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## **Impact of peri-transplant red blood cell transfusion on post-kidney transplant graft failure**

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**Objectives:** Patients undergoing kidney transplantation (KT) frequently receive red blood cell (RBC) transfusion perioperatively. Transfusion of blood products can lead to allosensitization of KT recipients. We investigate the impact of peri-transplant transfusion on graft survival using a nationwide database.

**Methods:** This retrospective study included 13,872 patients who received KT in Korea between 2007 and 2015. The analyzed outcomes were graft failure rate at 5 years from KT and overall patient survival according to transfused amount of RBC. Hypertension, diabetes mellitus, coronary artery disease, cerebrovascular disease, and Elixhauser comorbidity index were adjusted as covariates.

**Results:** The 5-year graft failure rates were 17% in the no transfusion group, 17% in 1-2 units group (OR 0.98 [95% CI 0.84–1.16]), 26% in 3-5 units group (OR 1.51 [95% CI 1.19–1.91]), and 38% in 6 units or more group (OR 2.13 [95% CI 1.39–3.27]) ( $P < .001$ , 3-5 units or 6 units or more vs. no transfusion group). The 10-year survival rates were 97% in no transfusion group, 96% in 1-2 units group (OR 1.44 [95% CI 1.19-1.75]), 92% in 3-5 units group (OR 2.38 [95% CI 1.86-3.05]), and 67% in 6 units or more group (OR 10.78 [95% CI 8.47-13.71]) ( $P < .001$ , 1-2 units, 3-5 units or 6 or more units group vs no transfusion group).

**Conclusions:** Perioperative RBC transfusions in KT was associated with increased risk of renal allograft failure and death, independent of other clinical covariates. Further studies are needed to confirm risk of allosensitization after blood transfusion and to continue searching for alternative ways to reduce sensitization with blood products.