The Chaim Sheba Medical Center at Tel HaShomer
Sheba - Academic Medical Center Hospital

שיבא תל השומר | מרכז לב, חזה וכלי דם ע"ש אולגה ולב לבייב

SAVR vs. TAVR in Obese Patients

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Department of Cardiac Surgery
Sheba Medical Center

סיכון קרדיו מטבולי והשמנת יתר
בהובלת החוגים: קרדיולוגיה בקהילה ופרמקותרפיה קרדיווסקולרית
מוקדש לזכרו של פרופ' אלכסנדר טננבאום ז"ל
יום שישי 30.12.22

The author declares no conflict of interest related to this presentation

TAVI VS. SAVR

Outcomes 2 Years After Transcatheter Aortic Valve Replacement in Patients at Low Surgical Risk

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The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 APRIL 28, 2016 VOL. 374 NO. 17

Transcatheter or Surgical Aortic-Valve Replacement in Intermediate-Risk Patients

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Longest follow-up – 5 years

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Surgical or Transcatheter Aortic-Valve Replacement in Intermediate-Risk Patients

M.J. Reardon, N.M. Van Mieghem, J.J. Popma, N.S. Kleiman, L. Søndergaard, M. Mumtaz, D.H. Adams, G.M. Deeb, B. Maini, H. Gada, S. Chetcuti, T. Gleason, 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*

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*

Important limitation

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Durability of Transcatheter and Surgical Bioprosthetic Aortic Valves in Patients at Lower Surgical Risk

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TABLE 2 Transcatheter and Surgical Valve Sizes

Surgical Valve Types	19 mm	21 mm	23 mm	25 mm	27 mm	All
Mosaic	18.2 (2/11)	28.6 (12/42)	17.4 (8/46)	42.4 (14/33)	33.3 (1/3)	27.4 (37/135)
Epic	27.3 (3/11)	26.2 (11/42)	37.0 (17/46)	21.2 (7/33)	33.3 (1/3)	28.9 (39/135)
Trifecta	54.5 (6/11)	26.2 (11/42)	23.9 (11/46)	9.1 (3/33)	33.3 (1/3)	23.7 (32/135)
Perimount	0.0 (0/11)	14.3 (6/42)	13.0 (6/46)	6.1 (2/33)	0.0 (0/3)	10.4 (14/135)
Sorin Mitroflow	0.0 (0/11)	4.8 (2/42)	8.7 (4/46)	21.2 (7/33)	0.0 (0/3)	9.6 (13/135)
All	11	42	46	33	3	135
CoreValve Sizes	**23 mm**	**26 mm**	**29 mm**	**31 mm**		
	1.4 (2/139)	38.1 (53/139)	42.4 (59/139)	7.9 (11/139)		

Values are % (n/N) or n.

Circulation

Catherine M. Otto, Rick A. Nishimura, Robert O. Bonow, Blase A. Carabello, John P. Erwin III, Federico Gentile, Hani Jneid, Eric V. Krieger, Michael Mack, Christopher McLeod, ... See all authors

Originally published 17 Dec 2020 | https://doi.org/10.1161/CIR.0000000000000923 | Circulation. 2021;143:e72–e227

2020 ACC/AHA Guideline for the Management of Patients With Valvular Heart Disease: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines

Limited data about TAVI durability

- SAVR has been used for more than 50 years, with ample durability data available
- Robust durability data for TAVI extend to only about 5 years
- SAVR valve deterioration typically occurs after >10 years, so longer-term TAVI durability data are needed

for low risk patients with more than 10 years life expectancy- the recommendation is SAVR

Sometimes age is just a number

SAVR mortality – Sheba Medical Center

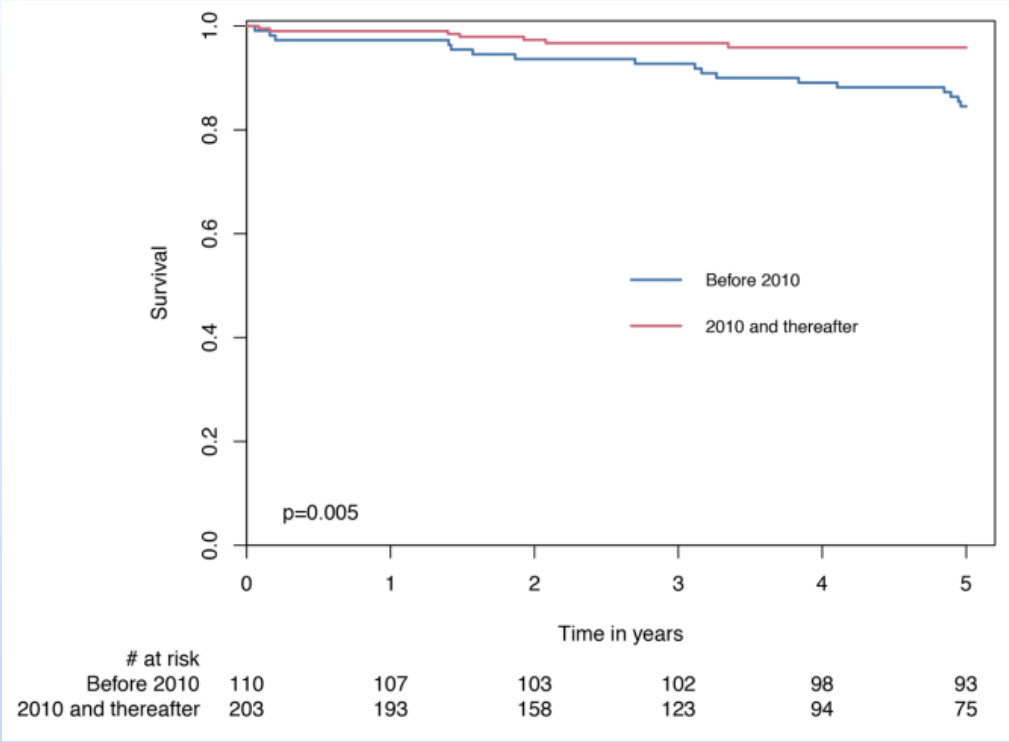
ORIGINAL ARTICLE

JOURNAL OF CARDIAC SURGERY WILEY

Outcomes of isolated surgical aortic valve replacement in the era of transcatheter aortic valve implantation

Eilon Ram MD[1] | Sergei Amunts MD[1] | Elchanan Zuroff MD[1] | Yael Peled MD[2] | Alexander Kogan MD[1] | Ehud Raanani MD[1] | Leonid Sternik MD[1]

Results: Mean age was 67 ± 5 years and 182 (58%) were male. Fifty-six patients (18%) had a unicuspid or bicuspid AV. Patient characteristics were similar between the early and late periods. There was no in-hospital or 30-day mortality throughout the entire cohort, with one case (0.3%) of postoperative stroke. Permanent pacemaker im-



Obesity is NOT a risk factor for mortality in SAVR

Journal of Cardiothoracic and Vascular Anesthesia

Journal of Cardiothoracic and Vascular Anesthesia 35 (2021) 3547–3556

Risk Factors of Midterm Mortality After Aortic Valve Replacement for Severe Calcified Tricuspid Aortic Valve Stenosis: A retrospective analysis of Perioperative Events Assessment in Adult Cardiac surgery (PESSAC) Registry

Antoine Beurton, MD*,†, Thomas Ferté, MD‡, Stefano Mion, MD*,†, Thibaud Besnard, MD*,†, Olivier Jecker, MD§, Alain Remy, MD*, Louis Labrousse, MD, PhD¶, Alexandre Ouattara, MD, PhD*,†

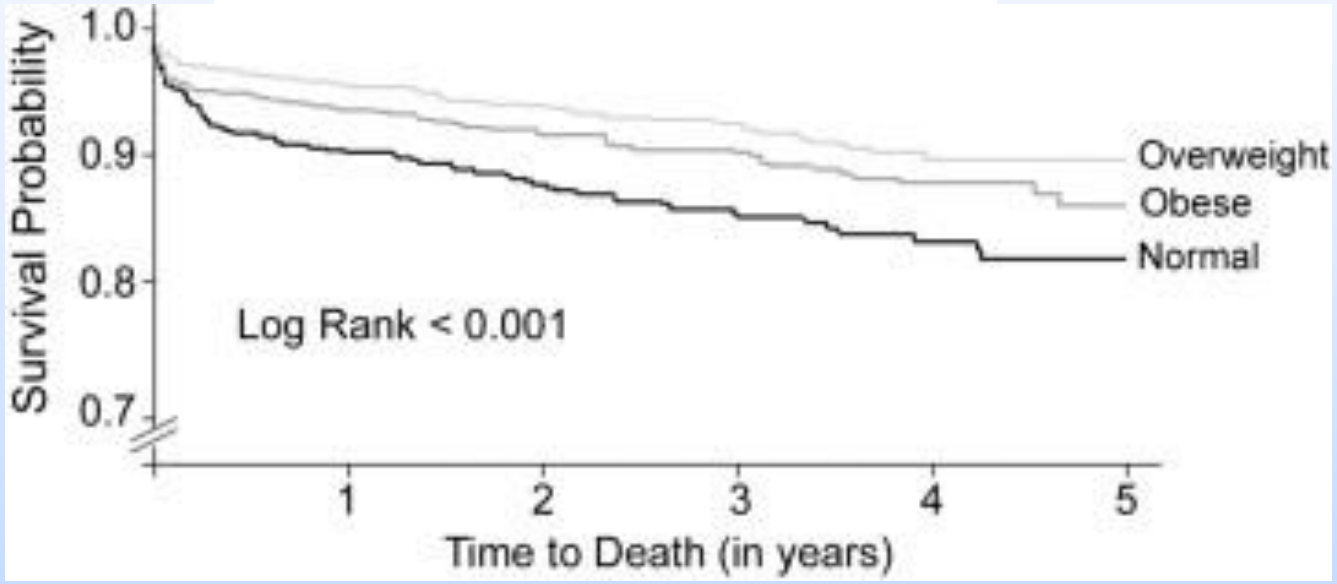
Table 1
Preoperative Clinical Characteristics of Patients

	All (n = 1,101)	Alive (n = 933)	Dead (n = 168)	p Value
Age, y (IQR)	77 (70-82)	76 (69-81)	81 (74-83)	<0.01
Male sex, n (%)	605 (54.9)	501 (53.7)	104 (61.9)	0.04
Body mass index, kg/m^2 (IQR)	28.3 (25.1-31.7)	28.3 (25.3-31.6)	27.5 (24.4-31.9)	0.48

The Obesity Paradox

The Annals of Thoracic Surgery

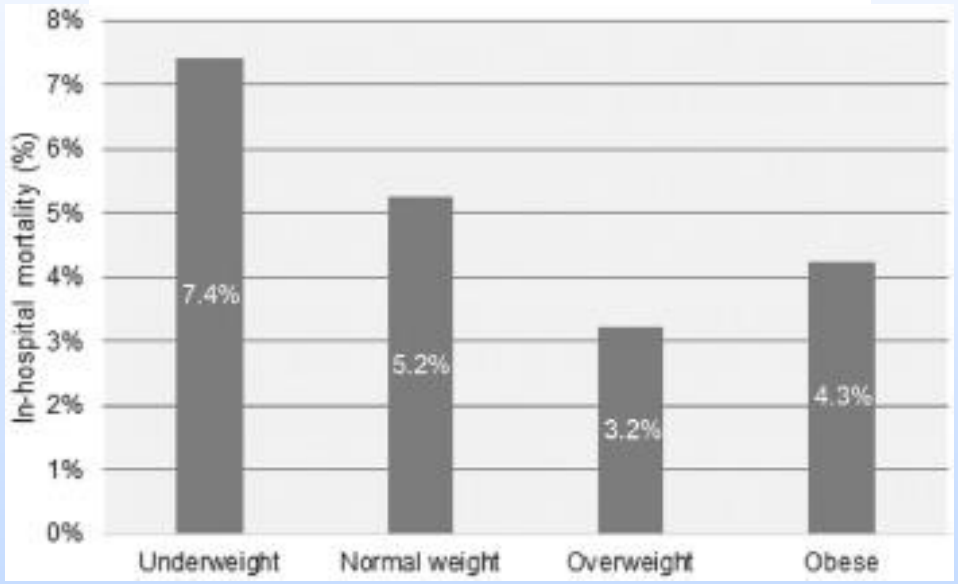
Volume 91, Issue 1, January 2011, Pages 42-47



Long term mortality

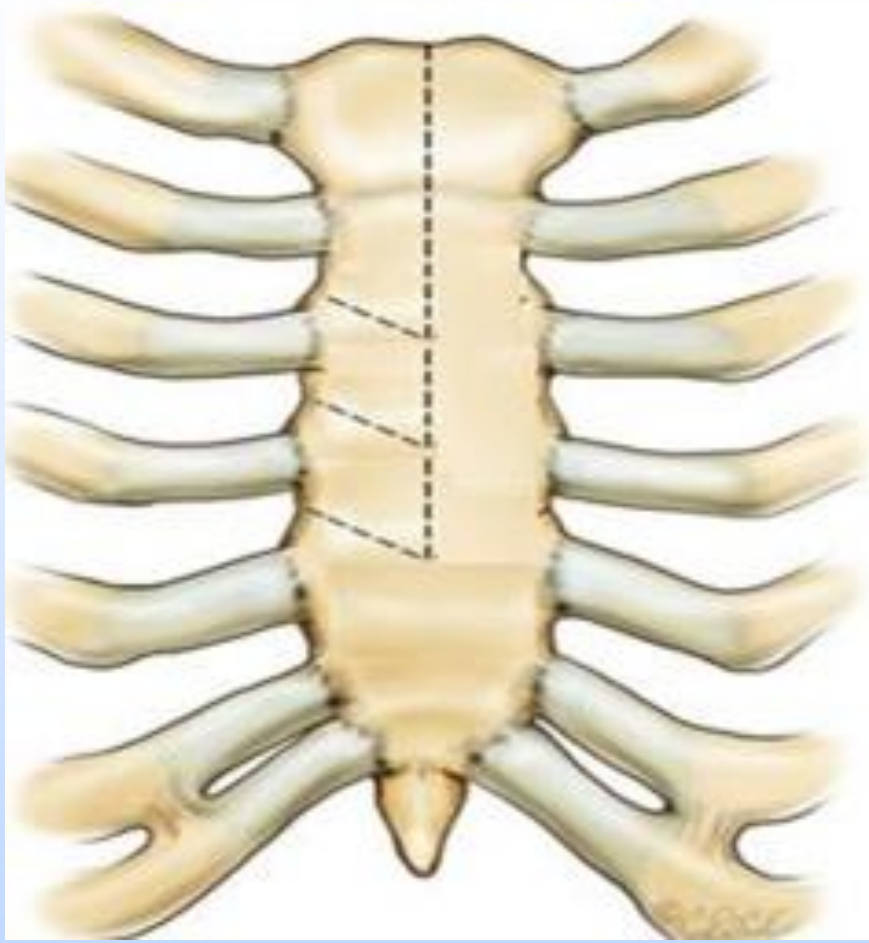
Journal of Cardiothoracic and Vascular Anesthesia

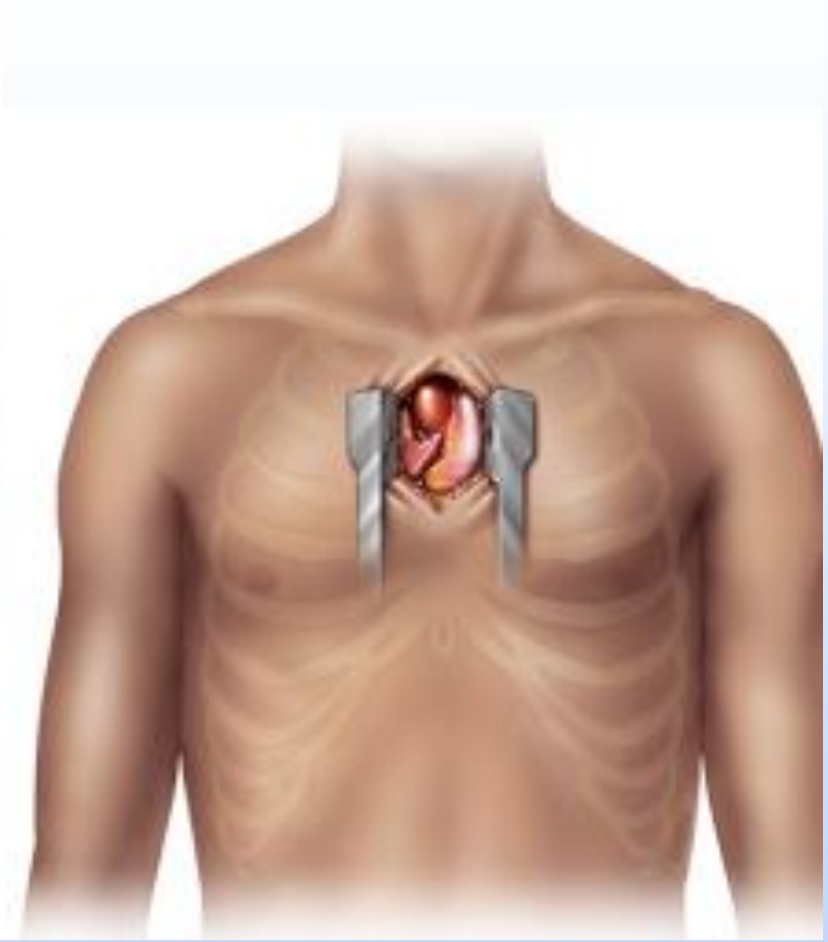
Volume 35, Issue 2, February 2021, Pages 492-498



In hospital mortality

J-sternotomy





SHEBA Tel HaShomer | The Leviev Cardiothoracic & Vascular Center

Complication

TAVI	SAVR
Permanent pacemaker	Disabling stroke
Valve thrombosis	Blood transfusion
PVL	POAF
Reoperation	AKI

Vascular complication
Valve Hemodynamic deterioration

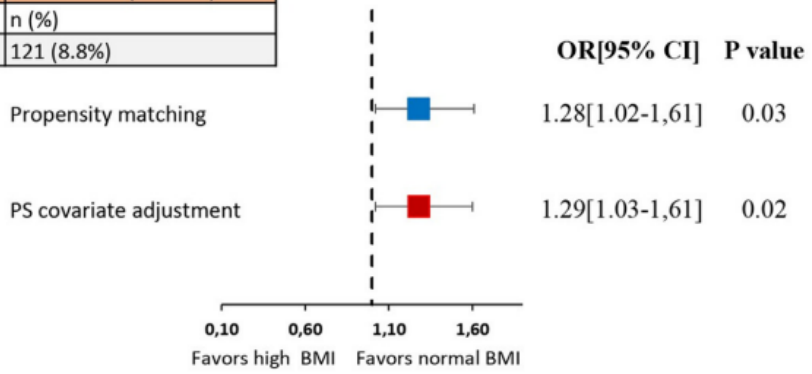
Obesity is a risk factor for vascular complications in TAVI

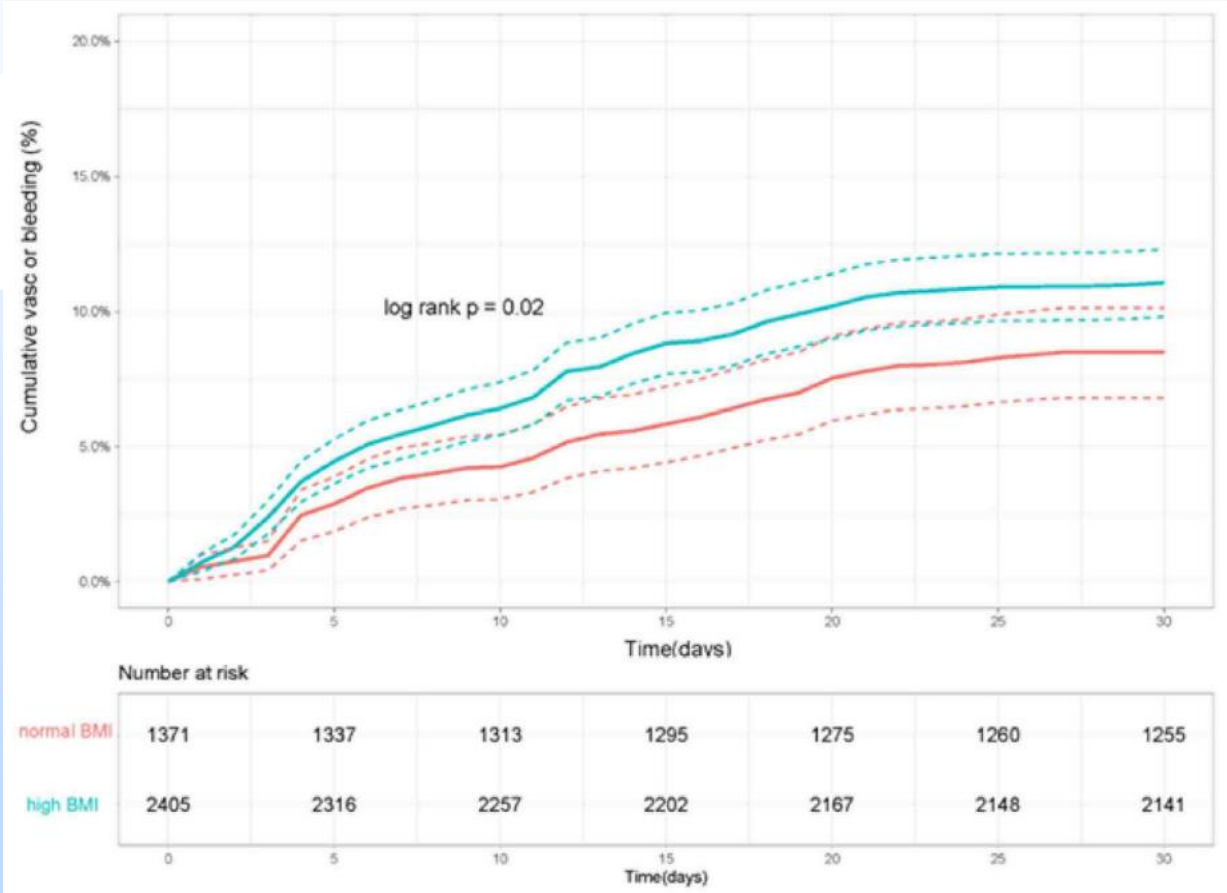
The American Journal of Cardiology
Volume 155, 15 September 2021, Pages 86-95

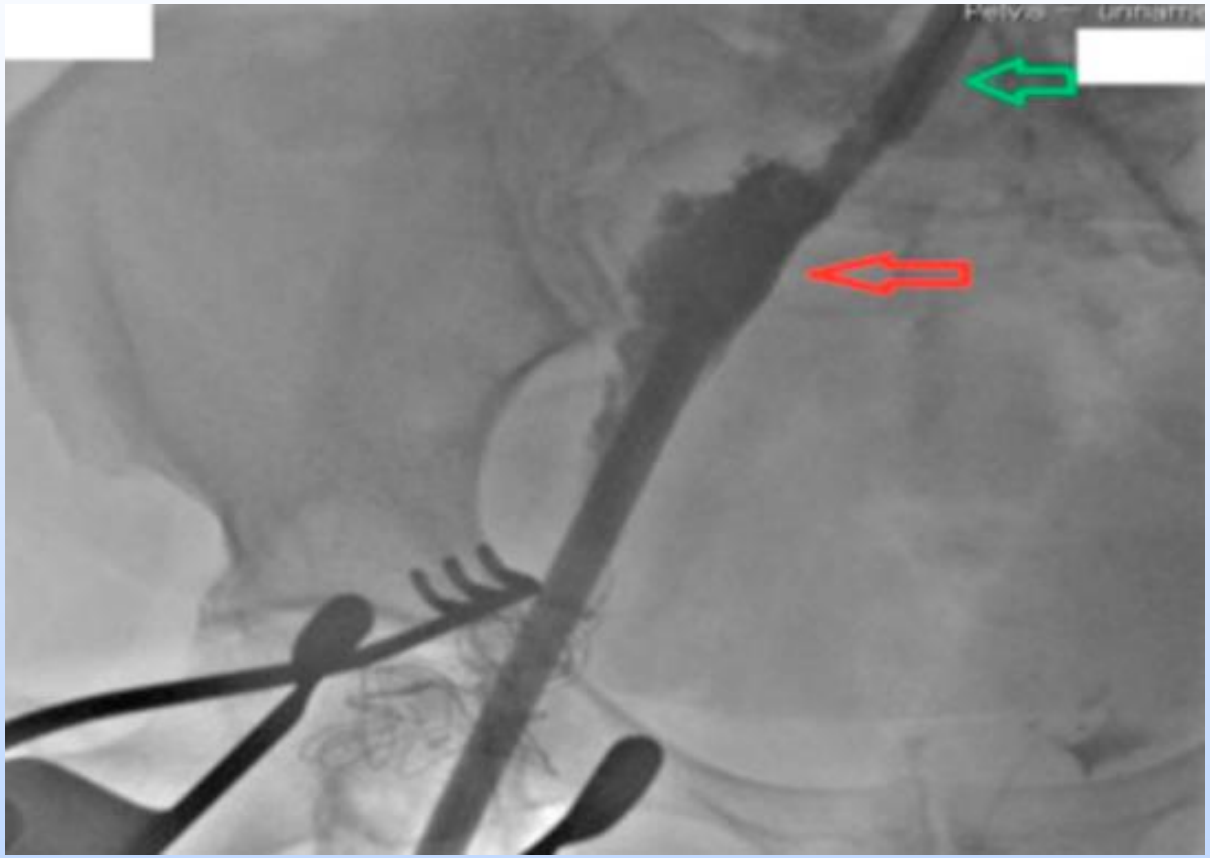
Impact of High Body Mass Index on Vascular and Bleeding Complications After Transcatheter Aortic Valve Implantation

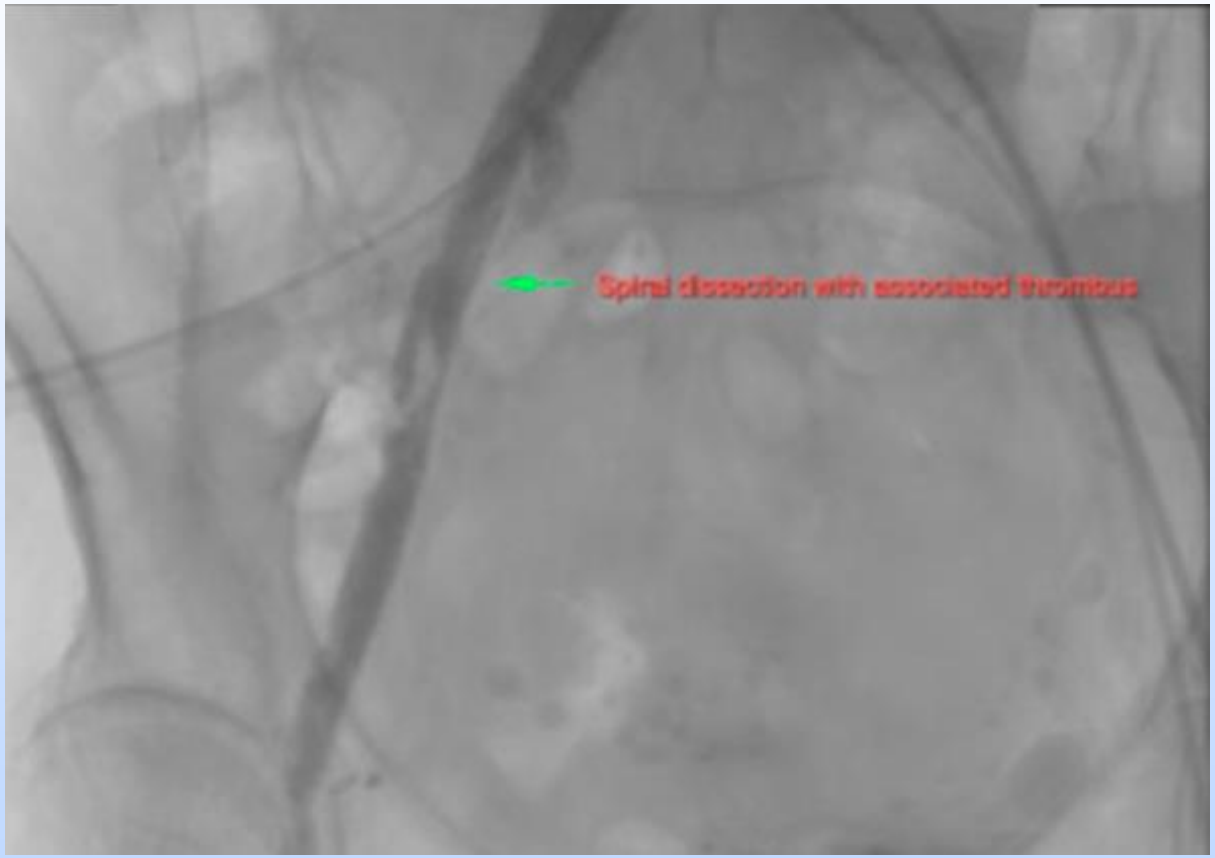
A **30-day Vasc. or Bleeding**

High BMI (N=2405)	normal BMI (N=1371)
n (%)	n (%)
266 (11.1%)	121 (8.8%)








Spinal dissection with associated thrombus

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Incidence, Timing, and Predictors of Valve Hemodynamic Deterioration After Transcatheter Aortic Valve Replacement

Multicenter Registry

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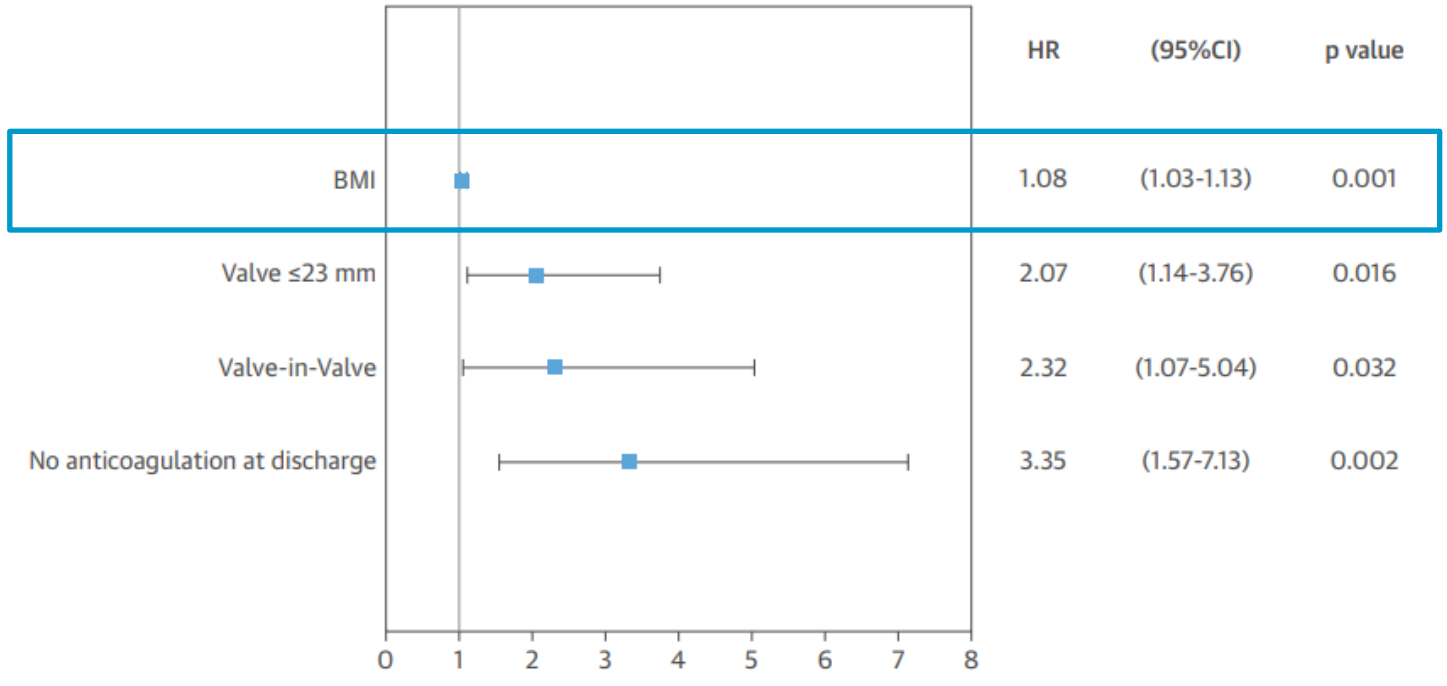
FIGURE 2 Predictors of Transcatheter VHD Post-TAVR



summary

- Durability
- Guidelines
- **Obesity Paradox**
- **J-sternotomy**
- **TAVI – vascular complication in obese patients**
- **TAVI - valve degeneration in obese patients**

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Thank you !