

# Early Discharge After TAVR : Korean Experience After TAVR

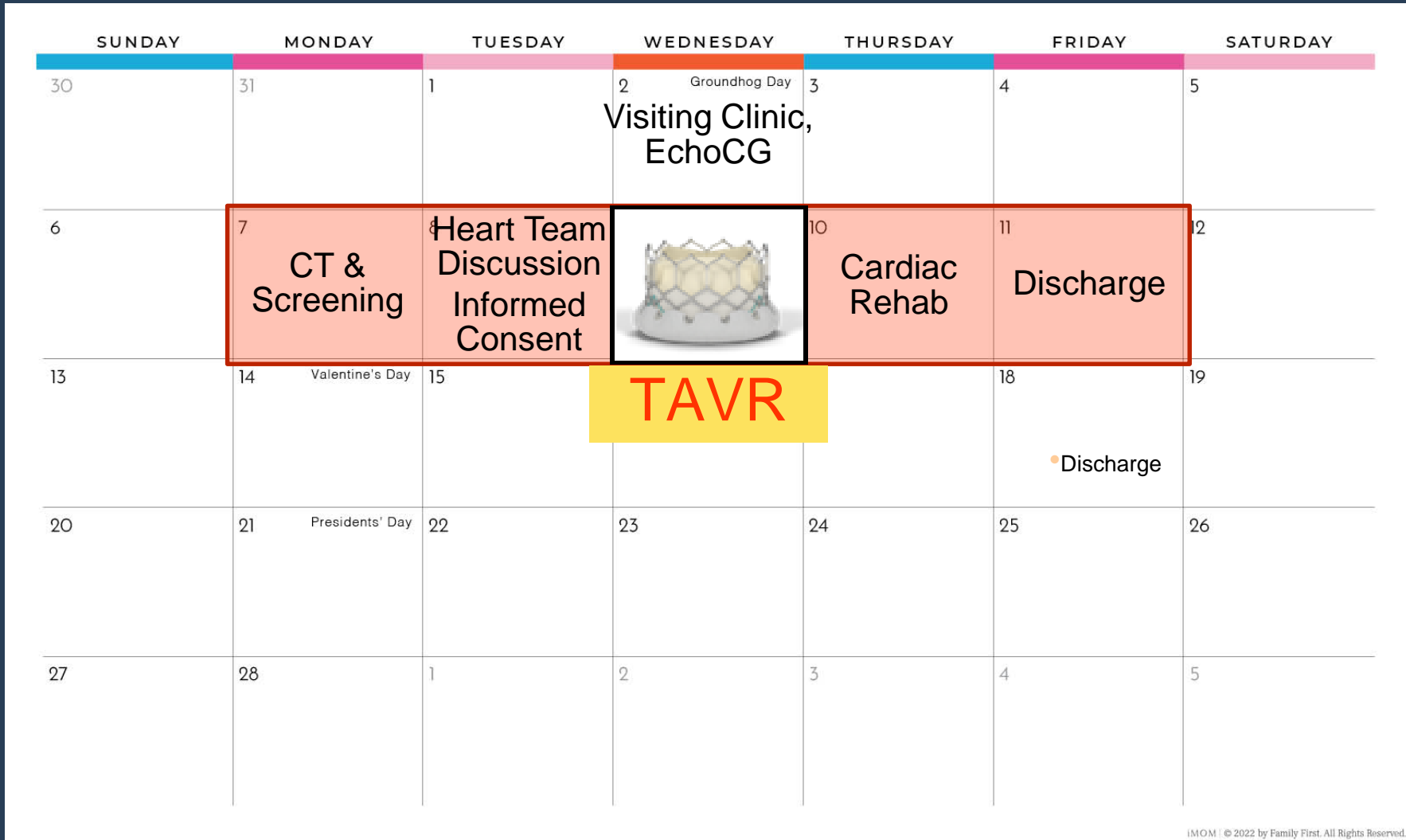
**Do-Yoon Kang, MD**

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# Disclosure

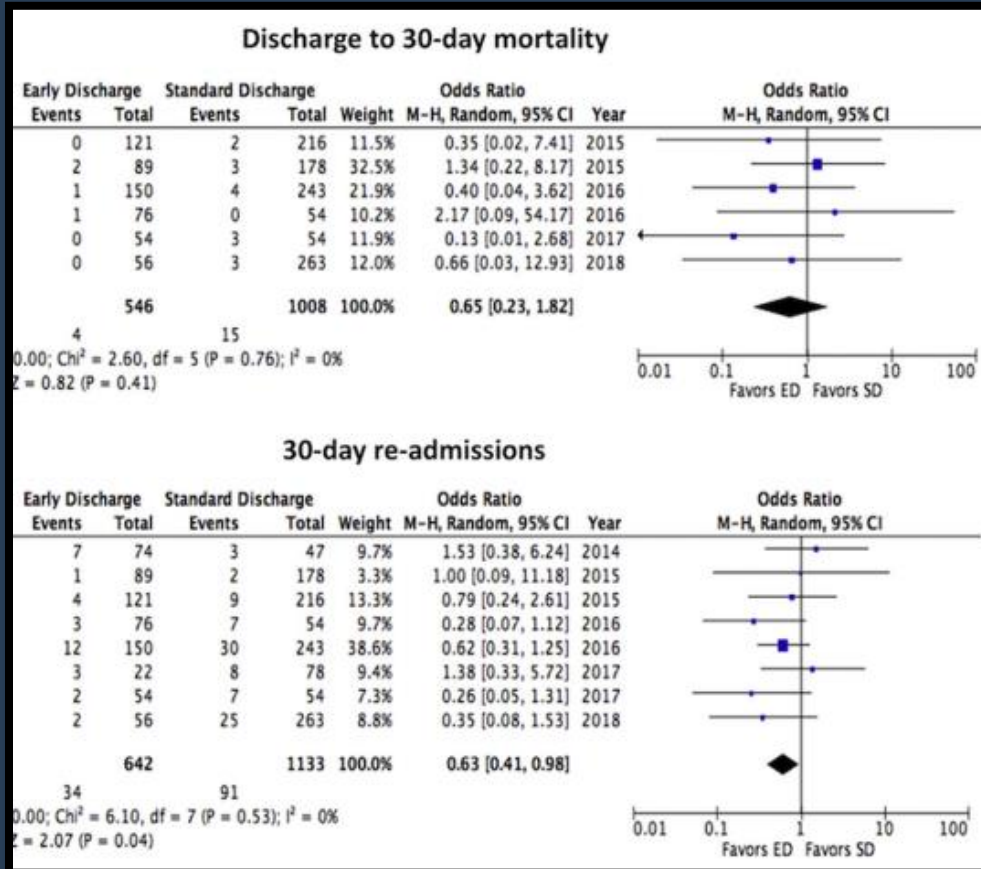
- I, Do-Yoon Kang, have nothing to disclose.

# In 2022, TAVR is a Routine Practice



# TAVR Length-of-Stay Has Been Getting Shorter

Early ( $\leq 3$  days) D/C is Safe



Kotronias RA et al JACC INT 2018;11:1759-71

Next-Day D/C is Safe

The Vancouver 3M (Multidisciplinary, Multimodality, But Minimalist) Clinical Pathway Facilitates Safe Next-Day Discharge Home at Low-, Medium-, and High-Volume Transfemoral Transcatheter Aortic Valve Replacement Centers

The 3M TAVR Study

411 patients  
327 next-day vs 81 not NDD  
No difference in outcomes  
30-day Mortality: 1.5%  
30-day New PPI: 5.7%

**BACKGROUND** Transfemoral transcatheter aortic valve replacement (TAVR) is an alternative to surgery in high- and intermediate-risk patients; however, hospital stays average at least 6 days in most trials. The Vancouver 3M Clinical Pathway is focused on next-day discharge, made possible by the use of objective screening criteria as well as streamlined peri- and post-procedural management guidelines.

**METHODS** Patients were enrolled from 6 low-volume (<100 TAVR/year), 4 medium-volume, and 3 high-volume (>200 TAVR/year) centers in Canada and the United States. The primary outcomes were a composite of all-cause death or stroke by 30 days and the proportion of patients successfully discharged home the day following TAVR.

Wood D et al JACC INT 2019;12:459-69

# Even Same-day Discharge was Suggested in COVID-19 Era



ESC

European Society  
of Cardiology

European Heart Journal - Case Reports  
doi:10.1093/ehjcr/ytaa556

CASE SERIES

Other

## Transcatheter aortic valve replacement same-day discharge for selected patients: a case series

Devesh Rai <sup>1</sup>, Muhammad Waqas Tahir<sup>1</sup>, Medhat Chowdhury <sup>1</sup>, Hammad Ali<sup>2</sup>,  
Rupinder Buttar<sup>1</sup>, Farhad Abtahian<sup>3</sup>, Deepak L. Bhatt <sup>4\*</sup>, and Jeremiah P. Depta<sup>3\*</sup>

CLINICAL CASE

JACC Case Rep 2020;2:2199:201

## Same-Day Discharge After Transcatheter Native Aortic and Mitral Valve-in-Valve Replacement



Vinayak Nagaraja, MBBS, MS MMED (CLIN EPI),<sup>a</sup> Amar Krishnaswamy, MD,<sup>a</sup> James Yun, MD,<sup>b</sup> Samir R. Kapadia, MD<sup>a</sup>

## Safety of same-day discharge after uncomplicated, minimalist transcatheter aortic valve replacement in the COVID-19 era

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Vasilis C. Babaliaros MD<sup>1</sup> | Patricia Keegan DNP<sup>1</sup> | Brendan Ceretto-Clark MSPH<sup>3</sup> |  
Jane Wei MPH<sup>3</sup> | Robert A. Guyton MD<sup>2</sup> | Gaetano Paone MD<sup>2</sup> |  
Isida Byku MD<sup>1</sup> | Patrick T. Gleason MD<sup>1</sup> | Kelby Biven PA-C<sup>1</sup> |  
Preethy Mathew NP<sup>1</sup> | Cecilia Mortorano MSN<sup>4</sup> | Errol K. Inci MD<sup>1</sup> |  
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CCI 2021;97:940-7

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## 29 Patients Were Safely Discharged After TAVR on the Same Day

**Methods:** In-hospital and 30 day outcomes of consecutive patients meeting pre-specified criteria for SDD after minimalist TAVR at our institution between March and July of 2020 were reviewed. Outcomes were compared to a NDD cohort from July 2018 through July 2020 that would have met SDD criteria. Primary endpoints were mortality,

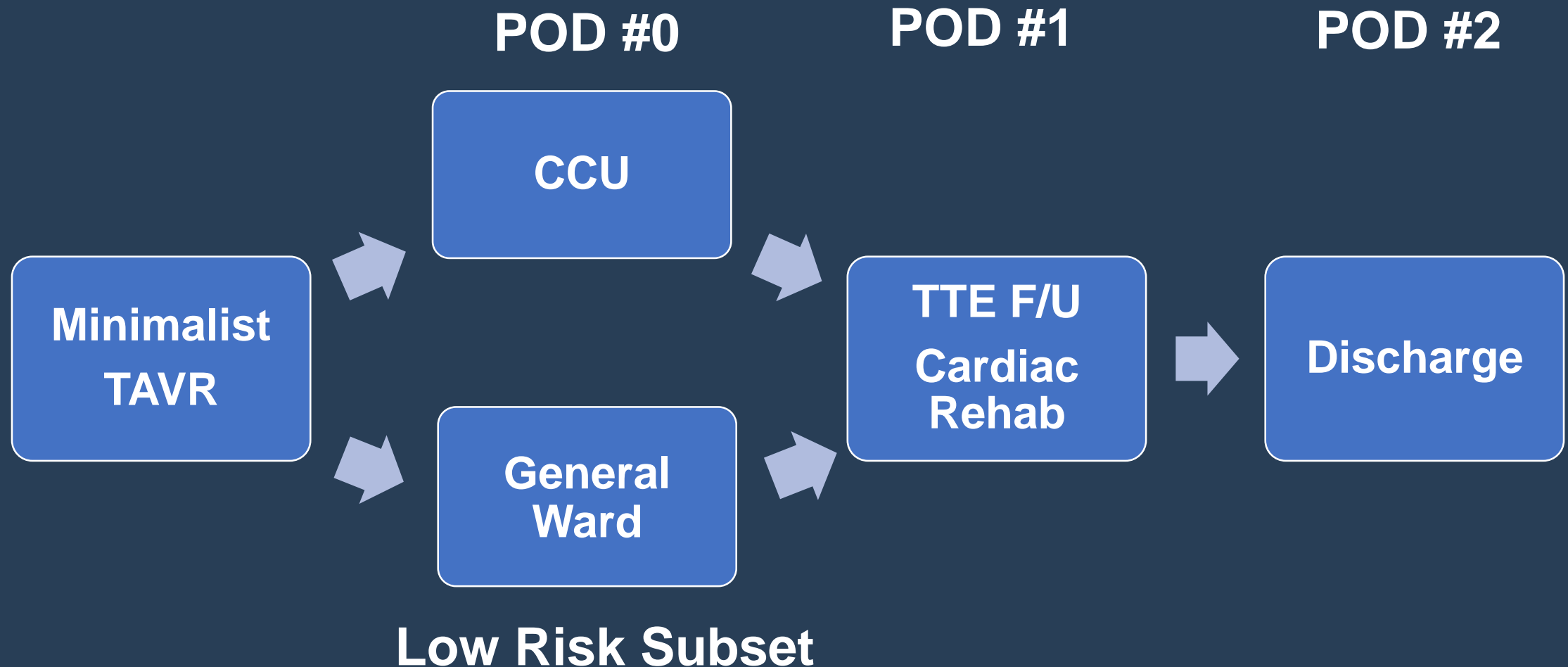
# Same-day Discharge in Korea ?

- Not performed yet

Because...

1. **Lower Cost** for Admission (Less than 100 USD per day)
2. **Reluctance** to Very Early Discharge after Expensive Procedure  
(Patients pay about 30,000 USD)
3. **Smaller Body** : More Frequent Puncture Site Problem  
Asian vs. Non-Asian in TP-TAVR (Kang DY et al. Heart. 2022)  
: BMI 24.0 vs. 28.4 kg/m<sup>2</sup>, Major Vascular Cx 4.1% vs. 1.7%
4. Relatively Well-controlled COVID-19 Situation

# Target Discharge Goal in AMC = POD #2



# Minimalist TAVR

- CT-Based Pre-procedural Planning
- Conscious sedation
- No TEE
- 30 minutes for Procedure
- Check for Rhythm Disturbance after TAVR



# Comprehensive Pre-TAVR MDCT Evaluation

1. Suitable Aortic Root Anatomy
2. Device and Size Selection
3. Coronary Disease Status
4. Aortic, Iliac and Femoral Anatomy
5. Optimal Fluoroscopic Projection Angulation

***NO***, Routine Coronary / Aortic / Peripheral Angiography

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# CT Based Valve Selection & Sizing

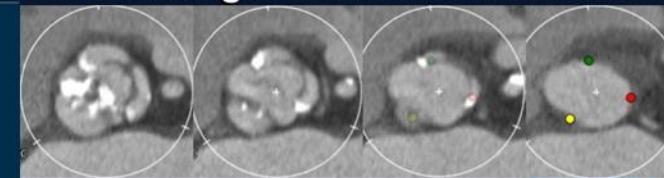
## Clinical information

- 71/F, 157 cm, 47.5 kg, BMI 19.27, BSA 1.44
- Chief complaints
  - Dyspnea (NYHA III)
- Medical history
  - ESRD s/p KT (1991), spinal stenosis, osteoporosis
  - Pericardial effusion s/p PCC (2017.3)
- ECG : paroxysmal AF with RVR
- Serum Cr : 1.48
- PFT : FEV1 0.94 (43%) / FVC 1.15 (40%) = 82%
- STS score = 3.081 %
- Euroscore I = 2.68 %, Euroscore II = 2.66 %

## Echo findings

- Tricuspid valve
- AVA = 0.55 cm<sup>2</sup>
- Peak / Mean PG = 119 / 63 mm Hg
- V max = 5.5 m/s
- EF= 71 %
- LVOT diameter, TTE: 19.4 mm
- Severe degenerative AS
- Mild AR
- Pericardial effusion

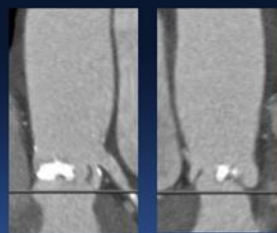
## CT findings – Aortic annulus view



Annulus plane

Aortic Annulus parameters	
Annulus short diameter	17.7 mm
Annulus long diameter	25.4 mm
Annulus mean diameter	21.5 mm
Annulus area	353.6 mm <sup>2</sup>
Annulus area-driven diameter	21.2 mm
Annulus perimeter	68.6 mm
Annulus perimeter-driven diameter	21.9 mm

## CT findings – Coronary Height



Anomalous origin of RCA from LCC

Coronary Height	
LCA	10.5 mm
RCA	13.5 mm

## CT findings – Iliofemoral Angio



## Sizing for Sapien 3

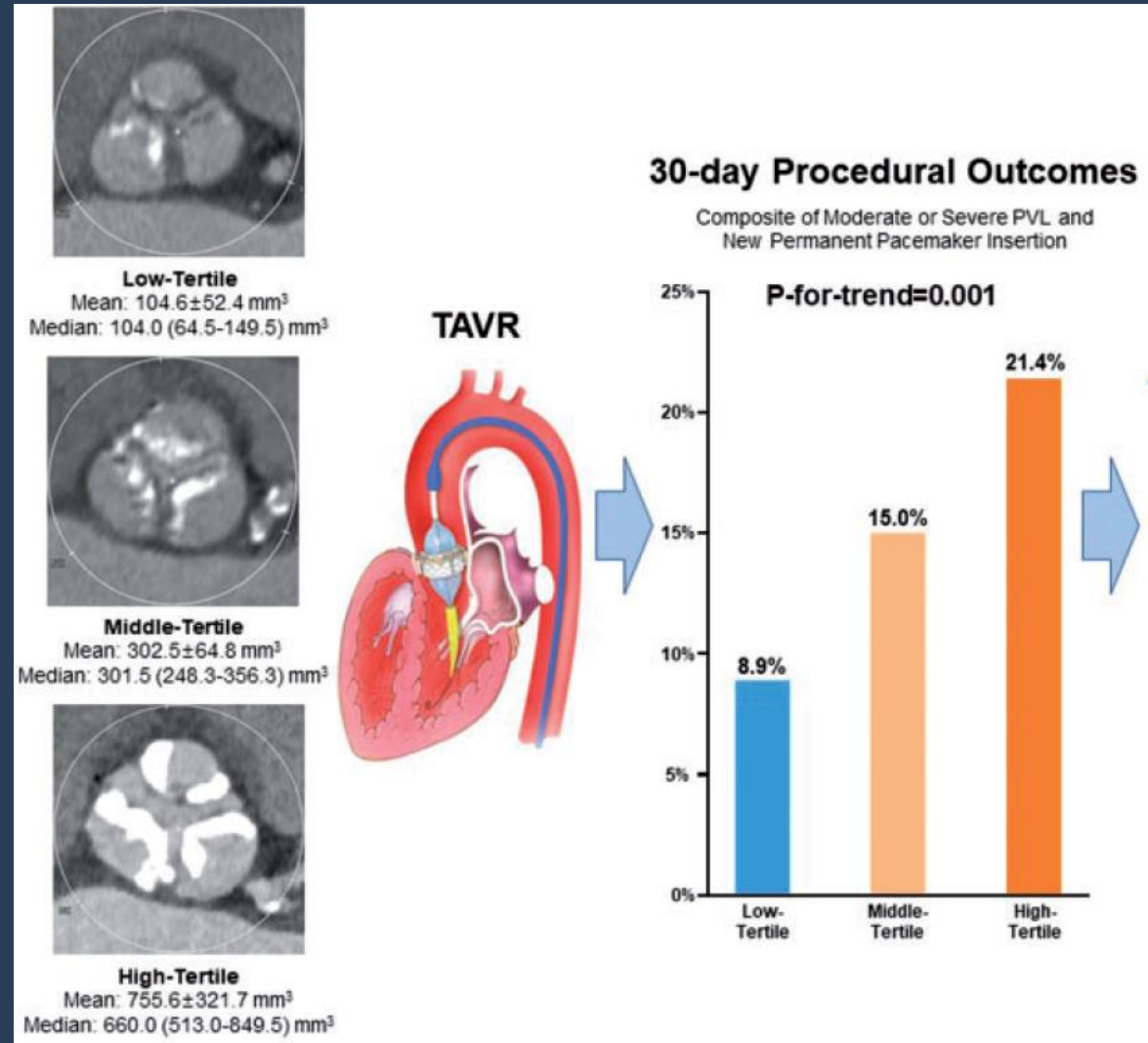
Size	Area_oversize (%)	Perimeter_oversize (%)
23	115.7	104.1
24	126.0	108.6
25	136.7	113.2
26	146.7	117.7
27	158.2	122.2
28	170.1	126.8
29	183.5	131.6

# Low-Risk Subset for Same-day G/W Transfer

- Age under 80 years-Old
- Normal LV systolic function
- Tricuspid Valve
- No Frailty

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- Lower Calcium Volume < 800

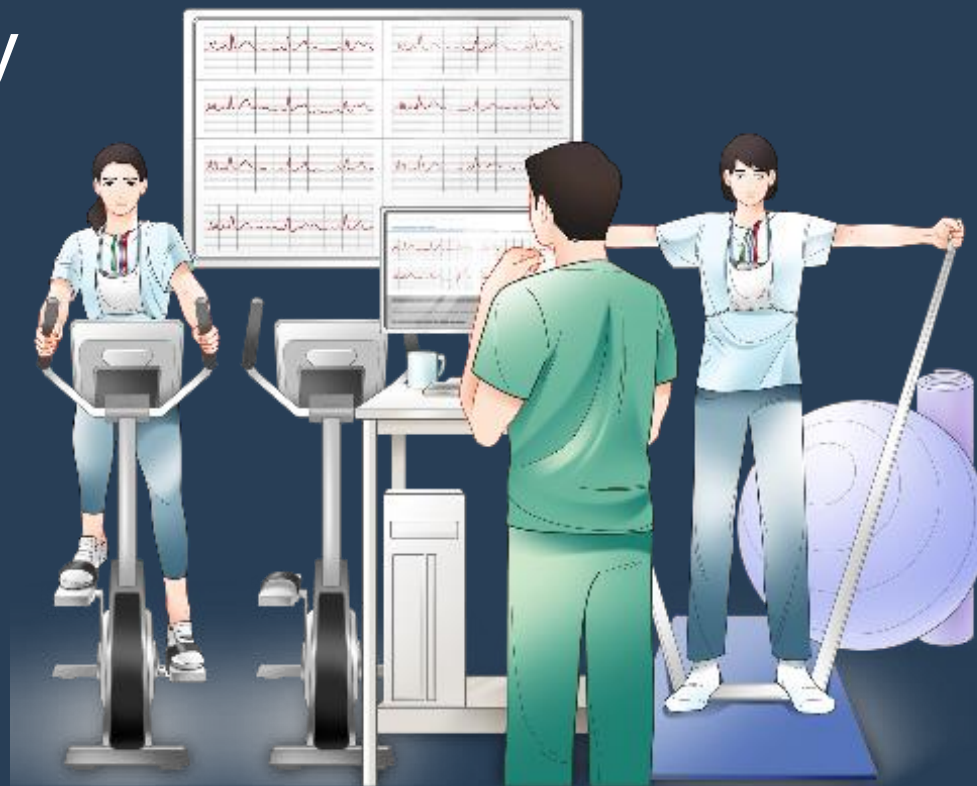


# Low-Risk Subset for Same-day G/W Transfer

- Age under 80 years-Old
- Normal LV systolic function
- Tricuspid Valve
- No Frailty
- Lower Calcium Volume < 800
- No Conduction disturbance
  - Pacemaker independent & No A-H block on RA pacing
- No Vascular complication after TAVR

# Cardiac Rehabilitation Enables Early Recovery

- Routine Next-day Cardiac Rehab in Stable Patients
- Check for the Exercise Capacity
- Education



# Conclusion

- In the era of Low-risk TAVR, Early discharge is Newly Emerging Target.
- Minimalist TAVR if done appropriately can provide clinical and economic benefits to the Patient and Hospital.
- Selection of the lower risk subset is Essential for Safer Early Discharge.



**Thank you for your attention !**