

Living Donor Kidney Transplantation: Does Size Matter? Dick A, Mercer L, Smith J, McDonald R, Young B, Healey P

Controversies exist in the adult literature regarding the use of kidneys from small donors into larger recipients. Little is known regarding this issue in pediatric kidney transplantation. We reviewed the United Network of Organ Sharing database from 1987 through 2010 for adolescents (11-18 years old) patients who underwent primary living donor renal transplantation. According to donor/recipient body surface area (BSA) ratio, patients were stratified into 2 categories: BSA ratio <0.9 and BSA ratio ≥ 0.9 . Graft survival rates were compared between these 2 groups using Kaplan-Meier survival curves and Cox proportional hazards models. Of the 1880 patients identified, 116 (6.2%) had a BSA ratio <0.9 and 1764 (93.8%) had a BSA ratio ≥ 0.9 . Patients with a BSA ratio of <0.9 had an increased risk of graft loss (adjusted hazard ratio [HR] 1.61, 95% CI 1.13-2.27, $p=0.008$). Patients with a BSA ratio ≥ 0.9 had a significantly greater graft survival than those in the group with BSA <0.9 (figure 1) after adjustment for: donor age and gender, recipient age, gender, ethnicity, cause of renal failure as well as clinical factors: cold and warm ischemia time and HLA mismatch. We conclude that low body surface area ratio strongly correlates with and increased risk of graft loss and appropriate size matching confers better long-term graft survival in adolescents receiving live donor kidney transplants

