



# Management of Antithrombotics before Endoscopy-Balancing the Risks

Joon Sung Kim and Byung-Wook Kim

Division of Gastroenterology, Department of Internal Medicine, Incheon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Korea

## Corresponding Author

Byung-Wook Kim

ORCID <https://orcid.org/0000-0002-2290-4954>

E-mail [gastro@catholic.ac.kr](mailto:gastro@catholic.ac.kr)

See "Effect of Antithrombotic Therapy on Bleeding after Argon Plasma Coagulation for Gastric Neoplasms" by Seol So, et al. on page 198, Vol. 16, No. 2, 2022

Antithrombotic (AT) is a class of drugs that reduces the formation of blood clots and is prescribed as primary or secondary prevention or treatment of thrombosis in various clinical settings.<sup>1</sup> They consist of two drug classes, anti-coagulants which inhibit various aspects of the coagulation pathway and antiplatelets which inhibit platelet functions. Prescription of AT has increased and results in many patients using these medications before their endoscopic procedures.<sup>2</sup> Endoscopists must constantly balance the risks of bleeding from the procedure versus the risk of thrombosis if the drug is discontinued. Patients are stratified according to the risk of bleeding from the endoscopic procedure and the risk of thrombosis.<sup>3</sup> The decision to continue, discontinue or modify AT are based on this stratification. Generally, bleeding after endoscopic procedures is controlled by endoscopic therapy and is rarely fatal. However, a thrombotic incident may result in more grave results such as lifelong disability or death. Endoscopists should thoroughly discuss these aspects with the patients before the endoscopic procedure.

In this issue of *Gut and Liver*, So *et al.*<sup>4</sup> reported on the risk of bleeding after argon plasma coagulation (APC) for gastric neoplasms in patients taking AT. They retrospectively examined 824 lesions from a total of 785 patients who underwent APC for gastric neoplasms. The authors reported a delayed bleeding rate of 2.4% after APC and no thromboembolic event was observed. There was no difference in delayed bleeding between the AT group (2.9%) and the non-AT group (2.4%). Multivariate analysis revealed male sex and chronic kidney disease as independent risk

factors of delayed bleeding. These results indicated that APC is a safe procedure for gastric neoplasms in patients taking AT and added evidence on the management of AT before various endoscopic procedures.

As expected, the baseline characteristics of the AT groups were different from the non-AT group which would suggest selection bias when comparing the delayed bleeding rates in these two groups. Propensity score matching would have created a more balanced dataset allowing for more precise comparison. However, the authors stated that propensity score matching was not possible due to the low rate of delayed bleeding events. Multivariate analysis found male sex and chronic kidney disease to be risk factors of bleeding, but these results are expected to be over fitted due to the small number of bleeding patients.<sup>5</sup> The authors did not investigate other factors associated with delayed bleeding after endoscopic resection such as size of the resected specimen, location of the lesion, procedure time, hypertension, and the presence of high-risk stigma during second endoscopy. The rate of delayed bleeding was 2.4% for the AT group. Specifically, there was no delayed bleeding in both the aspirin and anticoagulant group. However, the rate of bleeding in patients taking two or more AT agents was high at 9.1% with the caveat of small number of patients. This suggests that the risk of bleeding for patients taking AT should be stratified individually according to the type of medication.

The authors subdivided the AT group into three groups based on the interval of the last dose of AT therapy and APC therapy; continuation group, regular cessation group,

Copyright © Gut and Liver.



This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

and the prolonged cessation group. Patients who stopped receiving AT for 0 to 4 days were classified into the continuation group, 5 to 7 days into the AT group, and 8 to 14 days to the prolonged cessation group. This classification is quite puzzling as the half-life of each medication is different. For example, direct-acting oral anticoagulants generally have a short half-life of 24 to 48 hours.<sup>1</sup> The duration effect of warfarin is 2 to 5 days. Three days of discontinuation may be considered as continuation for warfarin but could be considered as regular cessation for direct-acting oral anticoagulants.

In conclusion, although more work is required to identify the risk factors of delayed bleeding in patients receiving APC, this study suggests that APC is a safe procedure and can be included in our armamentarium for the management of gastric neoplasm in such patients.

### CONFLICTS OF INTEREST

B.W.K. 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

Joon Sung Kim <https://orcid.org/0000-0001-9158-1012>  
Byung-Wook Kim <https://orcid.org/0000-0002-2290-4954>

### REFERENCES

1. Veitch AM, Radaelli F, Alikhan R, et al. Endoscopy in patients on antiplatelet or anticoagulant therapy: British Society of Gastroenterology (BSG) and European Society of Gastrointestinal Endoscopy (ESGE) guideline update. *Gut* 2021;70:1611-1628.
2. Jeon SW, Hong SJ, Lee ST, Kim H, Chun HJ; Research Group for Endoscopic Submucosal Dissection in Korean Society of Gastrointestinal Endoscopy. Clinical practice and guidelines for managing antithrombotics before and after endoscopy: a national survey study. *Gut Liver* 2020;14:316-322.
3. ASGE Standards of Practice Committee, Acosta RD, Abraham NS, et al. The management of antithrombotic agents for patients undergoing GI endoscopy. *Gastrointest Endosc* 2016;83:3-16.
4. So S, Noh JH, Ahn JY, et al. Effect of antithrombotic therapy on bleeding after argon plasma coagulation for gastric neoplasms. *Gut Liver* 2022;16:198-206.
5. Katz MH. Multivariable analysis: a primer for readers of medical research. *Ann Intern Med* 2003;138:644-650.