Reviewer’s report

Title: Intra-operative red blood cell transfusion and mortality after cardiac surgery

Version: 0 Date: 19 Jan 2019

Reviewer: Mohammad Reza Rasouli

Reviewer's report:

Association with intraoperative RBC transfusion and postoperative adverse outcomes including mortality has been shown in various types of surgeries including cardiac surgery and study findings are not novel. However, this study can be considered as an additional piece of data.

I was wondering why the authors included patients who had AVR in the study. As the authors know, valve replacement is an entirely different procedure from CABG and including AVR in the cohort makes the cohort heterogenous. The other question is that why authors included CABG+AVRs and did not include patients who needed CABG and MVR? Also there were some patients who had previous cardiac surgery and they were included too. Resternotomy is associate with a high risk of bleeding and including these patients in the cohort does not sound appropriate. In other word, the study cohort is heterogenous.

*This study covers more than 3 years. I was wondering if there was any significant changes in mortality or transfusion rate during the study period.

*Regardless of Hct level, hemodynamic instability is another indication for intraoperative RBC transfusion. I was wondering if intraoperative TEE and/or PA catheter was used for hemodynamic monitoring in the study patients.

*It seems that intraoperative FFP transfusion was performed subjectively based on amount of blood loss or signs of coagulopathy rather than using lab data (fibrinogen, coags or TEG). That should be mentioned as a study limitation.

* It is recommended to adjust study findings for other blood products (FFP, cryo or platelet) that administered intraoperatively.

*It would be useful if authors could report etiology of death in their cohort.

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.  

No

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:  

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