Long-term follow-up after aortic valve replacement with Edwards Prima Plus stentless bioprostheses in patients younger than 60 years of age

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Objectives
The Edwards Prima Plus was one of the first stentless aortic valve bioprostheses, with larger orifice areas and improved hemodynamics compared to stented bioprostheses. The aim of the present single-center retrospective study was to assess the long-term results of the Edwards Prima Plus in patients 60 years old or younger.

Methods
From 1993 to 2001, 120 patients (99 men and 21 women) aged 60 years or younger underwent implantation of the Edwards Prima Plus. The indications were stenosis and/or insufficiency. Associated procedures were performed in 38 patients (31.7%). Of the patients, 39% had impaired left ventricular function. Follow-up data were acquired by telephone interview. Time-to event analyses were performed using the Kaplan-Meier method. Variables affecting survival and freedom from reoperation were evaluated using Cox regression analysis. The mean patient age at surgery was 53.1 ± 8.0 years. The follow-up data were 88.8% complete at a mean of 8.5 ± 4.5 years. The total follow-up was 1022.7 patient-years.

Results
At 10 and 15 years, the overall actuarial survival rate was 71.8% ± 4.4% and 48.8% ± 9.6%, respectively. Survival was significantly lower for patients with older age, aortic insufficiency as the surgical indication, and small prosthesis size (<=25 mm vs >=27 mm). Reoperation was performed in 20 patients (16.7%), with a hospital mortality of 5%. At 10 and 14 years, the overall freedom from reoperation rate was 85.6% ± 3.7% and 65.2% ± 8.6%, respectively. Freedom from reoperation was significantly lower in patients with a small prosthesis size (<=25 mm) and insufficiency as the indication for surgery.

Conclusion
In patients aged 60 years or younger, an Edwards Prima Plus can provide reliable long-term results with acceptable freedom-from-reoperation rates.