

Study suggests health risks, no benefit of combining mitral valve repair with bypass surgery

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Just released two-year follow up data comparing coronary-artery bypass grafting (CABG) with combined CABG and mitral valve repair in patients with moderate ischemic mitral regurgitation (IMR) found no significant differences in benefit. The patients with CABG and mitral valve repair had an early hazard of longer hospital stay post-surgery, a higher incidence of postoperative supraventricular arrhythmias and higher rate of serious neurological events than those with CABG alone. There was a three-fold higher incidence of persistent mitral regurgitation in this same group without evidence of higher mortality or adverse clinical events. The study authors conclude that physicians must weigh risks of adverse events "against the uncertain benefits" of combining mitral valve repair during CABG.

These highly anticipated study findings, Two-Year Outcomes of Surgical Treatment of Moderate Ischemic Mitral Regurgitation, were presented today by Robert Michler, M.D. at the American College of Cardiology Scientific Session 2016 and published simultaneously in the *New England Journal of Medicine* by the Cardiothoracic Surgical Trials Network (CTSN).

This is the first study of its kind to provide evidence-based data on how best to treat patients needing CABG who also present with IMR. It is expected that this two-year data will impact how the medical community of physicians, surgeons and institutions will manage this patient

population going forward.

"The results of this study suggest there is no significant benefit to what is often considered a routine addition to the open-heart procedure of CABG for patients with moderate IMR," said first study author Robert Michler, M.D., professor and chairman, Department of Cardiothoracic and Vascular Surgery, and the Department of Surgery at Montefiore Health System and Albert Einstein College of Medicine, and co-director of The Montefiore Einstein Center for Heart and Vascular Care.

"However, after two years, we did find that the addition of [mitral valve repair](#) provided a more durable correction of mitral regurgitation."

IMR occurs when blood backflows into the left atrium from the left ventricle of the heart due to improper closure of the MV. The condition often develops as a complication of a heart attack and subsequent enlargement of the left ventricle, the heart's main pumping chamber. Functional IMR affects 1.6 million to 2.8 million patients in the U.S. and is associated with a doubling in mortality among patients with mild or greater degrees of mitral regurgitation after a heart attack.

"The approach to managing patients with moderate ischemic MR at the time of coronary artery bypass grafting remains controversial. The results of this trial study should inform surgical decision making when caring for these complex patients," said Annetine C. Gelijns, Ph.D., the Edmond A. Guggenheim Professor of Health Policy and chair of the Department of Health Evidence and Policy at Icahn School of Medicine at Mount Sinai, and the principal investigator for the Data Coordinating Center based at Mount Sinai.

Ischemic mitral regurgitation of moderate severity develops in approximately 10 percent of patients after myocardial infarction. Mitral regurgitation is caused by the displacement of papillary muscle, leaflet tethering, reduced closing forces, and annular dilatation. Over time, the

condition has an adverse effect on the rate of survival free of heart failure. Because most patients with ischemic [mitral regurgitation](#) have multivessel coronary artery disease requiring revascularization, surgeons have to consider whether to add mitral valve repair to coronary-artery bypass grafting (CABG).

The prospective, multi-center, controlled clinical trial randomly assigned 301 patients with moderate IMR to CABG alone or CABG with MV repair. The primary endpoint was left ventricular end systolic volume (LVESVI) at one-year, assessed using a Wilcoxon rank sum test categorizing deaths as the lowest LVESVI rank.

Two-year mortality was 10 percent in CABG/MV repair patients versus 10.6 percent in CABG [patients](#). There were no observed differences in MACCE, death, readmissions, functional status or quality-of-life at two years. Overall rates of hospital readmission and serious adverse events were similar in the two groups, but neurologic events and supraventricular arrhythmias remained more frequent in the combined-procedure group.

The CTSN DCC is based at the Icahn School of Medicine at Mount Sinai, which has eight core clinical centers in the U.S. and Canada, including Cleveland Clinic Foundation, Columbia University, Duke University, Emory University, Montefiore Einstein Heart Center, Montreal Heart Institute, University of Virginia, University of Pennsylvania and 19 Consortium sites.

This study was presented at the Featured Clinical Research Session I: Two-year Outcomes of Surgical Treatment of Moderate Ischemic Mitral Regurgitation: A Randomized Clinical Trial from The Cardiothoracic Surgical Trials Network.

Provided by Montefiore Medical Center

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