Reviewer’s report

Title: Medium-term outcomes of 78,808 patients after heart valve surgery in a middle-income country: a nationwide population-based study.

Version: 0 Date: 26 Jun 2017

Reviewer: Hendrik Treede

Reviewer's report:

In this manuscript the authors elaborate on the results of two national Brasilian registries of >78.000 patients who underwent heart valve surgery in the years 2001-2007. Rheumatic Heart disease accounted for the majority of indications for surgery and was most prominent in the mitral valve. According to this etiology and compared to western high-income countries the overall patient age was younger and valve repair rates were lower. Mortality rates were 7% in average and higher for valve replacement compared to repair, in older patients and in patients who underwent concomitant procedures. It is noticeable that the majority of deaths occured in the early postoperative period implicating a substantial difference in quality of care compared to high-income countries.

Detailed analysis of the database is limited by the lack of clinical variables what is openly stated by the authors.

The manuscript is well written, the statistical analysis is valid.

The manuscript would gain even more value by including additional analyses on data that should be available in the databases:

- Was the elevated mortality rate in the early postoperative period different in high volume centers compared to low volume centers and in rural compared to urban areas?

- What was the percentage of mechanical versus biological valves in the replacement groups and what was the role of anticoagulation therapy?

- Was there a difference in early mortality over time, e.g. was the mortality in the years 2001-2004 different from the mortality in 2005-2007?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes
**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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