

Repairing leaky valve improves heart failure patients' quality of life

18 March 2019

Patients with heart failure and a leaking heart valve reported feeling better and experiencing fewer heart failure symptoms if they underwent a procedure to repair their valve than patients who received standard treatment alone, according to research presented at the American College of Cardiology's 68th Annual Scientific Session.

The findings are the latest to come from the COAPT trial, which investigated the use of a procedure called transcatheter [mitral valve repair](#) (TMVR) in [patients](#) with secondary mitral regurgitation, a condition where the mitral valve does not close properly due to problems with the heart's chambers. In 2018, COAPT researchers reported that patients undergoing TMVR had significantly better rates of survival at two years compared with those receiving standard medical therapy. For the new study, researchers further analyzed data from the trial to determine whether the valve repair also improved patients' [quality of life](#).

"In patients with heart failure and secondary mitral regurgitation, TMVR resulted in early, substantial and sustained improvement in health status compared with standard care," said Suzanne Arnold, MD, a cardiologist at Saint Luke's Mid America Heart Institute, associate professor of medicine at the University of Missouri–Kansas City and the study's lead author. "These outcomes are incredibly important to patients. Showing that TMVR improves patients' symptoms and quality of life adds further support to the use of TMVR in these patients."

Heart failure, a condition in which the heart cannot pump enough blood to meet the body's needs, affects about 5 million people in the United States. It is estimated that at least a quarter of heart failure patients also have secondary mitral valve regurgitation, which allows blood to flow backward through the mitral valve and further reduces the heart's ability to pump blood. People with both

conditions commonly suffer symptoms such as [shortness of breath](#), swelling and fatigue.

COAPT enrolled 614 patients treated at 78 medical centers in the U.S. and Canada and randomly assigned them to receive TMVR or standard medical therapy, which typically includes diuretics, beta blockers, other medications, and sometimes cardiac resynchronization therapy. All participants had heart failure and moderate to severe secondary mitral regurgitation at the start of the trial. Researchers assessed participants' quality of life with the Kansas City Cardiomyopathy Questionnaire (KCCQ), a tool designed to assess the symptoms, functional limitations, social limitations and quality of life of people with heart failure.

At the start of the trial, participants scored 52 out of 100 on the KCCQ summary score, on average, which reflects a relatively poor quality of life. Patients' [heart failure symptoms](#) significantly limited their [daily activities](#), causing shortness of breath or fatigue when walking on level ground or doing light housework, Arnold said.

After one month, patients who underwent TMVR reported a 16-point greater improvement in their average KCCQ score compared with those on standard therapy, an improvement considered moderate to large. Patients potentially still had shortness of breath or fatigue when walking briskly or up an incline but were no longer limited in their ability to do less vigorous activities, such as shopping or walking at a normal pace.

By the end of two years, those undergoing TMVR had an average KCCQ score 13 points higher, on average, than those on standard therapy.

"The durability of the finding was a bit surprising given that these patients had pretty severe [heart failure](#) at baseline," Arnold said. "You might expect that the benefit might wane over time, and the fact

that we didn't see much reduction over time was encouraging."

Although deaths were common in both treatment groups owing to advanced age, comorbidities and underlying [heart failure](#), a higher proportion of patients who were randomized to TMVR were alive with significant improvement in health status at every follow-up time point. For example, at two years, 36 percent of patients treated with TMVR were alive with a moderate improvement in [health status](#) compared with only 17 percent in the standard care arm.

The study was limited by the fact that it was not a blinded trial; patients knew if they had undergone valve repair. In addition, because a relatively large proportion of patients died before the end of the two-year follow-up, the loss of the more severely ill patients, who likely had the poorest quality of life, may have biased the average quality of life over time in a slightly upward direction. It is also unclear whether the results are generalizable beyond the specific patient group included in the trial, Arnold said.

More information: Health Status after Transcatheter Mitral Valve Repair in Patients with Heart Failure and Secondary Mitral Regurgitation: COAPT Trial, Suzanne V. Arnold, Khaja M. Chinnakondapalli, John A. Spertus, et al. *Journal of the American College of Cardiology*, Published online March 17, 2019

Provided by American College of Cardiology
APA citation: Repairing leaky valve improves heart failure patients' quality of life (2019, March 18) retrieved 26 August 2022 from <https://medicalxpress.com/news/2019-03-leaky-valve-heart-failure-patients.html>

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