Predonation of autologous blood reduces perioperative allogenic transfusion requirement in grown-up patients with congenital heart disease.

Adults with congenital heart diseases have a substantial risk for bleeding upon re-operations. Due to the detrimental effects of allogeneic blood transfusion, reduction of transfusion requirement is a major concern. To investigate the efficacy of autologous blood predonation (ABP), we focussed on a homogeneous subgroup of patients, with right ventricular outflow tract reconstruction. Prospectively collected data included 76 patients older than 16 years with repeated right ventricular outflow tract reconstruction from May 1995 to November 2006. In 27 patients, ABP was performed without any complication. Primary diagnoses included Tetralogy of Fallot in 50 patients and others in 26 patients. All patients had at least one previous operation, 62% had more than one. All patients received a homograft conduit between the right ventricle and the pulmonary artery. Preoperative haemoglobin was 123+/-15 g l(-1) in patients with ABP and 134+/-22 g l(-1) in the remainder (p=0.037), but was not significantly different after cardiopulmonary bypass until discharge from the intensive care unit. Significantly more patients without ABP required transfusion of allogeneic packed red cells (PRCs) (26 of 49 patients (53%) vs 4 of 27 patients (15%), p=0.001) and allogeneic fresh frozen plasma (FFP) (30 of 49 patients (61%) vs 6 of 27 patients (22%), p=0.002) than patients with ABP. Of 27 patients, 23 (85%)
and 25 (93%) with ABP received their predonated PRC and FFP, respectively. Logistic regression analysis identified no ABP (p=0.005, odds ratio (OR) 5.4, 95% confidence interval (CI) 1.7-17.7) and time on extracorporeal circulation>83 min (p=0.009, OR 5.0, 95% CI 1.5-16.8) to be predictive for allogeneic blood transfusion. ABP can be safely performed in grown-up patients with congenital heart disease without complications. Patients without predonation of autologous blood exhibit a fivefold increased risk for requiring allogeneic blood transfusion.

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