

DEVICES FOR END-STAGE HEART FAILURE MANAGEMENT

Heart failure is now the leading cause for hospitalization. With an aging population, and mortality cut in half for myocardial infarction, many of our patients will develop heart failure. Management of end-stage heart disease will be a major consideration. The Randomized Evaluation of Mechanical Assistance for the Treatment of Congestive Heart failure (REMATCH) trial was presented at the American Heart Association meeting in November 2001 in Anaheim, California and published in the *New England Journal of Medicine* on November 15, 2001. One hundred and twenty nine patients with end-stage heart failure who could not receive a transplant were randomized to either a left ventricular assist device (LVAD) or conventional medical therapy. The mean age was 68 at baseline (Table 1). Eight months of additional life was noted with the device.

Subgroup analysis

Ninety one per cent of patients were receiving inotropic support at baseline, and

demonstrated benefit from the assist device, while those who were not quite as sick and did not require inotropic drugs demonstrated no survival advantage (Table 2).

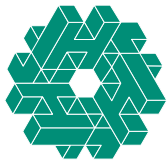
Physician's perspective

Patients with heart failure require multiple medications for improving their quality of life, and decreasing symptoms. Digoxin and diuretics are essential for symptomatic control. Angiotensin-converting enzyme (ACE) inhibitors, beta blockers and spironolactone in advanced heart failure prolonged life. Abdominal trauma index (ATI) antagonists, added to ACE inhibitors, improved quality of life and decreased the need for hospitalization. ATI antagonists should be considered in patients who are intolerant to ACE inhibitors, due to cough. Despite good medical therapy, heart failure is a progressive illness. A lucky few patients will be eligible and approved for transplantation. However, the vast majority of end-stage heart failure will be managed medically. Paying attention

Dr. Gregory Curnew is an assistant clinical professor, McMaster University, staff cardiologist/internist, former director, coronary care unit, Hamilton General Division, Hamilton Health Science Corporation, and a member of our editorial board.



Publications Mail Sales Product Agreement 40063348. Postage paid at St. Laurent, Quebec. Please address all change-of-address notices and subscription requests to: PERSPECTIVES IN CARDIOLOGY, 955 boulevard St-Jean, Suite 306, Pointe Claire, Quebec H9R 5K3. Tel: (514) 695-7623; Fax (514) 695-8554.



to daily weight, salt and water restrictions, avoiding anti-inflammatory agents, which cause fluid retention if possible, should not be forgotten. Heart function clinics, with an organized team, decrease hospitalization by 30%. Most of these patients will be taking multiple medications and have multiple co-morbidities. Difficult decisions will have to be considered, especially in terms of whether or not new options should be considered. It is clearly demonstrated that inotropic effect, including dobutamine and dopamine, improves quality of life but increases total mortality. LVADs will become a new option, however, these patients are extremely ill, and one needs to be selective in applying this new technology. Current assist devices have significant complication rates, including a high rate of infection, technical difficulties and thrombotic events. While the quality of life initially improved, patients spent a lot more time in the hospital (88 versus 24 days). Unfortunately, we currently have a mere 129 patients involved in this study. This is a very small number to base good medical decisions on, however, this is the best we have. LVADs are not available in Canada at

Table 1

Effect of LVAD on survival in all 129 patients

End-point	LVAD	No LVAD
1-year survival	52%	25%
2-year survival	23%	8%

LVAD: Left ventricular assist device

Table 2

Effect of LVAD on survival in patients prescribed intravenous inotropic support

End-point	LVAD	No LVAD
6-month survival	58%	39%
1-year survival	49%	22%
2-year survival	24%	0%

LVAD: Left ventricular assist device

this stage, but may become options down the road. Advances in technology are still necessary, and appropriate selection will be difficult but extremely important. Other devices are being developed, including total artificial hearts. Artificial hearts currently are not an option. 