Reviewer’s report

Title: PRESERVATION OF RENAL FUNCTION IN CARDIAC SURGERY PATIENTS WITH LOW CARDIAC OUTPUT SYNDROME: LEVOSIMENDAN VS BETA AGONISTS

Version: 1 Date: 06 Dec 2018

Reviewer: Fardin Yousefshahi

Reviewer's report:

Dear Editor,

The manuscript BANE-D-18-00443R1, entitled, "PRESERVATION OF RENAL FUNCTION IN CARDIAC SURGERY PATIENTS WITH LOW CARDIAC OUTPUT SYNDROME AND RENAL FAILURE: LEVOSIMENDAN VS BETA AGONISTS" is an original study to evaluate the effect of levosimendan on prevention of AKI in low cardiac output cardiac surgery patients. The special difficult field of study could be interesting for readers; however, the manuscript suffers from several obscure points in the methodology. My concerns about the manuscript are as follows;

Abstract

The aim of study in the background is not matched with the title and method of study.

Method:

The type of study should be reflected in the abstract method.

Conclusion: This study just compares the effect of Levosimendan vs. beta-agonists.

The conclusion is not relevant for the results of this study. It's not possible to talk about the protective effect on one of these study groups without accounting the second arm of the study.

Background

there are some grammatical errors in the manuscript. It needs a grammatical revise.

Method

Please mention the type of the study at beginning of the methods section.
In line 9; what means "cardiac rate"?

Please re-check all units among the text.

The method section needs more details. Please discuss the methods used to measure cardiac output in pre- and post-operative phases and also the PAWP. How was your routine assessment methods and protocols for detecting LCOS?

How long patients were followed?

When you start your intervention _ pre- intra- or post-operatively-?

What was and how you choose your Beta-agonist?

How you titrate and what was your target for beta-agonist therapy?

Did you have any patient who needs mechanical cardiac output support?

How you categorized patients to enter one of the study groups? Was there any kind of randomization?

Did you have any protocol to blinding participants to the study?

What were your criteria to diagnose AKI?

Please briefly mention other treatments for LCOS and AKI.

Please discuss your statistical methods.

Please consider the possible confounders in the upper mention inquiries to include in a limitation section at the end of discussion section.

Results

Please, insert all the p-values for tables 1,2 and 3.

What means the "ns" in table 3.

Please discuss abbreviations in the footnote of tables.

In table 1 in first rows please correct the number of participants in the "No Renal Failure at Discharge (n=103)", as total participants in the group are just 15.

please don't repeat data from the tables in the text.
What means * sign in table 2?

Please discuss probable mortality or other major morbidities. Do you have any data to compare the Length of ICU stay or the total hospital length of stay?

Please consider a regression test to prove the results and rule-out the effect of possible confounders.

Discussion

Please consider a limitation section to include all limitations for the study. Low power of the study, possible confounders, lack of randomization, and other concerns about the study should be listed there.

As an important point about the conclusion, "you should clear the definition of AKI whenever you stating the effect of levosimendan on AKI."

AKI have a wide range of definition. Furthermore, the low power of the study limits the popularity of the conclusion. It's better to limit the conclusion for the results of this study.

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

Unable to assess

**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.

No

**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 recommend additional statistical review

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