ISSN 0735-1097/$36.00

Letters

Long-Term Survival of Asymptomatic Patients With Very Severe Aortic Stenosis

Early Surgery Versus Conventional Treatment

Aortic valve replacement (AVR) is generally not indicated for asymptomatic patients with severe aortic stenosis (AS) (1), but early surgical AVR, as compared with conservative management, significantly reduced the rates of cardiovascular death and death from any cause among 145 asymptomatic patients with very severe AS during median follow-up of 6.2 years in our recent randomized trial (2). The aims of the present study were to evaluate whether the survival benefit of early AVR for asymptomatic very severe AS is sustained during longer-term follow-up of up to 20 years in a propensity analysis of larger registry data that were prospectively collected.

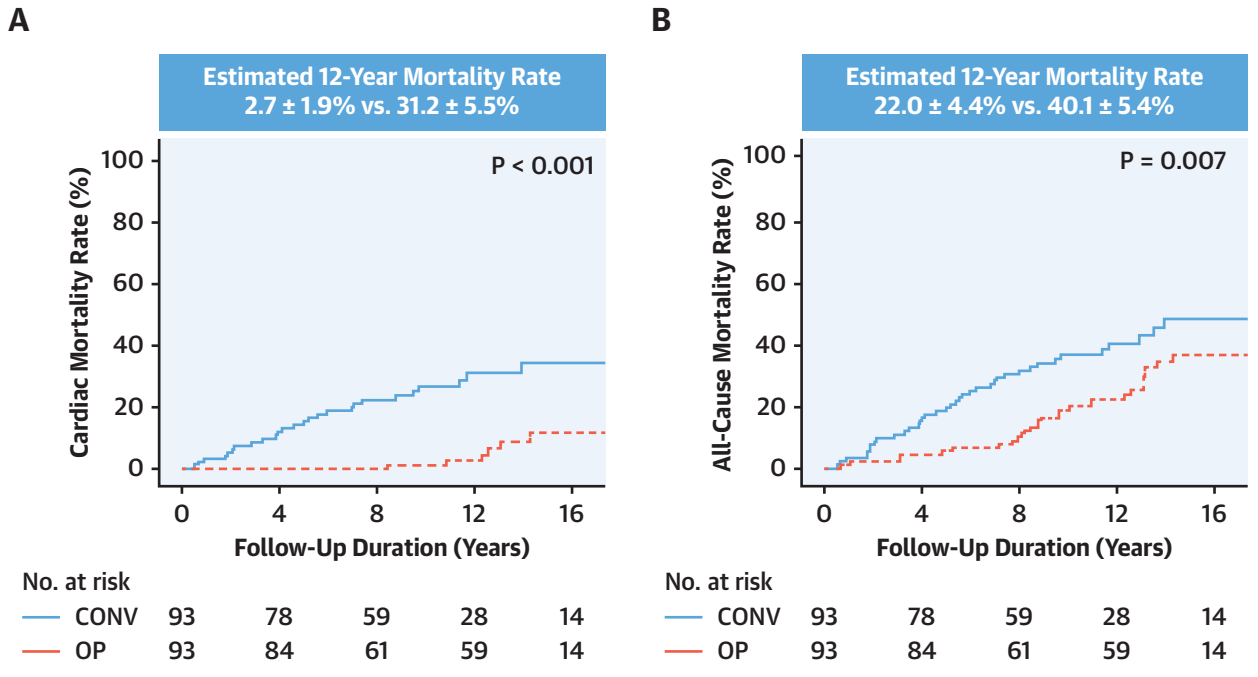
A total of 256 asymptomatic patients with very severe AS, who were potential candidates for early surgery, were prospectively enrolled from 1996 to 2009 in 2 major hospitals in South Korea. Very severe AS was defined as an aortic valve area <0.75 cm^2 with either a peak aortic velocity of ≥ 4.5 m/s or a mean transaortic gradient of ≥ 50 mm Hg. We excluded patients with symptoms or left ventricular ejection fraction (LVEF) $<50\%$. A conventional strategy was chosen for 137 patients (conventional treatment group), whereas early elective surgery was performed on 119 patients (early surgery group) within 3 months of diagnosis. Patients in the conventional treatment group were referred for surgery if symptoms developed or if the LVEF decreased to $<50\%$. Cardiac mortality was the primary endpoint, and all-cause mortality was the secondary endpoint.

The mean age of the patients was 62.1 ± 12.0 years and 48.9% were men. The cause of AS was a bicuspid aortic valve in 119 patients (46.5%), degenerative in 100 (39.1%), and rheumatic in 37 (14.5%). Baseline characteristics were similar in both groups, except that the early surgery group had a significantly higher aortic jet velocity (5.1 ± 0.5 m/s vs. 4.9 ± 0.5 m/s, $p < 0.001$) and mean transaortic gradient (65 ± 13 mm Hg vs. 60 ± 13 mm Hg, $p < 0.001$). After propensity score matching, we identified a well-balanced cohort of 93 pairs of patients.

In the early surgery group, all patients underwent AVR with a mechanical (n = 68) or a bioprosthetic (n = 51) valve within 3 months from enrollment, and there was 1 case of operative mortality (0.7%). In the conventional treatment group, 87 patients (63.5%) underwent surgical AVR during follow-up due to development of symptoms (n = 80) or the LVEF of $<50\%$ alone (n = 7); the median time from enrollment to AVR was 990 days (interquartile range: 400 to 1,520 days). During the median follow-up of 11.4 years (interquartile range: 8.4 to 14.4 years), 33 all-cause deaths (including 7 cardiac deaths) occurred in the early surgery group and 58 all-cause deaths (including 41 cardiac deaths) in the conventional treatment group. A total of 23 sudden deaths (16.8%) occurred in the conventional treatment group, and the cumulative incidence of sudden death was 5.3% at 4 years and 15.4% at 8 years. In the propensity score–matched cohort, the estimated actuarial cardiac mortality rates ($2.7 \pm 1.9\%$ vs. $31.2 \pm 5.5\%$ at 12 years, $p < 0.001$) and the estimated actuarial all-cause mortality rates ($22.0 \pm 4.4\%$ vs. $40.1 \pm 5.4\%$ at 12 years, $p = 0.007$) were significantly lower in the early surgery group (**Figure 1**). The Cox regression model also demonstrated a significantly lower risk of cardiac mortality (hazard ratio [HR]: 0.16; 95% confidence interval [CI]: 0.07 to 0.36; $p < 0.001$) and all-cause mortality (HR: 0.52; 95% CI: 0.32 to 0.84; $p = 0.008$) in the early surgery group. There was no significant interaction between the treatment group and the primary endpoint according to etiology of AS (p for interaction = 0.21).

Our findings may provide additional evidence supporting early surgery for asymptomatic patients with very severe AS, because early surgery is associated with significant reduction in cardiac mortality and all-cause mortality during longer-term follow-up in a propensity analysis of larger registry. However, this study is limited by its observational nature and is therefore prone to selection bias and residual confounding. Our study patients were younger and had a higher incidence of bicuspid AV. Thus, our results cannot be extrapolated to early

FIGURE 1 Comparison of Endpoints in the Propensity Score-Matched Cohort



Cumulative incidence curves for cardiac mortality **(A)** and all-cause mortality **(B)**. CONV = conventional treatment group; OP = early surgery group.

transcatheter AVR. Exercise testing is reasonable to confirm the absence of symptoms in asymptomatic patients with severe AS (1), but it was not included in the study protocol. This observational study may support the comparative effectiveness of early surgery in real clinical practice and help to generalize the results of our randomized trial.

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https://doi.org/10.1016/j.jacc.2020.03.036

Please note: The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the *JACC* author instructions page.

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Endocarditis in Patients With Ascending Aortic Prosthetic Graft

A Series From a National Referral Hospital

Despite the lack of specific guidelines, surgery has been considered mandatory to treat infective endocarditis (IE) in patients with an ascending aortic