



Meril

Cardiovascular

At the heart of life.
At the heart of precision.







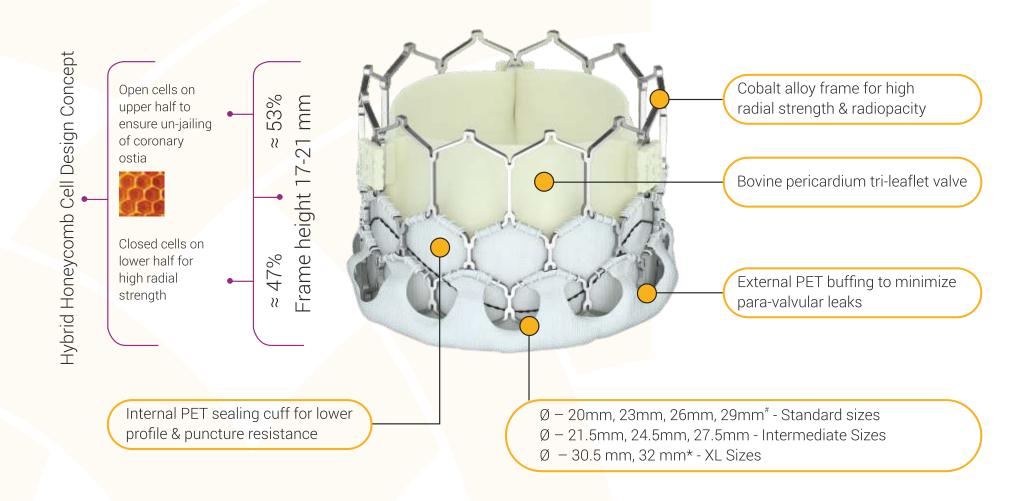
MyVal-1 Study 30 days Outcome

Low*

Device-Related Mortality
New Permanent Pacemaker
Incidence of Stroke

97% Device Success*

Myval THV: Designed for Precision in Outcomes



Myval THV has been indigenously developed by Meril Life Sciences Pvt. Ltd. & is CDSCO approved.

^{# -} Sizes available now

^{* -} Contact Meril Representative for information and availability in your country.

Myval THV diameter sizes 30.5 mm and 32 mm are currently not CE approved. Myval THV diameter size 30.5 mm is currently pending approval from CDSCO.

Myval THV: Size Matrix

Myval THV Size Matrix & Technical Specifications	Area 314 mm² 20 mm	Area 415 mm² Eleganoses 23 mm	Area 531 mm² Eu 61 26 mm	Area 661 mm² 20.50 mm 29 mm
Perimeter	62.83 mm	72.26 mm	81.68 mm	91.11 mm
Native annulus area	270 - 330 mm²	360 - 440 mm²	460 - 560 mm²	570 - 700 mm²
Area-derived diameter	18.5 - 20.5 mm	21.4 - 23.7 mm	24.2 - 26.7 mm	26.9 - 29.9 mm
Native annulus size by TEE	16 - 19 mm	18 - 22 mm	21- 25 mm	24 - 28 mm

Myval THV: Additional* Size Matrix

	-	Myval Intermediate Siz	← Myval XL Size —				
Myval THV Size Matrix & Technical Specifications	Area 363 mm² E	Area 471 mm² Eu 06.80 24.5 mm	Area 594 mm² 07.6 27.5 mm	Area 731 mm ² SO:12 30.5 mm	Area 804 mm² SC 130 32 mm		
Perimeter	67.54 mm	76.97 mm	86.39 mm	95.82 mm	100.53 mm		
Native annulus area (mm²)	314-380 mm²	410-500 mm²	510-630 mm²	630-770 mm²	700-840 mm²		
Area-derived diameter	20-22 mm	22.8-25.2 mm	25.5-28.3 mm	28.3-31.3 mm	29.9-32.7 mm		
Native annulus size by TEE	17.5-20.5 mm	19.5-23.5 mm	22.5-26.5 mm	25.5-29.5 mm	27-31 mm		

14Fr Python - Expandable Introducer Sheath can be used for all Myval THV diameter sizes up to 32 mm.

^{*} Contact Meril Representative for information and availability in your country. Myval THV diameter sizes 30.5 mm and 32 mm are currently not CE approved. Myval THV diameter size 30.5 mm is currently pending approval from CDSCO.

Myval THV: Precise Crimping



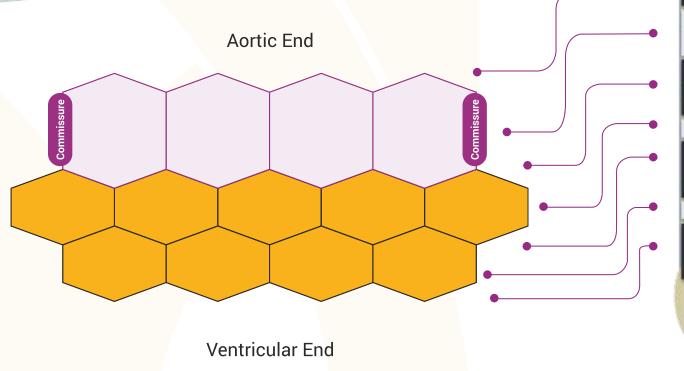
Cells 53%

Cells 47%

Open

Upon Crimping:

- V-shaped hinges on hexagonal frame fold, generating the dense bands on fluoroscopy
- O Vertical "I" connectors give rise to light bands
- Alternating V-folds & vertical connectors give Myval a unique appearance on fluoroscopy for ease of positioning



4th Dense Band

3rd Light Band

3rd Dense Band

2nd Light Band

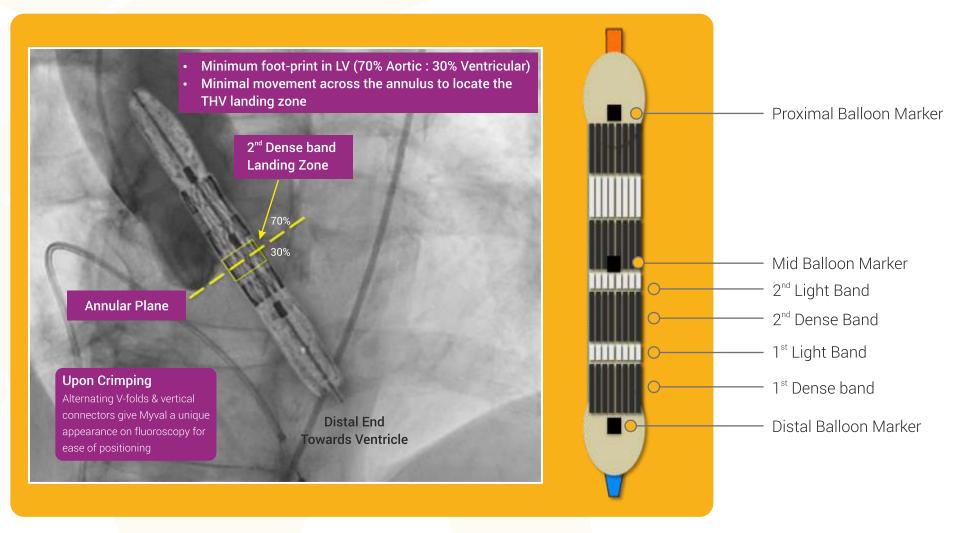
2nd Dense Band

1st Light Band

1st Dense Band

Myval THV: Precise Placement Technique

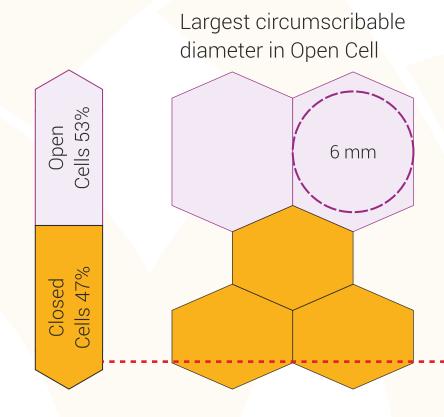
Schematic of Myval THV - Ideal Landing Zone

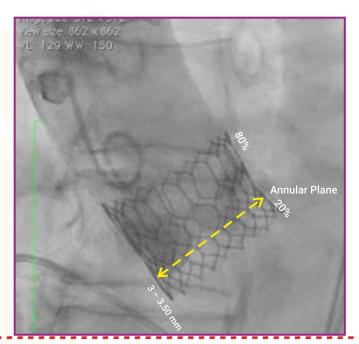


The characteristic bands may not be visible in-case the THV system is not co-axial to the annular plane. In this case, THV landing zone must be referenced using Mid-Balloon marker which has to be ~ 3 mm above the annular plane.

Myval THV: Ground Zero Deployment

- Shallow deployment of Myval with least engagement within LVOT is possible
- Optimal orthotopic anchorage of THV post deployment (80:20) without risk of THV migration
- Minimal infra-annular depth (range of 3-3.50 mm) to avoid conduction system interference (thus minimizing the need of new permanent pacemaker dependency)



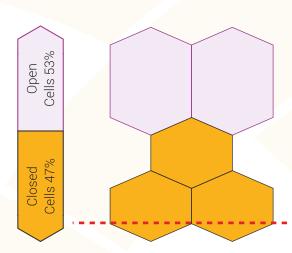


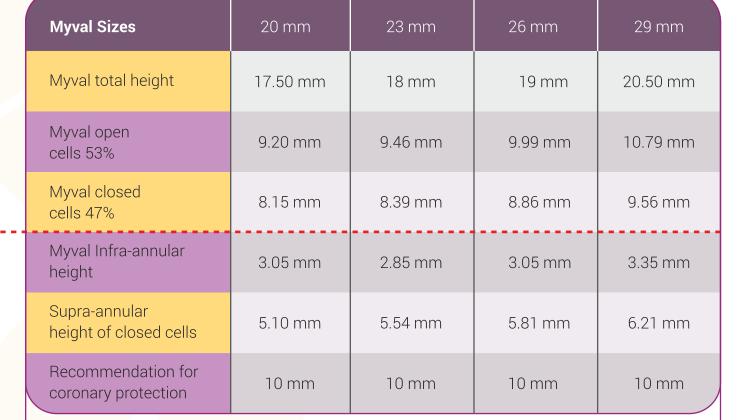
Myval THV infra-annular depth range 3 – 3.50 mm based on THV Ø

Myval THV Detailed Sizing Guide

3D Annular area mm	n^2	270	280	290) 30	00 3	10	314		320	330	340	350	363
3D area derived diamete	r mm	18.5	18.9	19.:	2 19	.5 19	9.9	20.0		20.2	20.5	20.8	21.1	21.5
	20 mm	16.4%	12.2%	8.39	% 4.7	7% 1.	3%							
% Annular area over/under	21.5 mm							16%		13%	10%	7%	4%	
	23 mm													14.5%
3D Annular area mm	n ²	370	380	390	400	410	41	5 4	20	430	440	450	460	471
3D area derived diamete	r mm	21.7	22.0	22.3	22.6	22.8	23	.0 2	3.1	23.4	23.7	23.9	24.2	24.5
	23 mm	12.3%	9.3%	6.5%	3.9%	1.3%								
% Annular area over/under	24.5 mm					15.0%	13.0	5% 12	2.2%	9.6%	7.1%	4.8%	2.5%	
	26 mm													12.7%
3D Annular area mm	n ²	480	490	500	510	520	53	1 5	540	550	560	570	580	594
3D area derived diamete	r mm	24.7	25.0	25.2	25.5	25.7	26	.0 2	6.2	26.5	26.7	26.9	27.2	27.5
	26 mm	10.6%	8.4%	6.2%	4.1%	2.1%								
% Annular area over/under	27.5 mm					14.2%	11.9	9% 10	0.0%	8.0%	6.1%	4.2%		
	29 mm												13.9%	11.2%
3D Annular area mm	n ²	600	610	620	630	640	65	0 6	61	670	680	690	700	710
3D area derived diamete	r mm	27.6	27.9	28.1	28.3	28.5	28	.8 2	9.0	29.2	29.4	29.6	29.9	30.1
	29 mm	10.1%	8.3%	6.5%	4.8%									
% Annular area over/under	30.5 mm					14.2%	12.4	4% 10).5%	9.0%	7.4%	5.9%	4.4%	
	32 mm												14.9%	13.3%
3D Annular <mark>area mm</mark>	n ²	720		731	740	750		760		770	780	7	790	804
3D area derived di <mark>amete</mark>	r mm	30.3	3	80.5	30.7	30.9		31.1		31.3	31.5	3	1.7	32.0
% Annular area over/under	32 mm	11.7%	10	0.0%	8.7%	7.2%		5.8%		4.4%	3.1%	1	.8%	0.0%

Myval THV Post Deployment Dimension Chart



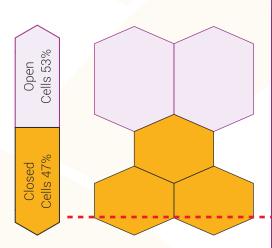


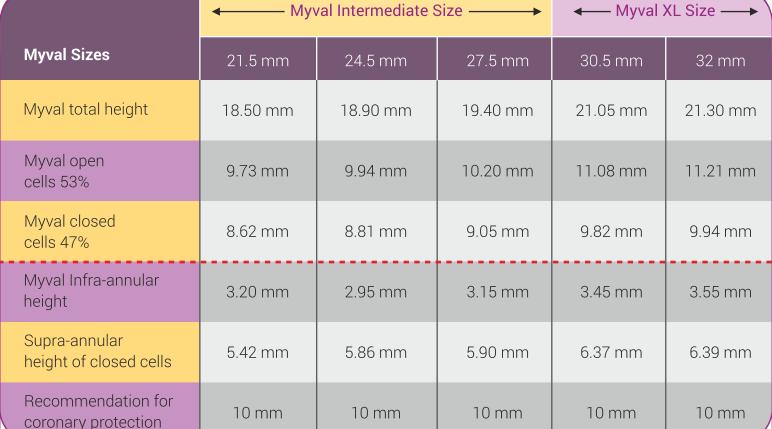


Largest circumscribable diameter in Open Cell

• Consider protection of coronary arteries with a DES especially if height of coronary ostium is < 10 mm from the annular plane and in conjunction with sinus of valsalva dimensions i.e. height & diameters.

Myval THV Post deployment Dimension Chart: Additional Sizing





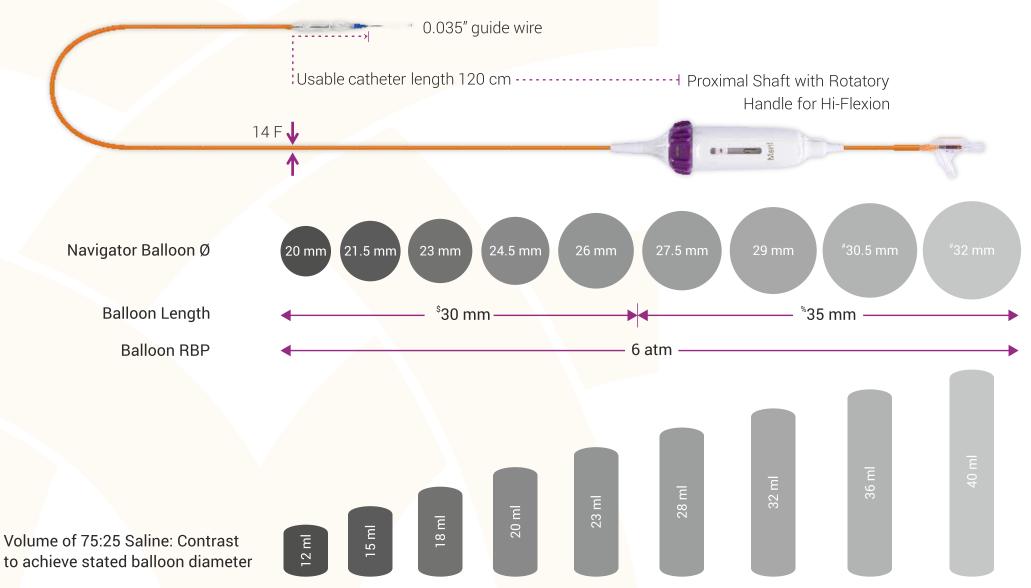


Largest circumscribable diameter in Open Cell

• A balloon occlusion test may be considered to assess the propensity for coronary occlusion.

Balloon diameter approximated to shortest axis of CT-derived annular diameter to be considered.

Navigator THV Delivery System



Navigator - THV Delivery System has been indigenously developed by Meril Life Sciences Pvt. Ltd., India.

^{# 30.5}mm & #32mm dia. are currently not CE approved and approval pending from CDSCO for 30.5mm dia.

^{% 35}mm length is currently not CE approved.

^{\$} For Balloon length of 30mm, balloon diameters of 20mm, 21.5mm, 23mm, 24.5mm, 26mm, 27.5mm and 29mm are CE approved.

Navigator THV Delivery System: Proximal Assembly

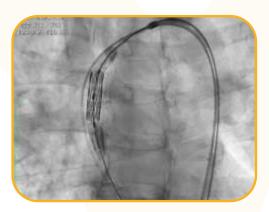
Clock-wise rotation to achieve distal end flexion

Proximal shaft with rotatory handle for Hi-Flexion

0.035" guide wire exit port



Hi-flexion feature ensures tracking the THV delivery system via inner aortic arch curve thereby avoiding contralateral wall scraping.







Caution: Always remember to fully un-flex the Navigator system while withdrawing

Navigator Balloon Expansion

Navigator balloon with dual expansion ports at each end ensures rapid, simultaneous, controlled expansion (dog-boning) of distal and proximal ends

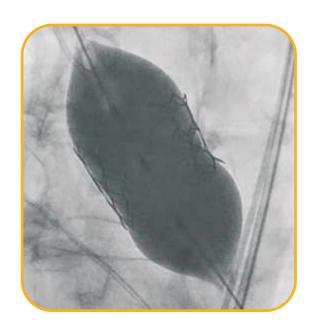
This typical dog bone pattern of inflation steadies the valve during expansion phase, ensuring its precise annular position and deployment without any risk of valve migration or embolization

Rapid balloon inflation using an inflation device is possible with controlled palm thrust

Rapid balloon deflation within 3-5 sec ensures procedure safety and compliance

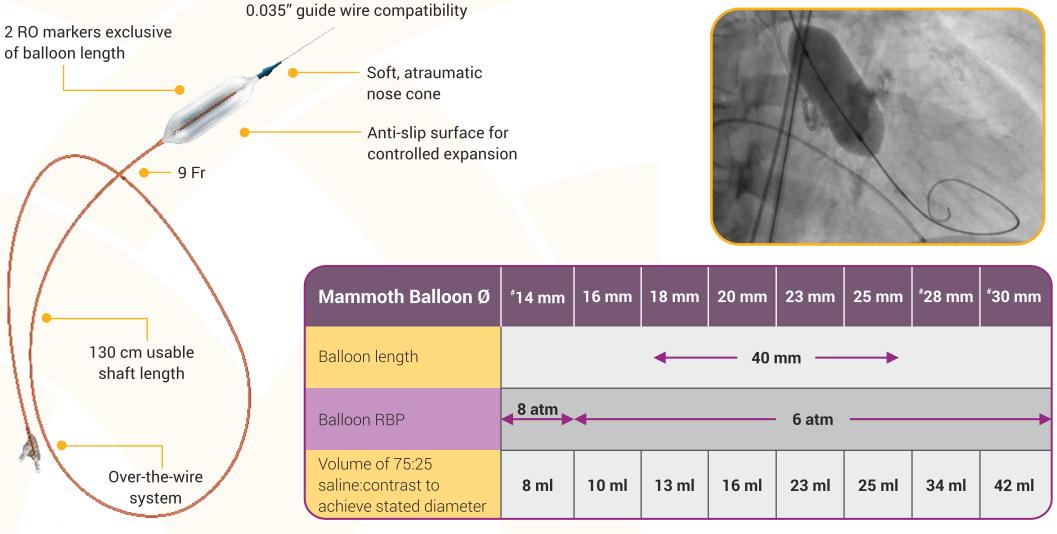






Mammoth - OTW Balloon Catheter

It is not mandatory to pre-dilate the native annulus prior to Myval THV implantation. Operators may consider pre-dilatation based on anatomical considerations.



Mammoth – OTW Balloon Catheter has been indigenously developed by Meril Life Sciences Pvt., Ltd. India.

Python – Introducer Sheath 14Fr Profile for all Myval Ø 20 mm to 32 mm

Sheath expands momentarily like a python swallowing its prey Conveniently allows passage of crimped Myval THV System

14Fr Distal Entry Profile, Allows Atraumatic Percutaneous Access

Easy retrieval of crimped valve in case of inability to cross annulus

Proximal Port with Hemostatic valves

*Counter opposing suturing eyelets

Lubricious, hydrophilic shaft coating

RO distal tip

Dilator with locking threads

\$Luer Hub Design

30 cm usable length

Seamless transition from dilator to distal tip

Convenient side port with 3-way



A separate loading tube ensures temporary opening of hemostatic valves in proximal port allowing smooth passage of crimped Myval THV System

Common Femoral Artery* Ø (mm)	Myval THV Ø (mm)				
≥ 5.50 mm	20 mm, 21.5 mm, 23 mm, 24.5 mm				
≥ 6.00 mm	26 mm, 27.5 mm, 29 mm				
≥ 6.50 mm	30.5 mm, 32 mm				
*CFA Ø must be MSCT derived. Excluding circumferential Ca ²⁺					

Python - Introducer Sheath has been indigenously developed by Meril Life Sciences Pvt. Ltd., India.

Myval THV Global Clinical Program



Myval Global⁴ (n=1,000)

Low, Intermediate to High surgical risk subjects. Real-world registry.

100 participating sites.

Myval-China⁵ (n=110)

High surgical risk subjects 10 participating sites

MyVal-1¹ (n=100)

FiM Study. Intermediate to high surgical risk subjects. 29 Indian participating sites.

LANDMARK Trial³ (n=768)

1:1 RCT Myval THV series : Contemporary Valves (Sapien and Evolut THV series) Low, Intermediate to High surgical risk subjects. EU/AUS/NZ 50+ participating sites.

Myval European Study² (n=200)

Retrospective registry of real-world EU population. 15 EU participating sites.

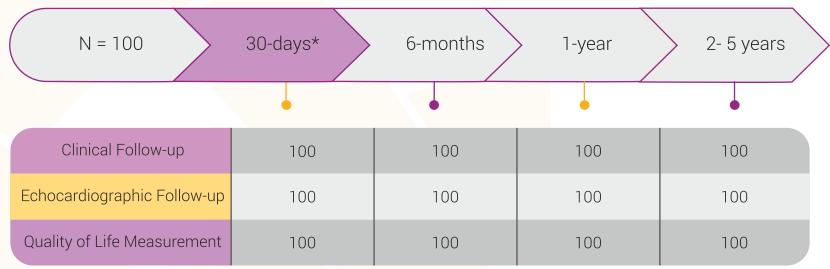
- 1. Primary endpoint achieved. Presented at PCR LV 2019.
- **2.** 30-days results to be presented at EuroPCR 2020.
- **3.** Initiated. First Patient First Visit expected Apr 2020.
- **4.** Initiated. First Patient First Visit expected Jun 2020.
- **5.** Pre-study activities initiated.

MyVal-1: Study Design

A prospective, multicentre, single-arm, open-label study of Myval THV in the treatment of severe symptomatic native aortic valve stenosis

Total number of patients: 100

CLINICAL FOLLOW-UP



Device Sizes - 20, 21.5, 23, 24.5, 26, 27.5 and 29 mm

- Dr. Samin Sharma Chairman, New York USA
- Dr. Ashok Seth Principal Investigator, New Delhi India
- Dr. Praveen Chandra Co-ordinating PI, New Delhi India
- Dr. Ravinder Singh Rao Co-ordinating Pl, Jaipur India
- Dr. PK Goel Scientific Advisor, Lucknow, India

MyVal-1: Clinical outcomes up to 1-month follow-up

Excellent clinical safety & efficacy

Major Adverse Cardiac, Cerebrovascular Renal Events (MACCRE)	Post-procedure	1-Month Follow-Up
Survival	98%	97%
Stroke	1%	2%
Acute renal failure	2%	2%
Life-threatening or disabling bleeding	1%	1%
Myocardial infarction	0%	0%
Major vascular complications	1%	1%
Minor vascular complications	2%	2%
Repeat hospitalization	NA	8%
New permanent pacemaker	2%*	2%

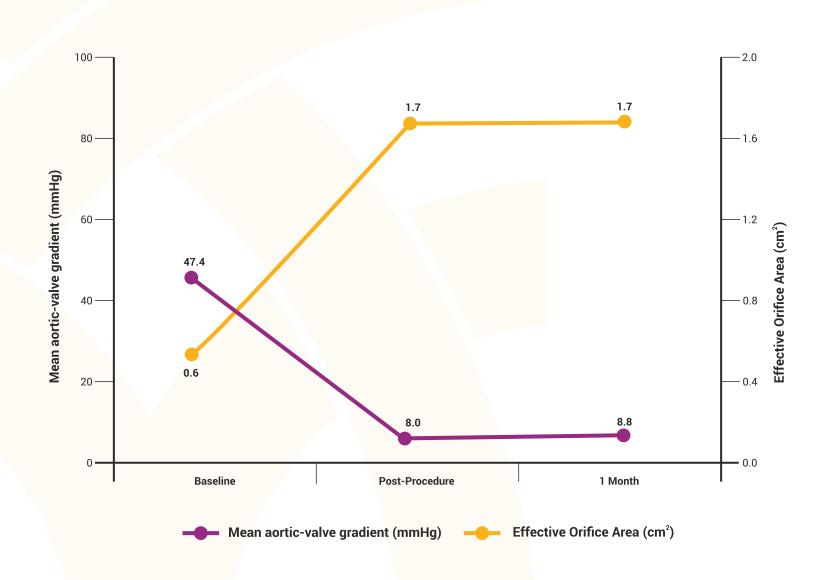
^{*}One patient had RBBB pre-procedure

MyVal-1: Echocardiographic Findings at 1-month Follow-up

Echocardiographic fin	dings

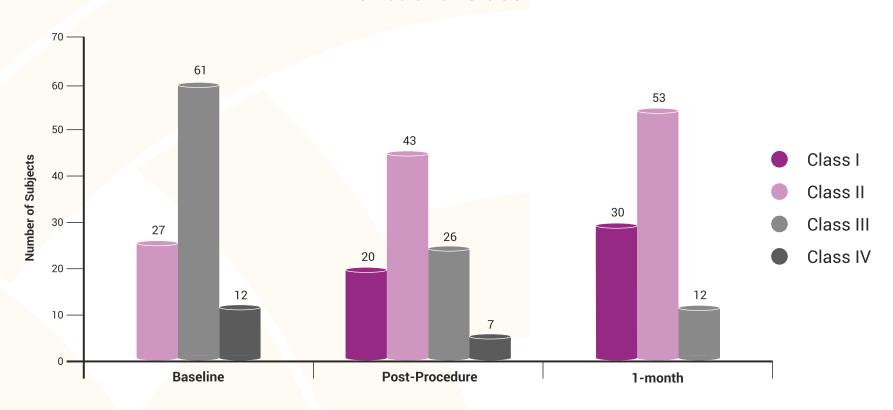
Parameters	Baseline	Post-procedure	30-day
Effective orifice area, (cm²)	0.6 ± 0.2	1.7 ± 0.3	1.7 ± 0.5
Mean aortic-valve gradient, (mmHg)	47.4 ± 8.8	8.0 ± 2.7	8.8 ± 2.5
Peak aortic-valve gradient, (mmHg)	71.7 ± 13.0	14.4 ± 2.4	15.7 ± 2.8
Trans-aortic velocity, (m/s)	4.5 ± 0.4	1.9 ± 0.4	1.8 ± 0.4
Mean LVEF, (%)	45.5 ± 11.5	47.8 ± 11.1	48.6 ± 8.9
Moderate or severe mitral regurgitation, (n)	2	0	0
Aortic regurgitation, (n)	-	0	0

Sustained Low Mean Gradients Post-Procedure and ~1.7cm² Large EOA at 1-month Follow-up (p<0.0001)



MyVal-1: Marked improvement in Quality of Life (QoL) parameters

NYHA Functional Class

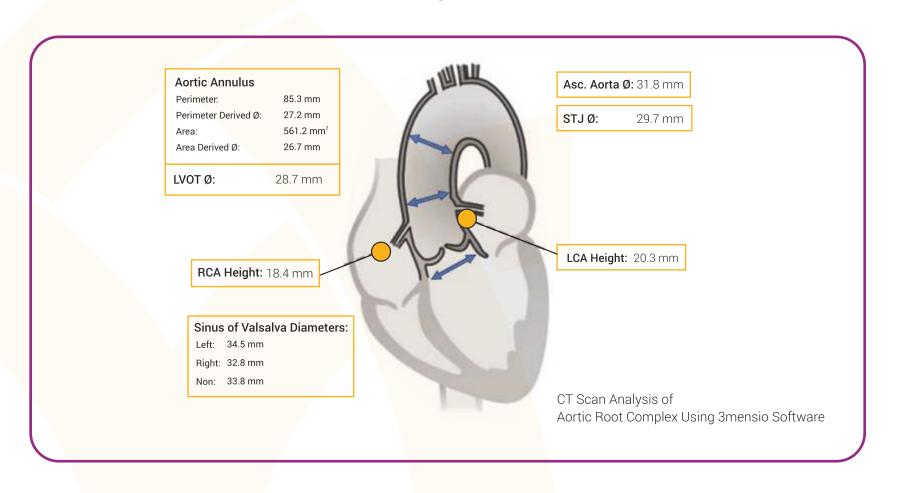


Parameters	Baseline (n=100)	1 Month (n=96)
Six minute walk test (p<0.0001)	171.7	230.69
Kansas city cardiomyopathy Questionnaire (p<0.0001)	35.27	47.91

Interesting Case with Myval THV

71 Years/Male | Symptomatic AS | NYHA class IV | LVEF 25% | Normal Renal Function | Hypertensive, AF on treatment | Moderate Pulmonary Disease | STS Score 7.97% | Valve Type Tri-Leaflet | Peak Velocity 4.59 m/s | Mean gradient 55 mmHg |

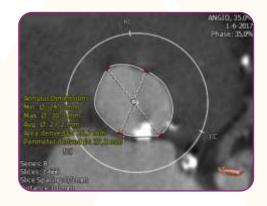
Peak Gradient 84 mmHg | EOA 0.5 cm² | EF 25%



Myval THV: Sizing Rationale

- Ideal valve sizing may be in the range of 10-15% higher than area derived annulus diameter to have a good valve apposition
- For an area of 561.2mm², a 29mm Myval would be 17.5% over sized
- Considering there is a large Ca²⁺ at the LCC running towards LVOT, it was considered to use 2cc less volume to avoid risk of annular rupture

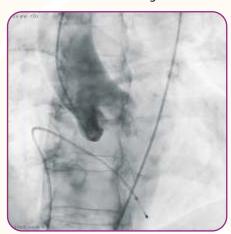
3D Annular a	rea mm²	546	550	560	570	580	590	600	610	615	620	630	640	650	660
3D area derived diar	meter mm	26.4	26.5	26.7	26.9	27.2	27.4	27.6	27.9	28.0	28.1	28.3	28.5	28.8	29.0
e a	20 mm	-42.7%	-43.1%	-44.1%	-45.1%	-46.0%	-46.9%	-47.8%	-48.7%	-49.1%	-49.5%	-50.3%	-51.1%	-51.8%	-52.6%
ar Je	23 mm	-24.2%	-24.7%	-26.1%	-27.4%	-28.6%	-29.8%	-31.0%	-32.1%	-32.7%	-33.2%	-34.3%	-35.3%	-36.3%	-37.3%
29mm Annular over/unc	26 mm	-3.1%	-3.8%	-5.5%	-7.2%	-8.8%	-10.3%	-11.8%	-13.3%	-14.0%	-14.7%	-16.0%	-17.3%	-18.6%	-19.8%
%	29 mm	20.5%	19.6%	17.5%	15.4%	13.4%	11.5%	9.7%	7.9%	7.0%	6.1%	4.4%	2.8%	1.2%	-0.3%



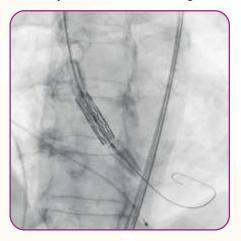


Case Summary

Baseline - Aortogram



Myval 29mm Positioning



Myval 29mm Final Result



Baseline Echo Results

Parameters	Values
Valve type	Tri-leaflet
Peak Trans-aortic velocity	4.59 m/s
Mean Trans-aortic gradient	55 mmHg
Peak gradient	84 mmHg
Calculated EOA	0.5 cm ²
Severity of AR	Mild
Severity of MR	No
Ejection fraction	25%

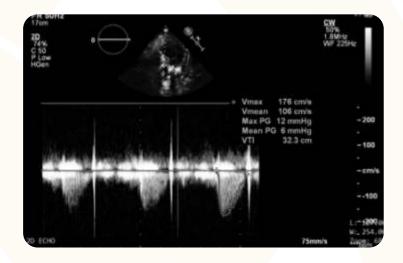
Post-Procedure Echo Results

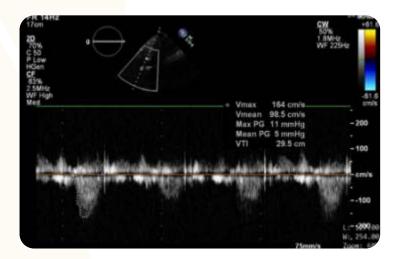
Parameters	Values
Valve type	Tri-leaflet
Peak Trans-aortic velocity	1.20 m/s
Mean Trans-aortic gradient	3.53 mmHg
Peak gradient	5.80 mmHg
Calculated EOA	>1.0 cm ²
Severity of AR	No
Severity of MR	No
Ejection fraction	25%

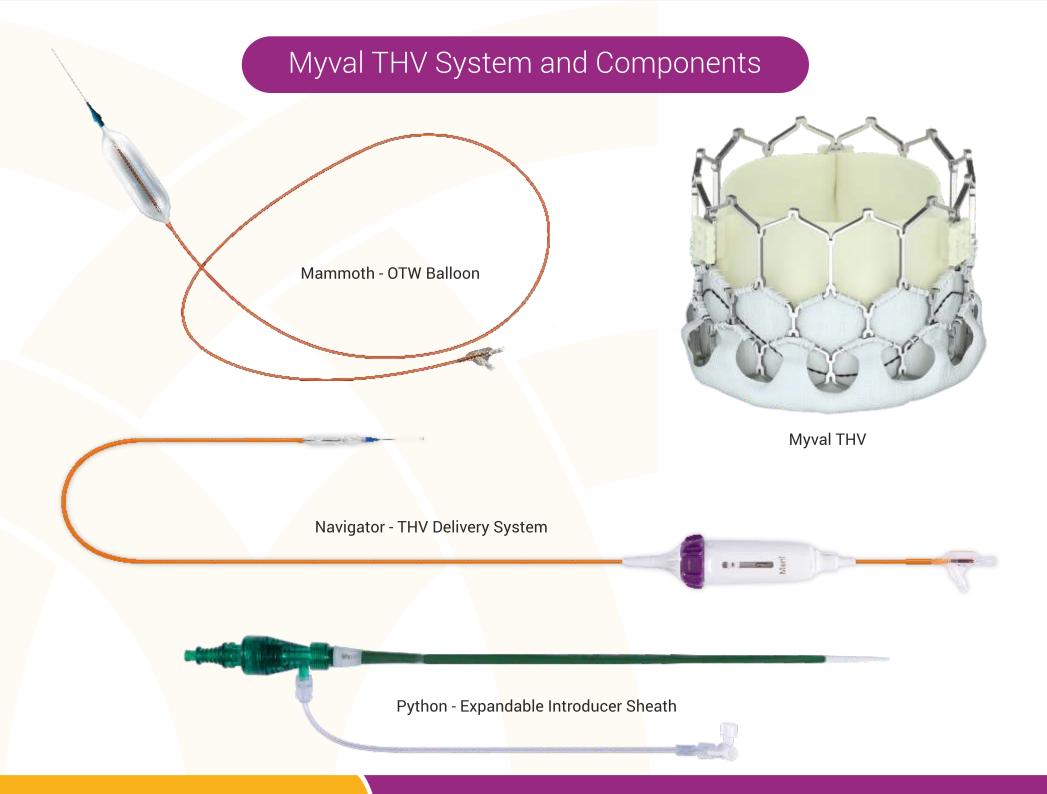
Case Follow-up

Echo TTE Results at 1 month follow-up	Values
Peak trans-aortic velocity	1.76 m/s
Mean trans-aortic gradient	6.0 mmHg
Peak gradient	12.0 mmHg
Calculated EOA	>1.0 cm ²

Echo TTE Results at 6 months follow-up	Values
Peak trans-aortic velocity	1.64 m/s
Mean trans-aortic gradient	5.0 mmHg
Peak gradient	11.0 mmHg
Calculated EOA	>1.0 cm ²









Myval THV Ordering Information

Diameters	20.0 mm	21.5 mm	23.0 mm	24.5 mm	26.0 mm	27.5 mm	29 mm
Product code	MVL200	MVL215	MVL230	MVL245	MVL260	MVL275	MVL290

Navigator - THV Delivery System Ordering Information

Diameters	20.0 x 30 mm	21.5 x 30 mm	23.0 X 30 IIIIII	24.5 X 30 IIIIII	20.0 X 30 IIIIII	27.5 X 30 IIIIII	29 X 30 IIIIII
Product code	NVT20030	NVT21530	NVT23030	NVT24530	NVT26030	NVT27530	NVT29030

Mammoth PTA Balloon Ordering Information

Diameters	14 x 40 mm	16 x 40 mm	18 x 40 mm	20 x 40 mm	23 x 40 mm	25 x 40 mm	28 x 40 mm	30 x 40 mm
Product code	MTV1440	MTV1640	MTV1840	MTV2040	MTV2340	MTV2540	MTV2840	MTV3040

Python 14 Fr Expandable Sheath Ordering Information

Product code	PHT14

Val-de-Crimp - Heart Valve Crimping Tool

Product code	VLDC
Product code	VLDC

Atrion QL4015 Inflation Device 15 ATM (40 mL)

Product code	MVINF15A	

Syringe Luer Lock 60mL

NG60ML

CrocoDial - Heart Valve Crimping Tool

(4,)	222
Product code	CCD

Basix Touch Inflation Device 35 ATM (30 mL)

Product code	MVINF35A
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Syringe Luer Lock 50mL

Product code	MVSNG50ML
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More to Life

Manufacturer:

Meril Life Sciences Pvt. Ltd. Survey No. 135/139, Bilakhia House, Muktanand Marg, Chala, Vapi 396 191. Gujarat. India.

T: +91 260 305 2100 F: +91 260 305 2125

Subsidiary companies:

Meril Life Sciences Pvt. Ltd.

301, A-Wing, Business Square, Chakala, Andheri Kurla Road, Andheri East, Mumbai 400 093 T +91 22 39350700 F +91 22 39350777

Meril, Inc.

2436 Emrick Boulevard, Bethlehem, PA 18020 T +610 500 2080 F +610 317 1672

Meril South America

Doc Med LTDA
Al. dos Tupiniquins,
1079 - Cep: 04077-003 - Moema.
Sao Paulo. Brazil.
T +55 11 3624 5935
F +55 11 3624 5936

Meril GmbH.

Bornheimer Strasse 135-137, D-53119 Bonn. Germany. T +49 228 7100 4000 F +49 228 7100 4001

Meril Tibbi Cihazlar

Meril Tıbbi Cihazlar İmalat ve Ticaret A.Ş. İçerenköy Mah. Çetinkaya Sok. Prestij Plaza No:28 Kat:4 Ataşehir, 34752 İstanbul / Turkey T +90 216 641 44 24 F +90 216 641 44 25

Meril China Co. Ltd.

2301b,23f, Lixin Plaza, no 90,South Hubin Road, Xiamen, China T 0086-592-5368505 F 0086-592-5368519

Meril SA Ptv. Ltd.

102, 104, S101 and S102, Boulevard West Office Park, 142 Western Service Road, Erf 813 Woodmead Extension 17 Sandton, Johannesburg – 2191 South Africa

T +27 11 465-2049 F +27 86 471 7941

Meril Medical LLC.

Nauchnyi Proezd 19, Moscow , Russia – 117 246. Office - +7 495 772 7643

EU representative.

Obelis S.A.
Bd, General Wahis 53,
1030, Brussels, Belgium.
T +32 2 732 5954
F +32 2 732 6003
E mail@obelis.net

