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Clinical Impact Of Early Blood Transfusion After Kidney Transplantation

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Introduction: Pretransplant blood transfusion is well-known cause of allosensitization. However, the effects of blood transfusion after kidney transplantation on graft outcomes remain controversial.

Methods: We analyzed 785 patients who underwent HLA- and ABO-compatible kidney transplantation between 2014 and 2020. Patients were grouped based on receiving red blood cell transfusion within the first 30 days after transplantation.

Results: Overall, 18.9% of patients received red blood cell transfusion within 1 month after transplantation. The median number of packed red cells among transfused recipients was 2 (interquartile range, 1.0-3.0) and the median time to first transfusion was 5.0 days (interquartile range, 2.0-12.0). Transfusion group patients were more often women, more often received a deceased donor transplant, and had a longer dialysis vintage compared to no transfusion group patients. During a median follow-up of 53 months, 30 patients (3.8%) died and 39 patients (5.0%) experienced death-censored graft loss. Multivariable analysis confirmed that blood transfusion was independently associated with higher all-cause mortality (hazard ratio, 3.030; 95% CI, 1.438-6.384; $P = 0.004$). Transfusion was also significantly associated with an increased risk of death-censored graft loss (hazard ratio, 2.178; 95% CI, 1.059-4.477; $P = 0.034$). Cumulative probabilities for antibody-mediated rejection was significantly higher in the transfusion group than in the no transfusion group ($P = 0.012$), whereas cumulative probabilities for T cell-mediated rejection between two groups were not significantly different ($P = 0.694$).

Conclusion: Transfusion within 1 month after kidney transplantation is associated with increased risk of all-cause mortality, death-censored graft loss, and antibody-mediated rejection.