

# Thirty-Day and One-Year Outcomes of the Navitor TAVR System in Patients with Low or Intermediate Risk

*The VANTAGE Trial*

Stephen Worthley, MD

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# Disclosure of Relevant Financial Relationships

Within the prior 24 months, I have had a financial relationship with a company producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients:

## Nature of Financial Relationship

Grant/Research Support

Consultant Fees/Honoraria

Individual Stock(s)/Stock Options

Royalties/Patent Beneficiary

Executive Role/Ownership Interest

Other Financial Benefit

## Ineligible Company

N/A

Abbott, Edwards LifeSciences

Three Peaks Medical

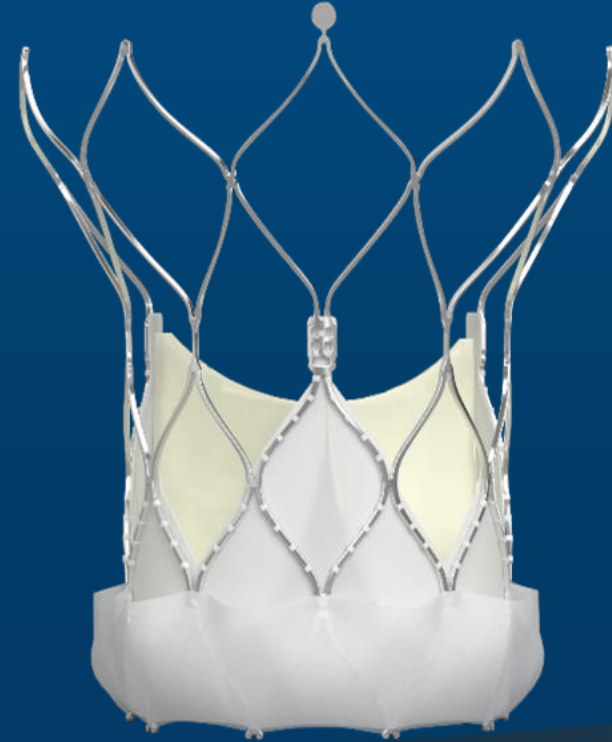
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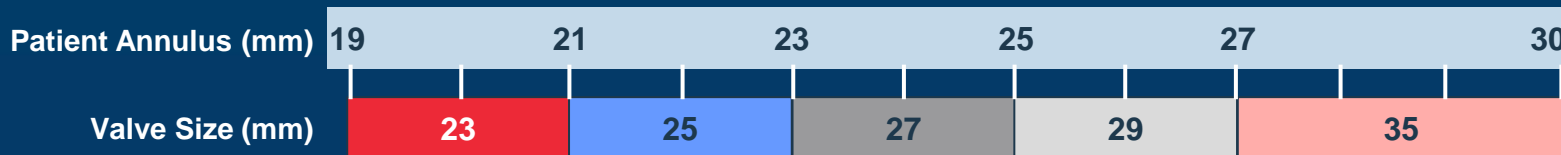
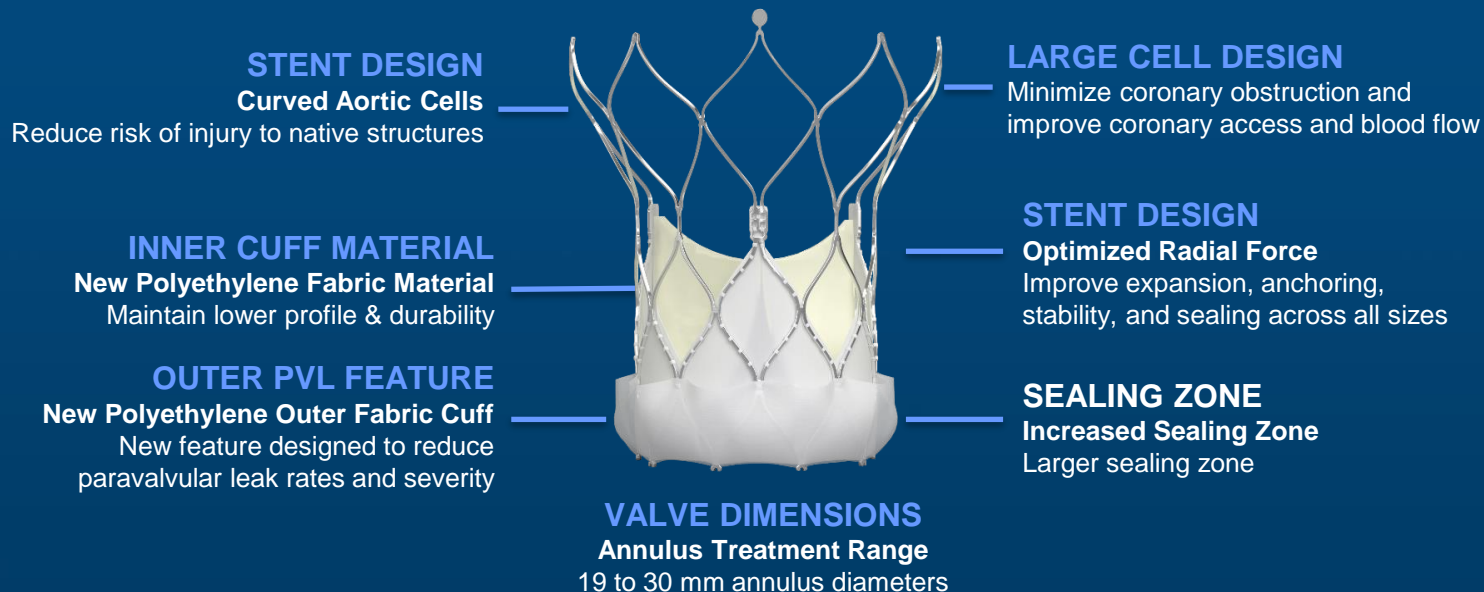
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# Background

- The **Navitor Transcatheter Aortic Valve Implantation (TAVI) System** was first approved for the treatment of patients with symptomatic, severe aortic stenosis (AS) at high or extreme surgical risk based on results of the Navitor IDE study.
- TAVI has evolved from a treatment reserved for patients at high surgical risk to now treat patients at low or intermediate surgical risk.
- The VANTAGE trial evaluates the safety and performance of the Navitor TAVI System for indication expansion in patients with symptomatic, severe AS at low or intermediate surgical risk.



# Navitor Valve: A Self-Expanding Intra-Annular Valve



# VANTAGE Trial Overview

## VANTAGE

Prospective, single-arm, multi-center, pre-market trial  
Up to 40 sites in Europe, Australia, and Israel, 10-year follow-up

### Native Aortic Valve

- Symptomatic, severe native aortic stenosis
- Low or intermediate surgical risk
- **434 patients enrolled (203 low, 231 intermediate)**

### Valve-in-valve

- TAV-in-SAV (stenosed, insufficient, or combined)
- Any risk group
- Currently enrolling (up to 100 patients)

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### Key Inclusion Criteria:

- Surgical mortality risk <7% at 30 days\*
- $AVA \leq 1.0 \text{ cm}^2$  or  $iEOA \leq 0.6 \text{ cm}^2/\text{m}^2$  AND mean gradient  $\geq 40 \text{ mmHg}$  or peak jet velocity  $\geq 4.0 \text{ m/s}$  or  $DVI \leq 0.25$ .

### Key Exclusion Criteria:

- Congenital unicuspid/bicuspid morphology
- Pre-existing prosthetic heart valve in any position
- Mixed aortic valve disease with predominant AR
- Severe mitral/tricuspid valve insufficiency

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**Primary safety endpoint:** All-cause mortality or fatal stroke/stroke with disability at 12 months (N=262)

**Primary effectiveness endpoint:** Moderate or greater paravalvular leak at 30 days (N=434)

# Study Leadership

## Study PIs

- **Nicolas van Mieghem**, Erasmus University Medical Center, Netherlands
- **Stephen Worthley**, Macquarie University Hospital, Australia

## Steering Committee

- Francesco Bedogni, Policinico San Donato, Italy
- Maurizio Taramasso, HerzZentrum Hirslanden, Switzerland
- Didier Tchetché, Clinique Pasteur, France

## Core Labs

- Medstar Health Research Institute, Washington, DC, USA
- University of British Columbia, Vancouver, BC, Canada

## Subject Screening Committee

- Maurizio Taramasso, HerzZentrum Hirslanden, Switzerland
- Katherine Harrington, The Heart Hospital Baylor Plano, US
- Gregory Fontana, Los Robles Regional Medical Center, US
- Tsuyoshi Kaneko, Washington University School of Medicine, Department of Surgery, US
- Won-Keun Kim, Kerckhoff-Klinik gGmbH, Germany
- Mohamed Azeem Latib, Montefiore Medical Center - Moses Division, US
- Ravi Ramana, Advocate Christ Medical Center, US
- Michael Reardon, The Methodist Hospital, US
- Molly Szerlip, The Heart Hospital Baylor Plano, US
- Nicolas Van Mieghem, Erasmus MC – Thoraxcenter, Netherlands
- Stephen Worthley, Macquarie University Hospital, Australia

# Participating Sites

36 sites from 11 countries



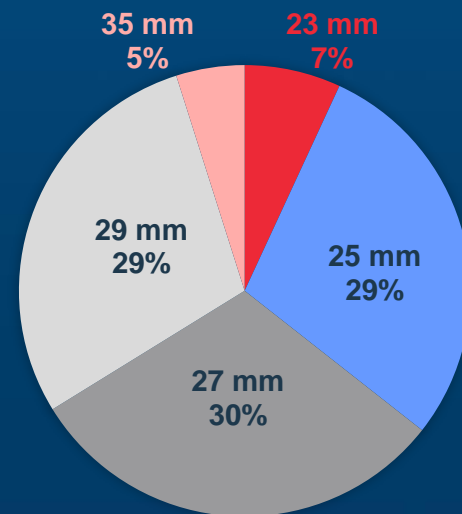
# Baseline Characteristics and Medical History

Variable	Low Risk (N=203)	Intermediate Risk (N=231)
<b>Age (years)</b>	<b>75.1 ± 3.2</b>	<b>79.1 ± 3.7</b>
Female	46.8%	52.8%
<b>STS-PROM (%)</b>	<b>1.5 ± 0.5</b>	<b>2.6 ± 1.2</b>
EuroSCORE II (%)	1.4 ± 0.6	2.1 ± 1.2
<b>Total Frailty Score (0-4)</b>	<b>0.4 ± 0.5</b>	<b>0.9 ± 0.8</b>
Coronary Artery Disease	21.7%	28.1%
Atrial Fibrillation	14.3%	23.4%
First Degree AVB	3.4%	7.8%
LBBB	2.5%	6.1%
RBBB	5.4%	8.7%
Permanent Pacemaker	3.9%	6.5%
Aortic Valve Area (cm <sup>2</sup> )	0.7 ± 0.2	0.7 ± 0.2
Mean Gradient (mmHg)	48.8 ± 9.9	47.7 ± 11.2
LV Ejection Fraction (%)	59.9 ± 6.7	60.9 ± 7.6

# Procedural Characteristics and Technical Success

Procedural Characteristic	Low Risk (N=203)	Intermediate Risk (N=231)	Total (N=434)
Conscious Sedation	58.1%	60.2%	59.2%
Transfemoral Access	99.5%	100.0%	99.8%
Pre-dilatation	88.7%	92.6%	90.8%
Post-dilatation	33.7%	32.0%	32.8%
No Resheathing	48.3%	42.4%	45.1%
Hospital Stay (days)	3.6 ± 1.9	3.7 ± 2.9	3.6 ± 2.5
<b>Technical Success</b>	<b>97.5%</b>	<b>96.5%</b>	<b>97.0%</b>
Additional Navitor Valve	0.5%	0.9%	0.7%
Alternative TAV/Conversion to SAVR	1.0%	0.0%	0.5%

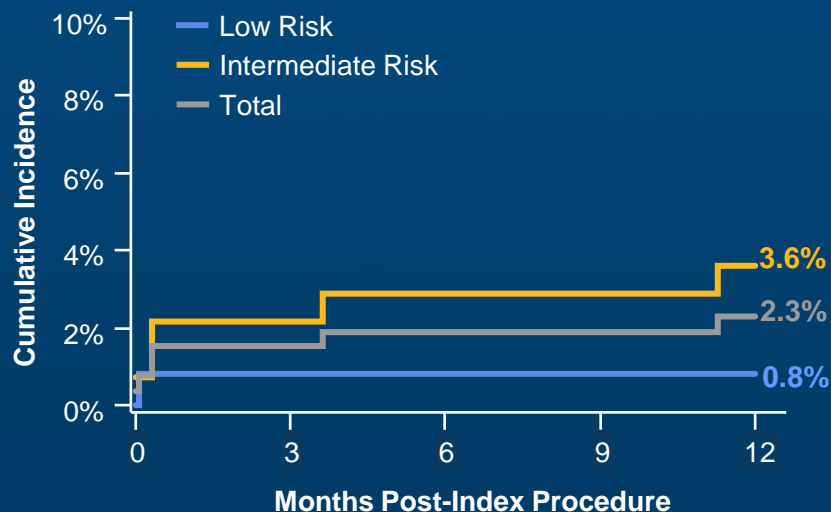
Implanted Valve Size



# Primary Safety Endpoint – Successfully Met

Primary Safety Endpoint	Observed Rate	97.5% UCB	Performance Goal	P Value
All-cause Mortality or Fatal Stroke/Stroke with Disability at 12 Months (N=262)	<b>2.3%</b>	5.0%	11.3%	<0.0001

# Primary Safety Endpoint and Individual Components



	Low Risk (N=123)	Intermediate Risk (N=139)	Total (N=262)
All-Cause Mortality	0.0% (0)	1.4% (2)	0.8% (2)
Fatal Stroke/Stroke with Disability	0.8% (1)	2.2% (3)	1.5% (4)
Fatal Stroke	0.0% (0)	0.0% (0)	0.0% (0)
Stroke with Disability	0.8% (1)	2.2% (3)	1.5% (4)

# Primary Effectiveness Endpoint – Successfully Met

Primary Effectiveness Endpoint	Observed Rate	97.5% UCB	Performance Goal	P Value
Moderate or Greater PVL at 30 days (N=434)	<b>0.0%</b>	0.9%	6.6%	<0.0001

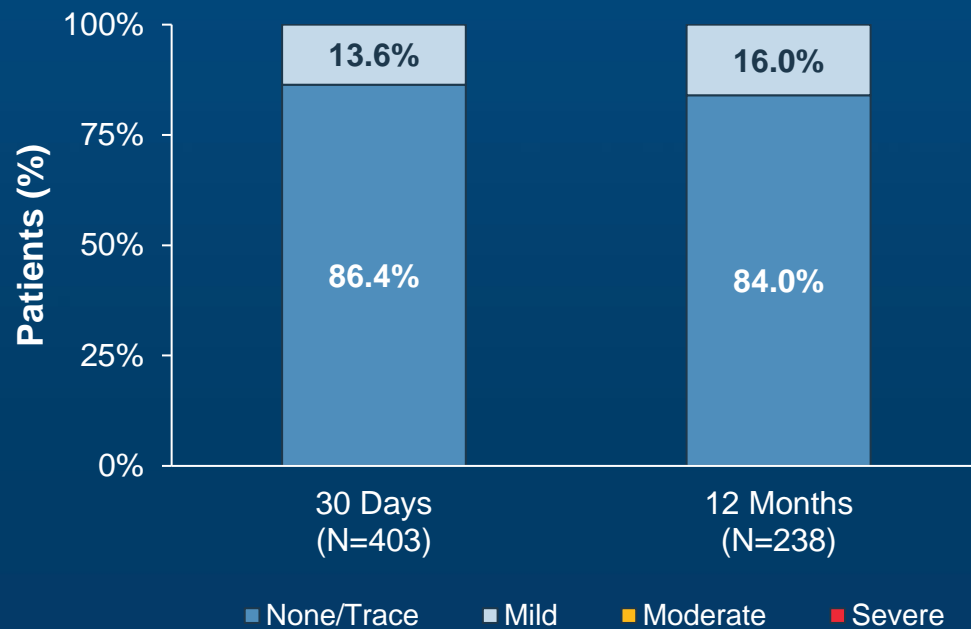
# 30-Day Safety Outcomes (N=434)

Events	Low Risk (N=203)	Intermediate Risk (N=231)	Total (N=434)
<b>All-Cause Mortality</b>	<b>0.0% (0)</b>	<b>0.9% (2)</b>	<b>0.5% (2)</b>
Cardiovascular Mortality	0.0% (0)	0.9% (2)	0.5% (2)
Valve-related Mortality	0.0% (0)	0.4% (1)	0.2% (1)
All-Stroke	1.0% (2)	2.2% (5)	1.6% (7)
<b>Fatal Stroke/Stroke with Disability</b>	<b>0.5% (1)</b>	<b>1.3% (3)</b>	<b>0.9% (4)</b>
Transient Ischemic Attack (TIA)	0.0% (0)	1.7% (4)	0.9% (4)
Stage 3/4 Acute Kidney Injury	0.0% (0)	0.9% (2)	0.5% (2)
Type 3/4 Bleeding	2.5% (5)	4.8% (11)	3.7% (16)
Major Vascular Complication	3.0% (6)	5.6% (13)	4.4% (19)
Major Cardiac Structural Complications	0.5% (1)	0.9% (2)	0.7% (3)
Myocardial Infarction	0.0% (0)	2.6% (6)	1.4% (6)
Aortic Valve Reintervention	0.5% (1)	0.4% (1)	0.5% (2)
PPI in Pacemaker-Naive Patients	15.9% (31)	21.3% (46)	18.7% (77)
Cardiovascular Rehospitalization	6.4% (13)	7.8% (18)	7.1% (31)

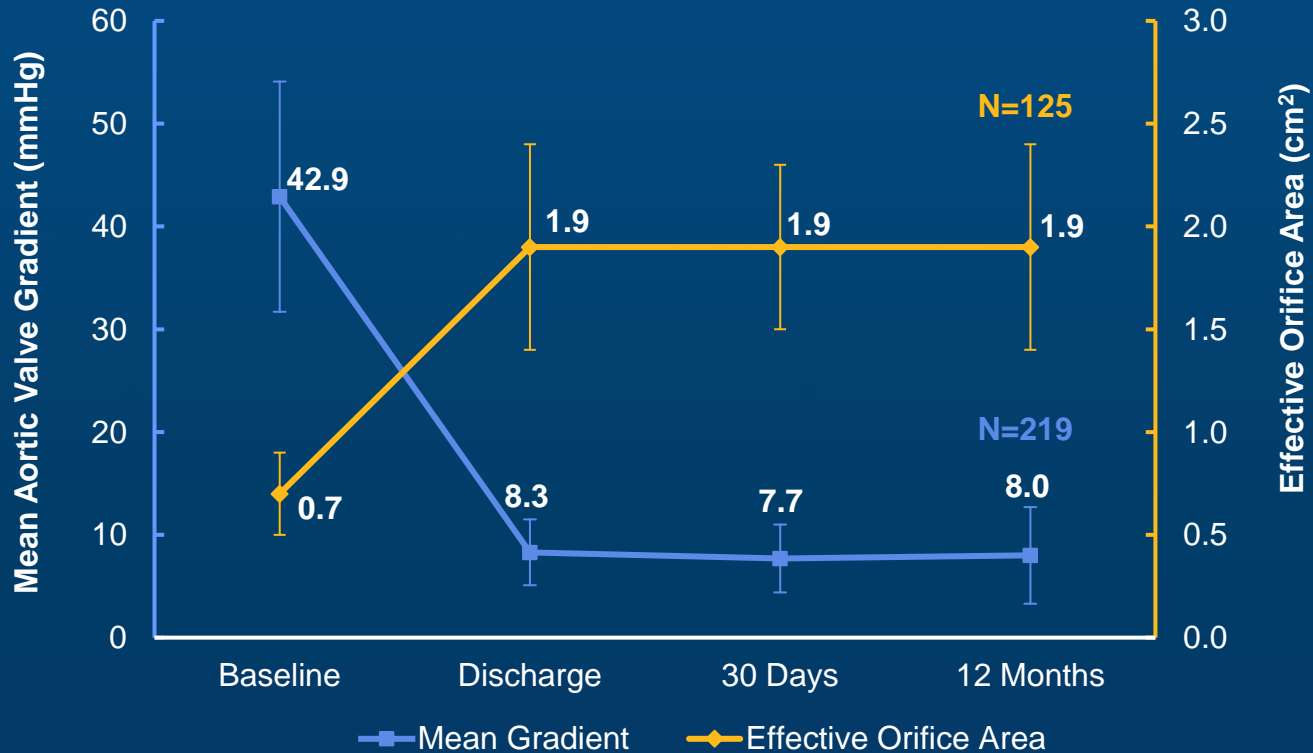
# 12-Month Safety Outcomes (N=262)

Events	Low Risk (N=123)	Intermediate Risk (N=139)	Total (N=262)
<b>All-Cause Mortality</b>	<b>0.0% (0)</b>	<b>1.4% (2)</b>	<b>0.8% (2)</b>
Cardiovascular Mortality	0.0% (0)	1.4% (2)	0.8% (2)
Valve-related Mortality	0.0% (0)	0.7% (1)	0.4% (1)
All-Stroke	1.6% (2)	3.6% (5)	2.7% (7)
<b>Fatal Stroke/Stroke with Disability</b>	<b>0.8% (1)</b>	<b>2.2% (3)</b>	<b>1.5% (4)</b>
Transient Ischemic Attack (TIA)	1.6% (2)	2.9% (4)	2.3% (6)
Myocardial Infarction	0.8% (1)	1.4% (2)	1.1% (3)
Coronary Obstruction Requiring Intervention	0.0% (0)	0.0% (0)	0.0% (0)
Successful Coronary Access When Needed	100.0% (2/2)	NA	100.0% (2/2)
Aortic Valve Reintervention	0.0% (0)	0.0% (0)	0.0% (0)
Cardiovascular Rehospitalization	13.0% (16)	18.7% (26)	16.0% (42)
Prosthesis Valve Endocarditis	0.0% (0)	0.7% (1)	0.4% (1)

# Paravalvular Leak (PVL)

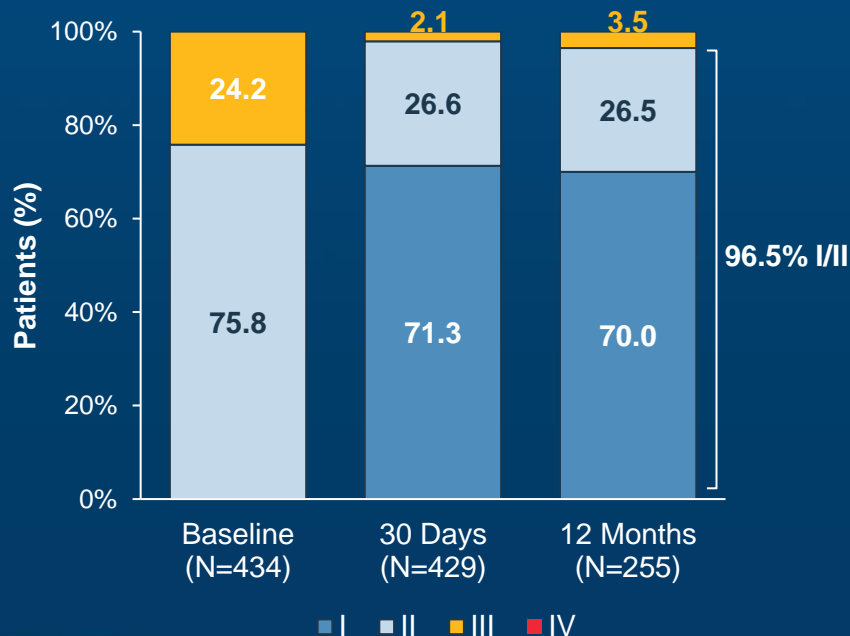


# Hemodynamic Performance

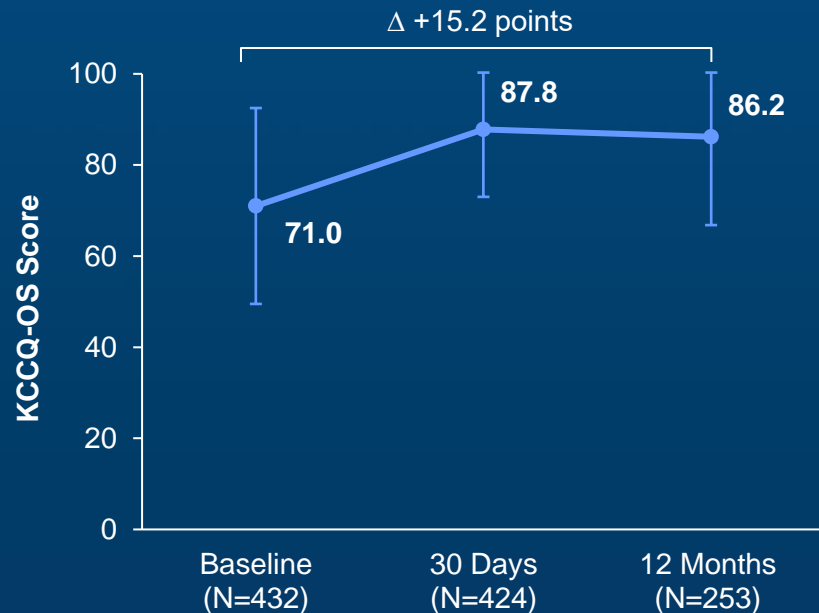


# NYHA Class and KCCQ Score Improvements

## NYHA Class



## KCCQ Score



# Limitations

- Single-arm trial does not allow direct comparisons with other TAVs.
- Screening process may have introduced inherent selection bias (total screen failure rate: 33.2%; anatomical screen failure rate: 14.7%).
- 12-month outcomes are currently available only for the first 262 patients.

# Conclusions

- The Navitor valve demonstrated **favorable safety and performance at 30 days and 12 months** in the treatment of patients with **symptomatic, severe aortic stenosis at low or intermediate surgical risk**.
  - Primary safety and primary effectiveness endpoints were both met ( $p < 0.0001$ ).
  - The Navitor valve with an intra-annular valve design offers favorable hemodynamics with a residual gradient at single digit (7.7 mmHg) and mild PVL in less than 14% of patients at 30 days.
- These results supported the expanded indication of the Navitor valve for low- and intermediate-risk patients.