

The HeartMate II Left Ventricular Assist Device as Bridge to Heart Transplantation – the Sheba Medical Center Experience

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Objective: We present the largest Israeli experience with the axial flow pump Heart Mate II left ventricular assist device (LVAD) as a bridge to heart transplantation.

Patients and Methods: Five patients underwent HeartMate II LVAD implantation at the Sheba Medical Center between November 2006 and September 2008. In four patients, age range 47-63 years with ischemic cardiomyopathy (ICM) the LVAD was implanted due to post myocardial infarction cardiogenic shock with mechanical ventilation and/or IABP in three patients and deterioration of terminal heart failure on catecholamines in one. The fifth patient, 18 years old boy weighing 37 Kg, was implanted with the LVAD due to congenital dilated cardiomyopathy (CDCM) causing terminal heart failure with non sustained SVT/VT and supra systemic pulmonary hypertension. All five patients had at least moderate right ventricular dysfunction.

Results: Three of the patients underwent successful heart transplantation four months, six months and 10 days following the LVAD implantation. One patient is still ongoing on LVAD support and one patient died 3 days after implantation due to progression of multi-organ failure secondary to preoperative cardiogenic shock. There were no neurological or infectious complications in any of the patients and no device malfunctions. There was no need for temporary mechanical right heart support in any of the patients. Three patients were discharged home while on LVAD support: two were transplanted and one – the young CDCM patient - is still ongoing with high pulmonary resistance, pending decision of listing him for heart and lungs transplantation.

Conclusions: HeartMate II LVAD is an excellent measure of stabilizing and supporting patients awaiting heart transplantation who are at imminent risk of death. The small device is easy to implant, carries minimal postoperative complications and provides patients with good quality of life while awaiting heart transplantation at home. The key to its successful use is highly dependant on its timely implantation, before multi-organ damage becomes irreversible.