

Left ventricular dysfunction in potential heart donors and its influence on recipient outcomes

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Introduction: Left ventricular (LV) dysfunction in organ donors is frequent and considered as contraindication for utilization of the heart. However, such dysfunction might be caused by sympathetic stress and could be transient (Takotsubo syndrome). We assessed the importance of LV dysfunction in potential heart donors and evaluated its influence on recipient outcomes.

Methods: Donor records of all consecutive organ donors in Western Sweden between 2006 and 2016 were reviewed. Recipients of transplanted donor hearts were identified in the Scandiatransplant database.

Results: Out of 641 potential heart donors who underwent echocardiographic assessment, LV dysfunction (EF<50% and/or RWMA) was found in 155 donors (24%). Regional hypokinesia was seen in 113 donors of whom 46 had a Takotsubo-like circumferential hypokinetic pattern. Independent risk-factors of LV dysfunction were a younger age, cardiac arrest as a contributing factor to death and a shorter time from admission to declaration of brain death. Angiographic evidence of CAD was not more common in donors with vs without LV dysfunction ($p>0.999$). A total of 338 (54%) donor hearts were transplanted, of which 45 (14%) had LV dysfunction. This was a major determinant of not transplanting the heart ($p<0.001$). After transplantation, LV function normalized in all recipients. Neither short-term outcomes nor the composite endpoint of death or re-transplantation over time differed between recipients receiving a donor heart with vs without LV dysfunction (Figure, $p=0.594$)

Conclusion: LV dysfunction is common among potential heart donors and were safely transplanted in this study. Measures should be taken to increase utilization of these hearts.