Author’s response to reviews

Title: Should High Risk Patients with Concomitant Severe Aortic Stenosis and Mitral Valve Disease undergo Double Valve Surgery in the TAVR Era?

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Dear Editor,

The authors appreciate the insightful comments and questions of the reviewers and have revised the manuscript accordingly. Below are the point by point responses to each of the reviewers’ comments.

Reviewer #1:

1. The references for combined TAVR and MR (3,4,6-8) are remote and may consider newer articles such as Ann Thor Surg 2017 Sep 29 Suppl S0003- by Mavromatis et al (ahead of print) TAVR in pts with AS and MV regurgitation and Eurointervention 2017, July 20, 13 (4) 475-82

   Newer articles, in addition to the ones mentioned above, are included in the revised manuscript.

2. There is discrepancy in AVR STS expected in Results i.e 10.1% vs in Discussion i.e. expected mortality of 14.6%
10.1% is the calculated STS PROM. 14.6% is the average total predicted risk of mortality which includes incremental risk factors not accounted for in the Society of Thoracic Surgeons risk model. This is clarified in the revised manuscript.

3. It may prudent to further subdivide in TAVR with MS and TAVR with MR and see what the outcomes are.

Only 8 patients in the cohort had MS which would be too small of a sample to perform a complete formal subgroup analysis.

4. Also it may help to comment on intervention with MitraClip in patients with TAVR and MR and their outcomes.

The use of MitraClip in post-TAVR patients is detailed in the revised discussion.

Reviewer #2: A major concern is the selection of surgical candidates. A bias as a result of reflecting data from patients with a more advanced cardiac disease that were therefore sent to surgery may invalidate the hypothesis of comparable mortality rate. I suggest to perform a comparison with TAVR patients from their institution presenting concomitant moderate or severe mitral regurgitation in order to assess the mechanism and degree of organic changes in the mitral valve in each group to assess if the comparable mortality hypothesis is sustained.

The discussion may also elucidate the potential usefulness of hybrid procedures.

The patients for this study were operated on between 2008-2012. As TAVR was available to high risk patients after 2012 in our institution, we purposefully did not include patients who underwent open surgical operations after that time so that there will not be a selection bias in patients who went for open surgery instead of TAVR. Due to the reports of poorer outcomes in patients with severe MR undergoing TAVR, our institution was selective on offering such patients TAVR. An analysis of our TAVR patient population with concomitant severe MR will therefore have an inherit selection bias.