



Research Week 2020

Social Determinants as Indicators for Medication Adherence and Graft Function in Pediatric Kidney Transplant Recipients

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Keywords

Social Determinants, Transplant, Adherence, Nephrology, Pediatrics

Abstract

Introduction

Social determinants of health (SDoH) affect the outcomes of medical interventions. We examined the association of SDoH documented pre-kidney transplant (Tx) with medication adherence and graft function within the first year after kidney Tx in children.

Methods

We conducted chart review of patients with a first kidney Tx at Doernbecher between 2012-2017, receiving tacrolimus therapy. SDoH data were collected from social workers' notes documented during pre-Tx evaluation. Medication adherence was assessed by calculating the coefficient of variation of tacrolimus trough levels (TCV) as well as the presence of donor specific antibodies (DSA) over 12 months post-Tx. TCV > 30% was considered high risk for medication non-adherence. Graft function was estimated using the bedside Schwartz equation (eGFR) at 12 months post-Tx. Data were analyzed in R. Summary statistics were calculated. Appropriate model assumptions were checked for linear and logistic regression. Multiple variable regression was used to examine the impact of SDoH variables on TCV, eGFR, and DSA.

Results

39 patients were included in the analysis, mean 10.9 ± 6.7 years at Tx, and 54% male. Based on the regression, patients who lived in a single caregiver household were estimated to have a TCV 6.04% higher (95% CI: -3.66 to 15.73%), an eGFR 10.78 mL/min/1.73m² lower (95% CI: -36.6 to -3.09 mL/min/1.73m²), and 2.98 times the odds of DSA (95% CI: 0.24 to 45.51) compared to their counterparts.

Conclusions

Our results are limited by sample size and retrospective design, but indicate that SDoH of children who are evaluated for kidney Tx may be important indicators of medication adherence and graft function post-Tx. SDoH variables that act as risk factors can often be addressed pre-Tx. For example, the results suggest that strengthening support for primary caregivers may improve post-Tx outcomes, particularly among single caregivers or those with a chronic illness.