

Section: SURGERY

Abstract: CIR-O2

Clinical impacts of autotransfusion in cardiac surgery: an effective strategy for the public healthcare system

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INTRODUCTION: Blood transfusion in cardiac surgery is associated with adverse effects, driving adoption of patient blood management (PBM), a set of strategies aimed at preserving autologous blood and reducing the use of blood products. These strategies include intraoperative autotransfusion (IAT), which is recognized as effective in reducing red blood cell transfusions. Its impact on clinical outcomes such as acute kidney injury (AKI), infections, and mortality, however, still lacks robust evidence, especially within the Brazilian public healthcare system (SUS). **METHODOLOGY:** This retrospective study analyzed patients who underwent elective or urgent cardiac surgery between January 2020 and December 2024. Coronary artery bypass grafting, valve surgery, and aortic surgery were included and grouped according to IAT use. Blood transfusion was indicated for hemoglobin <10 g/dL during surgery or <9 g/dL postoperatively. Patients undergoing emergency surgery or with preexisting blood dyscrasias were excluded. Outcomes were compared between patients who did and did not receive IAT. **RESULTS:** Despite a higher prevalence of severe left ventricular dysfunction in the IAT group, the findings indicated consistent benefits associated with the technique. The need for red blood cell transfusion was 28.8% lower, and the incidences of AKI and vasoplegic syndrome were also lower. The IAT group had a shorter mean intensive care unit stay, less bleeding during the first 24 hours after surgery, and no reoperations for hemostasis. There was also a marked reduction in mediastinitis and a 14.8% reduction in mortality. **DISCUSSION:** Preserving autologous blood through intraoperative autotransfusion had a positive impact not only on reducing blood transfusion but also on relevant clinical outcomes. The lower incidence of AKI and infections suggests hemodynamic and immunologic benefits. Outcomes were superior despite greater clinical complexity in the IAT group, with substantial clinical and economic implications. These findings reinforce the value of IAT as a cost-effective strategy within PBM guidelines. **CONCLUSION:** IAT effectively reduced complications in cardiac surgery, supporting its routine incorporation in cardiac surgery centers.

KEYWORDS: Cardiovascular surgical procedures; Cardiac surgery; Intraoperative autotransfusion; Cell saver.