

The Ross procedure in childhood

Petr Bukovský, Petr Šodek, Václav Chaloupecký

Jan Janoušek, Roman Gebauer

Children's Heart Centre, 2nd Faculty of Medicine, Charles University and Motol and Homolka University Hospital, Prague, Czech Republic





Methods

- A single nation-wide retrospective cohort study
- 164 consecutive patients
- Ross; Ross/Konno: 1997 - 2025
- Data from the institutional clinical information system
- Cross-mapping with
 - National Death Registry
 - National Registry of Cardiovascular Interventions in Adults
- End point
 - Death (any cause)
 - HTX
 - Surgical or transcatheter reintervention
- Statistics
 - Kaplan-Meier survival probability



Methods

- A single nation-wide retrospective cohort study
- 164 consecutive patients
- Ross; Ross/Konno: 1997 - 2025
- Data from the institutional clinical information system
- End point
 - Death (any cause)
 - HTX
- Statistics
 - Kaplan-Meier survival probability

Surg

- Ros



Results



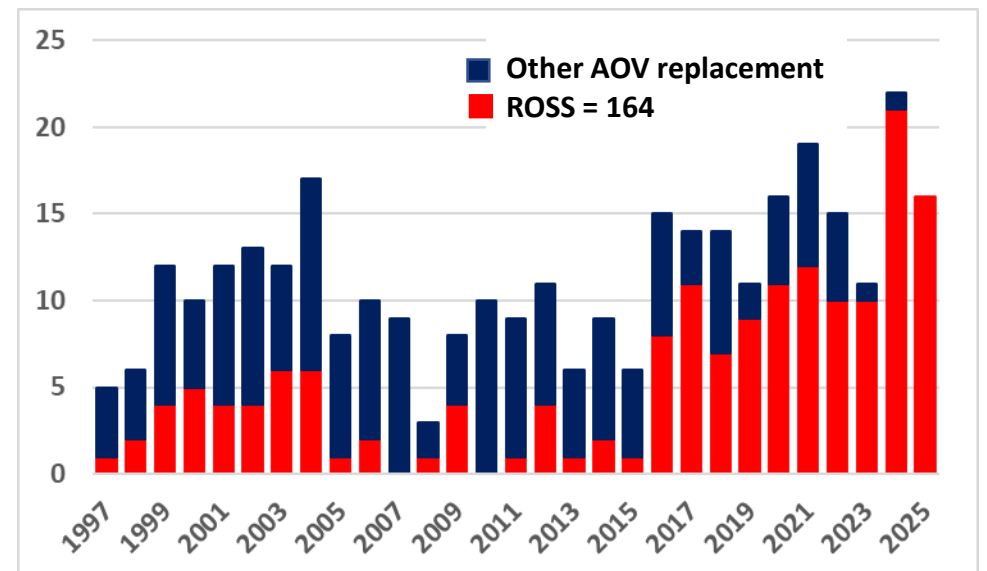
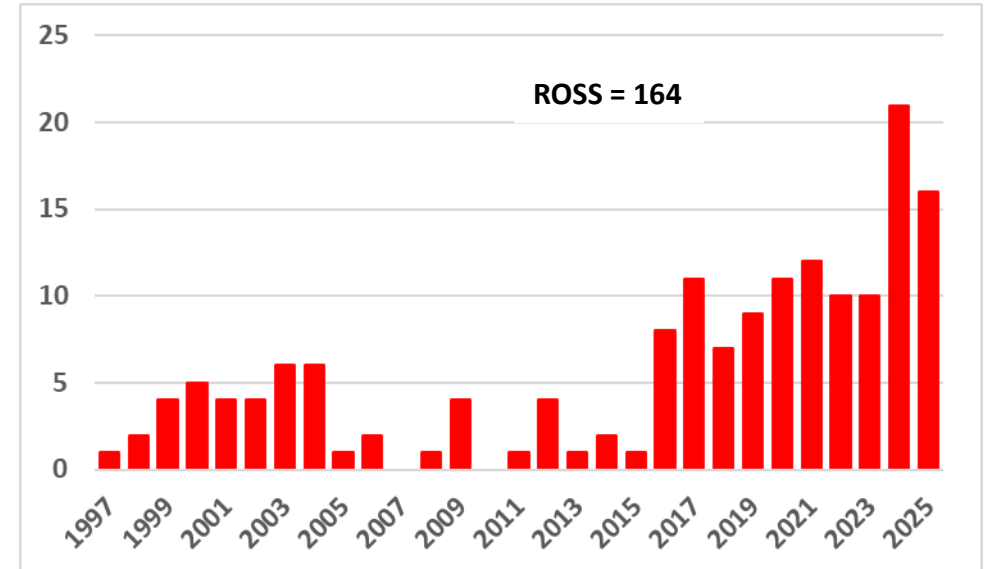
Patients

N = 164	Median	Range	IQR
Age	5.2 y	4 d - 25 y	5 m - 10.8 y
Weight (kg)	17.7	2.4 – 108.0	7.6 - 36.0
CPB (min)	219	154 - 372	203 -242
XC (min)	157	94 - 254	138 - 182

Previous aortic valve interventions in 120 (73%) /164 patients

	N	%
Baloon aortic valvuloplasty	98	81.7
Aortic valve valvotomy	15	12.5
Aortic valve valvuloplasty	7	5.8
Total	120	100.0

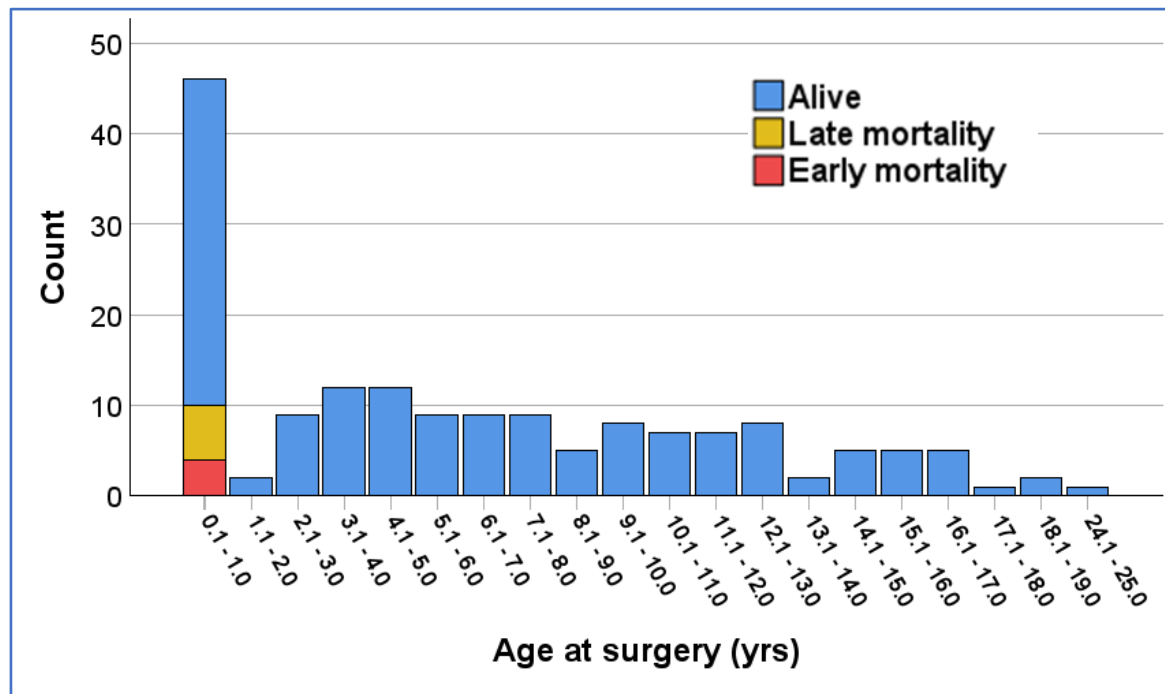
Procedures per year



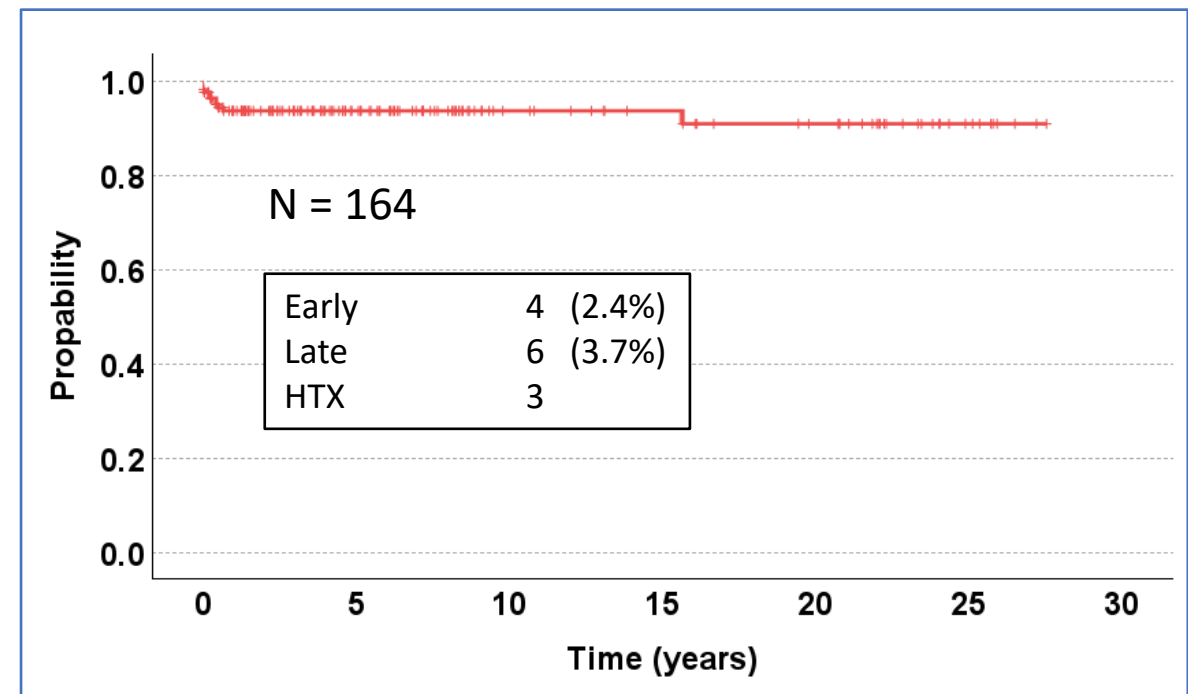


Results: survival/HTX

Mortality x Age at Ross procedure



Long term survival /HTX





Long-term follow-up

95 patients operated between 1997 - 2020

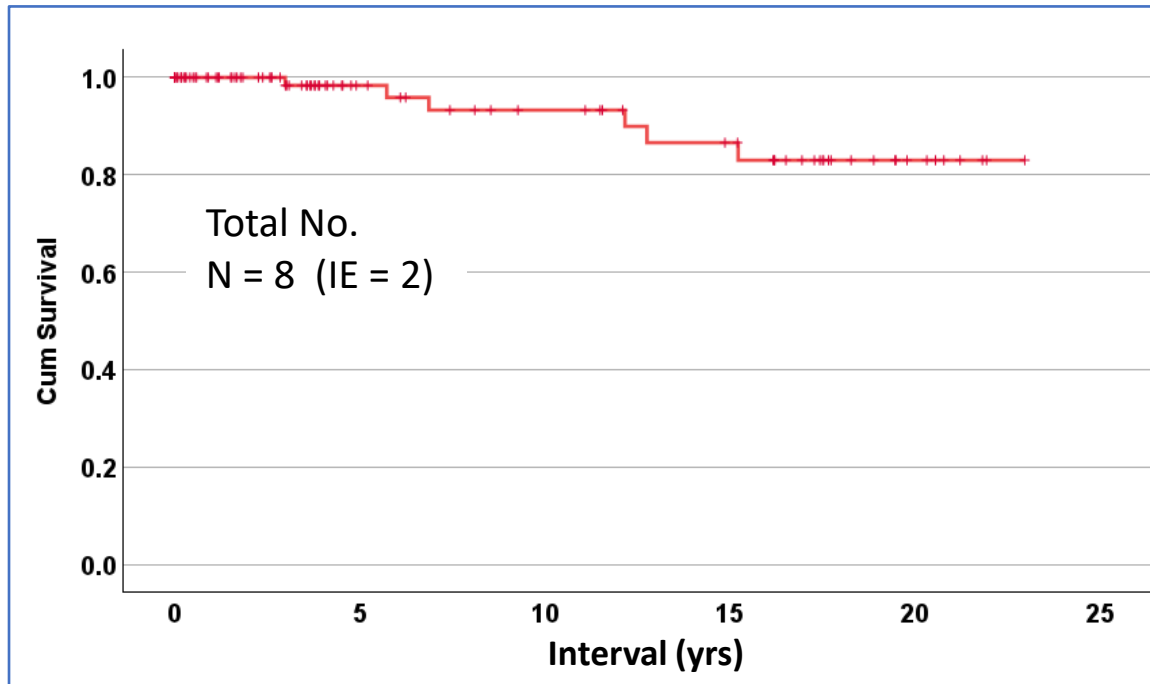
Major surgical or transcatheter procedures in 20/95 (21%) patients

	N
RV-PA conduit replacement	18
Transcatheter pulmonary valve replacement	4
Conduit angioplasty	4
Aortic valve replacement	8
Heart transplant	4
Tricuspid valve replacement	2
Mitral valve replacement	2
Total	42

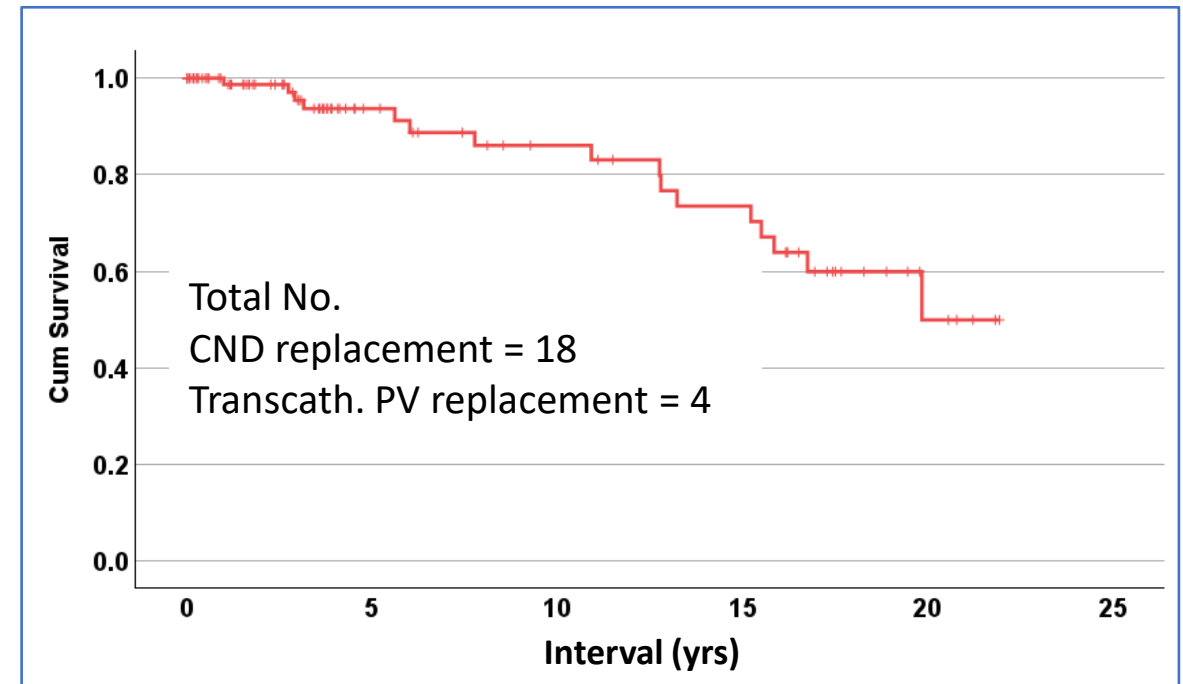
Reoperations, reinterventions



Freedom from neo-aortic valve replacement



Freedom from pulmonary reevaluation





Conclusions

- the Ross procedure is the only option for aortic valve replacement in small children
- early and late deaths occurred only after the Ross procedure performed with the 1st year of age
- freedom from pulmonary revalvulation was 50% at 20 years
- freedom from neo-aortic valve replacement was 83% at 20 years