



Meaning of Better Scoring System for the Patients with Cancer Bleeding in the Upper Gastrointestinal Tract

Ji Yong Ahn

Department of Gastroenterology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Corresponding Author

Ji Yong Ahn

ORCID <https://orcid.org/0000-0002-0030-3744>

E-mail ji110@hanmail.net

See "Mortality Risk Scoring System in Patients after Bleeding from Cancers in the Upper Gastrointestinal Tract" by Hyun Min Kim, et al. on page 222, Vol. 18, No. 2, 2024

Until now, bleeding from upper gastrointestinal tract (UGIT) is one of the common severe and emergent problem with high mortality and morbidity rates. Among nonvariceal UGIT bleeding, peptic ulcer is more than half and other causes such as malignancy, postoperative bleeding, postprocedural bleeding, Mallory-Weiss syndrome, and angiodysplasia can be possible.¹ As the mortality rate of UGIT bleeding is still high at 6% to 14%, it is important to predict the clinical course and prognosis of patients and establish appropriate treatment plans according to risk stratification.^{2,3}

Several scoring systems for assessing the risk of patients with UGIT bleeding have been validated, including the widely used Rockall score, Glasgow-Blatchford score (GBS), and AIMS65 score. Although the role of scoring systems in clinical practice are different according to the diseases, there have been reports on the usefulness of scoring systems for risk stratification and prognosis prediction in patients with UGIT bleeding.^{4,5}

However, the performance of risk scoring systems in predicting the clinical outcomes of bleeding from UGIT malignancy is not much studied and the usefulness of it is unclear. The ideal risk scoring system should accurately select low risk patients who could be early discharged or no need of intervention compare to high risk patients who should be managed by intensive treatments including hemostasis. In addition, if risk scoring system can predict mortality of patients, it can be very helpful in clinical setting for making further plans of patients. Besides, it will be better if we can predict the well-treated group for the endoscopic or other hemostatic treatments and know the

better hemostatic modality in UGIT malignant bleeding because rebleeding rate after hemostasis is higher and it makes worse prognosis.

In this issue of *Gut and Liver*, Kim *et al.*⁶ from the Catholic University, Seoul, Korea, showed the new scoring system for predicting mortality in UGIT cancer bleeding using large number of retrospective data. In this study, authors compared the performance of well-known three risk scoring systems (Rockall score, GBS, and AIMS65 score) for predicting the clinical outcomes of patients with bleeding of UGIT malignancy and developed new predictive model based on risk factors from their results. Among total of 264 patients with various UGIT cancers, 193 had bleeding and hemostasis or conservative managements were performed.

Conservative treatments using proton pump inhibitor were done in 108 cases and rebleeding occurred in 21.3%. And endoscopic or other hemostasis such as embolization or stent insertion were tried in other 85 cases and rebleeding happened in 45.3%. On multivariate analysis for the 30-day mortality, altered mental status (odds ratio [OR], 6.0; 95% confidence interval [CI], 1.7 to 21.0), renal failure (OR, 5.3; 95% CI, 1.1 to 25.4), rebleeding (OR, 4.8; 95% CI, 2.1 to 10.8), age older than 65 years (OR, 3.3; 95% CI, 1.3 to 8.4), and low albumin level (<3 g/dL) (OR, 2.6; 95% CI, 1.2 to 5.8) were significantly associated. With these results, authors made a new 30-day mortality predicting model using logistic regression and the formula for creating this system is as follows. $\text{Newscore_mortality} = (\text{if altered mental status} \times 1.798) + (\text{if renal failure} \times 1.673) + (\text{if rebleeding} \times 1.563) + (\text{if older than 65 years} \times 1.190) + (\text{if low$



albumin level \times 0.951)–3.363. Compare to the previous scoring systems such as Rockall score, GBS, and AIMS65 score, this new one showed significant superiority with area under curve (AUC) of 0.79 (95% CI, 0.72 to 0.86; $p < 0.001$) in predicting 30-day mortality. Usually in clinical situation, besides predicting mortality, two factors which can be corrected at bleeding status are important, one is the need of intervention and the other is risk factors for rebleeding. In this article, only Rockall score had a statistically significant for prediction the need for intervention, however, AUC values of the Rockall score, GBS, and AIMS65 score did not show statistical significance in predicting rebleeding unfortunately.

This article showed powerful scoring system to predict mortality using data from large number of UGIT bleeding patients and also showed that proper hemostatic treatment using various methods to reduce rebleeding is important similar with previous report.⁷ Even though there are not perfect scoring system until now, we know the strengths and needs of better scoring system to predict clinical outcomes and to decide the need of intervention. Therefore, I hope that this new scoring system will be validated and modified to be better system.

One more thing what we should study for the clinical importance is to make proper hemostatic methods for UGIT cancer bleeding. As we know, successful bleeding control for UGIT cancer including gastric cancer showed better clinical outcomes,^{6,7} however, rebleeding rate of cancer bleeding is higher compare to other UGIT bleeding⁸ and there is no standard modality for malignant bleeding. With regard to endoscopic treatment, many different modalities are available, but no specific guidelines have been established. Previous report recommend that the Forrest classification may be useful for choosing a method among endoscopic treatment modalities.⁹ Oozing bleeding (Forrest Ib) is the most common form of gastric cancer bleeding and electrocoagulation using argon plasma coagulation was the most common method used to treat this pattern of bleeding.⁹ For spurting bleeding (Forrest Ia), electrocoagulation using hemostatic forceps was the most commonly used treatment modality.¹⁰ However, unfortunately, we could not know most effective approach because of the retrospective design of previous analysis and the multiple modalities used for a single endoscopic treatment in most cases.

Therefore, in addition to develop more powerful scoring system to predict clinical outcomes of malignant UGIT bleeding patients, further studies on the efficacy of different endoscopic treatment modalities using other technique such as powder or low-dose radiation therapy are required in the future to evaluate the optimal treatment for patients with cancer bleeding to reduce mortality.

CONFLICTS OF INTEREST

J.Y.A. is an editorial board member of the journal but was not involved in the peer reviewer selection, evaluation, or decision process of this article. No other potential conflicts of interest relevant to this article were reported.

ORCID

Ji Yong Ahn <https://orcid.org/0000-0002-0030-3744>

REFERENCES

1. Tiellemann T, Bujanda D, Cryer B. Epidemiology and risk factors for upper gastrointestinal bleeding. *Gastrointest Endosc Clin N Am* 2015;25:415-428.
2. Cheng DW, Lu YW, Teller T, Sekhon HK, Wu BU. A modified Glasgow Blatchford score improves risk stratification in upper gastrointestinal bleed: a prospective comparison of scoring systems. *Aliment Pharmacol Ther* 2012;36:782-789.
3. Wilkins T, Wheeler B, Carpenter M. Upper gastrointestinal bleeding in adults: evaluation and management. *Am Fam Physician* 2020;101:294-300.
4. Noh JH, Cha B, Ahn JY, et al. Scoring systems for predicting clinical outcomes in peptic ulcer bleeding. *Medicine (Baltimore)* 2022;101:e30410.
5. Bryant RV, Kuo P, Williamson K, et al. Performance of the Glasgow-Blatchford score in predicting clinical outcomes and intervention in hospitalized patients with upper GI bleeding. *Gastrointest Endosc* 2013;78:576-583.
6. Kim HM, Kang D, Park JY, Cho YK, Choi MG, Park JM. Mortality risk scoring system in patients after bleeding from cancers in the upper gastrointestinal tract. *Gut Liver* 2024;18:222-230.
7. Park H, Ahn JY, Jung HY, et al. Can endoscopic bleeding control improve the prognosis of advanced gastric cancer patients? A retrospective case-control study. *J Clin Gastroenterol* 2017;51:599-606.
8. Sheibani S, Kim JJ, Chen B, et al. Natural history of acute upper GI bleeding due to tumours: short-term success and long-term recurrence with or without endoscopic therapy. *Aliment Pharmacol Ther* 2013;38:144-150.
9. Kim YI, Choi IJ. Endoscopic management of tumor bleeding from inoperable gastric cancer. *Clin Endosc* 2015;48:121-127.
10. Kim YI, Choi IJ, Cho SJ, et al. Outcome of endoscopic therapy for cancer bleeding in patients with unresectable gastric cancer. *J Gastroenterol Hepatol* 2013;28:1489-1495.