Los Angeles (LA) grade B. Ulcer was seen in one-third of the patients. About 5% patients had underlying malignancy. RUT was positive in 4 (5.2%) (Table 2).

Various mortality factors were observed and analysed in patients with no varices. Comorbidities like diabetes or hypertension were not found to increase mortality (p=0.32 and 0.73, respectively). Patients requiring blood transfusion had significantly increased mortality and the mortality was found to increase with increase in number of transfusions (p=<0.0001). Patients those presented with rebleed within 3 months had significantly higher rate of death during that hospitalization (p=0.01).Patients at presentation having tachycardia and hypotension had significantly increased risk of motality(p=0.002 and p=<0.0001 respectively). Patients requiring endoscopic intervention had significantly increased mortality (p=0.001). 20 patients had rockall score ≥3 of which 7 (35%) died while 56 patients have score <3 of which only 2 (3.5%) patients died. Therefore, it was observed that patient having rockall score of ≥3 had significantly increased mortality in non-variceal patients (Table 3).Gastritis (40%) was the most common diagnosis was made followed by ulcer disease in 33%, duodenitis (7.8%), Mallory weiss (7.8%) and malignancy (5%) (Table 4).

Table-1: Percentage of characteristics in non-variceal bleed patients

MEAN AGE	43.58 years
GENDER	
Male	46 (60.5%)
Female	30 (39.5%)
PRESENTING COMPLAINTS	
MELENA	12 (15.8%)
H/O ALCOHOL INTAKE	9 (11.8%)
H/O NSAIDS INTAKE	19 (25%)
H/O HYPERTENSION	8 (10.4%)
H/O CAD	5 (6.5%)
H/O DIABETES	2 (2.6%)
H/O RA	1 (1.3%)
H/O CKD	1 (1.3%)
CIRRHOTICS	2 (2.6%)

BLOOD TRANSFUSION REQUIRED	13 (17.1%)
TACHYCARDIA	25 (32.9%)
HYPOTENSION	6 (7.9%)
MORTALITY	9 (11.8%)
ENDOSCOPIC INTERVENTION	3 (3.9%)
REBLEED	3 (3.9%)

Table-2: Endoscopic findings in the non-variceal bleed patients

ENDOSCOPY FINDINGS	**No. (%age)**	
ESOPHAGITIS	**19**	**25%**
LA GRADE A	6	31.6%
LA GRADE B	7	36.8%
LA GRADE C	4	21.5%
LA GRADE D	2	10.5%
GASTRITIS (Hyperemia)	33	43.4%
DUODENITIS (Hyperemia)	7	9.2%
MALLLORY WEISS	6	7.8%
ESOPHAGEAL ULCER	8	10.5%
GASTRIC ULCER	16	21.1%
DUODENAL ULCER	8	10.5%
ESOPHAGEAL MALIGNANCY	1	1.3%
GASTRIC MALIGNANCY	2	2.6%
DUODENAL MALIGNANCY	1	1.3%
GAVE	1	1.3%
GASTRIC POLYP	1	1.3%

Table-3: Mortality in relation to various parameters

PARAMETERS	**MORTALITY**		***p*** **VALUE**
	PARAMETER PRESENT	**PARAMETER ABSENT**	
REQUIRED BLOOD TRANSFUSION	9/13	0/63	<0.0001
DIABETES	1/2	8/74	0.32
HYPERTENSION	1/8	8/68	0.73
REBLEED	3/3	6/73	0.01
TACHYCARDIA	8/25	1/51	0.002
HYPOTENSION	5/6	4/70	<0.0001
PATIENTS REQUIRING ENDOSCOPIC INTERVENTION	2/3	7/73	0.001
ROCKALL SCORE≥ 3	8/14	1/62	0.001

Table-4: Final diagnosis

FINAL DIAGNOSIS	**No.**	**%age**
GASTRITIS	31	40.3
GASTRIC ULCER	11	14.3
DUODENAL ULCER	10	13
DUODENITIS	6	7.8
MALLORY WEISS	6	7.8
CORROSIVE INGESTION	4	5.2
ESOPHAGEAL ULCER	4	5.2
ESOPHAGEAL CARCINOMA	1	1.3
DIEULAFOY'S LESION	1	1.3
HEMOSUCCUS PANCREATICUS	1	1.3
GIST	1	1.3
GASTRIC MALIGNANCY	1	1.3
IDIOPATHIC	1	1.3

DISCUSSION

UGIB is one of the commonest medical emergencies seen. Despite the advancements in the treatment of the gastrointestinal bleed, the mortality still remains high. So we have focused on the clinical parameters that increase the risk of death and are early markers of poor prognosis.

Our study observed male predominance in ratio of 1.53: 1 which corresponds to the finding of the study done by Mahajan et al in which male to female ratio was 1.6: 1 while the male predominance was seen to be as high as 6:1 in a study done by Singh and Panigrahi from Orissa [7, 8]. In our study, melena as presenting complaint in 15.8% patients which slightly higher than 10.94 % observed in the study done by Mahajan *et al.*[7]. In a studies done by Singh-Panigrahi and Bambha *et al*. melena was presenting complaint in 95% and 19%, respectively [8,9]. We observed tachycardia was present in one-third patients and hypotension in 8% patients. Blood transfusion was required in one-sixth of the patients in our study population while a study done by Al-jagbeer *et al*. in both variceal and non-variceal bleed patients, required blood transfusion in 49% when using restrictive strategy [10]. History of (H/O) NSAID intake was present in 25 % patients in our study. A study by Baradaran *et al*. observed H/O NSAID intake was present in 43% in UGIB patients [11].

In our study, variceal bleeding was the commonest cause of hemetemesis (62.2%), a finding also seen in study done by Mahajan *et al*. where hemetemesis was seen in 53.6% patients [7]. A study done by Panigrahi and Mohanty in eastern India found that peptic ulcer disease (41%) was the commonest cause of UGIB [12]. Mortality was observed in 11.8% of the patients in our study while studies which included both variceal and non-variceal bleed patients done by Mahajan *et al*. and Chalasani *et al.* observed 5.83% and 14.2%mortality rate, respectively [7,13]. We observed that 5% patients had underlying malignancy in our study while it was about 10.71% in a study done by Baradaran *et al*. [11]. We observed rebleeding rate of 4% in non-variceal bleed patients while a study by Baradaran *et al*. observed rebleeding rate of 34.5% in patients with UGIB [11].

We observed various clinical parameters affecting mortality in non-variceal bleed patients. We observed mortality was significantly higher in the patients requiring blood transfusion as compared to those who don't in our study (p=<0.0001). We also observed mortality was significantly higher in patients developing tachycardia and hypotension as compared to those not developing tachycardia or hypotension (p=0.002 and p=<0.001, respectively).We observed that patients having rockall score of ≥ 3 had significantly higher than those having score 0-2 (p=0.001).

CONCLUSION

We found variceal bleed to be the commonest cause of hemetemesis. Mean age of the patients having non-variceal bleed was 5th decade andnon-variceal bleed was more common in males. We observed gastritis constituted majority of the cause of non-variceal bleed patients. Tachycardia and hypotension on presentation, requiring blood transfusion, rockall score ≥ 3, requiring endoscopic intervention and those who rebleedhave poor prognosis.

REFERENCES

1. Fallah MA, Prakash C, Edmundowicz S. Acute gastrointestinal bleeding. Med Clin North Am. 2000; 84(5):1183–208.
2. Laine L. Acute and chronic gastrointestinal bleeding. In: Sleisenger MH, Fordtran JS, Scharschmidt BF, eds. Sleisenger and Fordtran's Gastrointestinal and Liver Disease. 9th ed. Philadelphia, Pa: WB Saunders. 2000:205-10.
3. Yavorski RT, Wong RK, Maydonovitch C, Battin LS, Furnia A, Amundson DE. Analysis of 3,294 cases of upper astrointestinal bleeding in military medical facilities. Am J Gastroenterol. 1995; 90:568–73.
4. Rockall TA, Logan RF, Devlin HB, Northfield TC. Incidence of and mortality from acute upper gastrointestinal haemorrhage in the United Kingdom. Bmj. 1995 Jul 22;311(6999):222-6.
5. Strate LL. Lower GI bleeding: epidemiology and diagnosis. Gastroenterol Clin North Am. 2005;34:643-64.
6. Rockall TA, Logan RF, Devlin HB, Northfield TC. Risk assessment after acute upper gastrointestinal haemorrhage. Gut.1996; 38: 316-21.
7. Mahajan P, Chandail V S. Etiological and endoscopic profile of middle aged and elderly patients with upper gastrointestinal bleeding in a Tertiary Care Hospital in North India: A retrospective analysis. J Mid-life Health 2017;8:137-41.
8. Singh SP, Panigrahi MK. Spectrum of upper gastrointestinal hemorrhage in coastal Odisha. TropGastroenterol. 2013;34:14-7.
9. Bambha K, Kim WR, Pedersen R, Bida JP, Kremers WK, Kamath PS. Predictors of early re-bleeding and mortality after acute variceal haemorrhage in patients with cirrhosis. Gut. 2008 Jun 1;57(6):814-20.
10. Al-Jaghbeer M andYende S. Blood transfusion for upper gastrointestinal bleeding: is less many again? Crit Care. 2013; 17(5): 325.
11. Baradaran F , Norouzi AR, Tavassoli S, Baradaran A, Roshandel GR. Factors Associated with Outcome in Patients with Acute Upper Gastrointestinal Bleeding in a Tertiary Referral Center in Northern Iran. Middle East J Dig Dis. 2016;8:201-5.
12. Panigrahi PK, Mohanty SS. A study on endoscopic evaluation of upper gastrointestinal bleeding. J Evid Based Med Healthc 2016;3:1245-52.
13. Chalasani N, Kahi C, Francois F, Pinto A, Marathe A, Bini EJ, Pandya P, Sitaraman S, Shen J. Improved patient survival after acute variceal bleeding: a multicenter, cohort study. The American journal of gastroenterology. 2003 Mar 1;98(3):653-9.