LATE RIGHT HEART FAILURE AFTER LEFT VENTRICULAR ASSIST DEVICE IMPLANTATION: CLINICAL PREDICTORS AND OUTCOMES

Moderated Poster Contributions
Poster Sessions, Expo North
Monday, March 11, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Mechanical Circulatory Support: Assessment of Risk and Outcomes
Abstract Category: 15. Heart Failure: Clinical
Presentation Number: 1307M-286

Authors: Shikhar Saxena, John Um, Ioana Dumitru, Samantha Pilmaier, Timothy Ryan, Shannon Yannone, Michael Moulton, Brian Lowes, Eugenia Raichlin, University of Nebraska Medical Center/Division of Cardiology, Omaha, NE, USA, University of Nebraska Medical Center/Surgery-Cardiovascular & Thoracic Surgery, Omaha, NE, USA

Background: Early right heart failure (RHF) after left ventricular assist device (LVAD) implantation has been well studied. However, the significance of late RHF (LRHF) remains unclear. This study aimed to assess the predictors and outcomes of LRHF after LVAD implantation.

Methods: A retrospective analysis of 73 consecutive patients implanted with HeartMate II LVAD was conducted. 23 (32%) patients presenting with New York Heart Association (NYHA) Class III symptoms, systemic congestion, and severe RHF on echocardiogram 1 month after LVAD implantation comprised the LRHF group. 50 (68%) patients had no signs of RHF (NRHF group). The Model for End-Stage Liver Disease (MELD) XI scores was calculated for all patients.

Results: The LRHF group patients were more often assigned for destination therapy (56% vs. 27%, p=0.01), had higher pre-operative MELD XI score (16.2 ± 4.4 vs. 13.8 ±3.2, p=0.03), lower serum albumin level (3.1 ± 0.7 vs. 3.4 ± 0.5 g/dl), tendency to higher central venous pressure (CVP, 15 ± 5 vs. 13 ± 6 mm Hg, p=0.06) and higher ratio of right ventricle to left ventricle diastolic dimension (RVDD/LVDD: 0.7 ± 0.2 vs. 0.6 ± 0.1, p=0.07) on pre-operative echocardiogram compared to the NRHF group. Preoperative MELD XI score ≥ 17 was identified in 54% of the LRHF group patients and 10% of the NRHF group patients (p = 0.001) and was the only independent predictor of LRHF (odds ratio 6.8, confidence interval 1.6 - 23.1, p = 0.009) by multivariate analysis. At 6 months the LRHF patients had higher serum creatinine (1.4 ± 1.1 mg/dl vs. 1.1 ± 0.2, p=0.03), higher CVP (14.5 ± 5.7 vs. 6.3 ± 2.9 mm Hg) and RVDD/LVDD (0.8 ± 0.2 vs. 0.7 ± 0.2, p= 0.05) compared to NRHF group. In addition, 7 (29%) patients of the LRHF group versus 5 (10%) patients of the NRHF group died over 9.5 ± 6.3 months follow up period (p=0.04).

Conclusions: LRHF may be predicted by pre-operative MELD XI score ≥ 17. LRHF persisted up to 6 months after LVAD implantation, and was associated with a higher mortality.