Original Article

Rockall score of the acute upper gastrointestinal bleeding patients the experience in Sudan

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Abstract

Introduction: Innovation of scoring systems helps to rectify personal experience based on subjective evaluation of outcome of patient treatment.

Objectives: To predict the morbidity and mortality in patients presenting with acute upper gastrointestinal bleeding at Ibn-Sina Hospital using the Rockall score.

Patients and methods: Prospective hospital-based study conducted from June 2007 through December 2007 at the Ibn-Sina Hospital Bleeding Centre. Demographic, data of history and physical examination and results of laboratory investigations of 238 patients were collected and allotted a Rockall score, Child-Pugh class and fed to Statistical Package of Social Sciences (SPSS) to calculate means and find the levels of statistical differences and define the predicted and observed mortality rates.

Results: The mean (±SD) age 44.6 (±15.31) range (8 - 85) years. There were 190 (79%) males. Patients with oesophageal varices, peptic ulcer, and upper GI tumours were 215 (90.3%), 18 (7.6%), and 5 (2.1%) respectively.

The mean predicted mortality was 3.8% while the actual observed mortality 3.8%. The mortality in cases of oesophageal varices was 8(3.4%), while that of bleeding peptic ulcers was one (0.4%).

Conclusion: Rockall score is feasible, accurate, effective system for predicting outcome in patients with upper GI bleeding. The risk factor for mortality are Rockall score >3, age >70 and rebleeding.

Key words: Mortality, morbidity, upper GIT bleeding, Rockall score.

Prediction of outcome of patients with acute upper GI bleeding remains subjective if it is not based on objective outcome measures. The important factors influencing the outcome of acute upper gastrointestinal haemorrhage have been the focus of research and debate since the 1940s.

The Rockall score[1] was developed as a simple tool to predict mortality in a large, prospective cohort study of patients with upper GI haemorrhage admitted to hospitals in the United Kingdom in 1993. Subsequent studies in the same setting established the internal validity of the Rockall score and suggested that it might be used to identify patients at high risk for mortality and recurrent bleeding.

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In this prospective study we used the Rockall score to predict mortality in patients presented with upper GI bleeding to the Mohammed Salih Idris Bleeding Centre affiliated to Ibn-Sina Specialized Hospital.

Objectives

The objective of this study is to predict morbidity and mortality in Sudanese patients presenting with acute upper gastrointestinal bleeding (GI) in Ibn-Sina Hospital using the Rockall score.

Patients and methods

This is a prospective, descriptive, hospital based study. It was conducted from June through December 2007 Mohammed Salih Idris Bleeding Centre.

Inclusion criteria: All patients presented with acute upper GI bleeding were included in this study. Informed consent was obtained. **Exclusion criteria:** Patient who has melaena or haematochezia and the cause

was not upper GI pathology were excluded from this study. The

Therefore, the studied population consisted of 238 critically ill patients with acute upper GI bleeding.

Set up: The bleeding centre consists of well equipped ICU, three general wards, each with three beds. It has a well equipped endoscopic unit, blood bank, laboratory facilities, and pharmacy. Elective GIT manometry, statistic office, and electronic library are primary available facilities. The centre receives critically ill patients with active upper and lower GI bleeding who were referred from other hospitals.

Clinical and laboratory data conforming to Rockall score and Child-Pugh classification were collected on admission. These include age, co-morbidity factors, mean BP, pulse rate, endoscopic diagnosis and stigmata of recent haemorrhage, presence of ascites, jaundice, total bilirubin, serum albumin, and prothrombin time.

Statistical analysis

Data were fed to Statistical Package of Social Sciences (SPSS). Descriptive statistics and cross tabulation was performed as appropriate and P <0.05 was taken for statistical significance.

Results

A total of 238 patients were included in this study. There were 190 (79.8%) males. The mean (±SD) age was 44.6(±15.3) range (8-85) years. 190(79.8%) patients were less than 60 years, 46 (19.3%) have age range from 60-79 and only 2 (0.8%) patients more than 80 years.

A sum of 58(24.4%) patients had co-morbid diseases and at presentation 41(17.2%) patients were haemodynamically unstable.

Prophylactic and/or treatment with antibiotics namely Ceftriazxone (Samixon, Elhekma Company) were prescribed for 107(45%) patients.

The cause of acute upper GI bleeding was oesophageal varices in 215 (90.3%), peptic ulcer in 18 (7.6%), and upper GI tumours in 5 (2.1%) patients.

Emergency endoscopy revealed that 114(47.9%) patients had major stigmata of recent haemorrhage and 124 (52.1%) had blood in the stomach.

The bleeding in 180(75.6%) patients stopped with 5% Ethanolamine oleate (EAO) injection, 13(5.5%) needed histoacryl, 18(7.6%) adrenaline, one(0.4%) with balloon tamponade, one(0.4%) with rubber band ligation, 19(8%) with both EAO 5% and balloon tamponade while 6(2.5%) patients were not injected at all and no patient underwent surgery.

Early rebleeding after endoscopic intervention, i.e. in the first 24 hours occurred in 18 (7.6%) patients. 224(94.1%) patients were discharged home after successful management, five (2.1%) patients were transferred to the hospital wards for further treatment, but nine (3.8%) patients died.

The Rockall score ranged from 1-10 with mean (±SD) 3.5882(±1.83226). The predicted mortality ranged from 3.7% - 5.6% with mean predicted mortality 3.8%. The actual mortality was 9(3.8%) patients. Among the deaths eight patients had oesophageal varices and one patient had peptic ulcer. No mortality was seen among patients transferred to the wards. Patients who had Rockall score > 2 were 166 (69.7%). All deaths had Rockall score ranged from 1-10 with mean 1.93.

Child Pugh classification was also used as disease specific scoring system so as to find out its prediction of mortality. Child class A patients were 146 (61.3%) with three deaths, which represented 1.3% of the studied population. Patients with child class B were 65 (27.3%) with only one death, which represented 0.4% of the studied population. Those with Child class C were 27 (11.3%) patients with fife deaths, which represented 9.2% of the studied population.

The mortality in those who had oesophageal varices was 8 (3.4%); and in those who had peptic ulcer was one (0.4%). Total mortality was nine (3.8%) patients. Six of them were females.

The outcome in those who received antibiotic were as follow 98 (91.6%) patients discharged home, two (1.9%) transferred,

seven (6.5%) patients died. While the outcome in those who did not receive antibiotic were 126 (96.2%) discharged home, three (2.3 %) transferred, and two (1.5%) died).

The Rockall score in those who receive antibiotic were 30(28%) patients with score less than two and 77(72%) with score more than two. In contrast to those who did not receive antibiotic 42(32.1%) patients had score less than two and 89(67.9%) had score more than two.

Regarding the outcome in those who re-bled after endoscopy six (2.5%) died and 12(5%) discharged home.

Seven (3.7%) out of the 190 patients less than 60 years of age died. Two (0.8%) patients their age were more than 80 years died.

The hospital stay for the studied group revealed that those who stayed <12 hours were 98(41.2%) patients but four (4.1%) of them died. Those who stayed 13-48 hours were 62(26.1%) patients with one (1.6%) death while those who stayed > 48 hours were 78 (32.8%) patients with four (5.1%) deaths.

Discussion

In this study the mean age was 44.6 years which is similar what was reported before in Sudan[2]. This is also comparable to that reported in North Ireland where mean age was reported to be 59 years[3].

In our study, the upper GI bleeding was found to be common in males which similar to the study reported earlier from Sudan[4]. This is most likely explained as by prevalence of oesophageal varices in farmers which are mainly male jobs.

The main cause of acute upper GI bleeding in this study is oesophageal varices; in contrast to the fact that peptic ulcer was the main cause of bleeding in a study done in Germany[4] and USA[1] and that is because of bilharzia is an endemic disease in Sudan.

This study showed high association with co-morbid diseases in 24.4%. Similar findings were reported before[1] reaching 22.2%-26.7%.

17.2% of the patients were unstable and 44.1% were haemodynamically stable with lower normal BP at presentation making a total number of 61.3% patients in shock or impending shock.

Major stigmata of recent haemorrhage were seen in 47.9% patients, while in a study done in Canada[5] found it 31% and that may indicate late referral of Sudanese patients. Rebleeding after endoscopy was seen in 7.6% patients of the study population which is similar to a study done in Italy[6] that showed rebleeding rate 5.35%.

The mortality rate in this study was 3.8% which is similar to a study done in USA[5] where mortality was reported as 2.1%, while in previous study done in Sudan[2] reported the mortality as 26.7%. This is probably due to improvement in the facilities of the Bleeding Centre with enough blood and blood products in the blood bank, use of somatostatin analogue for patients with bleeding varices and Injectable PPIs for patients with bleeding ulcers, and the early intervention to stop bleeding.

Antibiotic prophylaxis during acute bleeding episodes in patients with cirrhosis has resulted in significant decreases in mortality rates, but did not become standard protocol until recent years[7]. However, in our study it seems the impact of bleeding over-ride the benefits of prophylactic antibiotics. However, the use of prophylactic antibiotics in bleeding patients with end stage liver disease in Sudan needs further study.

The mean Rockall Score in this study 3.5882 is similar to a study done in UK[8] in which the mean Rockall score was 4.

Most dead patients in our study were Child class C which is similar to a recent study done in North America[7] that proved the association of the increased mortality with the increased Child score. In our study rebleeding was associated with increased mortality which is similar to a study reported in Germany[4].

In our study we found the distribution of mortality according to the age group; that in those less than 60 years the mortality is seven(3.7%) out of 190 patients in contrast to those more than 80 years the mortality is two out of two, i.e. 100%. So the mortality increased proportionally with age as

concluded in a study from UK[9].

Conclusion

The mean Rockall Score in this study is 3.5882. Rebleeding after endoscopy is seen in 7.6%. Rebleeding is associated with increased mortality. The mortality rate in this study is 3.8%. Most of the mortality in this study was Child class C. Mortality increased proportionately with age. Death occurred at Rockall score (5.88). Therefore Rockall score is an effective tool for outcome prediction in patients with acute upper GI bleeding.

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