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EDITORIAL COMMENTARY

Low-gradient severe aortic stenosis also benefits from aortic valve replacement

Carlos A. Mestres, MD, PhD, FETCS

See related article on pages 2823-8.

Aortic stenosis (AS) is a surgical disease, and patients are best treated with valve replacement at any age and condition, as it has been well documented over time.¹⁻³ The

results of the study of transcatheter versus surgical aortic valve replacement (SAVR) in high-risk patients corresponding to the Placement of Aortic Transcatheter Valves (PARTNER) trial published in 2011 suggested that in high-risk patients with severe AS, transcatheter and surgical procedures for AVR were associated with similar survival at 1 year, although there were important differences in periprocedural risks.⁴ This was despite a number of well-acknowledged limitations, such as the noninferiority design, frequent unexpected withdrawals, and lack of statistical power for robust conclusions in specific subgroups of patients. It is expected that technologic advancement will improve outcomes if current procedural and postprocedural limitations are overcome and some indications clearly defined.⁵⁻⁷ At this time, SAVR and transcatheter valve implantation are treatment options covering almost all possible groups of patients requiring an aggressive treatment of AS; however, there are still some doubts on

From the Department of Cardiovascular and Thoracic Surgery, Heart and Vascular Institute, Cleveland Clinic Abu Dhabi, Abu Dhabi, United Arab Emirates.

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Address for reprints: Carlos A. Mestres, MD, PhD, FETCS, Department of Cardiovascular and Thoracic Surgery, Heart and Vascular Institute, Cleveland Clinic Abu Dhabi, Sowwah Square, Al Maryah Island, PO Box 112412, Abu Dhabi, United Arab Emirates (E-mail: MestreCA@ClevelandClinicAbuDhabi.ae).

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specific subgroups whose problem is the decision for an intervention.

In this issue of the *Journal*, Grupper and colleagues⁸ aimed at investigating the effect of aortic valve intervention on survival in the subgroup of patients with low-gradient severe AS and preserved left ventricular function. They also speculated on the eventual influence of normal or decreased stroke volume. Their analysis covered a cohort of 416 predominantly female patients (58%) with a mean age of 76 ± 14 years. The subgroup of patients with low-flow, low-gradient AS had higher body surface area and body mass index, and lower peak velocity, mean gradient, stroke volume, and ejection fraction. Over an average follow-up of 28 months, 23% of patients (97/416) underwent aortic valve intervention and 32% of patients (140/416) died. The predominant intervention was SAVR. The authors concluded that aortic valve intervention is associated with improved survival among patients with low-gradient severe AS.

There are some issues of interest in this contribution. First, it stresses the difficulties of the evaluation and diagnosis of patients with AS and low transvalvular gradient with preserved left ventricular function. There are a number of technical aspects in the echocardiographic management that may lead to inappropriate estimates. This contribution supports the use of gradients as a main parameter for recommending aggressive treatment, although the aortic valve orifice area, estimation of transvalvular gradients, and stroke volume index do configure well on aggregate the conflictive perception of this subgroup of patients analyzed.

The benefit of SAVR is clear across the spectrum of this population regardless of the aortic valve area and transvalvular ejecting volume. The prognosis of these patients has greatly improved regardless of specific clinical and echocardiographic parameters. There may still be some concerns in the specific subpopulation with low-flow AS (113 in this study) in the long-term, as recently stated by Mohty and colleagues,⁹ when the variable patient–prosthesis mismatch was included; however, this may have an impact on the long-term and not on acute results, meaning that there will be benefit in referring these patients for surgery.

Most important is that the authors agree that patients must undergo operation. This is in agreement with the data shown in the article.⁸ It is clear that all patients must be referred for surgical treatment regardless of the transaortic flow when AS is present. There are, of course, a number of limitations, including the study design, the eventual bias with regard to

the severity of symptoms at the time of referral for intervention, and the formula used for the calculation of valve area and ejection fraction. However, as according to Grupper and colleagues,⁸ there has been improved survival in both low- and normal-flow AS with low gradient, intervention is warranted. The decision for intervention should be based on prompt recognition of the problem.

A final remark is that these conclusions are drawn by a group of cardiologists who recognized that patients must be referred early for surgical treatment of AS, an old story with updated confirmation. The readers must then be interested in such a simple conclusion. Despite recent advancements in the current era of transcatheter therapies, SAVR for AS continues to be one of the best operations ever designed and performed in all patients at any age with reliable results on the perioperative period and, most important, over time.^{10,11}

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