Tuesday, 31st October 2017, 1:21 - 1:29 pm, Presentation Theater 4
Colorado Convention Center, Denver

MeRes100 – BRS Science and Clinical Update *Six Months* Primary Endpoint of *MeRes-1 Extend* Study

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On Behalf of MeRes-1 Extend Investigators

Disclosure Statement of Financial Interest

I, Sasko Kedev, DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.

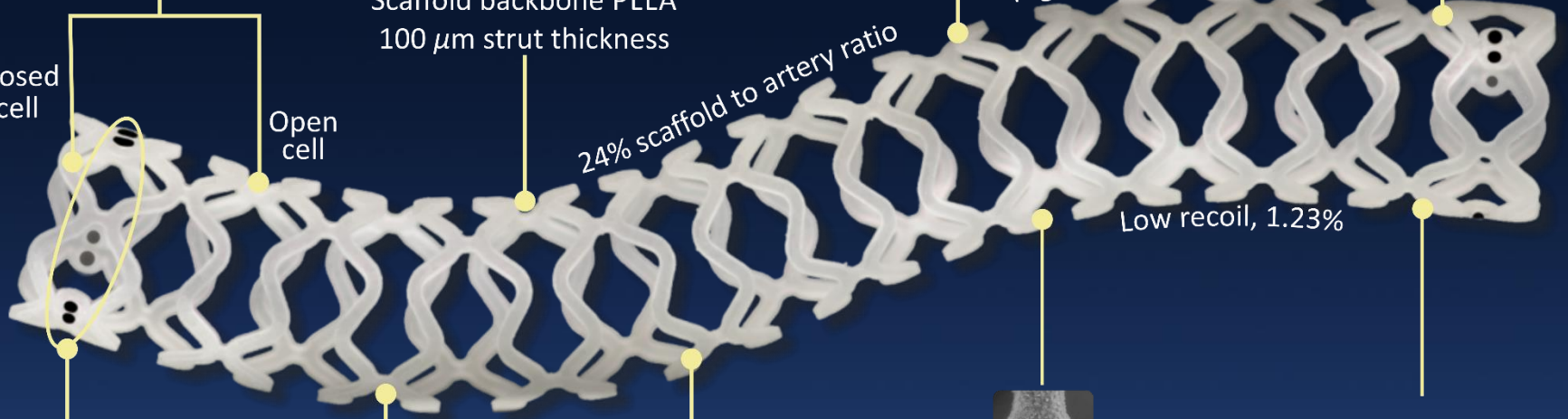
Background

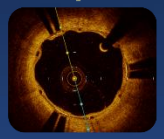
BRS are now a reality in the treatment of coronary artery disease. First gen BRS are not ‘ user friendly device ‘ and hence difficult to apply to the real world patient population

- Thick struts, high profile
- Special tips and tricks of implantation
- Limited expansion characteristics
- Limited accessibility to side branches
- Low radiopacity
- Uncertain radial strength
- Concerns regarding scaffold thrombosis
- Limited sizes of lengths and diameters

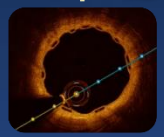
NEXT GENERATION Devices Are Needed!

MeRes100 – BRS Architecture



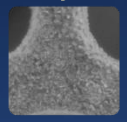


Couplets of tri-axial RO markers at either end



High vessel conformability

Estimated degradation in 2-3 years

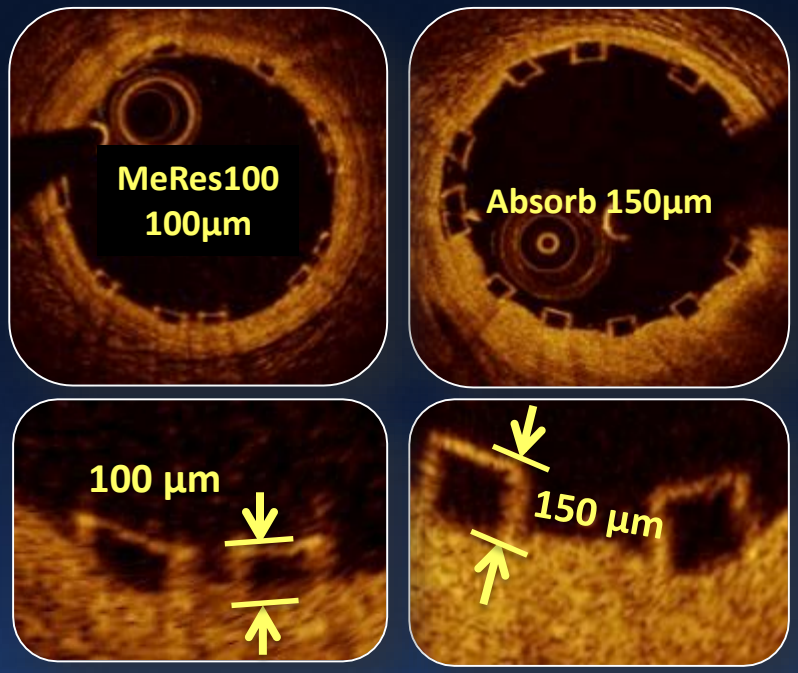


Drug coat of PDLLA + Sirolimus 1.25 µg/mm²

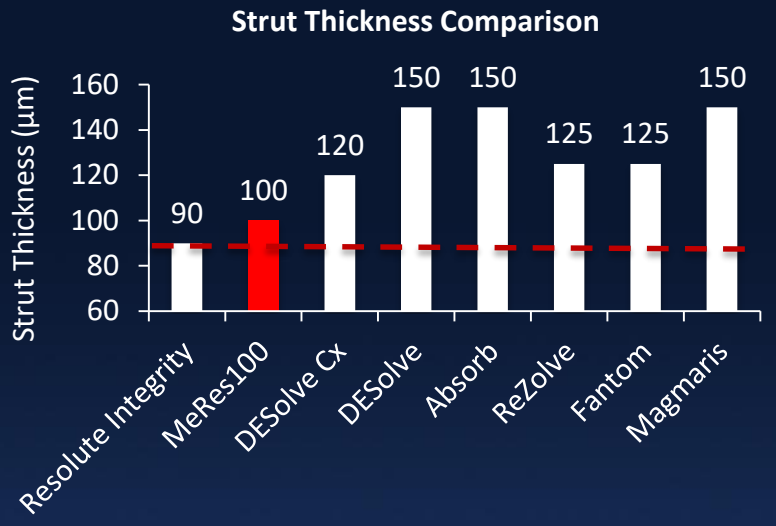
Low balloon overhang, short, abrupt balloon shoulders

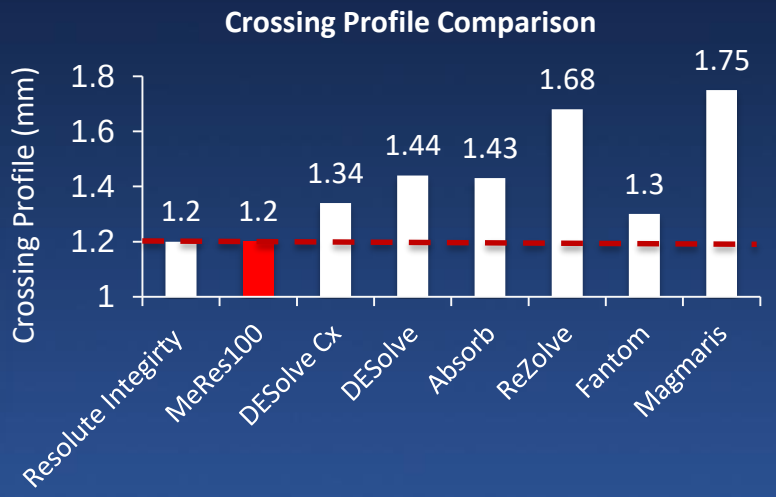
Size Matrix - 63 SKUs
Diameters - 2.50, 2.75, 3.00, 3.25, 3.50, 4.00, 4.50 mm
Lengths - 8, 13, 16, 19, 24, 29, 32, 37, 40 mm

MeRes100 – BRS
Strut Thickness & Crossing Profile



6Fr
Guide Catheter
for all Øs



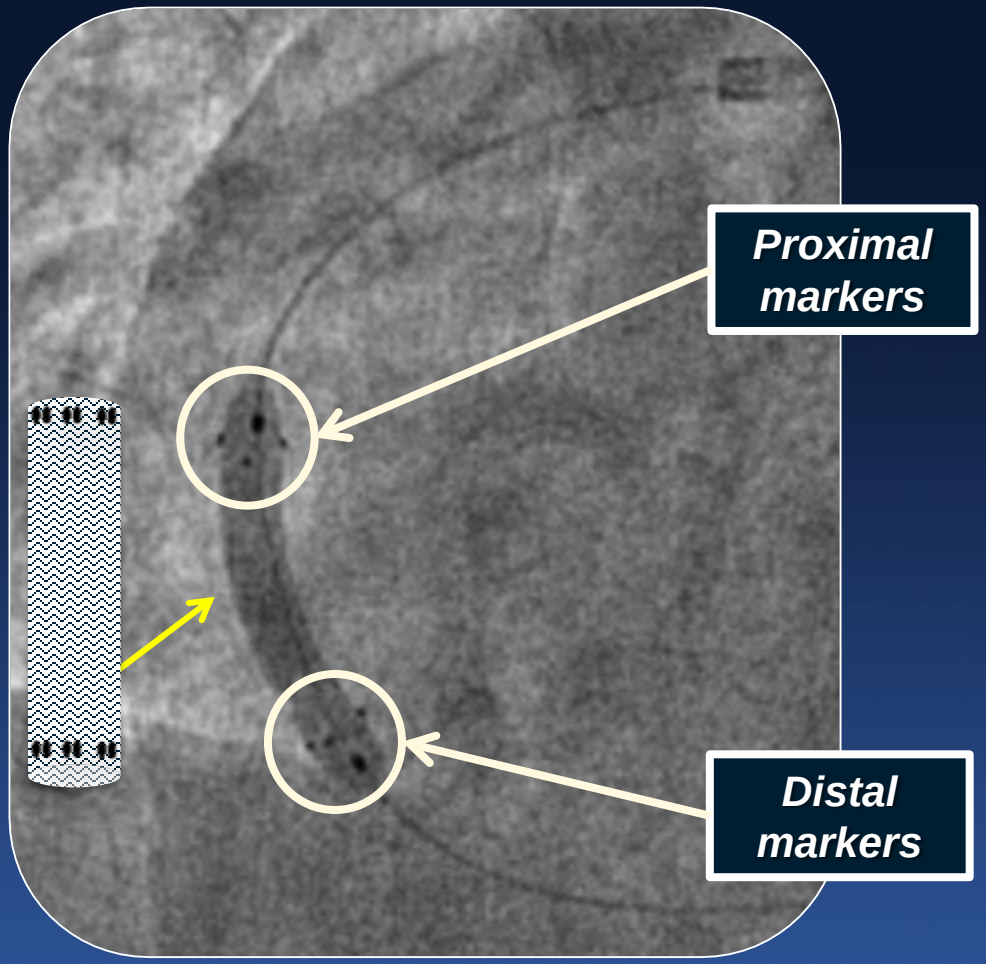


tct2017

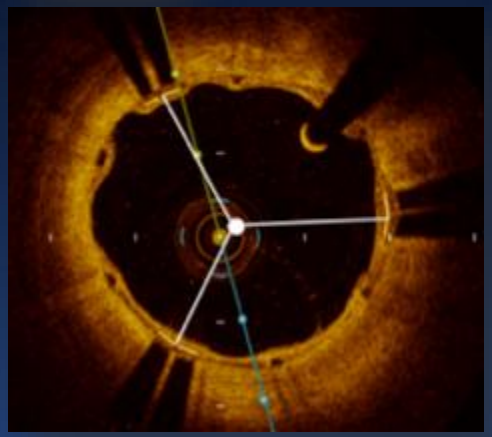
OCT images courtesy of Dr. Daniel Chamié, Dante Pazzanese Institute of Cardiology, Sao Paulo, Brazil.
Data on file with Meril Life Sciences Pvt. Ltd.

MeRes100 – Radiopacity

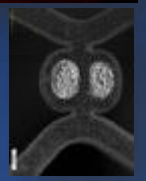
- Enhanced visibility. Gives a sense of virtual tubing. High operator comfort.
- Couplets of Tri-Axial RO markers (Pt) at either end of the scaffold



RO-marker couplets placed at 120° circumferentially seen on OCT cross-section



Double foot-print of RO-marker couplets seen on OCT cross-section



Data on file Meril Life Sciences Pvt. Ltd.

MeRes100 – Global Clinical Program

1-2. Achieved Primary Objective **3-6. Planning phase.**

MeRes-1 One Year Results Seth A. et al. EuroIntervention 2017;13:415-423

MeRes100 – 1 year Safety & Efficacy

- 0.93% MACE (1 case of TLR) 1-year
- 0% Scaffold Thrombosis 1-year
- 0.15 ± 0.23 mm LLL at 6-months
- Sustained data across OCT/IVUS/CT over 1Y

CLINICAL RESEARCH
CORONARY INTERVENTIONS

First-in-human evaluation of a novel poly-L-lactide based sirolimus-eluting bioresorbable vascular scaffold for the treatment of de novo native coronary artery lesions: MeRes-1 trial

Ashok Seth[1*], FRCP, D.Sc; Yoshinobu Onuma[2,3], MD, PhD; Ricardo Costa[4], MD, PhD; Praveen Chandra[5], MD, DM; Vinay K. Bahl[6], MD, DM; Cholenahally N. Manjunath[7], MD, DM; Ajaykumar U. Mahajan[8], MD, DM; Viveka Kumar[9], MD, DM; Pravin K. Goel[10], MD, DM; Gurpreet S. Wander[11], MD, DM; Mathew S. Kalarickal[12], MD, DM; Upendra Kaul[13], MD, DM; V.K. Ajit Kumar[14], MD, DM; Pratap C. Rath[15], MD, DM; Vijay Trehan[16], MD, DM; Gunasekaran Sengottuvelu[12], MD, DM; Sundeep Mishra[6], MD, DM; Alexandre Abizaid[4], MD, PhD; Patrick W. Serruys[17], MD, PhD

The authors' affiliations can be found in the Appendix paragraph.

GUEST EDITOR: Davide Capodanno, MD, PhD; *Cardio-Thoracic-Vascular Department, Ferrarotto Hospital, University of Catania, Catania, Italy*

EuroIntervention 2017;13:415-423 published online ahead of print May 2017

MeRes-1 Extend Study Design

First-in-man safety and efficacy in patients with single, de-novo coronary lesion (in up to 2 vessels) treated by a single MeRes100 scaffold up to 24mm length

Clinical follow-up					
N = 64	**30-day**	**6-months**	**1-year**	**2-years**	**3-years**
***QCA, OCT follow-up**					
Clinical follow-up	64	64	64	64	64
Angiographic follow-up	-	32	-	32	-
OCT follow-up	-	24	-	-	24

Diameters	– 2.75, 3.00, 3.50 mm
Length	– 19, 24 mm

PI	**– Dr. Alexandre Abizaid, Dante Pazzanese, Sao Paulo**
Core Labs	
Angiographic	– Cardiovascular Research Center, Sao Paulo, Brazil
OCT	– Cardialysis, Rotterdam, The Netherlands
Data Management	
CRO	– JSS, New Delhi, India

MeRes-1 Extend Sites & Status

64 Enrolled Subjects

Dr. Alexandre Abizaid, Sao Paulo	Dr. Sasko Kedev, Skopje
Dr. Robert-jan Van Geuns, Rotterdam	Dr. Rosli Mohd. Ali, Kuala Lampur
Dr. Bernard Chevalier, Paris	Dr. Teguh Santoso, Jakarta
Dr. Angel Cequier, Barcelona	Dr. Farrel Hellig, Johannesburg

* Site not initiated for enrolment.

MeRes-1 Extend
Key Eligibility Criteria

Key Inclusion Criteria

- Age >18 years
- Maximum 2 lesions in native coronary arteries (1 lesion/vessel)
- Reference vessel diameter 2.75-3.50mm
- Lesion length ≤ 20 mm
- Stenosis ≥ 50% & < 100%. TIMI ≥ 1
- Type A/B1 lesions

Key Exclusion Criteria

- Acute MI <7 days of Tx
- History of PCI or CABG
- LVEF ≤ 30%
- Ostial lesion (within 3mm)
- Lesion location in left main
- Lesion within 2m of origin of LAD, LCX
- Moderate to severe calcification, aneurysm
- Bifurcation, Side branch >2mm in diameter
- Extreme tortuosity, angulation ≥ 90°
- Creatinine ≥ 1.3 mg/dL

Major Study Endpoints

- **Safety**
  - Primary Endpoint:
    - MACE at 6-months (Cardiac death, MI, ID-TLR, ID-TVR)
  - Secondary Endpoints:
    - Device & procedure success
    - Scaffold thrombosis (ARC defined)

- **Efficacy**
  - QCA: Late lumen loss (in-scaffold / in-segment)
  - OCT: minimum lumen area (flow area), NIH area

MeRes-1 Extend – Demographics

Variable	N = 64
Age, years (mean ± SD)	59.1 ± 9.0
Male	69%
Current Smoker	5%
Diabetes mellitus	**25%**
Dyslipidemia	46%
Hypertension	80%
Myocardial Infarction (> 7days)	**28%**
Clinical presentation	
- Stable Angina	41%
- Silent Ischemia	58%
LVEF, % (mean ± SD)	59.1 ± 8.6

MeRes-1 Extend – Lesion Characteristics

Variable	64 pts | 69 lesions
LAD | LCx | RCA	62% | 20% | 18%
Calcification: none or mild | moderate | severe	65% | 3% | 1%
Tortuosity: moderate | severe	8% | 0%
Lesion class: A | B1 | B2 | C	**36% | 43% | 19% | 2%**
Baseline TIMI 3 flow	91%
Lesions per patient	**1.06 ± 0.27**
Nominal scaffold diameter: 2.75 | 3.0 | 3.5 mm	**12% | 45% | 43%**
Nominal scaffold length: 19 | 24 mm	55% | 45%
High pressure postdilatation	**100%**
Device | Procedure success	**100% | 97%***

*One patient received a metal DES to cover a proximal dissection during post dilatation.
*One patient received a metal DES to cover a distal dissection during post dilatation.

Primary Clinical Endpoint at 6-months

100% monitored

Primary Endpoint MACE, n (%)	In-Hospital N = 64 (100%)	1-month N = 64 (100%)	6-months N = 64 (100%)
MACE	0 (0%)	0 (0%)	1 (1.56%)
Cardiac Death	0 (0%)	0 (0%)	0 (0%)
Myocardial Infarction[@]	0 (0%)	0 (0%)	0 (0%)
Ischemia-driven TLR	0 (0%)	0 (0%)	1 (1.56%)
Ischemia-driven TVR	0 (0%)	0 (0%)	0 (0%)
Scaffold Thrombosis[$]	**0 (0%)**	**0 (0%)**	**0 (0%)**
Non-cardiac death	0 (0%)	0 (0%)	0 (0%)

$ ARC defined criteria

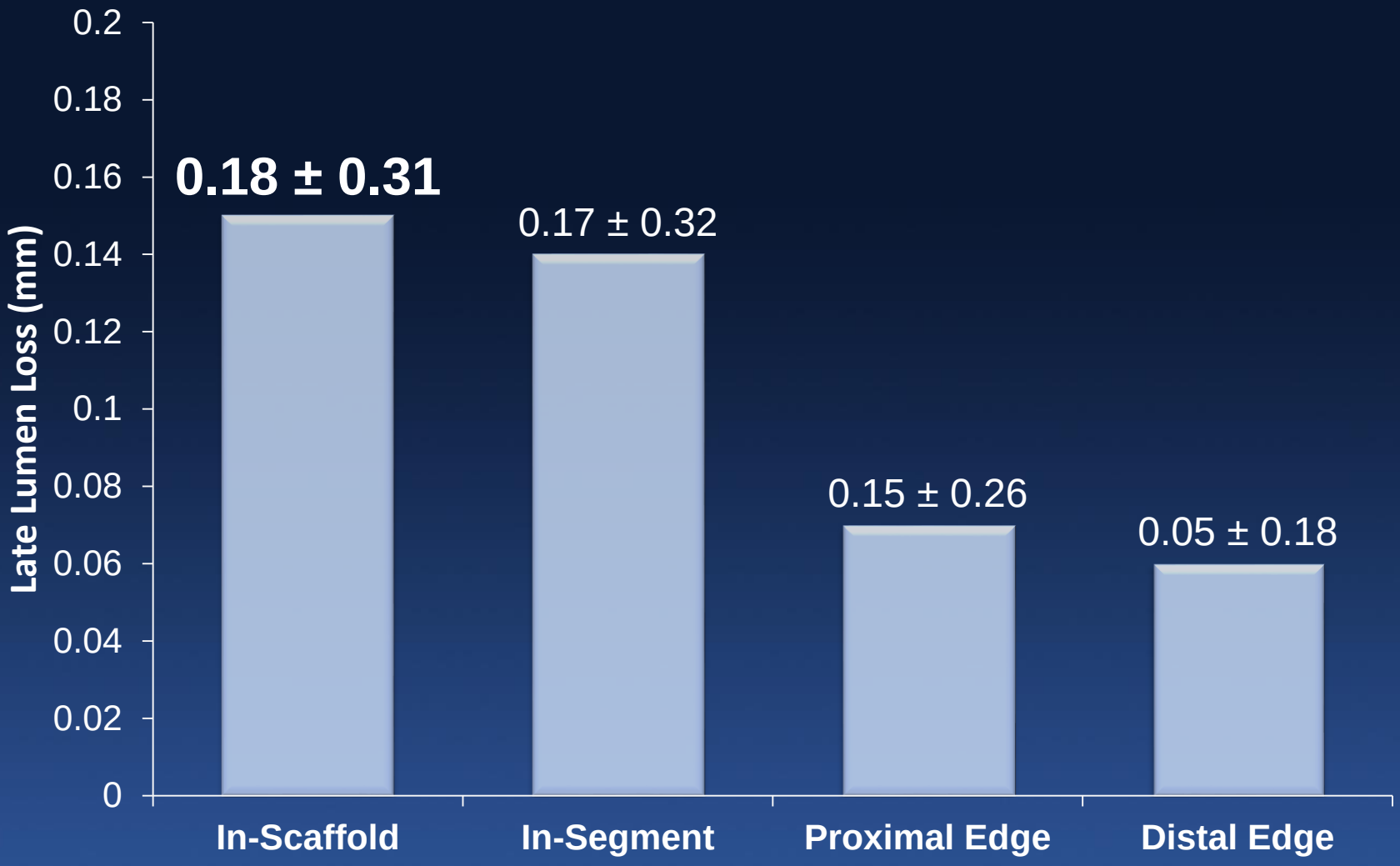
QCA Analysis – All Patients

Angiographic Analysis (QCA)	Baseline N = 64	Post-procedure N = 64
Lesion length (mm)	**13.97**	**-**
(In-)segment RVD (mm)	**3.03**	**3.06**
In-scaffold RVD (mm)	-	3.09
(In-)segment MLD (mm)	1.15	2.62
In-scaffold MLD (mm)	-	2.73
In-segment acute gain (mm)	-	1.47
In-scaffold acute gain (mm)	-	1.58
(In-)segment DS (%)	62.1	14.4
(In-)scaffold DS (%)	**-**	**11.6**

QCA Analysis – Angio Subset

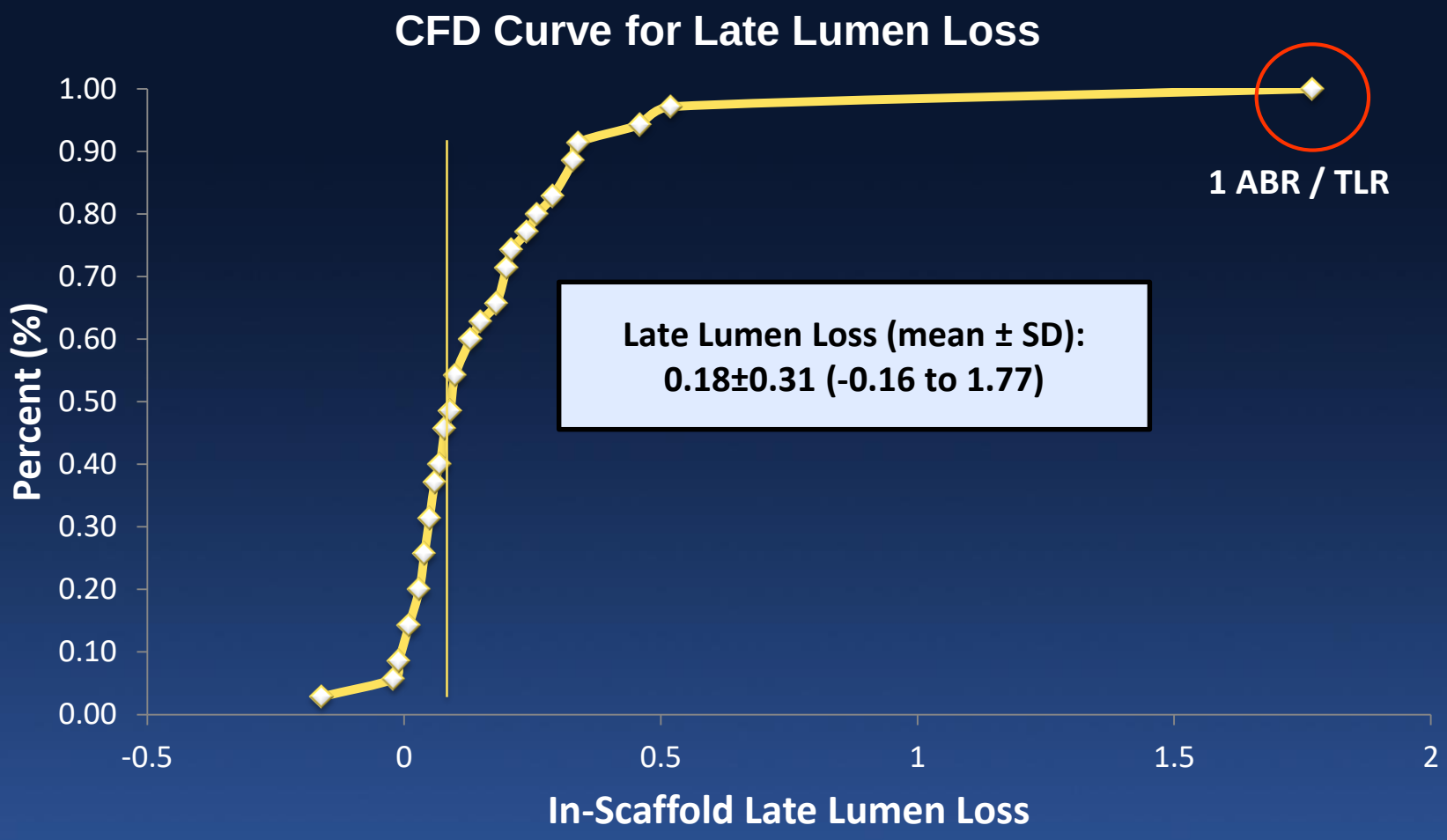
Angiographic Analysis (QCA)	Baseline N = 32	Post-procedure N = 32	6-months N = 32
Lesion length (mm)	**13.79**	-	-
(In-)segment RVD (mm)	**3.01**	**3.08**	**3.04**
In-scaffold RVD (mm)	-	3.12	3.06
(In-)segment MLD (mm)	1.05	2.63	2.46
In-scaffold MLD (mm)	-	2.74	2.56
In-segment acute gain (mm)	-	1.58	-
In-scaffold acute gain (mm)	-	1.69	-
(In-)segment DS (%)	63.4	14.7	18.9
(In-)scaffold DS (%)	-	**11.7**	**16.5**

MeRes-1 Extend
Late Lumen Loss at 6-Month FU



Angiographic Core Lab – CRC, Sao Paulo, Brazil. Dr. Ricardo Costa & Dr. Alexandre Abizaid

CFD Curve for Late Lumen Loss at 6-Months FU

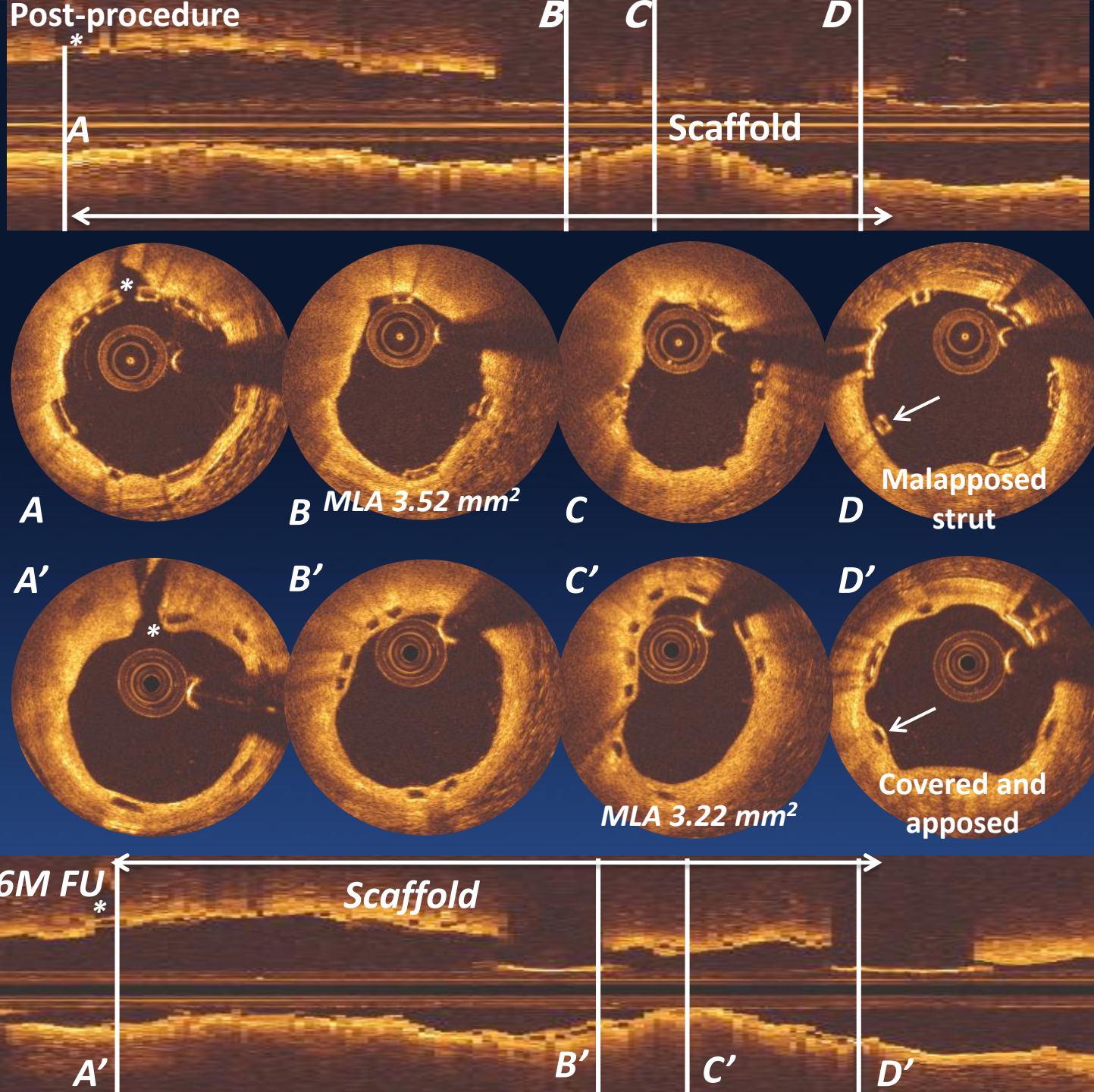


Core Lab Quantitative Assessment of OCT

N = 21	Post-procedure	6-months
Mean Flow area (mm^2)	6.70±1.67	6.04±1.81
Minimum Flow area (mm^2)	5.25±1.33	4.23±1.19
Mean Abluminal Scaffold area (mm^2)	7.41±1.68	7.56±1.79
Minimum Abluminal Scaffold area (mm^2)	6.12±1.50	5.91±1.44
Mean neointimal area (on top & in-between struts) (mm^2)	-	1.47±0.52
Neointimal thickness (mm)	-	0.03±0.05
% Covered struts	**-**	**97.95±3.69**

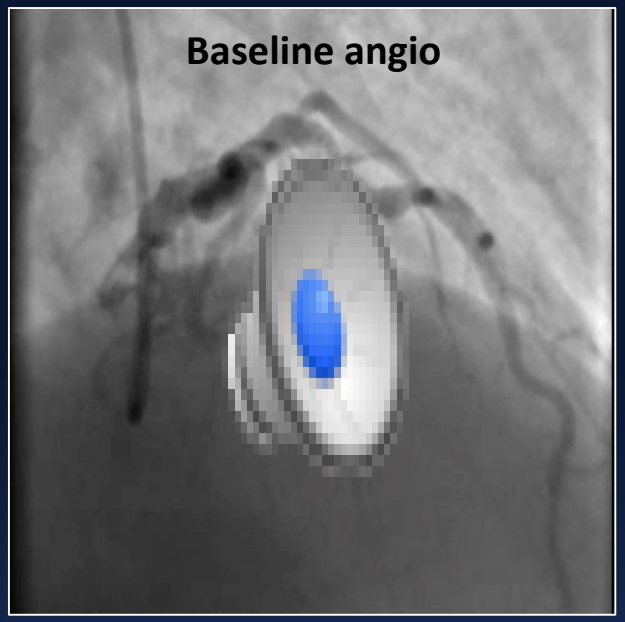
07-004

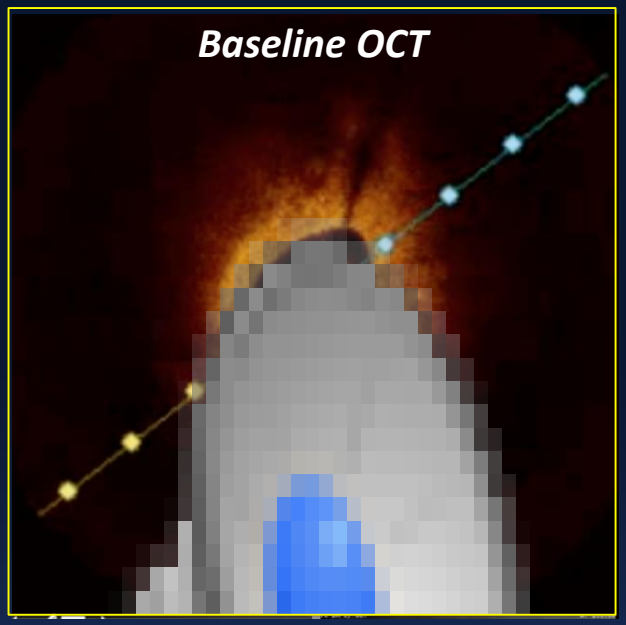
	POST	6M
Mean LA (mm^2)	4.56	4.28
Minimum LA (mm^2)	3.52	3.22
Mean SA (abluminal) (mm^2)	4.80	5.20
Minimum SA (abluminal) (mm^2)	3.92	4.43
Neointimal area (abluminal) (mm^2)	-	0.73

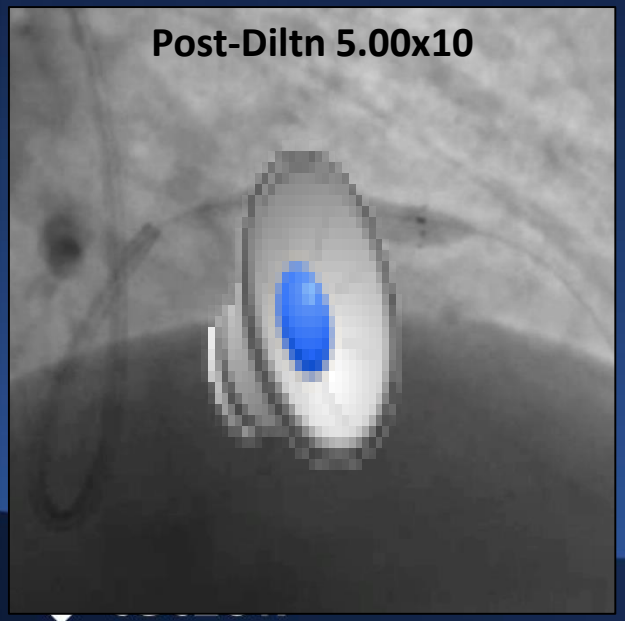


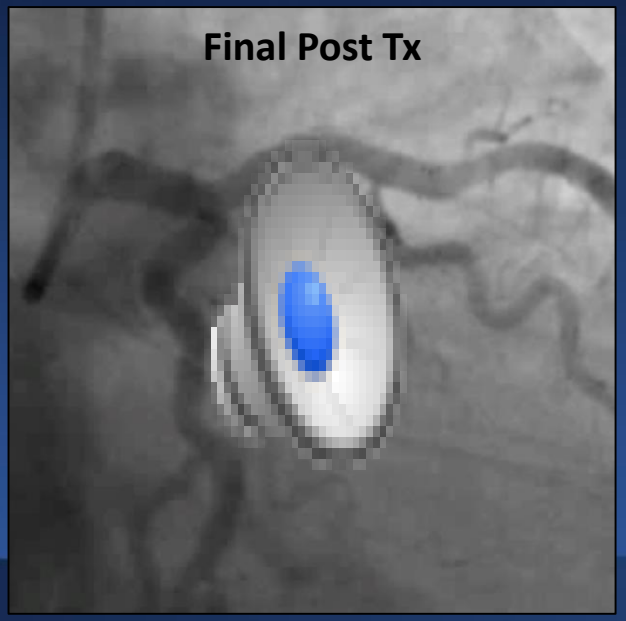
* side branch

MeRes100 Over Expansion









Patient History
- 62Y/Female
- Stable Angina Class II
- Family history of CAD
- Previous MI >3months
- Smoker
- Diabetic Type II
- Hypertensive

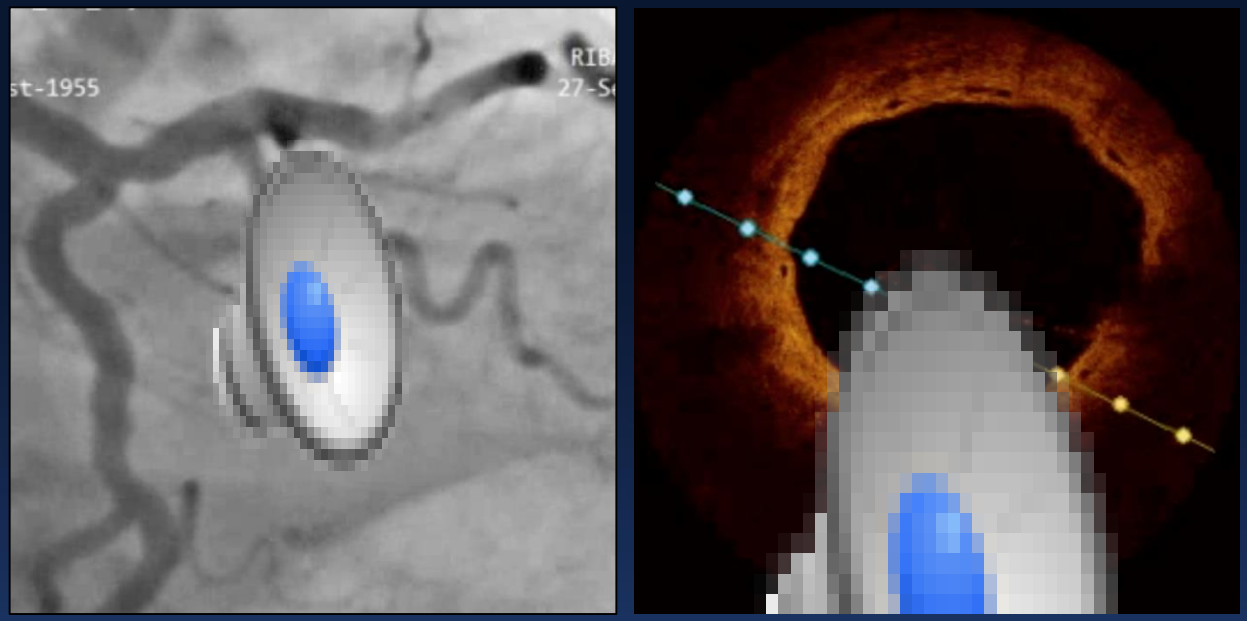
Treatment Details
- Dt. of Tx – 8-Apr-2017
- Proximal LAD
- MeRes100 – 3.50x19
- Post-dil – 3.20x20 @ 30 atm
- 4.50x15 @ 26 atm;
- 5.00x10 # 12 atm

Follow-up Details
- No MACE, no ST
- Follow-up angio/OCT 6-months

Videos courtesy Dante Pazzanese, Brazil

MeRes100 Over Expansion

6-months follow-up



- Fully patent vessel and scaffolded segment
- Positive remodeling of the lesion site
- Completely endothelialized struts
- No malapposition
- No strut fracture despite dilatation with 5.00 mm NC balloon
- Strong evidence of early degradation of struts

Conclusions

- MeRes-I Extend trial evaluating the 2nd generation MeRes100 BRS with 100 micron struts demonstrated high acute success and low MACE (1, 1.5%) IDTLR & 0% scaffold thrombosis up to 6-months.
- Serial QCA analysis demonstrated relatively low late lumen loss (0.18±0.31 mm), suggesting high efficacy on inhibiting NIH at late follow-up
- OCT subset analyses demonstrated sustained mean flow area and virtually complete strut coverage (98.0%)

MeRes100 – Forthcoming Clinical Trials

- The encouraging results of MeRes-1 study provide the basis for further studies, using a wider range of lengths and sizes in more complex and larger patient population.
- 1:1 Randomized pivotal trial of MeRes100 vs Xience (N = 484) has been initiated in China:
  - PI: Prof. Gao Runlin
  - 20 Clinical sites
  - 100% QCA follow-up and 20% population with OCT follow-up
- MeRes-Evolve RCT N=800 work has been initiated in India, Europe, Asia, Latin America, Middle East, Africa