Blood is an expensive and scarce resource that has risks and benefits. Anemia during cardiac surgery is quite common. However, the threshold at which red blood cells (RBC) are transfused in cardiac surgery is controversial and over the past several decades transfusion practices for cardiac surgery patients have varied widely both across centers and across care providers. There is tension regarding the use of blood since numerous observational studies have shown an association between transfusions and long term survival as well as other adverse outcomes.

Similarly, there are a number of studies that have associated anemia during cardiac surgery with heart failure, stroke, acute kidney injury, respiratory failure, and death. It has also been shown that the association of adverse outcomes related to transfusion appear to be different for women than for men. Most practice guidelines recommend a restrictive transfusion practice. To date more than 20 randomized controlled trials have sought to determine if there is a difference in outcomes for patients managed with a liberal or a restrictive transfusion practice. These trials have shown that a restrictive practice is effective in reducing the transfusion of RBCs, however restrictive practices do not appear to reduce the rates of adverse outcomes.

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events. Of note, there are few studies that have compared transfusion practices in patients with acute coronary syndromes.

The duration of storage and filtration of donor blood also been implicated in the safety of transfused blood. More recently donor characteristics such as age and sex of have been associated with recipient survival.

In 2015, AmSECT’s International Consortium for Evidence- Based Perfusion committee published a consensus statement on minimal criteria for reporting cardiopulmonary bypass-related contributions to red blood cell transfusions associated with adult cardiac surgery. The aim of this presentation will be to review the current literature on transfusion of RBCs in adult cardiac surgery patients as it relates to their clinical outcomes.


3 Loor, Gabriel et al. Implications and management of anemia in cardiac surgery: Current state of knowledge JTCVS 2012;144: 538 – 546

