Building Research Initiative Group: Chronic Illness Management and adHerence in Transplantation study

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Background

- Non-adherence (NA) to the treatment regimen after heart transplantation (HTx) is high among heart transplant recipients and frequently related to poor clinical and economic outcomes.
- Limited data are available about the prevalence of NA to the treatment regimen across different countries/healthcare systems.
- A few studies exist that focus on healthcare system factors to explain adherence to immunosuppressive medication in transplant patients.

Methods

- Design: International, multi-center, cross-sectional study
- Sample & setting: A convenience sample of heart transplant centers in Australia, Europe, North America, and South America
- A proportionate random sample of patients within the centers: small center: N= 25, medium center: N= 40, large center: N= 60
- Randomized sampling of transplant clinicians if >5 within center (maximum of 5 nurses included per center)
- Final sample: 1397 HTx recipients from 36 HTx centers in 11 countries

Variables and measurements:
- Patient level: 1. Patient level
- Micro level (patient-provider interaction)
- Meso level (transplant center)
- Macro level (Healthcare system)

Data analysis:
- Data description: measures of central tendency, dispersion, and frequency distributions are employed depending on the measurement level of each variable.
- Psychometrics: Multi-item instruments are checked for dimensions before use in further analyses.
- Inferential statistics: multi-level correlates of non-adherence will be examined using mixed-effects regression analysis, using center as a random variable. A separate model will be used to test the patient-level variables outlined in the IMBP.
- Benchmarking: each transplant center received feedback on their performance using results benchmarked on system factors against the mean of all transplant centers.

Selected results

We assessed the prevalence of medication non-adherence (MNA) (implementation and persistence) to immunosuppressants and co-medications in heart transplant (HTx) recipients using BAASIS® (self-report) and compared prevalence estimates in both categories of medication using logistic regression. MNA was present in both categories of medication and significantly (α=0.05) higher regarding co-medications than immunosuppressants (implementation: taking 23.9% vs. 17.3% (OR=1.5, CI: 1.30-1.73), drug holiday 5.7% vs. 1.9% (OR=3.17, CI: 2.13-4.73), dose alteration 3.8% vs. 1.6% (OR=2.46, CI: 1.49-4.06) and discontinuation: 2.6% vs. 0.5% (OR=5.15, CI: 2.36-11.20)).

Given this prevalence MNA to all post-HTx medication, adherence-enhancing interventions need to focus on the entire treatment regimen.

We used self-report data of adult HTx recipients to assess non-adherence to the post-HTx non-pharmacologic treatment. The non-adherence definitions used were: Physical activity: <3 times/week 30 minutes' moderate activity, or <5 times/week a combination of either intensity; Sun protection: not using sunscreen at all or at least 3 days a week, or <5 days a week for follow-up visits; and diet recommendations: less than 2 servings of fruits and vegetables a day. Overall prevalence figures were adjusted to avoid over- or underestimation of countries. Between-country variability was assessed within each treatment component via chi-square testing.

The adjusted study-wide non-adherence prevalence figures were: 47% for physical activity (95% CI [42.5-50.5%]), 39.9% for sun protection (95% CI [37.3-42.5%]), 38.2% for diet recommendations (95% CI [35.1-41.3%]), 22.9% for alcohol consumption (95% CI [20.8-25.1%]), 7.4% for smoking cessation (95% CI [6.1-8.7%]), and 5.7% for follow-up visits (95% CI [4.6-6.9%]). Significant variability was observed between countries in all treatment components except follow-up visits.

Non-adherence to the post-HTx non-pharmacologic treatment regimen is prevalent and shows significant variability internationally, suggesting a need for tailored adherence-enhancing interventions.