Medication Adherence Pre- to Post-Transfer to Adult Healthcare Settings Among Pediatric Solid Organ Transplant Recipients: Associations with Transfer Success

Kelly E. Rea, B.A.1, Grace Cushman, M.S.1, Roshan George, M.D.2,3, Arpita Basu, M.D.4, Wendy Book, M.D.3, Ryan Ford, M.D.4, & Ronald L. Blount, Ph.D.1

1University of Georgia, 2Children’s Healthcare of Atlanta, 3Emory University Department of Pediatrics, 4Emory Transplant Center, Emory University School of Medicine

Introduction

- Given increased survivorship rates, adolescent and young adult (AYA) transplant recipients are increasingly transitioning to adult healthcare settings.1
- However, the period of transition is associated with poor medication adherence and medical outcomes.2,3
- Data on post-transfer adherence to multiple aspects of the medical regimen (e.g., medication adherence, clinic attendance) among AYA transplant recipients remains limited.
- This study examines adherence to immunosuppression medications during the period of transition and relations to transfer success.

Methods

- Participants
  - 49 heart, kidney, or liver transplant recipients recently transferred from pediatric to adult healthcare.
- Medical Chart Review
  - Medication Level Variability Index (MLVI)4 = objective measure of tacrolimus medication adherence, collected in the year pre-transfer and two years post-transfer. Adherent is considered < 2.5 SD.
- Transfer success = first adult transplant clinic visit within one year of the last pediatric transplant clinic visit.

Analyses

- Independent samples t-tests assessed differences in MLVI and transfer characteristics between participants who transferred successfully versus unsuccessfully.
- Chi-square and Fisher’s exact analyses examined relations in adherence status pre- to post-transfer.

Results

Establishing adult care within one year of transfer is associated with greater medication adherence in young adulthood. Additionally, pre-transfer nonadherence appears to persist into adult settings.

![Transfer Success](image)

**Fisher’s Exact test:** Transfer Success and Medication Adherence (MLVI < 2.5 SD) Fisher’s Exact test, p = .02*

![Chi Square test](image)

**Chi Square test:** Medication Adherence (MLVI < 2.5 SD) Pre- and Post-Transfer

Note: Only n=32 participants taking tacrolimus and thus appropriate to calculate MLVI.

\[ p < .05, ** p < .01, *** p < .001 \]

Discussion

- The majority of AYAs successfully transferred to adult healthcare; however, among those who were unsuccessful, medication level variability and nonadherence was significantly higher.
- Additionally, without intervention, pre-transfer medication non-adherence persists into post-transfer adult healthcare settings.
- Findings suggest the importance of continuing attention to medication adherence in adult healthcare, as nonadherence patterns appear to persist into adult settings.
- Certain characteristics of patients not modifiable through intervention (i.e., patient age, time since transplant) remain important to consider during transition.

Future Directions

- Future research should test the feasibility of identifying patients at-risk for nonadherence via those known to demonstrate nonadherence or adherence barriers before the transition.
- Future research should also assess continuing pediatric non-adherence interventions after transfer and examine post-transfer medical and psychosocial factors related to transfer success and adherence.

Acknowledgements & References

Acknowledgements: The authors would like to thank the Children’s Healthcare of Atlanta Transplant Services and Emory Transplant Center staff, and the patients who participated in this study.

Address correspondence to: Kelly.Rea@uga.edu


