

## Impact of left atrial diameter on outcome in patients undergoing edge-to-edge mitral valve repair: results from the German TRAnscatheter Mitral valve Interventions registry (TRAMI)

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**Background:** Left atrium (LA) dimension is a marker of disease severity and outcome in primary and secondary mitral regurgitation. In transcatheter mitral valve repair LA enlargement might additionally impact on device handling and technical success through an altered anatomy and atrial annular dilatation.

**Methods:** Data from the multicenter German transcatheter mitral valve intervention registry "TRAMI" were used to analyse the association of baseline LA diameter by tertiles and efficacy, safety and long-term clinical outcome in patients undergoing edge-to-edge repair with the MitraClip.

**Results:** In 520 of 843 patients prospectively enrolled in TRAMI baseline LA diameter were reported (median [interquartile range] LA diameter in tertiles: 44 [40–46] mm, 51 [48–53] mm and 60 [55–66] mm). Larger LA diameters were significantly associated with secondary etiology of mitral re-

gurgitation, lower ejection fraction, larger left ventricle, male sex and atrial fibrillation (all  $p < 0.05$ ). Technical success was not different across tertiles (96%, 95.4%, 98.4% respectively,  $p = 0.43$ ) as were major in-hospital cardiovascular and cerebral adverse events (mortality, myocardial infarction or stroke) (1.8%, 1.2% and 4.4%,  $p = 0.11$  across tertiles). However, 4-year mortality significantly increased with larger LA diameter (32.9%, 46.4% and 51.7% respectively,  $p < 0.01$ ), as did hospitalization in survivors (60%, 67.6% and 78.9% respectively,  $p < 0.05$ ). The association between LA diameter and all-cause mortality remained significant after multivariable adjustment including baseline left ventricular end-diastolic diameter.

**Conclusion:** LA enlargement is a strong and independent predictor of adverse long-term outcome in mitral regurgitation suggesting that timely transcatheter mitral valve repair may have the potential to modify outcome.