

Reducing secondary mitral regurgitation in heart failure does not improve two-year outcome

3 September 2019

Percutaneous reduction of secondary mitral regurgitation in patients with heart failure does not lower death and hospitalisation at two years compared to standard medical care, according to late breaking results from the MITRA-FR study presented in a Hot Line Session today at ESC Congress 2019 together with the World Congress of Cardiology and published in the *European Journal of Heart Failure*.

In advanced [heart failure](#) the left ventricle dilates, causing the [mitral valve](#) to partially close and allow blood to leak back into the left atrium (called mitral regurgitation). It is called "secondary" because the mitral valve is structurally normal but does not work properly due to a dilated left ventricle.

The benefits of percutaneous correction of secondary mitral regurgitation in patients with [heart failure](#) is controversial. One-year results of MITRA-FR, first reported at ESC Congress 2018 and published in the *New England Journal of Medicine*, showed no significant impact of mitral valve repair on death and heart failure hospitalisation compared to standard medical treatment. In contrast, the COAPT study found that valve repair significantly reduced heart failure rehospitalisation and death after two years of follow-up.

"Many hypotheses have been suggested to explain the different outcomes between the two randomised trials," said MITRA-FR principal investigator Professor Jean-Francois Obadia of Civil Hospices of Lyon, France. "One theory is the longer duration of COAPT. We therefore conducted a two-year follow-up of patients in MITRA-FR."

The two-year results reported today show that the combined outcome of all-cause death and unplanned hospitalisation for heart failure occurred

in 63.8% of patients who underwent valve repair and 67.1% in those who did not, with no significant difference between groups. There were no significant differences between groups when each outcome was analysed separately. Rates of all-cause mortality were 34.9% and 34.2% in the intervention and control groups, respectively. Rates of unplanned hospitalisation for heart failure were 55.9% and 61.8% in the intervention and control groups, respectively.

"This analysis confirms the absence of a [significant difference](#) in the rate of the composite outcome of death from any cause or unplanned hospitalisation for heart failure in symptomatic patients with severe secondary mitral regurgitation treated by percutaneous mitral valve repair plus medical treatment as compared with those receiving medical treatment alone," said Prof Obadia. "Percutaneous repair remained safe—there was a very small number of prespecified serious adverse events."

An exploratory analysis of events occurring between 12 and 24 months suggested a lower rate of first [hospitalisation](#) for heart failure in the intervention group. This was consistent with a divergence in the curves of recurrent hospitalisations for heart failure for each group.

"This repeat event analysis was used as the main endpoint in the COAPT trial and tends to amplify differences compared to the analysis of time to first event, which was the main endpoint in MITRA-FR," said Prof Obadia. "As for any exploratory analysis of secondary endpoints, the interpretation of such an isolated finding should be viewed cautiously and only considered hypothesis generating."

Regarding the differing results between the two trials, Prof Obadia said: "In our view, one of the

main reasons is patient selection. Differences in inclusion criteria led to more severe mitral regurgitation, less pronounced left ventricular remodelling, lower pulmonary pressure, and better right ventricular function in COAPT compared to MITRA-FR. In addition, the run-in period assessed by a central eligibility committee was likely to result in more optimised guideline-directed medical therapy in COAPT than in MITRA-FR. However, this set-up may be difficult to implement in everyday practice which rarely achieves optimised therapy."

Prof Obadia said that medical treatment should remain the first line of treatment for heart failure patients with secondary mitral [regurgitation](#). "MITRA-FR and COAPT provide answers but also more questions," he said. "The definition of secondary [mitral regurgitation](#) has to be revisited taking into account the dynamic function of the heart. More studies are needed to clarify understanding of this complex disease."

More information: Jean-François Obadia et al. Percutaneous Repair or Medical Treatment for Secondary Mitral Regurgitation, *New England Journal of Medicine* (2018). [DOI: 10.1056/NEJMoa1805374](#)

Gregg W. Stone et al. Transcatheter Mitral-Valve Repair in Patients with Heart Failure, *New England Journal of Medicine* (2018). [DOI: 10.1056/NEJMoa1806640](#)

Provided by European Society of Cardiology

APA citation: Reducing secondary mitral regurgitation in heart failure does not improve two-year outcome (2019, September 3) retrieved 9 October 2022 from <https://medicalxpress.com/news/2019-09-secondary-mitral-regurgitation-heart-failure.html>

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