

## **Reduced Transfusion Requirements with a Low Prime Volume Oxygenator**

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**Background.** Despite advances in surgical techniques, up to 80% of patients undergoing open heart operations require allogeneic blood transfusions. Low hematocrit (Hct < 20) during cardiopulmonary bypass (CPB) is associated with higher mortality and other adverse outcomes. More frequently, blood transfusion and low Hct is encountered in patients with small body size and women patients. This prompted us to take an aggressive approach in our care of these patients.

**Methods.** The aim of this study was to evaluate the effect of the new low prime volume oxygenator on perioperative hemodilution and blood transfusions. We use of a low prime volume oxygenator (LPVO) (Group I) for adult patients with a body surface area (BSA) < 1.7 m<sup>2</sup> and use of standard prime volume oxygenator (SPVO) (Group II) for adult patients with a body surface area (BSA) > 1.7 m<sup>2</sup>. In a case-matched retrospective study, 40 patients undergoing coronary artery bypass surgery with using of LPVO were compared with 40 patients on SPVO.

**Results.** In the LPVO group, the prime volume was significantly reduced, resulting in less hemodilution and transfusion requirements during and after extracorporeal circulation: only 10% of patients needed transfusions vs. 35% in the SPVO group, with an average perioperative transfusion need of 0.16 vs. 1.25 units. During the hospitalization patient in LPVO group needed 1.8 vs 2.5 units in the SPVO group. No adverse effects were observed in both groups

**Conclusion.** The low prime volume oxygenator was considered safe and effective for open heart surgery.