

Současné možnosti katetrizační léčby aortální stenózy

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Kardiologická klinika 3.LF UK a FN Královské Vinohrady

ČTVRTEK, 12. BŘEZNA 2026

12. – 13. března 2026, Hotel Nové Adalbertinum, Hradec Králové

27. SYMPOSIUM PS CHLOPENNÍ A VROZENÉ SRDEČNÍ VADY V DOSPĚLOSTI ČKS

Obsah

- Role balonkové aortální valvuloplastiky (BAV)
- TAVI v ČR v průběhu let
- TAVI a bikuspidální aortální chlopeň
- TAVI a degenerace SAVR
- TAVI a degenerace TAVI
- TAVI a dlouhodobá perspektiva
- Budoucnost ???

Balónková aortální valvuloplastika

- Možná krátkodobá cesta k rozhodnutí a stabilizaci

Balloon aortic valvotomy may be considered as a bridge to SAVR or TAVI in haemodynamically unstable patients, and (if feasible) in those with severe AS who require urgent high-risk NCS.

IIb

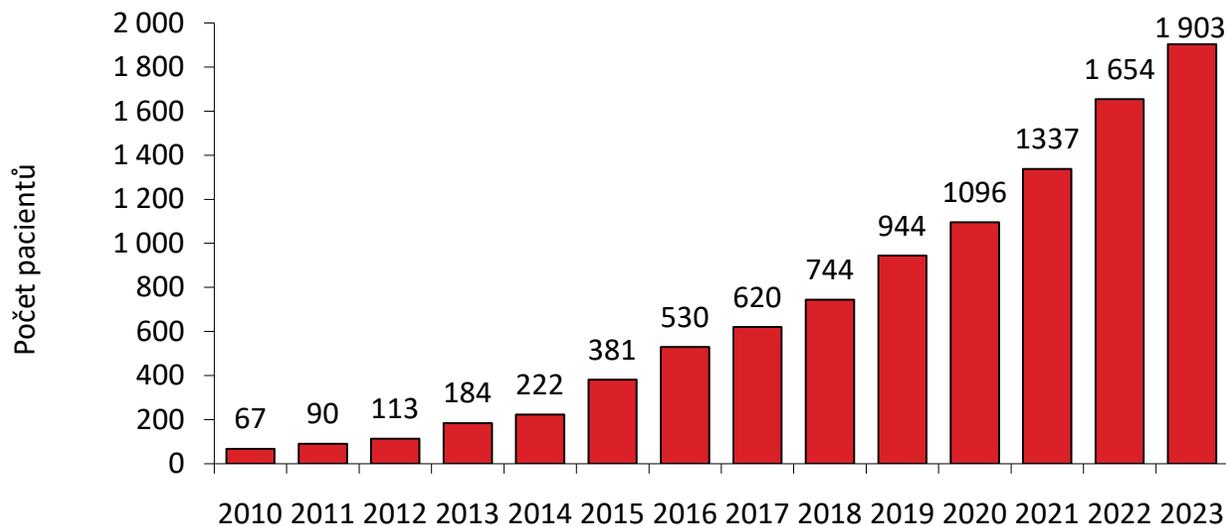
C

Complications		
	Pooled Percentage (%)	95% CI
Procedural mortality	1.94	1.39-2.59
Stroke	1.27	0.99-1.57
Major vascular events	4.77	3.18-6.66
Pacemaker implantation	1.89	1.23-2.69

Počet TAVI a demografické charakteristiky pacientů v ČR

Zdroj: NRHZZS 2010–2023; N = **9 887** , osoby s TAVI v letech 2010–2023

Počet TAVI v letech 2010–2023:

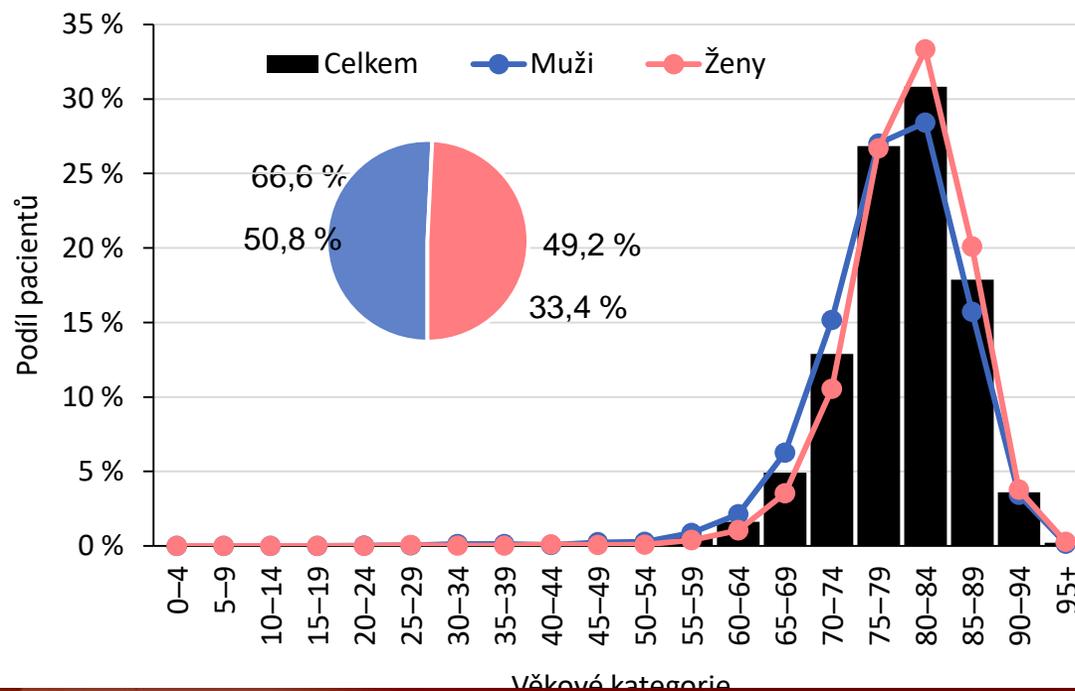


Roční počet provedených TAVI setrvale narůstá, Podíl mužů a žen je vyrovnaný, průměrný věk mužů je o 2 roky nižší než průměrný věk žen (78 vs, 80 let).

Věková struktura dle pohlaví pacientů TAVI (2010–2023):

	Počet	Věk	
		průměr (SD)	medián (IQR)
Celkem	9 887	79,2 ± 7,0	80 (75–84)
Muži	5 019	78,3 ± 7,5	79 (74–83)
Ženy	4 868	80,1 ± 6,4	81 (77–84)

Věková struktura pacientů TAVI

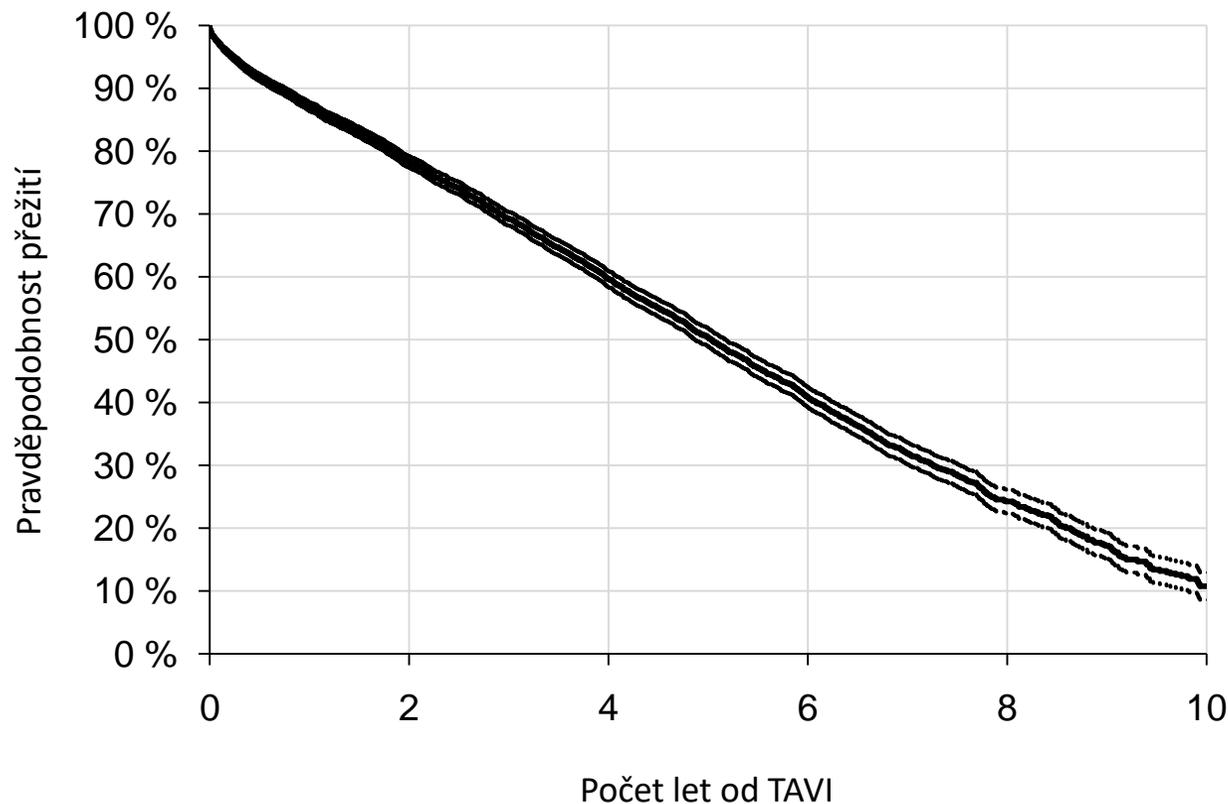


Přežití pacientů po TAVI

Zdroj: NRHZS 2010–2023

Pacienti s TAVI v letech 2010–2023 (N = 9 887):

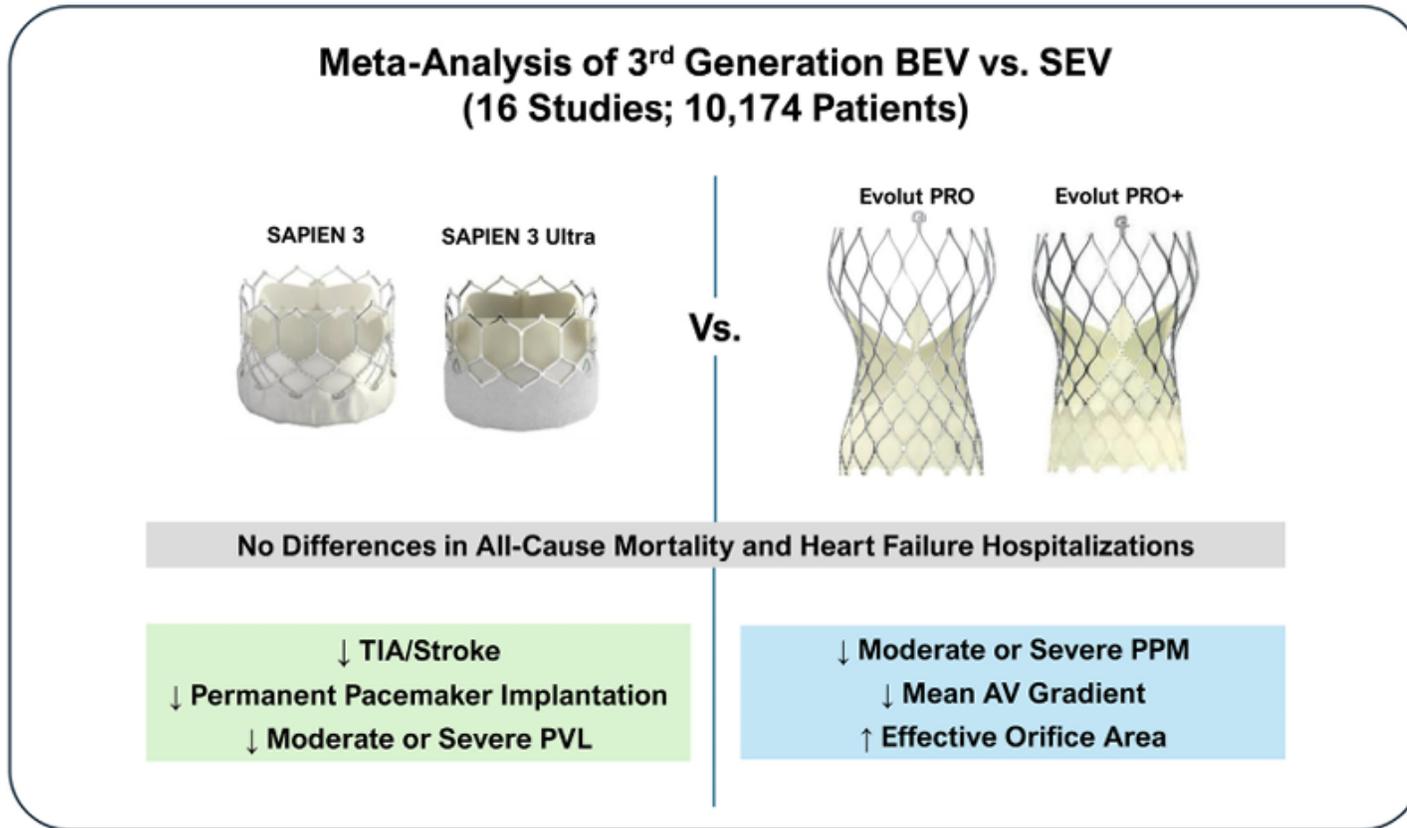
Délka přežití je hodnocena metodou Kaplan-Meiera, Pacient je sledován ode dne provedení TAVI do data úmrtí, Pokud nebylo úmrtí zaznamenáno, je pacient cenzorován k 31. 12. 2023.



Délka sledování	Pravděpodobnost přežití (95% interval spolehlivosti)
30 dní	97,4 % (97,0 %; 97,7 %)
1 rok	87,1 % (86,4 %; 87,7 %)
2 roky	78,3 % (77,4 %; 79,2 %)
3 roky	69,2 % (68,1 %; 70,3 %)
4 roky	59,6 % (58,4 %; 60,9 %)
5 let	50,4 % (48,9 %; 51,8 %)
6 let	40,9 % (39,3 %; 42,4 %)
7 let	31,9 % (30,1 %; 33,6 %)
8 let	24,3 % (22,4 %; 26,2 %)
9 let	17,2 % (15,2 %; 19,3 %)
10 let	10,8 % (8,6 %; 13,0 %)

Typy chlopenních protéz

S.A. Siddiqui et al. / Journal of the Society for Cardiovascular Angiography & Interventions 3 (2024) 102146



Individuální výběr chlopně

- Velikost anulu
- ICHS - Přístup do koronárních tepen
- Kalcifikace anulu a LVOT
- Horizontální aorta
- Věk pacienta

ESC Guidelines – bikuspidální chlopeň

TAVI is recommended in patients ≥ 70 years of age with tricuspid AV stenosis, if the anatomy is suitable.

I

A

TAVI may be considered for the treatment of severe BAV stenosis in patients at increased surgical risk, if the anatomy is suitable.

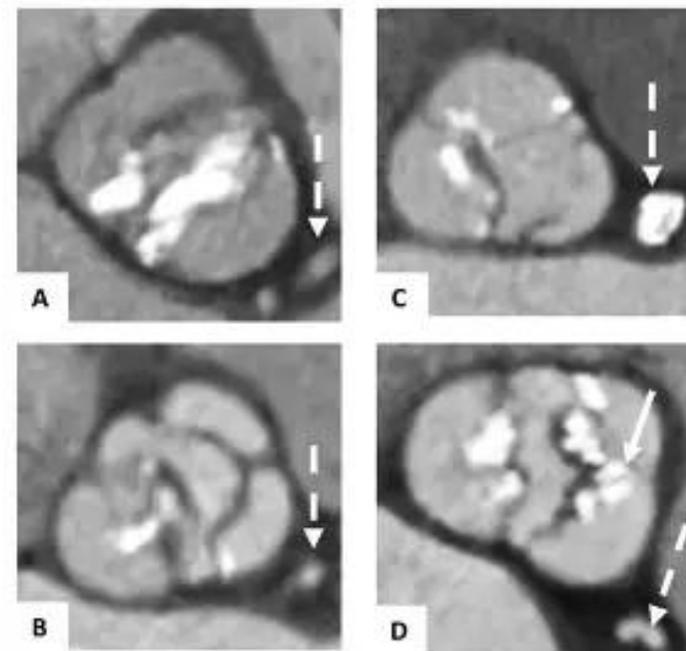
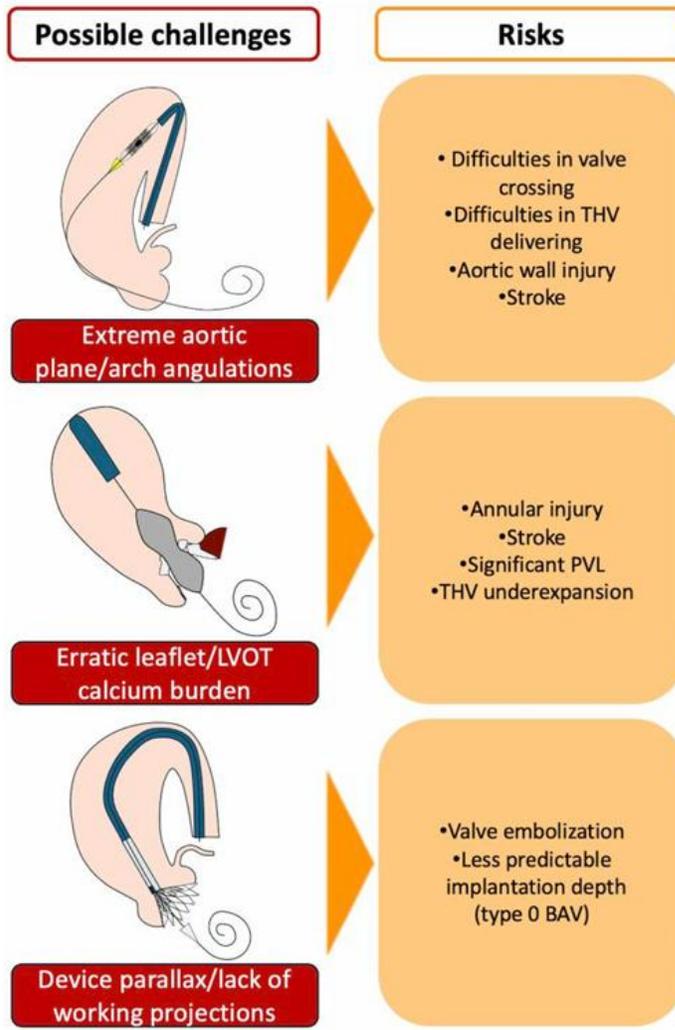
IIb

B

Pacienti s BAV nebyli zařazováni do RCT, Retrospektivní data z registrů

1 malá RCT NOTION-2

Bikuspidální aortální chlopeň



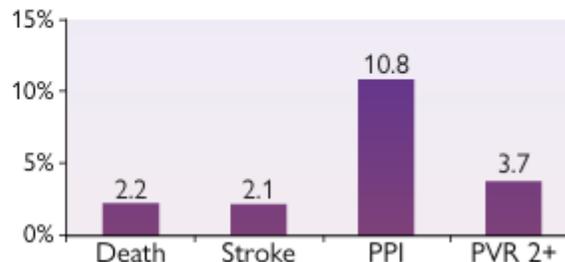
Bikuspidální aortální chlopeň

TAVI in bicuspid aortic valve disease

Pooled early outcomes

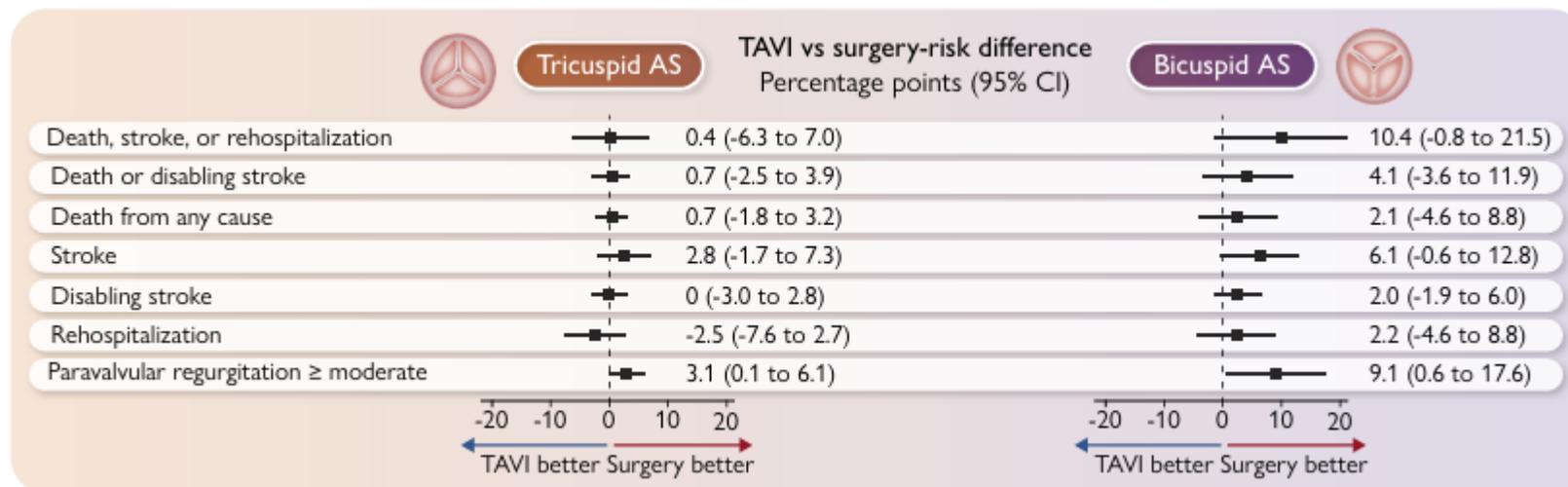


- 30 254 BAV patients
- 74.6 years old
- STS PROM 4.4%



Data z registrů

NOTION-2



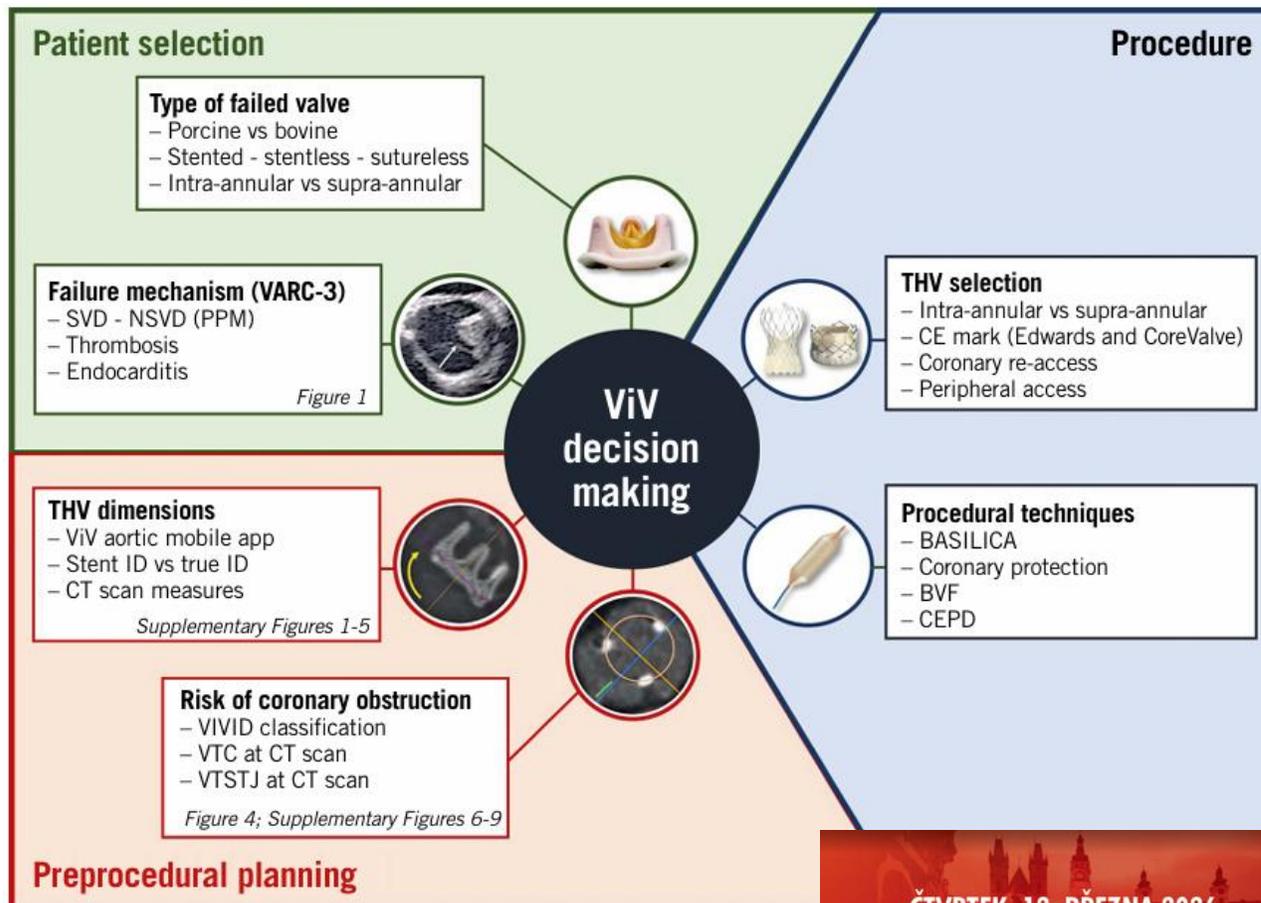
Barbanti, EHJ 2025
Jorgensen, EHJ 2024

TAVI in SAVR

Transcatheter transvenous mitral or tricuspid valve-in-valve implantation should be considered in patients with significant valve dysfunction at intermediate or high surgical risk, if the anatomy is suitable.

Ila

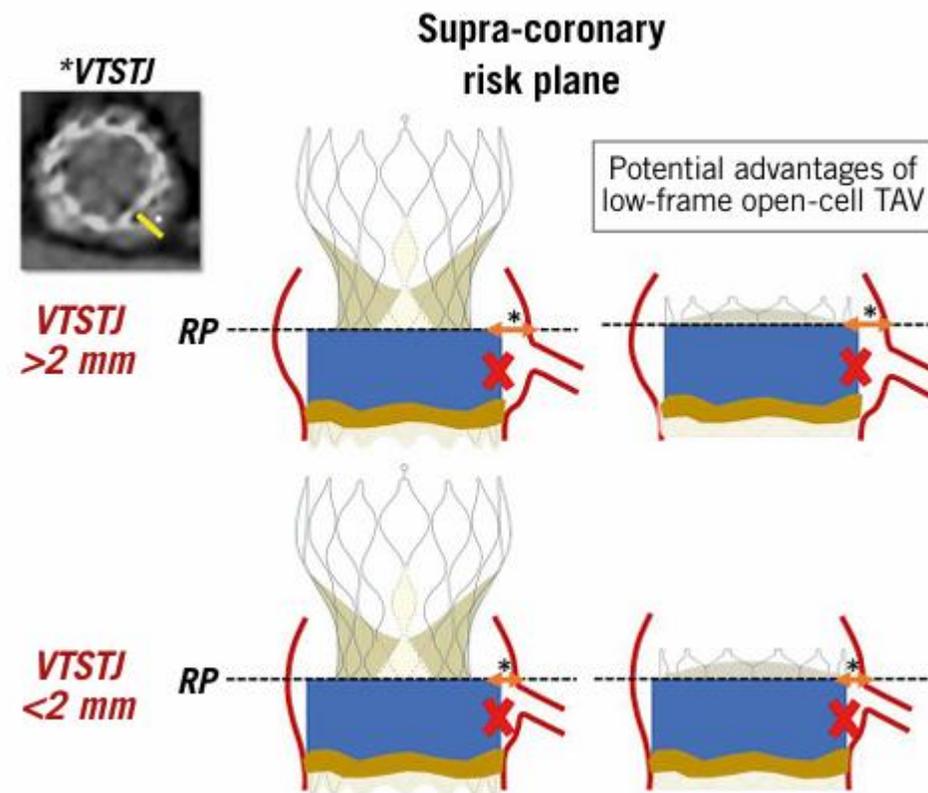
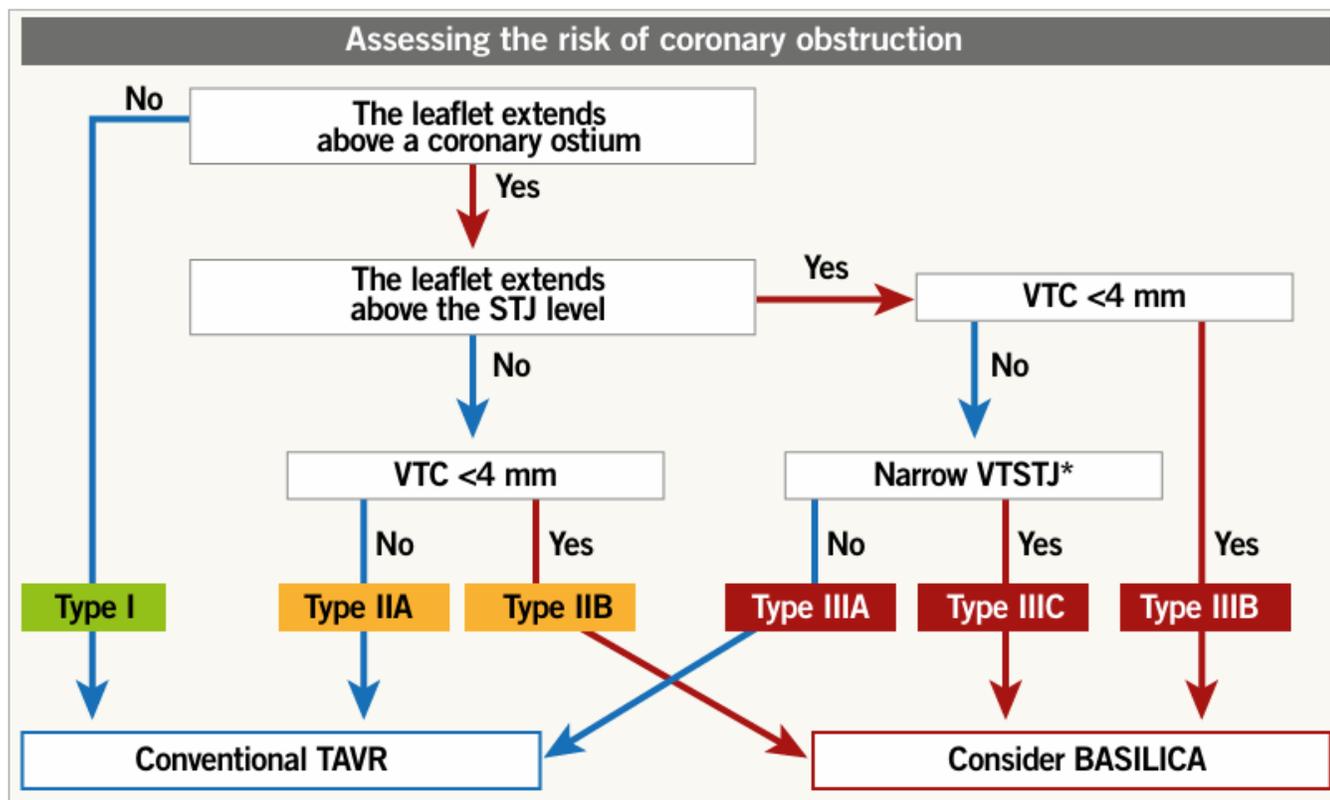
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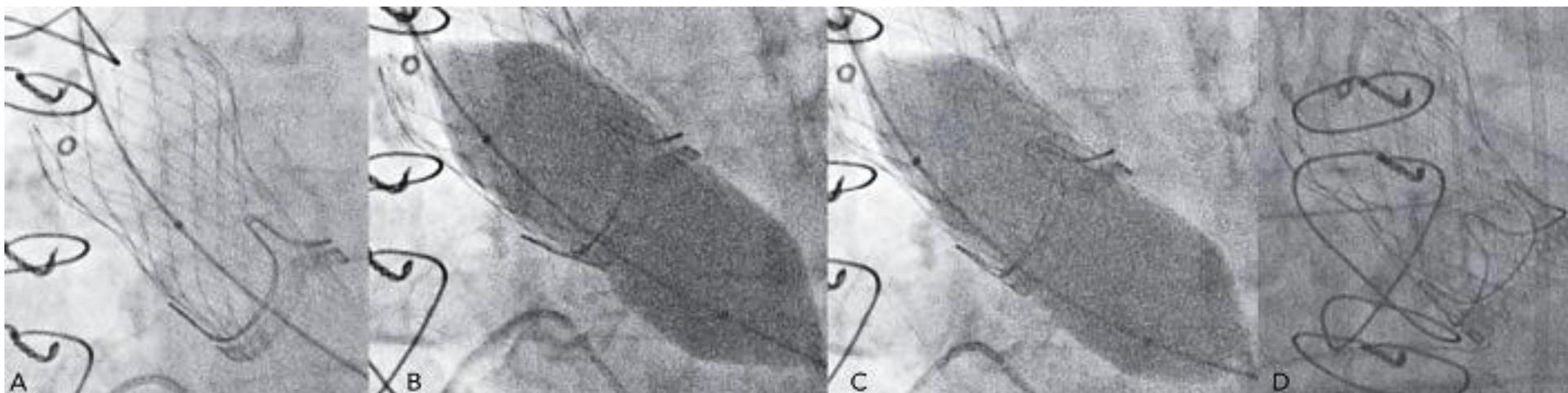
Zaměření na

- Riziko obstrukce koronárních tepen
- Možnost řešení reziduálního gradientu koronárních tepen

TAVI in SAVR – Riziko obstrukce koronárních tepen



TAVI in SAVR – Ballon valve fracture or remodelling



Redo TAVI (TAVI-in-TAVI)



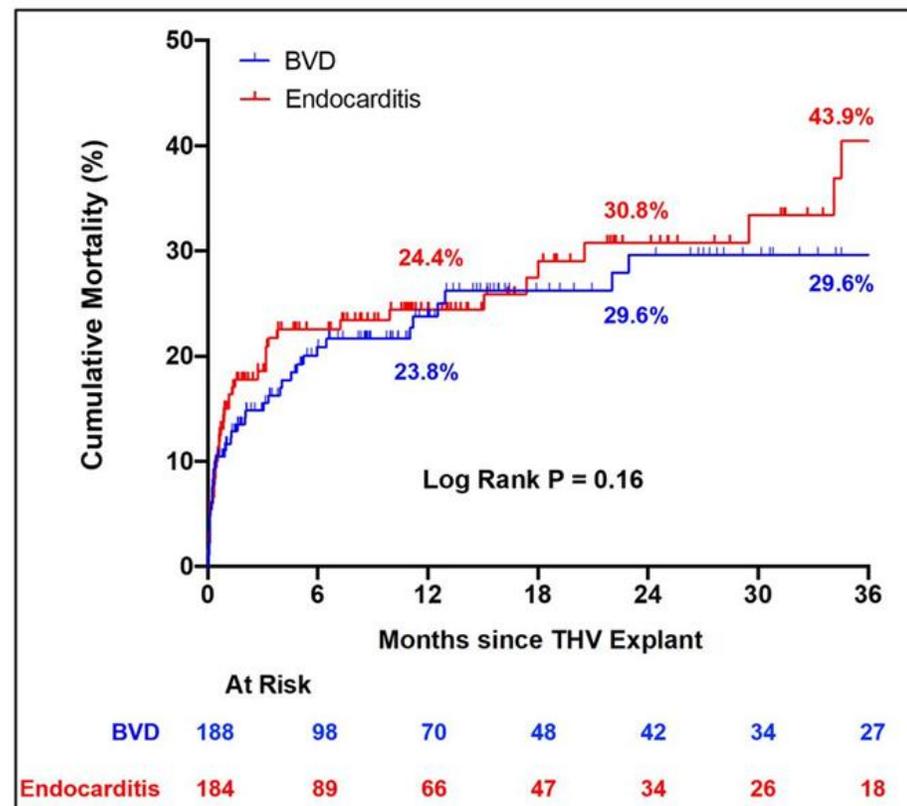
ESC

European Society of Cardiology
European Heart Journal (2024) 45, 2519–2532
<https://doi.org/10.1093/eurheartj/ehae292>

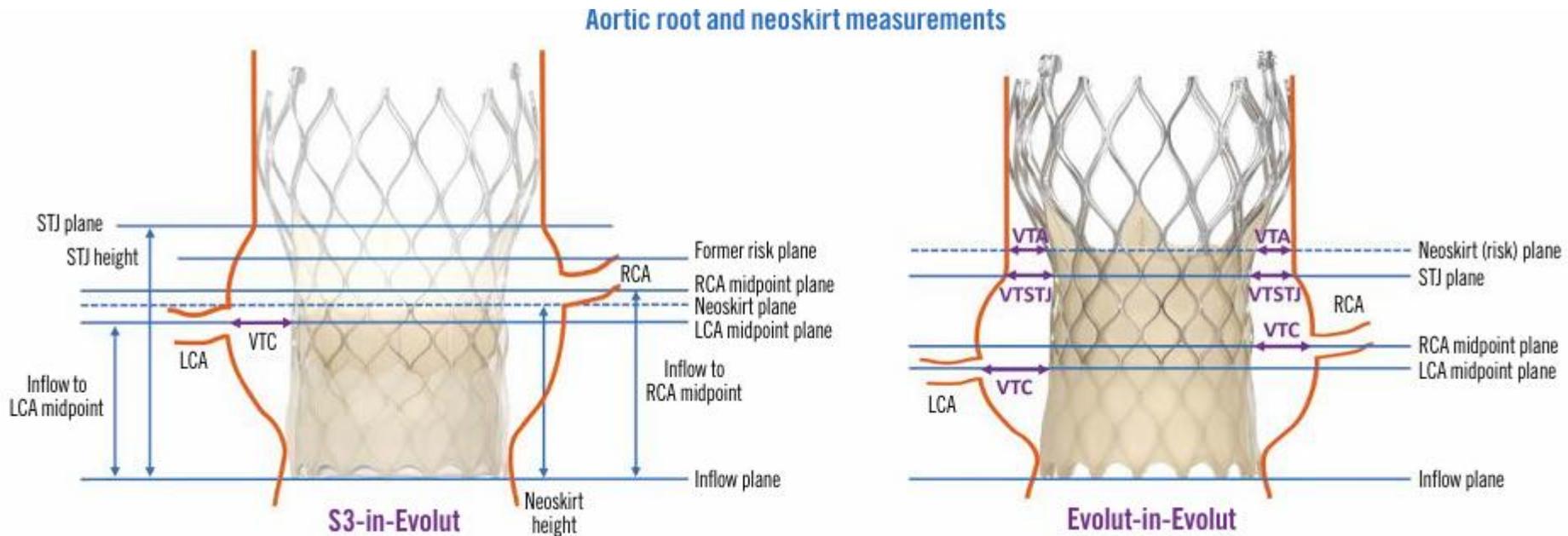
CLINICAL RESEARCH

Cardiac and vascular surgery

Transcatheter heart valve explant with infective endocarditis-associated prosthesis failure and outcomes: the EXPLANT-TAVR international registry



Redo TAVI (TAVI-in-TAVI)

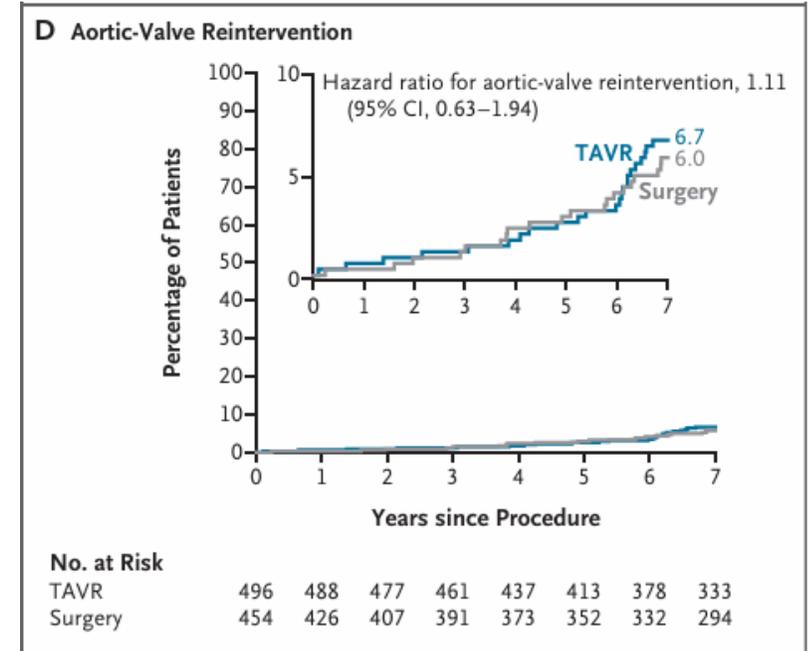
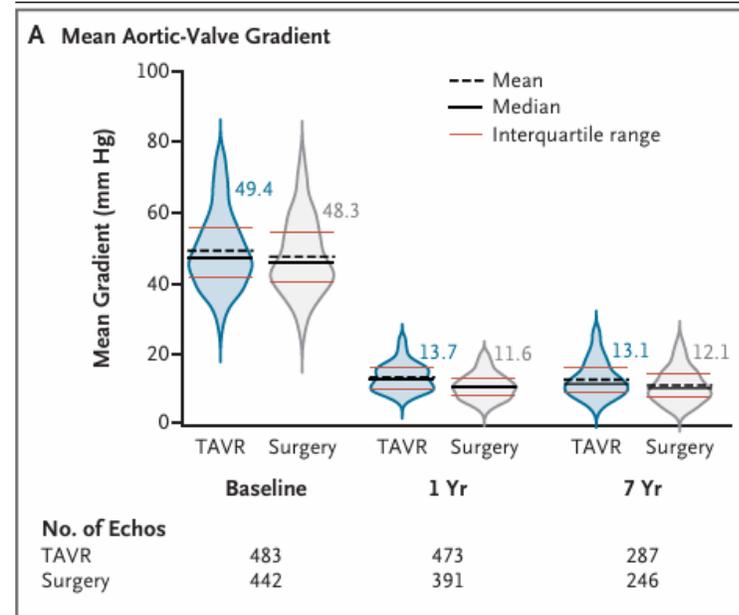
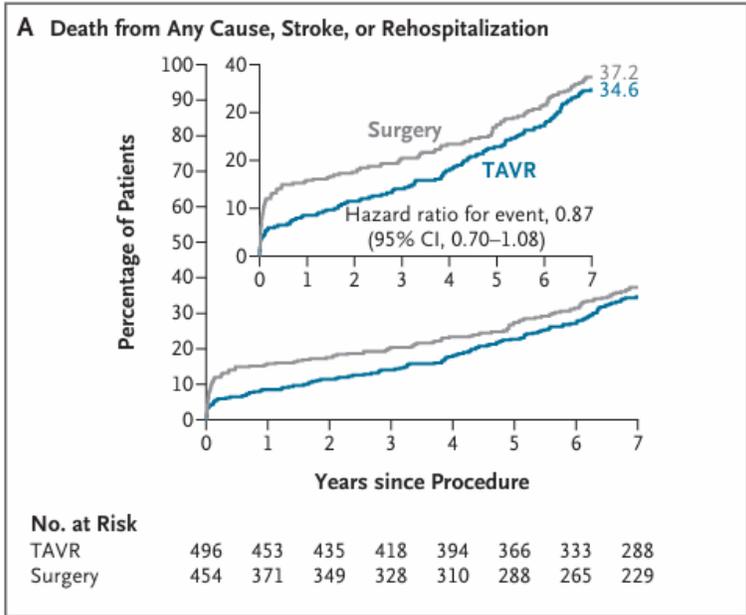


Grubb, EuroIntervention 2023

ORIGINAL ARTICLE

Transcatheter or Surgical Aortic-Valve Replacement in Low-Risk Patients at 7 Years

Martin B. Leon, M.D.,^{1,2} Michael J. Mack, M.D.,³ Philippe Pibarot, D.V.M., Ph.D.,⁴



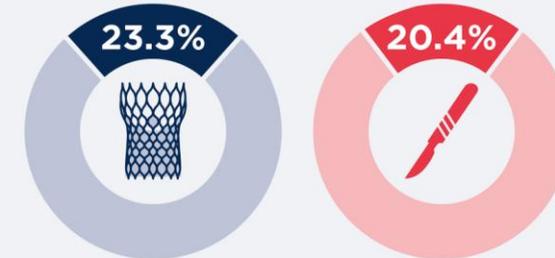
PVL regurgitace (mild, moderate, severe) – TAVI vs. SAVR - 17.7% vs. 29%

Six-Year Outcomes After Transcatheter vs Surgical Aortic Valve Replacement in Low-Risk Patients With Aortic Stenosis

John K. Forrest, MD,^a Steven J. Yakubov, MD,^b G. Michael Deeb, MD,^c Michael J. Reardon, MD,^d on behalf of the Evolut Low Risk Trial Investigators*

RESULTS

Composite endpoint of all-cause mortality or disabling stroke through 6 years



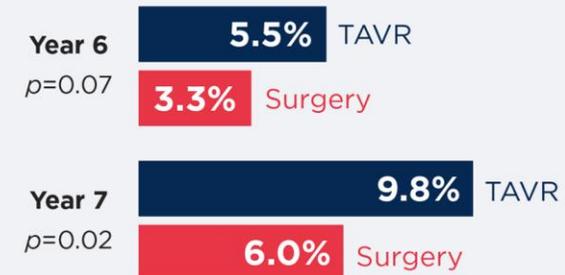
TAVR

Surgery

$p=0.43$

No significant difference

Reintervention—cumulative incidence



Year 6

$p=0.07$

Year 7

$p=0.02$

Další možnosti v budoucnosti...?

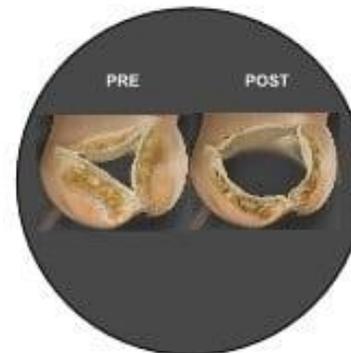
Leaflex™: Next Generation Aortic Valve Repair



Standalone non-implant catheter based solution for AS



Modifies leaflet calcification to improve mobility and flow through the valve

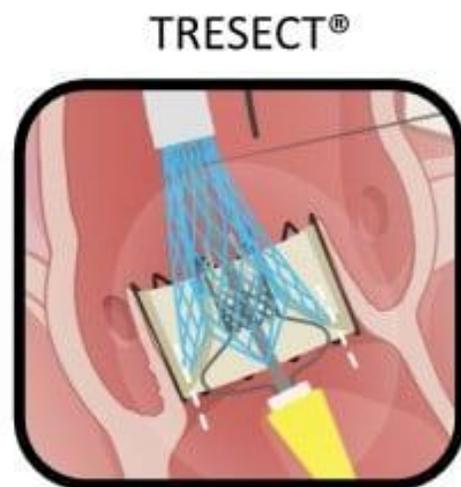


Safe, straightforward controlled procedure

Další možnosti v budoucnosti...?

Innovation to Address Unmet Needs

Key Enabling Technology to expand ViV and TAVR Market



+ 8,3%
CAGR



Valve-in-Valve Market

Extraction of bioprosthetic leaflets

Estimated to reach \$ 2B in 2034

Market
FOCUS

+ 3,9%
CAGR



TAVR Market

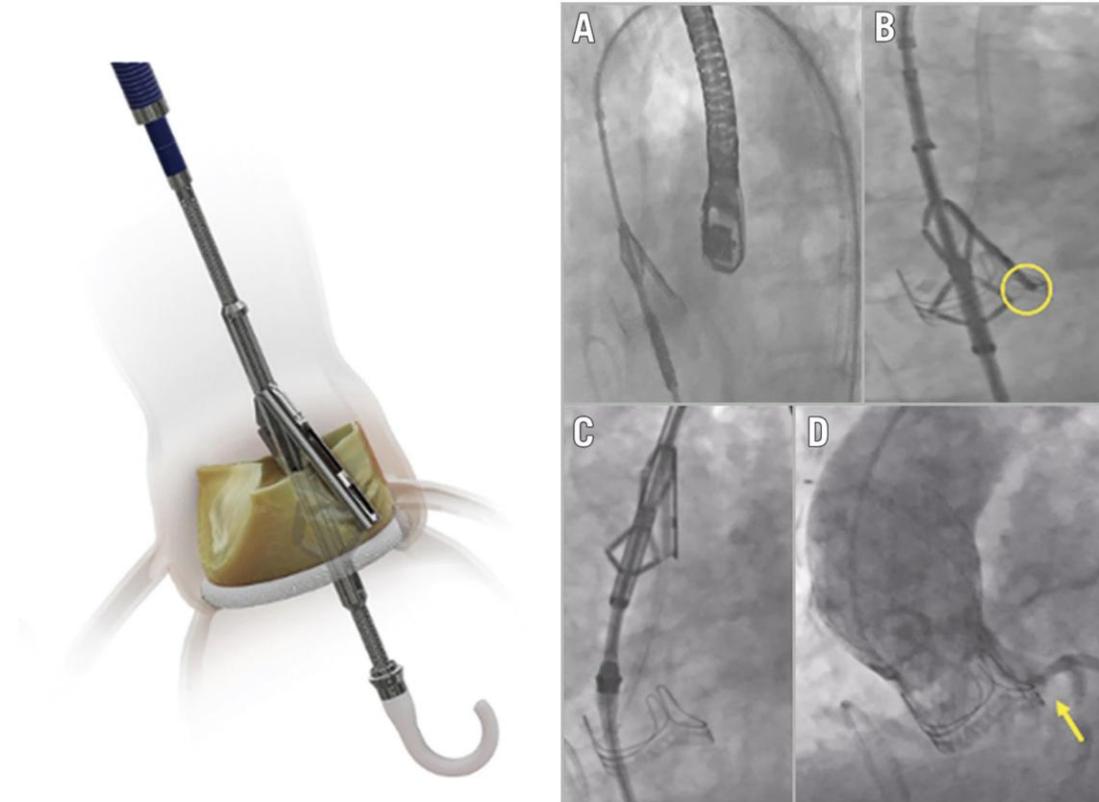
1. Extraction of native leaflets
2. Extraction of bicuspid leaflets

Estimated to reach \$ 10.7B in 2034

Další možnosti v budoucnosti...?

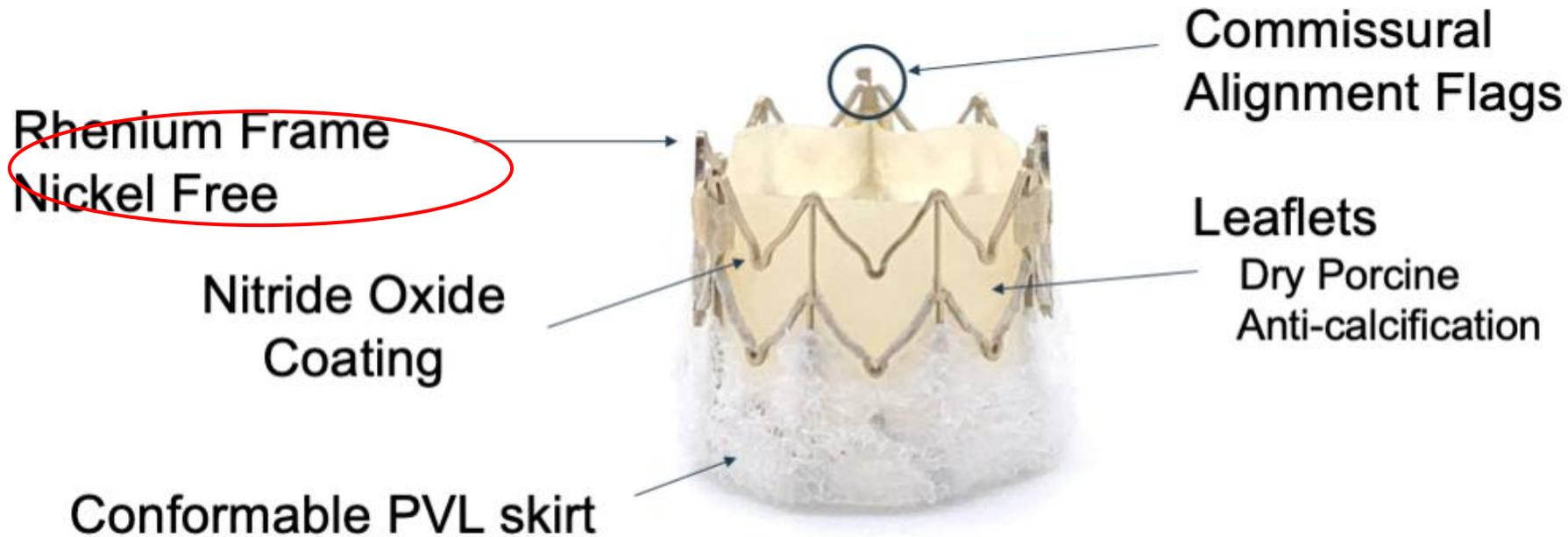
EuroIntervention

The ShortCut device



Tchéché D, et al. EuroIntervention 2022; DOI: 10.4244/EIJ-D-22-00344

Siegel: A Revolutionary THV System

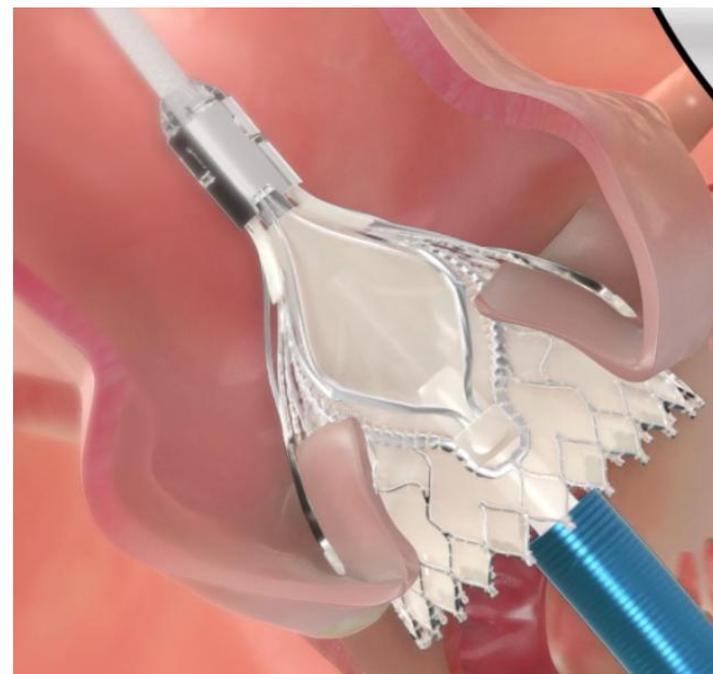


Delivered Crimped On Balloon Through 8 Fr Expandable Sheath

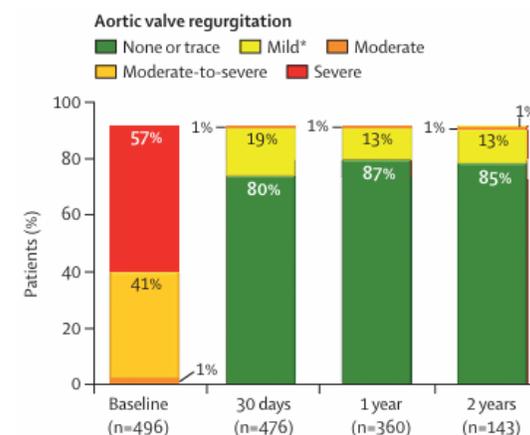
Transcatheter aortic valve implantation with the Trilogy valve for symptomatic native aortic regurgitation (ALIGN-AR): a pivotal, multicentre, single-arm, investigational device exemption study



Raj R Makkar, Vinod H Thourani, Torsten P Vahl, Pradeep K Yadav, James M McCabe, Isaac George, Lowell Satler, Stan Chetcuti, David V Daniels,



	1 year (n=492)		2 years (n=367)	
	Events, n	Event rate, % (95% CI)	Events, n	Event rate, % (95% CI)
All-cause death	38	7.8% (5.4-10.2)	53	13.3% (9.8-16.8)
Cardiac death	24	4.9% (3.0-6.8)	28	6.5% (4.1-8.9)
Non-cardiac death	11	2.3% (1.0-3.7)	22	6.6% (3.8-9.4)
Unknown cause death	3	0.7% (0.0-1.6)	3	0.7% (0.0-1.6)
New permanent pacemaker implantation*	114	27.2% (22.9-31.5)	115	27.7% (23.4-32.1)
Stroke	23	4.8% (2.9-6.7)	25	5.6% (3.4-7.8)



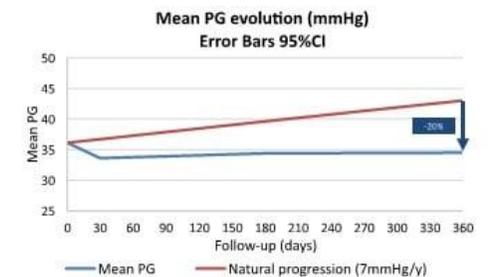
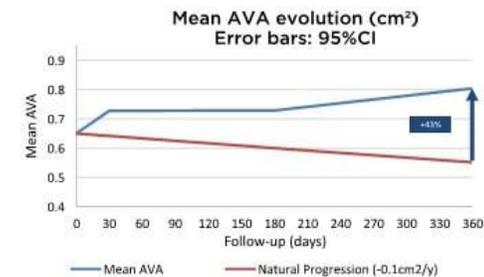
Nemohou intervence provádět všichni...?



VALVOSOFT CLINICAL STUDIES: HEMODYNAMIC RESULTS AT 12 MONTHS

Pooled study data (12 months follow-up)

- AVA increase of 10% compared to baseline, 43% compared to Natural Progression¹
- Mean pressure gradient decrease by 7% compared to baseline, 20% compared to Natural Progression¹



PCR london VALVES

¹Prosperi-Porta G., Archives of Cardiovascular Diseases 2023

pcrlondonvalves.com