Despite Higher 1st-Year Death Risk, LVADs Are Urged for Older Patients

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PHILADELPHIA — Older patients are much less likely to survive their first year on a ventricular assist device than are younger patients, according to a review of 1,365 patients who have received such devices.

Despite this, many patients who are at least 60 years old can often benefit from a left ventricular assist device, Peer M. Portner, Ph.D., said at the annual meeting of the International Society for Heart and Lung Transplantation.

"Age is likely a surrogate marker for comorbid conditions at the time of the implant. Left ventricular assist systems [LVAS] can produce a strong survival benefit, even in the oldest patients. This underscores the importance of patient selection for destination therapy," said Dr. Portner, of the department of cardiothoracic surgery at Stanford University in Palo Alto, Calif., and developer of the Novacor LVAS.

"We have an idea of which patients will do better [after receiving an LVAS], but we don't have strong data to document this," he said.

"It's been hard to collect the data that could help" identify the patients who will have the best outcomes after receiving an LVAS, the analysis reported by Dr. Portner came from a registry of patients who received the Novacor LVAS during 1984-2003. During that period, 1,461 patients received the device at 98 centers worldwide. This analysis excluded 70 patients who received the device as destination therapy and 26 patients with inadequate follow-up data, which left 1,365 patients who received the device as a bridge to transplant. The average period of implantation prior to receiving a heart transplant was 144 days for the entire group, but today the average period during which the implant is in place is about 1 year.

Outcomes data were analyzed by the patients' age, and the database was divided into four groups that had roughly similar numbers of patients: those aged 12-39 years (316 patients), those aged 40-49 years (353), those aged 50-59 years (451), and those aged 60 years and older (245).

A logistic regression analysis showed that death occurred in the first year with the device was directly linked to age. Patients who were in the oldest subgroup (at least 60 years old) had a 2.4-fold increased risk of death compared with all other patients. In contrast, patients in the youngest subgroup (younger than 40 years) had a 0.5-fold lower risk of death compared with the other patients. The two intermediate age groups had mortality risks that were between these two extremes.

Expressed another way, the survival rate at 1 year was 75% in patients younger than 40 years, 70% in those aged 40-49 years, 60% in patients aged 50-59 years, and 40% in patients aged 60 years or older. Although mortality was high in older patients, the data also showed that a significant number of older patients could survive beyond 1 year on a LVAS.

"I think that there is a significant opportunity [for treating older patients] beyond what is commonly done now," said Dr. Portner.

"The number of patients who receive destination therapy is very small. It's unfortunate that we're stuck in the United States with having a separate indication for destination therapy. The decision on the ultimate outcome of a recipient of an assist device should depend on how they progress. The device technology is underused. No device is perfect, but they have improved and there is an opportunity to give patients better outcomes and improved quality of life."