

Influence of Intraoperative Autotransfusion on Postoperative Hematocrit after Cardiac Surgery: A Cross-Sectional Study

To the Editor,

We read with interest the analysis by Stasko et al. entitled “The influence of intraoperative autotransfusion (IAT) on postoperative hematocrit (hct) after cardiac surgery,” (1) a report from a large perfusion registry. Hematocrit drift between cardiopulmonary bypass initiation and entry into the intensive care unit was selected as a primary end point showing that the amount of red blood cells (RBCs) salvaged with IAT was associated with reduced hct drift and a case is made for RBC salvage of high quality autologous RBCs.

In the discussion, it is stated that evidence suggests that the washed product from the cell salvage system is “equal or superior to allogeneic blood.” However, the washed product is devoid of plasma that contains coagulation and oncologically active proteins. These plasma components are important contributors to the endothelial glycocalyx that partly depends on the adsorption of plasma constituents.

In addition to hct drift, two other endpoints, blood loss and transfusion may shed light on the efficacy of IAT cell salvage for cardiac surgery patients. Rubens et al. (2), in a prospective randomized control trial, found that use of IAT in place of cardiotomy suction resulted in increased blood loss and transfusion. They found no difference in neurocognitive function when cardiotomy suction was used in place of the cell saver. They postulated that platelets, proteins and coagulation factors were lost in the cell washing process. Chappell et al. (3) showed that when plasma proteins are replaced with crystalloid solutions there may be an adverse effect on the endothelium that is dependent on the endothelial glycocalyx. Although the use of the cell saver is

a Class I recommendation (4), some centers do not use it, and rather use the cardiotomy suction, allowing for recovery of plasma (5).

In addition to hct drift, the authors may want to consider evaluation of blood loss and transfusion as other important endpoints as some have shown that increased use of intraoperative autotransfusion may paradoxically increase bleeding and blood product use.

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