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Commentary: Should all etiologies of mitral regurgitation treated equal?

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CENTRAL MESSAGE

In selected patients with ischemic mitral regurgitation, biological prostheses may offer optimal results. Still, treatment needs to be tailored to patient characteristics and all other options need to be examined.

Mitral valve regurgitation (MR) is a very heterogeneous disease, encompassing a variety of different etiologies, each presenting with their unique characteristics and considerations. Among them, ischemic mitral regurgitation (IMR) usually presents in older and more comorbid patients. Consequently, these patients usually have lower survival compared with patients with other MR etiologies.¹ As optimizing long-term survival remains the main objective in mitral valve surgery, selecting the option most likely to accomplish that goal is of the utmost importance.

In past years, mitral valve repair was the preferred option for the treatment of IMR. This option was thought to be associated with a lower perioperative mortality, lower risk of endocarditis, and better long-term survival.² On the other hand, mitral valve replacement (MVR) was associated with better durability.³ A recent study from the CTS Network challenged the idea that repair results in lower perioperative mortality and showed that, instead, it was associated with a high recurrence of moderate to severe MR at 1 year.⁴ Although some may argue that this is enough evidence to condemn valve repair in this subgroup of patients, this trial also highlights the fact that avoidance of MR recurrence in patients who underwent repair is associated with substantial reduction (>20% vs 6.8% after MVR) in left ventricular volume

at 1 year. Thus, rather than throwing the baby out with the bathwater, it may be more judicious to identify patients at high risk of MR recurrence, who may obtain greater benefit from replacement than repair.

In this issue of the *Journal*, Bernard and colleagues⁵ address the specific question of whether a mechanical or a biological valve should be chosen when performing MVR in patients with IMR. As the authors rightfully point out, the choice of prosthesis has been driven mainly by an age criterion, and the MR etiology is rarely considered when offering MVR. A recent statewide analysis looking at the long-term outcomes of patients undergoing MVR came to the conclusion that a mechanical prosthesis was associated with a survival benefit up to 70 years of age.⁶ However, this large database analysis did not provide the outcomes of each specific causes of MR. Considering that <50% of patients undergoing MVR had known coronary artery disease (CAD), it is likely that a large proportion of patients were operated on for nonischemic MR.

Looking at the outcomes of 252 matched patients (out of a total of 424) who underwent valve replacement for severe IMR, Bernard and colleagues conclude that mechanical and biological mitral prostheses are associated with similar long-term survival. However, in the matched analysis, patients who received a mechanical prosthesis had a higher risk of readmission for cardiovascular causes, stroke, or major bleeding. Both types of MVR were associated with significant perioperative mortality. Nevertheless, these data are representative of those found in the STS database, and the authors should be commended for the honest reporting.⁷ With the similar rates

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Disclosures: The authors reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication March 9, 2021; revisions received March 9, 2021; accepted for publication March 10, 2021; available ahead of print March 15, 2021.

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J Thorac Cardiovasc Surg 2023;165:648-9
0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2021.03.037>

of reintervention, it appears that the potential advantages of a mechanical prosthesis are outweighed by the lower rates of thromboembolic and bleeding events associated with a biological prosthesis, as well as the potential for transcatheter therapy in degenerated mitral bioprostheses. However, this may be a hasty conclusion, given that the unmatched data showed a survival advantage in patients who received a mechanical prosthesis. Thus, there may be a subpopulation of patients with IMR who benefit from a mechanical prosthesis, just as some patients may benefit most from valve repair. Patients present with specific characteristics, and a “one-size fits all” approach is likely to result in suboptimal outcomes. Rather, identifying the subgroup of patients who benefit most from a given approach remains an active area of research. In this regard, the study from the Quebec group helps in better identifying patients that would benefit from a biologic MVR.

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