Trends and Outcomes of Antithrombotic Strategies for Valve-in-Valve Transcatheter Aortic Valve Replacement - STS/ACC TVT Registry -

Hiroki Ueyama, MD

Emory University School of Medicine

Hiroki A. Ueyama, MD, Patrick T. Gleason, MD, Sreekanth Vemulapalli, MD, Pratik Manandhar, MS, Andrzej S. Kosinski, PhD, Stamatios Lerakis, MD, PhD, John D'Angelo, MD, Brent Keeling, MD, Isida Byku, MD, George S. Hanzel, MD, Chandan M. Devireddy, MD, Deepak L. Bhatt, MD, Adam B. Greenbaum, MD, Vasilis C. Babaliaros, MD, Joe X. Xie, MD

NCDR
AMERICAN COLLEGE of CARDIOLOGY

Funding Support and Disclaimer

This research was supported by the American College of Cardiology Foundation's National Cardiovascular Data Registry (NCDR) and The Society of Thoracic Surgeons National Database. The views expressed in this presentation represent those of the author(s), and do not necessarily represent the official views of either organization. Learn more about the STS/ACC TVT Registry at *www.tvtregistry.org.*

Background

- Case volume for valve-in-valve transcatheter aortic valve replacement (TAVR) is rapidly increasing.
- Optimal antithrombotic strategy after valve-in-valve TAVR remains uncertain.
  - Current studies and guidelines, focused mainly on native-valve TAVR, recommend single-antiplatelet therapy (SAPT).
  - Registry data suggest valve-in-valve TAVR carries a higher risk of clinical valve thrombosis, with significantly lower rates among patients receiving oral anticoagulation (OAC).
  - Clinical valve thrombosis is linked to thromboembolic complications and impaired valve function.
  - Valve-in-valve patients may therefore require a distinct approach.
- Currently, the antithrombotic regimen is left to the discretion of the treating physicians.

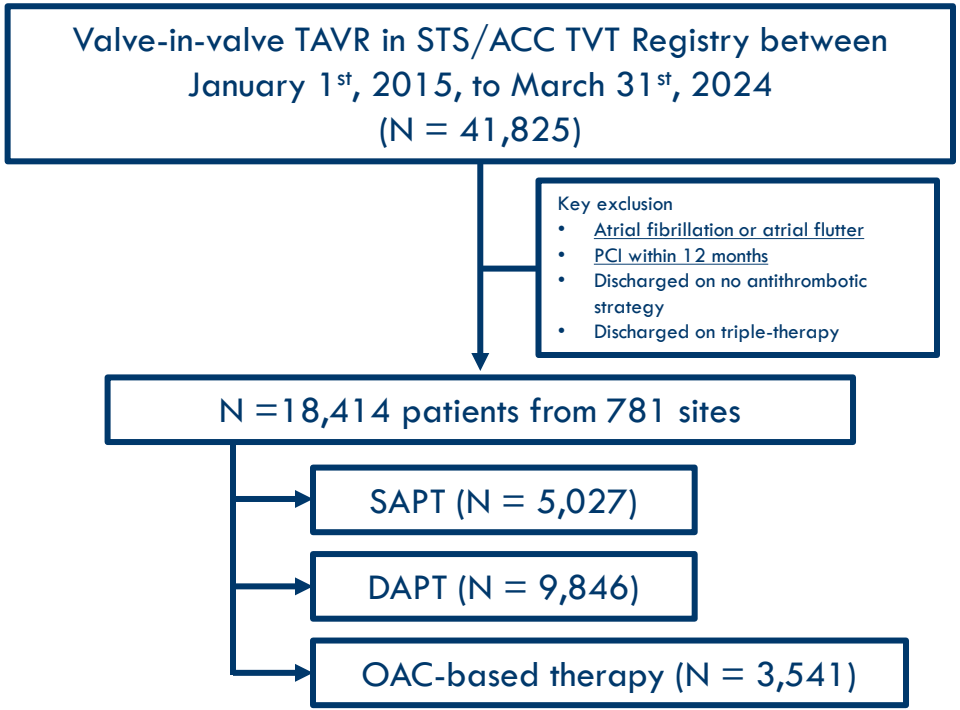
Aims

- To examine temporal trends in the selection of antithrombotic strategies in the U.S.
- To assess inter-operator and inter-institutional variability in antithrombotic management.
- To explore clinical outcomes associated with different antithrombotic regimens in patients undergoing valve-in-valve TAVR without a known indication for dual-antiplatelet therapy (DAPT) or OAC.

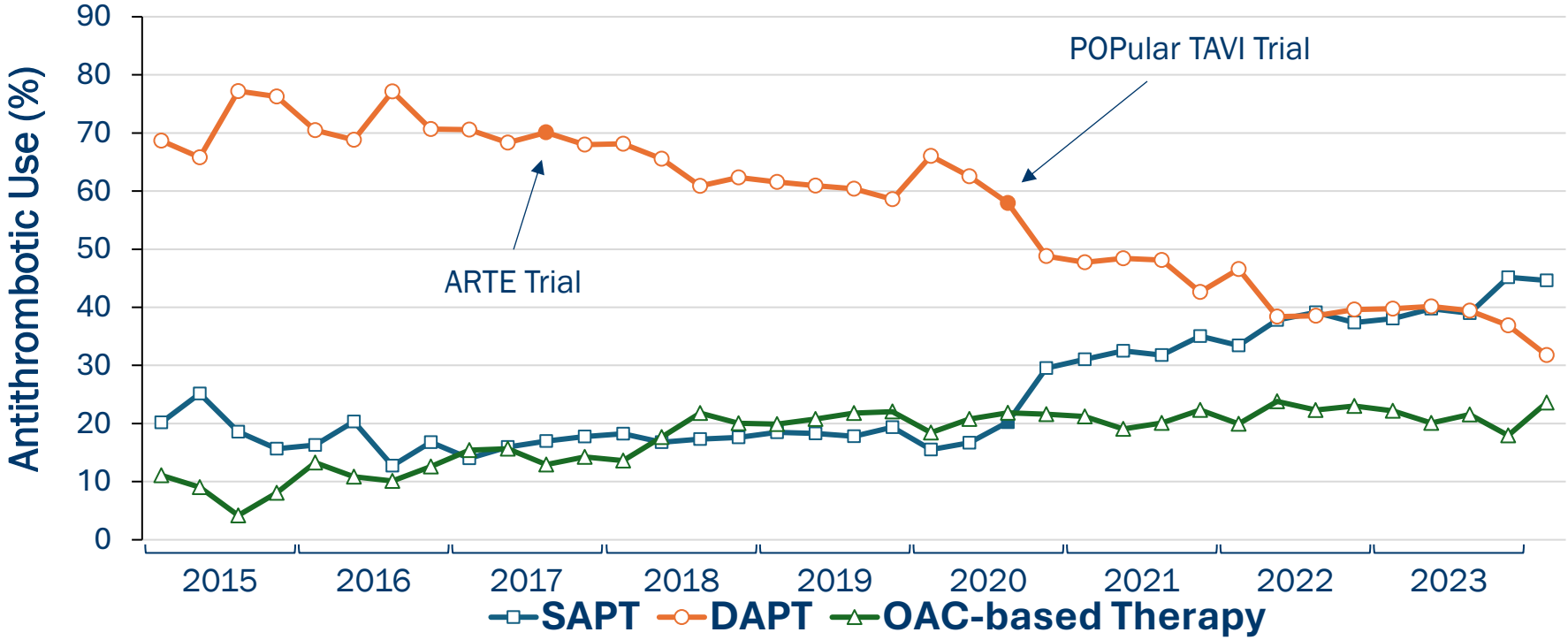
Methods

Design

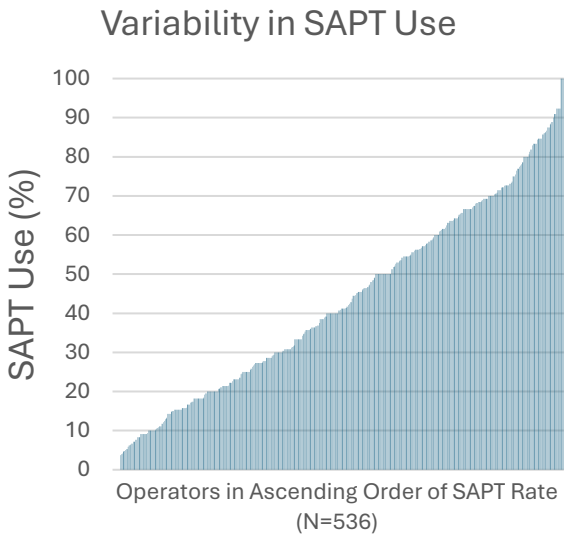
- STS/ACC TVT Registry
- 1/2015 - 3/2024
- 1-year
  - ✓ All-cause mortality
  - ✓ Stroke
  - ✓ VARC-3 type 2-4 bleeding

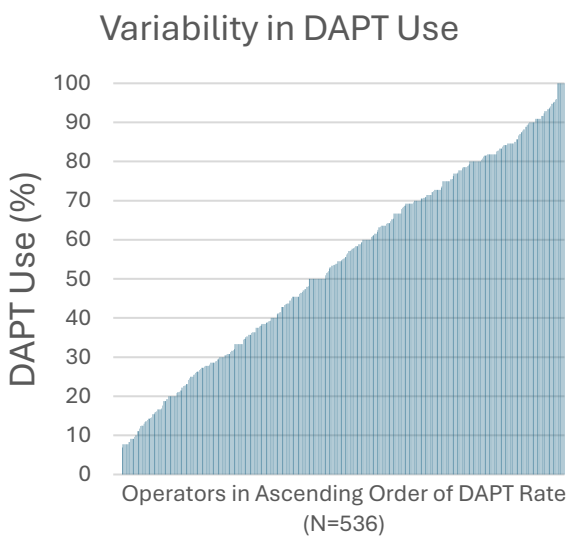


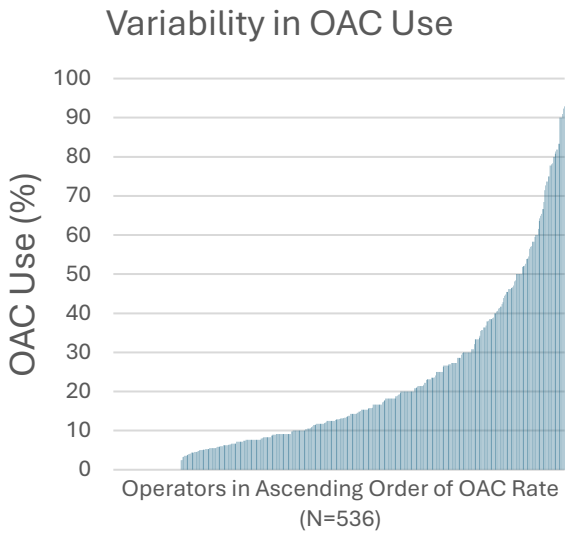
Temporal Trends



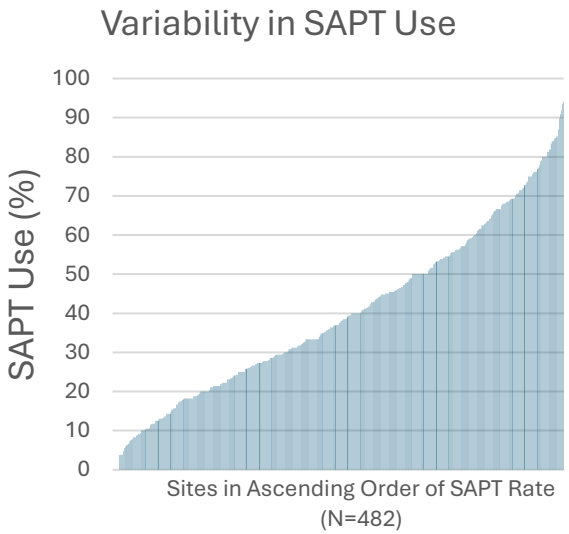
Operator Variability

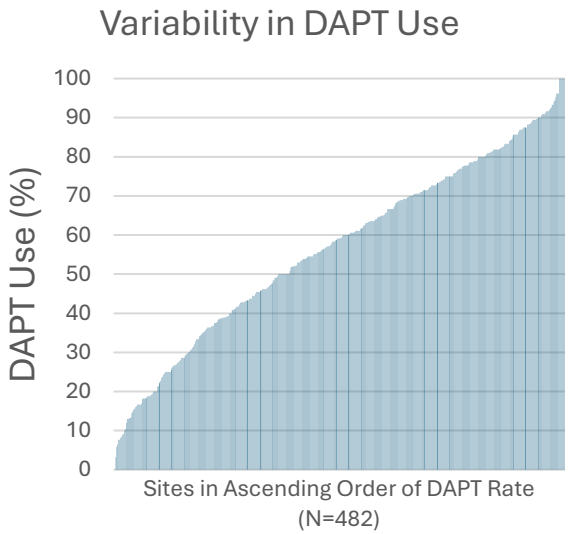


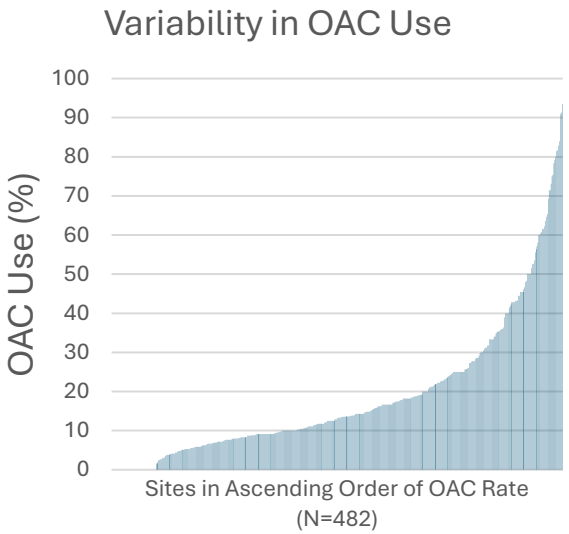




Institutional Varibility







Clinical Outcomes

	Crude event rate			Adjusted HR (95% CI); p-value	
	SAPT (N=5,027)	DAPT (N=9,846)	OAC-based therapy (N=3,541)	DAPT vs. SAPT (reference)	OAC-based therapy vs. SAPT (reference)
All-cause mortality	154 (4.2)	344 (4.0)	139 (4.9)	HR 0.90 (0.75, 1.08); p=0.25	HR 1.09 (0.87, 1.37); p=0.47
Stroke	78 (2.1)	184 (2.1)	63 (2.2)	HR 0.94 (0.72, 1.22); p=0.63	HR 0.99 (0.70, 1.40); p=0.96
Bleeding	186 (5.1)	432 (5.0)	146 (5.2)	HR 0.95 (0.79, 1.14); p=0.55	HR 0.94 (0.75, 1.18); p=0.61

Limitations

- **Retrospective design:** Subject to selection bias and residual confounding.
- **Valve thrombosis:** Not analyzed due to inconsistent, site-dependent reporting and lack of routine CT follow-up.
- **Echocardiography:** Incomplete data to evaluate valve hemodynamics.
- **Antithrombotic therapy:** Categorized by discharge regimen only; duration and later changes not captured.

Conclusions

- We observed dynamic temporal shifts in antithrombotic strategy selection following valve-in-valve TAVR, largely influenced by data from native-valve TAVR studies.
- Considerable variability in practice patterns persists, likely reflecting the current lack of definitive guidance for therapy in this specific setting.
- While no differences in outcomes were identified in this large retrospective analysis, a randomized trial with long-term follow-up is necessary to guide clinical care in this growing patient population.

NCDR®

AMERICAN COLLEGE of CARDIOLOGY®