21-year Experience with David Procedure in a middle-income country setting

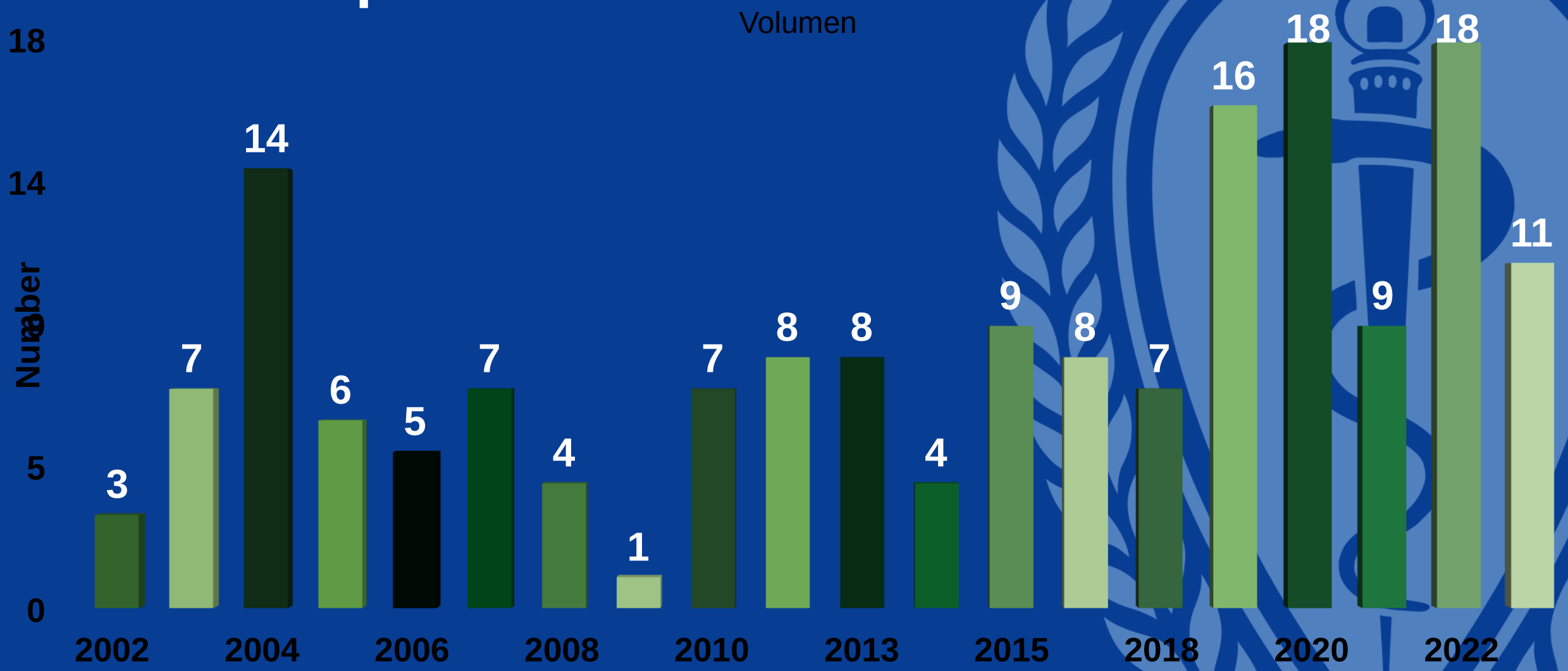
Objective

- **Describe the short and long-term outcomes of aortic valve-sparing root replacement procedures in a referral central in Bogota D.C, Colombia.**

Methods

- We included all patients who underwent the David procedure from January 2002 to September 2023 at our institution. We identified patients using the institutional cardiac surgery database that follows the coding guidelines of the Society of Thoracic Surgeons (STS).
- We collected demographics, clinical and imaging data from pre-, intra- and post-operative periods.
- Patient follow-up was done through outpatient clinic, government databases and telephone interviews.
- Our main outcomes were survival rate, valve regurgitation recurrence and freedom from reoperation, all estimated by the Kaplan-Meier method.
- A descriptive analysis was performed following standard statistical procedures. Variables are represented according to type and distribution.

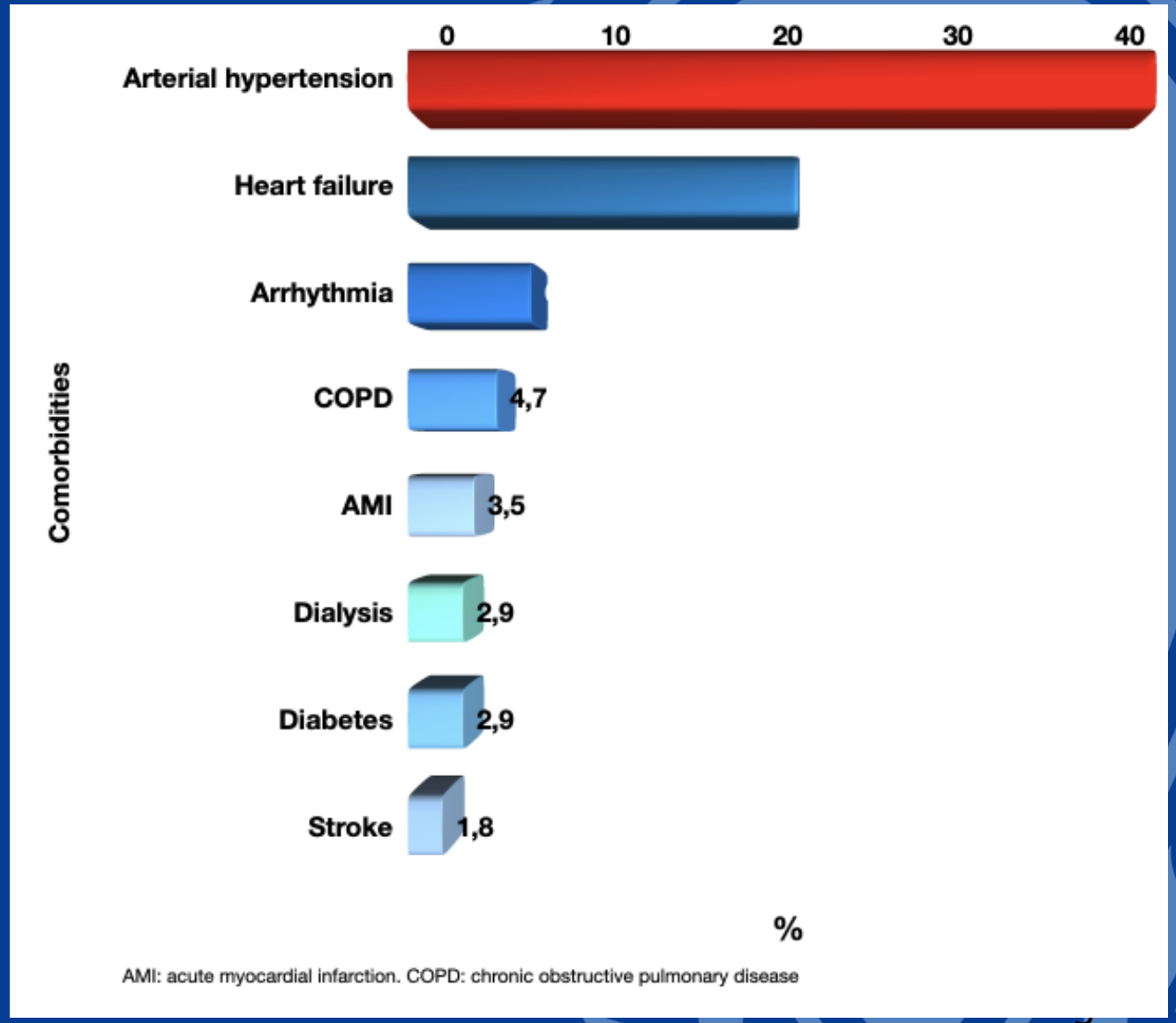
Volume per Year



*Data Until September 2023

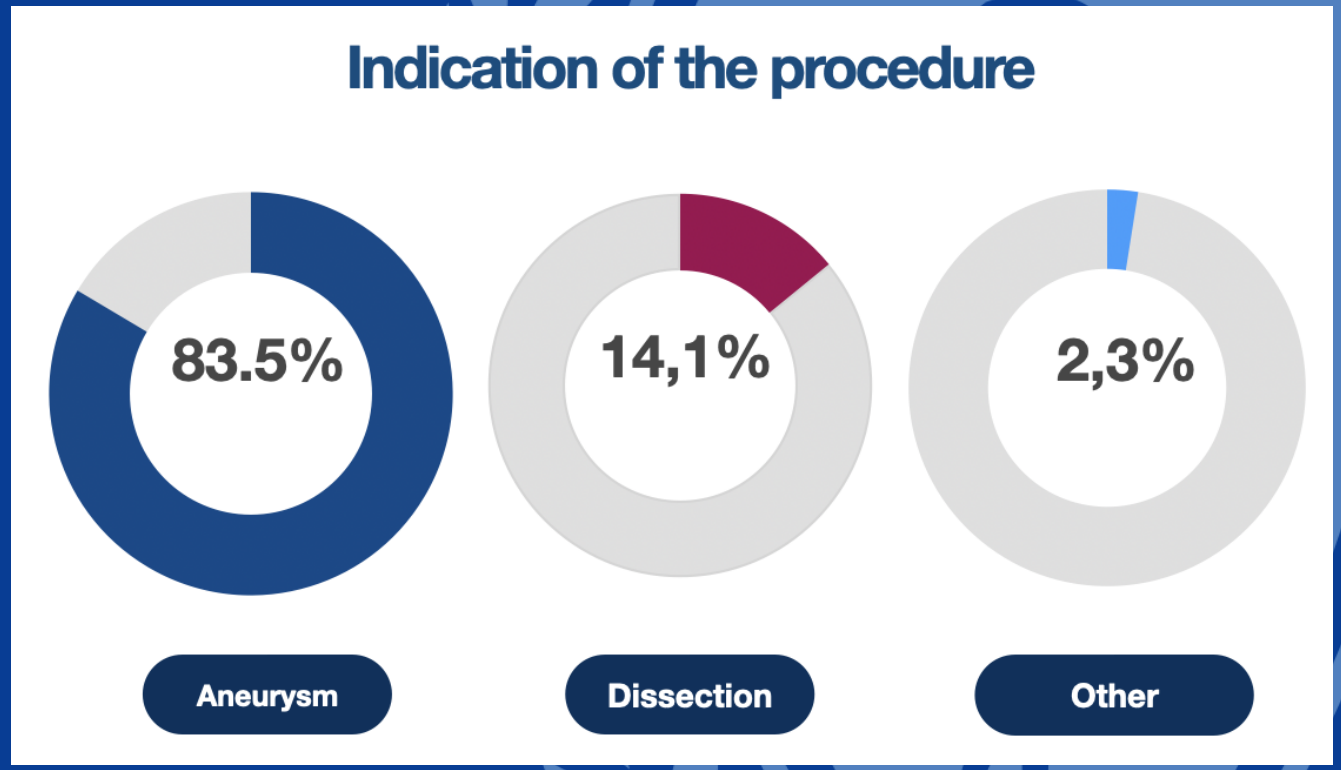
Baseline characteristics

Patients undergoing Aortic Valve-Sparing Root Replacement	N=170
Age (years)	51.6 (39.1-58.9)
Male	139 (81.8)
Marfan	24 (14.1)
Bicuspid Aortic Valve	63 (38)
NYHA	
I	32 (18.8)
II	116 (68.2)
III	19 (11.2)
IV	3 (1.8)
Aortic Valve Regurgitation	
No Regurgitation	48 (28.2)
Mild	10 (5.9)
Moderate	22 (12.9)
Severe	88 (51.8)
Not documented	2 (1.2)
LVEF (%)	51 (47-57)
EuroSCORE (%)	4.3 (3.4-5.5)

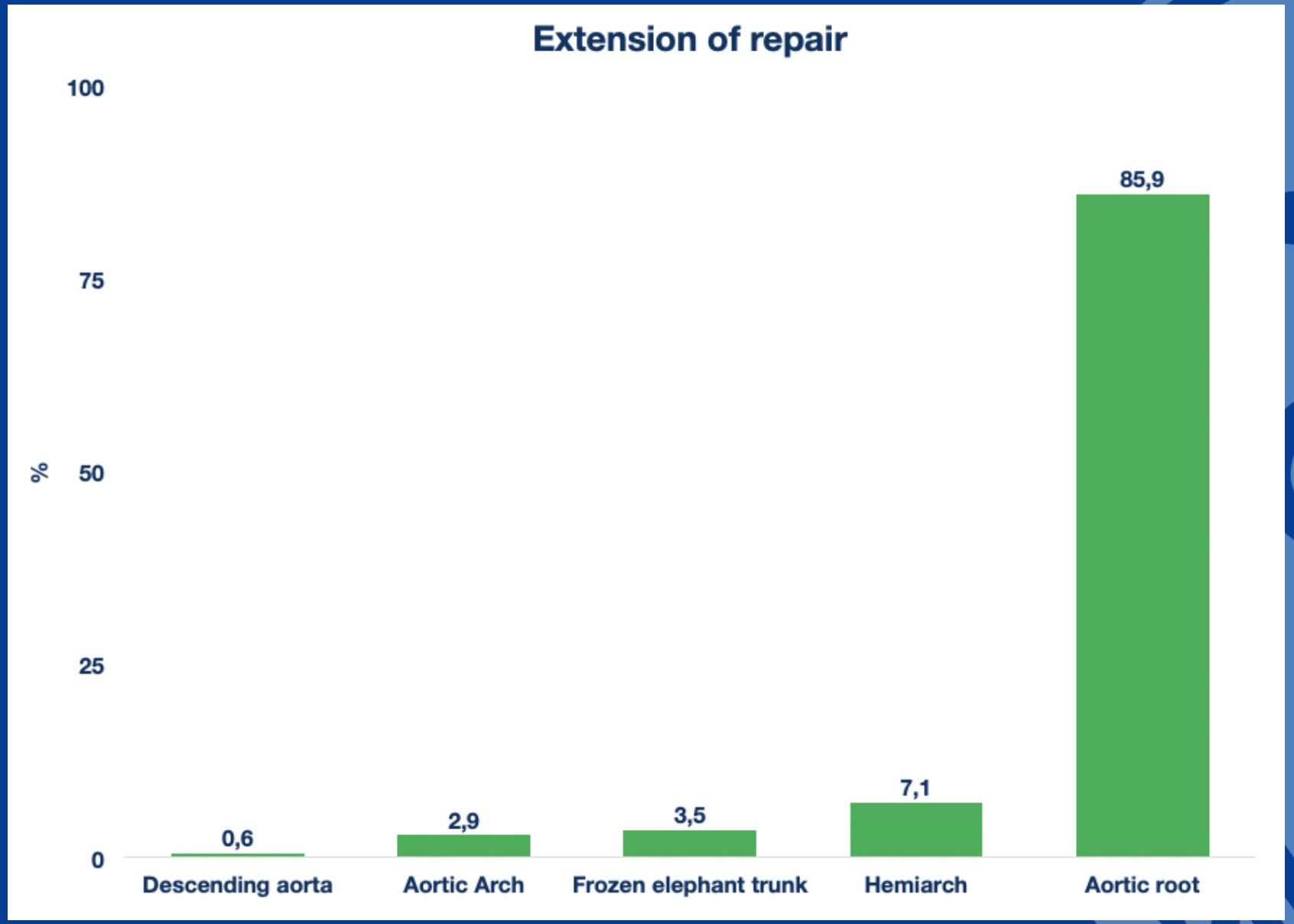


Intraoperative Variables

Aortic Valve-Sparing Root Replacement	n=170
Surgical status	
Elective	97 (57.1)
Urgent	65 (38.2)
Emergent	8 (4.7)
CPB (min)	200 (178-223)
AXC (min)	168 (154-195)
Associated procedures	
Mitral valve repair	12 (7.1)
Maze	3 (2.9)
Aortic Arch repair	22(12.9)
Aortic valve repair	20(11.7)

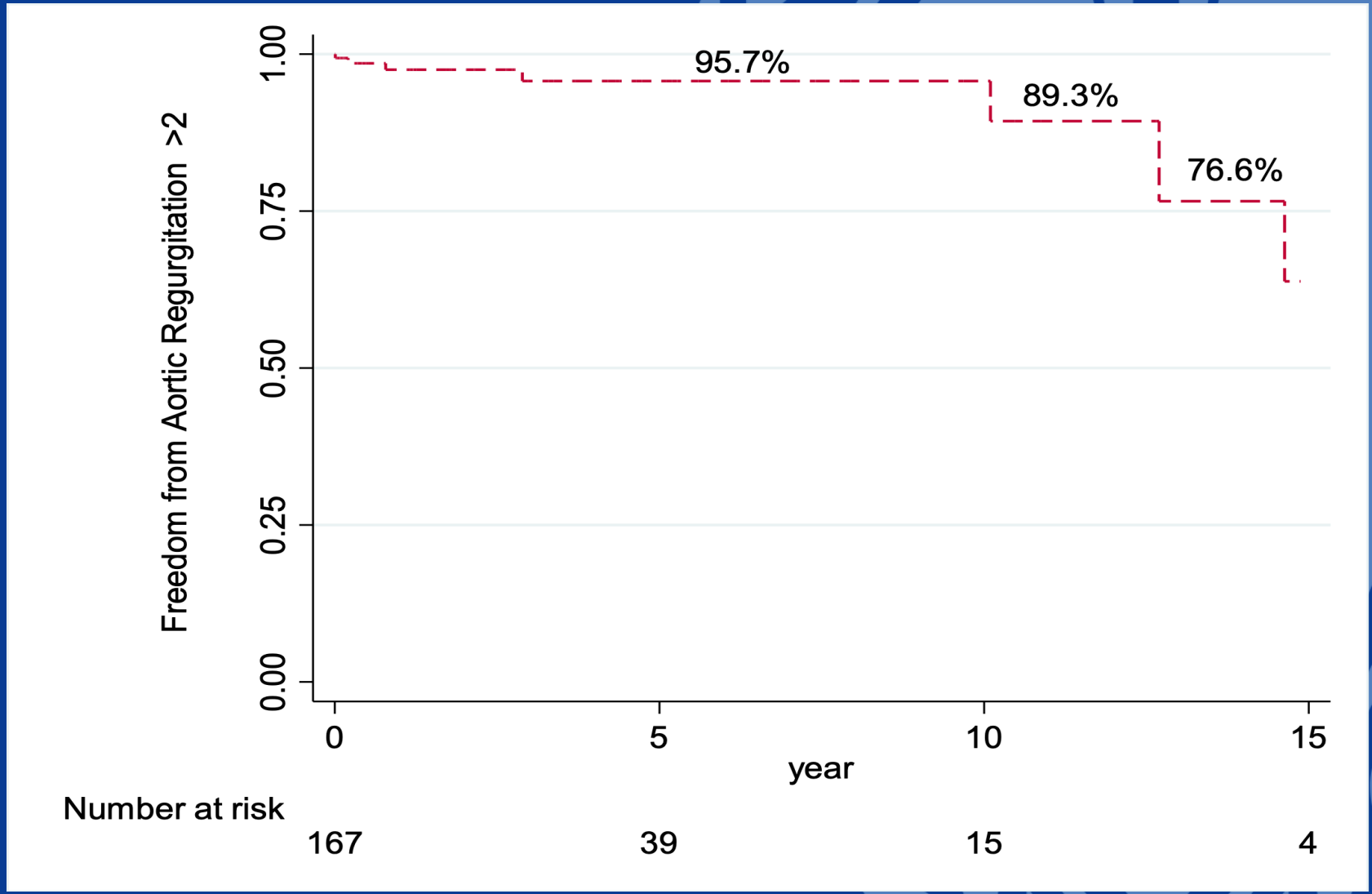


Intraoperative Variables

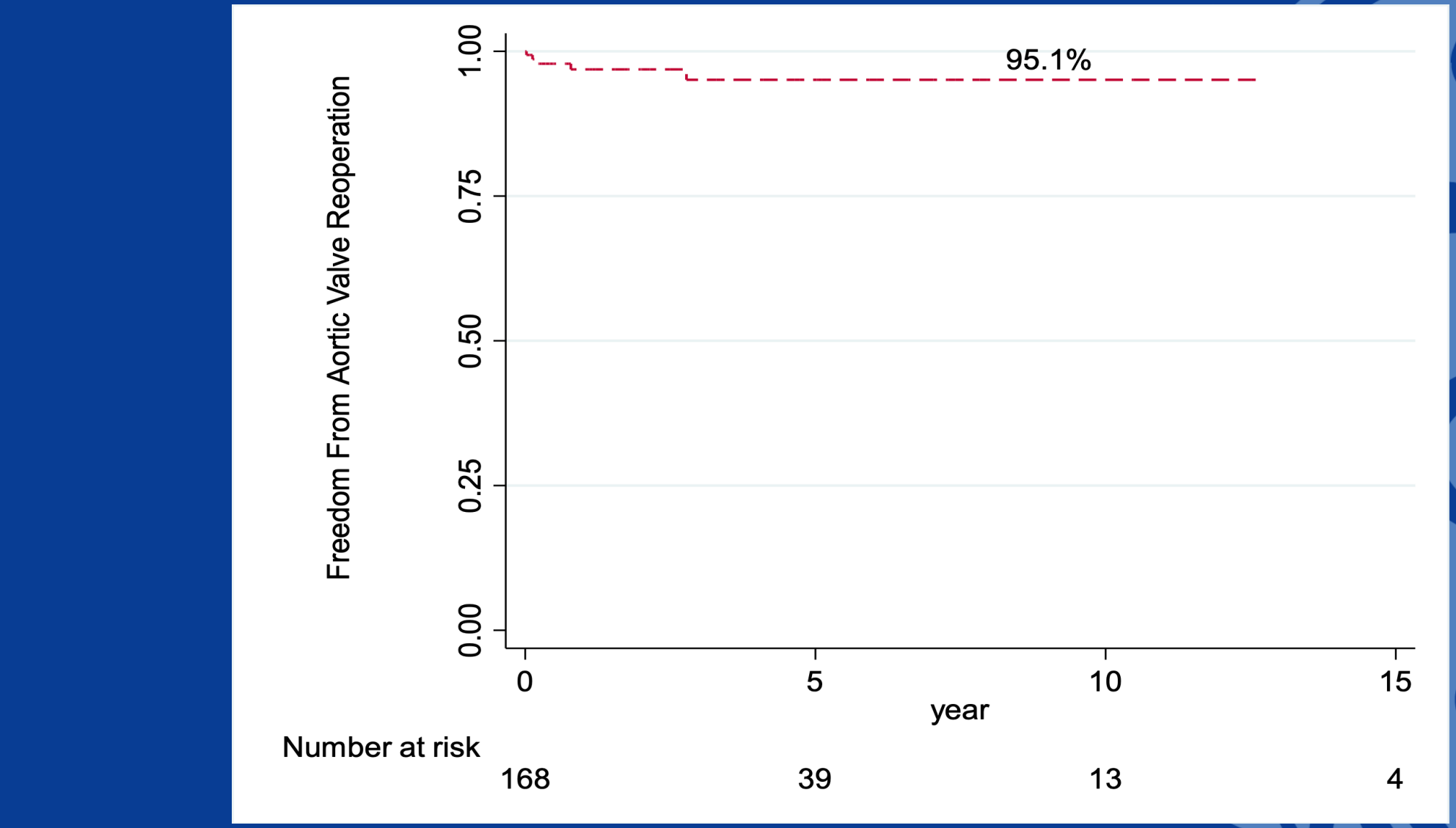


At a mean follow-up of 3 years, 95% of patients were free of significant aortic regurgitation

- Freedom from hemodynamically significant AVR (Grade III or higher) was estimated at 96% at 108 months.

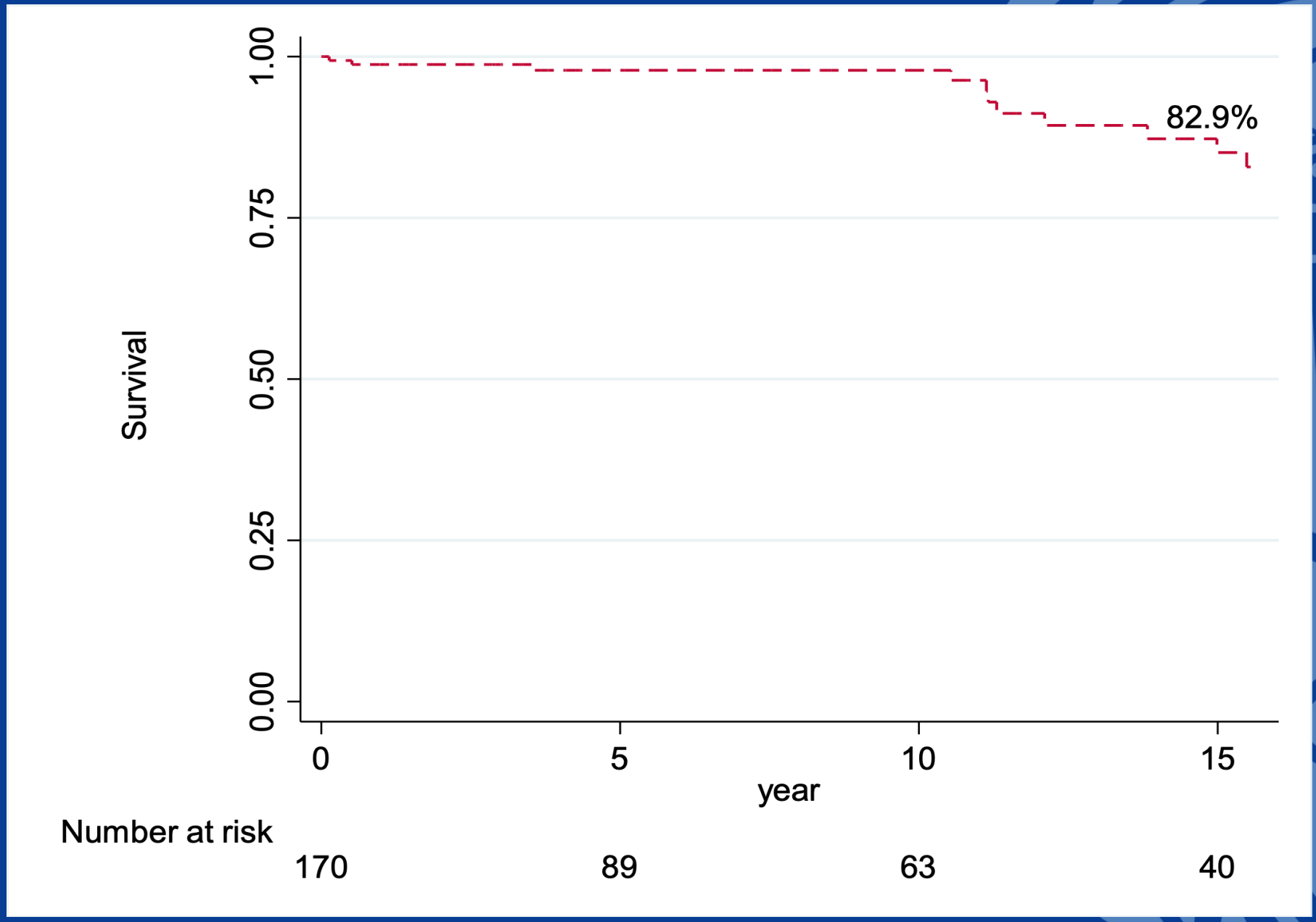


Freedom from reoperation was 95% at 13 years

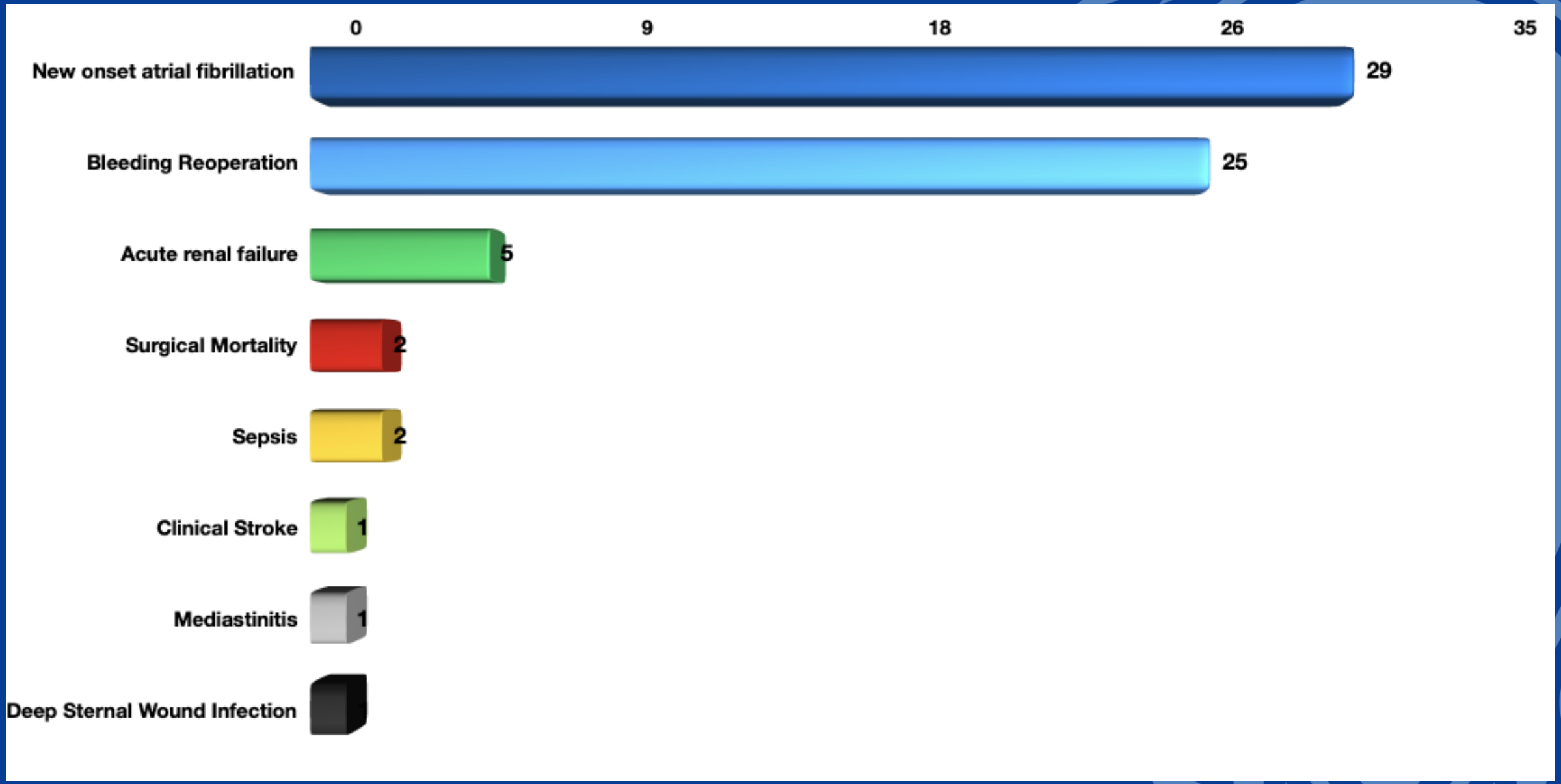


- *7 valve related reoperations

Survival rate was 83% after 15 years of follow-up



Outcomes


0
9
18
26
35
New onset atrial fibrillation
29
Bleeding Reoperation
25
Acute renal failure
5
Surgical Mortality
2
Sepsis
2
Clinical Stroke
1
Mediastinitis
1
Deep Sternal Wound Infection

Conclusions

- Aortic valve-sparing root replacement is a safe procedure providing excellent short and long-term outcomes.
- The improvement of AVR was remarkable and maintainable in the long term.
- In our setting, the David procedure shows excellent outcomes comparable to the reported in high-volume income centers.