Aortální patologie – máme společný cíl

TAVR/SAVR u pacientů s nízkým rizikem

Limitace SAVR

..z pohledu intervenčního kardiologa ☺

Petr Kala

ČAIK a Interní kardiologická klinika FN Brno a LF MU

2.3.2023

A Decade of Randomized Clinical Trials

Low Risk

Intermediate Risk

High Risk

Extreme Risk

Balloon Expandable TAVR

ORIGINAL ARTICLE

Transcatheter Aortic-Valve Replacement with a Balloon-Expandable Valve in Low-Risk Patients

M.J. Mack, M.B. Leon, V.H. Thourani, R. Makkar, S.K. Kodali, M. Russo, S.R. Kapadia, S.C. Malaisrie, D.J. Cohen, P. Pibarot, J. Leipsic, R.T. Hahn, P. Blanke, M.R. Williams, J.M. McCabe, D.L. Brown, V. Babaliaros, S. Goldman, W.Y. Szeto, P. Genereux, A. Pershad, S.J. Pocock, M.C. Alu, J.G. Webb, and C.R. Smith, for the PARTNER 3 Investigators*

D. Craig Miller, M.D., Howard C. Herrmann, M.D., Darshan Doshi, M.D., David J. Cohen, M.D., Augusto D. Pichard, M.D., Samir Kapadia, M.D., Todd Dewey, M.D., Vasilis Babaliaros, M.D., Wilson Y. Szeto, M.D., Mathew R. Williams, M.D., Dean Kereiakes, M.D., Alan Zajarias, M.D., Kevin L. Greason, M.D., Brian K. Whisenant, M.D., Robert W. Hodson, M.D., Jeffrey W. Moses, M.D., Alfredo Trento, M.D., David L. Brown, M.D., William F. Fearon, M.D., Philippe Pibarot, D.V.M., Ph.D., Rebecca T. Hahn, M.D., Wael A. Jaber, M.D., William N. Anderson, Ph.D., Maria C. Alu, M.M., and John G. Webb, M.D., for the PARTNER 2 Investigators*

Craig R. Smith, M.D., Martin B. Leon, M.D., Michael J. Mack, M.D., D. Craig Miller, M.D., Jeffrey W. Moses, M.D., Lars G. Svensson, M.D., Ph.D., E. Murat Tuzcu, M.D., John G. Webb, M.D., Gregory P. Fontana, M.D., Raj R. Makkar, M.D., Mathew Williams, M.D., Todd Dewey, M.D., Samir Kapadia, M.D., Vasilis Babaliaros, M.D., Vinod H. Thourani, M.D., Paul Corso, M.D., Augusto D. Pichard, M.D., Joseph E. Bavaria, M.D., Howard C. Herrmann, M.D., Jodi J. Akin, M.S., William N. Anderson, Ph.D., Duolao Wang, Ph.D., and Stuart J. Pocock, Ph.D., for the PARTNER Trial Investigators*

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Self-Expanding TAVR

ORIGINAL ARTICLE

Transcatheter Aortic-Valve Replacement with a Self-Expanding Valve in Low-Risk Patients

Jeffrey J. Popma, M.D., G. Michael Deeb, M.D., Steven J. Yakubov, M.D., Mubashir Mumtaz, M.D., Hemal Gada, M.D., Daniel O'Hair, M.D., Tanvir Bajwa, M.D., John C. Heiser, M.D., William Merhi, D.O., Neal S. Kleiman, M.D., Judah Askew, M.D., Paul Sorajja, M.D., Joshua Rovin, M.D., Stanley J. Chetcuti, M.D., David H. Adams, M.D., Paul S. Teirstein, M.D., George L. Zorn, III, M.D., John K. Forrest, M.D., Didier Tchétché, M.D., Jon Resar, M.D., Antony Walton, M.D., Nicolo Piazza, M.D., Ph.D., Basel Ramlawi, M.D., Newell Robinson, M.D., George Petrossian, M.D., Thomas G. Gleason, M.D., Jae K. Oh, M.D., Michael J. Boulware, Ph.D., Hongyan Qiao, Ph.D., Andrew S. Mugglin, Ph.D., and Michael J. Reardon, M.D., for the Evolut Low Risk Trial Investigators*

J. Heiser, R. Lange, W. Merhi, J.K. Oh, P.S. Olsen, N. Piazza, M. Williams, S. Windecker, S.J. Yakubov, E. Grube, R. Makkar, J.S. Lee, J. Conte, E. Vang, H. Nguyen, Y. Chang, A.S. Mugglin, P.W.J.C. Serruys, and A.P. Kappetein, for the SURTAVI Investigators*

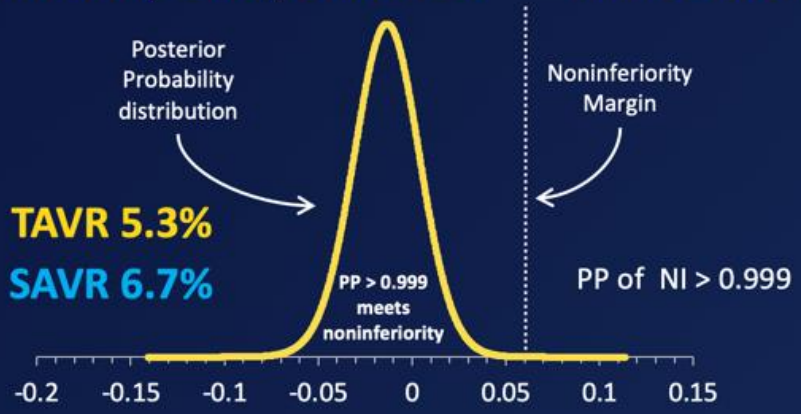
Neal S. Kleiman, M.D., Stan Chetcuti, M.D., John Heiser, M.D., William Merhi, D.O., George Zorn, M.D., Peter Tadros, M.D., Newell Robinson, M.D., George Petrossian, M.D., G. Chad Hughes, M.D., J. Kevin Harrison, M.D., John Conte, M.D., Brijeshwar Maini, M.D., Mubashir Mumtaz, M.D., Sharla Chenoweth, M.S., and Jae K. Oh, M.D., for the U.S. CoreValve Clinical Investigators*

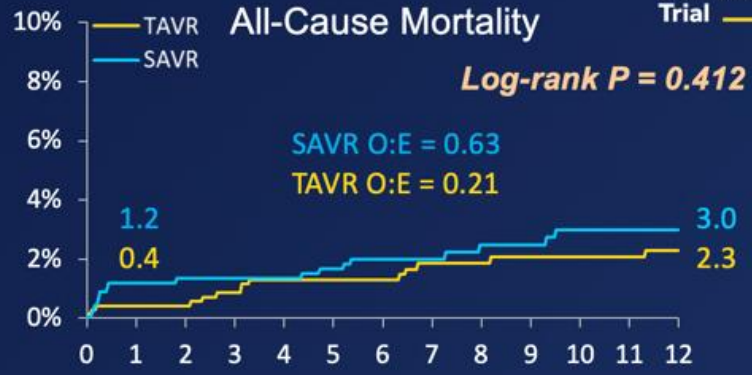
Maurice Buchbinder, MD,§§ G. Michael Deeb, MD,‖‖ Blasé Carabello, MD,¶¶ Patrick W. Serruys, MD, PhD,## Sharla Chenoweth, MS,*** Jae K. Oh, MD,††† for the CoreValve United States Clinical Investigators

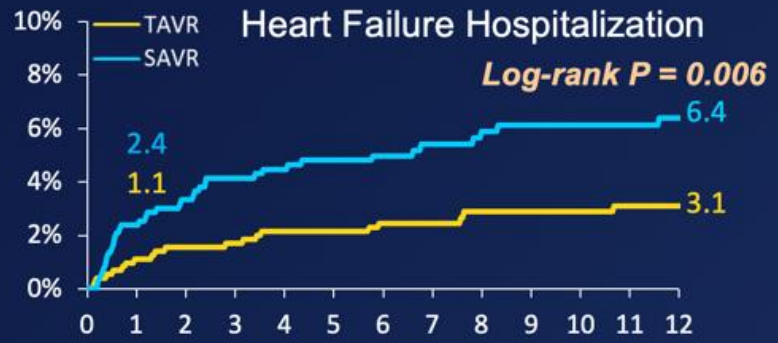
Boston, Massachusetts; New York, New York; Houston, Texas; Columbus, Ohio; Indianapolis, Indiana; Durham, North Carolina; Detroit and Ann Arbor, Michigan; Pittsburgh, Pennsylvania; Baltimore, Maryland; Palo Alto, California; Rotterdam, the Netherlands; and Minneapolis and Rochester, Minnesota

Primary Endpoint Met --- TAVR is noninferior to SAVR

Evolut™ Low Risk Trial





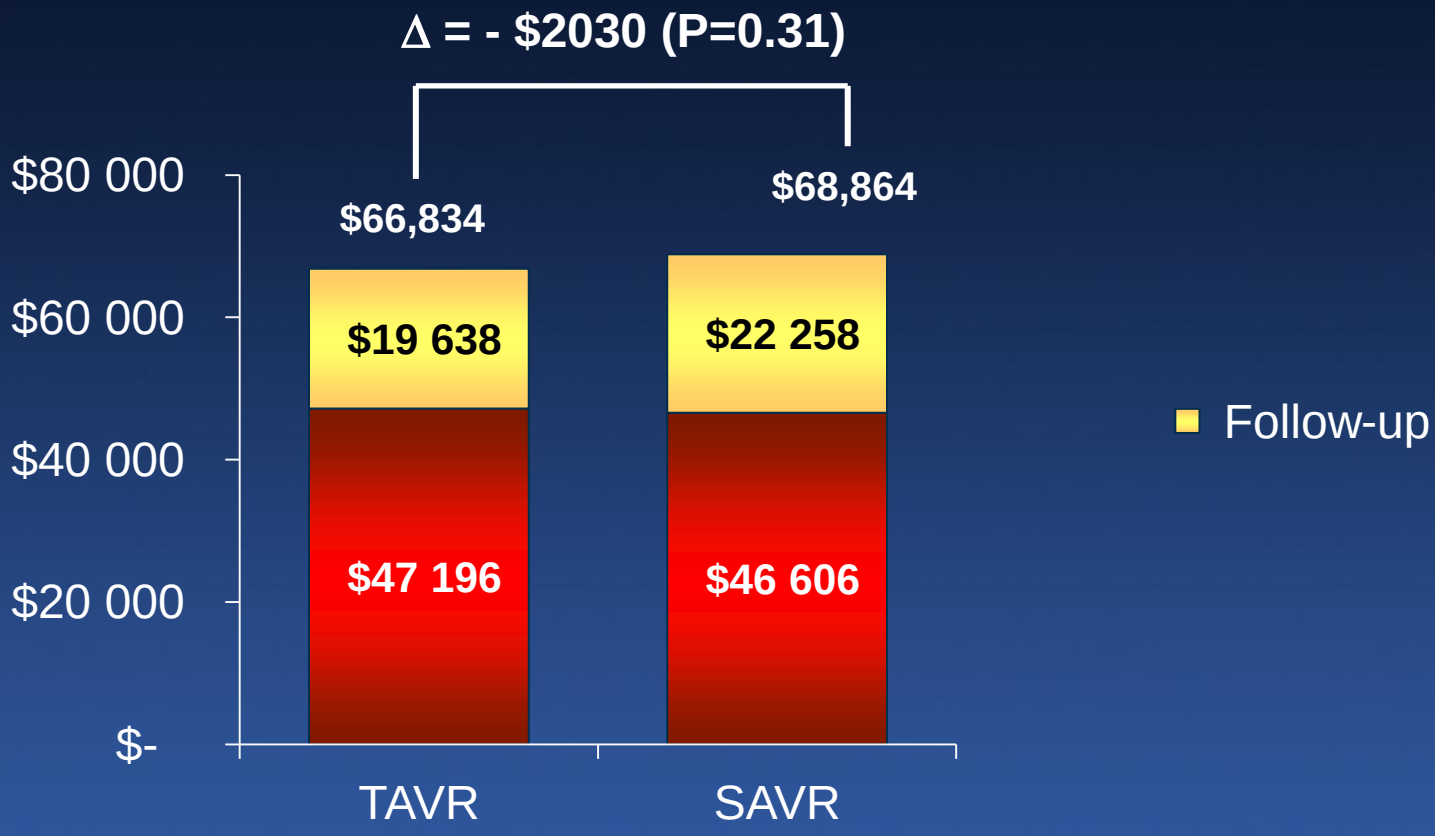


Popma et al NEJM 2019 380:1706-1715

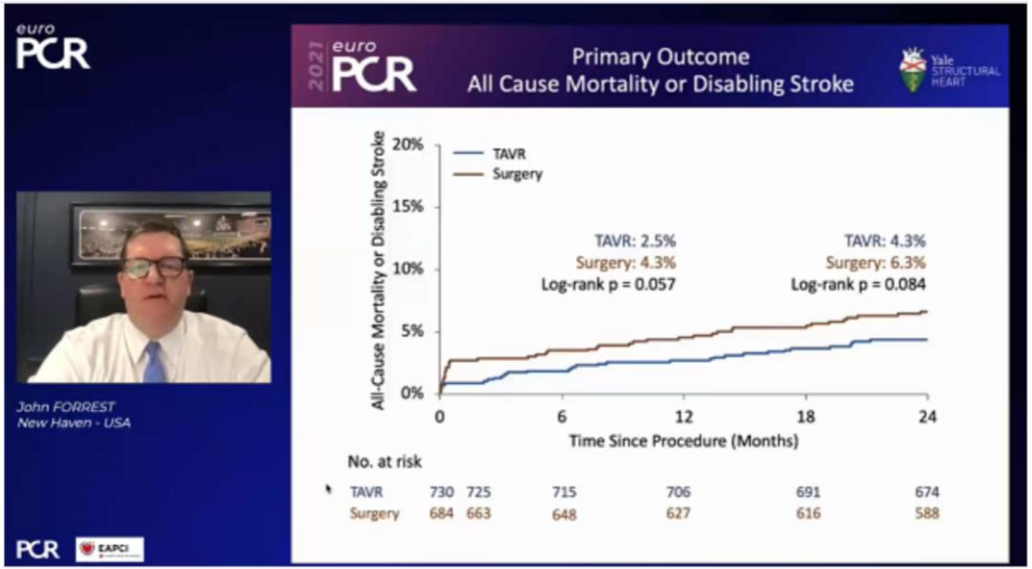
Index Hospitalization: Resource Use

	TAVR	*SAVR*	*P-Value*
Procedure duration (minutes)	59 ± 37	208 ± 62	<0.001
Length of stay (days)	1.9 ± 1.6	6.5 ± 3.7	<0.001
ICU	0.8 ± 0.8	2.7 ± 2.8	<0.001
Non-ICU	1.2 ± 1.6	3.8 ± 2.6	<0.001
Discharge Disposition			<0.001
Home/Self-Care	95.9%	73.1%	
Home w/ Home Health	2.9%	11.5%	
Rehab/SNF	0.8%	14.5%	

Total 2-Year Costs



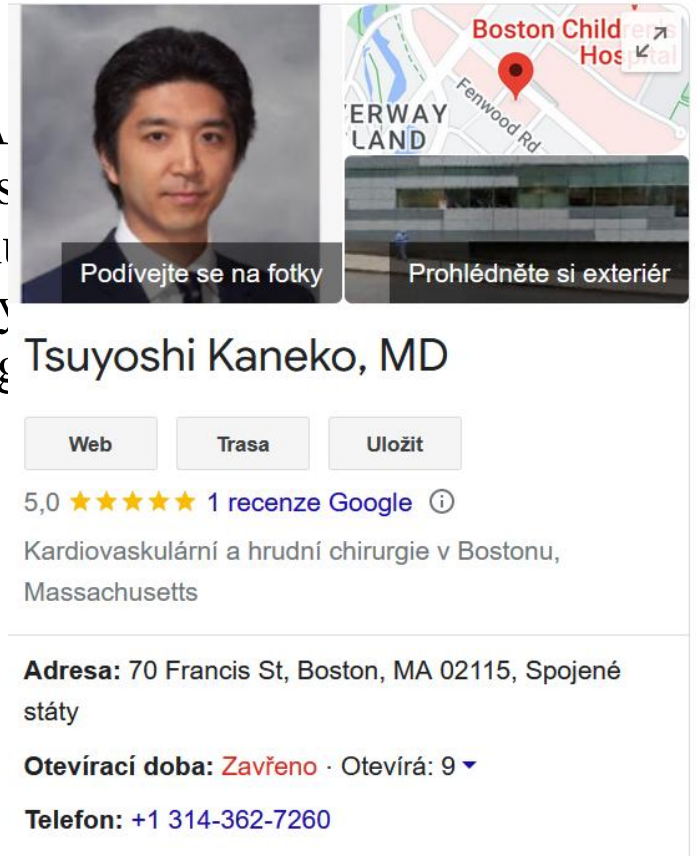
EVOLUT low-risk – 2 leté sledování



- Lehký **PVL** po implantaci byl 26.6% po TAVI a 2.6% po **SAVR** (*P* < 0.001).
- **PPM** - Patient-prosthesis mismatch **TAVI** lehký-střední 10% vs 24% po SAVR (*P* < 0.001).
- *Pozn. Pacienti s bikuspidní chlopní nebo anatomií nevhodnou k TAVI byli vyloučeni.*

Kontroverze studií TAVI vs SAVR?

- TCTMD news … the treatment protocols for SA
  flexibility when it came to adjunctive procedures
  operating room, we were allowed to treat it becau
  do," said T. Kaneko. "Surgeons are always told y
  when you're in the operating room. There's not g

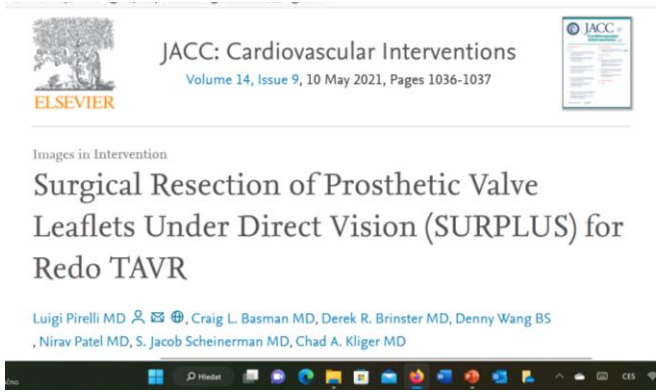


- U pacientů s nízkým rizikem je SAVR vs TAVI spojena s vyšším rizikem úmrtí a úmrtí/CMP krátce po operaci a rozdíl je eliminován v delším sledování.

Studie PARTNER 3, Evolut Low-Risk, NOTION, a UK TAVI

- **Častěji po (první) [redacted]**
  - Nově FISI
  - Velké krvácení
  - AKI
- **Častěji po (první) [redacted]**
  - Nově PM
  - Cévní komplikace
  - PVL

Low risk většinou = nižší věk..a dlouhý život před sebou..s velkou pravděpodobností více procedur.. SAVR/SAVR/SAVR? SAVR/TAVI? TAVI/SAVR? Atd..



JACC: Cardiovascular Interventions

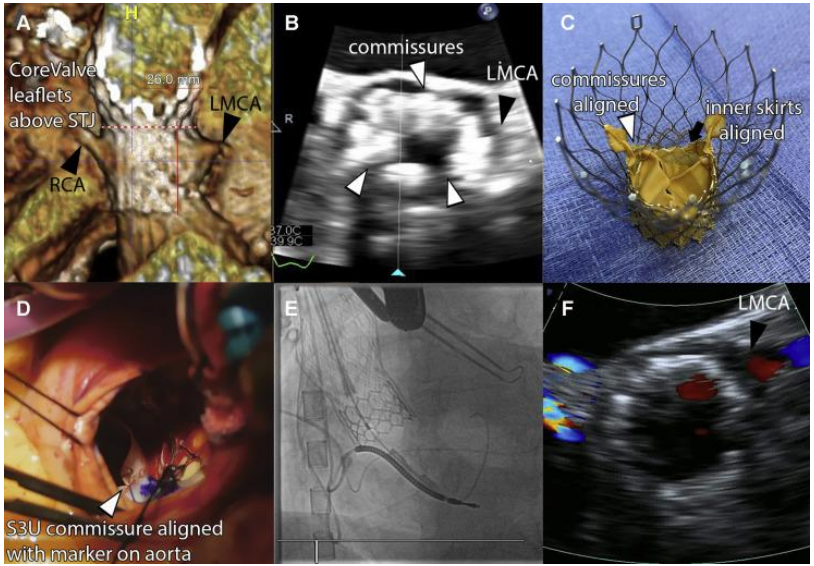
Volume 14, Issue 9, 10 May 2021, Pages 1036-1037

ELSEVIER

Images in Intervention

Surgical Resection of Prosthetic Valve Leaflets Under Direct Vision (SURPLUS) for Redo TAVR

Luigi Pirelli MD, Craig L. Basman MD, Derek R. Brinster MD, Denny Wang BS, Nirav Patel MD, S. Jacob Scheinerman MD, Chad A. Kliger MD

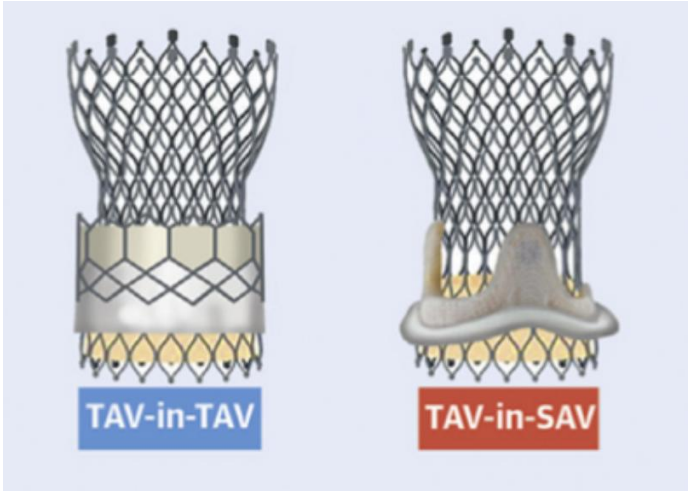


NEWS • Daily News

TAVR Yields Similar Success in Failed TAVR or Surgical Valves

But as the patient population shifts younger, strategies for "lifetime management" will be required, experts say.

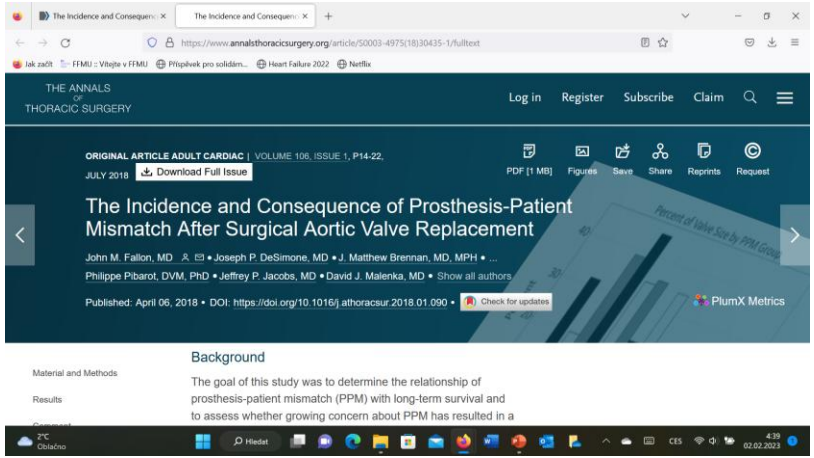
by Caitlin E. Cox | JANUARY 07, 2021

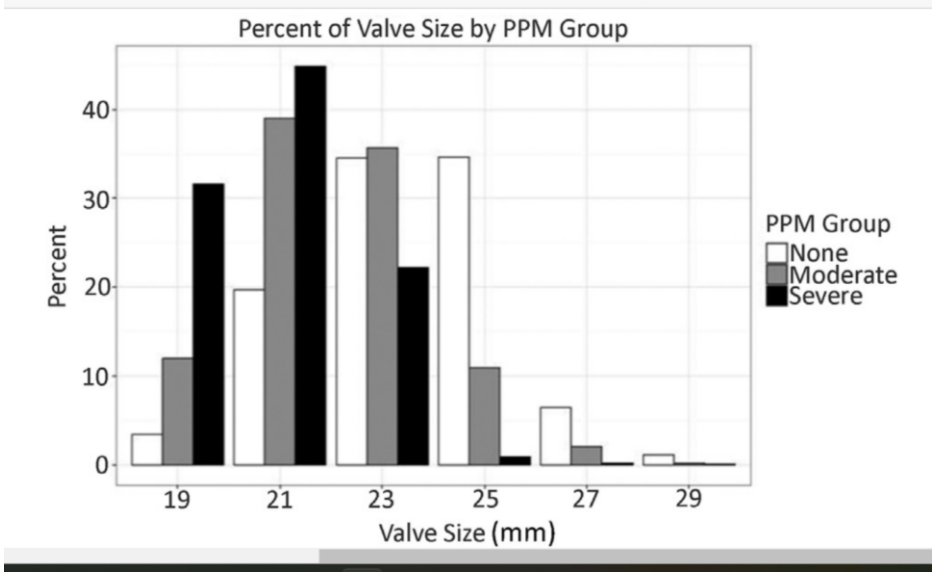


	TAV-in-TAV (N = 165)	TAV-in-SAV (N = 165)	*P* Value
Procedural Success	72.7%	62.4%	0.045
Procedural Safety	70.3%	72.1%	0.715
Mean Aortic Valve Area, cm^2	1.55	1.37	0.040
Mean Residual Gradient, mm Hg	12.6	14.9	0.011
New Pacemaker	10.9%	7.8%	0.251
≥ Moderate Residual AR at 30 Days	8.4%	4.8%	0.463
Mild AR			
30 Days	36.1%	17.2%	0.003
1 Year	36.2%	12.1%	0.001

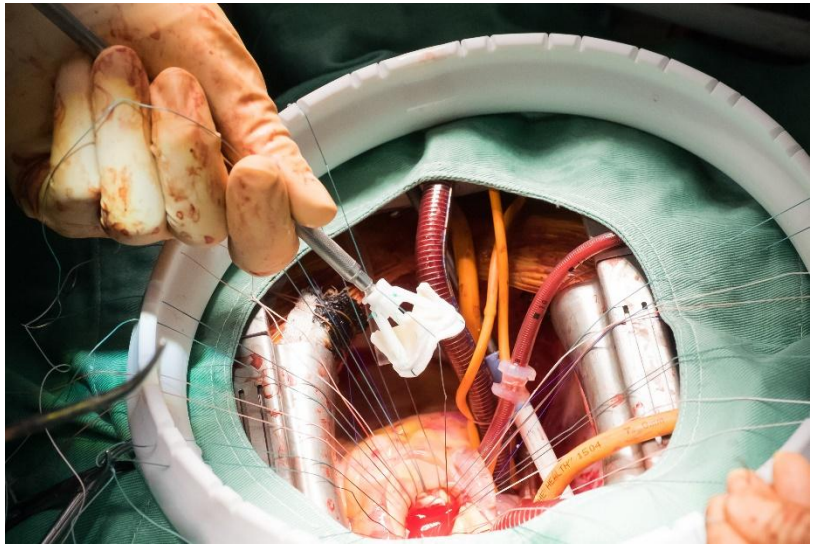
Mortality			
30 Days	3.0%	4.4%	0.570
1 Year	11.9%	10.2%	0.633

PPM – patient-prosthesis mismatch





PPM – patient-prosthesis mismatch



- Četnost PPM byla spojena s velikostí anulu pouze u **SAVR** - 39.0% u velkých anulů, 53.2% u středních, 66.7% u malých.
- **TAVR** bylo spojeno s nižším výskytem PPM než u SAVR – u pacientů s malým/středním anulem 30.0% resp. 22.4% bez PPM a bez rozdílu u velkých anulů.

PPM – patient-prosthesis mismatch

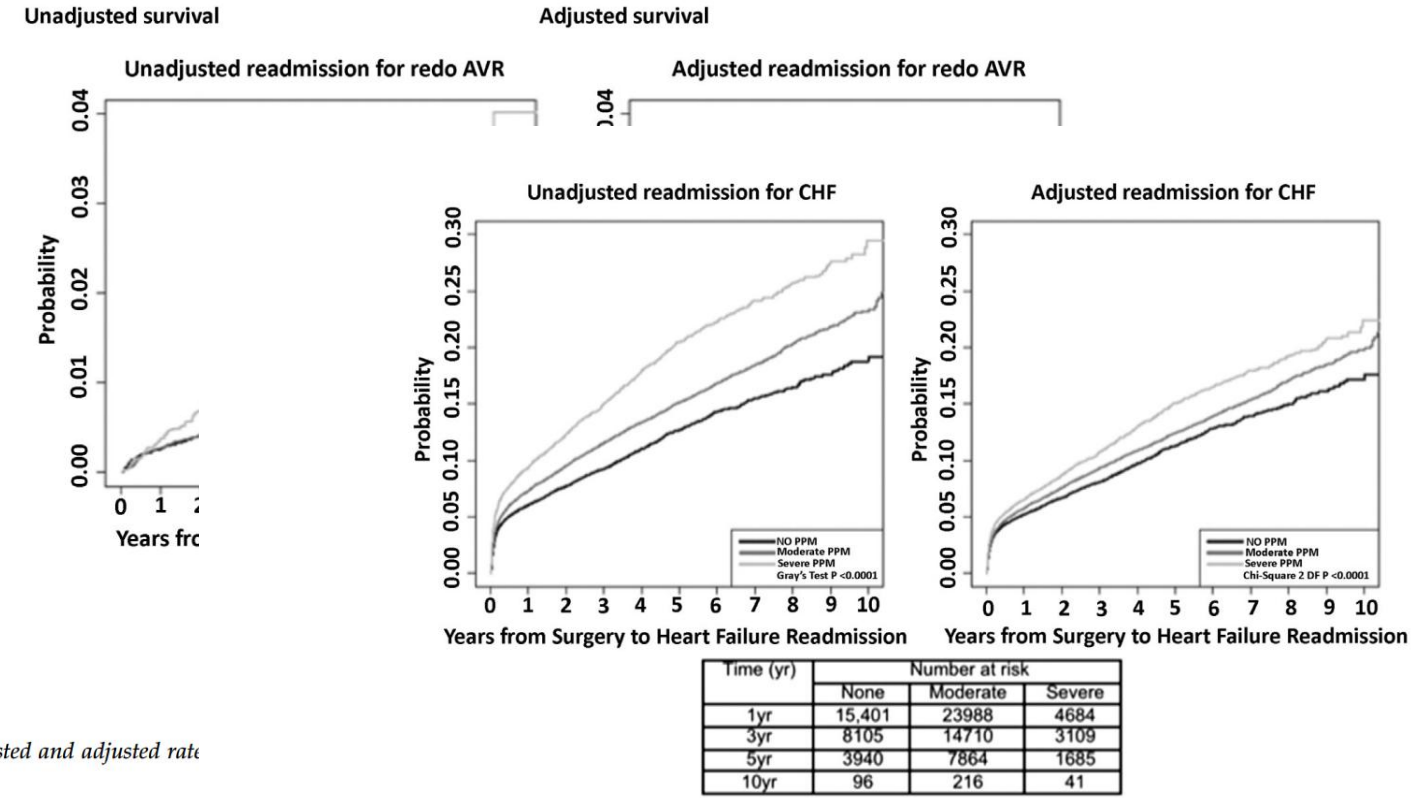


Fig 2. Unadjus

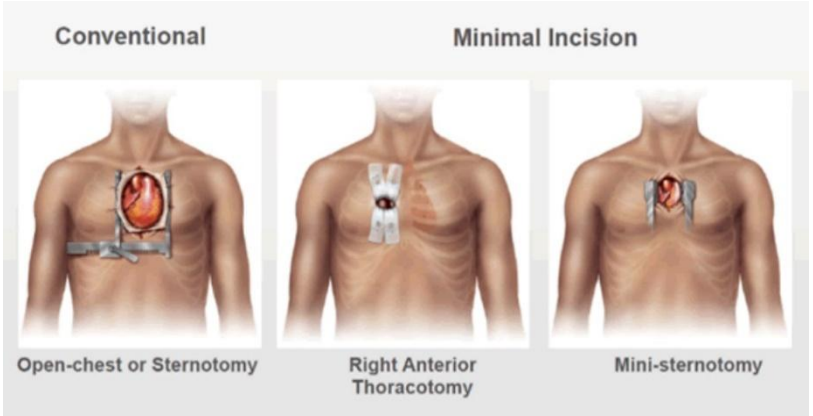
Fig 4. Unadjusted and adjusted rat

Time (yr)	Number at risk		
	None	Moderate	Severe
1yr	15,401	23988	4684
3yr	8105	14710	3109
5yr	3940	7864	1685
10yr	96	216	41

Fig 3. Unadjusted and adjusted readmission rates for congestive heart failure (CHF). (PPM = prosthesis-patient mismatch.)

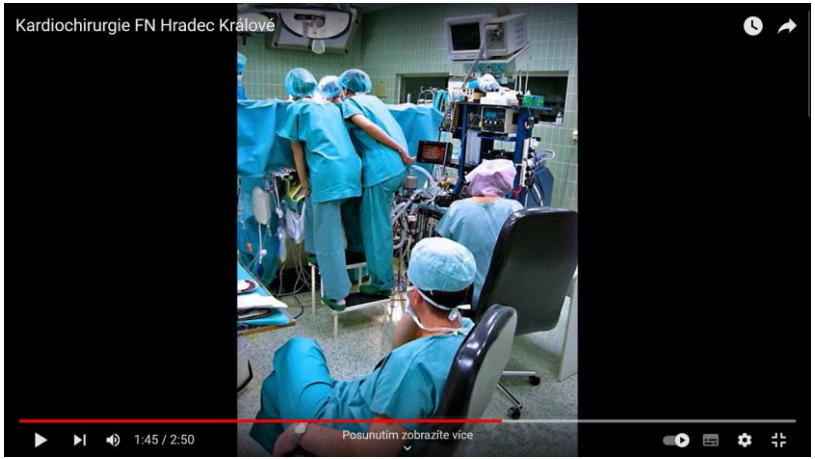
Co mě také zajímá a z čeho bych měl obavy?

https://www.cktch.cz/usek-mimotelniho-obehu/d1009



https://www.cardiothoracic-surgeon.co.uk/treatments/keyhole-aortic-valve-surgery/


Kardiochirurgie FN Hradec Králové
1:06 / 2:50
Posunutím zobrazíte více


Kardiochirurgie FN Hradec Králové
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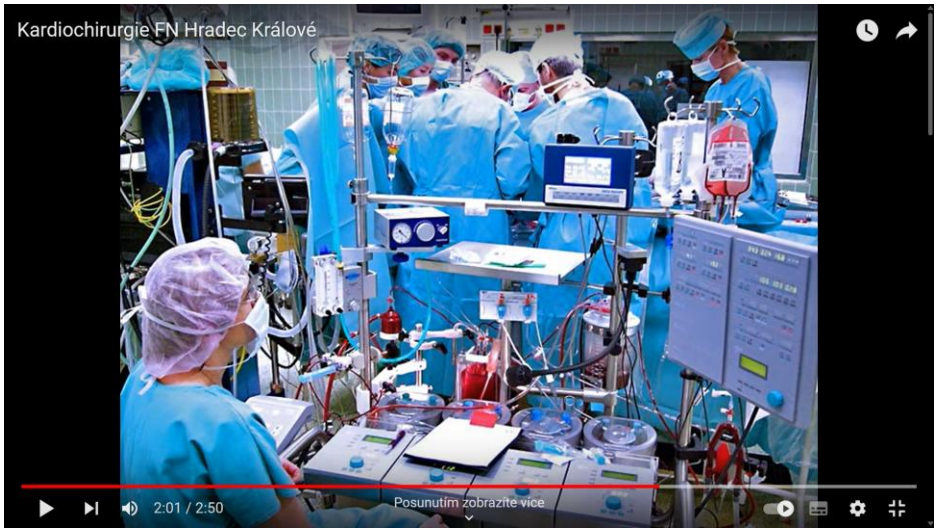
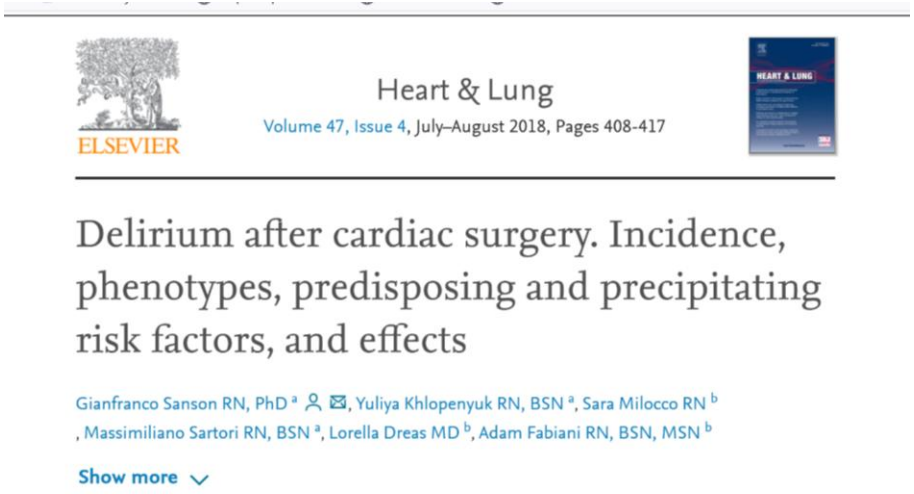

Kardiochirurgie FN Hradec Králové
2:01 / 2:50
Posunutím zobrazíte více

Psychický stav po KCH operaci (nejen otázka MO)



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Heart & Lung

Volume 47, Issue 4, July–August 2018, Pages 408-417

Delirium after cardiac surgery. Incidence, phenotypes, predisposing and precipitating risk factors, and effects

Gianfranco Sanson RN, PhD [a], Yuliya Khlopenyuk RN, BSN [a], Sara Milocco RN [b], Massimiliano Sartori RN, BSN [a], Lorella Dreas MD [b], Adam Fabiani RN, BSN, MSN [b]

Show more

- [redacted]/ neúplně vyjádřené delirium - incidence 30.7% resp. 31.2% v kolísavé intenzitě v průběhu několika dnů, prodlužuje hospitalizaci.
- Nezávislé prediktory: FISI, benzodiazepiny/opiody, zhoršení sluchu, MO, střední TK.

Nejen psychický stav po operaci ale hraje roli …možnosti zlepšení?

Review > Anaesthesiologie. 2022 Sep;71(9):663-673. doi: 10.1007/s00101-022-01190-z.
Epub 2022 Aug 20.

[Enhanced recovery after surgery (ERAS®) in cardiac anesthesia]

[Article in German]
J C Kubitz [1], A-M Schubert [2], L Schulte-Uentrop [2]

Affiliations + expand

PMID: 35987897 DOI: 10.1007/s00101-022-01190-z

Abstract in English, German

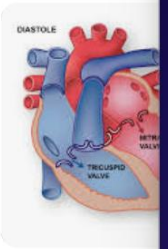
Enhanced Recovery After Cardiac Surgery [redacted] Recently, a transfer and adaptation of enhanced recovery after surgery (ERAS) protocols from other disciplines, such as colorectal surgery, to cardiac surgery has been performed in different settings. First, prehabilitation programs have been established and investigated to improve patients' physical, psychological and nutritional status including treatment of preoperative anemia. Second, intraoperative therapeutic steps are described, such as infection reduction bundles, rigid sternal closure and guidance of perioperative anesthesia. For this, the use of short-acting agents, goal-directed fluid management and multimodal anesthesia are among the

TAVR Yields Sim

Jak začít FFMU

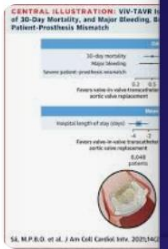
Google

Přihlásit se



The Texas Heart

Heart Valve Repa



JACC Journals

Valve-in-Valve Tra

Mini-sternotomy

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Shrnutí: Limitace SAVR u pacientů s nízkým rizikem

..z pohledu intervenčního kardiologa (ne-kardiochirurga)

- **Výhody SAVR (oproti TAVI/TAVR)**
  - Nižší výskyt PVL, cévních komplikací.
  - Nižší nutnost implantace PM proti samo-expandibilní chlopni.
- **Limitace SAVR (oproti TAVI/TAVR)**
  - Nutnost mimotělního oběhu a CA s poměrně častou psychickou deteriorací.
  - Velká operace s delší hospitalizací, vyšším rizikem krvácení, FISI, AKI a vyšší krátkodobou mortalitou, otázka estetická i funkční.
  - Pacienti (většinou) preferují TAVI, která je v USA spojena s nižší cenou po 2 letech.
  - *Osobní přání – SAVR pouze s chlopněmi umožňujícími re-do proceduru (SAVR/TAVI)*

Aortální patologie – máme společný cíl!!!