

# EuroPCR 2015

## Que pouvons-nous en retenir?

Jean Fajadet, FESC  
Clinique Pasteur, Toulouse

**12,001 participants**

**Incl. 8,160 physicians**

**452 sessions**





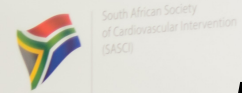
c Societies and Working Groups lounge

National Scientific Societies and Working Groups

# 51 National Scientific Societies and Working Groups

29 sessions

18 HSIT, 11 complication sessions



South African Society of Cardiovascular Intervention (SASCI)



Vascular Society of Southern Africa (VSSA)



Algerian Society of Cardiology (SAC)



Working Group on Interventional Cardiology of the Czech Society of Cardiology



British Cardiovascular Intervention Society (BCIS)



Working Group on Interventional Cardiology of the Spanish Society of Cardiology



Argentinian College of Interventional Cardiology

of the Association of Interventional Cardiologists of Bosnia & Herzegovina



Association of Interventional Cardiologists of Ukraine



Turkish Society of Interventional Cardiology and Endovascular Surgery



Interventional Cardiology of the Association of Interventional Cardiologists of Romania



Interventional Cardiology of the Bulgarian Society of Cardiology



Working Group on Interventional Cardiology of the Tunisian Society of Cardiology and Cardiovascular Surgery (GTCT)



Association of Percutaneous Cardiovascular Interventions of the Turkish Society of Cardiology (TAPCI/TSC-Interventions)



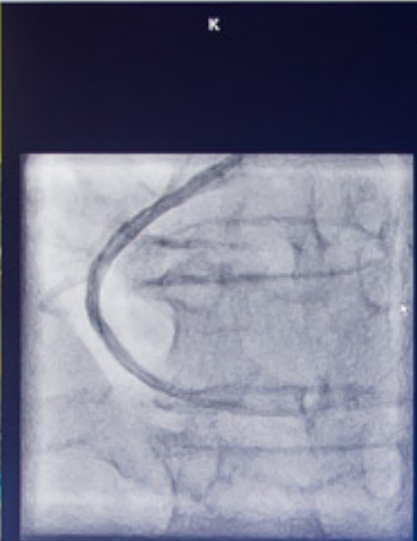
# 17 centres from 11 countries transmitting over 60 hours of LIVE procedures



euro  
**PCR**  
2015

ns: A. Cremonesi, J. Fajadet,  
Windecker

J. Al Rashdan, O. Goktekin,  
J. Koh



K  
Kerckhoff-Klinik G  
AXOM-  
VC14J 131  
I  
Joon

KA 2  
DOO 0

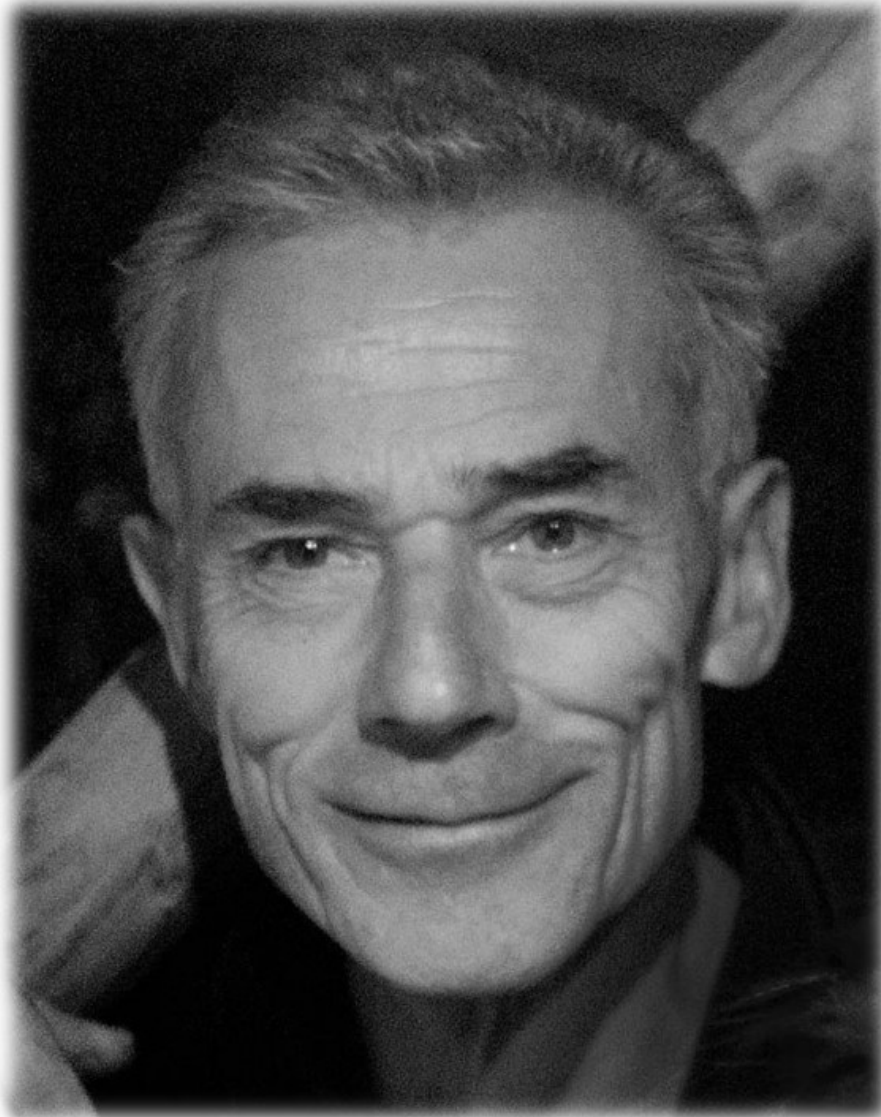
FM 1  
FB 2



euro  
**PCR**  
2015



# ETHICA AWARD



**Ferdinand Kiemeneij**



**Shigeru Saito**



# 5 tracks

- Coronary
- Structural
- Peripheral
- Heart failure & hypertension
- Nurses & technicians

# CORONARY

- Hotline - Trials:  
    NEXT, SORT OUT VII, PRAGUE 13
- Plenary sessions:
  - STEMI-MVD: what about non culprit lesion?
  - MVD – stable CAD
  - FFR – iFR
  - BioResorbable Scaffolds
  - CTO
  - Bifurcations
  - Radial access
  - Antithrombotic therapy
- Great Debate

# ***Final Three-Year Outcome of a Randomized Trial Comparing***

# ***Second Generation Drug-eluting Stents Using Either Biodegradable Polymer or Durable Polymer***

*The NOBORI Biolimus-Eluting versus XIENCE/PROMUS Everolimus-eluting Stent Trial (NEXT)*



**Masahiro Natsuaki, MD**

***Kyoto University Graduate School of Medicine, Saiseikai Fukuoka General Hospital***

*Ken Kozuma, MD; Takeshi Morimoto, MD, MPH; Kazushige Kadota, MD;*

*Toshiya Muramatsu, MD, Yoshihisa Nakagawa, MD, Takashi Akasaka, MD;*

*Keiichi Igarashi, MD; Kengo Tanabe, MD; Yoshihiro Morino, MD; Tetsuya Ishikawa, MD;*

*Hideo Nishikawa, MD; Masaki Awata, MD; Masaharu Akao, MD; Hisayuki Okada, MD;*

*Yoshiki Takatsu, MD; Nobuhiko Ogata, MD; Kazuo Kimura, MD; Kazushi Urasawa, MD;*

*Yasuhiro Tarutani, MD; Nobuo Shiode, MD; and Takeshi Kimura, MD*

***On behalf of the NEXT Investigators***



# NEXT Trial

Multicenter, randomized, non-inferiority trial comparing BP-BES with DP-EES

3235 patients scheduled for PCI using drug-eluting stent  
*No Exclusion Criteria (All-comer Design)*

Randomization 1:1

Nobori BP-BES  
(N=1617)

*Enrollment from 98 Japanese centers  
between May and October, 2011*

Xience/Promus DP-EES  
(N=1618)

BP-BES  
(N=1576)

<1035 days follow-up: N=41

3-Year Clinical Follow-up  
(N=3158; 97.6%)

DP-EES  
(N=1582)

<1035 days follow-up: N=36

<Primary Endpoint>

*Efficacy: Target lesion revascularization at 1-year*

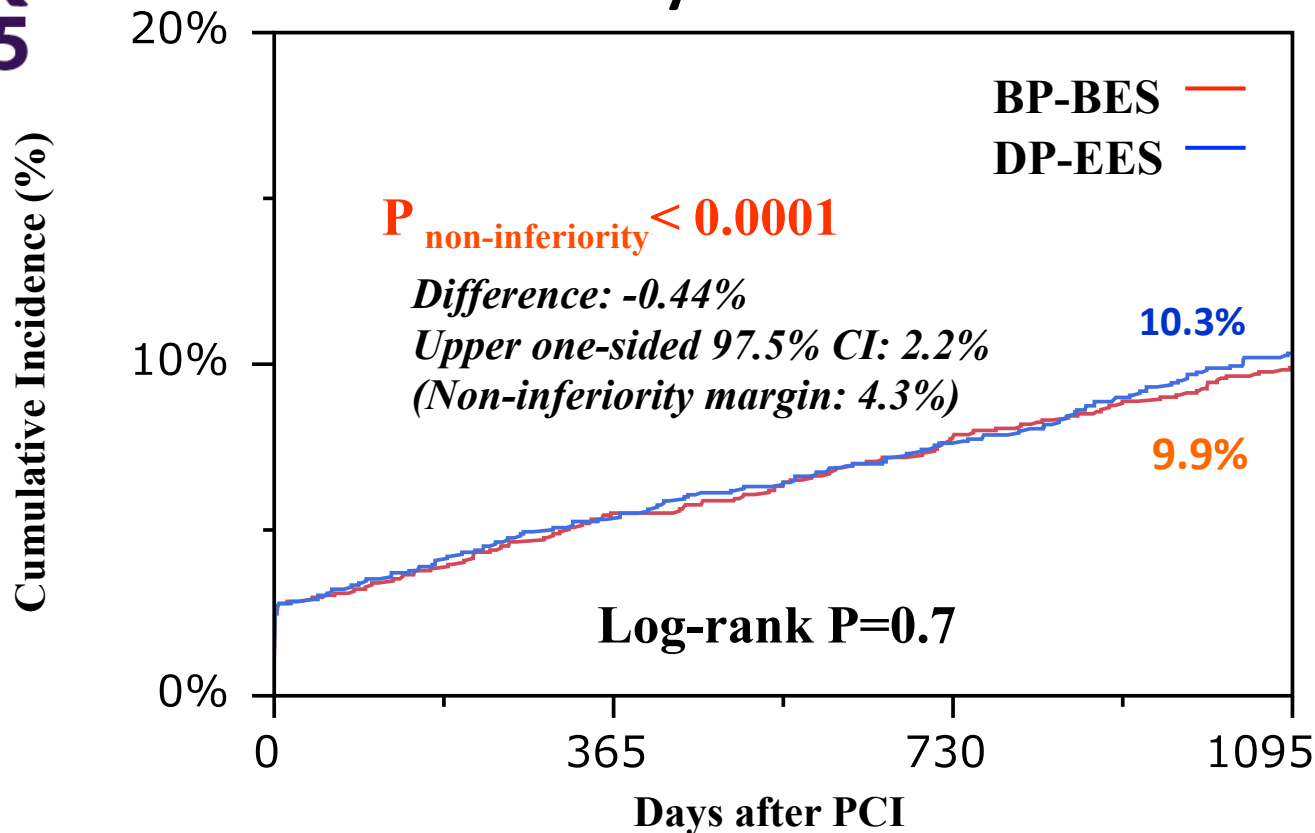
*Safety: Death or Myocardial Infarction at 3-year*

<Power Calculation>

*3000 patients would yield 91% power to detect non-inferiority  
with the non-inferiority margin of 4.3% (True rate 12.2%)*

**Primary Safety Endpoint**

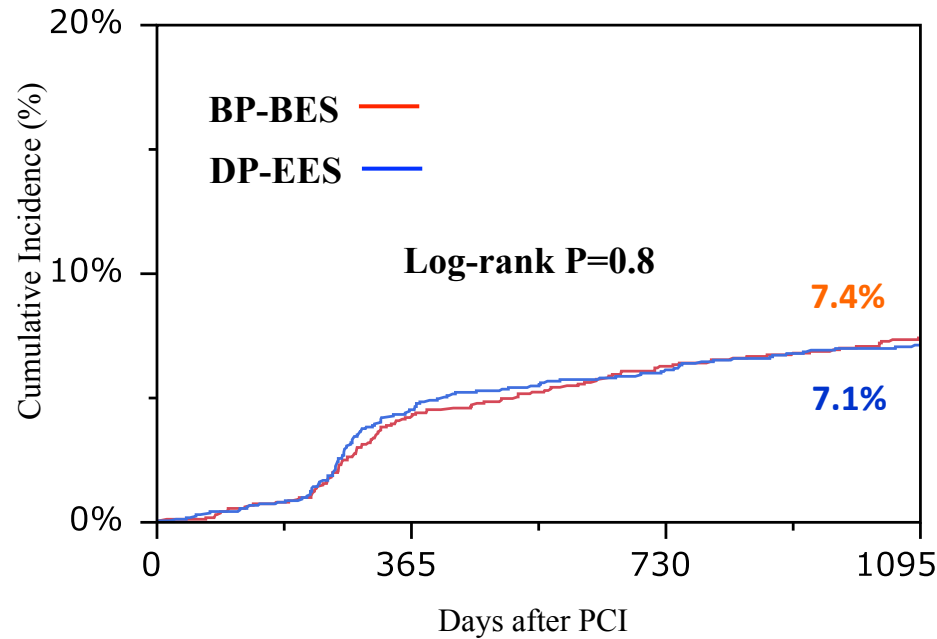
**Death or Myocardial Infarction**



Interval	0 day	30 days	365 days	730 days	1095 days
<b>BP-BES group</b>					
N of patients with at least 1 event		47	89	126	159
N of patients at risk	1617	1569	1524	1478	1416
Cumulative Incidence		2.9%	5.5%	7.8%	9.9%
<b>DP-EES group</b>					
N of patients with at least 1 event		47	87	124	166
N of patients at risk	1618	1571	1529	1482	1413
Cumulative Incidence		2.9%	5.4%	7.7%	10.3%

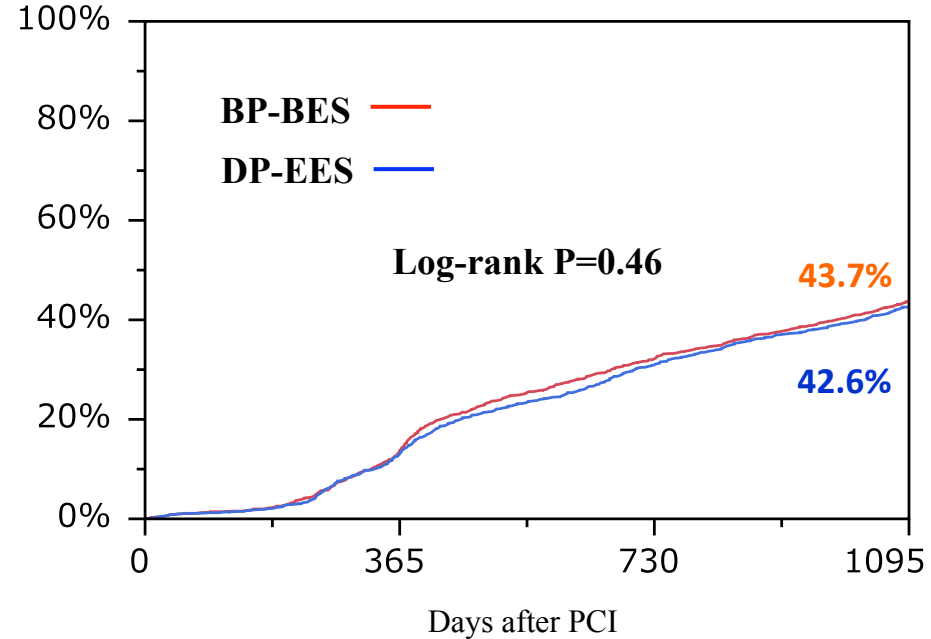
# Cumulative 3-year Incidence

## Target Lesion Revascularization



Interval	0 day	365 days	730 days	1095 days
<b>BP-BES group</b>				
N of patients with at least 1 event		68	99	116
N of patients at risk	1617	1506	1432	1353
Cumulative Incidence		4.3%	6.3%	7.4%
<b>DP-EES group</b>				
N of patients with at least 1 event		72	97	112
N of patients at risk	1618	1506	1440	1359
Cumulative Incidence		4.5%	6.1%	7.1%

## Persistent Discontinuation of Dural Antiplatelet Therapy



Interval	0 day	365 days	730 days	1095 days
<b>BP-BES group</b>				
N of patients with at least 1 event		218	503	673
N of patients at risk	1617	1347	1031	813
Cumulative Incidence		13.8%	32.2%	43.7%
<b>DP-EES group</b>				
N of patients with at least 1 event		205	484	657
N of patients at risk	1618	1367	1052	838
Cumulative Incidence		13.0%	31.0%	42.6%



# Randomized comparison of a sirolimus-eluting stent with a biolimus-eluting stent in patients treated with PCI: the SORT OUT VII trial

Lisette Okkels Jensen, Per Thayssen, Michael Maeng, Jan Ravkilde, Lars Krusell, Hans-Henrik Tilsted, Anders Junker, Christian Juhl Terkelsen, Karsten Tange Veien, Anne Kaltoft, Anton Boel Villadsen, Jens Aaroe, Klára Berencsi, Svend Eggert Jensen, Knud Nørregaard Hansen, Steen Dalby Kristensen, Morten Madsen, Hans Erik Bøtker Henrik Steen Hansen, Bent Raungaard, Jens Flensted Lassen, Evald Høj Christiansen

*Odense University Hospital, Aarhus University Hospital, Aalborg University Hospital - DENMARK*

# SORT OUT VII trial – 1 year

## **Objective:**

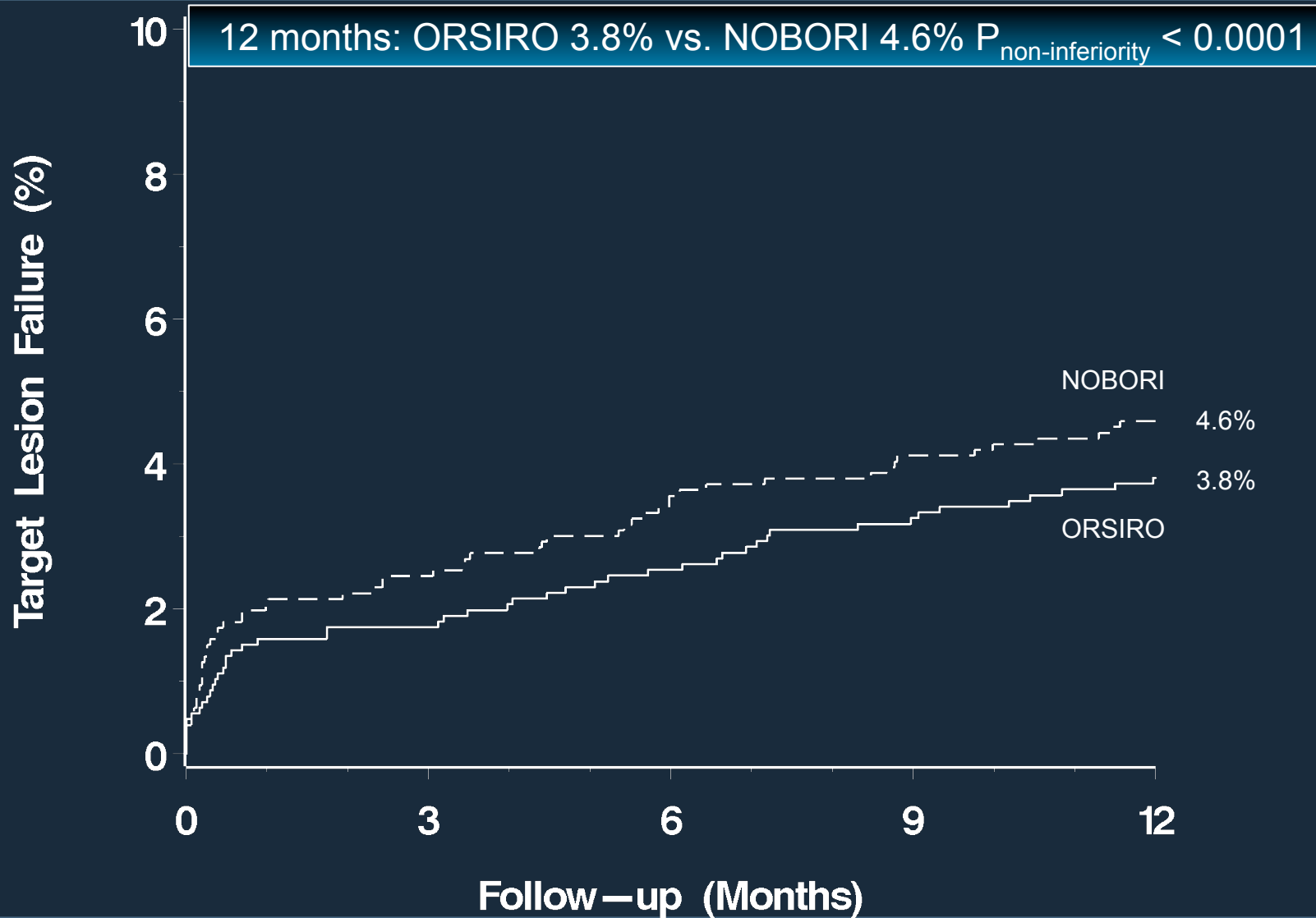
To compare the efficacy and safety of the thin strut, cobalt-chromium biodegradable polymer sirolimus-eluting Orsiro stent and the stainless steel biodegradable polymer biolimus-eluting Nobori stent in an all-comer population

## **Primary Endpoint:**

**Target lesion failure:** a composite of cardiac death, myocardial infarction (not related to other than index lesion) or target lesion revascularization within 1 year

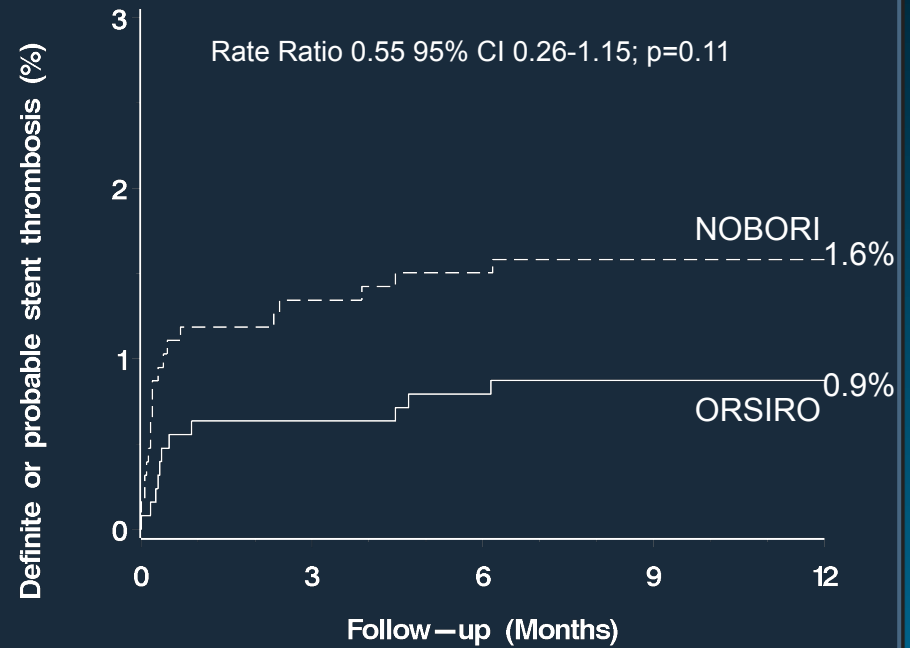
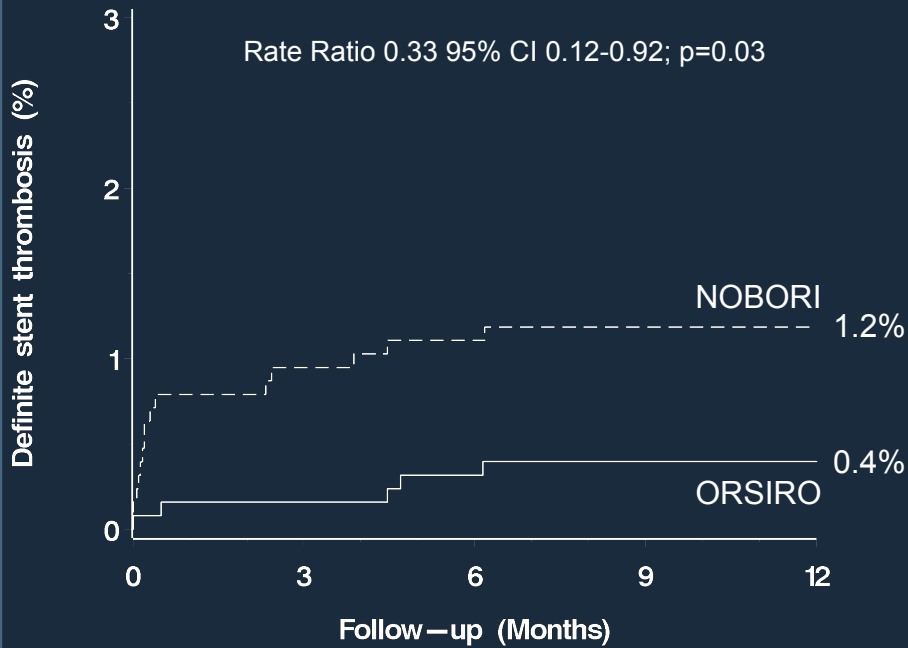
# 1° Endpoint: Target Lesion Failure

(Cardiac death, myocardial infarction<sub>index lesion related</sub>, target lesion revascularization)





# Stent Thrombosis



# Conclusion

- The thin strut biodegradable polymer sirolimus-eluting Orsiro stent was non-inferior to the biodegradable polymer biolimus-eluting Nobori stent in unselected patients for the combined safety and efficacy endpoint target lesion failure at 1 year
- The sirolimus-eluting Orsiro stent was associated with a reduced risk of definite stent thrombosis

# **Multivessel coronary disease diagnosed at the time of primary PCI for STEMI: complete revascularization versus conservative strategy. PRAGUE 13 trial**

**O. Hlinomaz**

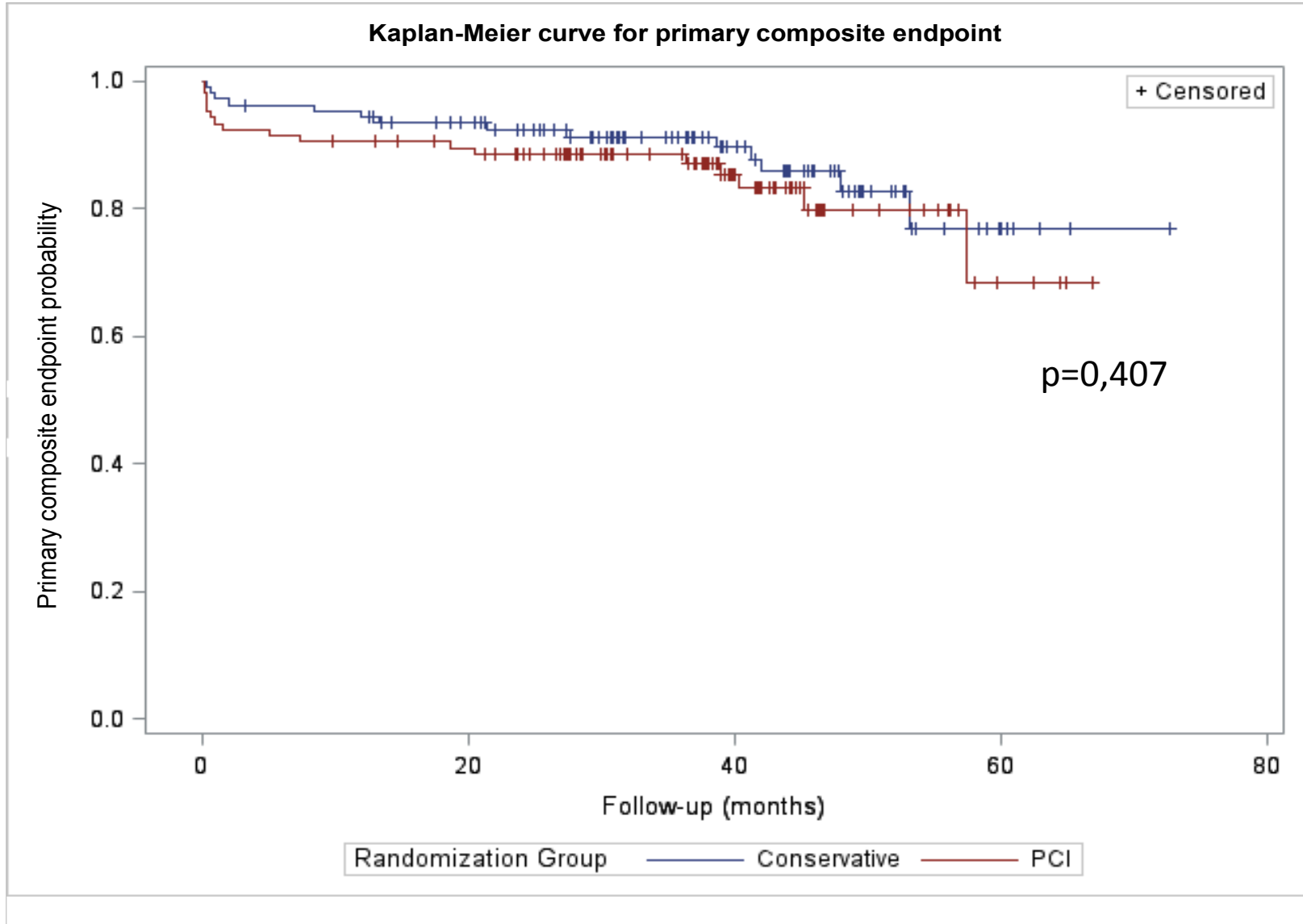
ICRC, St. Anne University Hospital, Brno, Czech Republic

On behalf of the PRAGUE-13 Investigators

L. Groch, K. Polokova, F. Lehar, T. Vekov, R. Petkov, M. Stoynev, M. Griva, J. Sitar, M. Rezek,  
M. Novak, J. Semenka, N. Penkov, B. Gersh, D. Holmes, G. Sandhu, P. Widimsky

Grant IGA Czech Republic NT11412-5/2010, VAVPI EU Project  
NCT01332591

# Primary composite endpoint



# Conclusion

This trial found no difference (not even a trend) favouring staged multivessel PCI over culprit-only primary PCI in STEMI.

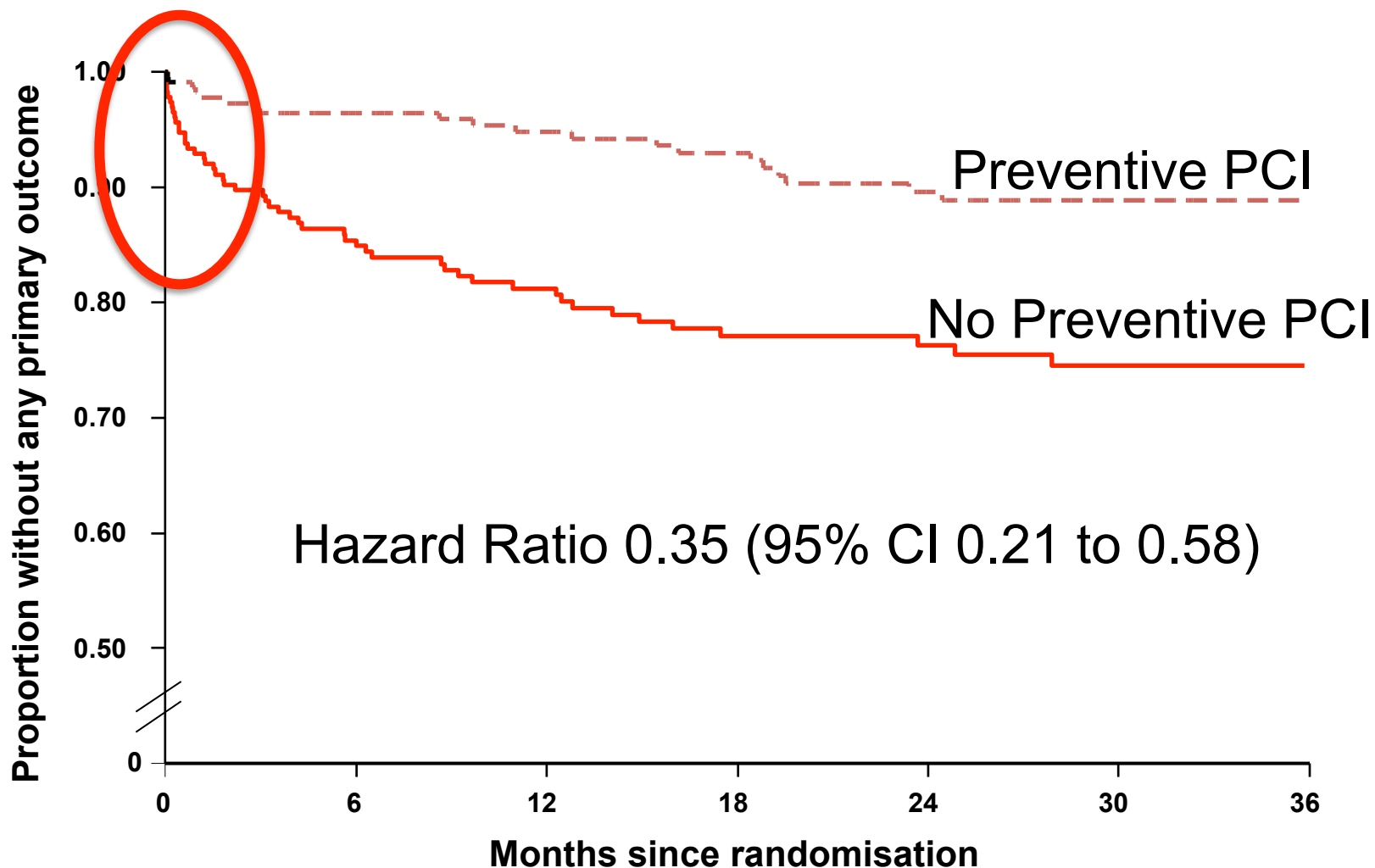
Larger trials are needed to clarify the revascularization strategy in STEMI patients with multivessel disease.

# Coronary plenary sessions

**STEMI-MVD:**

**what about non culprit lesion?**

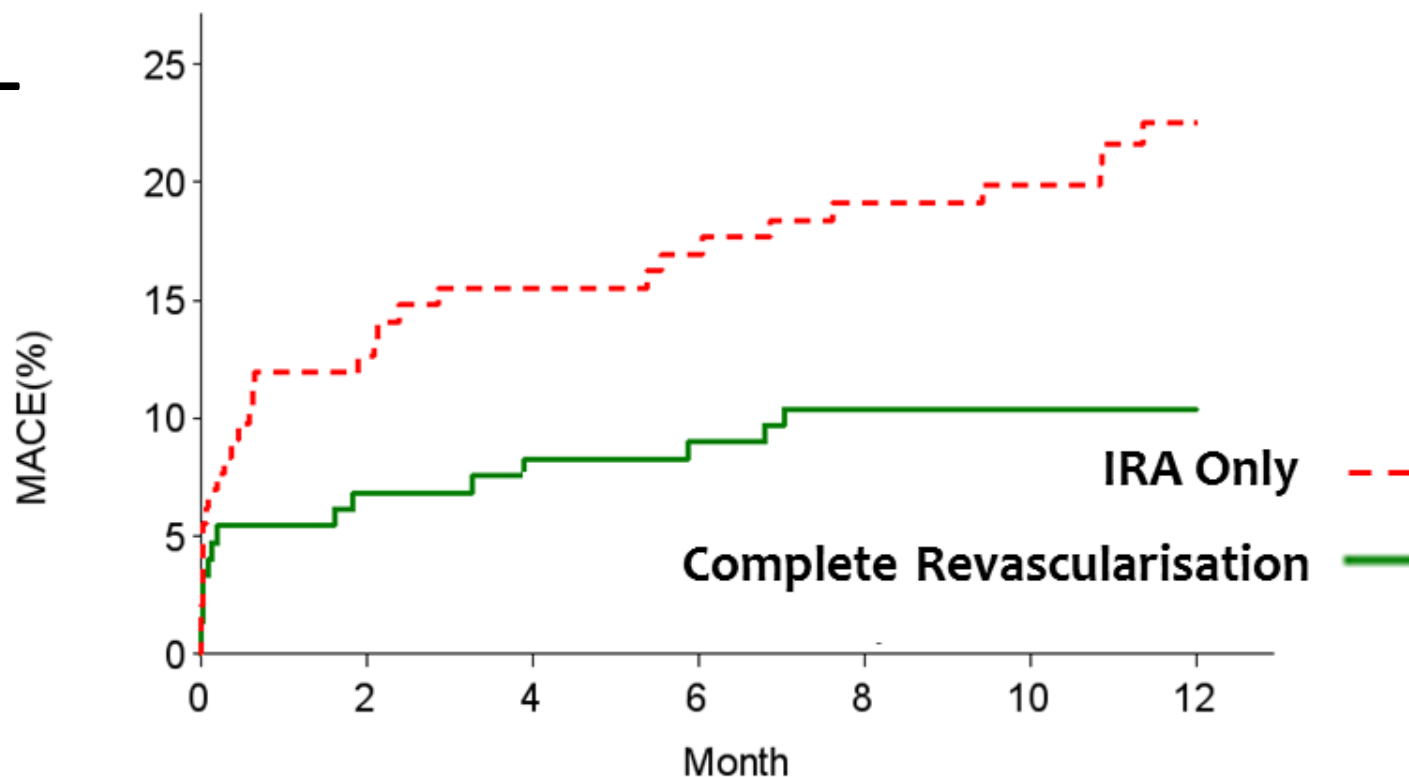
# Early benefit observed in PRAMI



# Complete revasc superior to culprit PCI

The primary endpoint composite of total mortality, recurrent MI, heart failure and ischaemia-driven revascularisation at 12 months

CvLPRIT

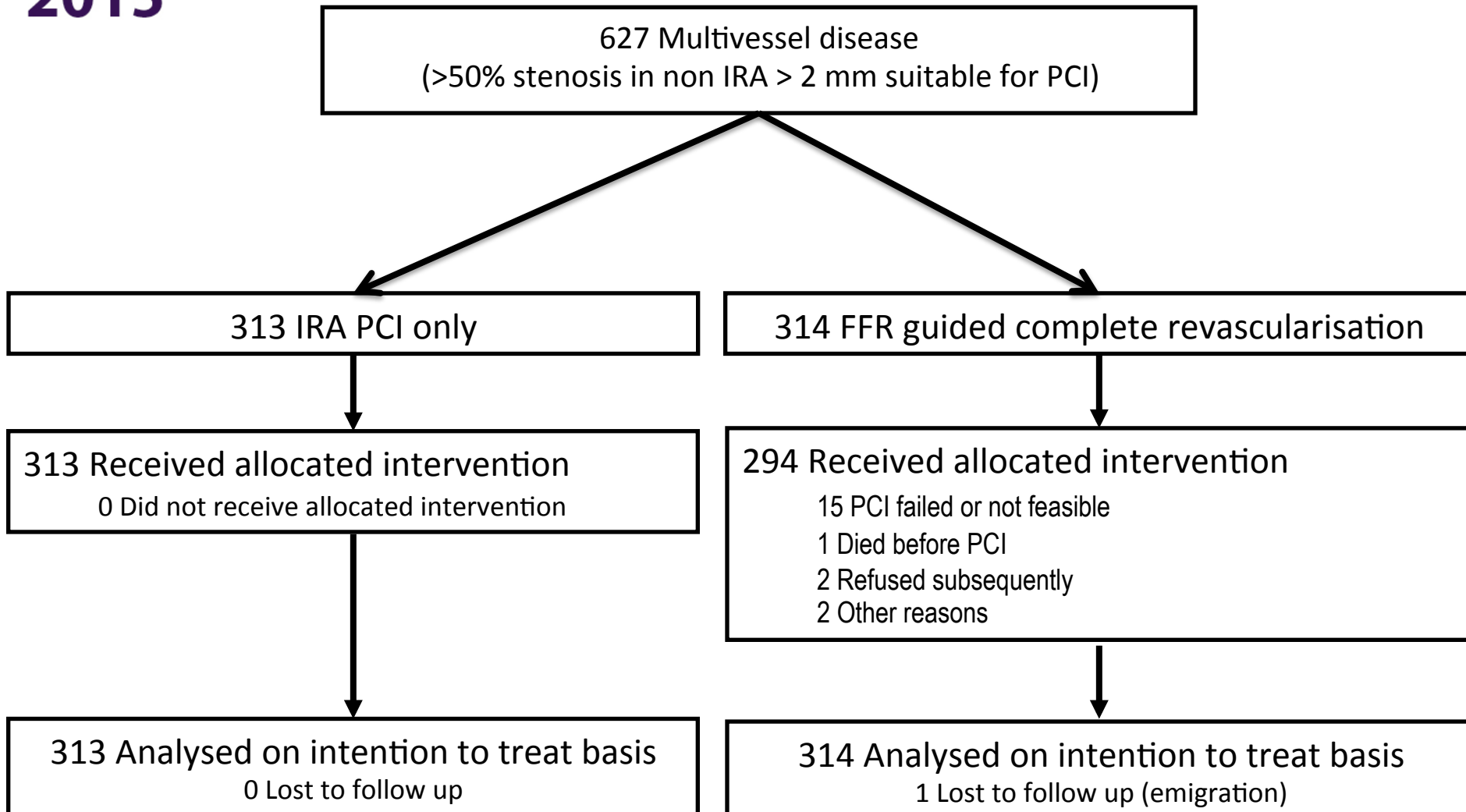


Number at risk:

Complete:	150	131	129	128	125	108	73
IRA Only:	146	122	118	116	111	98	68

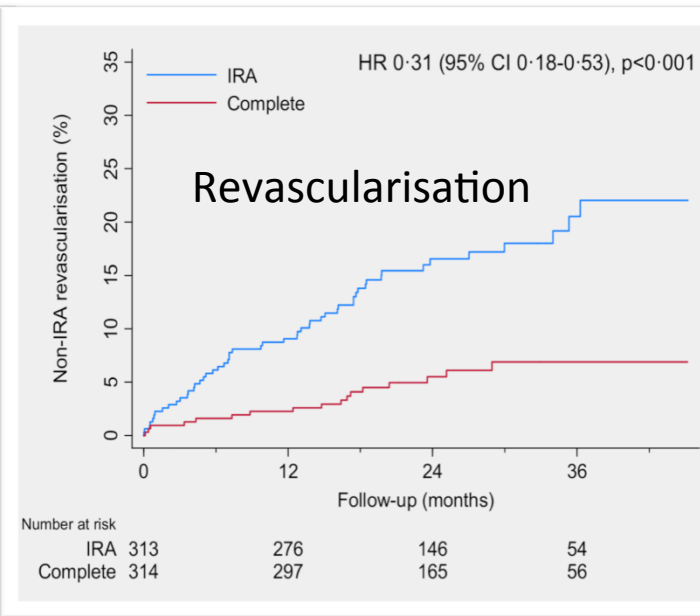
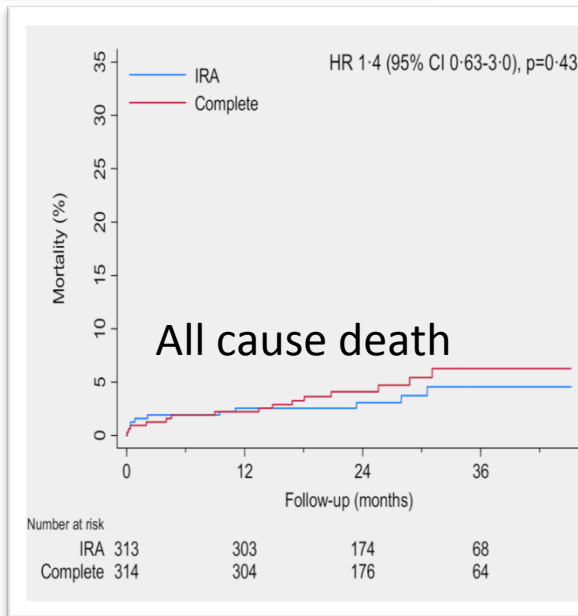
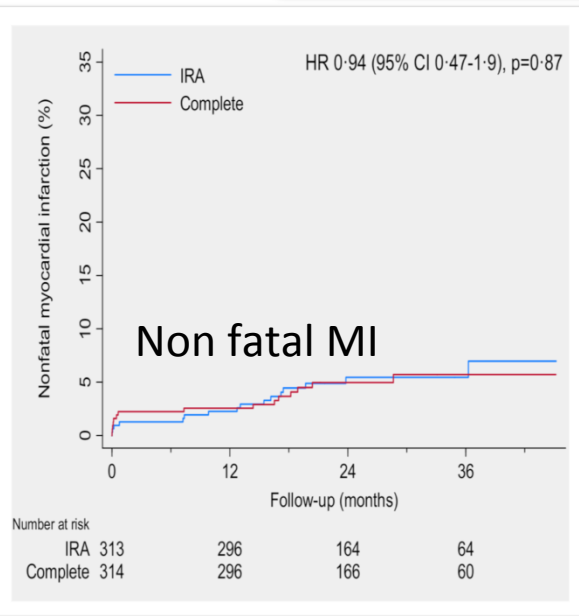
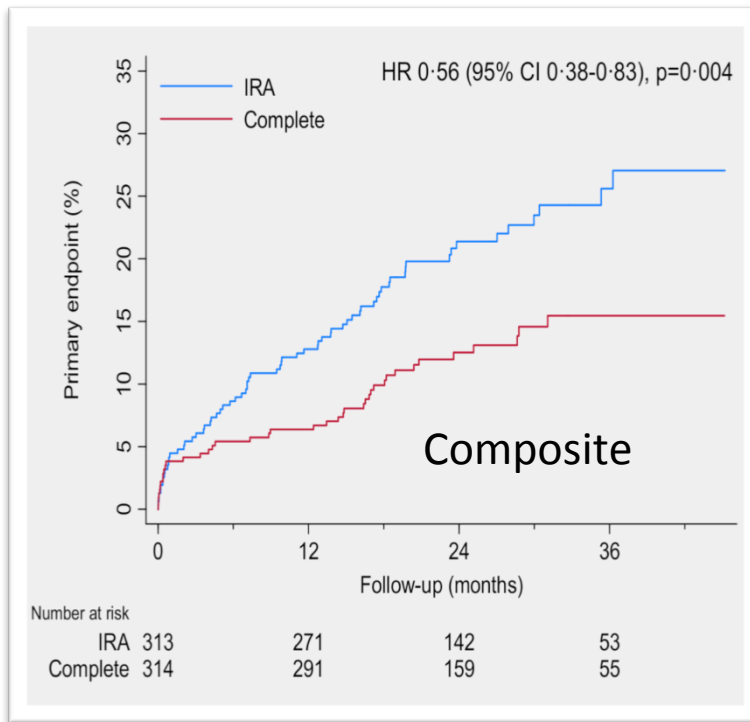


# DANAMI3-TRIAL PROGRAM



# DANAMI3-PRIMULTI

## Primary Endpoint



# Conclusions

- PPCI focus remains early culprit recanalisation
- Index angiography can be difficult to interpret
  - spasm
  - multiple culprits
  - focus on DTB
- Complete revascularisation advantageous
- Timing of bystander PCI remains unclear
  - clinical status is best guide currently
- Definite role for ischaemia testing

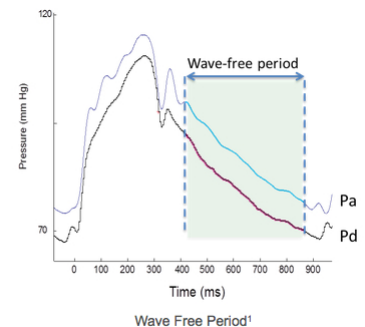
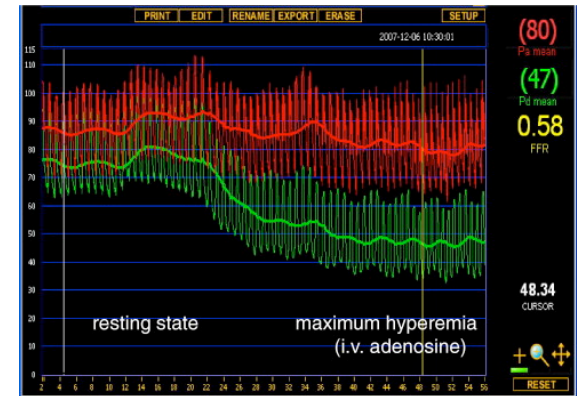
## **Coronary plenary sessions**

**Percutaneous revascularisation for  
complex multivessel disease in  
stable coronary artery disease**

# Summary

Use of coronary physiology  
**critical** in contemporary  
management of multivessel  
disease

Reclassify number of revasc targets  
Treat ischaemia-inducing lesions *only*  
Simplify decision-making & PCI itself  
Reduce time, cost and risk

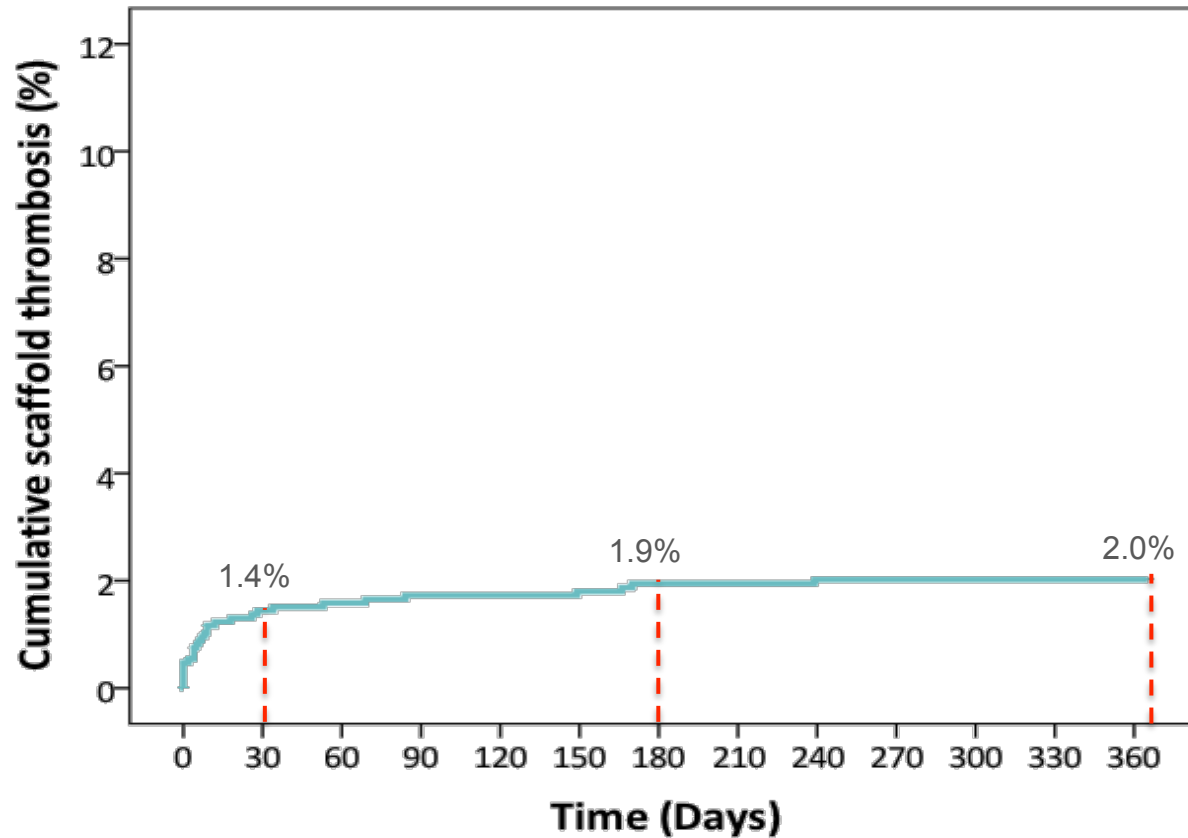


# **Coronary plenary sessions**

## **BioResorbable Scaffolds**

**How to integrate the currently available bioresorbable scaffolds in daily practice?**

## Scaffold Thrombosis Definite/probable

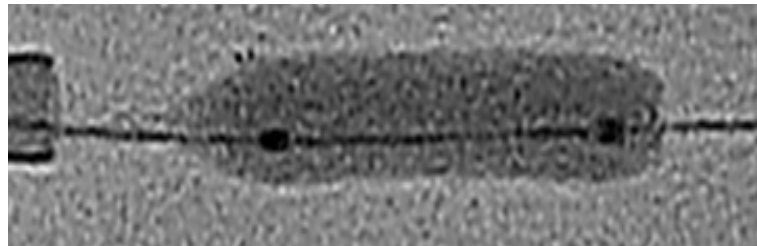
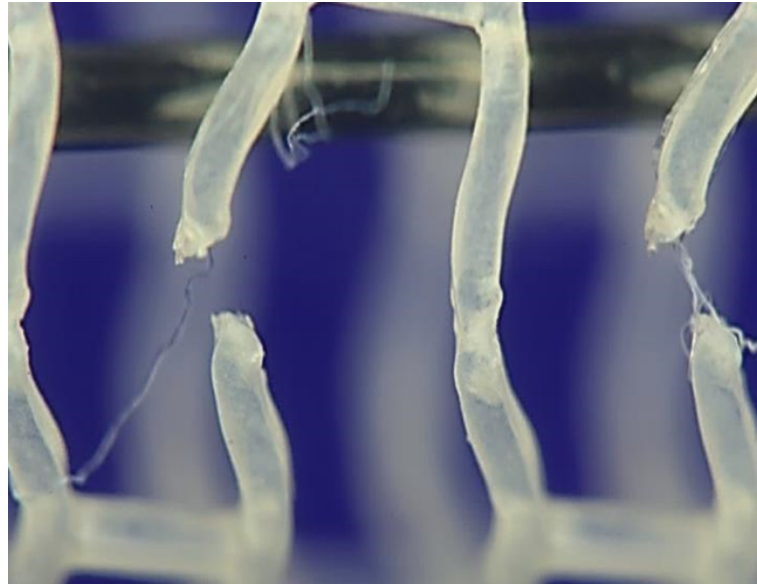


Days	0	90	180
365			
Pts at risk	1,477	1,376	1,332
1,012			

# **Post-dilatation may cause strut #**

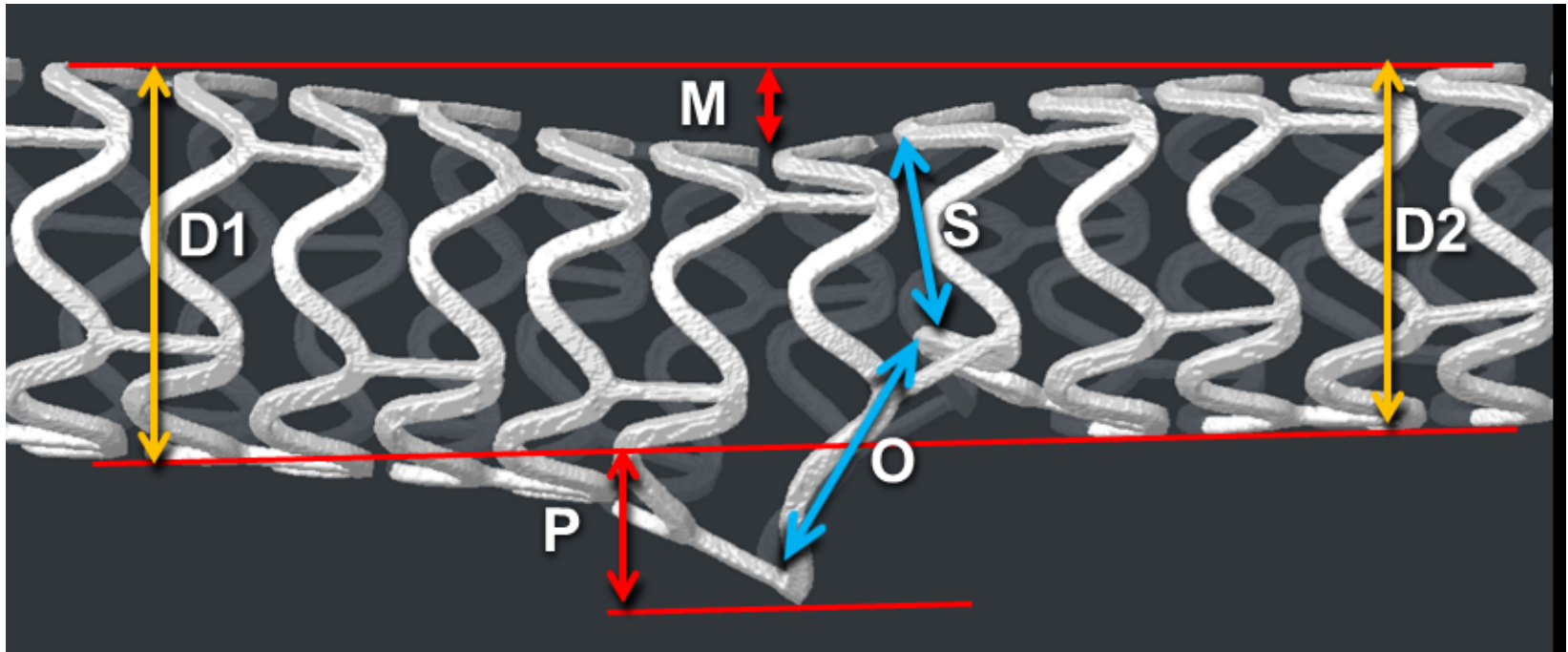
## **Multiple #s cause adverse events**

### **What is safe dilatation?**

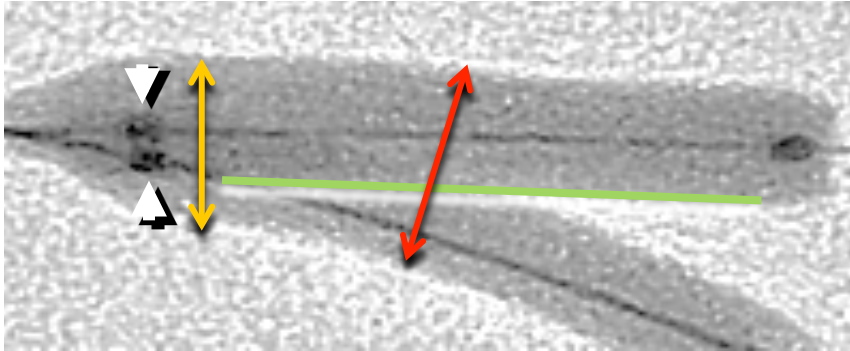




# Dilatation through the side of a scaffold causes distortion that should be corrected by a post-dilatation strategy

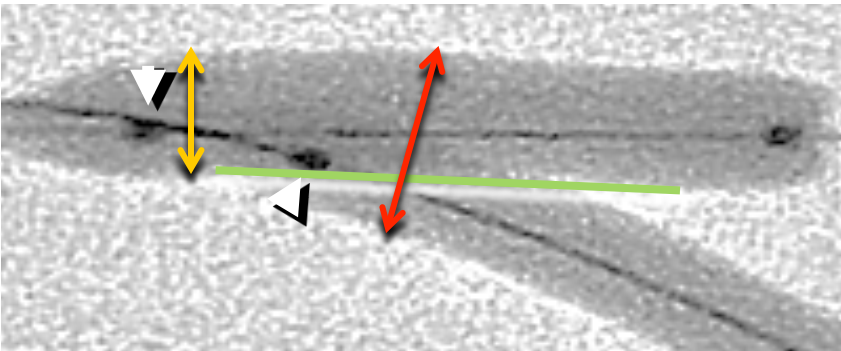


# Strategies that may correct distortion after scaffold side-dilatation



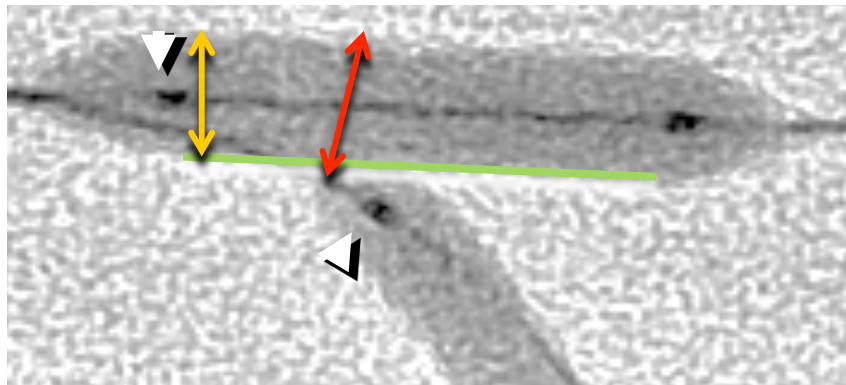
**Conventional kissing** balloon post-dilatation.

Balloon proximal markers are aligned



**Mini-kissing** balloon post-dilatation

There is minimal protrusion of the SB balloon into the MB



**“Snuggle”** balloons

There is no overlap of balloons

# Optimal duration of DAPT with BRS

Minimum of 6 months recommended in ABSORB program

## Clinic evaluation

Selection of the patient

Low bleeding risk

No planned surgery

Avoid patients with OAC

## Procedural evaluation

BVS diameter

Complex lesions

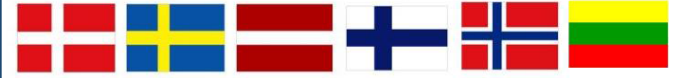
Overlap scaffolds

12 months (18-24 months?) regardless initial presentation

# **Coronary plenary sessions**

## **Coronary bifurcations**

**How to successfully perform PCI for  
complex bifurcation lesions?**



# Randomized comparison of provisional side branch stenting versus a two-stent strategy for treatment of true coronary bifurcation lesions involving a large side branch.

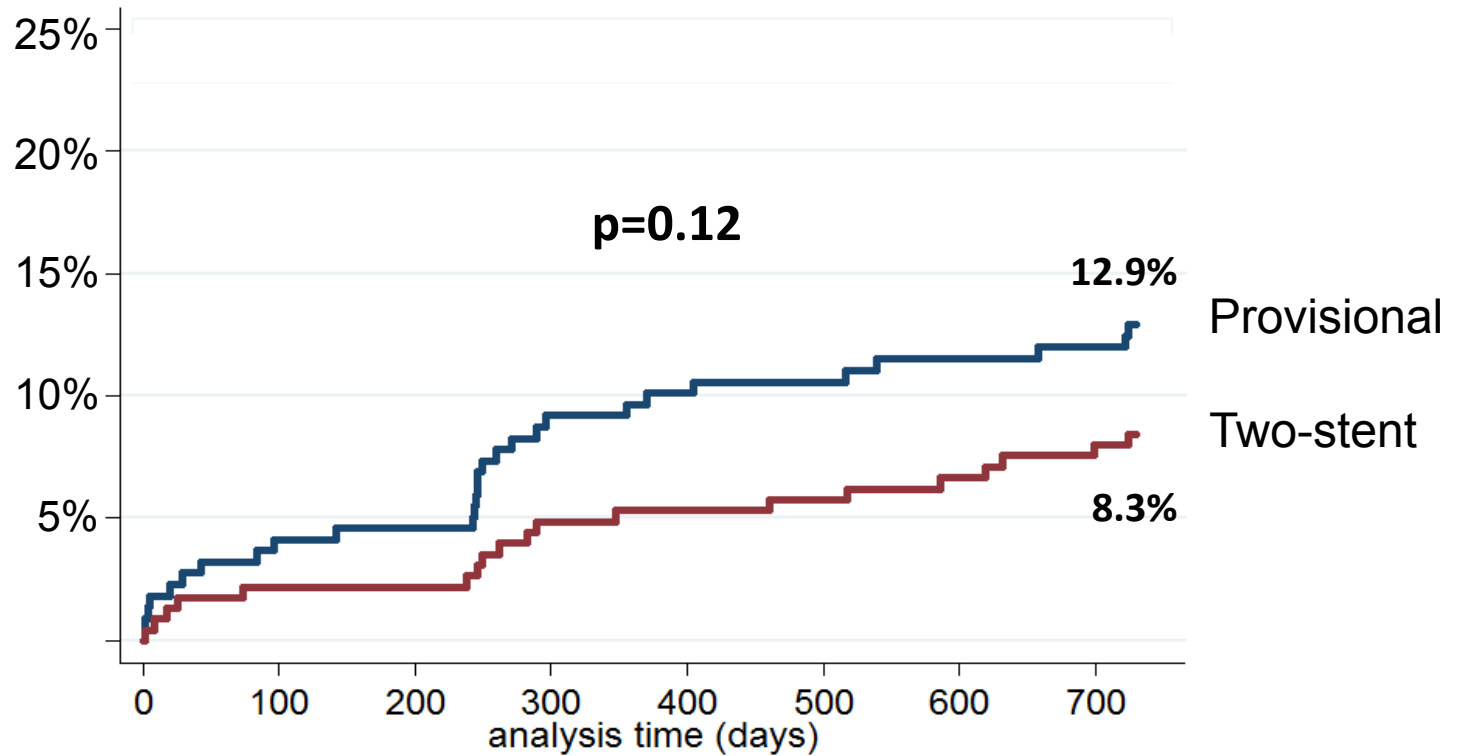
## Two-year results in the Nordic-Baltic bifurcation study IV

**Indulis Kumsars**, Niels R. Holm, Matti Niemelä, Andrejs Erglis, Kari Kervinen, Evald H. Christiansen, Michael Maeng, Andis Dombrovskis, Vytautas Abraitis, Aleksandras Kibarskis, Terje K. Steigen, Thor Trovik, Gustavs Latkovskis, Dace Sondore, Inga Narbute, Christian Juhl Terkelsen, Markku Eskola, Hannu Romppanen, Lisette Okkels Jensen, Mika Laine, Tuija Vasankari, Pål Gunnes, Lasse Hebsgaard, Ole Frobert, Fredrik Calais, Jens Aaroe, Juha Hartikainen, Svend Eggert Jensen, Jan Ravkilde, Thomas Engstrøm, Leif Thuesen, Jens F. Lassen

For the Nordic-Baltic PCI Study Group



# Two-year MACE

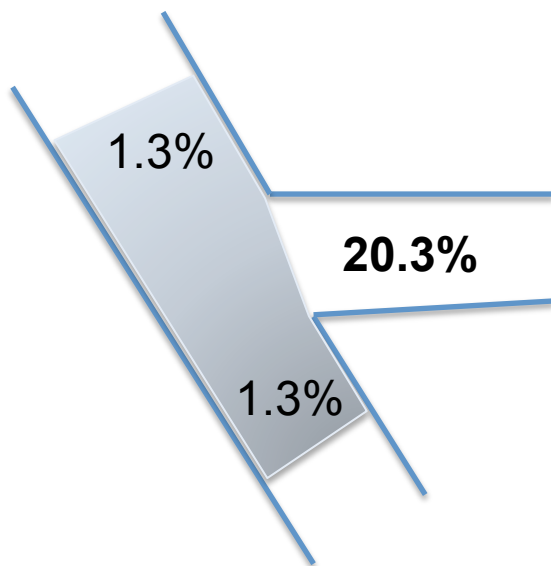


Number at risk	0	100	200	300	400	500	600	700
Two-stent tech.	228	221	221	214	212	211	209	206
Provisional tech.	218	209	208	196	194	192	189	187

**MACE:** cardiac death, non-procedural myocardial infarction, target lesion revascularization and definite stent thrombosis

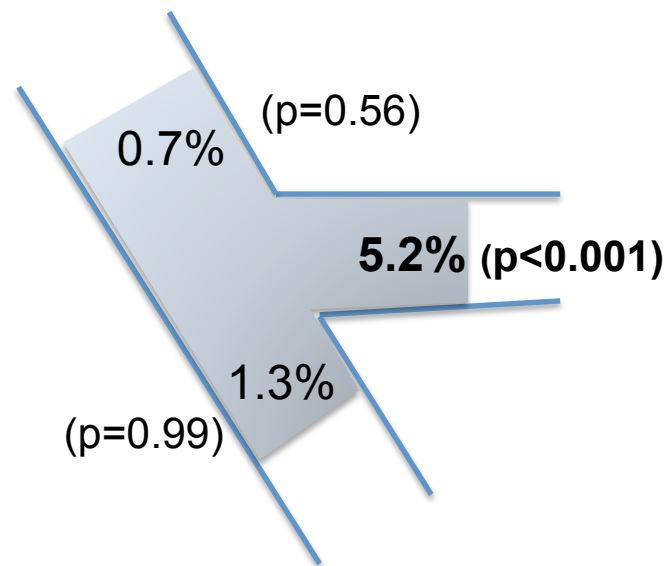
# Angiographic restenosis\* at 8 months

Provisional SB stent technique



n = 153

Two-stent technique

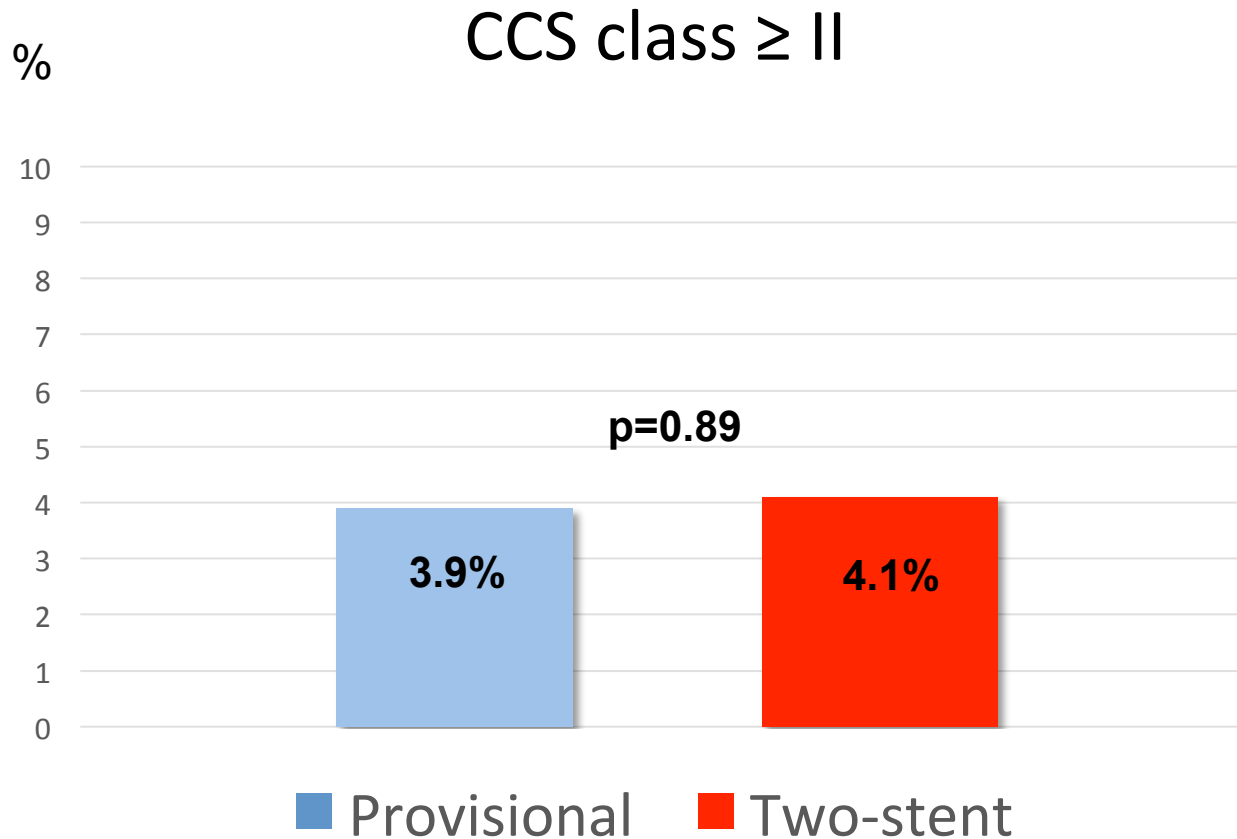


n = 154

\* Binary restenosis  $\geq$  50% diameter stenosis

QCA by dedicated bifurcation analysis. Medis QAngioXA 7.3

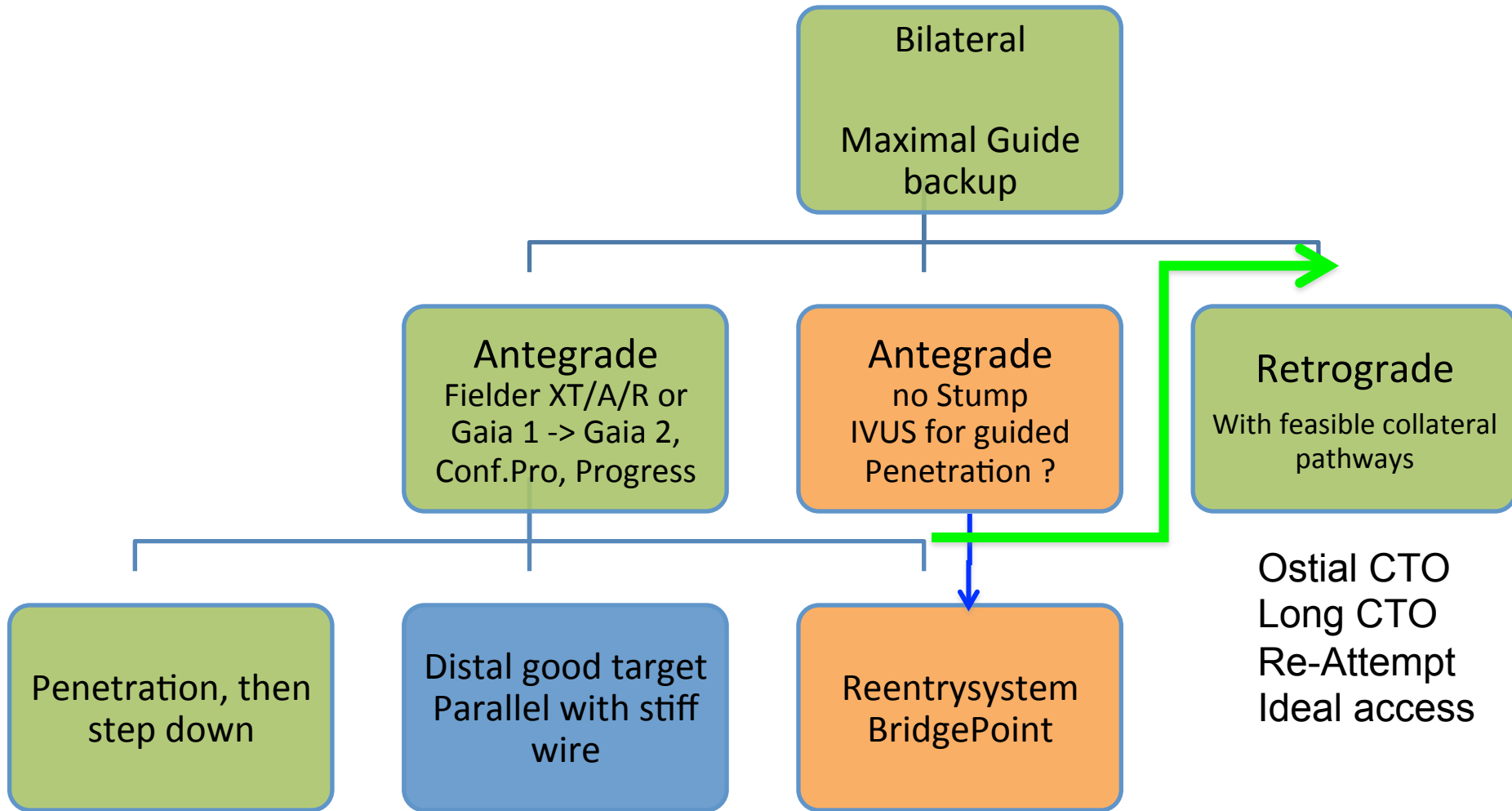
# Angina pectoris at 2 years



# **Coronary plenary sessions**

**Appropriate use of coronary CTO  
interventions in 2015**

# Strategic options in Europe





# **Coronary plenary sessions**

**Difficult clinical decisions in  
antithrombotic therapy for coronary  
interventions**

# 3 key and controversial issues !

Timing of P2Y12 blockers in SCAD / ACS

DAPT duration after ACS / DES

Management of PCI patient with OAC

# STRUCTURAL

- Hotline - Trials: NOTION, DEFLECT III
- Breaking news: Leaflet thickening & motion abnormality
- Plenary sessions:
  - TAVI: imaging, PVL, CAD, future vision
  - Valve in valve
  - Mitraclip
  - Mitral valve replacement
  - LAA closure
  - Heart failure

# The NOTION Trial

An All-comers Randomized Clinical Trial Comparing  
Transcatheter with Surgical Aortic Valve Replacement  
in Patients with Aortic Valve Stenosis

**Lars Søndergaard**

The Heart Center, Rigshospitalet, Copenhagen, Denmark  
- on behalf of the NOTION Investigators

# Primary Outcome\*

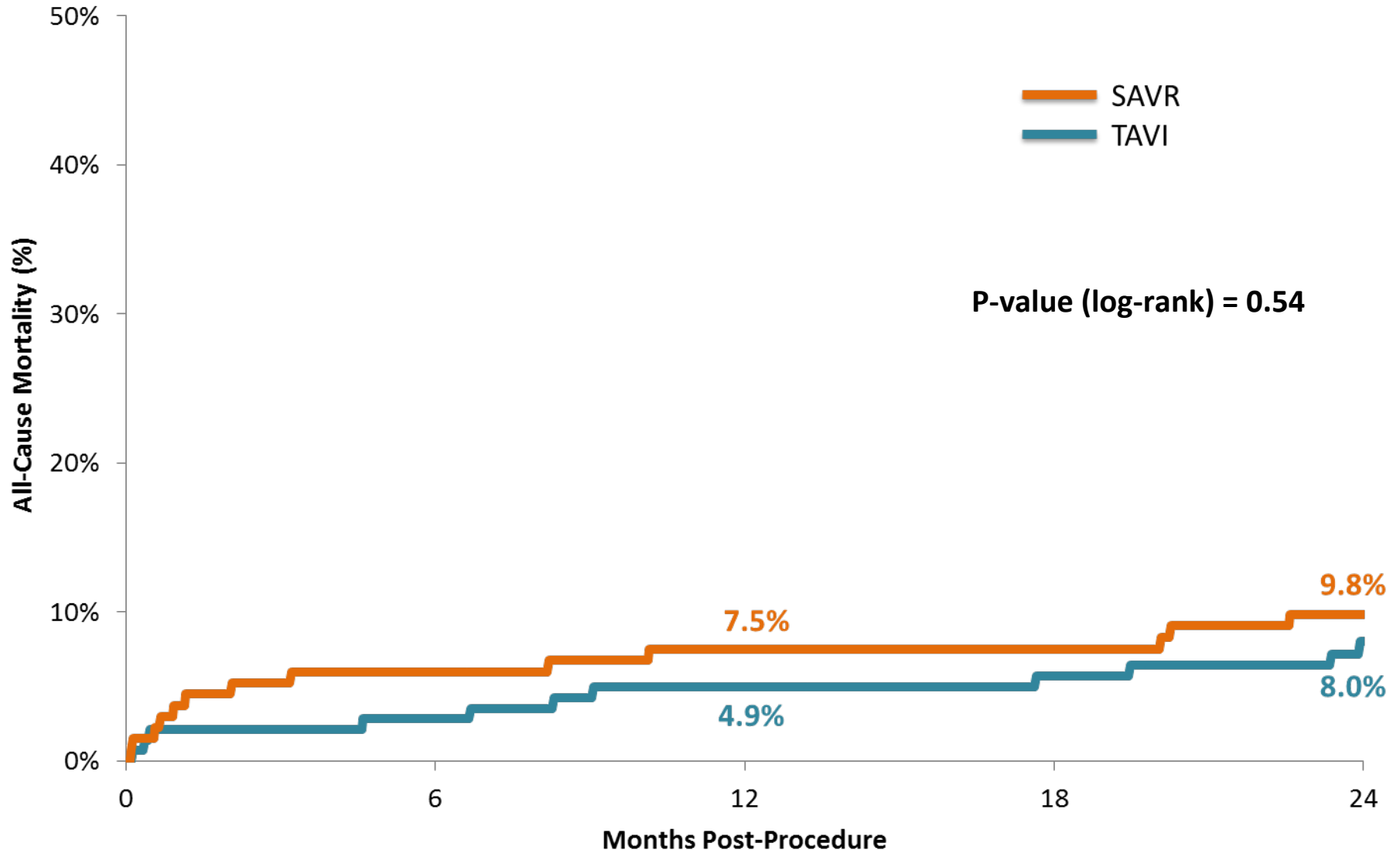
**Composite rate of death from any cause, stroke or myocardial infarction 1 year after the procedure**

**TAVI 13.1% vs. SAVR 16.3%**

Absolute difference -3.2%;  $p=0.43$  (for superiority)

\*Intention-to-treat population

# Death from Any Cause at 2 Years



# Secondary Outcomes at 2 Years

Outcome, %	1 Year			2 Years		
	TAVI	SAVR	p-value	TAVI	SAVR	p-value
Death, any cause	4.9	7.5	0.38	8.0	9.8	0.54
Death, cardiovascular	4.3	7.5	0.25	6.5	9.1	0.40
Stroke	2.9	4.6	0.44	3.6	5.4	0.46
TIA	2.1	1.6	0.71	6.0	3.3	0.30
Myocardial infarction	3.5	6.0	0.33	5.1	6.0	0.69
Atrial fibrillation	21.2	59.4	<0.001	22.7	60.2	<0.001
Pacemaker	38.0	2.4	<0.001	41.3	4.2	<0.001
Aortic valve re-intervention	0.0	0.0	na	0.0	0.0	na

Final 30-day results of the **DEFLECT III trial:**  
a prospective randomised evaluation of the novel  
embolic protection DEFLECTion device during TAVI

Andreas Baumbach  
Bristol Heart Institute  
University Hospitals Bristol, UK

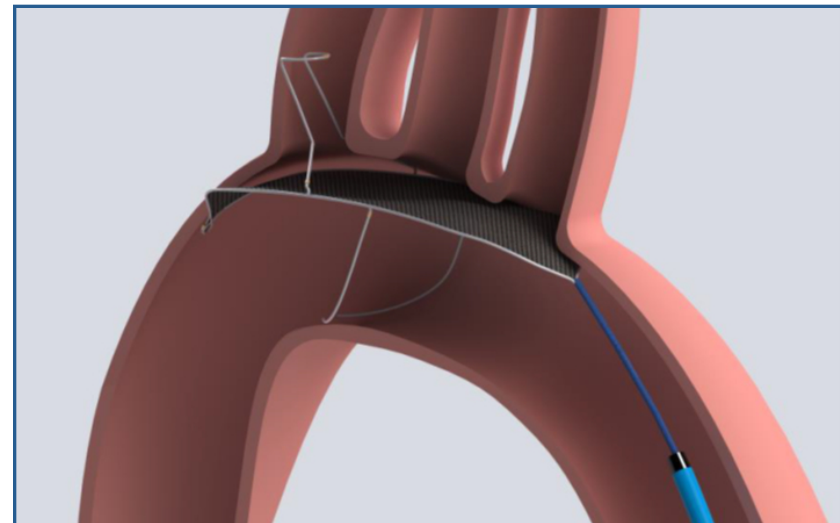
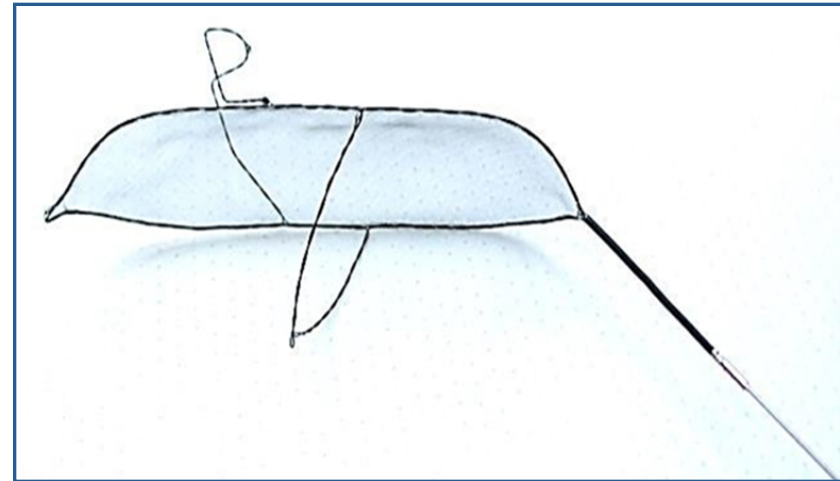
For the Deflect Study Group:

J Schofer, D Tchetché, P Stella, C Pietras, H Parise, K Abrams, J Forrest, M Cleman,  
J Reinöhl, T Cuisset, D Blackman, G Bolotin, S Spitzer, U Kappert, M Gilard, T Modine,  
D Hildick-Smith, M Haude, P Margolis, A Brickman, S Voros and A Lansky

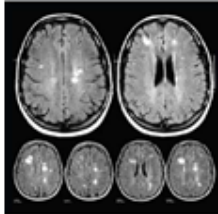


# TriGuard Device

- Single-wire nitinol frame and mesh filter with pore size of  $130\mu\text{m}$  designed to deflect cerebral emboli during TAVI while allowing maximal blood flow
- Positioned across all 3 cerebral vessels and maintained by a stabilizer in the innominate
- Delivered via 9 Fr sheath from the femoral artery

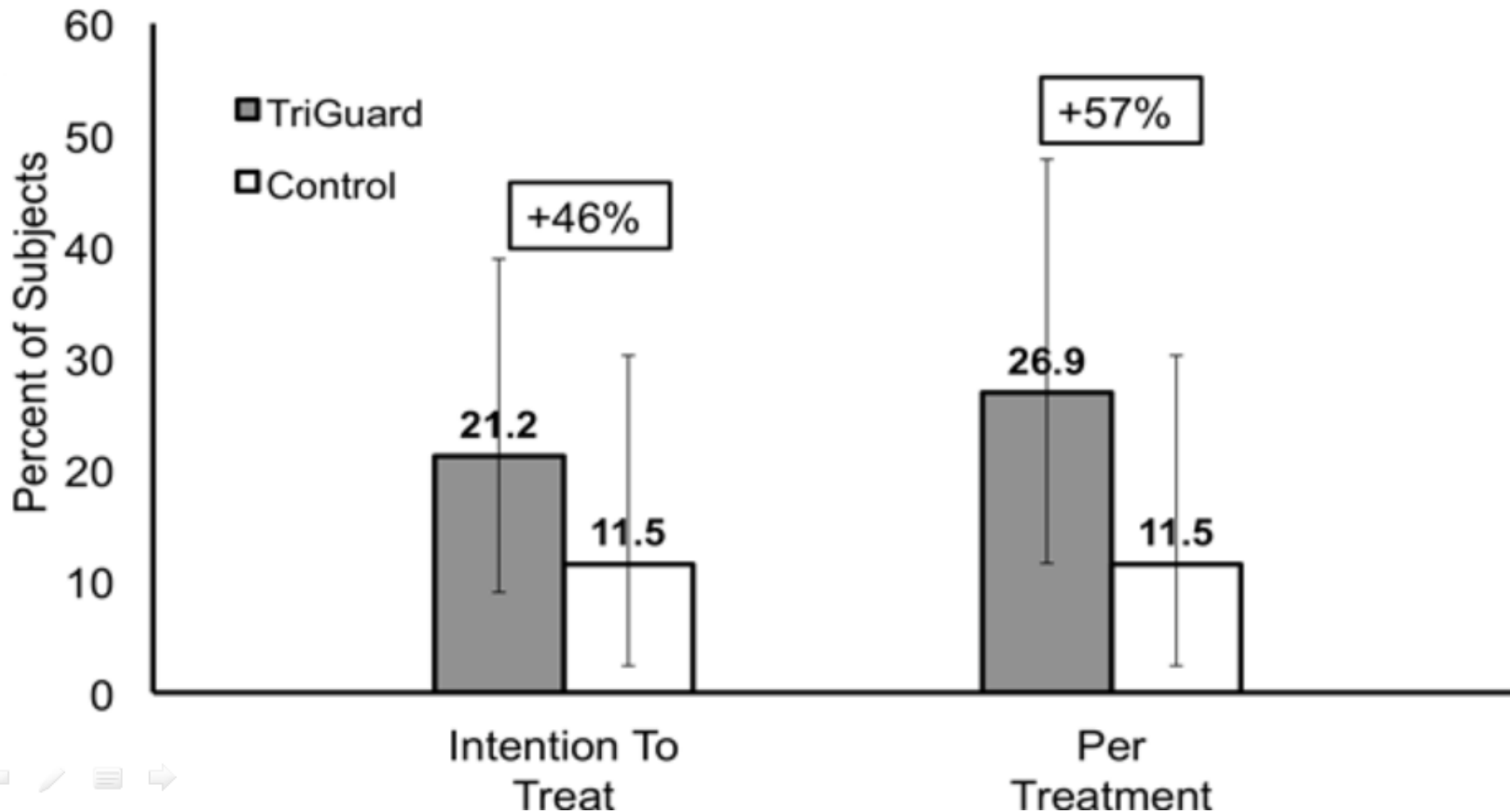


# DW Brain Imaging



Increased rate of pts without any new brain lesion

## A Freedom from ischemic brain lesions



# Key Messages on Behalf of PCR Breaking News Session

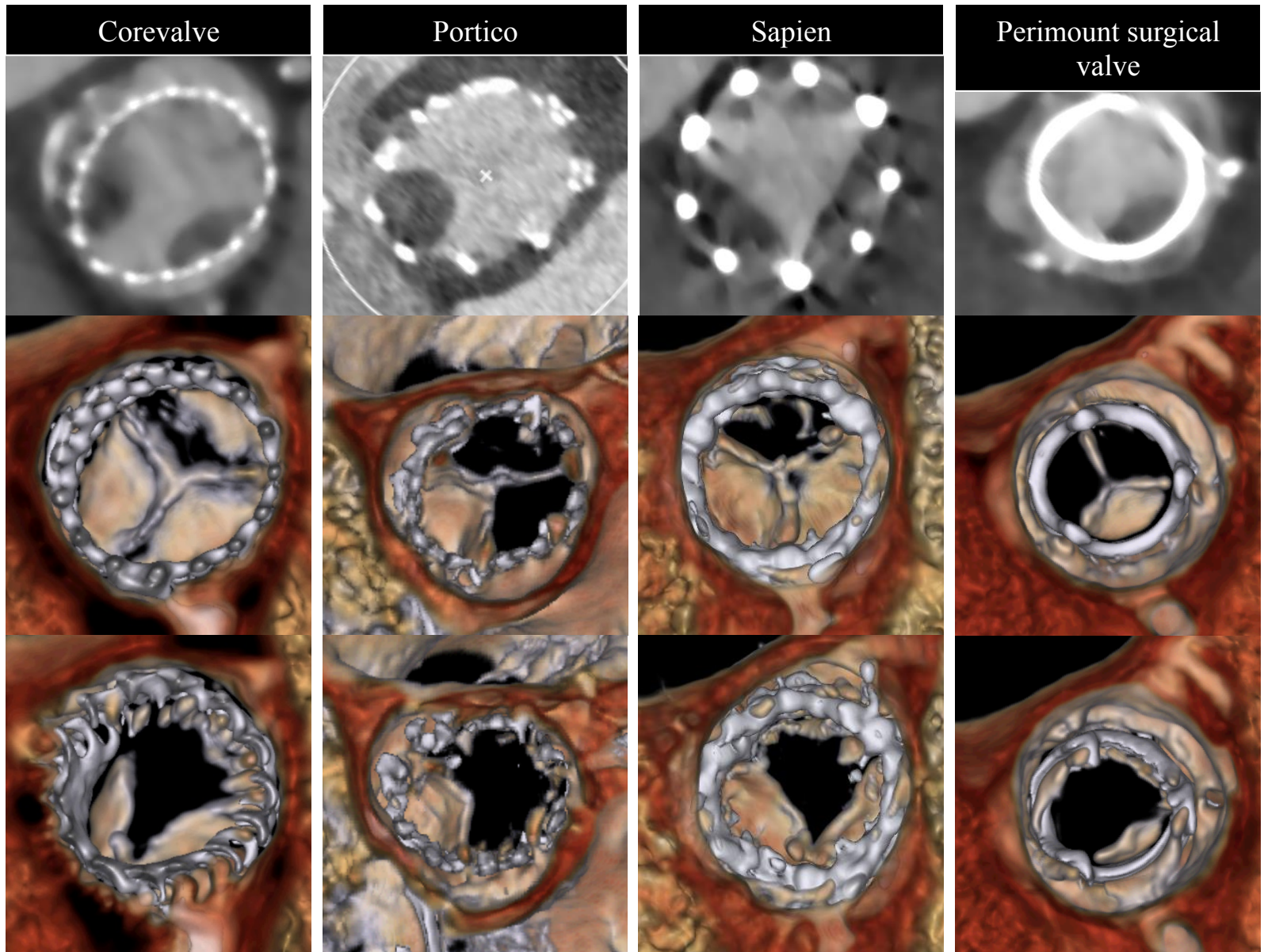
## *Leaflet Thickening and Reduced Motion of Bioprosthetic Aortic Valves*

Dr Bernard Prendergast DM FRCP FESC

St Thomas' Hospital London, UK

Co-Director PCR London Valves

# Reduced leaflet motion was observed in all valve types including surgical bioprostheses





# Early Hypoattenuating Leaflet Thickening

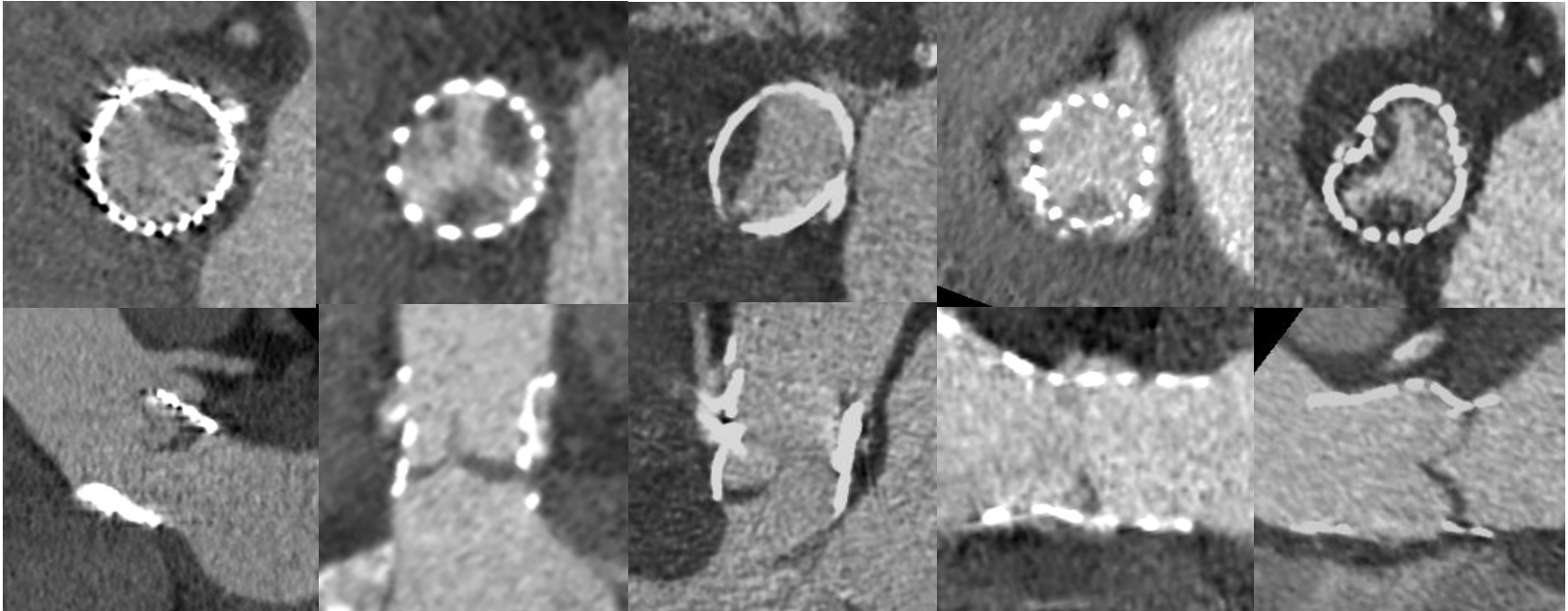
SAPIEN XT, 5 days after implantation, on clopidogrel + aspirin



2nd generation dual-source CT scanner (Somatom Definition Flash, Siemens)  
contrast-enhanced retrospective ECG-gated data acquisition  
temporal resolution of 75 ms

# Early Hypoattenuating Leaflet Thickening

may occur in any valve type



SAPIEN XT

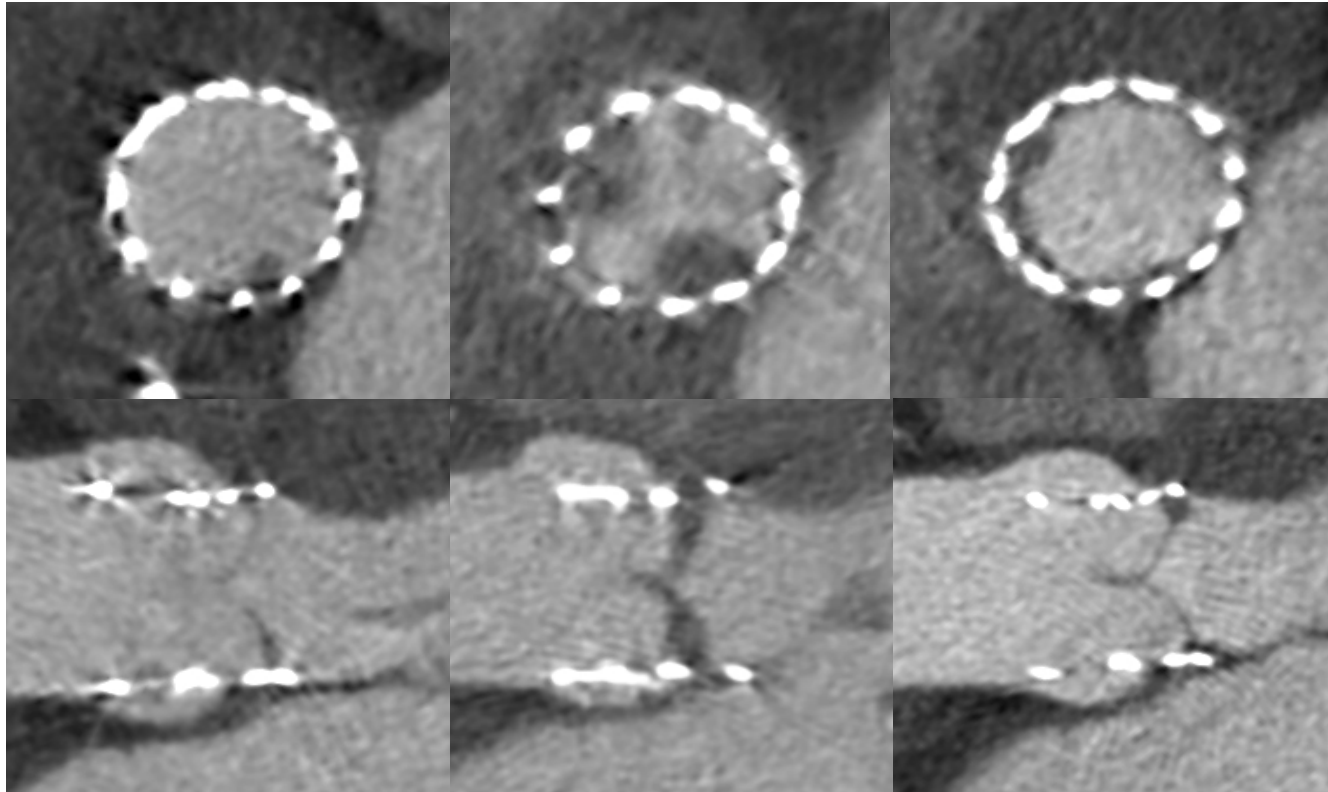
SAPIEN 3

LOTUS

CORE  
VALVE

PERCEVAL

# Progression and Regression of Leaflet Thickening



July 2014



3-month FU



6 month FU

Antiplatelet  
Therapy

Antiplatelet Therapy  
+

Full Anticoagulation

# TAVI: An Established Procedure

- **TAVI** is now a standard **life saving procedure** for patients with severe AS who are inoperable and an alternative to surgical AVR in high risk subjects
- A large body of high quality **clinical evidence** confirms its **safety, durability and effectiveness**
- Over 100,000 procedures performed worldwide
- There is no current standardised regime of anti-platelet or anti-thrombotic therapy before, during or after TAVI
- Rates of stroke in current RCTs and large scale registries are very low (1-2%) and comparable with surgical AVR



# Reassuring Data

- Today's data allay concerns regarding previous chance clinical observations and research-based imaging using **4D CT**
- In 345 patients with a variety of surgical valves and TAVI devices:
  - Spectrum of findings (leaflet thickening, impaired leaflet motion and thin films or small aggregations of thrombus) in **7-15% of patients**
  - **All asymptomatic** - no association with clinical events (stroke, systemic embolism or valve failure)
  - **Resolution** of the most advanced abnormalities with **oral anticoagulants**
- Some of these findings may represent imaging artefact or the natural history of biological valve leaflets

# Take Home Messages

- **There is no need for clinicians to modify their TAVI practice:**
  - Patient selection, device implantation, or follow up protocols (imaging and medical therapy)
  - Systematic follow up using CT or TOE in asymptomatic TAVI patients is unjustified
  - Current regimes of antithrombotic therapy remain appropriate - intensified treatment will expose TAVI patients to higher risk of bleeding
- **Future studies** will elaborate these observations and define the **optimal regime of antithrombotic therapy** for patients undergoing TAVI or surgical bioprosthetic AVR

# Structural plenary sessions

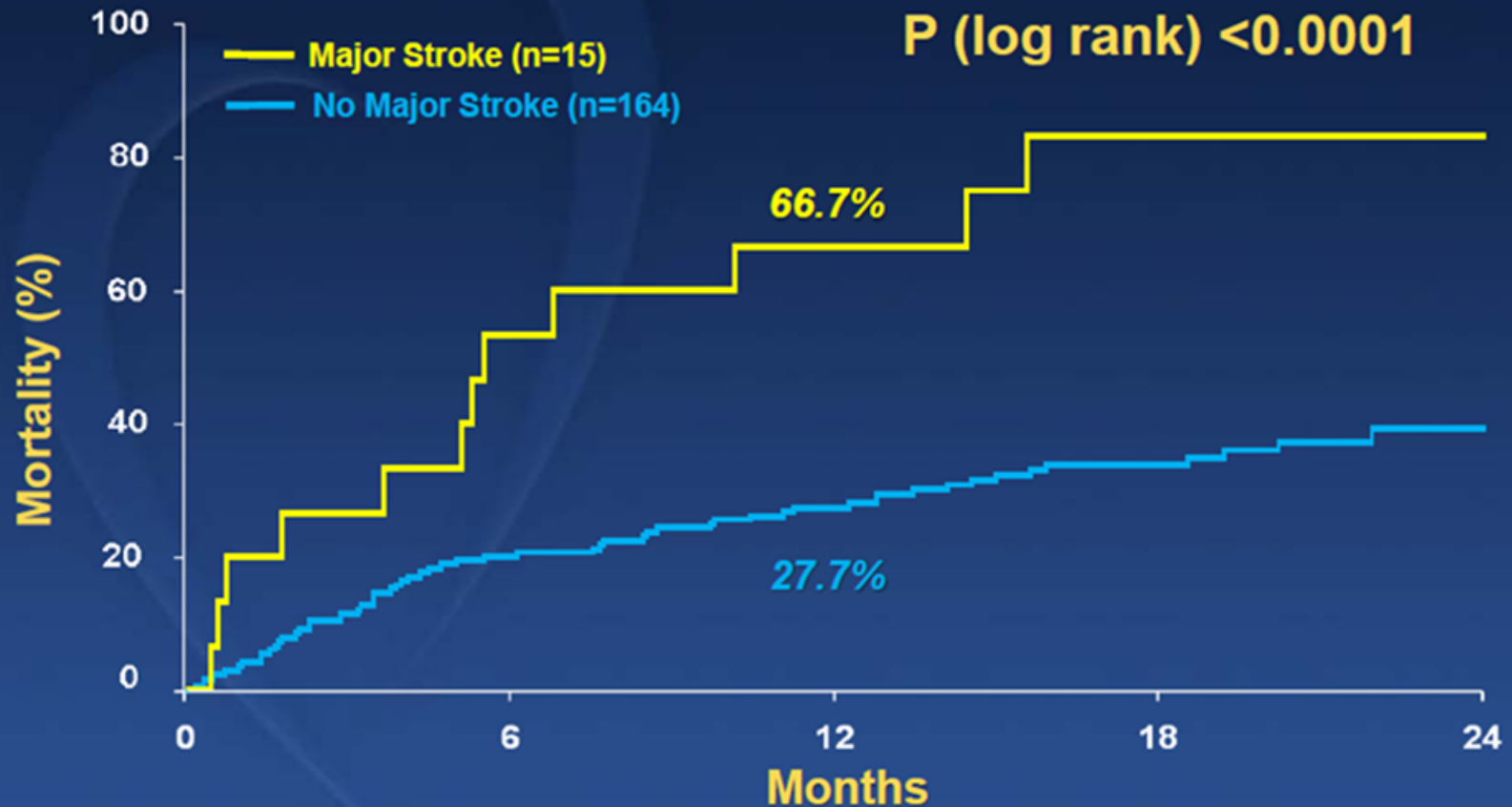
## How to Prevent Thromboembolic Complications in TAVI

**PETER WENAWESER, MD**

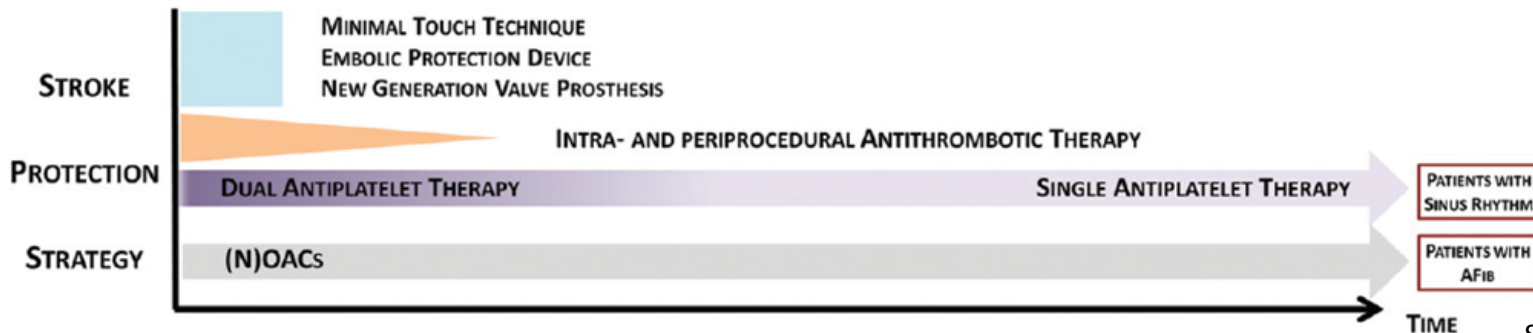
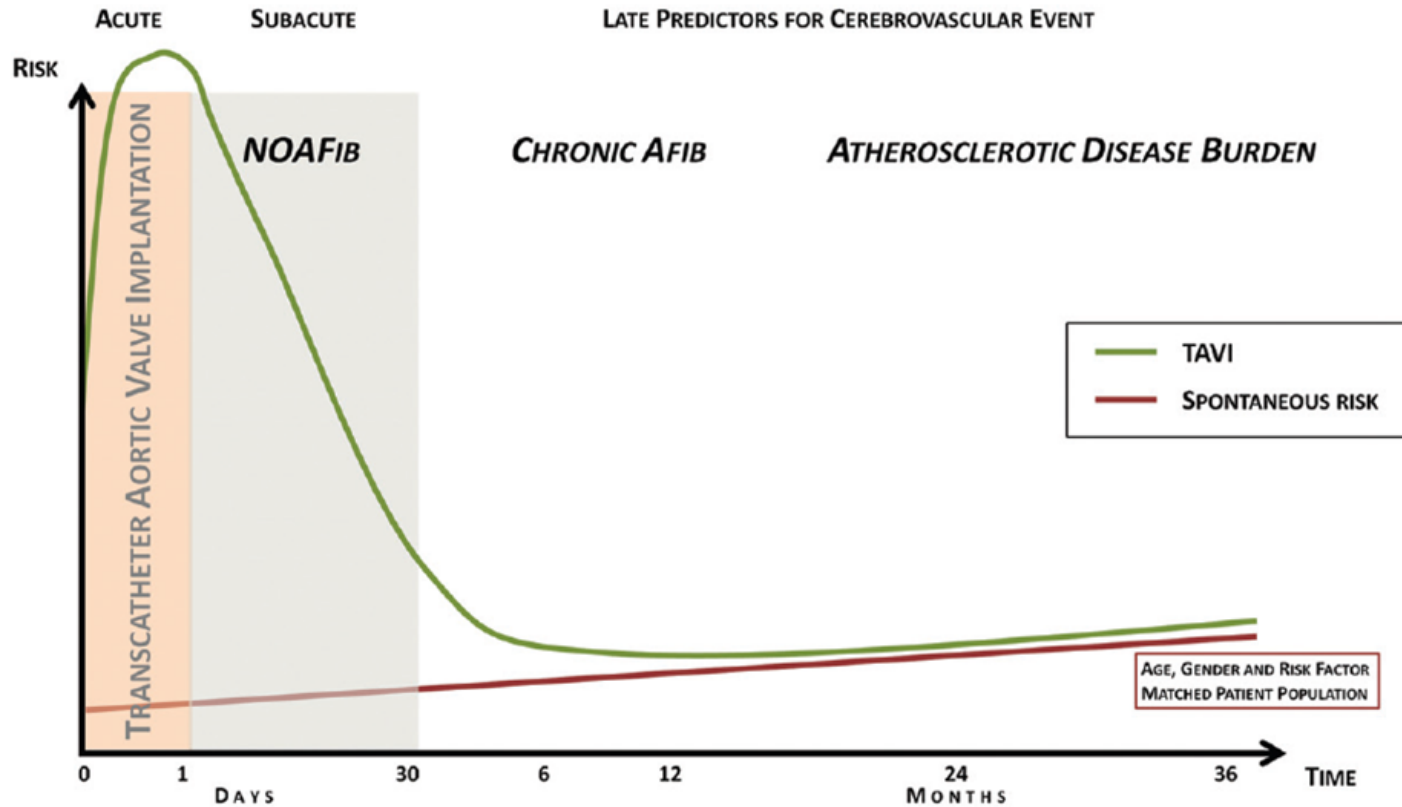
**Swiss Cardiovascular Centre, University Hospital,  
Bern, Switzerland**

# TAVI - STROKE

## Impact of Stroke on Mortality



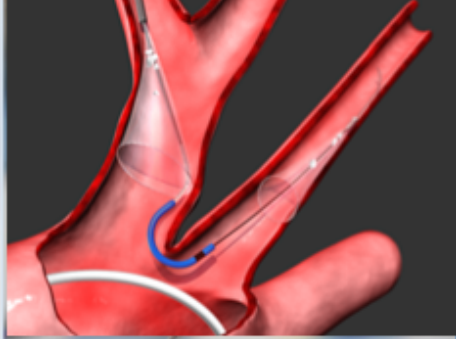


# Mechanism of Thromboembolic Events





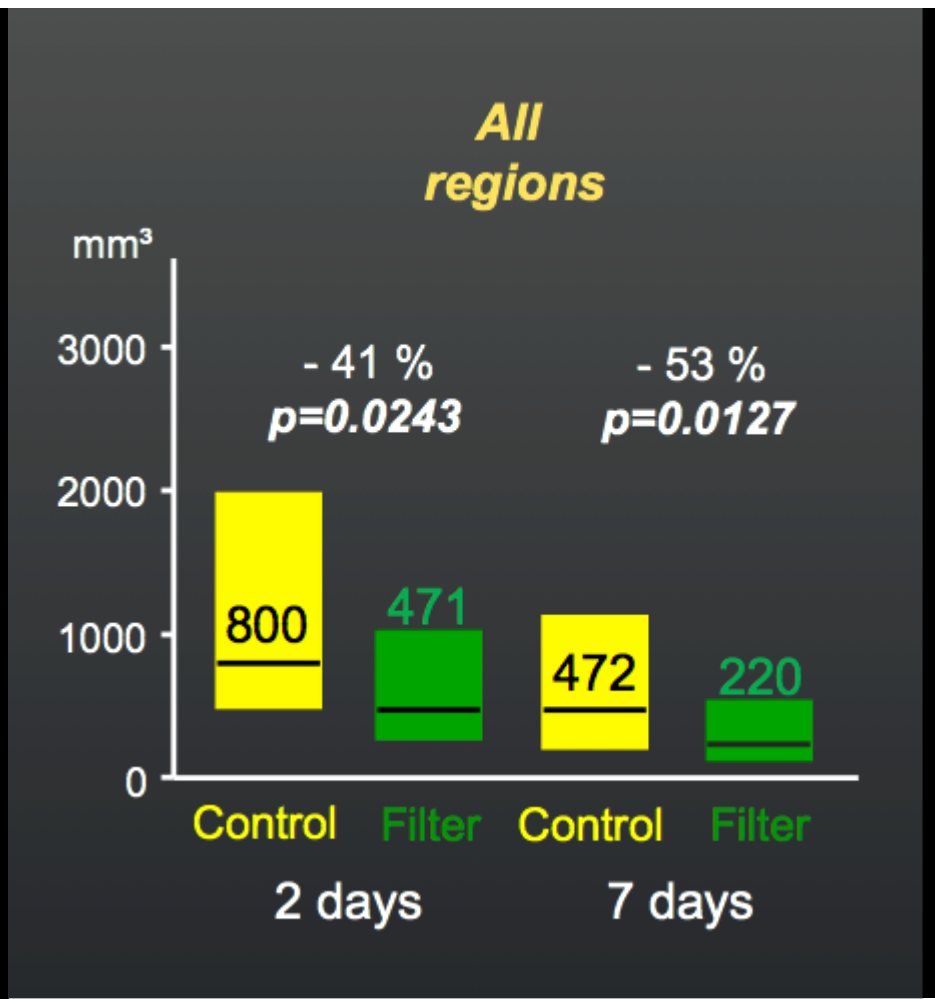
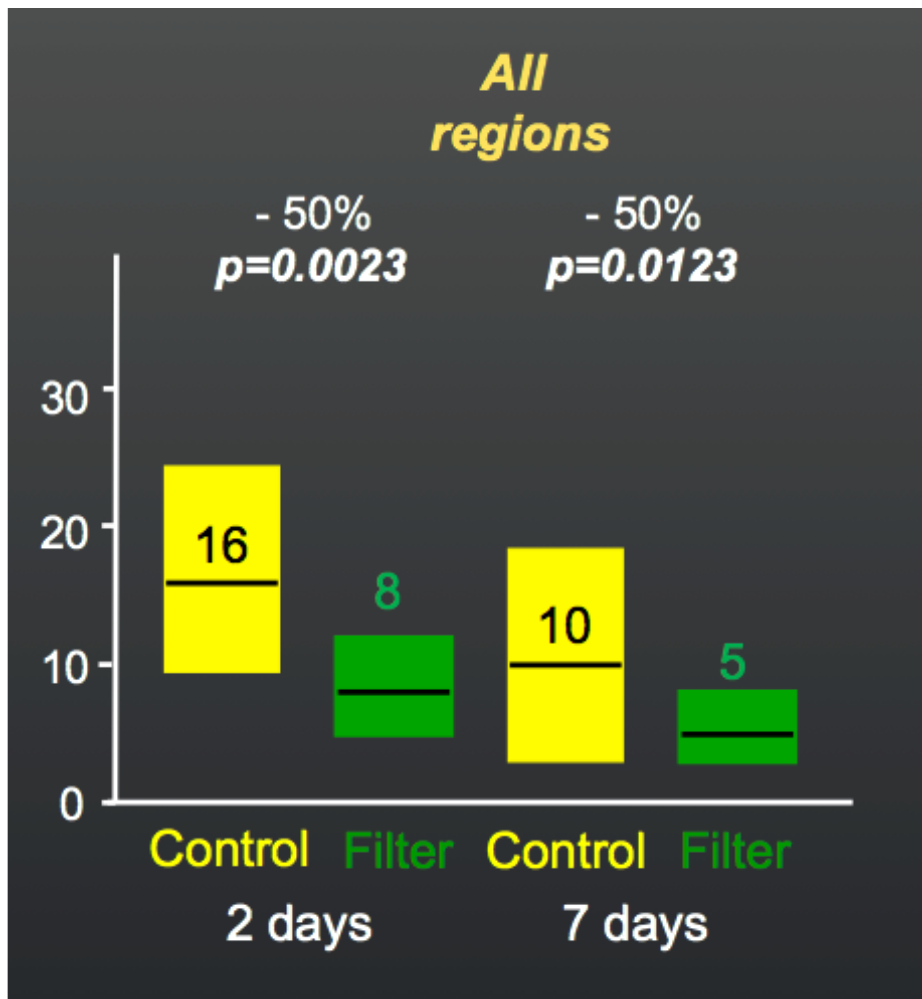
# Background

Device	<u>Embrella</u>	<u>TriGuard™</u>	<u>Claret™</u>
			
Access Site	Radial	<u>Femoral</u>	Radial
Position	Aorta	Aorta	<u>Brachiocephalic + Left Common Carotid</u>
<u>Coverage Area</u>	<u>Brachiocephalic + LCC</u>	<u>Brachiocephalic + LCC + LSC</u>	<u>Brachiocephalic + LCC</u>
<u>Mechanism</u>	<u>Deflection</u>	<u>Deflection</u>	Capture
Size	6F	9F	6F
Pore Size	100 <u>microns</u>	250 <u>microns</u>	140 <u>microns</u>

# CLEAN-TAVI MRI results

number of lesions

lesion volume



Boxes identify the 25%-75% CI, the black lines and number represent the median.

# Summary

- Stroke remains an important issue for patients undergoing TAVI
- Further improvements in the field of antiplatelet and anticoagulation treatment are warranted
- The role of protection devices need be determined



# Structural plenary sessions

## Paravalvular leak

# Paravalvular Aortic Regurgitation: The Achille's heel of TAVI ?

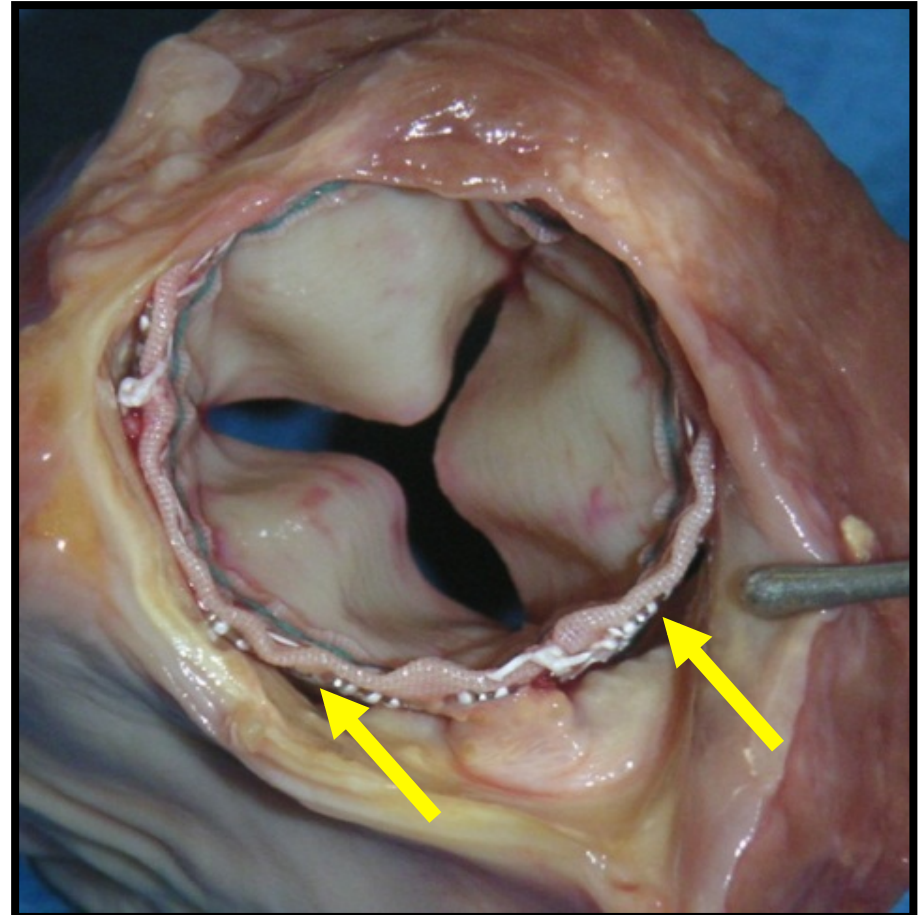
**Overall incidence: 50-85%**

## Moderate and severe PVL

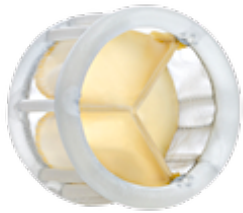
2010 SOURCE:	1.9%
2010 Canadian registry :	6%
2010 PARTNER IA:	12%
2011 PARTNER IB:	12.2%
2011 German registry:	15.2
2012 Italian registry:	15.2%
2012 FRANCE 2:	17%

## Two main causes:

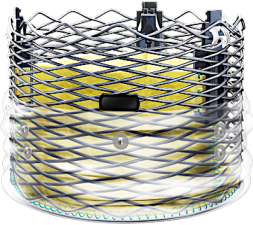
- ***Inappropriate sizing*** of the prosthesis
- ***Malpositioning*** of the prosthesis



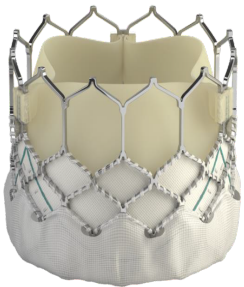
# The new devices and their characteristics to reduce PVL



- **Sealing rings** to prevent aortic regurgitation
- **Repositionable, fully retrievable**
- Allows **hemodynamic assessment** before final detachment



- **Adaptive seal**
- **Repositionable & retrievable**
- **High radial force**
- Allows **hemodynamic assessment** before final detachment

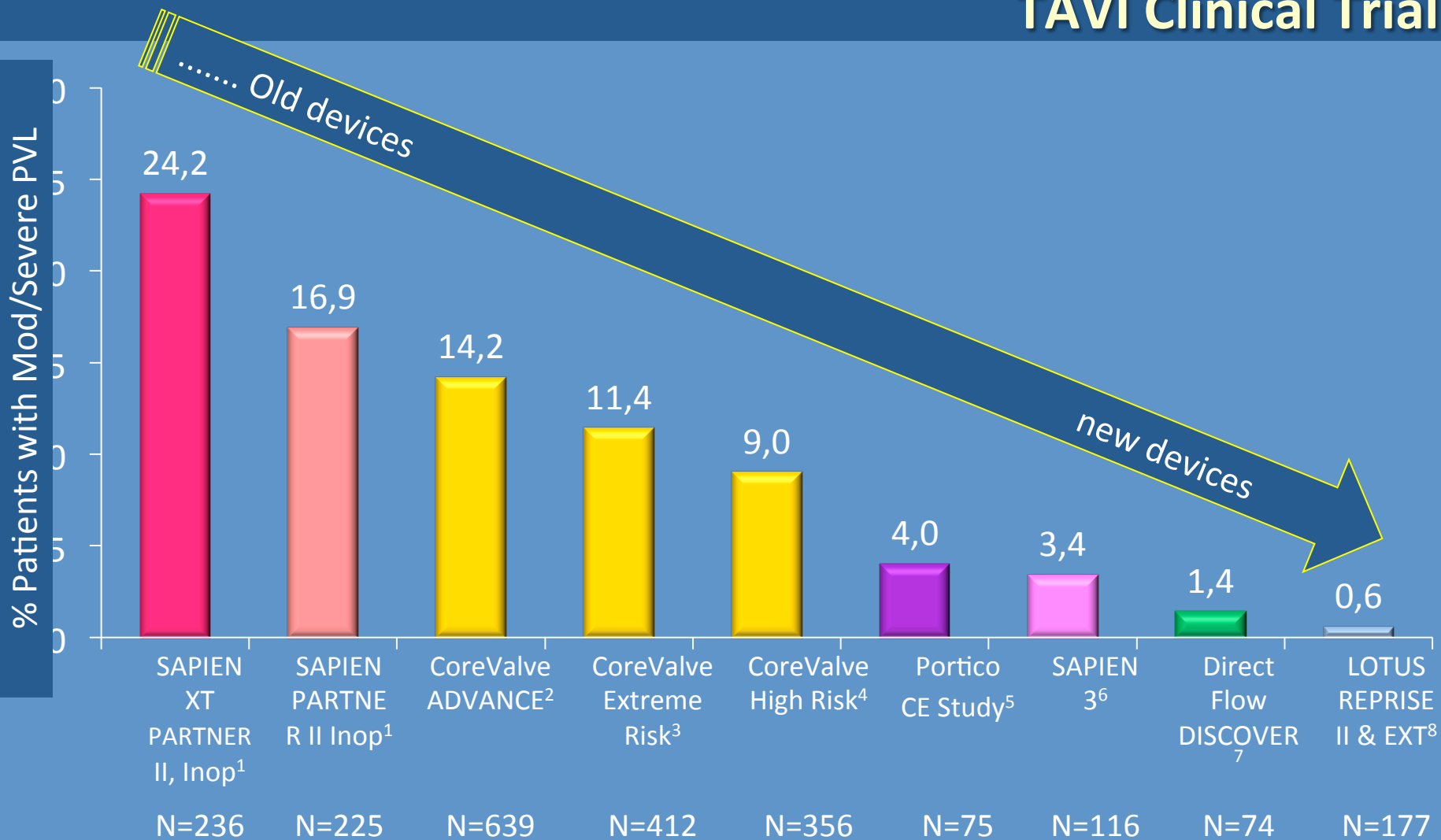


- **Outer skirt minimizes paravalvular leak**
- **High radial strength** for circularity / **increased frame height**



- More consistent **radial force** and
- **Optimized cover index** to reduce PVL
- **Resheathable, recapturable, repositionable and retrievable**
- Allows **hemodynamic assessment** before final detachment

# 1 Month Moderate & Severe PVL TAVI Clinical Trials



<sup>1</sup>Leon M, ACC 2013, <sup>2</sup>Linke A, PCR 2014. <sup>3</sup>Popma J, JACC 2014; 63(19): 1972-81, <sup>4</sup>Adams D, N Engl J Med 2014; 370: 1790-98. <sup>5</sup>Manoharan, et al. TCT 2014. <sup>6</sup>Webb J, EuroPCR 2014. <sup>7</sup>Schofer, JACC 2013. <sup>8</sup>Ian Meredith, London Valves 2014. Results from different studies not directly comparable. Information provided for educational purpose only.

# Structural plenary sessions

**TAVI in intermediate-risk patients  
What should we be doing now?**

# Risk is described along a continuum. There is no universally accepted criteria which clearly separates risk categories.

Low Risk

Intermediate Risk

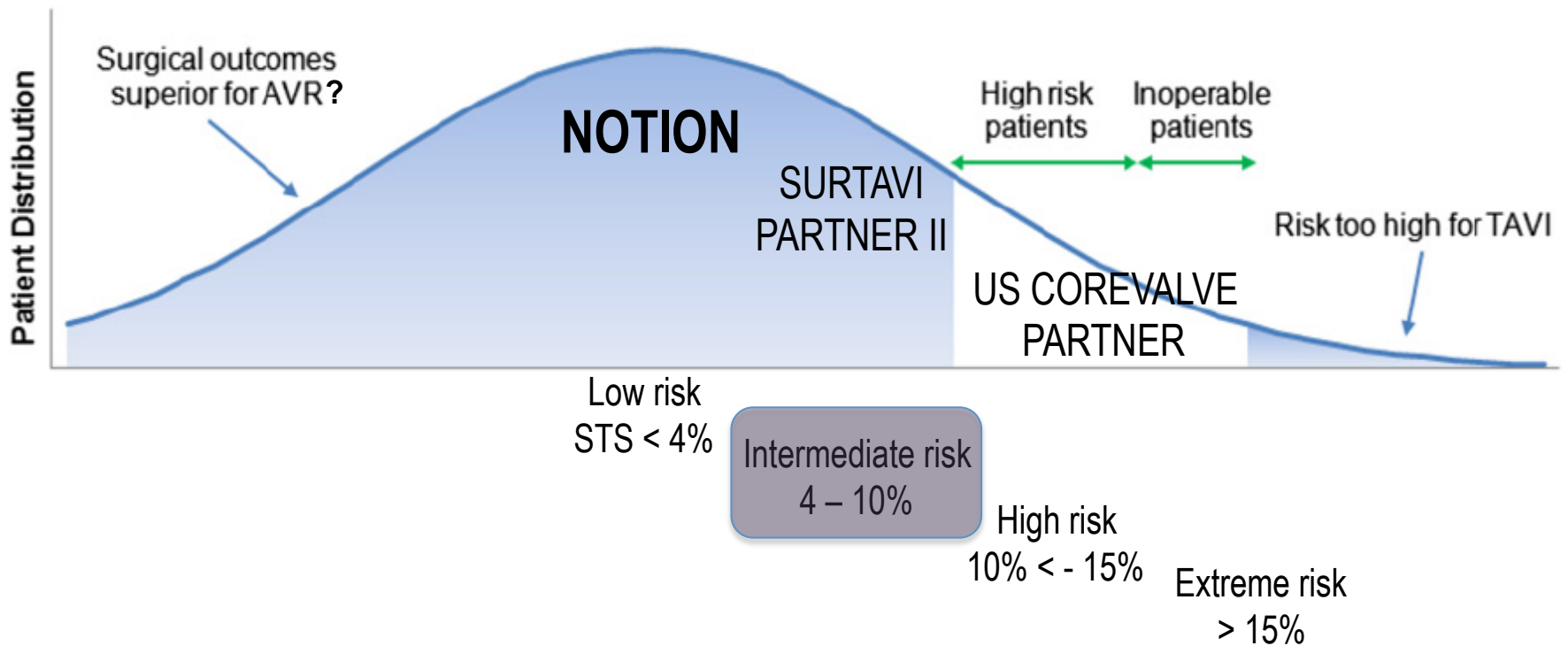
High Risk

Extreme Risk

	Low Risk	Intermediate Risk	High Risk	Extreme Risk
<b>VARC-2 (2012)<sup>1</sup></b>	Estimated 30 day mortality <4%	Estimated 30 day mortality 4-10%	Estimated 30 day mortality >10%	Est 30 day mortality >15% (very high risk) Est >50% irreversible morbidity or mortality (extreme risk)
<b>AHA/ACC (2014)<sup>2</sup></b> Note: All bullets represent "OR"	- <b>STS &lt;4%</b> -with no additional risk indicators	- <b>STS 4-8%</b> -1 Frailty index -1 Major Organ System compromised -Possible Procedure impediment	- <b>STS &gt;8%</b> -≥ 2Frailty indices -2 Major Organ System compromised -Possible Procedure specific impediment	- Predicted risk of death or major morbidity >50% at 1 y  - ≥3 Major Organ System compromised -Severe Procedure impediment

# The Evidence Base

## Operative Risk and TAVR vs. SAVR Trials



# Structural plenary sessions

## A Future Vision of TAVI: A simplified and reproducible procedure



# In 2015, TF-TAVI with conscious sedation comes with the concept of « minimalist strategy »

- TAVI with local anesthesia and light sedation
- Pure percutaneous transfemoral approach
- Preclosing with closure devices
- Transthoracic Echo on demand
- ICU < 24h, Early discharge (1-3 Days)

**NO**



General Anesthesia  
Endotracheal Intubation

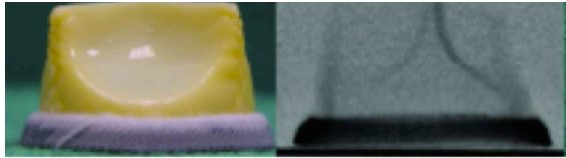
**TEE**

Additional vascular lines  
(jugular vein / radial art.)

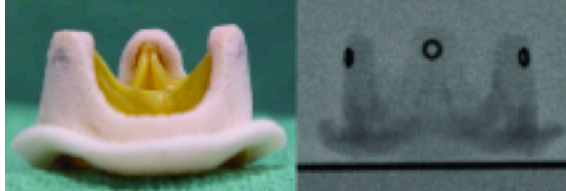
# Structural plenary sessions

**Valve in valve**

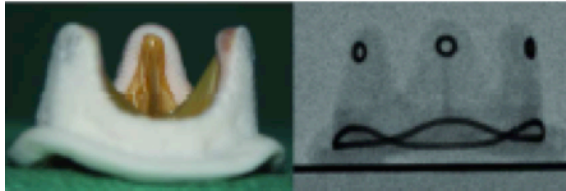
# Valve in Valve Sizing



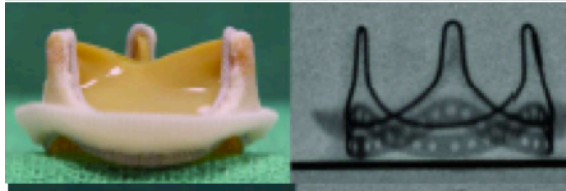
Mitroflow (Sorin)



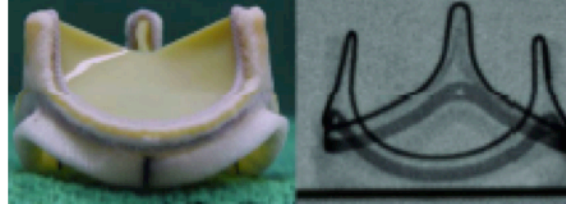
Mosaic (Medtronic)



Hancock II (Medtronic)



Perimount (Edwards)



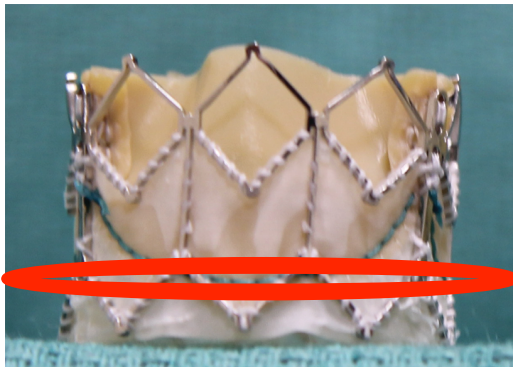
Magna (Edwards)



Porcine (Edwards)

# Ideal Position

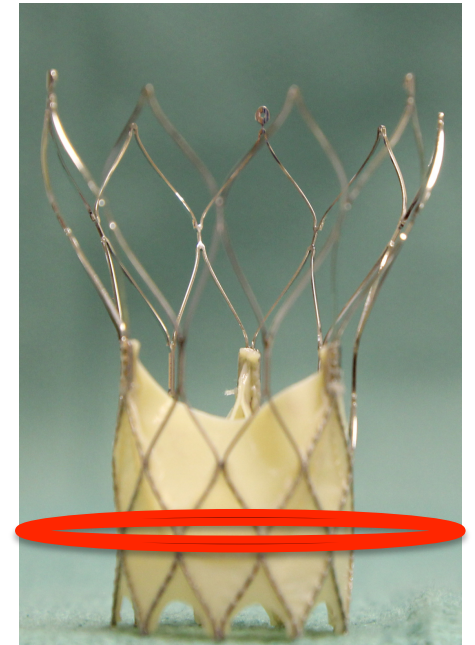
With Reference to the Neo-annulus = **Sewing ring**



Sapien  
15%



CoreValve  
4mm

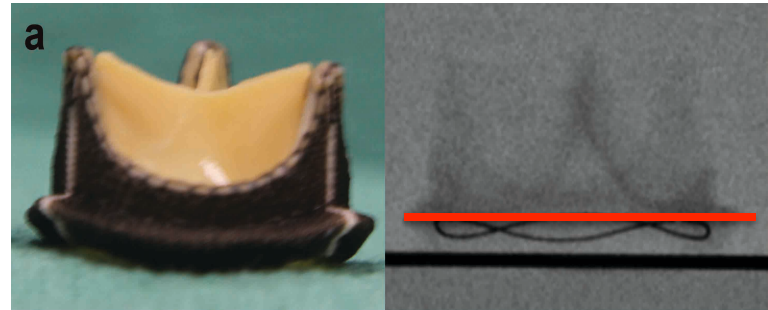


Portico  
4mm

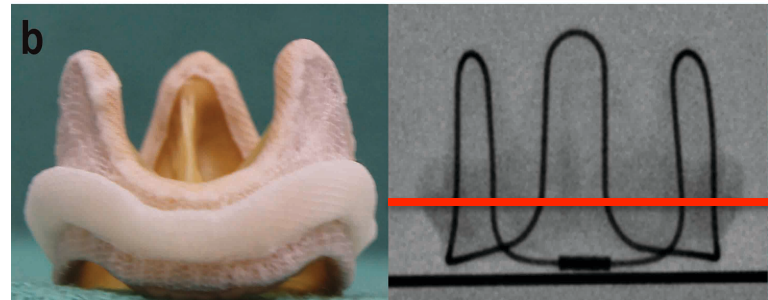
# Where is the sewing ring?

- Fluoroscopy

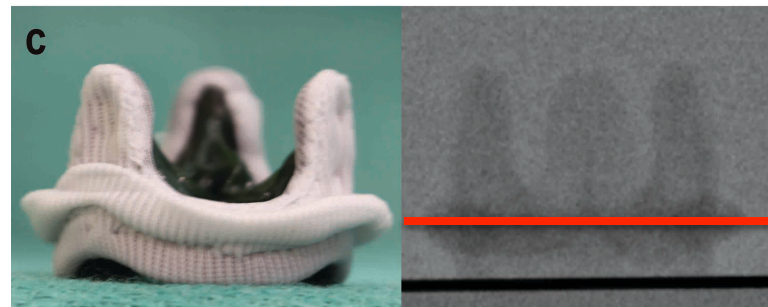
Sewing ring marker



Stent frame marker



No marker

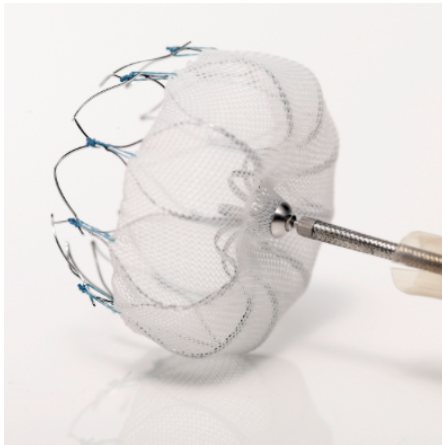


# Structural plenary sessions

## Left atrial appendage closure systems: implantation techniques

# LAA closure

- To obtain a *technical overview* of currently used devices for LAA closure



Watchman Flex



Amplatzer Amulet



Coherex



# LAA closure

- To learn how to tackle *challenging anatomies* with these devices

- ✓ Too large?
- ✓ Too small?
- ✓ Too shallow?
- ✓ Multilobar?
- ✓ Chicken wing?



cactus

cauliflower

chicken wing

windsock

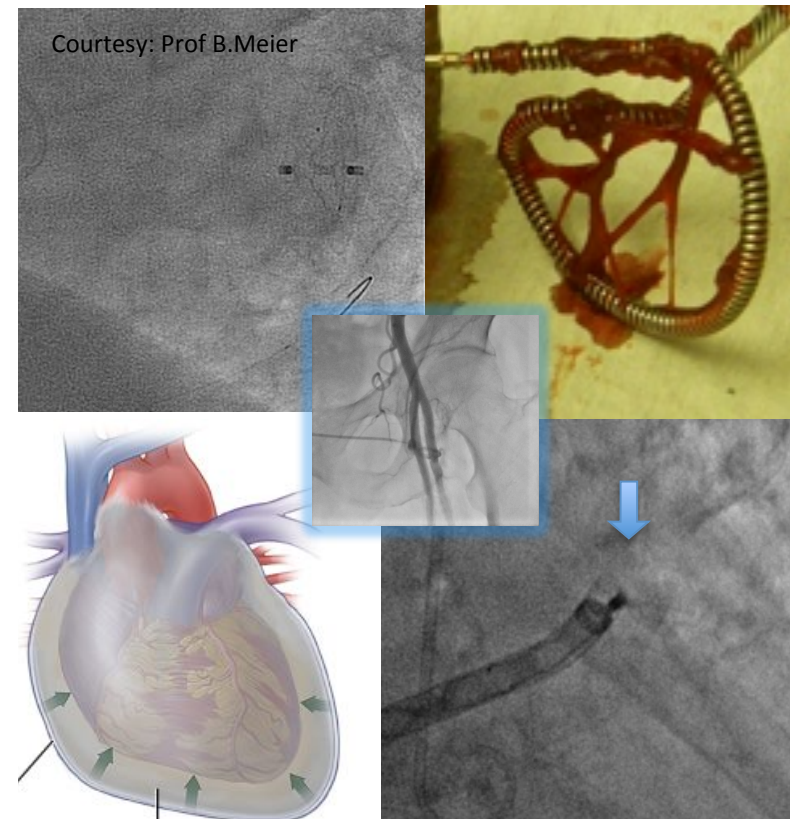


# LAA closure

- To learn how to avoid *complications*

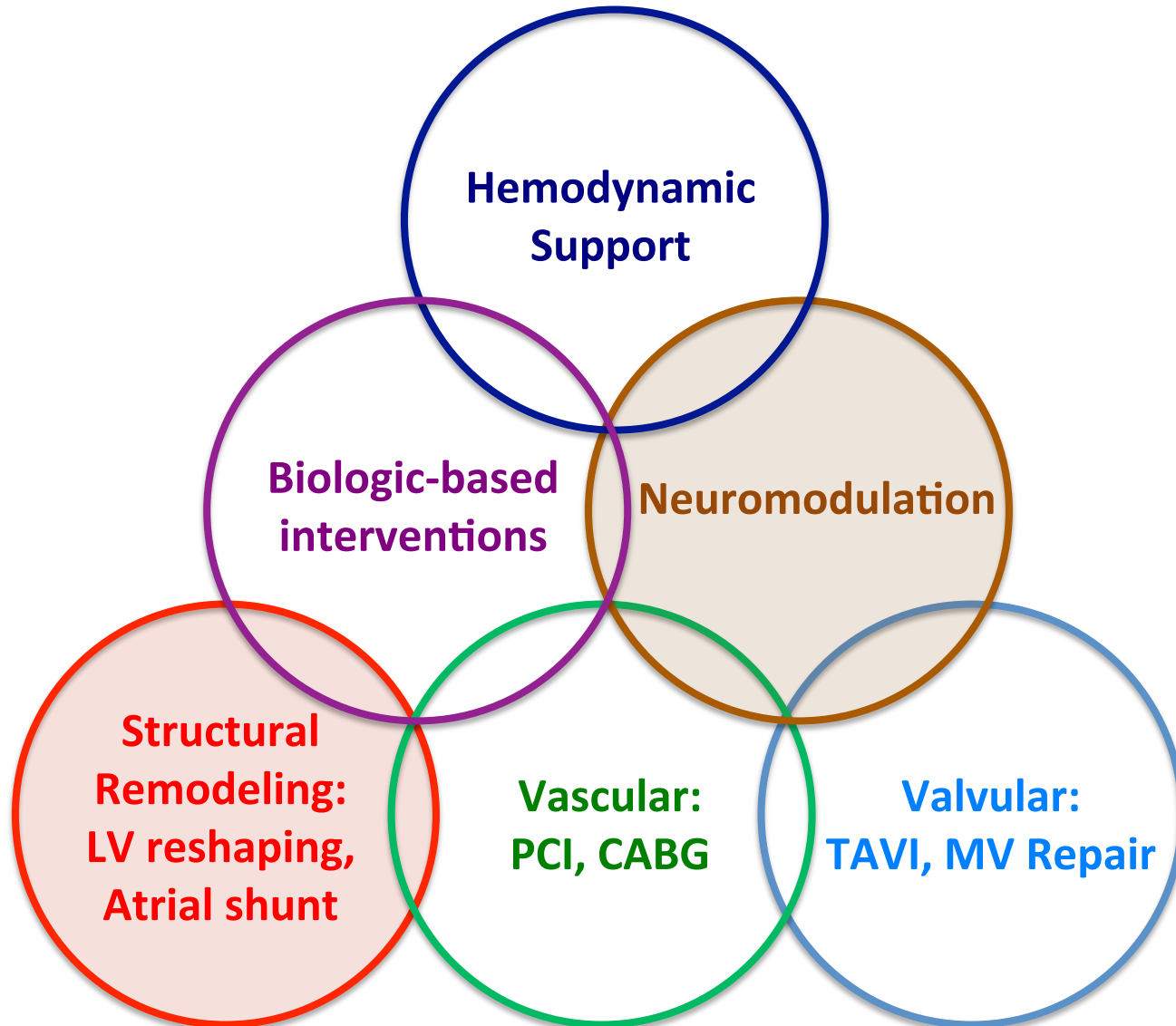
## Most common complications

- ✓ Device embolization
- ✓ Thrombus formation
- ✓ Cardiac tamponade
- ✓ Air embolism
- ✓ Vascular complications



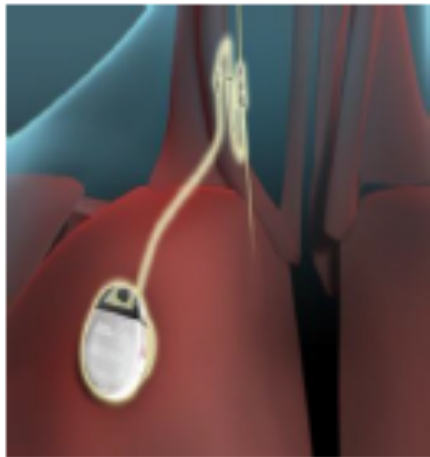
# Interventions for Heart Failure

## Approaches and Components



# Parasympathetic Modulation with Devices

## Vagal Stimulation



## Baroreceptor Stimulation

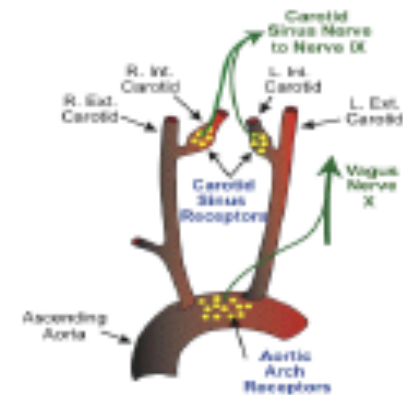
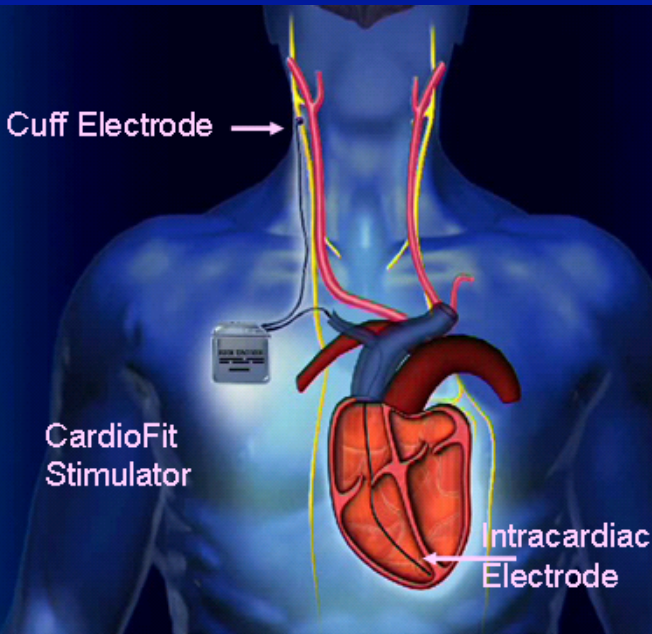


Figure 1. Location and innervation of arterial baroreceptors.

# VS Clinical Devices and Studies

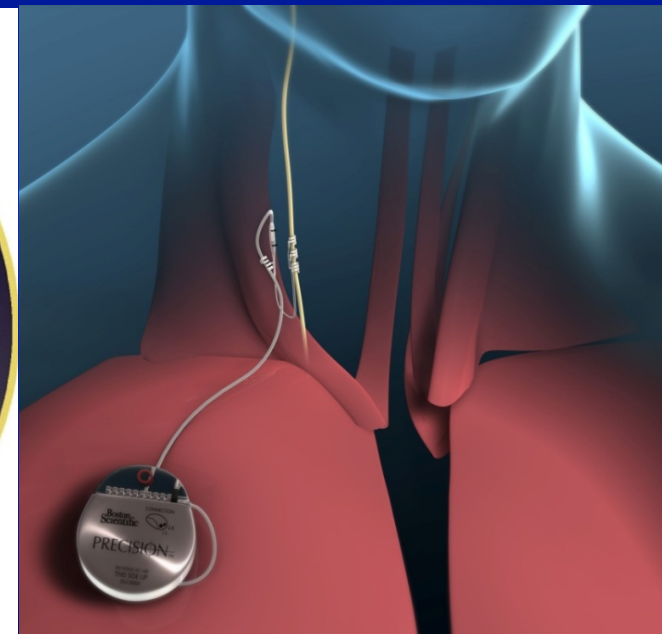
## CardioFit



## Anthem-HF

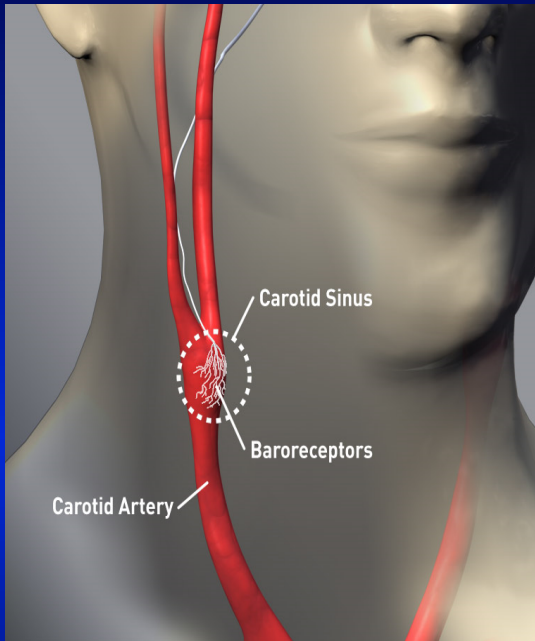


## Nectar-HF

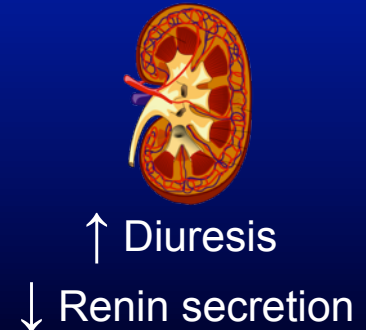
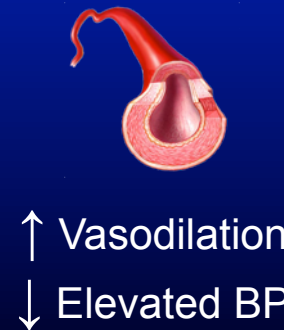
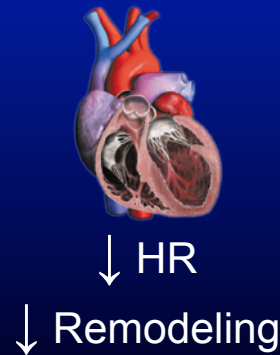
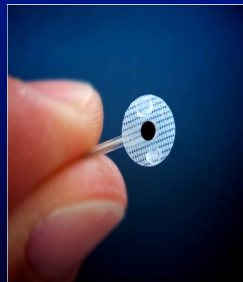


# The Baroreflex as a Therapeutic Target

## Carotid Baroreceptor Stimulation

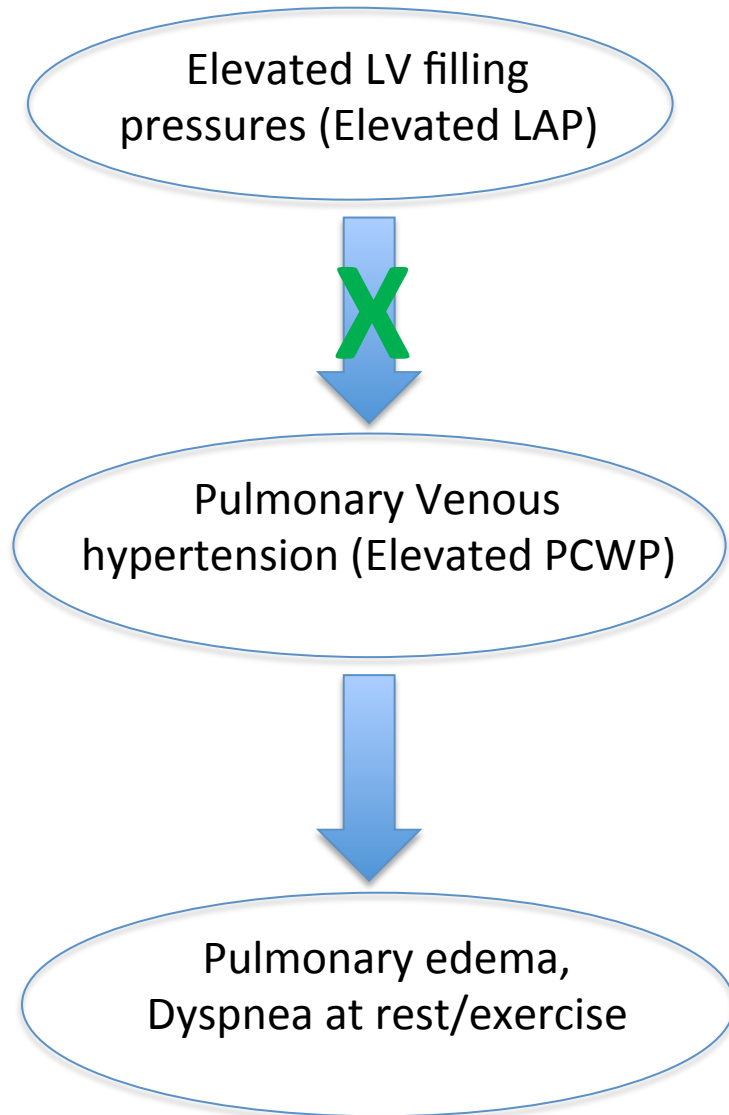
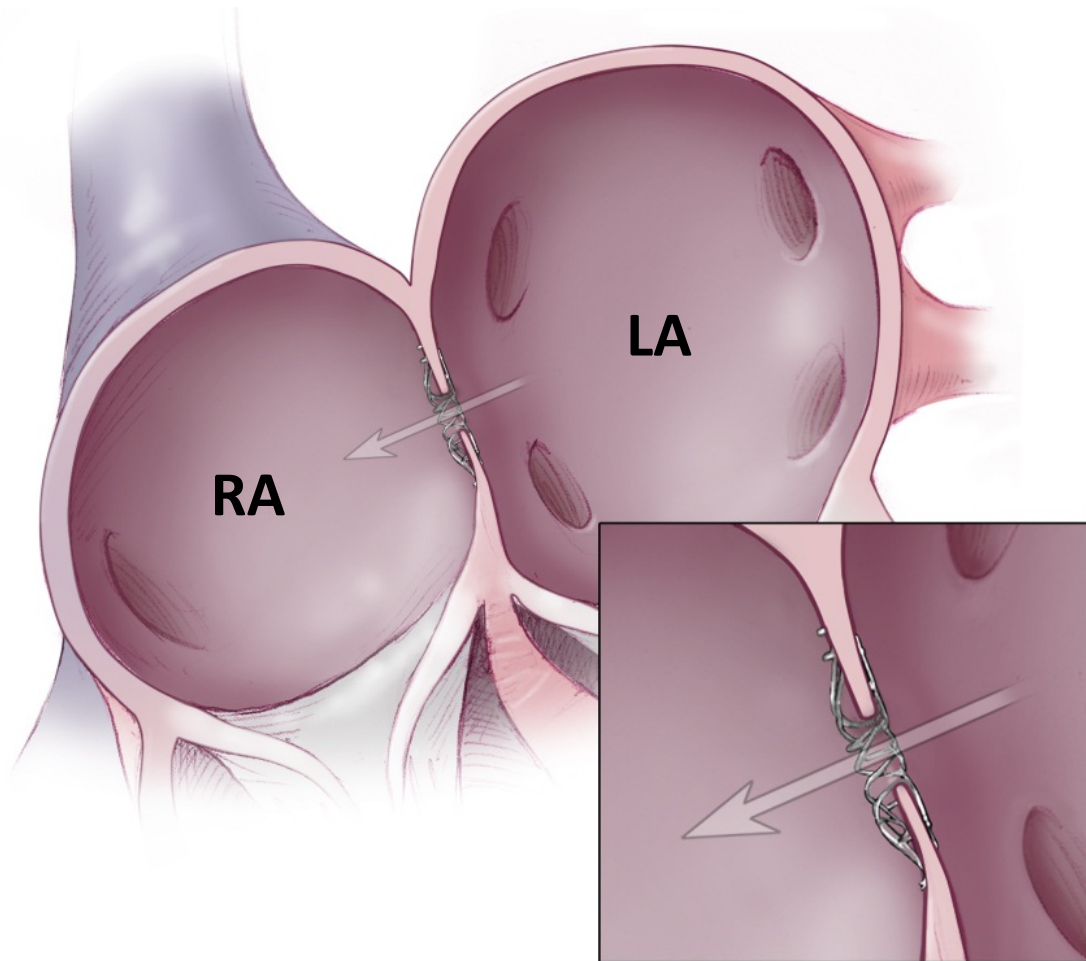


**Integrated Autonomic Nervous System Response**  
Inhibits **Sympathetic** Activity  
Enhances **Parasympathetic** Activity



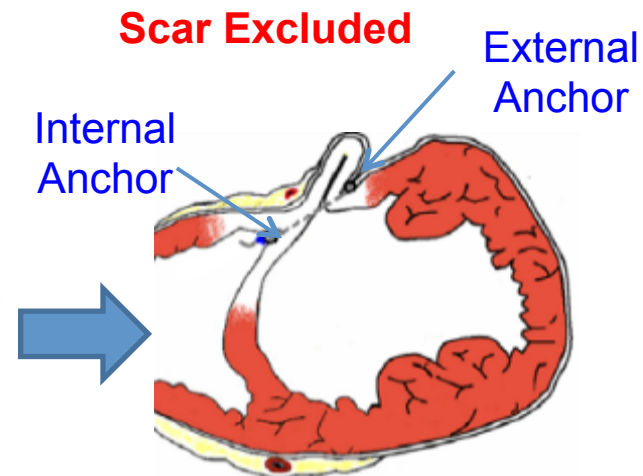
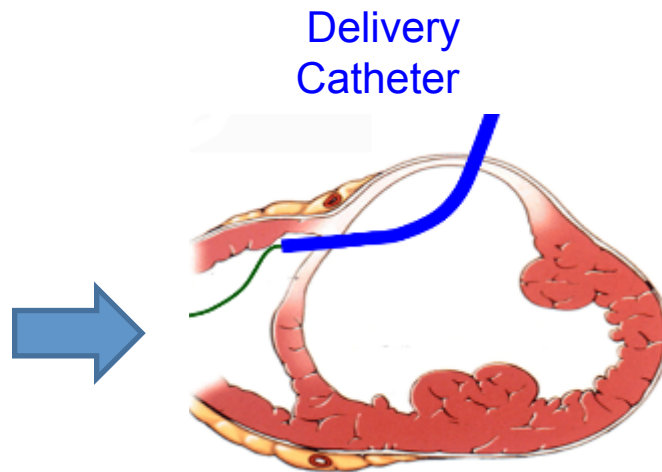
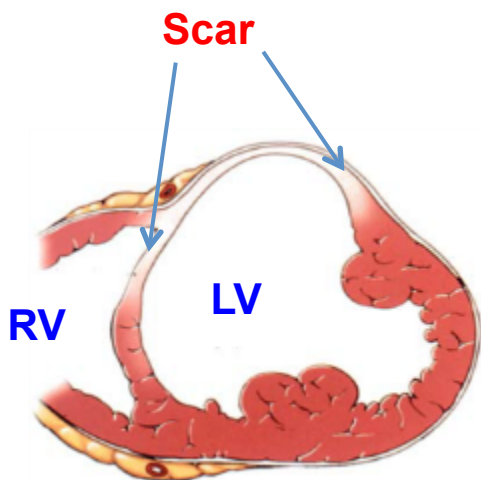
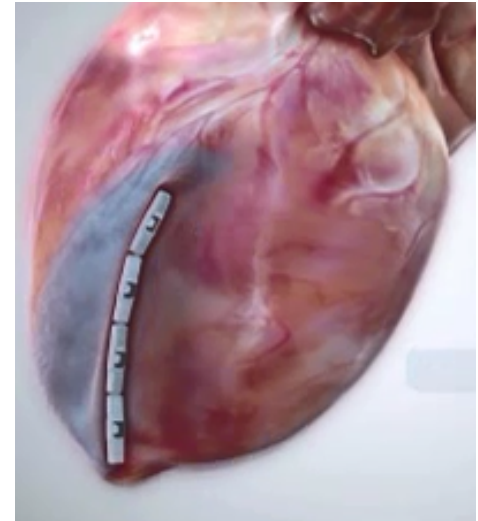
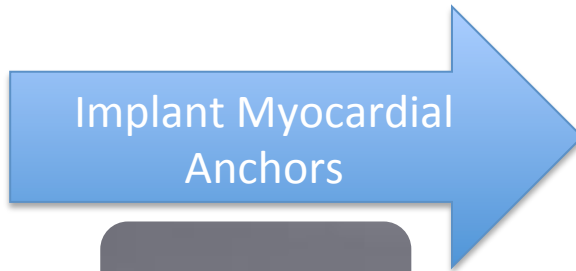


# Inter-Atrial Shunt Device<sup>1</sup> – Concept



<sup>1</sup> Exclusively for Clinical Investigation.

# Revivent Principles of Operation: Scar Exclusion = Volume and Wall Tension Reduction



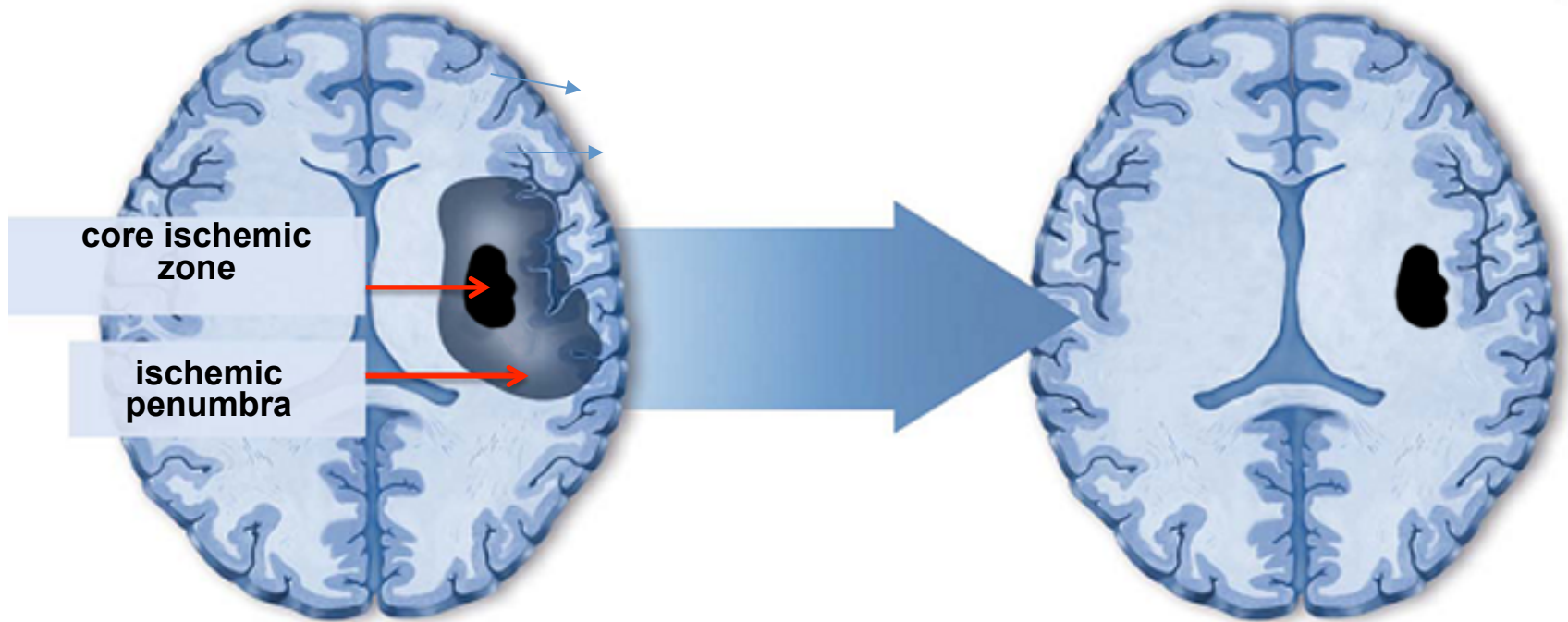
# **Breaking News Session**

## **ACUTE STROKE**



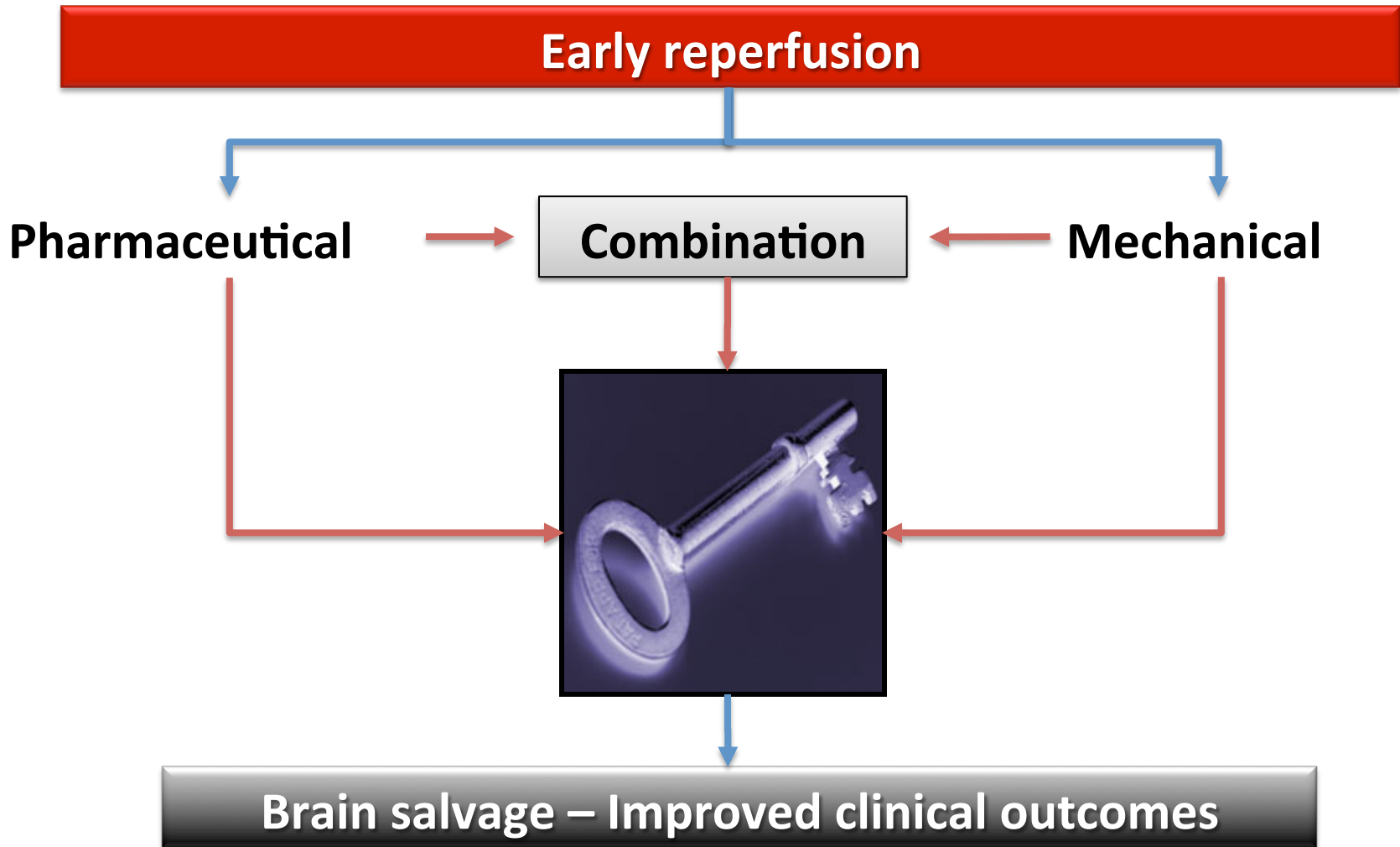
# Rapid Reperfusion May Reduce Neurologic Deficit

*Just Like AMI*



- Reperfusion of the ischemic penumbra may reduce the extent of damage and improve recovery of function
- Time is Brain
- The average patient loses 32,000 brain cells/second

# Reperfusion Therapy



# Acute ischemic stroke intervention using "stent-retrievers" devices

Endovascular therapy is highly beneficial,  
as compared with intravenous t-PA alone,  
in patients with occlusions of the intracranial internal  
carotid artery or middle cerebral artery  
up to 6 hours after stroke onset.

There is no significant increase in the rate of symptomatic  
brain hemorrhage.

# Acute ischemic stroke intervention using "stent-retrievers" devices

*Given the importance of this disease,  
how can we offer this effective method to  
as many patients with acute ischemic  
stroke as possible?*

# Acute ischemic stroke intervention using "stent-retrievers" devices

What do we need?

To build health care systems

- Interventional stroke centers
- Early intervention
- Collaborative network
- Emergency Medical Services

# Acute ischemic stroke intervention using "stent-retrievers" devices

What do we need?

To train physicians

- Angiologists, neurologists, vascular surgeons, interventional cardiologists
- Depending on local situation

# Acute ischemic stroke intervention using "stent-retrievers" devices

Many similarities with the implementation of STEMI networks (Stent for Life programme)

Experience with STEMI:

- need for early intervention
- effective EMS is crucial
- PCI centers effective 24h/7days
- trained and efficient interventional teams

# Acute ischemic stroke intervention using "stent-retrievers" devices

The call for action includes

1. mapping of the local-regional-national situation
2. organisation of a proper emergency medical care system
3. increasing awareness of the public for early symptom recognition



# Acute ischemic stroke intervention using "stent-retrievers" devices

EuroPCR

encourages the interventional community

- to join forces
- with all stakeholders
- in order to advance the establishment of proper care systems to offer endovascular treatment to all eligible stroke patients

# EuroIntervention@EuroPCR 2015

## On behalf of the Editors of EuroIntervention

Editor in chief: Patrick W. Serruys  
Managing Editor: Paul Cummins

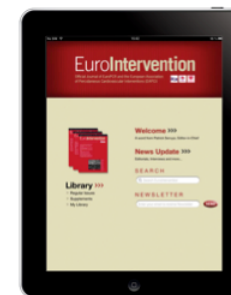
**2005**



**2009**



**2010**



**2012**



**3.285**

**2014**



**IMPACT FACTOR**

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**2015**





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