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LETTER TO THE EDITOR

OPEN ACCESS

Response to letter regarding 'association between ex vivo thrombogenicity and ischemic outcome in off-pump coronary surgery'

Dear Editor

We sincerely appreciate the readers' thoughtful comments on our recently published study, 'Association between *ex vivo* thrombogenicity and ischemic outcome in off-pump coronary surgery.'

First, we would like to clarify that our study does not advocate for the indiscriminate or perioperative use of intensified anticoagulation in all off-pump coronary artery bypass grafting (OPCAB) patients. Rather, we highlighted that thromboelastography (TEG) maximum amplitude (MA), when measured after anesthetic induction, **may serve as a potential biomarker to identify patients with high innate thrombogenicity**. Such patients **may derive a greater ischemic benefit relative to bleeding risk from more tailored postoperative anticoagulation**. Conventional clinical indicators may not sufficiently capture this individualized risk.

With respect to the BRIDGE trial [1] and the study by Siegal et al. [2], these primarily focused on perioperative anticoagulation bridging in patients undergoing non-CABG surgery. In contrast, our study did not involve bridging, nor did we advocate anticoagulation based on preoperative TEG results. The TEG measurements in our study **were conducted post-induction, and anticoagulation – beyond dual antiplatelet therapy (DAPT) – was considered only after the resolution of immediate bleeding risk**. Thus, comparisons with these studies must account for substantial differences in patient population, surgical setting, and timing of intervention.

It is true that current guidelines do not endorse routine use of TEG for predicting major adverse cardiovascular events (MACE) or guiding anticoagulation decisions in cardiac surgery. Our study does not propose changing existing practice guidelines, but rather serves to explore whether TEG MA could function as a potential marker in designing future risk stratification protocols.

Evidence from other cardiovascular populations may offer insight. The COMPASS trial [3] demonstrated that in patients with stable atherosclerotic vascular disease, including those with prior myocardial infarction, **the combination of aspirin and low-dose rivaroxaban reduced MACE versus aspirin alone, despite increased bleeding**. A sub-analysis of COMPASS [4] found that perioperative adverse outcomes were not significantly different between groups, suggesting potential perioperative safety in selected contexts. While not directly comparable, these findings suggest a potential role for MA-based selection to refine antithrombotic strategies in appropriately chosen patients.

We also agree with the concern regarding the generalizability of our findings. Our study was conducted at a single centre in Korea, and we recognize that differences in patient demographics, genetic backgrounds, surgical techniques, and postoperative management could limit broader applicability. Residual confounding factors, including unmeasured factors such as medication variations, may also have influenced our outcomes despite our efforts to adjust for them.

In summary, our study provides preliminary evidence suggesting that **elevated MA could serve as a potential biomarker for guiding individualized postoperative anticoagulation strategies in OPCAB patients**. We agree that large-scale, multicentre trials are essential prior to any definitive clinical implementation can be recommended.

Once again, we thank the authors for their valuable feedback, which we believe will contribute meaningfully to the ongoing discussion and refinement of thrombotic risk assessment and management strategies in cardiac surgery.

Ethics approval statement

As this is a commentary on a Letter to Editor and no new data were collected or analyzed, ethics approval was not required.

Author contributions

CRediT: **Sungmin Suh**: Data curation, Formal analysis, Methodology, Writing – original draft, Writing – review & editing; **Young-Lan Kwak**: Data curation; **Jae-Kwang Shim**: Conceptualization, Data curation, Methodology, Supervision, Writing – original draft, Writing – review & editing.

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Data availability statements

Data sharing not applicable – no new data generated, or the article describes entirely theoretical research

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