MitraClip Appears Promising in First Egyptian Patients for Percutaneous Mitral Repair

Written by **Mary Mosley**

Surgical approaches for degenerative or functional mitral regurgitation (MR) continue to have limitations and not all patients are appropriate surgical candidates. Hazem Khamis, MD, October 6 University Hospital, Giza, Egypt, described the use of percutaneous mitral valve repair for functional MR using the MitraClip Device and the results from their initial experience in Egypt.

This percutaneous device delivers two stitches into the mitral valve leaflets that approximate the two leaflets in a manner similar to that of the surgical Alfieri technique. The MitraClip procedure requires sufficient leaflet tissue in the mitral valve for mechanical coaptation, with a flail gap <10 mm, a flail width <15 mm, and a mitral area ≥4.0 cm. To use the MitralClip, the etiology of the regurgitation cannot be due to either rheumatic fever or infective endocarditis. The MitraClip is approved in some European and Asian countries, but is available for use only within clinical trials in the United States.

In 78 high-risk surgical patients (≥12% predicted mortality) with extensive comorbidities, the MitraClip device was shown to reduce MR, improve symptoms (functional status and quality of life), and prevent ventricular reverse remodeling through 1 year, according to results from the EVEREST II High Risk Study [Whitlow PL et al. *J Am Coll Cardiol* 2012]. Similar clinical benefits were found in the ACCESS EU trial of functional MR in patients with extensive comorbidities [Maisano F et al. *J Am Coll Cardiol* 2013].

The PERMIT-CARE prospective survey in 51 symptomatic patients who were not successfully treated with cardiac resynchronization therapy (CRT) in seven European centers showed there was significant improvement in NYHA class and MR after MitraClip implantation [Auricchio A et al. *J Am Coll Cardiol* 2011].

Prof. Khamis stressed the importance of the multidisciplinary team for the MitraClip approach, which discusses every potential patient. The team includes the interventional cardiologist, cardiac anesthetist, echocardiogram specialists, laboratory staff, and nursing staff who were given specialized training. All patients undergo a preprocedural transthoracic echocardiogram and transesophageal echocardiogram (TEE).

At their institution, Prof. Khamis and colleagues have treated five patients, all of whom had functional MR. The baseline demographics and comorbidities of these patients are summarized in Table 1. One patient was treated with two MitraClips, and the others with a single clip. There were no procedural major adverse cardiac events. The device performance was good, without any occurrence of embolization, fracture, erosion, or migration of the percutaneous device, or single leaflet device attachment. At 1 month, all of the patients reported a marked improvement in symptoms and in exercise capacity. At 30 days, only one safety endpoint had occurred, which was a deep wound infection.

Based on the results in the first five patients treated in Egypt, as well as those who have been treated in other parts of the world, percutaneous MV repair with the MitraClip device appears both safe and feasible. However, Prof. Khamis stated there is a steep learning curve, and understanding the MV anatomy and the TEE images is essential to proper device delivery. Furthermore, he stated there is a definite need for the development of percutaneous treatment options for MR in order to treat patients who are not candidates for current surgical treatments.

Table 1. Baseline Demographics and Comorbidities

Age	**55±7**
Male	4
History of heart failure	4
Coronary artery disease	3
Prior myocardial infarction	3
Previous cardiothoracic surgery	3
Atrial fibrillation	1
Chronic obstructive pulmonary disease	1
CRT	2
Diabetes mellitus	5
Degenerative mitral regurgitation etiology	0
Functional mitral regurgitation	5
NYHA functional class III/IV	5
Mitral regurgitation severity 3+ to 4+	5
Mean ejection fraction	33%
Mean left-ventricular end-systolic diameter	4.2 cm