

Comments to the Reviewers

Journal: World Journal of Cardiology

Manuscript Number: 30720

Manuscript Title: Blood Conservation Pediatric Cardiac Surgery in all Ages and Complexity Levels

Reviewer 00502903:

I agree with the reviewer that this is a QI study to reduce exposure of the patients to less to no blood transfusion reducing complication related to RBC. We have demonstrated in previous work that blood conservation group had lower length of stay, ventilator days, inotropic support, and complication more so in biventricular cohorts than univentricular patients (*Ann of Thoracic Surgery* 2013;95:962-7). The main goal of this study was to demonstrate the safety and feasibility of doing blood conservation cardiac surgery in all ages and complexity levels across the spectrum of cardiac defects. The outcome comparison was not performed due to redundancy with the previous work and lack of concrete information on historical non-conservation groups to make any meaningful conclusion. We could have extended this findings further to look at cost benefit for the administrative QI project to provide a rough estimate of cost benefit in blood conservation group, but with variability in cost of packed RBC in different eras the results would not be precise for the purpose of publication.

The trigger point for RBC transfusion was not written in stone for blood conservation group to be include as part of the method since it varied patient to patient depending on the cardiac defects and general perfusion status of the patients. The general trigger points was included in the discussion to indicate our general philosophy and practice of trigger point for RBC transfusion depending on age, complexity, and cardiac defect. The trigger point for RBC transfusion for non-conservation cohorts was not known and most probably varied depending on different surgeons on record and lack of guidelines for transfusion.

The blood conservation practice was implemented at once and spearheaded by one surgeon who has practiced conservation surgery in previous practice before joining this group. The practice and guidelines was agreed upon by all and implemented and perfected as the practice evolved between 2014-15. Different surgeons performed the non-conservation practice with the same core anesthesia and perfusion group.

We did not included ECMO patients for obvious reason of vast and variable need for blood products in any ECMO runs. There were also no ECMO patients

for blood conservation group in that period to include in the study for pairwise analysis.

There was no other QI study performed during the 5-year period. Due to paper chart review of the non-conservation cohorts and limitation of administrative data, only the intraoperative information and data were complete and accurate for comparison and data analysis.

Reviewer 00505382:

Most of the discussion and comments are included as above as far as QI evaluations. The methodology has been improved per reviewer suggestion.

Reviewer 00211908:

No comments.

I would like to express my sincere appreciation to all the reviewers for their constructive criticism and important suggestion of this work. I hope the above comments are in par with their satisfaction for the publication and would be happy to provide more clarification to their inquiry if needed.