Data, not dogma, for ischemic mitral regurgitation

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Historically, the surgical management of ischemic mitral regurgitation (MR) was based on small trials and weak evidence. Few guidelines existed, and published data were observational or underpowered. This uncertainty yielded differences in practice and outcomes. Ischemic MR is a complex disease of the ventricle. The severity of regurgitation can be difficult to diagnose and is subject to changes in fluid status and loading conditions of the heart. The initial cardiac insult, associated structural abnormalities, and characteristics of left ventricular remodeling after myocardial infarction all need to be considered.¹ These nuances are why data, not dogma, should dictate proper management for ischemic MR.

In this issue of the *Journal*, Virk and colleagues² present a systematic review and meta-analysis evaluating mitral valve (MV) surgery and coronary artery bypass grafting (CABG) for management of moderate-to-severe ischemic MR.² Four randomized controlled trials and 15 observational studies that reported mortality data after isolated CABG or CABG plus MV surgery for patients with at least moderate ischemic MR were included. Virk and colleagues² concluded that although there was no increase in perioperative mortality relative to CABG alone with the addition of MV surgery and that recurrence of MR was reduced, there was also no reduction in late mortality. Virk and colleagues² included patients with both moderate and severe MR, which is a major limitation of this study. MR exists on a continuum, but moderate and severe regurgitation are distinct physiologic entities.

The findings from this study support the conclusions from the moderate MR trial conducted by the Cardiothoracic Surgical Trials Network (CTSN).³ In this trial, mortality was not increased with the addition of MV repair to CABG for moderate MR, but there was also no improvement in degree of left ventricular reverse remodeling. At 2 years, the addition of MV repair to CABG did not improve survival and was associated with more neurologic events.⁴ Just because you can repair the MV safely does not mean that you should. On the

Eric J. Charles, MD (fellow, left) and Irving L. Kron, MD (investigator), Cardiothoracic Surgical Trials Network.

Central Message

High-quality, multicenter, randomized, controlled trial data from the Cardiothoracic Surgical Trials Network have changed clinical practice for moderate and severe ischemic mitral regurgitation.

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basis of these data, many of the CTSN investigators now support isolated CABG for the management of moderate ischemic MR.

The story differs for severe MR. MV repair was historically the default option, but with the results of the CTSN severe ischemic MR trial, replacement now has a place at the table.⁵ In this trial, MV repair was compared with replacement for severe ischemic MR. No differences in left ventricular reverse remodeling or survival at 1 and 2 years were seen.^{5,6} Recurrence of moderate or severe MR was significantly less with replacement; however, a subset of patients who underwent successful repair without recurrence arguably had the best outcomes. Further data are needed to determine who will benefit from repair and who should undergo replacement. Perhaps we may design better repair strategies.⁷

Results of the CTSN ischemic MR trials, as well as many of the studies reviewed in the meta-analysis by Virk and colleagues,² have changed clinical practice. The acquisition of high-fidelity data from well-designed clinical trials allows us to advance the surgical management of cardiac diseases in a meaningful, evidence-based manner.

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