

Is There Value in Pre-Operative Vascular Lab Testing for Left Ventricular Assist Devices?

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Introduction

A Left Ventricular Assist Device (LVAD) is a mechanical assist to the heart and is designed for long-term use. An LVAD is used as both a bridge-to-transplant and as a destination therapy for patients whom a transplant is not an option. Their increased usage has improved the quality of life for many heart failure patients. Our institution started implanting these devices in 2011 and we have implanted over 200 LVADs to date. Prior to an LVAD implantation patients must undergo testing in several departments to determine if they are a candidate for placement. In the vascular lab, we perform a bilateral lower arterial and a carotid duplex exam. These studies are typically very challenging due to medical limitations such as Intra-Aortic Balloon Pumps (IABP) and lines in the groin and neck; and the studies are frequently portable due to their high risk. These studies are difficult to perform and interpret because heart failure patients frequently have low velocities.

Methods

We evaluated trends among a nine-year history of inserting LVADs and performing vascular testing to determine how we aide in their care. Patient demographics, risk factors, symptoms, previous testing and if a vascular intervention was necessary were all evaluated.

Results

We evaluated over 300 LVAD workups performed at our facility. 54% of workups received an LVAD. 45% of workups were deemed ineligible. 2% of the studies had new findings compared to previous available testing. No patients were deferred based on vascular testing.

Conclusion/Discussion

What we found was that despite positive and even critical results LVAD placement was not deferred based upon the vascular testing results. The question remains if this practice is valuable to their care or if there are better uses of the hospital resources.