

Blood transfusion is associated with increased resource utilisation, morbidity and mortality in cardiac surgery.

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The purpose of the present investigation was to examine the impact of blood transfusion on resource utilisation, morbidity and mortality in patients undergoing coronary artery bypass graft (CABG) surgery at a major university hospital. The resources we examined are time to extubation, intensive care unit length of stay (ICULOS) and postoperative length of stay (PLOS). We further examined the impact of number of units of packed red blood cells (PRBCs) transfused during PLOS.

This is a retrospective observational study and includes 1746 consecutive male and female patients undergoing primary CABG (on- and off-pump) at our institution. Of these, 1067 patients received blood transfusions, while 677 did not. The data regarding the demography, blood transfusion, resource utilisation, morbidity and mortality were collected from the records of patients undergoing CABG over a period of three years. The mean time to extubation following surgery was 8.0 h for the transfused group and 4.3 h for the nontransfused group ($P \leq 0.001$). The mean ICULOS for the transfused group was 1.6 d and 1.2 d for the nontransfused group ($P < 0.001$). The PLOS was 7.2 d for the transfused group and 4.3 d for no-transfused cohorts ($P \leq 0.001$). In all patients and in patients with no preoperative morbidity, partial correlation coefficients were used to examine the effects of transfusion on mortality, time to extubation, ICULOS and PLOS. Linear regression model was used to assess the effect of number of PRBC units transfused on PLOS. We noted that PLOS increased with the number of PRBCs units transfused. Transfusion is significantly correlated with the increased time to extubation, ICULOS, PLOS and mortality. The transfused patients had significantly more postoperative complications than their nontransfused counterparts ($P \leq 0.001$). The 30-day hospital mortality was 3.1% for the transfused group with no deaths in the nontransfused group ($P \leq 0.001$). We conclude that the CABG patients receiving blood transfusion have significantly longer time for tracheal extubation, ICULOS, PLOS and higher morbidity and 30-day hospital mortality. Blood transfusion was an independent predictor of increased resource utilisation, postoperative morbidity and mortality.