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Prognostic impact of left atrial function following transcatheater mitral valve repair

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Background: Left atrial (LA) function predicts clinical outcome in a variety of cardiovascular diseases. However, limited data is available in the setting of mitral regurgitation (MR).

Purpose: The aim of the present study was to assess potential changes in LA ejection fraction (LA-EF) and its prognostic value in patients following transcatheter mitral valve repair using the mitraclip.

Methods: A total of 88 consecutive patients undergoing mitraclip implantation with complete echocardiography at baseline and follow-up between 3 and 6 months post-procedure were enrolled.

Results: LA-EF improved in 58% of the population. Change in LA-EF was associated with residual MR, residual transmirtal gradient and left ventricular ejection fraction (LV-EF) changes. Compared to their counterparts, patients with residual MR ≥ grade 2 (−6% [−9 to 1%] vs. 4% [−5 to 15%]; p=0.05) and with residual transmirtal gradient ≥5 mmHg (−2% [−9 to 9%] vs. 5% [−4 to 16%]; p=0.03) showed a decline in LA-EF, respectively. Furthermore, LA-EF significantly correlated with changes in LV-EF (r=0.40; p=0.001). With regards to clinical outcome, heart failure symptoms as assessed by NYHA class were more severe in patients with worsened LA-EF at follow-up. Finally, LA-EF change was identified as independent predictor of all-cause mortality (HR 0.94 [0.90–0.98]; p=0.008).

Conclusion: The present analysis showed changes in LA function in patients undergoing mitraclip implantation to be associated with important measures including residual MR, elevated transmirtal gradient and LV function. Importantly, LA function alterations represent a strong predictor for all-cause mortality.
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Kaplan-Meier estimates for survival