The Ross procedure in childhood

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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

Surg

- Ros

Results

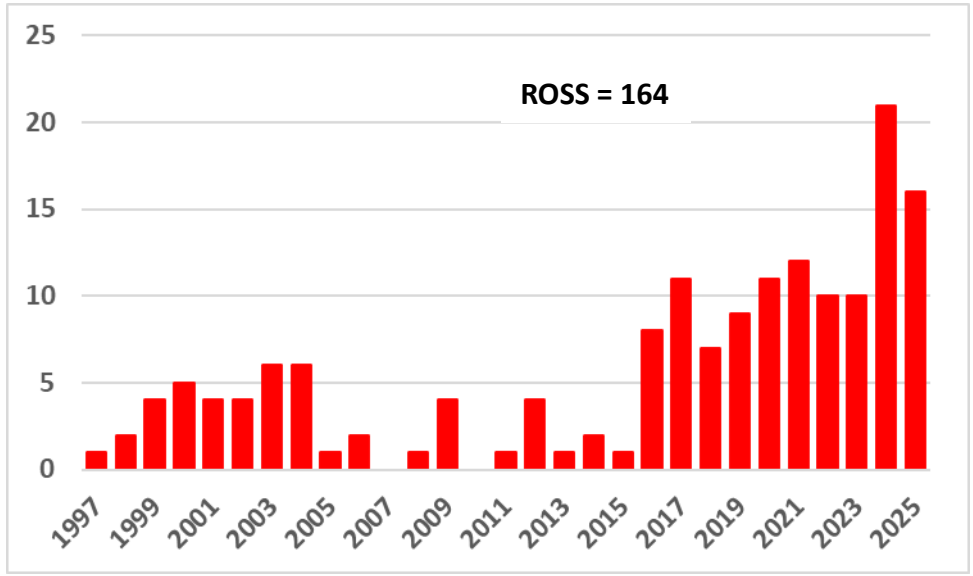
Patients

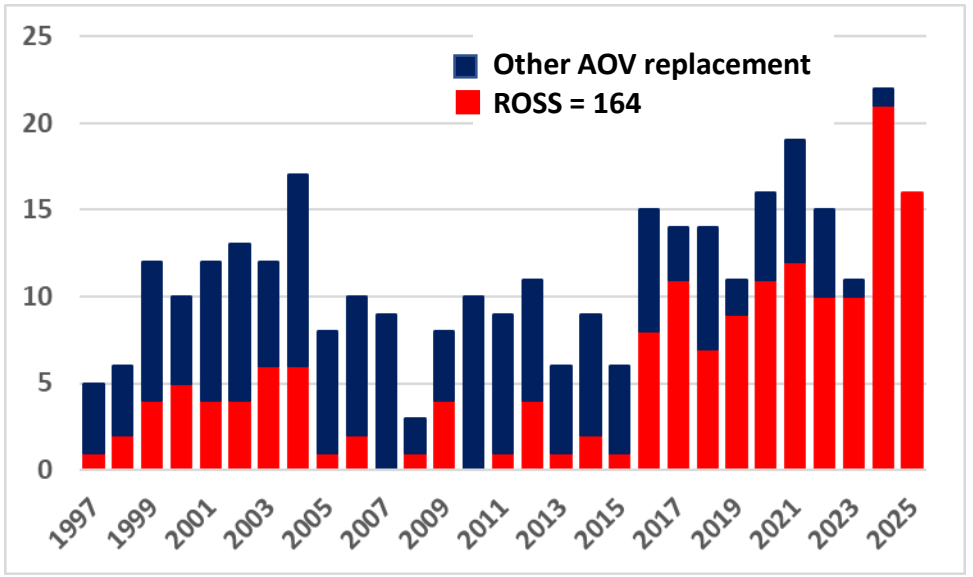
N = 164	Median	Range	IQR
Age	5.2 y	4 d - 25 y	5 m - 10.8 y
Weight (kg)	17.7	2.4 – 108.0	7.6 - 36.0
CPB (min)	219	154 - 372	203 -242
XC (min)	157	94 - 254	138 - 182

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

	N	%
Baloon valvuloplasty	98	81.7
Valvotomy	15	12.5
Valvotomy + cusp plasty	7	5.8
Total	**120**	**100.0**

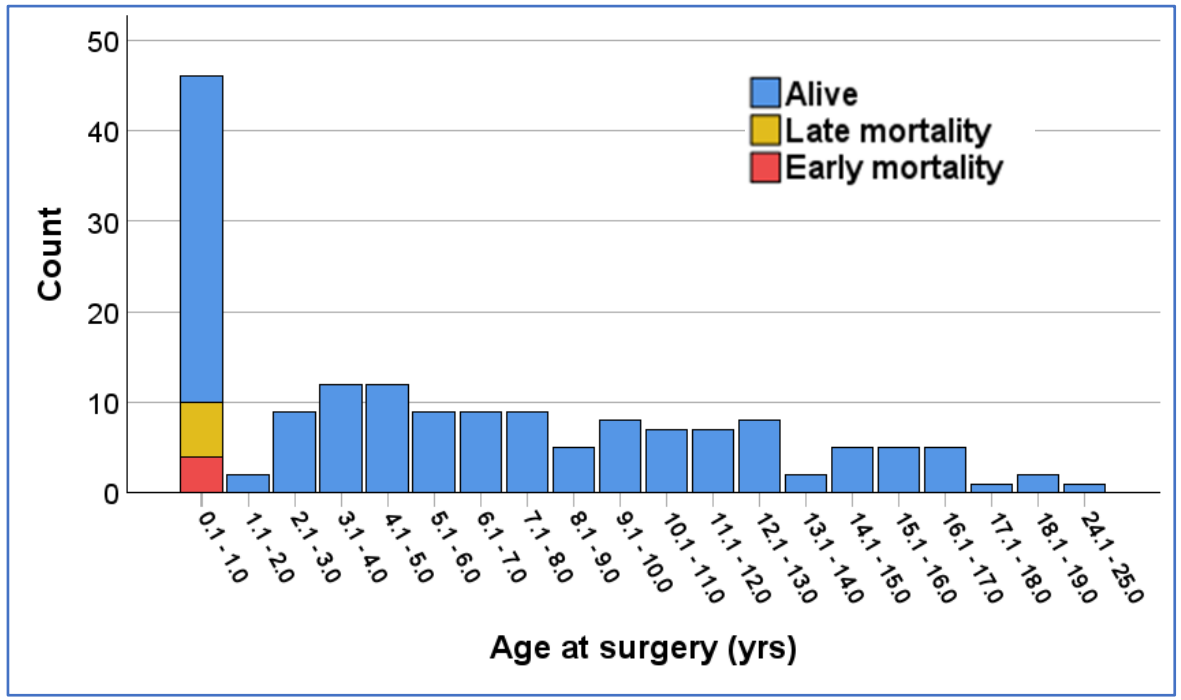
Procedures per year



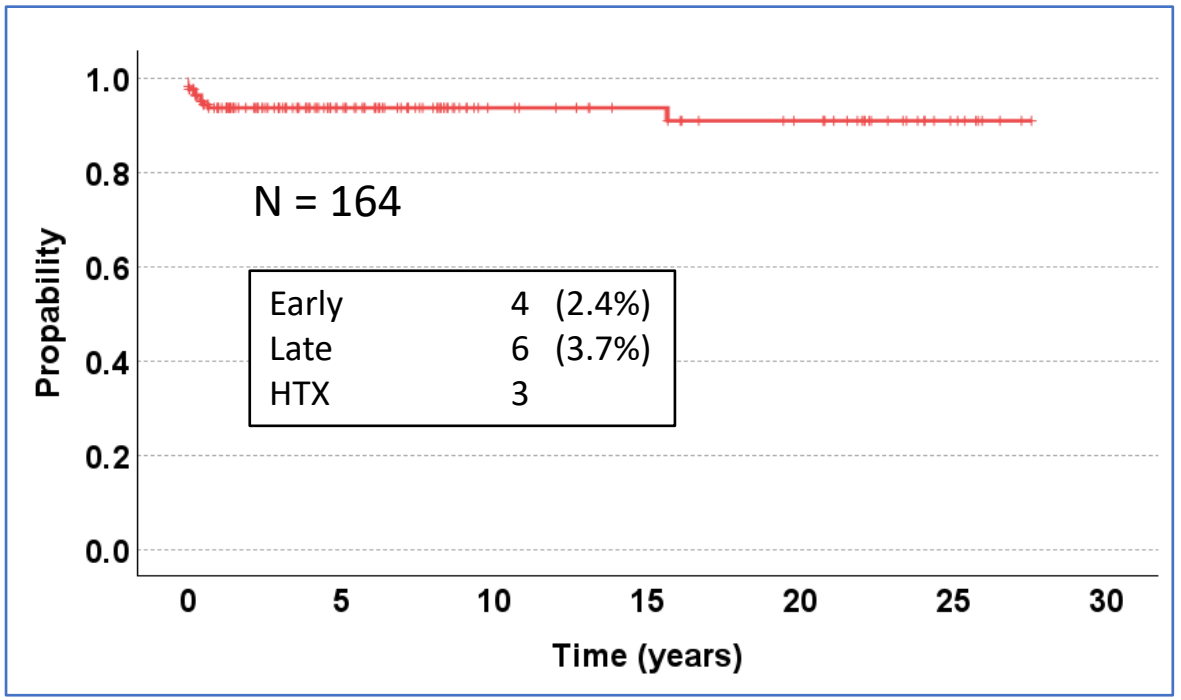


Results: survival/HTX

Mortality x Age at Ross procedure



Long term survival /HTX



Long-term follow-up

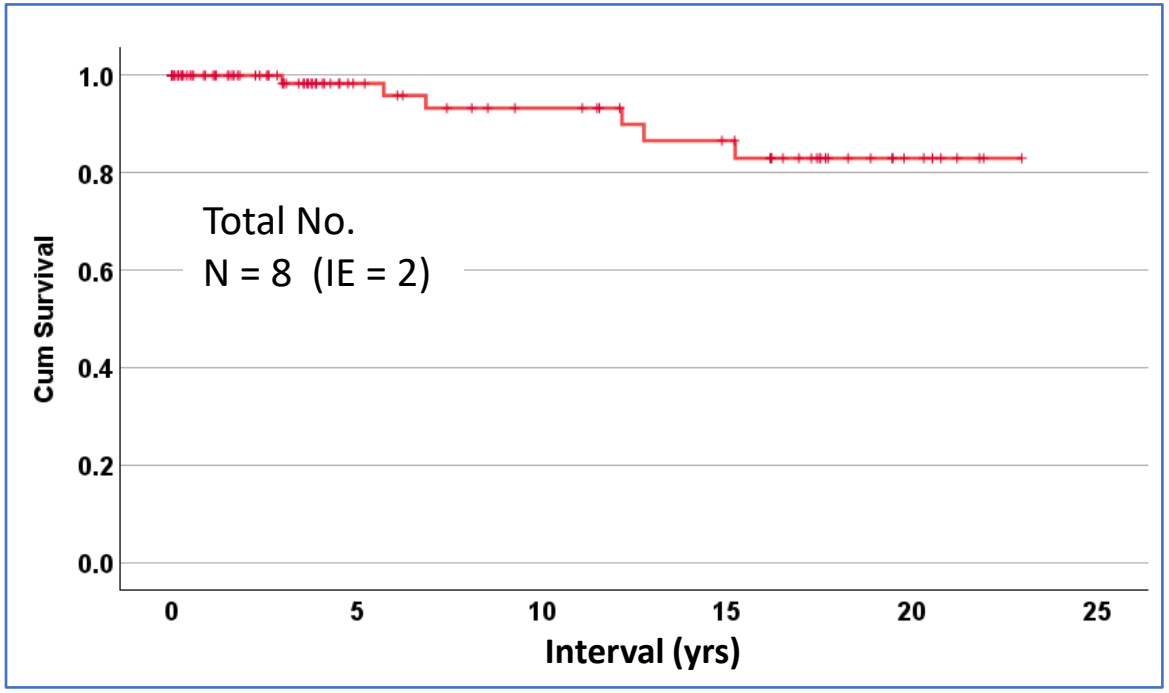
95 patients operated between 1997 - 2020

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

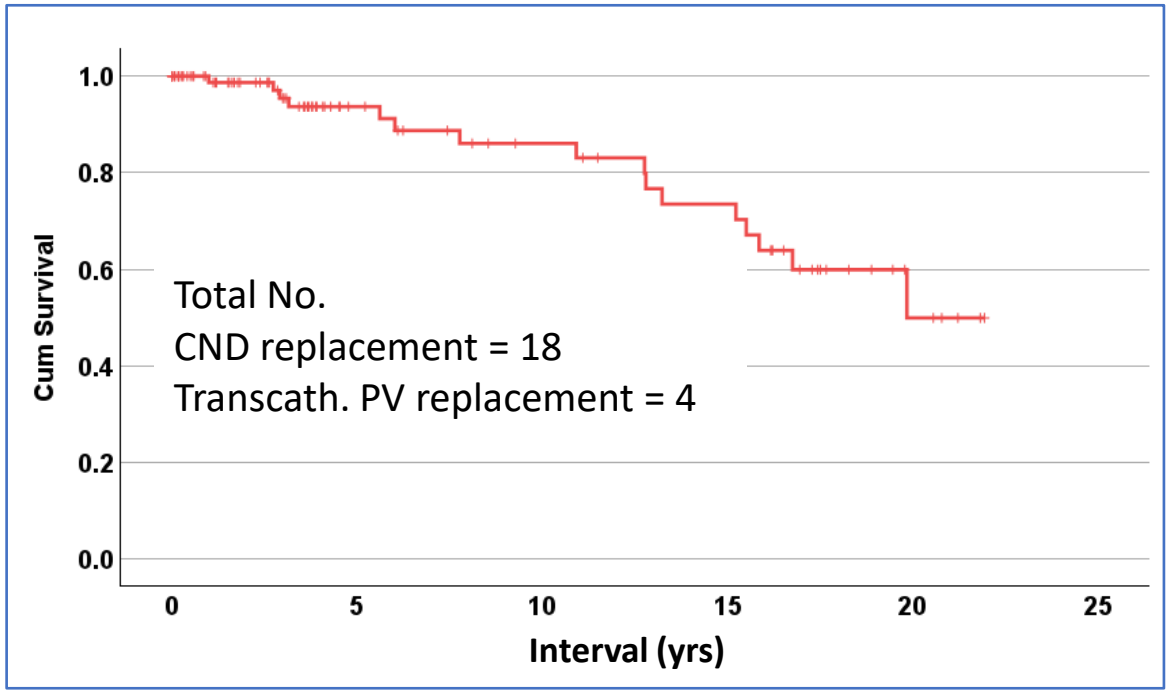
	N
RV-PA conduit replacement	18
Transcatheter pulmonary valve replacement	4
Conduit angioplasty	4
Aortic valve replacement	8
Heart transplant	3
Tricuspid valve replacement	2
Mitral valve replacement	2
Total	41

Reoperations, reinterventions

Freedom from neo-aortic valve replacement



Freedom from pulmonary revalvulation



Conclusions

- the Ross procedure is the only option for aortic valve replacement in newborns, infants and younger children
- the Ross procedure is the only option providing living substitute for aortic valve, (with potential to grow)
- combined with Konno procedure it allows LVOT obstruction relief at all age groups

Conclusions

- reinterventions mostly due to the conduit obstruction in the pulmonary position
- freedom from pulmonary revalvulation at 10/20 years - 86/50% in chirldren
- freedom from neo-aortic valve replacement at 10/20 years - 92/83%
- mortality occured only in newborn and infants