PARADIGM SHIFT TO EARLIER SURGERY FOR AORTIC REGURGITATION:
WHAT SHOULD BE DONE?

To the Editor:

Chronic aortic regurgitation (AR) represents the third most-common type of valvular heart disease in Western countries and especially affects young men. Some patients will incur myocardial damage before symptoms occur, with the risk that these adverse end points are irreversible even after valvular surgery. Therefore, current guidelines recommend surgical treatment in asymptomatic patients with severe AR when significant left ventricular (LV) enlargement is present. However, the cut-off values proposed by these guidelines (LV end-diastolic diameter >70 mm, LV end-systolic diameter >50 mm or >25 mm/m²) have been recently questioned by retrospective analyses suggesting that early surgery confers a better prognosis to patients with severe AR. The timing of surgery in patients with AR continues to elicit uncertainty and controversy, which has been the interest of a recent publication in the Journal by the Aneurysm InternATiOnal Registry (AVIATOR) investigators.1

The paper, based on prospective multicenter Heart Valve Society database (“AVIATOR”), is strengthening this approach. Among 1899 patients, 83% and 84% had Class I indication according to American Heart Association and European Society of Cardiology, respectively, and most were offered repair surgery (92%). However, they showed worse survival: 86 ± 2% versus 97 ± 1%, \( P = .002 \), predicted by left ventricle end-systolic dimension greater than 25 mm/m², confidence interval, 1.05-2.55, \( P = .03 \).

Interestingly, the same benefit of early interventions for AR apply to aortic valve replacement, as presented by the retrospective data just revealed by the Royal Brompton and Guys & St Thomas hospitals in London.2 Among 172 patients operated between 2005 and 2019, in 35.8% aortic valve replacement was performed earlier than European Society of Cardiology/European Association for Cardio-Thoracic Surgery 2021 recommendations; likewise, in 27% before American Heart Association 2020 cut guidelines, resulting in LV normalization correlated with clinical events (odds ratio, 2.9; \( P = .003 \)). However, the authors also concluded2 that the results of valve replacement should be interpreted cautiously due to late complications.

In contrast, striking improvements in surgical valve repair have completely transformed the current approach to patients with AR (Figure 1). Aortic valve-sparing is associated with a low perioperative mortality and excellent long-term results.1 AV intervention performed earlier than type I recommendations brings significant survival benefit, as proven by retrospective data.3,4

In order to clarify the proper approach based on strong level of recommendations, only a prospective scientific project may be decisive. Therefore, a multicenter, prospective randomized controlled trial be should implemented that evaluates the beneficial effects of aortic valve repair versus watchful waiting in patients with hemodynamically significant AR and moderate LV dilatation (LV end-systolic dimension comprised between 20 and 25 mm/m²). The clinical trial would be conducted by a consortium of experienced centers applying, for example, cardiac magnetic resonance imaging as diagnostic state-of-the-art.5 Our proposal may cause a paradigm shift and is designed to validate an innovative health care strategy like early surgical repair in asymptomatic patients with severe AR and moderate LV dilatation.

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Conflict of Interest Statement

Dr Jasinski is a consultant for Biostable and Medtronic. Dr Nienaber reported no conflicts of interest.

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FIGURE 1. Bicuspid aortic valve repair with aorta remodeling.
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The authors reported no conflicts of interest.

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