Commentary: Red Light, Green Light

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Central Message:

Earlier indications for aortic valve repair in severe chronic aortic regurgitation may be warranted to improve long term survival when compared to current surgical guidelines.

Central Picture Legend:

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David Letterman once said, “Traffic signals in New York are just rough guidelines.” Conversely, medical guidelines are revered as doctrines guiding our clinical management. Medical guidelines are respected for good reason, as they represent culminations of a robust school of data driven decisions. However, as populations evolve so must our clinical guidelines.

Historically, the presence of either heart failure symptoms or left ventricular ejection fraction (LVEF) below 50% was considered a Class I indication for aortic regurgitation (AR) surgery per the American College of Cardiology/American Heart Association (ACA/AHA).1 Given recent literature establishing differences in postoperative survival rates between patients who underwent surgery earlier compared to patients who received surgery based upon traditional guidelines, the ACA/AHA broadened their recommendations, in 2020, to a more inclusive threshold of left ventricular ejection fraction (LVEF) <55%.2,3 Similarly, the European guidelines were revised, in 2021, to encompass left ventricular end-systolic diameter index
Hanet et al. set out to investigate the prognostic impact of various indications for surgery, including the presence of symptoms, LVEF, and LVESDi based upon the current established guidelines.  

This international, multicenter retrospective observational study was conducted to evaluate postoperative survival rates of 1,899 patients who underwent surgical correction of severe chronic AR from 1986-2021. Although a heterogenous and relatively young population (mean age: 49±15 years, 85% male), all patients were reported to have clinically significant chronic AR. Moreover, 51% of patients had a bicuspid aorta suggesting different mechanisms involved in the AR. Despite multiple centers, the mean follow-up of transthoracic echocardiographic data was 37 months. Patients who had complex interventions such as multivalvular surgery or significant comorbid disease were excluded from this study.  

Patients with conventional surgical triggers, such as heart failure symptoms, LVEF below 50%, LVESDi > 25mm/m² had significantly worse survival. Comparatively, patients who underwent surgery with earlier triggers of LVEF between 50 and 55%, or LVESDi between 20 and 25mm/m² had a similar survival to that of patients without any trigger. These findings were consistent following correction for age, gender, and bicuspid phenotype. Impressively and perhaps by selection of patients included in this study, 92% of patients underwent aortic valve repair or valve sparing surgery, while the remaining 8% had aortic valve replacement. These findings encourage early surgery for severe AR when valve repair is feasible. Although separate literature challenges the notion of traditional triggers for valve replacement, the authors emphasize their focus was on intended early valve repair is should not be generalized to early valve replacement based upon current surgical literature.  

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This provocative observational study encompasses the largest cohort of postoperative AR survival reported to date. With increasing literature suggesting earlier intervention in mitral and tricuspid disease, this study suggests aortic valve repair should be considered before waiting for traditional triggers. Regarding moving recommendations to Green Lights for early aortic valve repair, randomized clinical trials will provide more definitive data for guideline revision. We must continue to ask ourselves if our clinical traffic signals remain in the correct positions.

References:


