No favorable impact of Retrograde Autologous Priming (RAP) on transfusion requirement: a pilot study

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Background: Hemodilution associated with cardiopulmonary bypass (CPB) exerts the risk for blood transfusion and volume overload. Priming of the CPB circuit with patients’ own blood – Retrograde Autologous Priming (RAP) limits hemodilution and has potential of reducing transfusion requirements.

Aim: The aim of the study was to investigate if RAP reduced the need for Red Blood Cell (RBC) transfusion and evaluate a possible impact on hemoglobin levels during and after cardiac surgery.

Method: Thirty patients undergoing coronary artery bypass grafting and/or aortic valve replacement were randomly allocated to standard priming (STP) or RAP. Priming volume removed in the RAP group amounted to 600 ml. A benchmark for RBC transfusion was a hemoglobin concentration < 8.0 g/dl. Allogeneic RBC transfusion and hemoglobin values were evaluated both per- and postoperative.

Result: No difference in transfusion requirement

Conclusion: RAP has potential of reducing hemodilution during CPB but revealed no favorable impact on transfusion rate or hemoglobin levels during the subsequent postoperative process.