

Commentary: Moving the guidelines for mitral repair



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Both European¹ and American² guidelines currently recommend percutaneous mitral repair as a “weak” class IIb recommendation that “may be considered” for patients with symptomatic, severe primary mitral regurgitation who are judged by a Heart Team not to be surgical candidates. However, given increasing facility with percutaneous techniques, likely technological advances, and compelling clinical need in an aging population, indications are likely to expand. Careful analysis of clinical experience is an essential complement to the criterion standard of the randomized clinical trial and is frequently the source helpful findings that can drive future research. The report of Buzzatti and colleagues³ in this issue of the *Journal* provides just such valuable information. Challenging the findings of the landmark Endovascular Edge-to-Edge Repair Study (EVEREST) II trial, which found no benefit for either surgical or percutaneous treatment of severe mitral regurgitation in the predefined subset of patients older than 75 years,⁴ Buzzatti and colleagues³ reviewed their 12-year clinical experience with patients 75 years old and older who underwent either percutaneous repair with MitraClip (Abbott Vascular, Santa Clara, Calif) or surgical repair for severe primary degenerative mitral regurgitation. Patients were at low to moderate surgical risk: STS predicted risk of mortality (PROM) median values were 1.64% (interquartile range, 1.30-2.41) in the surgical group and 2.99 (interquartile range, 2.29-4.38) in the MitraClip group (all <8%). Although there may have been a learning curve, procedural success appears appropriate, with only 3.2% of surgical patients and 6.9% of patients in the MitraClip group having conversion to replacement and only 2.8% of surgical patients and 27% of those in the MitraClip group having at least 2+ postprocedural regurgitation (23% of EVEREST II patients had 3+ to 4+ regurgitation before hospital discharge after clip placement). As might be expected, the groups were clinically distinct, with a higher incidence of comorbidities and higher STS PROM in the MitraClip group ($P < .001$). Propensity score modeling was the basis for inverse probability of treatment weighting to account for differences in patient selection. Interestingly, even before inverse probability of treatment weighting, groups were



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Central Message

Residual mitral regurgitation after surgical or transcatheter mitral valve repair is a significant predictor of long-term mortality.

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well balanced with regard to many physiologic parameters of mitral regurgitation; however, considerable imbalance between the groups remained even after weighting, with standardized mean difference values that ideally would fall under 10% ranging between 10% to 20% for many clinical factors, including the median STS PROM (1.91 vs 2.48; standardized mean difference, 12%). It is therefore not surprising that, unlike the EVEREST II trial, which found no difference in mortality,⁵ this study reports a marked difference in 5-year survival favoring surgery (34.5% vs 82.2%; hazard ratio, 4.12; 95% confidence interval, 2.31-7.34; $P < .001$).

As perhaps expected, STS PROM was an independent risk factor for mortality. What is novel, however, is the question—which was not considered by the EVEREST II investigators—that these surgeons asked: What was the impact of recurrent mitral regurgitation of at least 3+ on long-term survival? The answer is important. Weighted Cox regression found a hazard ratio of 2.19 ($P = .033$). Despite the many limitations of the study, which are well delineated and admirably modeled by Buzzatti and colleagues,³ the message is clear: In the elderly population, whatever approach is chosen, the result of the intervention must provide durable relief from severe mitral regurgitation to warrant interventional risk.

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