

Bioprosthetic Aortic Valve Replacement in Patients at Increased Risk of Early Structural Valve Degeneration



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Background:

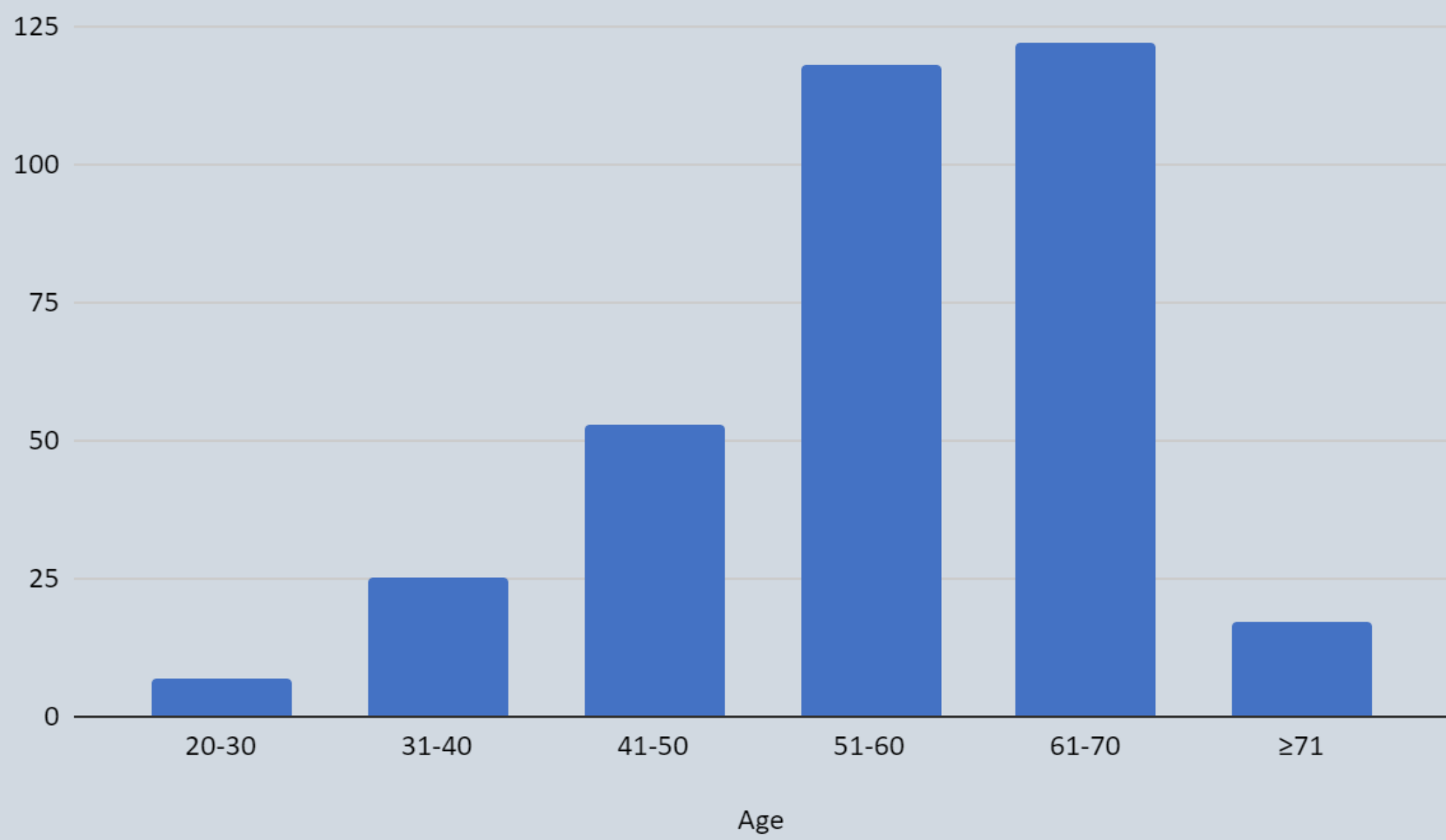
Biological prostheses are increasingly being used in young patients to avoid anticoagulation. The Edwards Inspiris Resilia aortic bioprosthesis is extremely promising in this population, since it has shown reduced calcification of the prosthetic leaflets in preclinical and early clinical studies. Little data are available, however, in patients younger than 65 years old. This study investigates the hemodynamic performance and clinical outcome of the Inspiris Resilia bioprosthesis in a group of young patients at increased risk of early structural valve degeneration (SVD).



Patients:

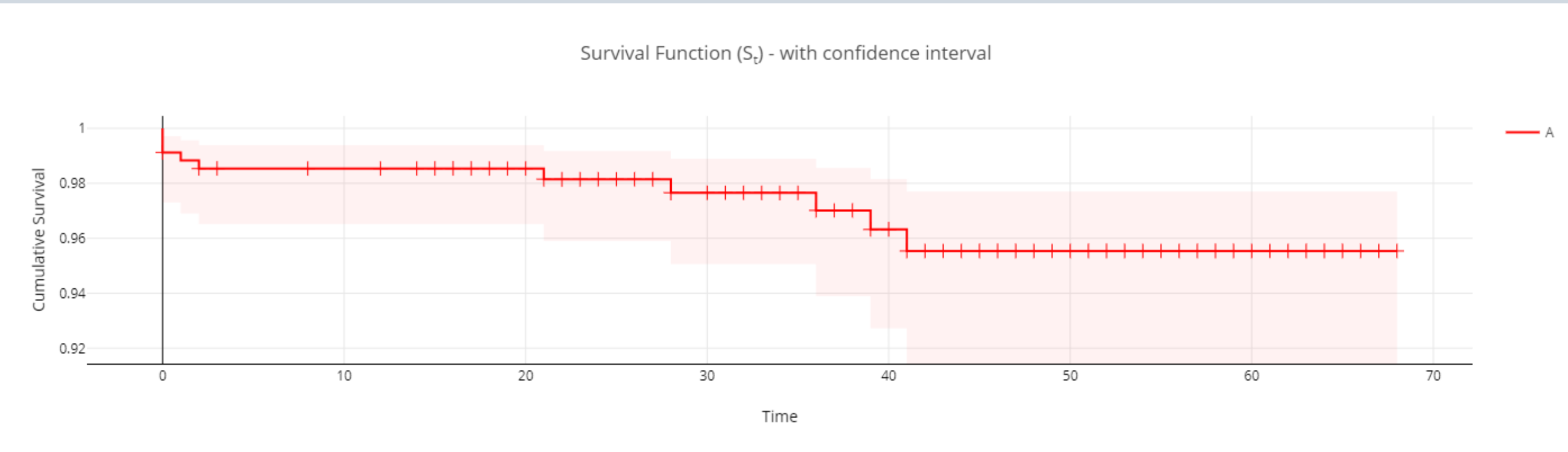
From January 2018, 342 patients aged 56 ± 10.7 years (range 20-76 years) underwent AVR with the Edwards Inspiris Resilia bioprosthesis at our institution. Ninety-two patients were younger than 50, and 24 had chronic renal failure. Associated procedures were performed in 157 patients (45.9%), and 56 cases were reoperations.

Variables	Mean $\pm$ SD or No. (%)
Age	56 ± 10.7
Male sex	271 (79.2%)
BMI>30kg/m ²	98 (28.6%)
Hypertension	216 (63.2%)
Diabetes	46 (13.5%)
Smoke	198 (57.9%)
Dyslipidemia	124 (36.3%)
CKD	24 (7%)
LVEF	54.8 ± 8.1
IE	41 (11.9%)
PVE	18 (5.3%)
CAD	77 (22.5%)
Aortopathy	37 (10.8%)
Aortic dissection	9 (2.6%)
Mitral valve pathology	23 (6.7%)
HOCM	11 (3.2%)



Results:

The in-hospital mortality was 1.5% (5 patients), and 5 additional patients died during the follow-up (total mortality 2.9%). All the in-hospital deaths occurred in patients with severe comorbidities or undergoing complex procedures.. Major complications included bleeding (32), respiratory failure (20), and BAV requiring PMK (7). Eleven patients (3.2%) needed reoperation during the follow-up, only in two cases for an actual degeneration. There was one case of valve thrombosis (0.3%) associated with a thromboembolic event. A transient increase of the transprosthetic gradient, in the range of subclinical SVD, was observed in only 4 patients (1.2%). At the latest control, the transprosthetic gradient had returned to normal values in all four. At follow-up, all except four patients reported a significant improvement in their symptomatic status (98.8 % were in NYHA≤II) and quality of life.



Conclusion:

Our study demonstrates good early hemodynamics and promising results at up to six years in a cohort of very young patients at increased risk of structural valve degeneration. Further studies with longer follow-up are needed.