

An Effortless Method for Reducing Blood Transfusions Following Cardiac Surgery

Victor Rubchevsky, Jacob Gurevich, Dan Aravot

Cardithoracic, Cardiac surgery, Carmel Hospital, Haifa, Israel

Background: Blood transfusion following open heart operations may be, at times, vital, but at the same time may be associated with possible complications ranging from anaphylactic reactions to transmission of various infectious agents such as Hepatitis B and C, and HIV viruses. The current worldwide medical approach is to avoid or reduce the need for blood transfusion as much as possible by reducing blood loss, autotransfusion, injecting erythropoietin before elective operations, using Cell Savers, etc.

Method: We have recently implemented a splendidly simple and cheap method allowing significant reduction of blood transfusions following open heart surgery, as well as effectively using patient's own blood.

At the end of cardio-pulmonary bypass, pump technician transfuses all remaining blood in the reservoir. At that stage another 500 cc of saline are added to the empty reservoir. The added solution "pushes" the rest of the patient's blood towards the patient, thus saving the remaining blood from the bottom of the oxygenator and aortic line.

Two groups of 20 patients each – one with "blood saving" (group I) and one without (group II) were compared. There were no significant differences in sex, gender and preoperative characteristics.

Results: Blood samples showed that Hb (hemoglobin), Ht (hematocrit) level in the aortic line at the end of procedure were 4.5 – 5 gm/dl and 20-22%, respectively - about half the Hb level in patient's own blood. Postoperative Ht level was higher in group I patients (36%±2 vs. 33%±2), and the need for blood transfusion in that group was 55% lower.

Conclusion: It was possible to reduce and in several cases to avoid postoperative blood transfusion. We recommend this simple and universally reproducible method to be widely used during open heart surgery.