

Device-Delivered Drugs Ease Severe Heart Failure

By Ed Edelson, HealthDay Reporter

HealthDay

WEDNESDAY, Nov. 1 (HealthDay News) -- Intensive drug therapy administered directly into heart muscle is saving the lives of people with the most severe form of heart failure, British researchers report.

The medicines were administered through a left ventricular assist device, a battery-operated pump implanted in the left ventricle when that chamber can no longer pump blood to the body, the team reported in the Nov. 2 issue of the *New England Journal of Medicine*.

The 15 patients who received the treatment had severe heart failure that required implantation of an assist device. After treatment, 11 were able to have the assist device removed and nine were still alive and free of heart failure four years later -- a remarkable accomplishment for a condition whose annual death rate is greater than 25 percent.

"We used a mixture of pharmaceutical therapies to reverse the decline in heart function," said lead researcher Dr. Emma J. Birks, a senior lecturer at Imperial College, London. "It was not just standard therapy."

The drug therapy was provided in two phases, noted Dr. Dale G. Renlund, professor of medicine at the University of Utah and co-author of an accompanying editorial.

"The first used the drugs that are very commonly used in treating early stages of heart failure -- beta blockers, ACE inhibitors, even digoxin," he said. "They act to help the heart work harder, comparable to whipping a horse. They can slow heart failure for a prolonged time. But in the late stages, they lower blood pressure so much they cannot be tolerated, or they can cause kidney failure."

"The second stage is use of a drug called clenbuterol, which strengthens the heart. Then they get the result they want," Renlund said.

The regimen will soon be tested at several medical centers in the United States, in a collaboration with the British team, Birks said.

"We hope to start within two months," said Dr. Leslie Miller, chief of the integrated cardiology program at Georgetown University in Washington, D.C., one of the proposed sites for the trials. "Initially, we will try it in people with the most advanced form of heart failure, those who require implant of an assist device."

The key to the treatment is clenbuterol, a drug developed in Germany, which is approved for use against asthma in Britain but does not yet have U.S. approval, Miller said. It has been found to improve heart function, he said.

Reversal of severe heart failure has been seen in some patients who had left ventricular assist devices implanted, but only in about 15 percent of cases, Miller said. "This is a new approach, not only to help the heart muscle get better but also to strengthen and thicken it," he said.

The initial trial at Georgetown will enroll 60 patients with severe heart failure, Miller said. Half will get clenbuterol, half will not. Such a trial is necessary "for verification of these findings, which are so provocative and so new," he said.

If the trial shows beneficial results, "we hope to go to a much larger trial," perhaps funded by the U.S. National Institutes of Health, Miller said.

"If we are successful, we can expand use of this technique to more people with heart failure, all patients who are near death when you start," Birks said. "Because the changes are quite dramatic and are sustained for several years."

More information

Heart failure and its treatment are described by the [American Heart Association](#).

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