

Study: Fewer infections with new heart-pump implant

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A state-of-the-art heart pump recently approved for use in end-stage cardiac patients has a significantly lower risk for infection than an earlier model of the device, according to researchers at Henry Ford Hospital in Detroit.

Known as a left ventricular assist device, the newest version of the HeartMate is much smaller than the first and uses a tiny turbine with synthetic ruby bearings, lubricated by the blood itself, to continually push blood through the body. Its predecessor is larger, heavier, has more moving parts, and is designed to mimic the pulsing of blood through a healthy heart.

Implanting the latest version of the pump is also less invasive, so researchers at the Henry Ford Heart & Vascular Institute sought to find whether it offered less risk of infection.

"Left ventricular assist devices have become the standard of care for patients with end-stage [heart failure](#)," says lead author Jeffrey A. Morgan, M.D. Associate Director of Circulatory Assist Device Program and Cardiac Transplantation, at Henry Ford. "However, development of a device-related infection can be a source of significant morbidity and mortality.

"The HeartMate II was designed to address specific limitations of the HM I, including minimizing the invasiveness of LVAD implantation. The focus of this study was to ascertain whether the HeartMate II was

associated with a decreased incidence of device-related infections."

The study will be presented May 27 at the American Society for Artificial Internal Organs in Baltimore.

The study, which ran from March 2006 through June 2009, included 58 patients with chronic heart failure who were implanted with either the HeartMate II - which the U.S. Food and Drug Administration approved in January for use in patients with severe heart failure who are not candidates for a heart transplant - or its predecessor, the larger and more complicated HeartMate I XVE.

Of the study group, 41 patients were implanted with the HeartMate II and 17 with the older model. Those who developed infections were treated with antibiotics, and the effects of those infections on their short- and long-term survival were also studied.

Two patients, or 4.9 percent of those who had HeartMate II pumps, developed infections, compared to four patients, or 23.5 percent of those whose hearts were assisted by the previous model. The researchers also found no significant difference in survival between HM II patients with and without infection at 30 days and one year.

Provided by Henry Ford Health System

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