A Retrospective Examination of Kidney Transplant Outcomes in Patients with Alport Syndrome

Tariq Shah MD, Jan V. Hutchinson PhD, Robert Mendez MD, Rafael Mendez MD, and Steven Takemoto PhD
National Institute of Transplantation, Los Angeles, CA

Abstract

Introduction: Alport Syndrome accounts for approximately 1% of kidney transplants. It is a hereditary cause of kidney failure associated with hearing loss, more often affecting males than females. Loss of kidney function is attributed to collagen defects in the glomerular basement membrane. Formation of antibody reactive to normal collagen in the transplanted kidney may increase the risk of graft loss.

Methods: This retrospective examination of registry data for transplants 1996-2007 used logistic regression to identify distinguishing characteristics of Alport patients (n=4,626). A cohort (n=6,301) with similar distributions of age, gender, race, graft number, donor type, insurance, co-morbidity and re-transplant status was identified.

Results: Cox proportional hazards analysis indicate that Alport recipients had 19% reduced risk of graft loss and 39% reduced risk of death when compared to the matched cohort. Registry reports did not reveal cases where graft loss in Alport recipients was attributed to antibody reactive to glomerular basement membrane. Recipient retransplantation and expanded criteria donors were associated with increased risk of graft loss. Alport recipients were more likely male, White, non-obese with body mass index (BMI) less than 25 kg/m2 and unenrolled with panel reactive antibody (PRA) less than 10%. They were less likely retransplanted, had a lower comorbid burden of disease, hypertension, cardiovascular disease or cancer, and less likely received an expanded criteria donor.

Objective: To compare covariates and outcomes in Alport patients with patients having other causes of ESRD using a matched cohort of kidney transplant recipients.

Methods: A matched cohort was constructed using a set of patients with a similar distribution of recipient age in decades, gender, ethnicity, body-mass index (BMI) grouping, re-transplant, dialysis duration, type of insurance and type of donor.

The risk of rejection was 12% lower for Alport vs. matched patients but was similar to rejection in patients with other causes of ESRD. Alport patients had a 19% lower risk of graft loss compared to matched and 29% lower than other ESRD patients, and a lower risk of death (39% vs. 57%).

Multivariate outcomes

The risk of rejection was 12% lower for Alport vs. matched patients but was similar to rejection in patients with other causes of ESRD. Alport patients had a 19% lower risk of graft loss compared to matched and 29% lower than other ESRD patients, and a lower risk of death (39% vs. 57%).

Conclusions

Alport patients are generally younger and have less burden of systemic disease when compared to those with other causes of ESRD. Rates of graft loss and death were lower in Alport recipients. Rates of rejection were similar in Alport recipients as were rates of graft loss due to disease recurrence. Recipients of living related and unrelated kidneys had similar outcomes. There were high rates of graft loss in retransplanted recipients and those receiving a transplant from an expanded criteria donor.

Percentage cases distributed by gender and age.

Univariate outcomes

Results

Alport patients had lower rates of graft loss in younger, male and deceased donor allografts as well as those treated with tacrolimus or mycophenolate mofetil.

Rates of death were significantly lower in Alport patients who were young, male, in receipt of a graft from a deceased donor or treated with mycophenolate.