Author’s response to reviews

Title: Heart valve operations associated with reduced risk of death from mitral valve disease but other operations associated with increased risk of death: A national population-based case control study

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Title: Heart valve operations associated with reduced risk of death from mitral valve disease but other operations associated with increased risk of death: A national population-based case–control study

We thank deeply for all the constructive and instructive comments from the reviewers. We had considered each comment seriously and appropriate revision was made according to the editor’s and reviewers’ suggestions. The revised phrases and wording in the text were highlighted in red.

Response to reviewer #1:

1) Several English grammar and words mistake are present throughout the manuscript and need to be proofed a native English speaker and writer.

Response:

We thank the reviewer for suggestions. This manuscript was edited by Wallace Academic Editing.
2) The following abbreviations are not common and therefore, are confusing.

MVD, HVD, HVO, MVO.

Author had better not use these abbreviations.

Response:

We thank the reviewer for suggestions. We have replaced these abbreviations to full texts.

3) Disease diagnoses were based on the International Classification of Disease, Ninth Revision, Clinical Modifications (ICD-9-CM). Therefore, this study has some limitations and problems.

- Mitral valve disease contains various diseases, for example, mitral regurgitation, mitral stenosis. Moreover, various degrees of disease are included.

These are important matters.

- Author did not analyze the reasons of re-operation. The reasons of re-operation could influence the prognosis.

- How did author analyze the patients with both mitral valve and aortic valve disease?

Response:

We thank and agree with the reviewer for suggestion. Patients with chronic rheumatic heart disease were identified by ICD-9-CM, but further characterized by the mitral and aortic valves cannot be classification. The source database did not include serious conditions and information regarding clinical parameters. In addition, the database also lacked details concerning heart valve operation type and duration. More, the prognosis, personal lifestyles and reasons, and living habits of reoperation patients could not be obtained from the NHIRD. Therefore, we have added these sentences in the paragraph of limitation. At present study, we explore that the relationship between heart valve operations and risk of death from mitral valve disease. We would further study about the influence of a serious degree of mitral valve disease on type and number of heart valve operations and patient death.

4) Discussion is insufficient. There are many repetitions of results in Discussion.

Author should describe the considerations for results.

Response:
We thank the reviewer for suggestions. We have reorganized the paragraph of discussion and added the sentences considerations form results.

5) Page 12, Line 6

"Our results indicate that performing more HVOs could reduce the mortality rate of patients with MVD; conversely, more total operations could increase the mortality rate of patients with MVD."

Author should describe the consideration of these results.

Response:
We thank the reviewer for pointing out the question. We have improved these sentences.

6) What is clinical implication of this paper?

Author should describe clinical implication clearly.

Response:
We thank the reviewer for pointing out the question. We have improved these sentences in the paragraph of discussion and conclusion.

7) Page 17, Line 12, Figure 2

These figures are not the ROC curve. Therefore, please describe the data of the ROC curve in Results, not figure legends.

Response:
We thank the reviewer for suggestions. We have sifted the data of the ROC curve in the Results.

8) Page 18, Table 1

Comorbidity is insufficient.

Please add the data about anemia and the presence of hemodialysis.

Response:
We thank the reviewer for suggestions. We have added comorbidity including anemia and hemodialysis in the table 1 and results.

9) Page 21, Figure 2

What does "age" mean?

Response:

We thank the reviewer for pointing out the mistake in the figure 2. We have replaced the age into years.

Response to Reviewer #2:

The results of this study are fair and reasonable however, I could not find new insights from this article. It is well known that the patients who had undergone non-cardiac operations have higher risk of mitral valve surgery and heart valve operations can lower the risk of death from valve disease. No surgeons would not deny the authors' findings as they should already know these things.

Response:

We acknowledge the reviewer for pointing out the question. At present study, we found that the risk of death could be reduced by more frequently performing the heart valve operations, including closed heart valvotomy, open heart valvuloplasty, and replacement of a heart valve, in patients with mitral valve disease. The risk of death increases with a high frequency of other operations, containing other cardiac and non-cardiac operations. Present study could be good sufficient evidence to show the three heart valve operations can lower the risk of death from valve disease. These conclusions could provide the important assistance benefit on clinical therapy for mitral valve disease patients.

At page 12, I could not understand this sentence like "conversely, more total operations could increase the mortality rate of patients with MVD."

Response:

We thank the reviewer for pointing out the question. We have improved the sentence.

The column in the Figure 2 needs to be changed from "heart value" to "heart valve".
Response:

We thank the reviewer for pointing out the mistake in the figure 2. We have corrected the mistake.