



CLINICAL PROFILE OF NON-VARICEAL UPPER GASTROINTESTINAL BLEEDING IN NORTH-EAST INDIA WITH SPECIAL REFERENCE TO SEVERITY OF BLEEDING

Gastroenterology

Ankur
Bhattacharyya

Post Graduate Trainee, Department of Medicine, Assam Medical College, Assam

Subhalakshmi Das* MD, Associate professor, Department of Medicine, Assam Medical College and hospital, Assam *Corresponding Author

ABSTRACT

Background: Upper gastrointestinal bleeding (UGIB) is a common life threatening emergency with an overall mortality rate around 10%. Complete Rockall Score is designed to identify patients who are at great risk for adverse outcome. The aim of this study was to study the clinical profile and severity assessment of non-variceal upper gastrointestinal bleeding.

Methods: This study was an observational study conducted where 303 cases with age more than or equal to 13 years were selected. Severity of bleeding was assessed with complete Rockall Scoring. The statistical significance was fixed at 5% level (p value <0.05)

Results: The mean age of the study was 46.56 ± 16.40 years with male: female ratio 3.21: 1. Majority of patients (54.79%) presented with both hematemesis and melena. The most common lesion was duodenal ulcer (37.62%). Forrest grade III ulcers were found in maximum of patients (46.60%). The mean blood transfusion was 1.26 ± 1.27 units. The mean Rockall score was 2.74 ± 1.94 . Out of 16 patients expired, 37.50% belonged to moderate and 62.50% belonged to high risk Rockall all group. Statistically significant correlation was observed (p value <0.001).

Conclusion: Acute UGI bleeding is a medical emergency and Rockall score helps in anticipating prognosis. Rockall scoring system should ideally be used at the time of hospitalization for appropriate and cost effective hospital management.

KEYWORDS

Rockall, non-variceal, upper gastrointestinal bleed

INTRODUCTION

Upper gastrointestinal bleeding (UGIB) is a common life threatening emergency which accounts for over 507,000 annual hospital admissions accounting for over 4.85 billion annual health expenditure.¹ In spite of the development of newer interventions, the overall mortality rate remains around 10% in most studies.² Endoscopic study done within the first 24 hours of bleeding has shown to be the most reliable investigation which can identify the source which helps in stratifying the patients into different risk groups.³ Upper gastrointestinal bleeding is defined as hemorrhage that originates proximal to the ligament of Treitz. Clinically, it can present as hematemesis (vomiting of blood) or melena (passage of black, tarry, semi solid stools by the presence of altered blood) or both.⁴ The most common cause of upper gastrointestinal bleeding is peptic ulcer disease which includes duodenal ulcer (DU) and gastric ulcer (GU). Several scoring tools have been developed to stratify severity of bleeding to identify patients who are at great risk for mortality and rebleeding.⁴ The most commonly used post endoscopy scoring system is the Complete Rockall Score designed to combine information such as the patient's age, occurrence of shock assessed from systolic blood pressure records and pulse rate, presence and severity of co-morbid conditions, and stigmata of hemorrhage.⁵ Despite non-variceal upper gastrointestinal bleeding being an important cause of mortality in the world including India, not many studies has been conducted specially in this part of the country. The aim of this study was to study the clinical profile and severity assessment of non-variceal upper gastrointestinal bleeding.

METHODS

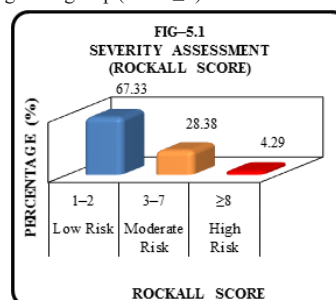
This study was an observational study conducted during the period of one year, from June 2018 to May 2019 which was carried out after obtaining approval from Institutional Ethics Committee. A total of 303 cases with age more than or equal to 13 years admitted in Department of Medicine, Assam Medical College and Hospital, Dibrugarh presenting with hematemesis, melena or both were selected. Patients with portal hypertension with or without liver diseases were excluded. Melena was considered when patients presented with passage of black tarry foul smelling semisolid stool and hematemesis when there was vomiting of fresh or altered blood or both. Immediately following admission vital signs of all patients were assessed and necessary resuscitation was done by maintaining airways, posture, replacing the initial blood loss by isotonic saline or synthetic colloid till the blood was available for transfusion.

After stabilizing the patient hemodynamically, they were subjected to thorough history taking and complete physical examination to find out the risk factors, etiology, clinical presentation and to assess the severity of bleeding. Upper gastrointestinal endoscopy was performed in Department of Medicine at the endoscopy unit using Pentax UGI

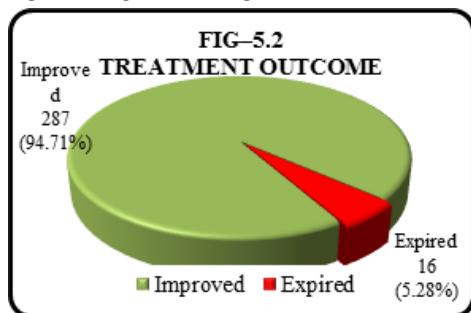
Endoscope. Assessment of severity of bleeding was assessed with the help of Rockall Scoring. Maximum score of 11 can be obtained from Rockall system. Patients were categorized on the basis of this Score and assigned to 3 groups: low risk group: a score of ≤ 2 , moderate risk group: a score of 3-7, high risk group: a score of ≥ 8 . For all analyses, the statistical significance was fixed at 5% level (p value <0.05).

RESULTS

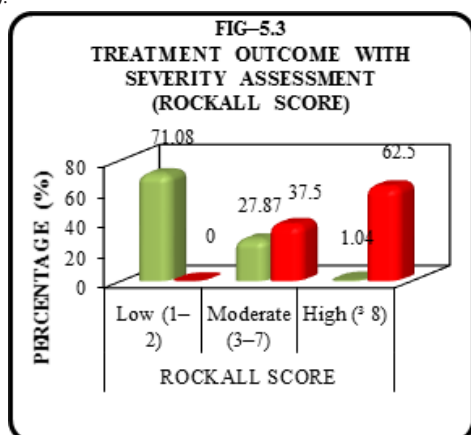
The mean age of the study population was 46.56 ± 16.40 years with male to female ratio being 3.21: 1. Majority of patients (54.79%) presented with both hematemesis and melena at the time of admission whereas 37.29% patients presented with melena and 7.92% presented with hematemesis alone. Out of 52 patients 17.16% patients presented with shock, 82.69% presented with both hematemesis and melena. In 52.48% patients upper gastrointestinal endoscopy was done within 24 hours. The most common lesion was duodenal ulcer found in 114 patients (37.62%) followed by gastric ulcer in 85 patients (28.05%), gastric erosion in 66 patients (21.78%), duodenal erosion in 12.87%, Mallory Weiss tear in 4.29%, growth in stomach in 3.63%, oesophageal erosion in 2.64% and growth in oesophagus in 0.99%. Other lesions constituted 4.95%. Normal endoscopic study was seen in 3.63%. The stigmata of ulcer bleeding were assessed with Forrest grading and grade III ulcers were found in 46.60%, grade II in 43.46% and grade I in 9.95%. Alcohol intake was the most common risk factor found in 55.12% patients followed by NSAIDs in 30.03% and smoking in 21.45%. Co-morbidities including hypertension constituted 18.81% of patients while 8.25% had diabetes, 6.93% had chronic kidney disease and other co-morbidities constituted 16.50%. H. Pylori positivity was found to be 70.38%. The mean hemoglobin was found to be 8.36 ± 2.46 gm/dl. In 90.43% patients there were anemia while in 9.57% there were no anemia. The mean transfusion was 1.26 ± 1.27 units. low risk (score 1-2) was seen in 67.33% patients, moderate (score 3-7) in 28.38% and high risk (score ≥ 8) in 4.29%. The mean Rockall score was 2.74 ± 1.94 where low risk group (score 1-2) constituted 67.33% of patients, moderate risk group (score 3-7) 28.38% and high risk group (score ≥ 8) constituted 4.29%.



The mean hospital stay was found to be 2.96 ± 1.45 . In 94.71% patients there were no bleeding after initiation of treatment however 5.28% patient expired during course of hospitalization.



Out of 287 patients who improved after hospitalization, majority (71.08%) belonged to low risk group where out of 16 patients expired during hospitalization, 37.50% belonged to moderate risk group while 62.50% patients belonged to high risk group. Strong correlation found between Rockall scoring and hospital outcome was observed (p value 0.001).



In high risk group 7.69% had no co-morbidity, 23.07% had single co-morbidity, 38.46% had 2 co-morbidities while 30.76% had 3 or more co-morbidities. Significant association were observed between co-morbidities and Rockall scoring (p value <0.001). In high risk group 15.38% had single risk factor, 23.07% had 2 risk factors while 61.53% had 3 or more risk factors. Significant association was observed between risk factors and Rockall scoring (p value <0.001). The patients who were expired it was seen that in 31.25% there were single co-morbidity, 43.75% had 2 co-morbidities and 25% had 3 or more co-morbidities. Significant association were noted ($p <0.001$). The patients who were expired it was seen that in 18.75% there were single risk factors, 31.25% had 2 risk factors and 50% had 3 or more risk factors. The mean hospitalization of 2.45 ± 0.65 days was seen in Rockall low risk group, 4.41 ± 1.83 days in moderate risk group and 5.33 ± 0.58 days in high risk group.

DISCUSSION

Out of 303 patients, 76.24% were male and 23.76% were female with male to female ratio 3.21:1. The mean age of patients was found to be 46.56 ± 16.40 years where elderly population aged more than 60 years covered 22.12% of all cases. Study done by Cyrla Zaltman et al on Brazilian population found that male constituted 68.7% of study population.⁷ In the study done by Nam Hun Jong et al the mean age group was found to be 49.2 ± 14.9 ,⁸ while Jyoti Jain et al found it to be 46.2 ± 15.3 years.⁹ Concomitant melena and hematemesis (54.79%) was the most common presentation. In a study done by Cyrla Zaltman et al, concomitant hematemesis and melena was the presenting manifestation of 72 patients (41%).⁷ Peptic ulcer disease was the most common cause of upper gastrointestinal bleed which was seen in 65.67% of patients. Duodenal ulcer was found in 37.62% of patients and gastric ulcer was found in 28.05% of patients. Second most common cause was gastroduodenal erosive mucosal disease found in 37.29% of patients. In a study done by Karma D Lama et al, Duodenal ulcer (36.84%) was the most common lesion followed by gastric ulcer (19.29%), erosive mucosal disease (12.28%) and Mallory-Weiss tear (5.26%).¹⁰ Chandan Kumar et al in their study have observed that 41%

of the study population had peptic ulcer disease.¹¹ In this study, co-morbidities were seen in 30.69% while in the study done by Md Nadeem Parvez et al, 58.1% patients had co-morbidities.¹² The most common risk factor was found to be alcohol in 55.12% followed by NSAID in 30.03 % of patients. A study done by Jyoti Jain et al found the risk association to be alcohol in 47% and consumption of NSAIDs in 20% patients. The mean hemoglobin was found to be 8.36 ± 2.46 gm/dl. In 9.95% patients Forrest I ulcers were noted, in 43.46% patients Forrest II and in 46.60% patients Forrest III ulcers were observed. Forrest III ulcers were the most common observation. In a study done by Nam Hun Jong et al, it was seen that 8.3% patients were classified as Forrest I, 44.2% patients as Forrest II and 47.5% patients as Forrest III. Forrest III was the most common observation.⁸

The Mean Rockall score was observed to be 2.74 ± 1.94 . Out of 303 patients, 204 patients (67.33%) belonged to low risk group, 86 patients (28.38%) moderate risk group and 13 patients (4.29%) belonged to high risk group. In a study done by Robert A Enns et al it was observed that 8% patients were classified as high risk (i.e., Rockall score ≥ 8). After initiation of treatment, there were no bleeding in 287 patients. Death occurred in 16 patients, out of which 6 (37.5%) patients belonged to Rockall moderate risk group and 10 (62.5%) patients belonged to high risk group. No mortality was observed in Rockall low risk group. The mean hospitalization was 2.45 ± 0.65 in Rockall low risk group, 4.41 ± 1.83 in moderate risk group and 5.33 ± 0.58 in high risk group. Blood transfusion was done in 209 patients (68.97%), mean number of transfusion was 1.26 ± 1.27 . In a study done by Dewan KR et al, 95.8% patients recovered and were discharged from the hospital and 4.2% patients expired. Another study done by Afshin Shafaghi et al found that low risk, moderate risk and high risk groups were hospitalized for 2.72 ± 1.20 , 2.85 ± 1.44 and 4.20 ± 2.23 days respectively.¹³ Among the high risk group, out of total 13 patients (male 9, female 4), 9 patients were above 60 years age. Twelve patients (92%) presented with hematemesis and melena both at the time of admission. Co-morbidities were found in all 13 patients. Peptic ulcer disease was the most common endoscopic finding. Stomach and oesophageal neoplasms together constituted 2.14% of all cases. Mortality was seen in 76.92% of patients of high risk group with a mean Rockall score of 8.31 ± 0.48 . In our study, out of 303 patients, 16 patients expired during course of treatment. Mortality was observed more in elderly age group (50%) more than 60 years age, more in males 81%. Hematemesis and melena both were present in 93%. Gastric ulcer was the most common endoscopic finding while Forrest I was the most common ulcer grade (76.92%). Severe anemia found in 68.75% patients where multiple blood transfusions were given in 62.5%. The average Rockall score was 7.63 ± 1.20 . It was seen that 62.5% patients belonged to high risk while 37.5% belonged to moderate risk group ($p < 0.0001$). In the original study done by Rockall et al, it was observed that mortality increases in a stepwise fashion as the risk score increases. The independent significant factors in predicting mortality were age, shock, co-morbidities, diagnosis and stigmata of recent hemorrhage.

CONCLUSION

Acute UGI bleeding is a medical emergency and stratification of patients is of critical importance. Rock all score helps in stratifying patients into different risk groups at the initial stage. Low risk group patients can be discharged early while direct specialized care including ICU transfer with closed monitoring is advisable in high risk group patients. Patients with Rock all score >8 , Forrest grade I ulcer, multi factorial association of co-morbidities and risk factors are the most vulnerable group for fatal outcome. Prolongation of hospitalization, increased risk of reappearance of bleeding, increased requirement of blood transfusion or supportive care can be anticipated with the help of Rock all scoring early at the time of admission. In a tertiary care centre Rock all scoring system should ideally be used at the time of hospitalization for appropriate cost effective hospital management which will definitely help to reduce morbidity and mortality during hospitalization and also help to reduce disease burden in our society. The limitation of study was that follow up of cases were not considered in our study. The study used only one severity score and therefore comparison could not be possible with other available scores.

REFERENCES

1. Laine L. Gastrointestinal Bleeding. In: Jameson JL, Kasper DL, editors. Harrison's Principles of Internal Medicine. 20th ed. New York: Mc Graw Hill; 2018. p. 272-6.
2. Cook DJ, Guyatt GH, Salena BJ, Laine LA. Endoscopic therapy for acute nonvariceal upper gastrointestinal hemorrhage: A meta-analysis. Gastroenterology. 1992;102(1):139-48.

3. Mustapha SK, Ajayi N, B JY. Aetiology of Upper Gastrointestinal Bleeding in North-eastern Nigeria: A Retrospective Review of Endoscopic Findings. *Niger J Gastroenterol Hepatol*. 2009;1(2):75–8.
4. Savides TJ, Jensen DM. Gastrointestinal Bleeding. In: Feldman M, Friedman LS, Brandt LJ, editors. *Sleisenger and Fordtran's Gastrointestinal and Liver Disease*. 10th ed. Philadelphia: Elsevier Inc.; 2016. p. 297–335.
5. Dewan KR, Patowary BS, Bhattarai S, Shrestha G. Complete Rockall Score in Predicting Outcomes in Acute Upper Gastrointestinal Bleeding. 2018;0657(4):178–83.
6. Bozkurt MA, Peker D, Unsal MG. The Importance of Rockall Scoring System for Upper Gastrointestinal Bleeding in Long-Term Follow-Up. 2017;79(June):188–91.
7. Zaltman C, De Souza HSP, Castro MEC, Sobral M de FS, Dias PCP, Lemos V. Upper gastrointestinal bleeding in a Brazilian hospital: A retrospective study of endoscopic records. *Arq Gastroenterol*. 2002;39(2):74–80.
8. Jong NH, Kim HS, Han CJ. Prediction of clinical outcome in patients with nonvariceal gastrointestinal bleeding using Forrest classification and Rockall score. *Kasr Al Ainy Med J*. 2018;24(2):83–8.
9. Jain J, Rawool A, Banait S, Maliye C. Clinical and endoscopic profile of the patients with upper gastrointestinal bleeding in central rural India: A hospital-based cross-sectional study. *J Mahatma Gandhi Inst Med Sci*. 2018;23(1):13–8.
10. Bhutia K, Lamtha S. Retrospective study of etiology of non variceal acute gastrointestinal bleeding in Eastern Himalayan region of india in Sikkim. *J Fam Med Prim Care*. 2019;8(2):573.
11. Kumar C, Kumar Chakrabarti S, Chakraborty S, Sinharay K. Clinical profile of patients presenting with gastrointestinal bleeding in a tertiary care hospital. *Int J Adv Med*. 2017 Nov 22;4(6):1616–20.
12. Parvez MN, Goenka M, Tiwari I, Goenka U. Spectrum of upper gastrointestinal bleed: An experience from Eastern India. *J Dig Endosc*. 2016;7(2):55–61.
13. Shafaghi A, Mansour-ghanaei F, Mohtasham M, Joukar F, Mavaddati S, Jahromi SK. Rockall Score In Nonvariceal Upper Gastrointestinal Bleeding (NVUGIB): A Predictor of In-Hospital Rebleeding. *Indian J Med Res Pharm Sci*. 2016;3(October):15–20.