There are Benefits of Using Fresh Whole Blood in Cardiopulmonary Bypass Prime in Neonatal and Pediatric Cardiac Surgery

Abstract

The use of fresh whole blood in the cardio-pulmonary bypass (CPB) circuit has been suggested as a way to improve perioperative and postoperative outcomes. The benefit of limiting patients to a single donor exposure in the pediatric population is uncertain. It is the intent of our studies to show that fresh whole blood can offer a reduction in blood product exposures thereby reducing blood loss and an overall improved postoperative outcome. A retrospective review of 235 patients aged 2 years or younger from January 2003 through June 2006 and again from January 2012 through May 2014 who underwent cardiopulmonary bypass was conducted. Patients were excluded from the study whom did not require a transfusion for CPB prime, had pre or post op mechanical support, a bleeding disorder, or liver disease. Patient data was obtained intraoperatively and the first 48 hours post op. Data included donor exposures, CPB data, and post op blood loss. Overall 69% of these patients were exposed to only one donor for the data review period while blood loss averaged 3.3+-2.4 mL/kg. Priming of the CPB circuit with fresh whole blood significantly reduces the number of donor blood exposures in neonatal and pediatric heart patients.