

DEVICE THERAPY
**LVADs AS A BRIDGE
TO RECOVERY**

Second-generation, continuous-flow left ventricular assist devices (LVADs) can be used in combination with pharmacological therapy to reverse severe heart failure, report Birks and colleagues. Pulsatile LVADs have been used to improve the durability of recovery in patients with dilated cardiomyopathy, but the use of continuous-flow LVADs for this purpose is an exciting new development.

This prospective study included 20 patients with nonischemic dilated cardiomyopathy who had received a continuous-flow LVAD as a bridge to transplantation. Aggressive drug therapy (lisinopril, carvedilol, spironolactone, digoxin and losartan) in combination with unloading of the myocardium using the LVAD was used to maximize reverse remodeling. Progress was monitored monthly by echocardiographic measurements of the left ventricle with the LVAD pump running at minimal speed. Once the heart had reached normal size, carvedilol was switched to bisoprolol, and clenbuterol was added to strengthen the heart muscle. Of the 12 patients who recovered and underwent device explantation, two died within 30 days. The other 10 (83.3%) survived to the end of the 3-year study.

“Currently, clinicians do not use ... drugs to promote recovery or test the underlying myocardial function once the patient is on the device,” explains lead author Emma Birks. “If this protocol is more widely used, many more patients with advanced dilated cardiomyopathy could recover their myocardial function back to normal,” she notes.

One limitation of the study is the specific role of clenbuterol is difficult to ascertain because of the lack of a control group. The researchers are now planning a multicenter study in the USA to assess the contribution of clenbuterol and further develop the therapy.

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