473867 - PREDICTORS OF PERI-OPERATIVE RED BLOOD CELL TRANSFUSION IN LUNG TRANSPLANTATION

Martin Ma, MD[1], Peter Slinger, MD[1], Marc De Perrot, MD[2], Keyvan Karkouti, MD[1], Karen McRae, MD[1]
1. Anesthesia and Pain Management, Toronto General Hospital, Toronto, ON, Canada
2. Thoracic Surgery, Toronto General Hospital, Toronto, ON, Canada

Introduction: We retrospectively reviewed the peri-operative packed red blood cell (PRBC) transfusion requirements for a recent series of cadaveric lung transplants at a single center. The purpose of the review was to identify any predictors of transfusion that could potentially be modified, in order to minimize transfusion requirements.
Methods: Following research ethics board approval, the charts of single (n=28) or bilateral (n=199) lung recipients transplanted between December 2004 and December 2007 were reviewed. Patients who required simultaneous heart or liver transplant were excluded from analysis as were redo transplants. Variables examined included red blood cell requirements in the 72 hours after the start of surgery, type of transplant (single versus bilateral), gender, height, weight, body surface area (BSA), body mass index (BMI), patient diagnosis, the use of pre-operative steroids, pre-operative hemoglobin, initial systolic pulmonary artery (PA) pressure in the operating room, the need for cardiopulmonary bypass (CPB), and intra-operative temperature. Logistic regression analysis was used to determine predictors of any PRBC transfusion, or of massive transfusion defined as > 5 units PRBC.
Results: Of 240 charts reviewed, 227 were included in our analysis. Of these, 82% received PRBCs and 45% received a massive transfusion. Predictors of massive transfusion included: height < 168cm (p=0.0046), BSA < 1.85 (p=0.04), female gender (p=0.02), pre-operative hemoglobin < 130mg/L (p=0.001), initial PA >50mmHg (p<0.0001), and CPB (p<0.0001). There was a non-statistically significant trend associating double lung transplants with massive transfusion. While not predictive of massive transfusion, double lung transplantation (p<0.0001) and weight <70kg (p=0.003) were predictive of patients receiving a PRBC transfusion. Pre-operative steroid use and intra-operative temperature < 35 degrees celsius did not impact blood usage.
Discussion: Important predictors of PRBC requirements in lung transplantation include preoperative hemoglobin, parameters reflective of body size (height, weight, BSA, and female gender) initial systolic PA pressure and the need for CPB. These significant predictors are difficult to modify in patients where the timing of surgery is unpredictable.
References: No references