Reviewer's report

Title: Effects of inhaled nitric oxide for postoperative hypoxemia in acute type A aortic dissection: A retrospective observational study

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Reviewer: Mate Petricevic

Reviewer's report:

Dear authors

Thank you for submitting the manuscript "Effects of inhaled nitric oxide for postoperative hypoxemia in acute type A aortic dissection".

1) Objectives of the paper and importance of the research question:

Postoperative hypoxemia in acute type A aortic dissection (AADA) is known to occur and is associated with negative outcomes. This manuscript sought to analyze the efficacy of low-dose (5-10 ppm) inhaled nitric oxide (iNO) in the management of hypoxemia following dissection repair surgery.

(2) Study group, methods and sample size:

Authors did not clearly describe the type of the study they conducted. It should be clearly described in the "Methods" section. The study needs to be described with regard to the "timeline" and with regard to the presence of "intervention". Following this, this study is apparently retrospective observational study. Propensity score matching was used to make the groups comparable.

Patients data were retrieved from two institutions. A proportion of 42.9% of patients had hypoxemia following dissection repair surgery. Were all the operations done in the same way? This needs to be addressed whenever the study is multicentric.

(3) Outcome measures:

Authors selected adequate outcome measures. When it comes to mortality, it is highly likely that the study is underpowered and sample size effect should inevitably be taken into account.

(4) Presentation of results:
Inhaled NO ameliorated hypoxemia at 6, 24, 48, and 72 hours after initiation, and shortened the durations of ventilator support and ICU stay. There were no significant between-group differences in mortality, complications, or length of hospital stay.

As previously mentioned, this is a observational comparative non-interventional study and as such needs to follow STROBE guidelines. Authors are strongly encouraged to follow these guidelines when reporting observational trial such as this.

(5) Discussion and interpretation:

Limitations of the study section is somewhat superficial and should go in more details. Study is underpowered to draw the conclusions based on secondary outcomes. Prospective RCT is needed. Selection of patients who had iNH remains elusive despite propensity matching.

Level of interest
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Quality of written English
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Needs some language corrections before being published

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