

Sex Does Matter-Impact of Gender Matching on Early and Late Outcomes Following Heart Transplantation

Potashnik-Peled, Yael¹; Lavee, Jacob²; Arad, Michael¹; Shemesh, Yedida¹; Kassif, Yigal²; Har Zahav, Yedael²; Freimark, Dov¹

¹Sheba Medical Center, Heart Institute, Heart Failure Service, Ramat Gan, Israel; ²Sheba Medical Center, Heart Transplantation Unit, Ramat Gan, Israel

Background: The role of donor/recipient gender matching on heart transplantation (HT) outcomes is still controversial. This prospective study investigates the impact of gender matching on early and long term outcomes following HT.

Methods: Patients who underwent HT between 1991 and 2011, and are being followed at our HT clinic, were grouped as follows: male donor-male recipient (MD-MR, n=109); female donor-male recipient (FD-MR, n=36); male donor-female recipient (MD-FR, n=14), female donor-female recipient (FD-FR, n=7). Outcomes included mortality, need for inotropic support, length of hospital stay, major perioperative and late non-fatal adverse events (AEs), rejections and cardiac allograft vasculopathy (CAV).

Results: Early mortality, need for inotropic support, length of hospital stay and major perioperative AEs did not differ between the groups. FD-MR group was associated with significantly higher rates of early moderate/severe rejections per patient (FD-MR 1.2, MD-MR 0.4, MD-FR 0.3, FD-FR 0.3, $p=0.008$) and late moderate/severe rejections per patient (FD-MR 0.4, MD-FR 0.09, MD-MR 0.07, FD-FR 0, $p=0.016$). CAV was significantly higher among this group (FD-MR 43%, MD-MR 20%, FD-FR 17%, MD-FR 0%, $p=0.016$). Non fatal major AEs were significantly higher in the FD-MR group (FD-MR 61%, MD-MR 32%, MD-FR 29%, FD-FR 14%, $p=0.007$). Rates of heart failure (FD-MR 36%, MD-MR 11%, MD-FR 17%, FD-FR 17%, $p=0.038$) and end stage renal failure (FD-MR 29%, MD-MR 5%, MD-FR 0, FD-FR 0, $p=0.001$) were significantly higher. A trend toward higher mortality was observed in FD-MR group.

Conclusions: Donor-recipient gender matching impacts outcomes of HT. Our study indicates that male recipients who receive female hearts have an increased risk of rejections, development of CAV, higher rates of late non fatal AEs, and a trend toward higher mortality. These results suggest that sex mismatching is a limiting factor in the prognosis of male HT recipients and needs to be avoided if possible.