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Response to Letter Regarding, “Surgical Revascularization is Associated with Maximal Survival in Patients With Ischemic Mitral Regurgitation: A 20-year Experience”

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Our gratitude to Dr. Durukan for his thoughtful review of our study regarding treatment options for ischemic mitral regurgitation (IMR).¹

His correspondence highlights an important point of debate regarding the pathophysiology of IMR and the capacity for restoration of mitral valve competence with revascularization alone. As research in this dynamic field continues to progress, it is important to re-evaluate previous viewpoints on disease mechanisms and treatment paradigms. We would therefore caution against an inflexible approach to understanding this disease process in light of continued advancement in available evidence to guide clinical decisions, such as the information provided by our current study.

To this end, many have called for randomized trials to further elucidate optimal treatment strategies for IMR. The Cardiothoracic Surgical Trials Network (CSTN) has recently reported the results of a prospective, multicenter, randomized clinical trial comparing coronary artery bypass grafting (CABG) alone to CABG combined with mitral valve repair for moderate IMR treatment, with the primary endpoint of left ventricular end-systolic volume index (LVESVI) as a surrogate for left ventricular remodeling.² This study of 301 patients demonstrated no significant difference in LVESVI at 1 year, for which the authors concluded that the addition of mitral valve repair to CABG did not result in a higher degree of left ventricular reverse remodeling. There were also no significant between-group

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differences in mortality, the composite end point of cardiac or cerebrovascular events, readmissions, or quality of life. This further supports the conclusions from our retrospective series.

It is important to acknowledge the limitations in our retrospective series as discussed by Dr. Durukan, and we agree that progression of IMR, subsequent interventions, and quality of life are important endpoints that unfortunately are not captured in our dataset. It should be noted, however, that our study design was an intention to treat analysis, which has been well established for observational and randomized trials. Nevertheless, a review of billing data from our institution for the subset of the CABG alone group with surgery dates after 03/1996 ($n = 1,225$) indicates that only seven patients (0.6%) subsequently underwent mitral valve repair, replacement, or closed valvulotomy or valvuloplasty, and four (0.3%) ultimately required a ventricular assist device or heart transplantation (data not previously published); however, this is subject to the limitations of retrospective analysis of billing data, and furthermore would not capture procedures performed at other institutions. In regards to the comment concerning patients with higher degrees of IMR, it is important to reinforce that our study included a sensitivity analysis based on IMR severity, which indicated that the adjusted risk of death based on treatment group did not differ significantly in cases of moderate versus severe MR.

We do agree with Dr. Durukan, however, that the question of optimal treatment of IMR is far from settled, and individual patient characteristics must be considered when deciding whether to engage the mitral valve when performing a CABG in the setting of IMR. Our study and the recent CSTN trial have helped advance the field, and we are encouraged by ongoing research efforts and randomized trials seeking to further delineate optimal treatment for this complex patient population.

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