

The Impact of Donor-Recipient Gender Matching on Rejection Rate after Heart Transplantation

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Rationale: The role of heart donor/recipient gender matching on heart transplantation (HT) outcome is still controversial, suggesting that it has survival benefit for men but not for women. This retrospective study investigated the impact of donor/recipient gender matching on the rejection and cardiac allograft vasculopathy (CAV) rates following HT.

Methodology: 89 recipients of HT (73 men and 16 women; mean age 48y no statistical difference) who received organs from 66 men and 23 women were grouped as follows : male donor-male recipient (MD-MR, n=55); female donor-male recipient (FD-MR, n=18); female donor-female recipient (FD-FR, n=5); male donor-female recipient (MD-FR, n=11). Rejection was established by right ventricular endomyocardial biopsy and histological grading was done according to the ISHLT grading score. CAV was diagnosed by annual coronary angiography. Statistical analysis was completed by one-way ANOVA(for continuous variables) and the χ^2 test (categorical variables). Survival curves using the Kaplan–Meier and the Log-rank test.

Results: Pre heart transplantation diagnosis for MR was almost exclusively of ischemic heart disease, while for FR indications varied and included mostly DCM. Age of FD was significantly higher than MD (38y vs. 31y). Regardless of donor gender, FR exhibited after 1y a significant higher rate of mild rejections as compared to MR (40% vs. 20% at 5y; P=0.01). MD-MR matching was associated with significantly lower rate of mild rejections after 1y, as compared to MD-FR (40% vs. 80% at 7y; P=0.03). Also, an observation was made suggesting that FD-FR is associated with higher rate of mild rejections after 1y, as compared to FD-MR. Incidence of CAV did not differ among all groups.

Conclusions: Donor and recipient gender per-se as well as donor-recipient gender matching play a role in the rejection process following HT. Expanding of this cohort of patients will further validate these observations.