Evaluating the Impact of Integrated Pediatric Transplant Psychology on Graft Outcomes in Pediatric Transplant Patients

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BACKGROUND
- Across pediatric populations, psychology assessment and intervention is associated with improved patient outcomes.
- There is growing recognition that integrated behavioral health support is critical for pediatric solid organ transplant (SOT) patients post-transplant to prevent nonadherence and subsequent graft loss.
- Little research has examined the potential benefits of psychology assessment and intervention within pediatric transplant teams on pediatric SOT patient outcomes.
- Further understanding of the behavioral health consultation model that leads to improved patient outcomes in SOT is needed.
- The current project examined a new model of psychology service including a standardized and more frequent schedule of integrated behavioral health appointments during the 3-year post-transplant period and its impact on subsequent graft outcomes.

METHODS
- Retrospective review of the electronic medical record (Epic) between 2018 and 2020 was conducted.
- Participants (N=171, Mage=9.26, 49.7% female) included 78 kidney, 47 liver, 45 heart, and 1 kidney/liver transplant patients seen in multidisciplinary pediatric transplant clinics.
- Frequency of psychology contacts, organ graft loss, and sociodemographic variables were collected and compared 1 year pre- and post-implementation of the new psychology service delivery model to determine whether increased psychology visits were associated with improved graft outcomes.

RESULTS
- There was an increase in psychological services to transplant patients who were within 3-years post-transplant (psychology met with 25% prior to implementation vs. 95% following implementation of the model in 2019).
- During the one-year period before implementation of the service delivery model (2018-2019), eight patients experienced organ graft loss, whereas only one patient experienced organ graft loss from 2019-2020 after increasing psychology contacts, representing an 87.5% decrease in graft loss.
- A one-way ANCOVA demonstrated a significant effect of organ type on number of psychology contacts after controlling for child age, $F=(2, 166) 3.21, p=0.043$, partial $\eta^2=0.037$. The number of psychology contacts were significantly higher for heart transplant patients ($M=3.96, SE=0.56$) than kidney transplant patients ($M=2.19, SE=0.44; p=0.043$). There were no significant differences between liver and heart or kidney transplant patients in terms of mean number of psychology contacts.

CONCLUSIONS
- Following the implementation of the novel, targeted triage model of behavioral health visits, psychology contacts with pediatric SOT patients increased and graft loss decreased.
- Heart transplant patients may be at higher risk for psychosocial concerns than patients receiving kidney or liver transplants. This could be due to the medical complexity and acuity within heart transplant and associated stress placed on families.
- These findings support the need for increased integrated psychology services on pediatric SOT teams and provide evidence that psychosocial intervention may be critical in preventing graft loss in pediatric transplant patients.

FUTURE DIRECTIONS
- Exploring contextual factors specific to heart transplant patients that contribute to their increased need for psychosocial support will further inform intervention efforts unique to this population.
- Longitudinal research is needed to determine the long-term effects of increased psychosocial support for pediatric SOT patients on preventing organ graft loss and rejection episodes within the three-year post-transplantation period and beyond.

REFERENCES