Graft and Patient Survival Outcomes of a Third Kidney Transplant


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BACKGROUND: The waiting time for deceased donor renal transplantation in the United States continues to grow. Retransplant candidates make up a small but growing percentage of the overall transplant waiting list and raise questions about the stewardship of scarce resources. The utility of renal transplantation among individuals with two prior renal transplants is not described in the literature, and we thus sought to determine the survival benefit associated with a third kidney transplant (3KT).

METHODS: Multivariable Cox regression models were created to determine characteristics associated with 3KT outcomes and the survival benefit of 3KT among recipients wait listed and transplanted within the United States between 1995 and 2009.

RESULTS: A total of 4,334 patients were waitlisted for a 3KT and 2,492 patients received a 3KT. In a multivariate analysis, 3KT demonstrated an overall patient survival benefit compared to the waitlist (hazards ratio, 0.379; 95% confidence interval, 0.302-0.475; P<0.001) for those awaiting their first, second, or third kidney transplants, although an inferior graft outcome compared to first kidney transplants. The time to survival benefit did not accrue until 8 months after transplantation. In addition, we found that the duration of second graft survival was predictive of third graft survival, such that second graft survival beyond 5 years is associated with superior 3KT graft survival. Second graft loss in 30 days or less was not associated with inferior 3KT graft survival.

CONCLUSION: A 3KT achieves a survival benefit over remaining on the waitlist, although is associated with inferior graft outcomes compared to first kidney transplants. Graft survival of the second transplant beyond 5 years is associated with superior 3KT graft survival.