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Disparities in Heart Transplantation Allocation and Outcomes by Blood Type in Korea (2010-2022)

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Introduction: Heart transplantation, a pivotal therapeutic modality for end-stage heart disease, is influenced by the recipients blood type in organ allocation. We investigated the role of recipient blood type on donor matching, wait times, and survival outcomes in Korea between 2010 and 2022.

Methods: In this retrospective cohort study, we examined 1,745 heart transplant recipients classified by blood types: A (n=631), B (n=488), AB (n=256), and O (n=370). Parameters studied encompassed donor and recipient ages, donor blood type compatibility, organ type, emergency status, waiting periods, and survival rates up to one year post-transplant.

Results: Blood type O recipients waited the longest (median: 110 days), with an average of 205±514 days. Remarkably, type A and O recipients predominantly received organs from donors of matching blood types (79.5% and 100% respectively). Gender distribution was consistent across blood types, with the majority (>96%) undergoing heart-only transplants. One-year post-transplant survival rates were comparable across the groups, exceeding 80%.

Conclusion: From 2010 to 2022, heart transplantation allocation in Korea exhibited distinct disparities among blood types. The prevalent system, heavily reliant on precise blood type matches, extended waiting times, especially for type O recipients. Despite these imbalances in organ allocation, post-transplant survival remained high across all blood groups. Reassessing the allocation criteria is crucial to ensure equitable organ distribution.