TO EVALUATE NON VARICEAL UPPER GASTRO-INTESTINAL BLEEDING FOR CLINICAL INTERVENTION ON THE BASIS OF BLATCHFORD SCORING SYSTEM

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ABSTRACT

OBJECTIVE: To evaluate patients of non-variceal upper gastrointestinal bleeding for clinical intervention on the basis of Blatchford scoring system.

STUDY DESIGN: A cross sectional observational study.

PLACE AND DURATION: At Medical Unit III, Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro from 1st Sep'2014 – 28th Feb '2015.

METHODOLOGY: Study population included 50 patients of upper gastrointestinal bleeding. Blatchford score was calculated for each patient. Patients needing clinical intervention to control bleeding were defined as high risk having a Blatchford score of ≥5.

RESULTS: A total of 50 patients took part in this study with a male to female ratio of 1.5:1. The age range was 20-85 years, with mean age of 39.24 ± 13.37 years (SD). The Blatchford score identified 20 of 50 patients as high risk for clinical intervention. These patients presented with 2-3 episodes of hematemesis and vitally un-stable & were categorized as low risk. Peptic ulcer disease came out to be the main cause of non variceal bleeding on endoscopy.

CONCLUSION: Decision for endoscopy depends upon Blatchford score and general health of patients. We observed Blatchford score to be helpful for differentiating among high and low risk groups and to evaluate the need for clinical intervention in patients of upper gastrointestinal bleeding admitted in the hospital.

KEY WORDS: Upper Gastrointestinal bleeding, Nonvariceal, Blatchford scoring system.

INTRODUCTION

Acute upper gastrointestinal bleeding (UGIB) is the most frequent medical emergency and considered as a principal cause of morbidity and death¹. The occurrence of UGIB is 170 patients /100,000 population per annum, while the frequency fluctuates from 50 – 150/ 100 000 population per annum in United States and 100 to 107/ 100,000 / annum in United Kingdom². A prompt and accurate diagnosis is essential for carrying out appropriate management and helping in patient’s care. Currently endoscopic measures have improved a lot, which helps in better hemostasis and a decline in the threat of re-bleeding³. The non-variceal etiologies (peptic ulcer disease) are the foremost cause of acute UGIB in Western nations⁴. The routine investigation of choice is emergency Esophagastroduodenoscopy (EGD) for active UGIB and the source of bleeding can be detected in more than 90% of cases⁵. Endoscopic treatment stops active bleeding in bulk of cases but in 10-20% of cases after initial hemostasis patients has further bleeding or rebleeding⁶. Numerous scoring systems are established to help clinicians to manage patients with upper gastrointestinal bleeding. Blatchford developed and tested a simple scoring system to identify patients of UGIB requiring hospital admission and aggressive treatment to control gastrointestinal bleeding. The hemoglobin level, blood urea nitrogen level, blood pressure, pulse and readily accessible clinical factors emerged as the most predictive. These factors were used to construct the scoring system⁷. The aim of Blatchford score is to establish the relative importance of risk factors for mortality after acute upper gastrointestinal hemorrhage and to formulate a simple numerical scoring system that categorizes patients by risk⁸. If the score is less than four (<4), patient needs no intervention but if score is more than five (>5), patient needs intervention⁹. A study conducted at Keio University of Medicine, Tokyo, Japan showed that Blatchford score system is accurate for recognizing unambiguously low-risk patients of GI hemorrhage, even before carrying out emergency UGI endoscopy⁹. Blatchford scoring system uses only clinical and laboratory parameters whereas the other scoring system like Rockall score requires endoscopy⁹. The Blatchford score is a useful risk stratification tool in detecting which patient needs clinical intervention with acute non-variceal UGIB. It does not need urgent endoscopy for scoring and has higher sensitivity than the clinical Rockall score and the complete Rockall score in identifying high risk patients ⁹. Blatchford stresses that the new score can be easily calculated by first-line staff and provides reliable identification of patients at highest risk⁹. Thus Blatchford score is believed to be helpful.
for differentiating between the high and low risk group of individuals having UGIB and to evaluate the requirement of clinical intervention in patients with UGIB admitted in the hospital. As acute UGIB is the most frequent medical emergency and a principal cause of morbidity and mortality, urgent EGD is required for accurate diagnosis and proper management. Emergency upper gastrointestinal endoscopy is costly and rarely accessible in the majority hospitals in Pakistan and as majority of our patients are poor, it is imperative to categorize the patients into low risk and high risk groups to avoid this costly investigation. That’s why we undertook this study to evaluate patients of non-variceal UGIB for clinical intervention on the basis of Blatchford scoring system.

**METHODOLOGY**

It was a cross sectional observational study conducted at Medical Unit III, Liaquat University Hospital, Jamshoro from 1st Sep 2014 – 28th Feb’2015. Fifty consecutive patients of acute UGIB were enrolled for the study after getting informed consent. Patients with variceal bleeding, those who required surgical intervention to control bleeding, those who required blood transfusion or endoscopic intervention and patients in whom definitive cause was inconclusive or undetermined were excluded from the study.

UGIB was diagnosed in presence of hematemesis, melena or both. In the absence of these, nasogastric (NG) tube aspiration of coffee ground, black or blood content is considered positive for UGIB. All patients were subjected to thorough history taking and physical examination. Patient’s age and gender were noted and they were asked about dyspepsia, color of vomitus (bright red, coffee ground, blood clot), color of stool (brightened maroon, black), history of liver disease, variceal and non variceal bleeding within last one year, H/O drug intake (Non Steroidal anti inflammatory drugs (NSAIDs), Steroids, Anticoagulants, Aspirin) within last four weeks and any co morbid disease like Chronic renal failure (CRF), Chronic heart failure (CHF), Stroke, Malignancy etc. Blood pressure and pulse were recorded in every patient along with pallor, Jaundice, fever, and signs of chronic liver disease like palmer erythema, spider e.t.c. Abdominal examination was done in detail and viseromegaly, liver span and shifting dullness were recorded. NG tube aspiration and per rectal examination was done in every patient to look for the contents. Blood samples were collected for complete blood count, urea, creatinine and LFT in every patient. ECG, CXR and Ultrasound abdomen were also done. Blatchford score was calculated for each enrolled patient from patient’s presentation with syncope & melena and their admission hemoglobin, urea, pulse and systolic blood pressure, as well as evidence of hepatic or cardiac disease. The data was evaluated on the basis of Blatchford score system and the subjects were categorized into low risk & high risk groups.

High risk for clinical intervention (blood transfusion, endoscopic or surgical management to control bleeding), was defined as a score of ≥ 5. Diagnostic endoscopy was done to identify the underlying cause of bleeding in high risk patients. Statistical package for social sciences (SPSS-18.0) was used to analyze data. Frequency and percentage were computed for categorical variables like gender, cause of bleeding and risk factors for upper gastrointestinal bleeding. Mean, Standard deviation was computed for quantitative variables like age of the patients.

**RESULTS**

Out of fifty patients studied, 60% (n = 30) were males and 40% (n = 20) were females with male to female ratio of 1.5:1. The mean age of the patients was 39.24 ±13.37 (SD) years with the range of 20-85 years. Smoking was most commonly reported risk factor for UGIB (56%, n = 28). Risk factors for UGIB are given in Table I. At presentation 48% of patients (n = 24) had hematemesis alone and 06% (n = 3) of patients presented with melena alone. The remaining 46% (n = 23) of patients had both hematemesis and melena. Dyspepsia was noted in all the patients studied (100%, n = 50) patients. Table I shows the clinical presentation of patients studied. Those who presented with one episode of bleeding and vitally stable were categorized as low risk (60%, n = 30). Those low risk patients were treated as outpatients. Those who presented with 2-3 episodes of hematemesis and vitally unstable (i.e. SBP ≤90 mmHg, pulse rate >100 bpm) were categorized as high risk (40%, n = 20). They had a hemoglobin level of < 6 gm% and a raised BUN also. They were referred for endoscopy within seventy two hours of presentation and treated on emergency basis. In these high risk patients, the major causes of bleeding noted on endoscopy were PUD, Gastritis, Esophagitis, Gastroesophageal reflex disease, Gastric carcinoma and others in that order. The detail of different bleeding lesion (causes) is given in figure no. I. Those who had co morbid diseases like chronic liver disease also had low platelet counts and low albumin levels and a raised mean ALT and AST levels. PT and APTT were also increased in these patients. Chest X Ray and ultrasound abdomen were normal except in those with co morbidities. Table II show the laboratory values of patients studied.

**Validation of the Blatchford score:**

We use the Blatchford score to evaluate the patients of upper gastrointestinal bleeding for clinical intervention. Table IV shows the Blatchford score of subjects. Those who were stable and score ≤4 were considered as low risk patients (60%, n = 30). While those who were unstable and score ≥5 categorized as high risk patients (40%, n = 20) and they were referred for endoscopy for diagnostic and therapeutic purpose. Figure no.II shows risk stratification according to the Blatchford scoring system.
DISCUSSION

Acute UGIB is a serious gastro-intestinal emergency. It is a common reason for hospital admissions worldwide as shown in a study done by Abdul Basit Elghuel in Libya\(^1\). Acute UGIB is associated with considerable morbidity and mortality rates as well as enormous financial burden on health services as shown in a study by Tsesmeli NE\(^2\). Early resuscitation of patients with UGIB reduces mortality as shown by Baredarian R et al.\(^3\) In our study done on fifty patients of acute UGIB, males predominated. This male preponderance was also noted in majority of the local studies\(^4-7\) but the peak incidence of UGIB in western countries is at 5\(^{th}\) and 6\(^{th}\) decades as noted by Fabrizio Parente et al.\(^8\). This difference could be due to higher average life span in western population. In our setup, oesophageal varices as a cause of UGIB is more common as shown in other studies carried out in Pakistan\(^9,10\). This is because of high prevalence of hepatitis B and C in our population. In our study, PUD was the leading cause of non-variceal UGIB. This is in agreement with other local studies\(^11,12\) and an international study by Bordou M.\(^13\). We evaluated patients of non-variceal UGIB according to Blatchford Score to identify patients for further management. We found...
BSS as a useful tool in identifying patients as high risk and low risk. This was also proved by other studies. Blatchford score is more useful than Rockall score to identify high risk patients for clinical intervention.

In our study, PUD was the main cause of UGIB in high risk patients which is similar to other studies. We found smoking and NSAIDs use as a major risk factor in patients with UGIB. This corresponds to other studies done locally and internationally. Gastric cancer represents only 5% high risk cases of UGIB which is comparable to a study done by Qureshi et al. In a study conducted in US, GERD was less common cause of UGIB and this is in line with our results where esophagitis, gastritis and GERD comprised only 5% cases.

We found Blatchford score system as useful and accurate for identifying low risk patients of UGIB, even prior to performance of UGIE. Among these patients there was zero mortality and no intervention needed and they were suitable for outpatient treatment. This was also proved by Masoaka.

CONCLUSION

We observed peptic ulcer disease as the most common cause of serious and life threatening non-variceal gastrointestinal bleeding. We found Blatchford scoring system to be useful and reliable to categorized patients as high risk and low risk depending upon clinical and laboratory criteria and help in the management of patient accordingly. This score helps in reducing admissions and allowing more appropriate use of in-patient resources.

Contribution of authors:

Soniah Aslam: Data analysis and interpretation and Final approval of the version to be published.

Aslam Ghouri: Concept, design and drafting of work and Final approval of the version to be published.

Farhaj Mughal: Data acquisition and Final approval of the version to be published.

Mohammad Hanif Ghani: Revising it critically for important intellectual content and final approval of the version to be published.

Sohail Ahmed: Data acquisition and Final approval of the version to be published.

REFERENCES


