

Survival Analysis in Adult Heart Transplantation: Correspondence

Dear Editor,

In the retrospective analysis "Survival Analysis in Adult Heart Transplantation: Experience from a Brazilian Single Center"¹, 255 adult heart transplant recipients at a Brazilian institution were evaluated for survival and risk factors for early mortality. At one year, the total survival rate was 68.1%; in the most recent year (2016–2022), it rose to 73.2%. Important results show that longer cardiopulmonary bypass graft duration, older donor age, nutritional state, and early transplantation timing are risk factors for 30-day death. Within the first month of life, infections and primary graft abnormalities were found to be the leading causes of death.

This study's retrospective methodology, which made it more difficult to account for biases and confounding variables that can affect survival rates, is one of its main weaknesses. Furthermore, a thorough assessment of the recipients' pre-transplant health status was absent from the study, despite its significance in determining the likelihood of post-transplant problems and mortality. Moreover, developments in surgical methods, immunosuppressive treatments, and medical protocols that may have a substantial impact on long-term results were not considered in the time-stratified analysis. More research should be done on these variables.

While donor factors are acknowledged in the literature, the study emphasizes the impact of donor characteristics — specifically, obesity and donor age — on early death among recipients of heart transplants. However, contemporary studies have not thoroughly examined the specific mention of nutritional status as a direct risk factor. This provides new opportunities for investigating the importance of donor health indicators and may lead transplant programs to adopt stricter donor selection criteria as well as intervention strategies aimed at optimizing donor health prior to donation.

To improve the generalizability and robustness of published results, multicenter techniques to examining findings in various demographics and situations should be taken into account in future research. Furthermore, prospective studies that carefully evaluate the time period and pre-transplant therapies would be beneficial in order to gain a better knowledge of the ways in which these variables directly impact post-transplant survival. Beyond just survival rates, qualitative indicators like recipient quality of life and long-term health outcomes may also be included to paint a more complete picture of transplant success.

To add innovation to future research, researchers could investigate new biomarkers or genetic predictors for transplant rejection or survival, which could supplement established clinical assessments. Machine learning and artificial intelligence advances could also be used to evaluate complicated information for predictive modeling, identifying patients who are at high risk of complications based on a mix of clinical and patient history. Furthermore, the study of tailored nutritional programs for both donors and recipients may become an important area of emphasis. This highlights the relevance of dietary management in improving transplant outcomes.

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