

## Peer Review File

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### **Responses to Reviewer A**

**Comment 1:** “Postoperative TP was defined as a preoperative platelet count  $<100 \times 10^9$  /L as measured within 7 days after surgery” sounds conflicting. Can this be rephrased?

**Reply:** Thanks for the reviewer's suggestion. We are very sorry that this is a mistake, we have revised the expression. “Postoperative TP was defined as a postoperative platelet count  $<100 \times 10^9$  /L as measured within 7 days after surgery”.

**Comment 2:** I would recommend using “thrombocytopenia” instead of “TP” throughout the manuscript. Both constitute a single word count.

**Reply:** Thanks for the reviewer's suggestion. We have revised this word.

**Comment 3:** Were there patients on a second anti-platelet medication prior to CABG?

**Reply:** Other antiplatelet medications (such as clopidogrel or ticagrelor) are required to be discontinued for at least five days prior to CABG surgery at our center, and patients are generally prescribed one (aspirin) or no antiplatelet medication prior to surgery.

**Comment 4:** What was the proportion of off-pump CABG? Were there differences in the on-pump vs off-pump CABG groups?

**Reply:** In this study, the proportion of on-pump CABG was 16.9%, which has been added in the section of result. It is worth noting that CPB has a significant impact on postoperative thrombocytopenia. Therefore, we have included a discussion in the limitations section.

**Comment 5:** Much emphasis is placed on statistical methods. The manuscript can be improved by supplementing its clinical content and discussion.

**Reply:** Thanks for the reviewer's suggestion. We added the discussion about its clinical content and implications.

**Comment 6:** The authors have elaborated on some of the risk factors identified for thrombocytopenia post-CABG.

Can the authors also propose reasons for the association of the following with thrombocytopenia post-CABG?

- B-type natriuretic peptide (BNP)
- low-density lipoprotein (LDL)
- triglycerides (TG)
- total cholesterol (TC)
- use of beta-blocker
- use of epinephrine

**Reply:** Thank you to the reviewer for the valuable suggestion. We have incorporated a discussion regarding BNP, beta blocker, and use of epinephrine in the section of Discussion. After thorough deliberation by the research team, there may be correlation results for some laboratory examination results. However, it is important to note that these results may not be clinically significant, potentially due to confounding factors. In light of this and other reviewers' comments, we have removed unnecessary laboratory examinations, optimized the model accordingly, and updated the Figures and Tables.

Changes in the original manuscript: Studies have indicated a connection between thrombocytopenia and reduced cardiac function, which may lead to an increased incidence of postoperative thrombocytopenia. However, few studies have investigated the mechanism of postoperative thrombocytopenia caused by reduced cardiac function. One hypothesis is that thrombocytopenia could be associated with severe right heart failure and hemodynamic abnormalities associated with hepatic congestion and consequent hypersplenism. Preoperative elevated BNP are indicative of poor

cardiac function and exhibit a positive correlation with platelet reduction.  $\beta$ -blocker therapy can improve left ventricular systolic and diastolic function, control heart rate, decrease cardiac afterload and preload, and serve as a protective factor for cardiac function in patients with chronic heart failure. Additionally, the use of epinephrine also reflects the level of cardiac function in patients. Our multivariate analysis showed beta-blockers were inversely associated with postoperative thrombocytopenia, while epinephrine showed a positive correlation.

### **Responses to Reviewer B**

**Comment 1:** Please explain why you didn't exclude patients on IABP. This is a known risk factor for TP (as you discuss yourself) and since your aim was to predict TP than adding patients with a well-established risk factor does not make sense.

**Reply:** Thanks to the reviewers for their attention to the important issue of including IABP patients. The aim of the study was to develop a predictive model for TP, which would be applicable to real-world clinical settings. In such settings, patients with different risk factors, including those on IABP, are encountered. Therefore, excluding patients on IABP would limit the generalizability and practical utility of the model. Inclusion of IABP may indeed introduce bias or confounding factors into the model, and we minimized these biases by adjusting for known risk factors including IABP in multivariate analyses.

**Comment 2:** Line 247 – “who are more prone to TP due to weakened liver and kidney function” – this is the first time in the discussion you mention weakened liver function as a risk factor. I would make sure this was discussed earlier in the discussion. I would also use a different term than “weakened” – maybe “impaired”?

**Reply:** Thanks for the reviewer's suggestion. We have revised this word.

**Comment 3:** In my mind there is no point in predicting TP if there is no treatment or therapeutic implication to its prediction. I would at least discuss the possible therapeutic implications in the discussion

**Reply:** Thanks for the reviewer's suggestion. We added the discussion about therapeutic implication.

**Comment 4:** You discuss the fact that there is no clear threshold for post operative TP. You have many patients (especially considering the short time span of the study) – why not use this data to try and understand what is the clinically important threshold for TP below which there is an increased risk of complications.

**Reply:** Thanks for the reviewer's suggestion. This question is indeed very meaningful. The primary objective of the current study was to analyze risk factors and develop a predictive model for TP, rather than specifically investigating the threshold for TP. Moreover, the dataset used in this study did not include sufficient outcome data on TP to rigorously determine the cutoff value. However, we plan to conduct further research to explore the clinical significance of TP and its impact on complications in future studies.

**Comment 5:** In table 1 it says “Use of CPB” in about 15-20% of patients. Were 80% of your cases done off pump? If so this should be mentioned earlier in the manuscript and also be noted as a limitation since you discuss the contribution of CPB to postoperative TP but most of your patients had undergone off pump surgery.

**Reply:** Thank you for your valuable feedback. We have added a description of CPB use in the section of results. Additionally, we have included a discussion of CPB in the section of limitations.

**Comment 6:** Line 24 - You use the adjective “serious” in the first sentence of the abstract. I believe TP is a common complication after CABG and rarely serious. Consider removing.

**Reply:** Thanks for the reviewer's suggestion. We have revised it.

**Comment 7:** Line 55 – “has become a major procedure” – consider changing to “is an established therapy for coronary artery disease”. CABG is hardly a new procedure.

**Reply:** Thanks for the reviewer's suggestion. We have revised this sentence.

**Comment 8:** Table 1: what is the definition of “Drinker”? please better define

**Reply:** We added an explanation below Table 1.

**Comment 9:** Table 1: “Complication” – this should be “Comorbidities”

**Reply:** Thanks for the reviewer's suggestion. We have revised it.

**Comment 10:** Table 1: please remove “Vital signs at admission\*” – why is this necessary? Please reduce the number of labs listed, please reduce the number of medications listed only to relevant ones, why is the urine output relevant?

**Reply:** Thanks for the reviewer's suggestion. We removed the redundant variables from the Table 1.

**Comment 11:** Table 1: what is the meaning of “Contrast agent” in the medications? Is this recent exposure?

**Reply:** We added an explanation below Table 1.