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**Literature search results**

<table>
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<tr>
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<th>Glasgow Blatchford scale for Gastrointestinal bleeding. Validation process, Drawbacks, Usefulness, History and Is it possible to refute the scale?</th>
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**Search details**

**Resources searched**

- NHS Evidence; TRIP Database; Cochrane Library; AMED; BNI; CINAHL; EMBASE; HMIC; Health Business Elite; MEDLINE; PsychINFO; Google Scholar; Google Advanced Search

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**Google search string(s):**

**Summary**

There are a number of articles relating to the scale and it would appear that it was developed in 2000 to predict the need for hospital-based intervention – transfusion, endoscopic therapy, surgery – or death following UGIH.

A modified GBS from Canadian data which predicted high risk endoscopic stigmata, re-bleeding and mortality, is described by Romagnuolo et al

Simple clinical predictors may obviate urgent endoscopy in selected patients with nonvariceal upper GI tract bleeding.

Arch Intern Med, 2007, 176, 265 – 270

The drawbacks are that the scale is not as good as the AIMS 65 or Rockall score in predicting overall mortality and it doesn’t have good performance in predicting re-bleeding.

There is no published data assessing GBS use in variceal haemorrhage.
NICE recommends to use the following formal risk assessment scores for all patients with acute upper GI bleeding:

- Blatchford score at first assessment
- The full Rockall score after endoscopy

**Guidelines and Policy**

G1. **Gastro-intestinal bleeding: the management of acute upper GI bleeding**


G2. **Management of acute upper and lower Gastrointestinal bleeding. A national clinical guideline**


**Evidence-based reviews**

1. **The Glasgow Blatchford score is the most accurate assessment of patients with upper gastrointestinal hemorrhage.**

   **Citation:** Clinical Gastroenterology & Hepatology, October 2012, vol./is. 10/10(1130-1135.e1), 1542-3565;1542-7714 (2012 Oct)

   **Author(s):** Laursen SB; Hansen JM; Schaffalitzky de Muckadell OB

   **Abstract:** BACKGROUND & AIMS: Risk scoring systems are used increasingly to assess patients with upper gastrointestinal hemorrhage (UGIH). There have been comparative studies to identify the best system, but most have been retrospective and included small sample sizes, few patients with severe bleeding and with low mortality. We aimed to identify the optimal scoring system. METHODS: We performed a prospective study to compare the accuracy of the Glasgow Blatchford score (GBS), an age-extended GBS (EGBS), the Rockall score, the Baylor bleeding score, and the Cedars-Sinai Medical Center predictive index in predicting patients’ (1) need for hospital-based intervention or 30-day mortality, (2) suitability for early discharge, (3) likelihood of rebleeding, and (4) mortality. We analyzed the area under receiver operating characteristic (AUROC) curve, sensitivity, specificity, and positive and negative predictive values for each system. The study included 831 consecutive patients admitted with UGIH during a 2-year period. RESULTS: The GBS and EGBS better predicted patients’ need for hospital-based intervention or 30-day mortality than the other systems (AUROC, 0.93; P < .001) and were also better in identifying low-risk patients (sensitivity values, 0.27-0.38; specificity values, 0.099-1). The EGBS identified a significantly higher proportion of low-risk patients than the GBS (P = .006). None of the systems accurately predicted which patients would have rebleeding or patients’ 30-day mortality, on the basis of low AUROC and specificity values. CONCLUSIONS: The GBS accurately identifies patients with UGIH most likely to need hospital-based intervention and also those best suited for outpatient care. The EGBS seems promising but must be validated externally. No scoring system seems to accurately predict patients’ 30-day mortality or rebleeding. ClinicalTrials.gov number, NCT01589250. Copyright 2012 AGA Institute. Published by Elsevier Inc. All rights reserved.

**Publication Type:** Comparative Study; Journal Article; Research Support, Non-U.S. Gov't

**Source:** MEDLINE and also available at:  http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/507/CN-00899507/frame.html
1. Predictors for in-hospital mortality and need for clinical intervention in upper GI bleeding: a 5-year observational study.

**Citation:** Chirurgia (Bucuresti), January 2014, vol./is. 109(1(48-54), 1221-9118; 1221-9118 (2014 Jan-Feb)

**Author(s):** Balaban DV; Strambu V; Florea BG; Cazan AR; Bratucu M; Jinga M

**Abstract:** BACKGROUND: Upper GI bleeding (UGIB) is a potentially life threatening gastrointestinal emergency whose effective management depends on early risk stratification.METHODS: We retrospectively studied 151 patients admitted to our unit with UGIB between 1st January 2007 and 31st December 2011 and in whom we calculated the clinical and complete Rockall, the Glasgow-Blatchford and modified Glasgow-Blatchford risk scores. We performed an analysis of the predictive value of these scores for in-hospital mortality and need for clinical intervention.RESULTS: Of the 151 patients enrolled, 68.87% were male, and the mean age was 59.48 years. One in three patients had a history of chronic liver disease and one in eight had a previous episode of UGIB. Clinically, 58.3% of the patients presented with melena, 18.5% with hematemesis and 23.1% with both hematemesis and melena. 22% of cases were variceal hemorrhages and the other non-variceal. 16 patients died during hospitalization. The prognostic accuracy of all four scores for in-hospital death and need for clinical intervention was good, the complete Rockall score having the best performance (AUROC 0.849 and 0.653 respectively).CONCLUSIONS: The Rockall and Blatchford scores were good predictors of mortality and need for clinical intervention in our study. The good predictive performance of these scores highlight the need for their use in day-to-day practice to select patients with likelihood of poor clinical outcome.

**Publication Type:** Journal Article

**Source:** MEDLINE

2. Is the Glasgow Blatchford score useful in the risk assessment of patients presenting with variceal haemorrhage?.

**Citation:** European Journal of Gastroenterology & Hepatology, April 2014, vol./is. 26(4(432-7), 0954-691X; 1473-5687 (2014 Apr)

**Author(s):** Reed EA; Dalton H; Blatchford O; Ashley D; Mowat C; Gaya DR; Cahill A; Warshow U; Hare N; Groome M; Forrest EH; Morris J; Stanley AJ

**Abstract:** BACKGROUND: The Glasgow Blatchford score (GBS) is a pre-endoscopic risk assessment tool for patients presenting with upper gastrointestinal haemorrhage. There are few data regarding use in patients with variceal bleeding, who are generally accepted as being at high risk.AIM: The aim of the study was to assess GBS in correctly identifying patients with subsequently proven variceal bleeding as 'high risk' and to compare GBS, admission and full Rockall scores in predicting clinical endpoints in this group.PATIENTS AND METHODS: Data on consecutive patients with upper gastrointestinal haemorrhage presenting to four UK hospitals were collected. The GBS, admission and full Rockall scores were calculated and compared for the subgroup subsequently shown to have variceal bleeding. Area under the receiver operating curve (AUROC) was used to assess the scores ability to predict clinical endpoints within this variceal bleeding subgroup.RESULTS: A total of 1432 patients presented during the study period. Seventy-one (5%) had a final diagnosis of variceal bleeding. At presentation, none of this group had GBS less than 2, but six had an admission Rockall score of 0. In predicting need for blood transfusion, AUROC scores for GBS, full and admission Rockall scores were 0.68, 0.65 and 0.68, respectively. For endoscopic/surgical intervention the scores were 0.34, 0.51 and 0.55, respectively, and for predicting death the scores were 0.56, 0.72 and 0.70, respectively. None of these AUROC score comparisons were significant.CONCLUSION: At presentation, GBS correctly identifies patients with variceal bleeding as high risk and appears superior to the admission Rockall score. However, GBS and both Rockall scores are poor at predicting clinical outcome within this group.

**Publication Type:** Journal Article

**Source:** MEDLINE

BACKGROUND: Data regarding the utility of the Glasgow-Blatchford bleeding score (GBS) in hospitalized patients with upper GI hemorrhage are limited. OBJECTIVE: To evaluate the performance of the GBS in predicting clinical outcomes and the need for interventions in patients with upper GI hemorrhage.

DESIGN: Prospective observational study. SETTING: Single, tertiary-care endoscopic center. PATIENTS: Between July 2010 and July 2012, 888 consecutive hospitalized patients managed for upper GI hemorrhage were entered into the study. INTERVENTION: GBS and Rockall scores. MAIN OUTCOME MEASUREMENTS: GBS and Rockall scores were prospectively calculated. The performance of these scores to predict the need for interventions and outcomes was assessed by using a receiver operating characteristic curve.

RESULTS: Endoscopy was performed in 708 patients (80%). A total of 286 patients (40.3%) required endoscopic therapy, and 29 patients (3.8%) underwent surgery. GBS and post-endoscopy Rockall scores (post-E RS) were superior to pre-endoscopy Rockall scores in predicting the need for endoscopic therapy (area under the curve [AUC] 0.76 vs 0.76 vs 0.66, respectively) and rebleeding (AUC 0.71 vs 0.64 vs 0.57). The GBS was superior to Rockall scores in predicting the need for blood transfusion (AUC 0.81 vs 0.70 vs 0.68) and surgery (AUC 0.71 vs 0.64 vs 0.51). Patients with GBS scores < 3 did not require intervention. LIMITATIONS: Subjective decision making as to need for endoscopic therapy and blood transfusion.

CONCLUSION: Compared with post-E RS, the GBS was superior in predicting the need for blood transfusion and surgery in hospitalized patients with upper GI hemorrhage and was equivalent in predicting the need for endoscopic therapy, rebleeding, and death. There are potential cut off GBS scores that allow risk stratification for upper GI hemorrhage, which warrant further evaluation. Copyright 2013 American Society for Gastrointestinal Endoscopy. Published by Mosby, Inc. All rights reserved.

Publication Type: Journal Article
Source: MEDLINE


4. Emergency department risk stratification in upper gastrointestinal bleeding.

Citation: CJEM Canadian Journal of Emergency Medical Care, January 2012, vol./is. 14/1(45-9), 1481-8035;1481-8035 (2012 Jan)

Author(s): Ali H; Lang E; Barkan A


Publication Type: Journal Article
Source: MEDLINE

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5. ACP Journal Club. The Glasgow-Blatchford Bleeding Score identified patients with upper GI bleeding who could be managed as outpatients.

Citation: Annals of Internal Medicine, May 2009, vol./is. 150/10(JC5-14), 0003-4819;1539-3704 (2009 May 19)

Author(s): Kowdley KV; Irani S

Publication Type: Journal Article
Source: MEDLINE

Full Text: Available from Annals of Internal Medicine in Lincoln County Hospital Professional Library; Note: ; Notes: Use the link to request articles from the library. Complete the online form and press 'Send'. Available from Free Access Content in Annals of Internal Medicine

6. Pre-endoscopic Rockall and Blatchford scores to identify which emergency
department patients with suspected gastrointestinal bleed do not need endoscopic hemostasis.

Citation: Journal of Emergency Medicine, June 2013, vol./is. 44/6(1083-7), 0736-4679:0736-4679 (2013 Jun)

Author(s): Meltzer AC; Burnett S; Pinchbeck C; Brown AL; Choudhri T; Yadav K; Fleischer DE; Pines JM

Abstract: BACKGROUND: The pre-endoscopic Rockall Score (RS) and the Glasgow-Blatchford Scores (GBS) can help risk stratify patients with upper gastrointestinal bleed who are seen in the Emergency Department (ED). The RS and GBS have yet to be validated in a United States patient population for their ability to discriminate which ED patients with upper gastrointestinal bleed do not need endoscopic hemostasis.

OBJECTIVE: We sought to determine whether patients who received a score of zero on either score (the lowest risk) in the ED still required upper endoscopic hemostasis during hospitalization.

METHODS: Retrospective electronic medical record chart review was performed during a 3-year period (2007-2009) to identify patients with suspected upper gastrointestinal bleed by ED final diagnosis of gastrointestinal hemorrhage and related terms at a single urban academic ED. The RS and GBS were calculated from ED chart abstraction and the hospital records of admitted patients were queried for subsequent endoscopic hemostasis.

RESULTS: Six hundred and ninety patients with gastrointestinal bleed were identified and 86% were admitted to the hospital. One hundred and twenty-two patients had an RS equal to zero; 67 (55%; 95% confidence interval [CI] 46-63%) of these patients were admitted to the hospital and 11 (16%; 95% CI 9-27%) received endoscopic hemostasis. Sixty-three patients had a GBS equal to zero; 15 (24%; 95% CI 15-36%) were admitted to the hospital and 2 (13%; 95% CI 4-38%) received endoscopic hemostasis.

CONCLUSIONS: Some patients who were identified as lowest risk by the GBS or RS still received endoscopic hemostasis during hospital admission. These clinical decision rules may be insufficiently sensitive to predict which patients do not require endoscopic hemostasis. Copyright 2013. Published by Elsevier Inc.

Publication Type: Journal Article
Source: MEDLINE


Citation: American Journal of Emergency Medicine, May 2013, vol./is. 31/5(775-8), 0735-6757;1532-8171 (2013 May)

Author(s): Wang CH; Chen YW; Young YR; Yang CJ; Chen IC

Abstract: BACKGROUND: The clinical severities of upper gastrointestinal bleeding (UGIB) are of a wide variety, ranging from insignificant bleeds to fatal outcomes. Several scoring systems have been designed to identify UGIB high- and low-risk patients. The aim of our study was to compare the Glasgow-Blatchford score (GBS) with the preendoscopic Rockall score (PRS) and the complete Rockall score (CRS) in their utilities in predicting clinical outcomes in patients with UGIB.

METHODS: We designed a prospective study to compare the performance of the GBS, PRS, and CRS in predicting primary and secondary outcomes in UGIB patients. The primary outcome included the need for blood transfusion, endoscopic therapy, or surgical intervention and was labeled as high risk. The secondary outcomes included rebleeding and 30-day mortality. The area under the receiver operating characteristic curve (AUC), sensitivity, specificity, and positive and negative predictive values for each system were analyzed. A total of 303 consecutive patients admitted with UGIB during a 1-year period were enrolled.

RESULTS: For prediction of high-risk group, AUC was obtained for GBS (0.808), PRS (0.604), and CRS (0.767). For prediction of rebleeding, AUC was obtained for GBS (0.674), PRS (0.602), and CRS (0.621). For prediction of mortality, AUC was obtained for GBS (0.513), PRS (0.703), and CRS (0.620).

CONCLUSIONS: In detecting high-risk patients with acute UGIB, GBS may be a useful risk stratification tool. However, none of the 3 score systems has good performance in predicting rebleeding and 30-day mortality because of low AUCs. Copyright 2013 Elsevier Inc. All rights reserved.

Publication Type: Clinical Trial; Comparative Study; Journal Article; Research Support, Non-U.S. Gov't
Source: MEDLINE
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8. The AIMS65 score compared with the Glasgow-Blatchford score in predicting outcomes in upper GI bleeding.

Citation: Gastrointestinal Endoscopy, April 2013, vol./is. 77/4(551-7), 0016-5107;1097-6779 (2013 Apr)
Author(s): Hyett BH; Abougergi MS; Charpentier JP; Kumar NL; Brozovic S; Claggett BL; Travis AC; Saltzman JR

Abstract: INTRODUCTION: We previously derived and validated the AIMS65 score, a mortality prognostic scale for upper GI bleeding (UGIB). OBJECTIVE: To validate the AIMS65 score in a different patient population and compare it with the Glasgow-Blatchford risk score (GBRS). DESIGN: Retrospective cohort study. PATIENTS: Adults with a primary diagnosis of UGIB. MAIN OUTCOME MEASUREMENTS: Primary outcome: inpatient mortality. Secondary outcomes: composite clinical endpoint of inpatient mortality, rebleeding, and endoscopic, radiologic or surgical intervention; blood transfusion; intensive care unit admission; rebleeding; length of stay; timing of endoscopy. The area under the receiver-operating characteristic curve (AUROC) was calculated for each score. RESULTS: Of the 278 study patients, 6.5% died and 35% experienced the composite clinical endpoint. The AIMS65 score was superior in predicting inpatient mortality (AUROC, 0.93 vs 0.68; P < .001), whereas the GBRS was superior in predicting blood transfusion (AUROC, 0.85 vs 0.65; P < .01) The 2 scores were similar in predicting the composite clinical endpoint (AUROC, 0.62 vs 0.68; P = .13) as well as the secondary outcomes. A GBRS of 10 and 12 or more maximized the sum of the sensitivity and specificity for inpatient mortality and rebleeding, respectively. The cutoff was 2 or more for the AIMS65 score for both outcomes. LIMITATIONS: Retrospective, single-center study. CONCLUSION: The AIMS65 score is superior to the GBRS in predicting inpatient mortality from UGIB, whereas the GBRS is superior for predicting blood transfusion. Both scores are similar in predicting the composite clinical endpoint and other outcomes in clinical care and resource use. Copyright 2013 American Society for Gastrointestinal Endoscopy. Published by Mosby, Inc. All rights reserved.

Publication Type: Comparative Study; Journal Article
Source: MEDLINE

9. Comparison of risk scoring systems in predicting clinical outcome at upper gastrointestinal bleeding patients in an emergency unit.

Citation: American Journal of Emergency Medicine, January 2013, vol./is. 31/1(94-9), 0735-6757;1532-8171 (2013 Jan)
Author(s): Dicu D; Pop F; Ionescu D; Dicu T
Abstract: BACKGROUND: Admission Rockall score (RS), full RS, and Glasgow-Blatchford Bleeding Score (GBS) can all be used to stratify the risk in patients presenting with upper gastrointestinal bleeding (UGIB) in the emergency department (ED). The aim of our study was to compare both admission and full RS and GBS in predicting outcomes at UGIB patients in a Romanian ED. PATIENTS AND METHODS: A total of 229 consecutive patients with UGIB were enrolled in the study. Patients were followed up 60 days after admission to ED because of UGIB episode to determine cases of rebleeding or death during this period. By using areas under the curve (AUCs), we compared the 3 scores in terms of identifying the most predictive score of unfavorable outcomes. RESULTS: Rebleeding rate was 40.2% (92 patients), and mortality rate was 18.7% (43 patients). For the prediction of mortality, full RS was superior to GBS (AUC, 0.825 vs 0.723; P = .05) and similar to admission RS (AUC, 0.792). Glasgow-Blatchford Bleeding Score had the highest accuracy in detecting patients who needed transfusion (AUC, 0.888) and was superior to both the admission RS and full RS (AUC, 0.693 and 0.750, respectively) (P < .0001). In predicting the need for intervention, the GBS was superior to both the admission RS and full RS (AUC, 0.868, 0.674, and 0.785, respectively) (P < .0001 and P = .04, respectively). CONCLUSIONS: The GBS can be used to predict need for intervention and transfusion in patients with UGIB in our ED, whereas full RS can be successfully used to stratify the mortality risk in these patients. Copyright 2013 Elsevier Inc. All rights reserved.

Publication Type: Comparative Study; Journal Article
Source: MEDLINE

10. Validation of the Glasgow Blatchford Score to enable safe discharge of selected patients with upper GI bleeding.

Citation: American Journal of Emergency Medicine, Th; Note: ;
11. Prospective validation of the Glasgow Blatchford scoring system in patients with upper gastrointestinal bleeding in the emergency department.

Citation: Turkish Journal of Gastroenterology, 2012, vol./is. 23/5(448-55), 1300-4948;1300-4948 (2012)

Author(s): Koksal O; Ozeren G; Ozdemir F; Armagan E; Aydin S; Ayyildiz T

Language: English

Abstract: BACKGROUND/AIMS: This study aimed to allow decision-making about hospitalization or discharge using the Glasgow Blatchford Scoring system, a risk analysis performed using basic laboratory and clinical variables, in patients presenting to the Emergency Department with upper gastrointestinal system bleeding. MATERIALS AND METHODS: This prospective, observational study conducted in the Emergency Department of a university hospital enrolled patients aged >18 years, who presented to the Emergency Department with upper gastrointestinal system bleeding between June 2009 and December 2010. For all patients, Glasgow Blatchford Scoring scores were calculated, and the patients were classified into two groups as high-risk and low-risk patients. RESULTS: A total of 160 subjects with upper gastrointestinal system bleeding were enrolled in the study. Mean Glasgow Blatchford Scoring scores were 7.1 + 3.8 for 71 low-risk subjects and 11.7 + 2.9 for 89 high-risk subjects, and the difference between the two groups was statistically significant (p<0.001). When the performance of the Glasgow Blatchford Scoring system was evaluated in the determination of high risk, the sensitivity and specificity were 100% and 1.41%, respectively, for a cut-off value of Glasgow Blatchford Scoring >0, 100% and 16.9% for a cut-off value of Glasgow Blatchford Scoring >3, 96.63% and 36.62% for a cut-off value of Glasgow Blatchford Scoring >5, and 86.52% and 69.01% for a cut-off value of Glasgow Blatchford Scoring >8. In the receiver operating characteristic curve analysis, for Glasgow Blatchford Scoring in the high-risk estimation, the area under the curve was found to be 0.82 (95% CI: 0.75-0.88), and this value was statistically significant (p<0.001). CONCLUSIONS: The Glasgow Blatchford Scoring system, which may be easily calculated based on laboratory and clinical variables, seems to be a useful scoring system for risk analysis of all patients with upper gastrointestinal system bleeding admitted to the Emergency Department.

Publication Type: Comparative Study; Journal Article; Validation Studies

Source: MEDLINE

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Citation: Alimentary Pharmacology & Therapeutics, October 2012, vol./is. 36/8(782-9), 0269-2813;1365-2036 (2012 Oct)

Author(s): Cheng DW; Lu YW; Teller T; Sekhon HK; Wu BU

Abstract: BACKGROUND: Several risk scoring systems exist for upper gastrointestinal bleed (UGIB). We hypothesised that a modified Glasgow Blatchford Score (mGBS) that eliminates the subjective components of the GBS might perform as well as current scoring systems. AIM: To compare the performance of the mGBS to the most widely reported scoring systems for prediction of clinical outcomes in patients presenting with UGIB. METHODS: Prospective cohort study from 9/2010 to 9/2011. Accuracy of the mGBS was compared with the full GBS, full Rockall Score (RS) and clinical RS using area under the receiver operating characteristics-curve (AUC). Primary outcome was need for clinical intervention: blood transfusion, endoscopic, radiological or surgical intervention. Secondary outcome was repeat bleeding or mortality. RESULTS: One hundred and ninety-nine patients were included. Median age was 56 with 40% women. Thirty-two per cent patients required blood transfusion, 24% endoscopic interventions, 0.5% radiological intervention, 0 surgical interventions, 5% had repeat bleeding and 0.5% mortality. Primary outcome: the mGBS (AUC 0.85) performed as well as the GBS (AUC 0.86, P = 0.81), and outperformed the full RS (AUC 0.75, P = 0.005) and clinical RS (AUC 0.66, P < 0.0001). Secondary outcome: the mGBS (AUC 0.83) performed as well as the GBS (AUC 0.81, P = 0.38) and full RS (AUC 0.69, and outperformed the clinical RS (AUC 0.59, P = 0.0007). CONCLUSIONS: The modified Glasgow Blatchford Score
performed as well as the full Glasgow Blatchford Score while outperforming both Rockall Scores for prediction of clinical outcomes in American patients with upper gastrointestinal bleed. By eliminating the subjective components of the Glasgow Blatchford Score, the modified Glasgow Blatchford Score may be easier to use and therefore more easily implemented into routine clinical practice. 2012 Blackwell Publishing Ltd.

**Publication Type:** Comparative Study; Journal Article  
**Source:** MEDLINE  
**Full Text:** Available from Wiley in *Alimentary Pharmacology and Therapeutics*  
Available from EBSCOhost in *Alimentary Pharmacology & Therapeutics*  
Available from Wiley in *Alimentary Pharmacology and Therapeutics*

14. Urgent endoscopy in severe non-variceal upper gastrointestinal hemorrhage: does the Glasgow-Blatchford score help endoscopists?.  
**Citation:** Scandinavian Journal of Gastroenterology, September 2012, vol./is. 47/8(1086-93), 0036-5521;1502-7708 (2012 Sep)  
**Author(s):** Attar A; Sebbagh V; Vicaut E; Le Toumelin P; Bouhnik Y  
**Abstract:** OBJECTIVE: The Glasgow-Blatchford score (GBS) has been validated to select severe patients with non-variceal upper gastrointestinal hemorrhage (UGIH). The aim was to compare the yield of the triage based on the GBS with an endoscopist' decision to perform an urgent upper gastrointestinal endoscopy (UGIE) in newly admitted patients and inpatients with UGIH in the setting of an endoscopy on-duty service in 13 tertiary care centers. MATERIAL AND METHODS: During a 6-month period, GBS and patient data were collected for all patients with non-variceal UGIH for whom an UGIE was requested in emergency. If patients experienced severe endoscopic lesion, surgery or death, they were categorized as patients who had been at need for urgent UGIE. RESULTS: The 102 UGIH patients included (mean age 62, men 73%) had a median GBS of 12 (range 0-21), significantly lower for new patients compared with inpatients (11, range 0-21 vs. 14, range 2-21, respectively, p = 0.001). If triage for urgent UGIE had followed the GBS, no more patients would have had an urgent UGIE compared with what endoscopists performed (99/102 (97%) vs. 92/102 (90%), respectively, p = 0.09). Sensitivity for the detection of patients who needed an UGIE was no different with the GBS than endoscopists (98% vs. 98%, respectively, p = 0.10) and both showed insufficient specificity (4% and 19%, respectively). CONCLUSIONS: The GBS does not detect more patients at need for urgent UGIE than on-duty endoscopists. Both methods lead to numerous unjustified UGIEs. A score that would equally help endoscopists in their decision to intervene urgently is still warranted.

**Publication Type:** Comparative Study; Journal Article  
**Source:** MEDLINE  
**Full Text:** Available from EBSCOhost in *Scandinavian Journal of Gastroenterology*

**Citation:** American Journal of Emergency Medicine, June 2012, vol./is. 30/5(673-9), 0735-6757;1532-8171 (2012 Jun)  
**Author(s):** Chandra S; Hess EP; Agarwal D; Nestler DM; Montori VM; Song LM; Wells GA; Stiell IG  
**Abstract:** BACKGROUND: The Glasgow-Blatchford Bleeding Score (GBS) and Rockall Score (RS) are clinical decision rules that risk stratify emergency department (ED) patients with upper gastrointestinal bleeding (UGIB). We evaluated GBS and RS to determine the extent to which either score identifies patients with UGIB who could be safely discharged from the ED. METHODS: We reviewed and extracted data from the electronic medical records of consecutive adult patients who presented with signs or symptoms of UGIB (hematemesis and/or melena) to an academic ED from April 1, 2004, to April 1, 2009. The primary outcome was need for intervention (blood transfusion and/or endoscopic/surgical intervention) or death within 30 days. RESULTS: We identified 171 patients with the following characteristics: mean age of 69.9 years (SD, 17.0 years ), 52% women, 20% with a history of liver disease, and 22% with history of gastrointestinal bleeding. Ninety (52.6%, 95% confidence interval, 44.9-60.3) patients had the primary outcome. GBS outperformed pre-endoscopy RS [area under the receiver operating characteristic curve (AUC)=0.79 vs 0.62; P=.0001; absolute difference, 0.17]. The
prognostic accuracy of GBS and post-endoscopy RS was similarly high (AUC, 0.79 vs 0.72; P=.26; absolute difference, 0.07). The specificity of GBS and RS was suboptimal at all potential decision thresholds. CONCLUSIONS: Although GBS outperformed pre-endoscopy RS, the prognostic accuracy of GBS and post-endoscopy RS was similarly high. The specificity of GBS and RS was insufficient to recommend use of either score in clinical practice. Copyright 2012 Elsevier Inc. All rights reserved.

Publication Type: Journal Article
Source: MEDLINE
Full Text: Available from ProQuest in American Journal of Emergency Medicine, The;
Note: Collection notes: On first login to a ProQuest journal you will need to select 'Athens (OpenAthens Federation)' from Select Region, and then 'NHS England' from Choose your Library.

Citation: European Journal of Gastroenterology & Hepatology, April 2012, vol./is. 24/4(382-7), 0954-691X;1473-5687 (2012 Apr)
Author(s): Schiefer M; Aquarius M; Leffers P; Stassen P; van Deursen C; Oostenbrug L; Jansen L; Mascllee A; Keulemans YC
Abstract: BACKGROUND AND AIM: Glasgow Blatchford Bleeding Score stratifies patients presenting with acute upper gastrointestinal hemorrhage at the emergency department according to the likelihood of the need for treatment. The objective of this study was to validate the Glasgow Blatchford Bleeding Score for use in an emergency department in the Netherlands. Furthermore, we assessed its clinical usefulness for safe discharge of low-risk acute upper gastrointestinal hemorrhage patients and compared its test validity to that of other scoring systems. METHODS: This multicentre historic cohort study was conducted in two hospitals in the Netherlands. All 478 patients presenting with a suspicion of acute upper gastrointestinal hemorrhage at our emergency departments during a 1-year period were included. For each patient we calculated Glasgow Blatchford Bleeding Score and other commonly used scores. Test validity was assessed using the receiver operated characteristics curve analysis; calibration plots were used to assess the probability of the need for treatment of different levels of the scores. RESULTS: Glasgow Blatchford Bleeding Score had a good discriminative ability in predicting the need for treatment, receiver operated characteristics curve analysis showed an area under the curve of 0.879. Counting a score of 2 or less as low risk (negative), 104 patients (21.7%) were classified as low-risk, with a negative predictive value of 98.1%. These results were superior to those of the other scoring systems. CONCLUSION: Patients presenting at an emergency department in continental Europe with acute upper gastrointestinal hemorrhage and a Glasgow Blatchford Bleeding Score of 2 or less can be safely discharged. The Glasgow Blatchford Bleeding Score performed better than the other commonly used scoring systems.
Publication Type: Journal Article; Multicenter Study; Validation Studies
Source: MEDLINE

17. Safe discharge of patients with low-risk upper gastrointestinal bleeding (UGIB): can the use of Glasgow-Blatchford Bleeding Score be extended?.
Citation: Acute Medicine, 2011, vol./is. 10/4(176-81), 1747-4884;1747-4892 (2011)
Author(s): Le Jeune IR; Gordon AL; Farrugia D; Manwani R; Guha IN; James MW
Abstract: INTRODUCTION: Risk stratification of patients with suspected upper gastrointestinal bleeding (UGIB) using either Glasgow-Blatchford Bleeding Score (GBS) or preendoscopy Rockall score to facilitate early safe discharge (GBS=0, pre-Rockall=0) has been reported. This observational study compared score utility and considered the impact of extending the range of GBS or pre-Rockall scores permitting safe discharge. METHODS: Consecutive adult patients presenting to acute medical admissions or the emergency department from September 2008-March 2009 with suspected UGIB had clinical history, vital signs, laboratory and endoscopy results prospectively recorded using electronic databases. GBS, pre-Rockall scores and a composite endpoint (blood transfusion, endoscopic therapy, interventional radiology, surgery or 30-day mortality) were calculated. RESULTS: 388 patients with suspected UGIB were identified of which 92.3% were admitted (median (range) GBS=5 (0-19) and pre-Rockall=2 (0-11)) and 7.7% discharged (GBS=0 (0-4) and pre-Rockall=0 (0-4)). 186 (47.9%) underwent in-patient endoscopy. 151 (38.9%) were found to have the composite endpoint with 77.5% having
transfusion, 45.7% endoscopic treatment and an 8.0% mortality within 30 days. AUROC (95% CI) for 30-day composite endpoint was 0.92 (0.89-0.94) using GBS and 0.75 (0.70-0.80) using pre-Rockall scores. Analysis using different GBS thresholds demonstrated that GBS=0, GBS <1 and GBS<2 had superior utility in identifying freedom from an adverse clinical outcome at 30-days than pre-Rockall score 0.

CONCLUSIONS: GBS is superior to pre-Rockall score in identifying patients with suspected UGIB who have a low likelihood of an adverse clinical outcome and can be considered for early discharge. Diagnostic performance at different thresholds suggests that patients with GBS<2 could be considered for early discharge, doubling the number of eligible patients (15.2 to 32.5%). This has important patient safety and resource implications.

**Publication Type:** Comparative Study; Journal Article

**Source:** MEDLINE

18. Multicentre comparison of the Glasgow Blatchford and Rockall Scores in the prediction of clinical end-points after upper gastrointestinal haemorrhage.

**Citation:** Alimentary Pharmacology & Therapeutics, August 2011, vol./is. 34/4(470-5), 0269-2813;1365-2036 (2011 Aug)

**Author(s):** Stanley AJ; Dalton HR; Blatchford O; Ashley D; Mowat C; Cahill A; Gaya DR; Thompson E; Warshow U; Hare N; Groome M; Benson G; Murray W

**Abstract:** BACKGROUND: The Glasgow Blatchford Score (GBS) is increasingly being used to predict intervention and outcome following upper gastrointestinal haemorrhage (UGIH). AIM: To compare the GBS with both the admission and full Rockall scores in predicting specific clinical end-points following UGIH. PATIENTS AND METHODS: Data on consecutive patients presenting to four UK hospitals were collected. Admission history, clinical and laboratory data, endoscopic findings, treatment and clinical follow-up were recorded. Using ROC curves, we compared the three scores in the prediction of death, endoscopic or surgical intervention and transfusion. Results A total of 1555 patients (mean age 56.7 years) presented with UGIH during the study period. Seventy-four (4.8%) died, 223 (14.3%) had endoscopic or surgical intervention and 363 (23.3%) required transfusion. The GBS was similar at predicting death compared with both the admission Rockall (area under ROC curve 0.804 vs. 0.801) and full Rockall score (AUROC 0.741 vs. 0.790). In predicting endo-surgical intervention, the GBS was superior to the admission Rockall (AUROC 0.858 vs. 0.705; P<0.00005) and similar to the full Rockall score (AUROC 0.822 vs. 0.797). The GBS was superior to both admission Rockall (AUROC 0.944 vs. 0.756; P<0.00005) and full Rockall scores (AUROC 0.935 vs. 0.792; P<0.00005) in predicting need for transfusion. CONCLUSIONS: Despite not incorporating age, the GBS is as effective as the admission and full Rockall scores in predicting death after UGIH. It is superior to both the admission and full Rockall scores in predicting need for transfusion, and superior to the admission Rockall score in predicting endoscopic or surgical intervention. 2011 Blackwell Publishing Ltd.

**Publication Type:** Comparative Study; Journal Article; Multicenter Study

**Source:** MEDLINE

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**Also available at:** http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/911/CN-00890911/frame.html

19. Acute nonvariceal upper gastrointestinal bleeding.

**Citation:** Current Opinion in Gastroenterology, September 2010, vol./is. 26/5(425-8), 0267-1379;1531-7056 (2010 Sep)

**Author(s):** Chiu PW; Sung JJ

**Abstract:** PURPOSE OF REVIEW: To review recent literature (2009-2010) on acute nonvariceal upper gastrointestinal hemorrhage. RECENT FINDINGS: There is a decreasing trend in the incidence and hospitalization for acute nonvariceal upper gastrointestinal haemorrhage worldwide, with significant improvement in rebleeding and mortality. One study showed that Glasgow-Blatchford score was superior to Rockall score in predicting the need of intervention or death. None of those categorized as low risk required any intervention. Another database research from United States demonstrated that those managed as outpatients upon clinician decision had 6.3% mortality. Recent meta-analysis demonstrated that epinephrine injection should be used in combination with one other modality for hemostasis in bleeding ulcers, whereas thermal, sclerosant, clips and thrombin/fibrin glue appeared to be effective alone. Despite meta-analysis showing that
second look endoscopy with thermal therapy reduced rebleeding, international consensus from experts recommended proton pump inhibitor infusion as the preferred strategy to prevent ulcer rebleeding.

**SUMMARY:** Epidemiological studies worldwide confirmed reduction in the incidence and improvement in clinical outcomes for acute nonvariceal upper gastrointestinal bleeding. Patients categorized as low risk may be managed as outpatients. Endoscopic therapy remained the mainstay of ulcer hemostasis and high dose proton pump inhibitor infusion should be employed to prevent rebleeding.

**Publication Type:** Journal Article; Review

**Source:** MEDLINE

**20. The Glasgow Blatchford scoring system enables accurate risk stratification of patients with upper gastrointestinal haemorrhage.**

**Citation:** International Journal of Clinical Practice, June 2010, vol./is. 64/7(868-74), 1368-5031;1742-1241 (2010 Jun)

**Author(s):** Srirajaskanthan R; Conn R; Bulwer C; Irving P

**Abstract:** BACKGROUND: Upper gastrointestinal (UGI) haemorrhage is a frequent cause of hospital admission. Scoring systems have been devised to identify those at risk of adverse outcomes. We evaluated the Glasgow Blatchford score’s (GBS) ability to identify the need for clinical and endoscopic intervention in patients with UGI haemorrhage.

**METHODS:** A retrospective observational study was performed in all patients who attended the A&E department with UGI haemorrhage during a 12-month period. Patients were separated into low and high risk categories. High risk encompassed patients who required blood transfusions, operative or endoscopic interventions, management on high dependency or intensive care units, and those who re-bleed, represented with further bleeding, or who died.

**RESULTS:** A total of 174 patients were seen with UGI bleeding. Eight of them self-discharged and were excluded. Of the remaining 166, 94 had a ‘low risk’ bleed, and 72 ‘high risk’. The GBS was significantly higher in the high risk (median = 10) than in the low risk group (median 1, p < 0.001). To assess the validity of the GBS at separating low and high risk groups, receiver-operator characteristic (ROC) curves were plotted. The GBS had an area under ROC curve of 0.96 (95% CI 0.95-1.00). When a cut-off value of > or = 3 was used, sensitivity and specificity of GBS for identifying high risk bleeds was 100% and 68%. Thus at a cut-off value of < or = 2 the GBS is useful for distinguishing those patients with a low risk UGI bleed.

**CONCLUSIONS:** The GBS accurately identifies low risk patients who could be managed safely as outpatients.

**Publication Type:** Evaluation Studies; Journal Article

**Source:** MEDLINE

**Full Text:** Available from *International Journal of Clinical Practice* in Lincoln County Hospital Professional Library; Note: ; Notes: Use the link to request articles from the library. Complete the online form and press ‘Send’.

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**21. Management of minor upper gastrointestinal haemorrhage in the community using the Glasgow Blatchford Score.**

**Citation:** European Journal of Gastroenterology & Hepatology, December 2009, vol./is. 21/12(1340-6), 0954-691X;1473-5687 (2009 Dec)

**Author(s):** Stephens JR; Hare NC; Warshow U; Hamad N; Fellows HJ; Pritchard C; Thatcher P; Jackson L; Michell N; Murray IA; Hyder Hussaini S; Dalton HR

**Abstract:** BACKGROUND: The Glasgow Blatchford Score (GBS) is a validated risk assessment tool in primary upper gastrointestinal haemorrhage, which accurately predicts the need for intervention (endoscopic therapy, blood transfusion or surgery) or death.

**AIMS:** To identify the GBS that predicts lack of intervention or death and to apply this to clinical practice by managing low-risk patients in the community.

**METHODS:** GBSSs prospectively calculated on 232 patients with upper gastrointestinal haemorrhage to identify low-risk score. Patients with low-risk of requiring intervention (GBS <or=2, age <70 years) from a further 304 patients were considered for management in the community.

**RESULTS:** Fifty-two of 232 patients in the first cohort had a GBS <or=2 and were aged less than 70 years: none of these required intervention or died. In the second cohort 104 of 304 (34.2%) patients had a GBS <or=2 and were aged less than 70 years, none of whom died or required endoscopic therapy, blood transfusion, surgery or died. Thirty-two of 104 (10.5% of total cohort) were safely managed in the community.

**CONCLUSION:** Using the criteria of a GBS <or=2, aged less than 70 years to define patients at ‘low risk’ allows 10.5% of patients with primary upper gastrointestinal haemorrhage to be safely managed in the community.
22. Outpatient management of patients with low-risk upper-gastrointestinal haemorrhage: multicentre validation and prospective evaluation.

Citation: Lancet, January 2009, vol./is. 373/9657(42-7), 0140-6736;1474-547X (2009 Jan 3)

Author(s): Stanley AJ; Ashley D; Dalton HR; Mowat C; Gaya DR; Thompson E; Warshow U; Groome M; Cahill A; Benson G; Blatchford O; Murray W

Abstract: BACKGROUND: Upper-gastrointestinal haemorrhage is a frequent reason for hospital admission. Although most risk scoring systems for this disorder incorporate endoscopic findings, the Glasgow-Blatchford bleeding score (GBS) is based on simple clinical and laboratory variables; a score of 0 identifies low-risk patients who might be suitable for outpatient management. We aimed to evaluate the GBS then assess the effect of a protocol based on this score for non-admission of low-risk individuals.METHODS: Our study was undertaken at four hospitals in the UK. We calculated GBS and admission (pre-endoscopy) and full (post-endoscopy) Rockall scores for consecutive patients presenting with upper-gastrointestinal haemorrhage. With receiver-operating characteristic (ROC) curves, we compared the ability of these scores to predict either need for clinical intervention or death. We then prospectively assessed at two hospitals the introduction of GBS scoring to avoid admission of low-risk patients.FINDINGS: Of 676 people presenting with upper-gastrointestinal haemorrhage, we identified 105 (16%) who scored 0 on the GBS. For prediction of need for intervention or death, GBS (area under ROC curve 0.90 [95% CI 0.88-0.93]) was superior to full Rockall score (0.81 [0.77-0.84]), which in turn was better than the admission Rockall score (0.70 [0.65-0.75]). When introduced into clinical practice, 123 patients (22%) with upper-gastrointestinal haemorrhage were classified as low risk, of whom 84 (68%) were managed as outpatients without adverse events. The proportion of individuals with this condition admitted to hospital also fell (96% to 71%, p<0.00001).INTERPRETATION: The GBS identifies many patients presenting to general hospitals with upper-gastrointestinal haemorrhage who can be managed safely as outpatients. This score reduces admissions for this condition, allowing more appropriate use of in-patient resources.

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