HAVE LVADS RENDERED FIXED PULMONARY HYPERTENSION IN HEART FAILURE A VESTIGE OF THE PAST?

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Background: Pulmonary hypertension secondary to chronic elevation in left ventricular (LV) filling pressures is a common feature of advanced heart failure. This is often considered an exclusion criterion for transplantation. The aim of this study was to ascertain if the use of left ventricular assist devices (LVADs) in patients with previously considered fixed pulmonary hypertension results in subsequent reversibility.

Methods: Fifty-seven patients implanted as both bridge to transplant (BTT) and destination therapy at a single center since February 2007 were studied.

Results: Of 57 patients studied, 26 underwent a vasodilator challenge at right heart catheterization prior to LVAD implantation. Three received pulsatile LVADs, the remainder continuous flow devices. Sodium nitroprusside (mean peak dose 2.4±1.6 μg/kg/min) was administered in 23 patients and nitric oxide at a peak dose of 80 ppm in three patients. There were 14 responders and 12 non-responders. The hemodynamic effects of vasodilator challenge and subsequent LVAD implantation are shown in Figures 1 and 2.

Conclusions: LVAD therapy very effectively decreases pulmonary arterial pressures in patients previously identified to have either fixed or reversible pulmonary hypertension at right heart catheterization. Furthermore, PVR appears to normalize in both groups post LVAD placement, suggesting that LVAD therapy may render some patients who transplant ineligible due to high PVR potentially transplantable.