THE UTILITY OF ROCKALL SCORING SYSTEM, IN FOLLOW-UP OF UPPER GASTROINTESTINAL BLEEDING CASES.

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ABSTRACT Our aim is to study the utility of Rockall scoring system during the follow-up of the patients with Upper Gastrointestinal Bleeding (UGIB), to estimate re-bleeding and mortality.

A total of 82 patients who were treated in our Government Teaching Hospital for UGIB between January 2015 to December 2016, were selected for this study. Patients' clinical data, demographic values, quantity of blood transfusion, results of endoscopy and Rockall scores were collected from the patients' case sheet records.

The morbidity, re-bleeding and mortality values were noted after 1 year of follow-up, by contacting the patients or their relatives over telephone or when they came for follow up in the out-patient department or if they got re-admitted for any complication.

We found Rockall risk scoring system to be a valuable tool to predict re-bleeding and mortality for patients presenting with upper gastrointestinal bleeding during follow-up. We can use this scoring to safely discharge non-risky patients or some of these cases which are Rockall score 0 can be managed on out-patient basis, thereby reducing unnecessary admission and ensuing costs.

KEYWORDS : Upper Gastrointestinal bleeding. UGIB. Re-bleeding. Mortality. Rockall scoring system

INTRODUCTION

By definition, Upper gastrointestinal bleeding (UGIB) means, any bleeding that is emanating from the gastrointestinal tract which is proximal to the Ligament of Trietz. Whereas, bleeding from the small intestine distal to the Ligament of Trietz is called as middle gastrointestinal bleeding and any bleeding from the colon and distal gut is called as lower gastrointestinal bleeding.

Upper gastrointestinal bleeding (UGIB) is a potentially life-threatening condition which requires meticulous evaluation from the time of first presentation. That evaluation should also include an attempt to predict and decrease the risk of re-bleeding and death [1]. To meet this end, several scoring systems have been devised by various researchers.

One such scoring system was designed by a team, undertaking a large audit of the cases of upper gastrointestinal hemorrhage in England. This came to known as Rockall Scoring system. This scoring system has been shown to be more or less accurate and a valid predictor of serious complication of UGIB such as re-bleeding and death. Rockall scores take into consideration such factors like, patient's age, signs of shock at the time of presentation like blood pressure records and pulse rate, co-morbid conditions and stigmata of hemorrhage [2,3] (Table 1).

Table 1 Rockall scoring system

Component score	0	1	2	3
Age	<60	60-79	>80	-
Hemodynamics				
Pulse	<100	>100,	-	-
Systolic BP	≥100	≥100,	<100	-
Comorbidities	None	-	IHD, CF	-
Diagnosis	MW,no..	All	Malig	-
Stigmata	No stig	-	blood	-

UGIT upper gastrointestinal tract, *IHD* ischemic heart disease, *MW* Mallory-Weiss tear, *GI* gastrointestinal, *BP* blood pressure

Previous investigations into this scoring system have highlighted that those patients having score of ≤2 will have very low episodes of re-bleeding and death. Such patients could be managed as out-patients without fear. This scoring system has thus given a tool in the hands of the treating physicians to make a decision about, what kind of intervention to be used in individual scenarios. In that way, a tremendous saving in health resources could be accomplished and resources usage could be tailored accordingly. There should not be over usage and sometimes wastage of resources due to a lack of protocol and scoring system [4].

The aim of our study was to evaluate the usefulness of the Rockall scoring system during follow-up, in predicting re-bleeding and death after an episode of Upper Gastrointestinal Bleeding.

Materials and Method

This is a retrospective study conducted in our institute between 1st January 2016 to 31st December 2016, who presented with complaints of UGIB. The data of the patients with respect to their age, gender, findings on endoscopy, transfusion of blood (if any), Rockall scores (if previously done) and in-patient mortality rate were collected from the hospital record section of our institute.

We used the Rockall scoring system to classify patients according to data at the time of admission. Few patients could not be reached for follow-up, such patients were also excluded from the study. In the initial In the initial Rockall score, Age, hemodynamics and presence of comorbidities were taken into consideration (Table 1).

Hemodynamically stable patients underwent Upper gastrointestinal endoscopy. If active bleeding was present, control of bleeding was attempted, by Variceal Band Ligation (VBL) or Infiltration of bleeding ulcer base with Adrenaline solution (1:10 diluted). Our institute doesn't have facilities of Argon Laser coagulation. Hence, those cases in which active bleeding was not controlled in the initial attempt, endoscopic procedure was immediately abandoned and resuscitation resumed. We use Somatostatin infusion (or it's analogue, Octreotide) and cold saline wash to control the bleeding. Emergency surgery was planned when conservative measures failed.

Oral feeding was permitted 24 hours after the endoscopy procedure and after the patient becomes hemodynamically stable. If they tolerate the oral feed well, they were discharged from the hospital with relevant medical therapy.

Decision was taken regarding repeat endoscopy or emergency surgery or referral to centers with higher facilities, if there is suspicion of continuous bleeding, indicated by failure of improvement of hemodynamic status, inspite of doing resuscitation. Patients were deemed fit for discharge, when they remain stable for atleast 24 hours with stable hemodynamic parameters and no evidence of active and ongoing hemorrhage.

We followed the patients for about one year over telephone or during follow-up in the Out-Patient Department. We specifically asked about any further episodes of bleeding (re-bleeding) and also enquired with the relatives about the present condition of the patient, and if dead, when and how?

Results

Ninety-one patients presented to our institute with history of upper gastrointestinal bleeding between 1st January 2016 to 31st December

2016. Nine patients were lost to follow-up, hence were not included in the subsequent study. A total of 82 patients were included in the study.

Sixty-six patients (80.5%) of the patients were male and sixteen patients (19.5%) of them were female. Among these patients, 95% were presenting with UGIB for the first time. All of these patients underwent upper gastrointestinal endoscopy.

Table 2 Initial Rockall score, patient number, gender, and age

Rockall score (initial)	Number of Patients	Percentage	Male:female Ratio
0	17	20.7%	14:3
1	14	17.1%	12:2
2	19	23.2%	15:4
3	15	18.3%	12:3
4	11	13.4%	8:3
5	6	7.3%	5:1
Total	82	100%	66:16

Initial Rockall scores of the patients were: 0 for 17 patients (20.7%), 1 for 14 patients (17.1%), 2 for 19 patients (23.2%), 3 for 15 patients (18.3%), 4 for 11 patients (13.4%), and Rockall score of 5 for 6 patients (7.3%) (Table 2)

Complete Rockall scores of the patients were as follows: 0 for 16 (19.5%) patients, 1 for 12 (14.6%) patients, 2 for 18 (22.0%) patients, 3 for 14 (17.1%) patients, 4 for 10 (12.2%) patients, 5 for 6 (7.3%) patients, and >5 for 6 (7.3%) patients (Table 3).

Table 3 Patients with complete Rockall score

Rockall score (complete)	Number of Patients	Percentage	Male:Female Ratio
0	16	19.5%	13:3
1	12	14.6%	10:2
2	18	22.0%	15:3
3	14	17.1%	11:3
4	10	12.2%	8:2
5	6	7.3%	4:2
>5	6	7.3%	5:1
Total	82	100%	66:16

Sixteen patients (19.5%) presented with active bleeding. Out of these, 8 patient had variceal bleeding, which were successfully controlled by Variceal band ligation (VBL). Another 4 patient had bleeding duodenal ulcer (DU), of these 2 were successfully controlled by adrenaline solution (1:10) infiltration of the ulcer base. Remaining 2 bleeding Duodenal Ulcers continued to bleed. These required abandonment of the endoscopic procedure and starting of the Octreotide infusion and cold saline wash. One among these 2 cases responded, where as the another one case, where the bleeding was spurting, had to be operated upon on emergency basis and the bleeding vessel in the ulcer base (in posterior duodenal wall) was secured by suture.

There was no re-bleeding in the Rockall scores 0 and 1 patients, whereas 5.3% (1 patient) for Rockall score 2; 20% (3 patients) for Rockall score 3; 18.2% (2 patients) for Rockall score 4; and 33.3% patients had re-bleeding episodes (2 patients out of 6) for Rockall score 5.

Patients with Rockall scores 3 and above had higher re-bleeding rate as compared to patients with Rockall scores 0, 1 and 2.(Table 4). Similar was the case with the mortality rate. Patients with Rockall scores 4 and 5 had highest mortality (27.3% and 33.3% respectively).

Table 4 :- Re-bleeding rates and mortality rates with Complete Rockall Scores.

Complete Rockall Scores	No. of patients	Rebleeding rates	Mortality rate
0	17	0 (0%)	0 (0%)
1	14	0 (0%)	1 (7.1%)
2	19	1 (5.3%)	2 (10.5%)
3	15	3 (20%)	1 (6.7%)
4	11	2 (18.2%)	3 (27.3%)
5	6	2 (33.3%)	2 (33.3%)
Total	82	8 (9.8%)	9 (11%)

Patients with higher Rockall scores has statistically significant re-bleeding and mortality rates.

Discussion

The advent of modern endoscopy and endoscopic techniques for hemostasis has significantly changed the management of UGIB. Peptic ulcer is the main etiological factor in 20-50% of patients [5,6].

Re-bleeding is described as a major factor affecting the outcome in patients with UGIB [7,8]. Many scoring system have been developed to stratify the patients according to the risk of major re-bleeding and death, so that proper intervention and health care resources are utilized for deserving patients and resources are not wasted in over treating low risk patients [9].

Our study showed similar outcomes as compared to previous studies, which showed higher re-bleeding and mortality in patients with Rockall score 4 and 5. In our study, mortality occurred in 9 (11%) cases [10,11,12].

The main advantage of using Rockall scores in patient with UGIB is to identify patients with low-risk, who can be safely discharged and managed on out-patient basis. The results of our study reveals that, patients with Rockall score 0 can be safely managed as out-patients with very less or no chances of re-bleeding and other complications of UGIB.

Conclusion

Rockall risk scoring system is a valuable tool to predict re-bleeding and mortality rates in patients with upper gastrointestinal bleeding.

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