

Percutaneous edge-to-edge mitral repair in the presence of mitral annulus calcification

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Background: Mitral annular calcification (MAC) is commonly found in patients affected with mitral regurgitation (MR) and it's associated with high morbidity, mortality and worse cardiac surgical outcomes. Transcatheter edge-to-edge mitral valve repair with the MitraClip system has been established as a valid alternative to surgery in high risk patients with severe MR. However, its efficacy in patients affected with MAC remains uncertain as this population has been excluded from trials.

Objectives: To analyze the safety, efficacy and mid-term durability of the treatment of MR with the MitraClip system in patients affected with moderate or severe MAC.

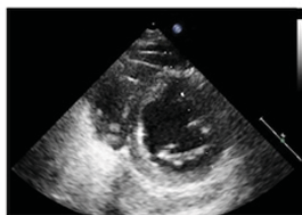
Methods: Data was obtained from a multicenter spanish registry that prospectively included consecutive patients with MR grade ≥ 3 undergoing transcatheter mitral valve repair with the MitraClip system. Sixty-one patients with moderate or severe MAC were included in the "MAC" group and 791 with no-or-mild MAC were allocated in the "NoMAC" group.

Results: Procedural success was similar in both groups (91.8% vs

95.06%, $p=0.268$, in MAC and NoMAC respectively) with a very low rate of complications beside a higher residual mean gradient in the MAC group (3.0 vs 3.6mmHg, $p=0.001$). At one-year follow-up, 79.5% of NoMAC and 90.6% of MAC patients had MR grade ≤ 2 ($p=0.129$). Only 9 patients (1,14%), all in NoMAC group, required reintervention during follow up. Eighty percent of patients in both groups remained in NYHA functional class $\leq II$ and a significant reduction in readmissions for heart failure was also observed (65% vs 78% respectively, $p=0.145$). One-year mortality was slightly higher in MAC patients (19.67% vs 11.25%, $p=0.050$) with no difference in cardiovascular mortality (15.25% vs 9.21%, $p=0.129$).

Conclusions: Transcatheter edge-to-edge repair with the MitraClip system in selected patients with moderate or severe MAC is safe and feasible with a mid-term durability similar to those without MAC. These patients also benefit clinically from this treatment with a sustained mid-term subjective clinical improvement and no increase in cardiovascular mortality as compared to NoMAC patients.

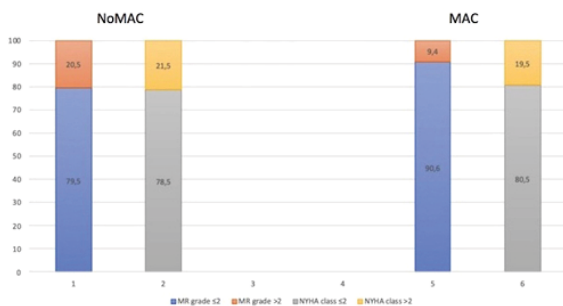
CENTRAL ILLUSTRATION Percutaneous edge-to-edge mitral repair in presence of moderate or severe mitral annulus calcification



A) Immediate results in MAC patients

High procedural success (91.8%)
 Low rate of complications
 Higher residual mean gradient in MAC group

B) 1-Year Follow-up MR grade and NYHA class in NoMAC and MAC patients



C) 1-Year freedom from unplanned cardiac re-hospitalization in NoMAC and MAC patients

