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Background: The prevalence of Heart Failure (HF) in the USA is over 5 million Americans and 1.2 percent (60,000) are end-stage (NYHA Class IV or Stage D). In 2011, approximately 2300 heart transplants were performed. In contrast, over 3200 Left Ventricular Assist Devices (LVAD) were implanted—the first time LVADs exceeded transplants! The durability of the LVAD is now measured in years and its use as an alternative to transplant (i.e. Destination Therapy) is firmly established. The purpose of this abstract is to report the current state-of-the-art LVAD therapy for end-stage heart failure in patients who are not transplant candidates.

Methods: The Heartmate II LVAD™ (Thoratec Corporation, Pleasonton, CA) is an FDA-Approved Destination Therapy (DT) device for non-transplant patients with end-stage heart failure patients who remain in Class IV or Stage D heart failure despite Optimal Medical Management (OMM). Comparisons in outcomes, including survival and Quality of Life (QOL), have been conducted and registered with the Interagency Registry for Mechanically Assisted Circulatory Support (INTERMACS). The Destination Therapy Risk Score (DTRS) has allowed end-stage heart failure patients to be screened for the procedure in order to determine a risk versus benefit comparison.

Results: Overall results have shown superior one and two year survival as well as an improved QOL among the DT patients compared with their OMM counterparts. Risk stratification from the DTRS and clinical categorization according to INTERMACS have translated into profiles that favor LVAD implantation in specific subsets of patients.

Conclusions: LVAD therapy for end-stage heart failure is superior to OMM for patients who are ineligible for transplant. Present-day data suggests that LVADs may replace transplantation altogether as technological improvements continue to be made. Patient profiling aid in determining the most suitable candidates.

Biography

Louis Samuels is a board-certified Cardiothoracic Surgeon. He graduated from Hahnemann University School of Medicine in 1987 and completed his training in 1995. In 2001, Samuels and his team implanted the world's 5th totally implantable electric artificial heart (AbioCor™). In 2003, he joined the Main Line Health System at Lankenau Hospital. In addition to coronary artery bypass grafting, valve replacement, and LVAD implantation, he is a world expert on mechanical circulatory assist technologies of all kinds. He is Professor of Surgery at Thomas Jefferson School of Medicine, Surgical Director of Heart Failure at the Lankenau Medical Center, and Chief of Cardiothoracic Surgery at Bryn Mawr Hospital. He is a full member of the American Association for Thoracic Surgery (AATS) and the Society of Thoracic Surgeons (STS) and serves as a guest reviewer for cardiac surgery journals. He has published over 100 articles and participated in several landmark clinical trials.

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