DOI: https://doi.org/10.2298/SARH250407059K
UDC: 616.32/.34-005.1-072.1/.2

ORIGINAL ARTICLE / ОРИГИНАЛНИ РАД

# Evaluation of the prognostic performance of the Rockall and Glasgow-Blatchford scoring systems in non-variceal upper gastrointestinal bleeding

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**SUMMARY**

**Introduction/Objective** Upper gastrointestinal bleeding is a significant medical emergency requiring prompt assessment and intervention. Various risk stratification tools, including the Rockall Score and Glasgow-Blatchford Score (GBS), are used to predict clinical outcomes such as mortality, intensive care unit admission, and the need for blood transfusion.

**Methods** This study analyzed a cohort of 199 patients admitted to our hospital for non-variceal upper gastrointestinal bleeding between October 1, 2020, and October 1, 2024. Demographic data, vital signs (pulse rate, systolic and diastolic blood pressure), length of hospital and ICU stay, comorbidities, and medication use were recorded. The Rockall Score and GBS were calculated for each patient, and their predictive accuracy was assessed using sensitivity and specificity analyses.

**Results** The GBS (AUC = 0.887) demonstrated superior predictive performance for blood transfusion compared to the Rockall Score (AUC = 0.786, $p < 0.001$). However, both scores exhibited poor predictive ability for ICU admission (AUC = 0.624 *vs*. 0.605, respectively, $p < 0.05$), with Rockall outperforming GBS. For mortality prediction, both scores performed similarly (Rockall: AUC = 0.847, GBS: AUC = 0.837, $p = 0.239$), indicating no significant difference.

**Conclusion** GBS outperforms the Rockall Score in predicting blood transfusion need, while both scores show poor ICU admission prediction, with Rockall performing slightly better. For mortality prediction, both scores are comparable. GBS is preferable for transfusion assessment, but additional factors may improve ICU and mortality predictions.

**Keywords:** gastrointestinal bleeding; Rockall Score; Glasgow-Blatchford Score; mortality; transfusion

## INTRODUCTION

Upper gastrointestinal (GI) bleeding represents a serious medical emergency that can pose significant risks to a patient's life. This type of bleeding, originating from the upper part of the digestive system – which includes the esophagus, stomach, and the first part of the small intestine – demands careful and diligent monitoring due to its potential to lead to severe complications such as shock and even death [1]. The nature of upper GI bleeding can vary, ranging from minor oozing to massive hemorrhage, and can occur due to a variety of underlying conditions, including ulcers, varices, or malignancies. One of the most concerning aspects is the risk of recurrent bleeding, which may exacerbate the patient's condition and necessitate further medical interventions. In such cases, urgent upper endoscopy within 24 hours is recommended as the cornerstone of both diagnosis and therapeutic intervention, allowing for timely identification and control of the bleeding source. Early endoscopy has been shown to reduce transfusion requirements, length of hospital stay, and mortality, particularly in high-risk patients [2]. Therefore, a well-structured and proactive approach to managing upper GI bleeding is crucial. This involves rapid assessment, stabilization of vital signs, and identification of the bleeding source. Effective management not only focuses on immediate treatment but also emphasizes the need for ongoing surveillance and follow-up care to reduce the risk of recurrence and improve patient outcomes. Understanding these complexities is essential for healthcare providers in delivering safe and effective care to affected individuals [3].

To effectively categorize GI bleeding incidents and assess the associated rates of rebleeding and mortality, various risk assessment tools have been developed. Among these, two of the most prominent tools are the Glasgow-Blatchford Score (GBS) and the Rockall Score [4]. The Rockall Score is a comprehensive risk assessment tool that combines both pre-endoscopy and post-endoscopy factors to more accurately evaluate a patient's risk. It considers clinical variables such as age, comorbidities, and the severity of the bleeding observed during endoscopy, allowing healthcare providers to stratify patients based on their likelihood of rebleeding or death resulting from the bleeding event [5]. In contrast, the GBS focuses exclusively on pre-endoscopy variables to gauge the initial severity of the bleeding. This score

**Received • Примљено:** April 7, 2025
**Revised • Ревизија:** July 13, 2025
**Accepted • Прихваћено:** July 26, 2025
**Online first:** July 29, 2025

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takes into account symptoms presented by the patient, vital signs, and any underlying medical conditions (comorbidities). It is particularly valuable in emergency settings because it helps clinicians quickly identify patients who may require urgent intervention based on their initial presentation. Both scoring systems are essential in guiding clinical decision-making, risk stratification, and treatment approaches for patients experiencing GI hemorrhages [6].

The primary aim of this study was to conduct a comprehensive comparison between the Rockall and Glasgow-Blatchford scoring systems, both of which have been developed to assess patients presenting with GI bleeding. Specifically, the study aimed to evaluate the effectiveness of these scoring systems in predicting three critical clinical outcomes: the need for blood transfusions, the likelihood of requiring admission to an ICU, and the overall mortality associated with GI bleeding. By analyzing these outcomes, the study sought to determine which scoring system provides better clinical guidance for clinicians in managing patients with GI hemorrhages.

## METHODS

This study examined a cohort of 199 patients who were admitted to Gazi Yaşargil Training and Research Hospital for treatment of upper gastrointestinal bleeding over a period spanning from October 1, 2020, to October 1, 2024. We meticulously gathered demographic information regarding each patient, including their age and gender at the time of admission. Additionally, we recorded vital signs, such as pulse rate, systolic and diastolic blood pressure, which are critical indicators of a patient's cardiovascular status. We also tracked the duration of each patient's stay in the intensive care unit, as well as their overall hospital admission length. Furthermore, we documented any existing comorbidities of the patients to provide a comprehensive overview of their health profiles. This study was conducted in accordance with the Declaration of Helsinki.

Patients were enrolled in the study according to predefined inclusion criteria outlined below:

Inclusion criteria:

- (≥ 18 years) with confirmed upper gastrointestinal (GI) bleeding based on endoscopic findings.

Exclusion criteria:

- No endoscopy performed or no endoscopic evidence of upper GI bleeding
- Upper GI bleeding due to varices or malignancy
- Referral to other medical centers
- Age < 18 years
- Incomplete or missing medical records.

The Rockall Score and GBS of the patients were recorded, and analyses of their sensitivity and specificity were performed.

### Calculation of the Rockall Score

The Rockall Score is a clinical scoring system used to assess the risk of mortality and rebleeding in patients with upper gastrointestinal bleeding. It consists of pre-endoscopic and post-endoscopic components.

1. Pre-endoscopic Rockall Score

The initial (pre-endoscopic) Rockall score is calculated based on the three parameters shown in Table 1.

2. Complete Rockall Score (post-endoscopic)

Once endoscopy is performed, two additional parameters are included to refine the risk assessment (Table 2).

**Table 1.** Pre-Endoscopic Rockall Scoring System

| Category | Criteria | Score |
|---|---|---|
| Age | < 60 years | 0 |
| | 60–79 years | 1 |
| | ≥ 80 years | 2 |
| Shock (hemodynamic status) | No shock (SBP ≥ 100 mmHg and HR < 100 bpm) | 0 |
| | Tachycardia (HR ≥ 100 bpm) but SBP ≥ 100 mmHg | 1 |
| | Hypotension (SBP < 100 mmHg) | 2 |
| Comorbidities | No major comorbidity | 0 |
| | Cardiac failure, ischemic heart disease, chronic kidney disease, malignancy, or other significant comorbidities | 2 |
| | Metastatic malignancy | 3 |

SBP – systolic blood pressure; HR – heart rate; BPM – beats per minute; maximum pre-endoscopic score: 7

**Table 2.** Complete Rockall Scoring System (post endoscopic)

| Category | Criteria | Score |
|---|---|---|
| Endoscopic diagnosis | No lesion, Mallory–Weiss tear | 0 |
| | All other diagnoses | 1 |
| | Malignancy of upper GI tract | 2 |
| Signs of recent hemorrhage | No stigmata of recent hemorrhage | 0 |
| | Blood in upper GI tract or adherent clot | 2 |
| | Active bleeding (spurting or oozing) | 2 |

Maximum complete Rockall Score: 11

### Interpretation of the Rockall Score

- Low Risk (0–2 points): Low mortality and rebleeding risk; may be managed with early discharge.
- Moderate Risk (3–4 points): Increased risk; requires closer monitoring.
- High Risk (≥ 5 points): High mortality and rebleeding risk; often requires ICU admission and intensive management [1].

### Calculation of GBS

GBS is calculated using multiple clinical and laboratory parameters. The blood urea nitrogen (BUN) level contributes to the score, with values below 6.5 mmol/L receiving 0 points, 6.5–8 mmol/L scoring 2 points, 8–10 mmol/L scoring 3 points, 10–25 mmol/L scoring 4 points, and above 25.0 mmol/L scoring 6 points. Hemoglobin levels are also considered separately for men and women. In men, ≥ 13 g/dL is scored as 0, 12–12.9 g/dL as 1, 10–11.9 g/dL as 3, and < 10 g/dL as 6. In women, ≥ 12 g/dL is scored as 0, 10–11.9 g/dL as 1, and < 10 g/dL as 6 (Table 3).

Systolic blood pressure (SBP) is another important factor, where values ≥ 110 mmHg receive 0 points,

100–109 mmHg receive 1 point, 90–99 mmHg receive 2 points, and < 90 mmHg receive 3 points. A pulse rate of ≥ 100 bpm contributes 1 point to the total score. The presence of melena (black stools) is given 1 point, while syncope adds 2 points. If the patient has hepatic disease, an additional 2 points are assigned. Similarly, the presence of cardiac failure also contributes 2 points to the overall score (Table 3).

**Table 3.** Glasgow-Blatchford Scoring System

| Parameter | Criteria | Score |
|---|---|---|
| Blood urea nitrogen (mmol/L) | < 6.5 | 0 |
| | 6.5–8 | 2 |
| | 8–10 | 3 |
| | 10–25 | 4 |
| | > 25 | 6 |
| Hemoglobin (g/dL, Men) | ≥ 13 | 0 |
| | 12–12.9 | 1 |
| | 10–11.9 | 3 |
| | < 10 | 6 |
| Hemoglobin (g/dL, Women) | ≥ 12 | 0 |
| | 10–11.9 | 1 |
| | < 10 | 6 |
| Systolic blood pressure (mmHg) | ≥ 110 | 0 |
| | 100–109 | 1 |
| | 90–99 | 2 |
| | < 90 | 3 |
| Pulse rate (bpm) | ≥ 100 | 1 |
| Melena | Present | 1 |
| Syncope | Present | 2 |
| Hepatic disease | Present | 2 |
| Cardiac failure | Present | 2 |

BPM – beats per minute

### Interpretation of GBS

- Score = 0 → Very low risk; outpatient management is safe.
- Score ≥ 1 → Increased risk; hospitalization and further evaluation are recommended.
- Score ≥ 6 → High risk of severe bleeding and mortality; requires urgent intervention (endoscopy, transfusion, ICU admission) [7].

### Statistics

The Kolmogorov–Smirnov test was employed to determine whether the data followed a normal distribution. For data that were normally distributed, results are presented as mean ± SD, while data that were not normally distributed are shown as median (IQR). If the non-categorical data were normally distributed, comparisons were made using the Student's t-test. For data that were not normally distributed, the Mann–Whitney U test was used for comparison. Categorical data were analyzed using the $\chi^2$ test. Sensitivity and specificity were assessed using the ROC curve, and results were compared with the DeLong test. A p-value of less than 0.05 was considered statistically significant. The program used for statistical analysis was IBM SPSS Statistics, Version 26.0 (IBM Corp., Armonk, NY, USA).

**Ethics:** Ethics committee approval for this study was obtained from the Ethics Committee of Gazi Yaşargil Education and Research Hospital on March 28, 2024, with approval number 403. The study was conducted in accordance with the Declaration of Helsinki and its ethical principles.

## RESULTS

**ICU admission and sex distribution**: Among male patients, 110 individuals (74.8%) were admitted to the ICU, while 37 individuals (25.2%) were not. Among female patients, 38 individuals (73.1%) were admitted to the ICU, whereas 14 individuals (26.9%) were not. A total of 199 patients were evaluated for ICU admission, with a p-value of 0.803; this indicates no statistically significant difference (p = 0.803) (Table 4).

**Mortality and sex distribution**: Among male patients, 138 individuals (93.2%) were discharged, while nine individuals (6.8%) died. Among female patients, 48 individuals (92.3%) were discharged, whereas four individuals (7.7%) died. A total of 199 patients were assessed for survival status, with a p-value of 0.694. There is no significant difference in mortality rates between male and female patients (p = 0.694) (Table 5).

**Table 4.** Admission to the intensive care unit (ICU) according to sex

| Sex | Admitted to ICU | Not admitted to ICU | Total |
|---|---|---|---|
| Male | 110 | 37 | 147 |
| Female | 38 | 14 | 52 |
| Total | 148 | 51 | 199 |

**Table 5.** Mortality according to sex

| Sex | Discharged | Exitus (death) | Total |
|---|---|---|---|
| Male | 138 | 9 | 147 |
| Female | 48 | 4 | 52 |
| Total | 186 | 13 | 199 |

p-value: 0.694

**Age distribution:** The median age of male patients was 57 years (IQR 72), while the median age of female patients was 77.5 years (IQR 80), and this age difference was found to be statistically significant (p < 0.001), suggesting that female patients with upper GI bleeding were generally older than their male counterparts (Table 7).

**Vital signs:** The median pulse rate was 88 bpm for both males (IQR 81) and females (IQR 85), with no statistically significant difference between the groups (p = 0.645) (Table 5). Similarly, the median systolic blood pressure was 115 mmHg in males (IQR 135) and 110.5 mmHg in females (IQR 130), showing no significant difference (p = 0.746) (Table 6). Although the median diastolic blood pressure was slightly higher in males (70 mmHg, IQR 65) compared to females (63.5 mmHg, IQR 68), the difference approached but did not reach statistical significance (p = 0.063) (Table 7).

**Length of stay:** The total length of hospital stay was similar between male and female patients, with a median

of five days (IQR 150) for males and 5.5 days (IQR 33) for females, showing no statistically significant difference (p = 0.835) (Table 6). Likewise, the median length of stay in the ICU was two days for both sexes – males (IQR 151) and females (IQR 35) – with no significant difference observed (p = 0.608) (Table 7).

**Endoscopic results**: Among 199 patients who underwent endoscopy, peptic ulcer was the most common finding, observed in 91% of cases. Other lesions were infrequent, including erosive gastritis and esophagitis (2% each), angiodysplasia (1.5%), and erosive bulbitis (1%). Rare findings (0.5% each) included bulbar diverticulum, gastric antral vascular ectasia, esophageal ulcer, and duplicate entries of erosive gastritis and bulbitis (Table 6).

**Table 6.** Endoscopic results of the patients

| Endoscopic lesion | Frequency | Percentage |
|---|---|---|
| Peptic ulcer | 181 | 91% |
| Erosive gastritis | 4 | 2% |
| Esophagitis | 4 | 2% |
| Angiodysplasia | 3 | 1.5% |
| Erosive bulbitis | 2 | 1% |
| Bulbar diverticulum | 1 | 0.5% |
| Erosive bulbitis *(alternate entry)* | 1 | 0.5% |
| Erosive gastritis *(alternate entry)* | 1 | 0.5% |
| Gastric antral vascular ectasia | 1 | 0.5% |
| Esophageal ulcer | 1 | 0.5% |

**Clinical scores:** The GBS had a median value of 11 (IQR 16) for males and 11.5 (IQR 16) for females, with a statistically significant difference observed (p = 0.012), indicating a slightly higher risk profile in female patients (Table 6). Similarly, the Rockall Score was significantly higher in females, with a median of 5 (IQR 8) compared to 3 (IQR 8) in males (p = 0.01), suggesting a greater likelihood of adverse outcomes among female patients (Table 7).

**Laboratory and transfusion parameters:** The mean hemoglobin level was significantly lower in female patients (7.63 ± 2.16 g/dL) compared to males (9.72 ± 2.92 g/dL), with a p-value of < 0.001, indicating a highly significant sex difference (Table 6). However, the median number of erythrocyte transfusions was the same for both sexes at two units, though the IQR was 33 for males and 22 for females; this difference was not statistically significant (p = 0.11) (Table 7).

**Table 7.** Descriptive analysis of patients according to sex

| Parameter | Male (n = 147) | Female (n = 52) | p |
|---|---|---|---|
| Age (years) median ± IQR | 57 (18–90) | 77.5 (20–100) | **< 0.001** |
| Pulse (beats/minute) median ± IQR | 88 (55–136) | 88 (60–145) | 0.645 |
| SBP (mmHg) median ± IQR | 115 (65–200) | 110.5 (75–205) | 0.746 |
| DBP (mmHg) median ± IQR | 70 (35–100) | 63.5 (42–110) | 0.063 |
| LOS (days) median ± IQR | 5 (1–151) | 5.5 (2–35) | 0.835 |
| LOS in ICU (days) median ± IQR | 2 (0–151) | 2 (0–35) | 0.608 |
| Glasgow-Blatchford Score median ± IQR | 11 (2–18) | 11.5 (1–17) | **0.012** |
| Rockall Score median ± IQR | 3 (1–9) | 5 (1–9) | **0.01** |
| Hemoglobin mean ± SD | 9.72 ± 2.92 | 7.63 ± 2.16 | **< 0.001** |
| Number of transfusions (erythrocyte) median ± IQR | 2 (0–33) | 2 (0–22) | 0.11 |

SBP – systolic blood pressure; DBP – diastolic blood pressure; LOS – length of stay; ICU – intensive care unit; IQR – interquartile range;
p-values < 0.05 were considered statistically significant

**1. Blood transfusion prediction**
- GBS: AUC = 0.887 (95% CI: 0.835–0.932)
- Rockall: AUC = 0.786 (95% CI: 0.717–0.844)
- Z = 35.16, p < 0.001 → GBS significantly outperforms Rockall (Figure 1).

**2. ICU admission prediction**
- Rockall: AUC = 0.624 (95% CI: 0.531–0.714)
- GBS: AUC = 0.604 (95% CI: 0.512–0.682)
- Z = -7.87, p < 0.05 → Rockall slightly better, but both scores show poor to fair predictive value (Figure 2).

**3. Mortality Prediction**
- Rockall: AUC = 0.847 (95% CI: 0.735–0.937)
- GBS: AUC = 0.837 (95% CI: 0.704–0.939)
- Z = -1.18, p = 0.239 → No significant difference; both show good predictive performance (Figure 3).

## DISCUSSION

This study included 199 patients who presented with upper GI bleeding and were being followed up at our hospital. Demographic data of all patients were recorded. The primary objective of the study was to evaluate the role of the Rockall and GB scoring systems – which are specifically developed for patients with GI bleeding –in predicting the need for blood transfusion and ICU admission. Additionally, the study aimed to assess the effectiveness of these scoring systems in predicting mortality.

In upper GI bleeding, there is a general male predominance, with the condition typically occurring at a ratio of approximately 2:1 in favor of males. Additionally, male patients tend to be younger at the time of diagnosis compared to female patients [8, 9]. In our study, the male-to-female ratio was consistent with these previously reported trends, with 147 male patients and 52 female patients included in the analysis. When comparing age distribution, male patients had a median age of 57 years (IQR 72), whereas female patients had a median age of 77.5 years (IQR 80). This indicates that female patients were significantly older than their male counterparts, and this difference was found to be statistically significant (p < 0.001). Although significant differences were observed between the two groups in terms of numerical distribution and age, statistical analyses revealed no significant association between gender and ICU admission rates (p = 0.803) or gender and mortality rates (p = 0.694). This suggests that while demographic characteristics differ, gender does not appear to be an independent predictor of ICU requirement or mortality risk in patients with upper GI bleeding.

In the comparison of vital signs and laboratory parameters between the two groups, no statistically significant differences were generally observed. This included pulse

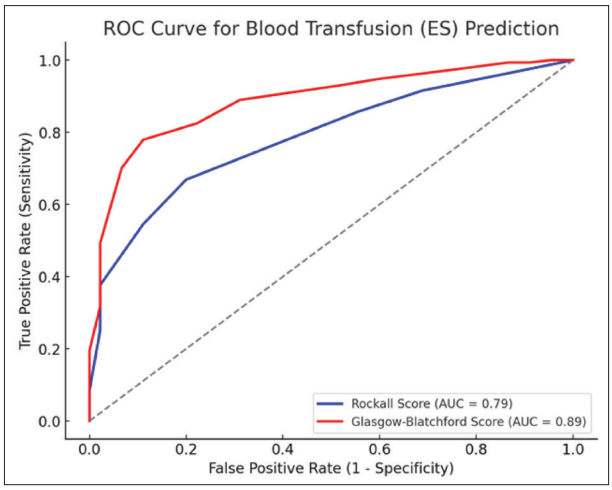


**Figure 1.** Receiver operating characteristic (ROC) curve of Rockall and Glasgow-Blatchford Scores for transfusion need

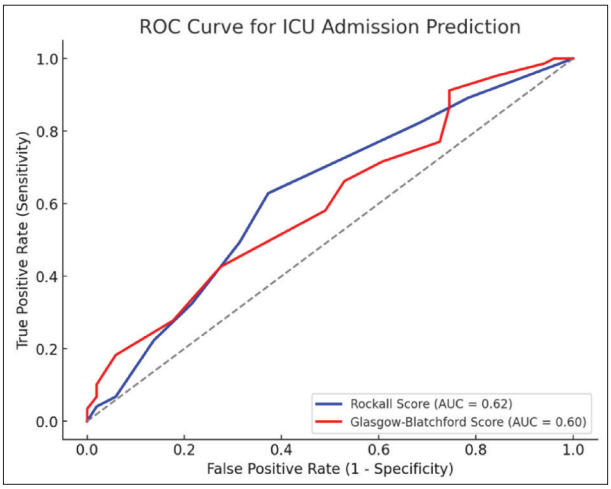


**Figure 2.** Receiver operating characteristic (ROC) curve of Rockall and Glasgow-Blatchford Scores for ICU admission prediction

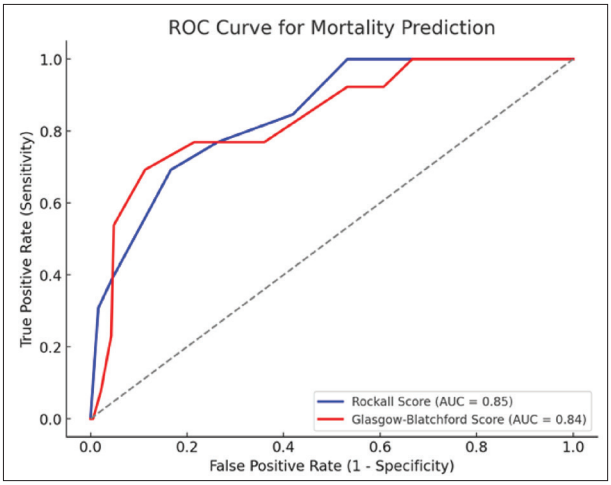


**Figure 3.** Receiver operating characteristic (ROC) curve of Rockall and Glasgow-Blatchford Score for mortality

rate, systolic blood pressure, and diastolic blood pressure, with p-values of 0.645, 0.746, and 0.063, respectively. Similarly, no significant differences were detected in terms of ICU admission rates ($p = 0.835$) or overall hospital length of stay ($p = 0.608$). However, a statistically significant difference was found in the hemoglobin levels at the time of hospital admission ($p < 0.001$). This difference may be attributed to the lower hemoglobin levels observed in female patients compared to males, which could be associated with the older age profile of female patients in this study. Studies suggest that lower baseline hemoglobin levels in women are often linked to physiological factors, such as menstrual blood loss and differences in iron storage capacity, as well as age-related declines in hematopoietic function [10]. Furthermore, older patients – especially postmenopausal women – may have reduced erythropoietin production and lower bone marrow responsiveness, contributing to their increased susceptibility to anemia [11]. In addition, the lower hemoglobin levels observed in female patients compared to their male counterparts may be influenced by multiple factors, such as chronic nutritional deficiencies (e.g., iron deficiency) and the frequent use of non-steroidal anti-inflammatory drugs, which are known to cause gastrointestinal mucosal damage and bleeding. These factors, individually or in combination, may contribute to the higher prevalence of anemia in women [12].

Gastrointestinal bleeding poses a significant risk in terms of hospital admissions and mortality. To minimize this risk and improve patient management, various risk scoring systems have been developed to assess disease severity, predict clinical outcomes, and guide treatment decisions effectively [13]. This condition has multiple clinical and economic implications, particularly affecting gastrointestinal interventions and healthcare resource utilization. Therefore, it is crucial for clinicians to be aware of these potential outcomes to optimize patient management and decision-making [14]. Among the risk scoring systems developed for this purpose, the Rockall Score and the GBS are among the most widely used. These scoring systems provide valuable insights into the need for blood transfusion, ICU admission, and overall mortality risk, helping clinicians make informed decisions in the management of gastrointestinal bleeding [15]. In the study conducted by Robertson et al. [16], the GBS was found to be superior to the Rockall Score in predicting the need for blood transfusion. However, in terms of mortality prediction, both scoring systems demonstrated comparable accuracy [16].

In our study, the GBS demonstrated superior performance in predicting the need for blood transfusion compared to the Rockall Score, and this difference was found to be statistically significant (AUC = 0.887 *vs.* 0.786, Z-score = 35.16, $p < 0.001$). This finding highlights the practical advantage of using GBS in transfusion assessment, as it offers a more effective and convenient tool for clinical decision-making. However, when evaluating ICU admission, both the Rockall and GBS scores had relatively low AUC values, indicating poor predictive power (AUC = 0.624 *vs.* 0.605). Despite the statistically significant

difference ($p < 0.05$), the low AUC values suggest that neither scoring system is highly reliable for predicting ICU admission. Nevertheless, the Rockall Score outperformed GBS in this context. Regarding mortality prediction, the Rockall Score (AUC = 0.847) and GBS (AUC = 0.837) exhibited similar performance, with no statistically significant difference between the two scores ($p = 0.239$). This suggests that both scoring systems have comparable predictive power in estimating mortality risk in patients with upper GI bleeding.

## CONCLUSION

GBS is superior to the Rockall Score in predicting blood transfusion need, making it a more practical tool for clinical decision-making. However, both scores show poor predictive power for ICU admission, with the Rockall Score performing slightly better. In mortality prediction, both scores are comparable with no significant difference. While GBS is preferable for transfusion assessment, additional factors may be needed to improve ICU and mortality predictions.

## ACKNOWLEDGMENT

**Contributions:** JK: conceptualization, formal analysis, methodology, writing – original draft; ÖFA: data collection, writing; MO: writing – review and editing; IS: conceptualization, editing.

**Availability of data and materials:** The authors confirm that most of the data used in this article can be found in Tables 1–6, Figures 1, 2 and 3. Any additional data are available on request.

**Conflict of interest:** None declared.

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# Процена прогностичке вредности Рокалове и Глазгов–Блачфордове скале бодовања код неварикозног крварења из горњег гастроинтестиналног тракта

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**САЖЕТАК**

**Увод/Циљ** Крварење из горњег гастроинтестиналног тракта представља озбиљно медицинско хитно стање које захтева брзу процену и интервенцију. Различите скале за стратификацију ризика, укључујући Рокалову и Глазгов–Блачфордову скалу бодовања (ГБС), користе се за предвиђање клиничких исхода као што су морталитет, пријем у јединицу интензивне неге и потреба за трансфузијом крви.

**Методе** У студију је укључено 199 болесника примљених у нашу болницу због неварикозног крварења из горњег гастроинтестиналног тракта у периоду од 1. октобра 2020. до 1. октобра 2024. године. Забележени су демографски подаци, витални знаци (пулс, систолни и дијастолни крвни притисак), дужина боравка у болници и на интензивној нези, коморбидитети и употреба лекова. За сваког болесника израчунати су Рокалови и ГБС скорови, а њихова предиктивна вредност процењена је анализом сензитивности и специфичности.

**Резултати** ГБС (*AUC* = 0,887) показао је бољу предиктивну вреност за трансфузију крви у поређењу са Рокаловом скалом (*AUC* = 0,786, $p < 0,001$). Међутим, оба резултата показала су слабу предиктивну способност за пријем у јединицу интензивне неге (*AUC* = 0,624 према 0,605, $p < 0,05$), при чему је Рокалова скала надмашила ГБС. За предвиђање морталитета, оба резултата су се показала слично (Рокал: *AUC* = 0,847, ГБС: *AUC* = 0,837, $p = 0,239$), што не указује на значајну разлику.

**Закључак** ГБС надмашује Рокалову скалу у предвиђању потребе за трансфузијом крви, док оба скора показују слаб учинак у предикцији пријема у јединицу интензивне неге, при чему је Рокалова скала нешто боља. У предвиђању морталитета, оба скора су упоредива. ГБС је погоднија за процену потребе за трансфузијом, али додатни фактори могу побољшати предикцију пријема у јединицу интензивне неге и морталитета.

**Кључне речи**: крварење из гастроинтестиналног тракта; Рокалова скала; Глазгов–Блачфордова скала; морталитет; трансфузија