**Symptom burden is associated with multiple aspects of health related quality of life in kidney transplant recipients**

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Kidney transplantation (KT) improves survival and health related quality of life (HRQOL) compared to staying on dialysis in patients with end stage kidney disease. However, many patients with KT experience physical and emotional symptoms that may impact their HRQOL. These symptoms frequently remain undetected, as systematic symptom screening is not part of clinical care in patients with KT. Here, we assess the association between physical and emotional symptoms and HRQOL among patients with KT.

A cross-sectional, convenience sample of adults was recruited from the outpatient KT clinic of Toronto General Hospital, Toronto, Canada. Participants completed Patient Reported Outcome Measures, including the Kidney Disease Quality of Life-36 (KDQOL - that includes the SF-12 as a generic core), Edmonton Symptom Assessment System-revised (ESASr), and the EuroQol-5D5L (EQ5) questionnaires, on an electronic data capture platform. Clinical characteristics were collected from medical records. Multiple imputation by chained equations was used to handle missing data and multivariable adjusted linear regression models were used to assess the associations between symptom burden (ESASr global score) and HRQOL (KDQOL effects of kidney disease, SF-12 physical component, and EQ5 health utility score).

A total of 327 participants (60% male, 25% with diabetes, mean [SD] age 52 [16] years, eGFR 56 [24] ml/min/1.76m2, median [IQR] time since transplant 7.5 [1.5-13.7] years) were enrolled. The median (IQR) ESASr global score was 10 (2-22). The median (IQR) EQ5 health utility score was 0.89 (0.81-0.95); the mean (SD) KDQOL effects of kidney disease and SF-12 physical component scores were 85 (17) and 46 (11), respectively. In multivariable adjusted (age, sex, marital status, ethnicity, income, education, comorbidity, eGFR, serum albumin, hemoglobin and depression and anxiety scores) linear regression models, the ESASr score was significantly associated with both KDQOL effects of kidney disease (coeff=-0.31; 95% CI:-0.52, -0.09; p=0.008); SF-12 physical component (coeff=-0.43; 95%CI:-0.54, -0.33; p<0.001), and EQ5 health utility score (coeff=-0.005; 95%CI:-0.007, -0.003; p<0.001), respectively.

These results confirm that symptom burden is an important predictor of both generic and disease specific HRQOL in kidney transplant recipients above and beyond clinical and socio-demographic factors. Future research should assess the impact of systematic screening guided symptom management on clinical outcomes in this patient population.