Evaluating the impact of pharmacy type on medication-related hospitalizations in transplant patients prescribed immunosuppressants

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Background

- Medication non-adherence in transplant patients is a predictor of late acute rejection and graft loss, with adherence rates of < 95% associated with poor outcomes.[1]
- Hospital-system specialty pharmacy services demonstrate higher adherence rates and lower admission rates among transplant patients in clinical studies.[2,3]
- Community pharmacies often lack time for individual patient counseling, resulting in delayed treatment initiation and poor outcomes.[4]
- Specialty pharmacy services like benefits investigations, financial and refill assistance, and clinical follow-ups help promote patient adherence.[5]

Objectives

- To evaluate the impact of pharmacy type on medication-related hospitalizations and medication adherence in transplant patients prescribed immunosuppressants.
- **Hypothesis:** specialty pharmacy patients will have fewer hospitalizations and higher adherence rates than non-specialty pharmacy patients.

Methods

- This study was a single-center, retrospective, observational chart review of transplant patients 18 years or older.
- **Inclusion Criteria**: Adult transplant patients prescribed at least *one* immunosuppressant between September 19th, 2024, and September 19th, 2025.
- **Primary outcome**: Medication-related hospital admissions
  - **Admission rate**: ≥ 1 hospital admission attributed to medication issues during the study period.
- **Secondary outcome**: Immunosuppression adherence
  - **Non-adherence**: ≥ 1 documented incidence of non-adherence during study period, based on the 95% threshold.
- Demographics (age, sex, race), transplant type, and immunosuppressants prescribed were also collected.
- **Statistical analysis**: chi-square tests were used to compare the primary and secondary outcomes between cohorts. P-values < 0.05 were considered significant.

Results

Table 1. Baseline characteristics

Characteristic	Specialty Pharmacy Cohort (N = 132)	Non-Specialty Pharmacy Cohort (N = 725)
Age – yr, median (IQR)	57 (44 - 66)	62 (51 - 69)
Sex – no (%)		
Male	78 (59.1)	473 (65.2)
Female	54 (40.9)	208 (34.8)
Race – no (%)		
Black/African American	49 (37.1)	215 (29.7)
White or Caucasian	31 (23.5)	317 (43.7)
Asian	28 (21.2)	82 (11.3)
Other	24 (18.2)	111 (15.3)
Immunosuppressant Medications Prescribed, > 5% – no (%)		
Tacrolimus	100 (75.8)	532 (73.4)
Mycophenolate	86 (65.2)	468 (64.6)
Prednisone	27 (20.5)	403 (55.6)
Sirolimus	12 (9.1)	154 (21.2)

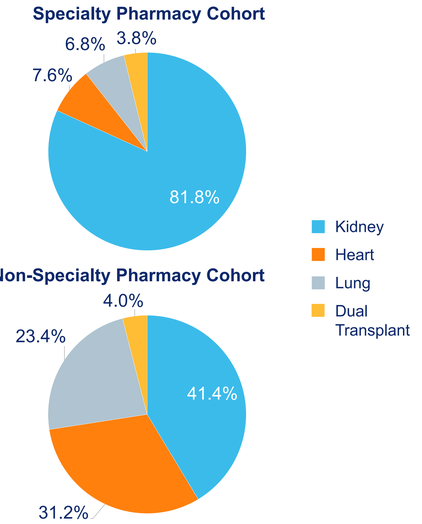

Figure 1. Transplant type by cohort

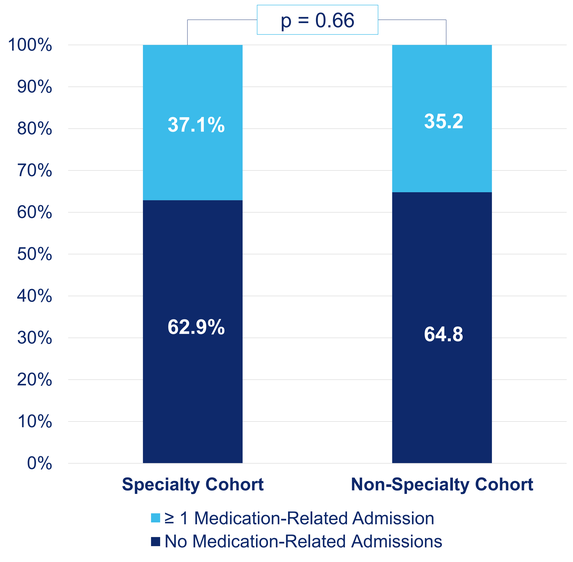

Figure 2. Medication-related hospital admission rate

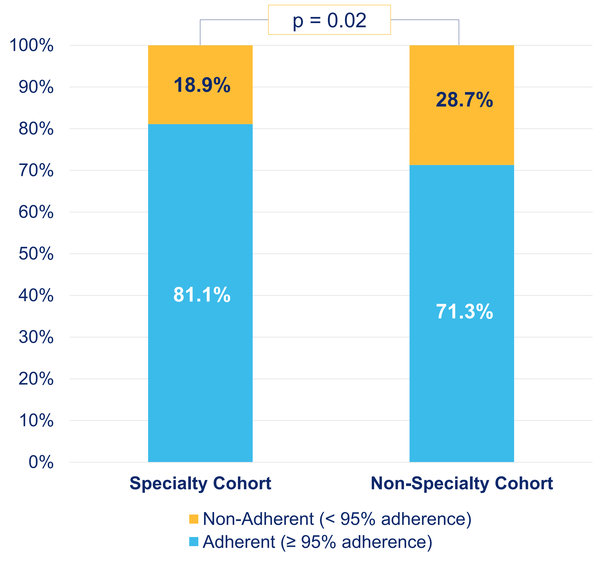

Figure 3. Immunosuppressant medication adherence rate

Discussion

- **Hospital admission rates** were slightly higher in the specialty pharmacy cohort; however, this difference was not significant **(1.9% difference, p = 0.66).**
- **Medication adherence rates** were significantly higher in the specialty pharmacy cohort **(9.8% difference, p = 0.02).**
- **Strengths**:
  - **One-year study period.**
  - **Comprehensive data collection** including patient demographics, transplant type, and medication use.
  - Inclusion of all available patient data for **large overall sample size**.
- **Limitations**:
  - **Single-center design** limits external validity.
  - **Retrospective chart review** reliance on accurate EHR documentation may introduce bias.
  - Significant **differences in cohort size and transplant type** between groups may limit comparability.

Conclusion

- Higher observed rates of medication adherence in the specialty pharmacy cohort highlight the potential benefits of specialty pharmacy services in transplant care.
- These results should be interpreted with caution given differences in baseline characteristics between cohorts.
- Further study is needed to assess the relationship between pharmacy type and hospital admission rates.

Disclosures

The authors have nothing to disclose.

References

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