**Author’s response to reviews**

**Title:** Post-operative left atrial volume index is a predictor of the occurrence of permanent atrial fibrillation after mitral valve surgery in patients who undergo mitral valve surgery

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Answers to reviewers and Editor

For starters, I am really appreciated and impressed your valuable review and I tried to modify my manuscript as much as you recommended.

Thank you again for your excellent reviews and I am really happy that I could have a chance for revision our manuscript.

Dear Erwan Donal (Reviewer 1):

I sincerely thank you for your sympathy and understanding for our research. I’ve made the most of what you pointed out. Below is my answer.
Post-operative left atrial volume index is a predictor of the occurrence of permanent atrial fibrillation after mitral valve surgery in patients who undergo mitral valve surgery. This is a retrospective study with probably missing data and nothing about the A function but this is a valuable study. It allows to underscore the importance of LA size in MR patients. This has been done in guidelines but the present paper is going a little bit further.

The reading of the manuscript is pleasant for reading.

The pressure gradient across the valve is missing, the presence of a tricuspid regurg and its treatment is missing, the level of pulmonary pressure is missing…

- 1) Mean diastolic pressure gradient of the MV was in the table 2, I made it more noticeable.

- 2) presence of a TR and its treatment: for these parameter, I described it as “combined with other valve” in the table 1, and there was no significant statistical difference. However, pre and post operative TR grading was slightly higher in patients with AF. The results were specified in table 2~4 and in the text. Also, I added the treatment of TR (either TAP or TVR) in the table 2.

- 3) pap: preoperative PAP was not significantly difference between the two groups, but postoperative PAP was slightly higher in patients with AF. The results were specified in table 2~4 and in the text.

These results were not significantly associated with the occurrence of AF in the multivariate analysis.

The figure 3 is showing the highly probable lack of power of the study.

Something could be added about the feasibility of the measurements of the LA size in the post-operative period, the method used and recommended to optimize the measurement of LA volume is important.

Also, a subgroup analysis according to the initial mitral valve diseases could be proposed even if it is underpowered. It could be use as a pilot work for further studies.

Thank you for your good suggestions. However, even if the current study shows weak statistical power, there is also a limit to adding other parameters. If subsequent studies continue, then we will analyze the results with reference to this proposal.
Dear Rodolfo Citro (Reviewer 2):

I sincerely thank you for pointing out the shortcomings of our research. Some mistakes I made and you pointed out made me ashamed. I am very sorry about that. Below is my answer.

The article "Post-operative left atrial volume index is a predictor of the occurrence of permanent atrial fibrillation after mitral valve surgery in patients who undergo mitral valve surgery" written by Kang et al is well written and adds novelties to the scientific scenery of the subtype of patients which analyzes.

However some corrections and minor revisions have to be done.

1. In the "Study design and participants" paragraph, page 6, 9th line, permanent AF should be better defined. ☐ I added a more detailed description.

2. In the "Results" paragraph, page 8, 6th line, are described percentages of only pre-operative LVEF. Percentages of post-operative LVEF have to be added. ☐ I added it.

3. In the "Results" paragraph, page 8, 18th line, is not specified to which valve is referred the mean diastolic pressure gradient. Clarify this point. ☐ I clarified it as adding “of the mitral valve”

4. In the "Discussion" paragraph, page 11, 15th line, is written "diastolic function" but I think there is a mistake. You should write "diastolic dysfunction". ☐ You are absolutely right. I changed it as diastolic dysfunction.

5. References 27, 28, 29 are not mentioned in the "References" paragraph. ☐ I am really embarrassing for this primitive mistake. I added it.

6. All references mentioned in the "References" paragraph have to be cited in the text. Cite all references in the text. ☐ I am shocked after I found out such a terrible mistake. I am really sorry for that. I corrected it.
7. References cited in the "Background" paragraph must be written at the apex. □ I changed it.

8. Table 1 presents some mistakes: 1) on 4th and on 5th line Variables are not adequately described, 2) Mitral Valve replacement subgroups are not appropriately described in the NSR and in the AF subgroup □ I corrected it.

9. In Figure 1, in the 2 last boxes of the diagram, should be specified that "New onset permanent AF" subgroup and the "Maintenance of sinus rhythm" subgroup are referent to patients underwent surgery. □ I specified it as adding more detailed descriptions in the Figure legends.