

Peer Review File

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Reviewer A

Thank you for this interesting paper.

In this manuscript, the authors review the current literature on high-sensitivity cardiac troponin and its role in the prognostic assessment of patients undergoing CABG

Here are my comments:

Introduction:

- The whole opening paragraph has no references. While the statements might all be true, they should be backed up by evidence (This might be a mistake since the first reference in the next section is number 13 (line 43) but, in my PDF, there are no references in the first paragraph)

Reply: Dear Reviewer,

Thank you for your constructive feedback on my manuscript. I have now incorporated relevant references into the opening paragraph to support the statements made and corrected the citation numbering to ensure consistency. (see Page 2, line 47-55)

It should be noted that the current page numbers and line numbers are based on the new revised word document in the review state that we have submitted. Should these markings become disordered for any reason, we are more than willing to offer our assistance.

General:

- While this is a very nice literature review, it lacks a conclusion paragraph and the authors should suggest the next steps needed, in their opinion, to overcome the limitations of troponin as a prognostic tool today (what data is needed? What research would they conduct?)

Reply: Thank you for your insightful comments and suggestions on our manuscript.

We have now added a comprehensive conclusion paragraph that not only summarizes the key points of our literature review but also outlines the next steps we believe are necessary to overcome the current limitations of hscTn. In this section, we discuss the specific data gaps that need to be addressed and propose potential research avenues that could lead to advancements in this field. (see Page 8, line 228-260)

Reviewer B

The Authors provided a review on the prognostic value of high-sensitivity cardiac troponin levels after coronary artery bypass graft surgery. The manuscript is well written. However, there are some points to be made:

1. Definitions of post-operative myocardial infarction after CABG varies somewhat between the different working groups (UDMI, ESC Joint Working, SCAI and ARC2). Authors should highlight the differences between these definitions in a bit more details.

Reply: Dear Reviewer,

Thank you very much for reviewing our manuscript and for your valuable comments.

In response to your point we have provided a more detailed elaboration of the definitions of MI5 as published by the ESC's UDMI, as well as those of SCAI and

ARC2. We hope this will facilitate readers' understanding of the distinctions between these definitions. (see Page 4, line 125-135)

It should be noted that the current page numbers and line numbers are based on the new revised word document in the review state that we have submitted. Should these markings become disordered for any reason, we are more than willing to offer our assistance.

2. The Authors report that current evidence suggests measuring cardiac Troponin later (between 9- 24 hours) after surgery, which is a valid point. Diagnosis of ischemia and infarction early after CABG surgery should primarily rely on clinical assessment (hemodynamic or electrical instability, echocardiography and ECG changes). This should be further highlighted in the paper.

Reply:

Thank you for your valuable suggestions. We fully agree that emphasizing the importance of clinical assessment in the early diagnosis of ischemia and infarction following CABG surgery, as well as the timing of Troponin measurement, is crucial. We have incorporated the latter into our paper. (see Page 9, line 269-272)

3. The fourth paragraph of the manuscript is not well written and does not relate to the subject of this review. The authors report on the performance of one of the approved algorithms for rule-out/rule-in of myocardial infarction in the emergency department. Only 8% of patients in that study had a history of CABG which represents a great limitation in the study. Furthermore, rule-out performance remained very high at 100%. Moreover, the scope of this review is the prognostic evaluation of hs-cTn after CABG surgery which is different from the utility of one of the recommended algorithms for diagnosis of MI in patients who have had CABG. I would suggest to omit this paragraph and add one sentence that further larger-scale studies in this specific population is warranted.

Reply:

We fully concur with your assessment that the fourth paragraph was not well-aligned with the main focus of this review. As suggested, we have removed that paragraph from the manuscript and have incorporated a statement in the discussion section highlighting the need for more extensive research on the application of this algorithm within the specific population of patients who have undergone coronary artery bypass grafting surgery. (see Page 9, line 256-260)

Reviewer C

Thank you for the opportunity to review the paper: A review of recent clinical research on the value of high-sensitivity cardiac troponin levels in prognostic evaluation after coronary artery bypass graft surgery.

The subject is interesting and gives a comprehensive insight into the value of Troponin post-CABG. There are some limitations to address:

Line 36: add reference

Reply: Dear Reviewer,

Thank you for your comments, reference have been added reference 4(see Page 3, line 75)

It should be noted that the current page numbers and line numbers are based on the new revised word document in the review state that we have submitted. Should these markings become disordered for any reason, we are more than willing to offer our assistance.

Line 69: add reference

Reply: Have been added reference 7 (see Page 4, line 109)

Line 73: The author states that Type 5 MI is one of the most common complications after CABG. Please define “Most common” and add a reference.

Reply: Thanks for your rigor, it has been revised to "Common complications" and reference has been added reference 14(see Page 4, line 115)

Line 75: The author specifies the definition of type 5 MI but not in full. He refers only to the patients whose Troponin levels pre-op are normal. Please specify the patients whose Troponin levels are elevated.

Reply: Thank you for your valuable comments and relevant expressions have been added (see Page 4, line 125-135)

Line 94: starts with the number 3. Probably a mistake.

Reply: Thank you for your correction, it is an error and has been corrected (see Page 5, line 142)

Line 110: add reference

Reply: Have been added reference 20 (see Page 5, line 160)

Line 175: There is a contradiction between the statement: “Therefore, performing the assay at the optimal time after surgery can not only improve the accuracy of prediction, but also help to avoid unnecessary early assays, thereby saving medical resources, improving the efficiency of medical services, and reducing the burden on patients” and the summary that states: “However, it is widely recognized that the recommended cutoff values currently used in the medical field are overly conservative and limit its clinical application to some extent”. Please clarify this contradiction.

The take-home message from the study is not coherent and needs to be clarified

Reply:

Thank you for pointing out the potential contradiction in our manuscript. Upon careful consideration, we recognize the need to clarify our statements. In short, the two aspects we discussed are complementary:

"Overly conservative cutoff values" refer to the current hs-cTn thresholds for diagnosing Type 5 MI being set too low, suggesting an increase in the multiples of the 99th percentile upper reference limit (URL).

"Early diagnosis" emphasizes the importance of timely hs-cTn testing post-surgery to identify and intervene in MI patients as soon as possible.

We believe these revisions will address your concerns and enhance the clarity and logic of our article. Thank you for your valuable comments and guidance.