Abstract

Donor-Recipient Gender and Size Mismatch Impacts Graft Success after Kidney Transplantation


Background: Female recipients of male kidneys have an inferior graft survival, and patients receiving larger kidneys relative to their body size may have a graft survival advantage. Thus, graft survival may be affected by both gender and kidney size mismatches. The objective of this study was to analyze the possible confounding effect of body mass mismatch (body mass as proxy for kidney size) between female recipients of male donor kidneys.

Study Design: A total of 668 kidney transplants between 1996 and 2005 at our center were studied retrospectively. Graft and patient survival were determined by Kaplan-Meier estimation. Multivariate Cox proportional analyses were performed to determine the hazards of graft loss.

Results: There were 146 female recipients of male kidneys. Compared to all gender combinations, this group had the lowest, unadjusted graft survival (86%, 79%, and 78% vs. 92%, 88%, and 86% at 1, 2, and 3 years, respectively, log-rank p=0.01). Donor body mass index (BMI) correlated with donor kidney size (p<0.001). Male kidneys were a risk factor of graft loss for female recipients (hazard ratio [HR] 3.45, 95% CI 1.40-8.51, p=0.01), but male donors with a larger BMI relative to female recipients’ significantly reduced the risk (HR 0.19, 95% CI 0.05-0.67, p=0.01).

Conclusions: The inferior graft survival for female recipients of male donor kidneys is mitigated by male donors with a larger BMI.