

Normalization of High Pulmonary Pressure with HeartMate II LVAD Support

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Objective: Pulmonary hypertension (PHT) and elevated pulmonary vascular resistance (PVR) lead to poor outcome after heart transplantation due to postoperative failure of the donor right ventricle. As such, patients with PHT and elevated PVR are considered high risk for transplantation. The use of left ventricular assist device (LVAD) to reduce PHT has been suggested to convert those patients to be adequate transplant candidates.

Methods and Results: We describe 7 patients with severe PHT (6 ischemic cardiomyopathy, 1 dilated cardiomyopathy) who deteriorated and required support. Three had previous CABG. All patients had PHT and elevated PVR despite maximum medical therapy. HeartMate II LVAD was implanted in all 7 patients. The patients experienced clinical improvement and were sent home. Systolic pulmonary pressure was measured preoperatively and between 3 – 15 months postoperatively (table). Pulmonary pressures decreased significantly in all patients except for the patient with dilated cardiomyopathy (patient#7).

Conclusions: Severe PHT and Elevated PVR were both previously considered as contraindication for heart transplantation. A period of LVAD support leads to a progressive decrease of PVR and normalization of pulmonary pressures, especially in patients with ischemic cardiomyopathy, making these patients amenable for heart transplantation.