Reviewer’s report

Title: Predictive risk factors for postoperative pneumonia after heart transplantation

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Reviewer: Anna Kedziora

Reviewer's report:

In general, the issue addressed in the study is interesting, especially as the detailed POP pathogens analysis is presented. However, I would recommend some changes prior to the publication:

In the abstract following notes should be addressed:
Risk factors for
All cases of POP
I would not recommend naming the determined risk factors as the primary end-point of the study. I would rather see the sentence as: The study aimed to determine risk factors for using uni- and multivariate Cox-regression model.

Loss in follow-up
Instead of mainly involved I would recommend were the most common pathogens.
The results in the abstract are unclearly described. Are the first two the ones with the highest OR or the only statistically significant risk factors? Which statistic test supports the hypothesis that the other mentioned risk factors increased the risk of POP? Which parameter increased the risk of mortality at 30 days and 1 year post-HTX? If the authors meant POP than it is unclear. Were there any patients within the sensitized patients who did not receive plasmapheresis and IVIG? Even if all that is clarified in the manuscript, the abstract should be unambiguous.

In general, I would suggest correction of the whole manuscript by a native speaker or by an expert English proofreader.

From the paper I can assume that the authors had a hypothesis about the association between sensitization and POP occurrence. If so, the paper would benefit from a paragraph about this hypothesis in the Background section.

The recipients were mainly men (129, 73.3%) - I would leave only the percentage value
dilated cardiomyopathy in 53% (93/175) - I would leave only the percentage value

What were the diagnostic criteria for sequent POP episode?
The paper would also benefit from the information about the perioperative antimicrobial prophylaxis used in the center.
Are the conclusions for plasmapheresis and IVIG based on the same multivariate Cox-regression that was calculated for all patients? This is not clear.
In HTx group with POP, mechanical ventilation duration, postoperative VA-ECMO support and ICU hospital length of stay increased in comparison with the HTx group without POP - Table 3 should be cited here.
The main cause of death was septic complications (57%) followed by neurological complications (17%). - was the cause of death estimated for 30-day or 1-year mortality?

As the authors mention that POP increased the risk of early and late mortality with sepsis as the leading
cause of death, my question is: was the sepsis caused by the same pathogen as POP? The discussion is very unclear and I don't really see what was the authors' idea to go through the results and discuss them. Perhaps this arises from the need of language proofreading, as it was mentioned above.

The Table 3 is very inconsistent with the manuscript. From the manuscript I got the impression that the authors would like to state that because of the hemodynamic instability the risk of POP is increased, however Table 3 presents need for prolonged VA-ECMO support as the secondary outcome. If the difference that was the basis for this conclusion was present in the data for the need for VA-ECMO support, this should be presented.

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

No

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

Yes

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

Unable to assess

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I am able to assess the statistics

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Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited
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