

Heart study aims to identify at-risk patients after pump implant

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LVAD is a battery-operated, portable mechanical pump that helps the pumping function of the left side of the heart of patients with severe heart failure who are awaiting heart transplantation or are not transplant candidates.

Emory researchers are exploring the use of echocardiography, an established non-invasive method to view the heart without radiation, to help identify patients at risk for right ventricular heart failure after implantation of a left ventricular assist device (LVAD).

LVAD is a battery-operated, portable mechanical pump that helps the pumping function of the left side of the heart of patients with severe [heart failure](#) who are awaiting [heart transplantation](#) or are not [transplant candidates](#).

While LVAD supports the left side of the heart, the right side must function on its own. Sometimes the right side does not recover after

LVAD implantation, a condition called [right ventricular failure](#) (RVF). This complication increases the risk of death, prolongs hospitalization, requires additional procedures, leads to poor quality of life and increases costs.

The four-year Emory study is funded by an American Heart Association Scientist Development Grant awarded to Andreas Kalogeropoulos, MD, PhD, assistant professor of cardiology, Emory University School of Medicine. The award aims to support highly promising beginning scientists.

"Over the years, several risk factors and scores have been proposed to identify patients at risk for RVF," says Kalogeropoulos. "But these methods have proven inadequate since approximately one out of three patients is still experiencing right ventricular failure after LVAD surgery."

Kalogeropoulos and his colleagues will use echocardiography to record images of the heart before LVAD surgery in 120 LVAD recipients at Emory. Afterward, they will follow the patients for 90 days to detect any symptoms and signs of clinical right ventricular failure and poor quality of life and record the course of right ventricular function with echocardiography.

"We want to determine whether echocardiography before scheduled LVAD surgery can predict who is going to develop RVF and poor quality of life so we can better select patients for LVAD surgery," says Kalogeropoulos, "In addition, our goal is to find out whether it can tell us the course of RVF after implantation, so we can take measures to prevent failure and ultimately save lives."

An estimated 150,000 to 250,000 patients in the U.S. are potential LVAD recipients. The number of LVADs implanted every year is

increasing rapidly, with 2,000 devices implanted in 2012, according to the national INTERMACS registry.

More information: www.emoryhealthcare.org/heart-failure/index.html

Provided by Emory University

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