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Reviews:

Journal of Heart and Lung Transplantation

[Outcome of unplanned right ventricular assist device support for severe right heart failure after implantable left ventricular assist device insertion*](#)

Takeda K, Naka Y, Yang JA, Uriel N, Colombo PC, Jorde UP, Takayama H.
J Heart Lung Transplant. 2014 Feb;33(2):141-148.

The authors from Columbia Presbyterian Medical Center retrospectively reviewed 398 end stage heart failure patients underwent insertion of implantable LVADs (HeartMate I and HeartMate II). They recruited 44 patients who required unplanned RVAD (Thoratec PVAD, Abiomed AB 5000 and CentriMag) support due to severe RV failure after LVAD insertion. For comparison, 37 patients underwent planned biventricular assist device (BiVAD) insertion were identified during the same study period. The authors analyzed the early and late outcomes in those patients.

The authors identified that only 11% of patients required unplanned RVAD support after implantable LVAD insertion. Overall mortality was high at up to 50%. Importantly, these patients were initially thought to be candidates for isolated LVAD support. However, satisfactory outcomes were achieved in only half of the patients who could be weaned from RVAD support. The outcomes were extremely poor in patients who failed RVAD removal. End-organ failure was more advanced in patients who could not be weaned from RVAD than in those who could be weaned. In multivariate analysis, pre-operative WBC and creatinine levels were found to be strong predictors of successful RVAD removal. An elevated WBC count indicated either an underlying infection or systemic inflammatory response before and after LVAD insertion. Patients with mild to moderate renal dysfunction are likely to be suitable candidates for temporary RVAD support among those who develop severe RV failure after LVAD implantation. Recovery of renal function after adding RVAD support could lead to better outcomes because the patients who had sustained renal failure on Day 3 after operation most likely died. The outcomes of patients who could not be weaned from the temporary RVAD support were extremely poor. In this study, the authors found similar outcomes, irrespective of the type of LVAD or RVAD, although the number in each group was small.

[HeartWare and HeartMate II left ventricular assist devices as bridge to transplantation: a comparative analysis*](#)

Topkara VK, O'Neill JK, Carlisle A, Novak E, Silvestry SC, Ewald GA.
Ann Thorac Surg. 2014 Feb;97(2):506-12.

The authors from Washington University School of Medicine performed a comparative analysis of 1965 patients bridged to transplantation with HeartWare (n = 141) or HeartMate II (n = 1824) LVADs using the multicenter United Network for Organ Sharing (UNOS) database during the period of 2009 to 2012.

Mechanical unloading with the HeartWare device leads to comparable levels of allosensitization, hemodynamic profiles, and end-organ function before transplantation compared with the HeartMate II device. Post transplantation outcomes including freedom from rejection, cardiac allograft vasculopathy, and post transplant survival are also similar between the two device types. The authors supported the use of both the HeartWare and HeartMate II devices in transplant-eligible patients.

[Transcatheter aortic valve implantation and left ventricular assist device: a word of caution](#)

Parry D, Rao V, Butany J, Catrip J, Wilson W, McDonald M, Billia PF, Horlick E, Cusimano RJ.
Ann Thorac Surg. 2014 Feb;97(2):e41-2.

The authors from Toronto General Hospital presented a case of a 64-year-old woman, with nonischemic cardiomyopathy secondary to anthracycline toxicity, who underwent transcatheter aortic valve implantation to replace a stenotic aortic valve to facilitate left ventricular assist device explantation.

Thirty-three days later, the porcine pericardial valve cusps were fused and a thick pseudomembrane had occluded the left ventricular outflow tract, forcing the explant to be aborted. The authors advised that a careful consideration should be given to the timing and technique of aortic valve replacement in the setting of LVAD as a bridge to recovery.

Other Journals

[European Journal Cardio-Thoracic Surgery](#)

1. Marasco SF, Bell D, Lee G, Bailey M, Bergin P, Esmore DS. [Heterotopic heart transplant: is there an indication in the continuous flow ventricular assist device era?](#) *Eur J Cardiothorac Surg.* 2014 Feb;45(2):372-6.*
2. Tuzun E, Pennings K, van Tuijl S, de Hart J, Stijnen M, van de Vosse F, de Mol B, Rutten M. [Assessment of aortic valve pressure overload and leaflet functions in an ex vivo beating heart loaded with a continuous flow cardiac assist device.](#) *Eur J Cardiothorac Surg.* 2014 Feb;45(2):377-83.*
3. Furukawa N, Morshuis M, Gummert JF. [Outflow graft abrasion due to bend relief detachment in a HeartMate II device.](#) *Eur J Cardiothorac Surg.* 2014 Feb;45(2):394.