La cardiologie interventionnelle SCA

L Belle Annecy France

La cardiologie interventionnelle
SCA - STEMI

La cardiologie interventionnelle
SCA - STEMI - PPCI

Conflits d’intérêt

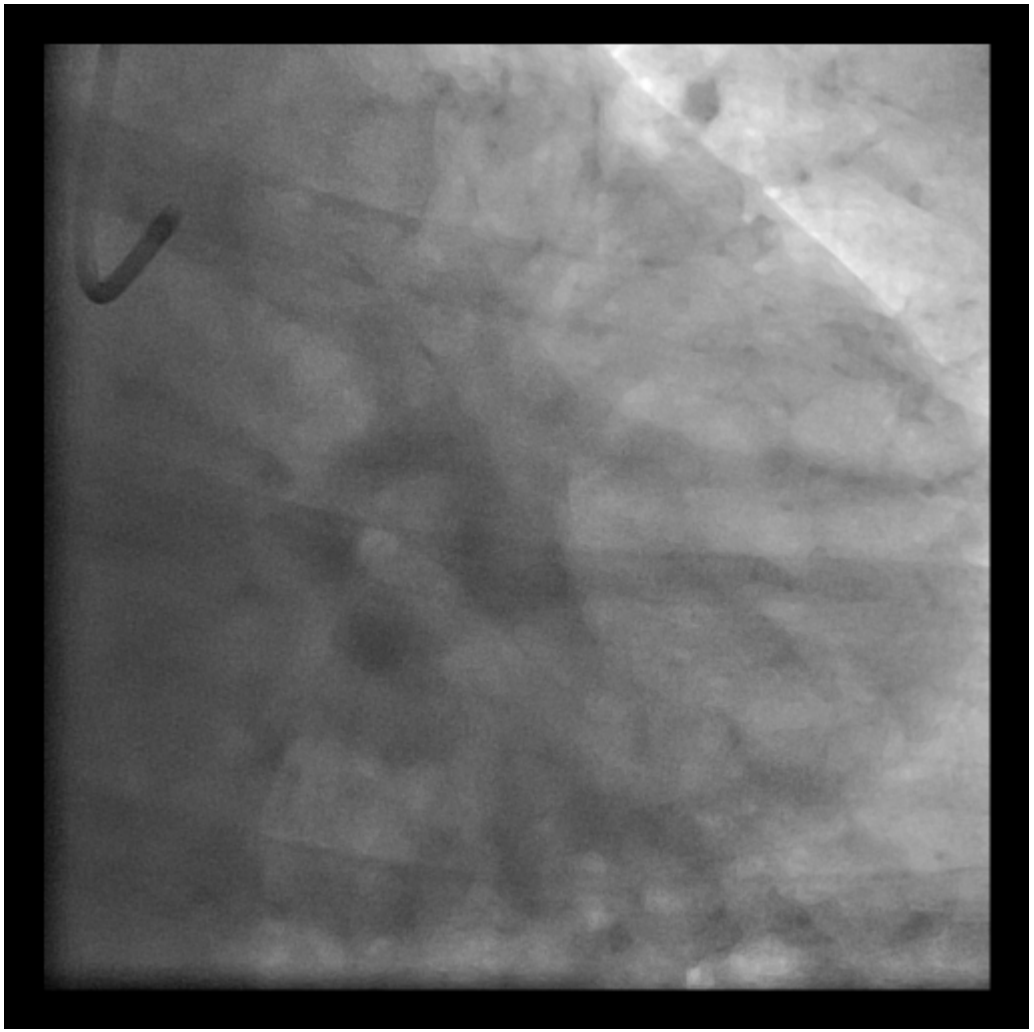
- Participation à des symposia :

Médecines company, Lilly, Astra, Abbott, Biotronik…

- Bourses de recherche :

Medtronic , Abbott, Biotronik, Lilly, Boston, Hexacath,Terumo, St Jude ...

PPCI



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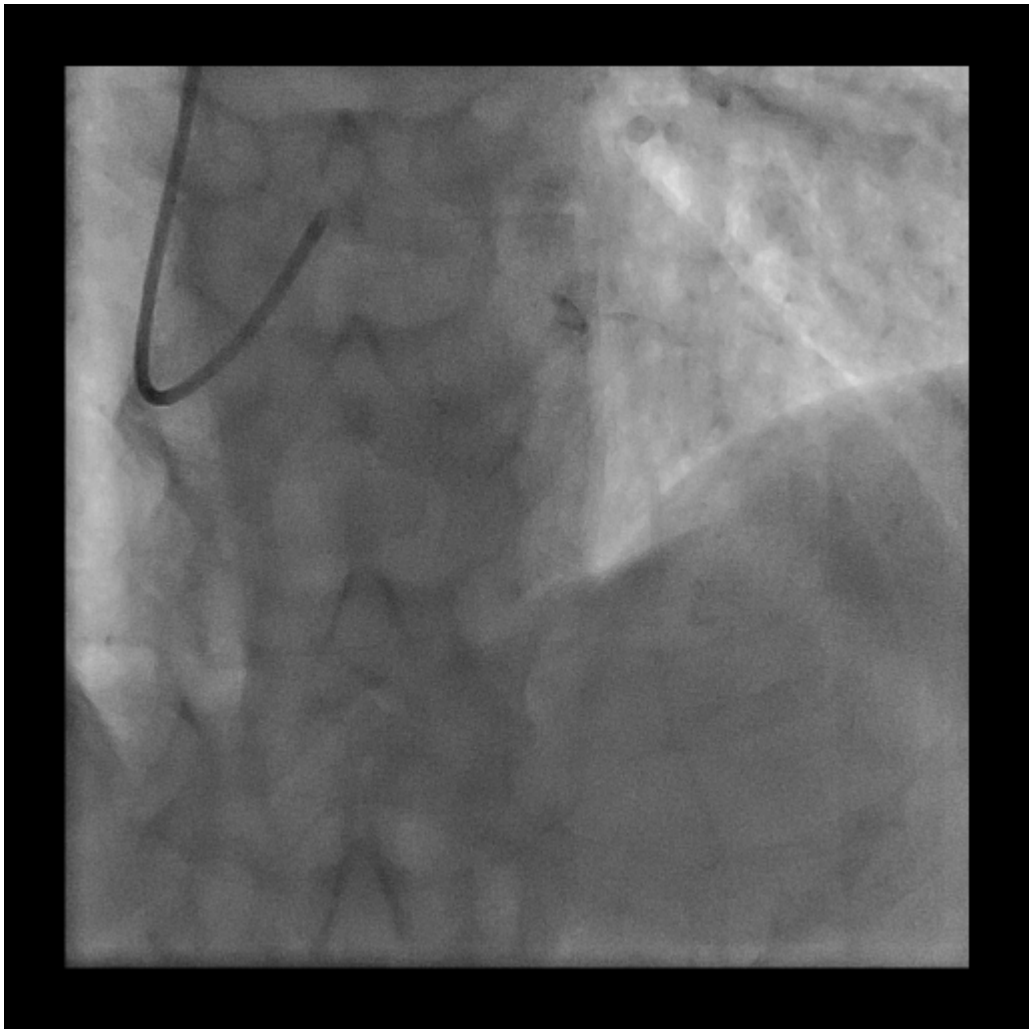

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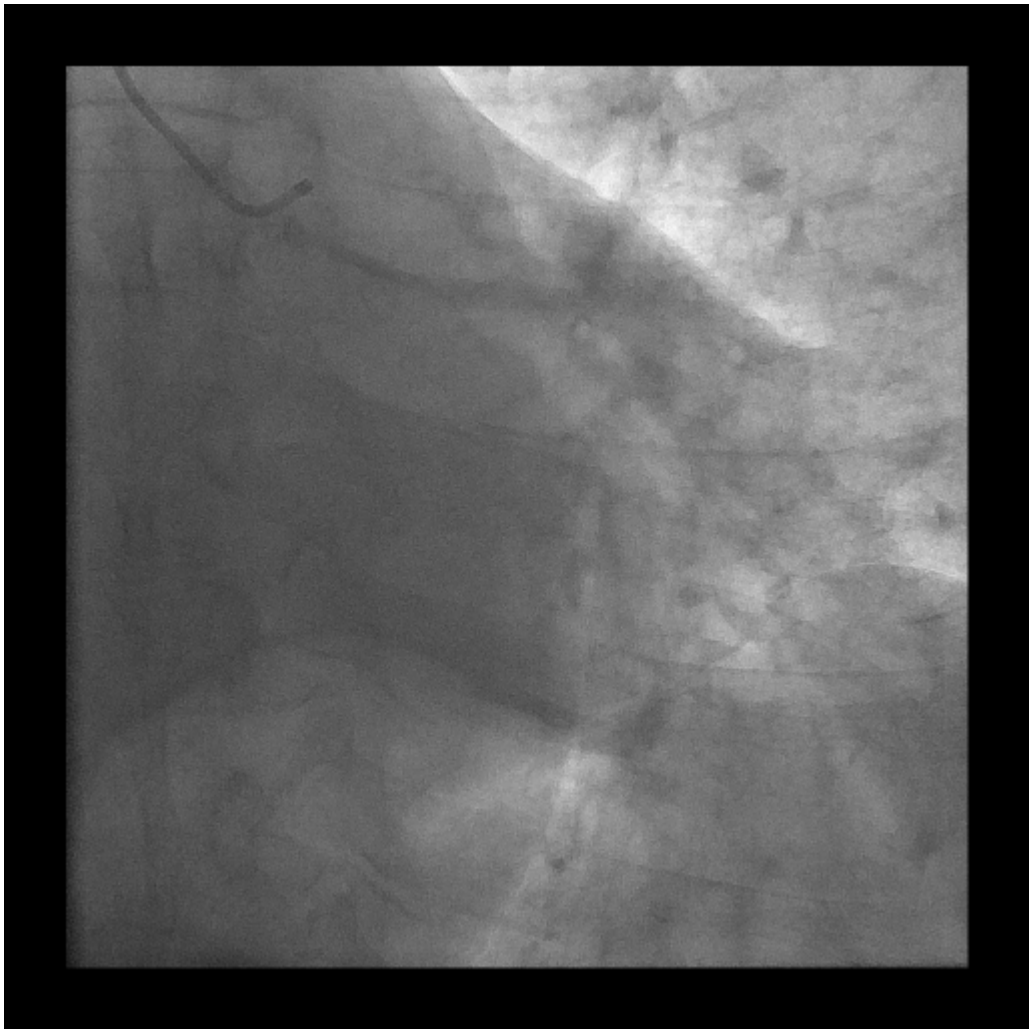
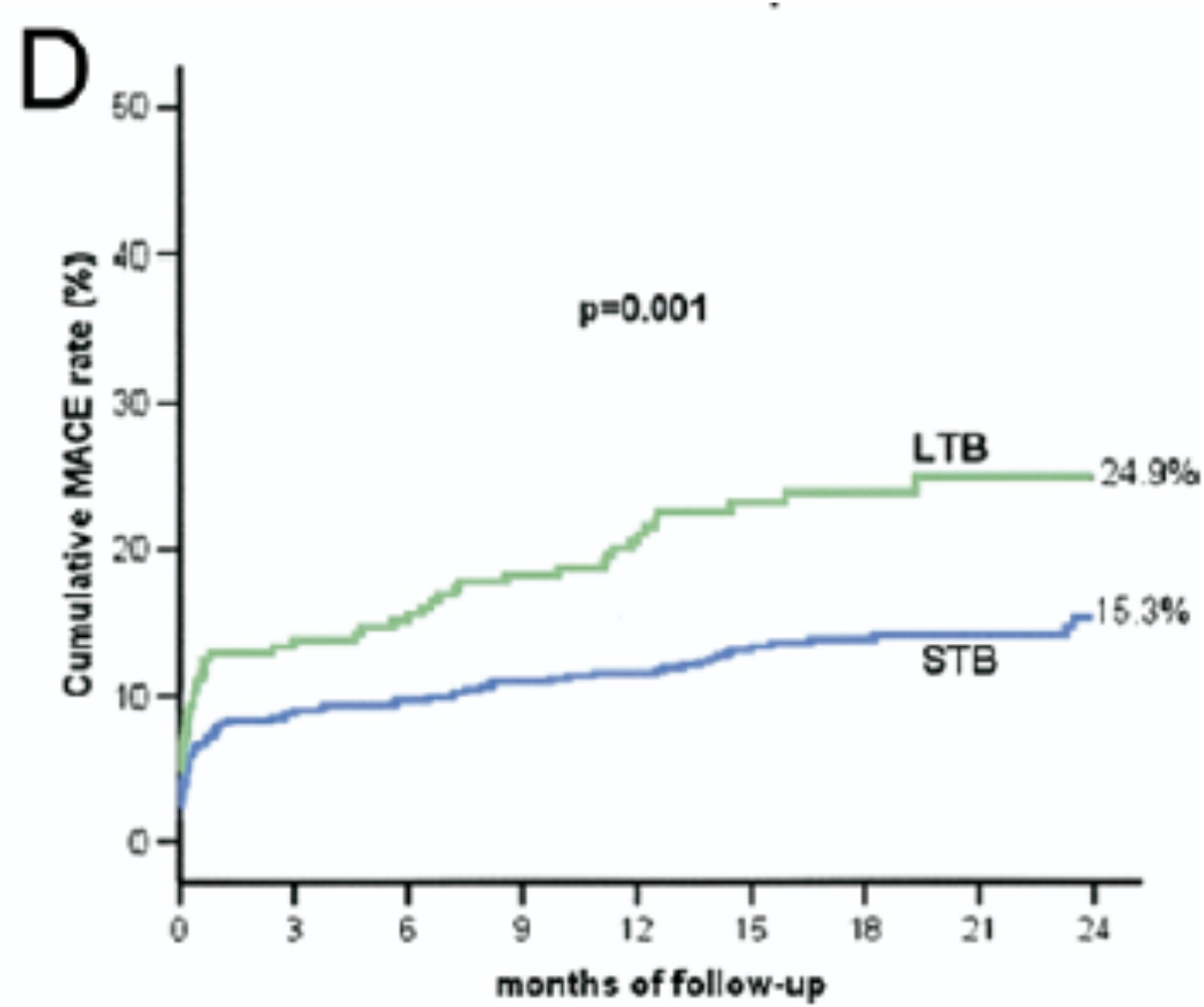



D
Cumulative MACE rate (%)
50
40
30
20
10
0
p=0.001
LTB
24.9%
15.3%
STB
0
3
6
9
12
15
18
21
24
months of follow-up

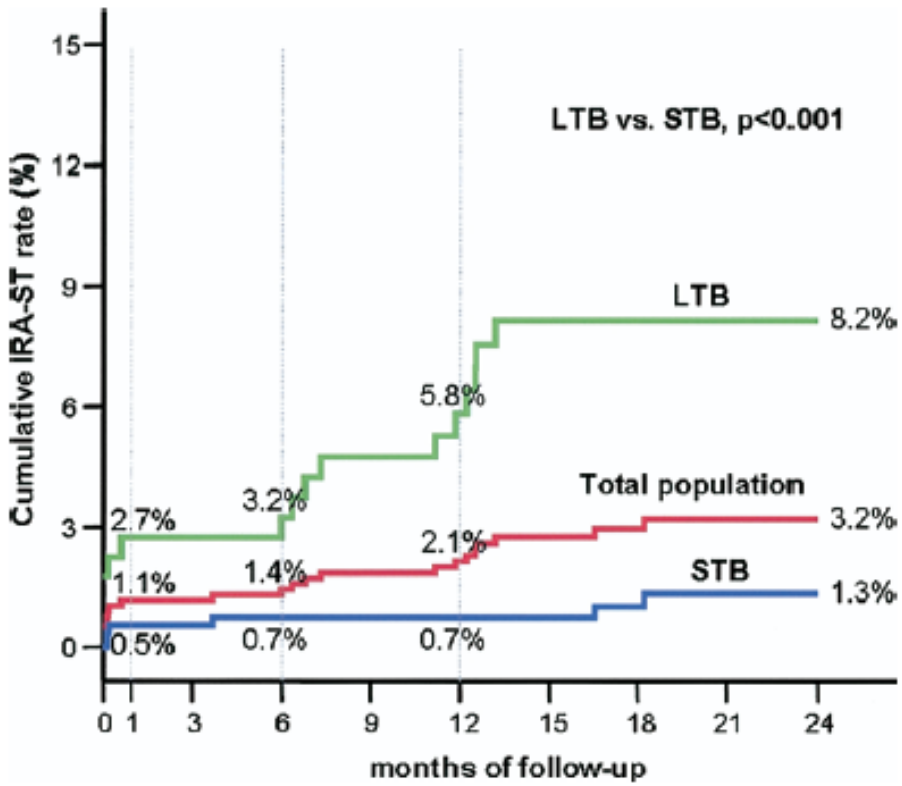
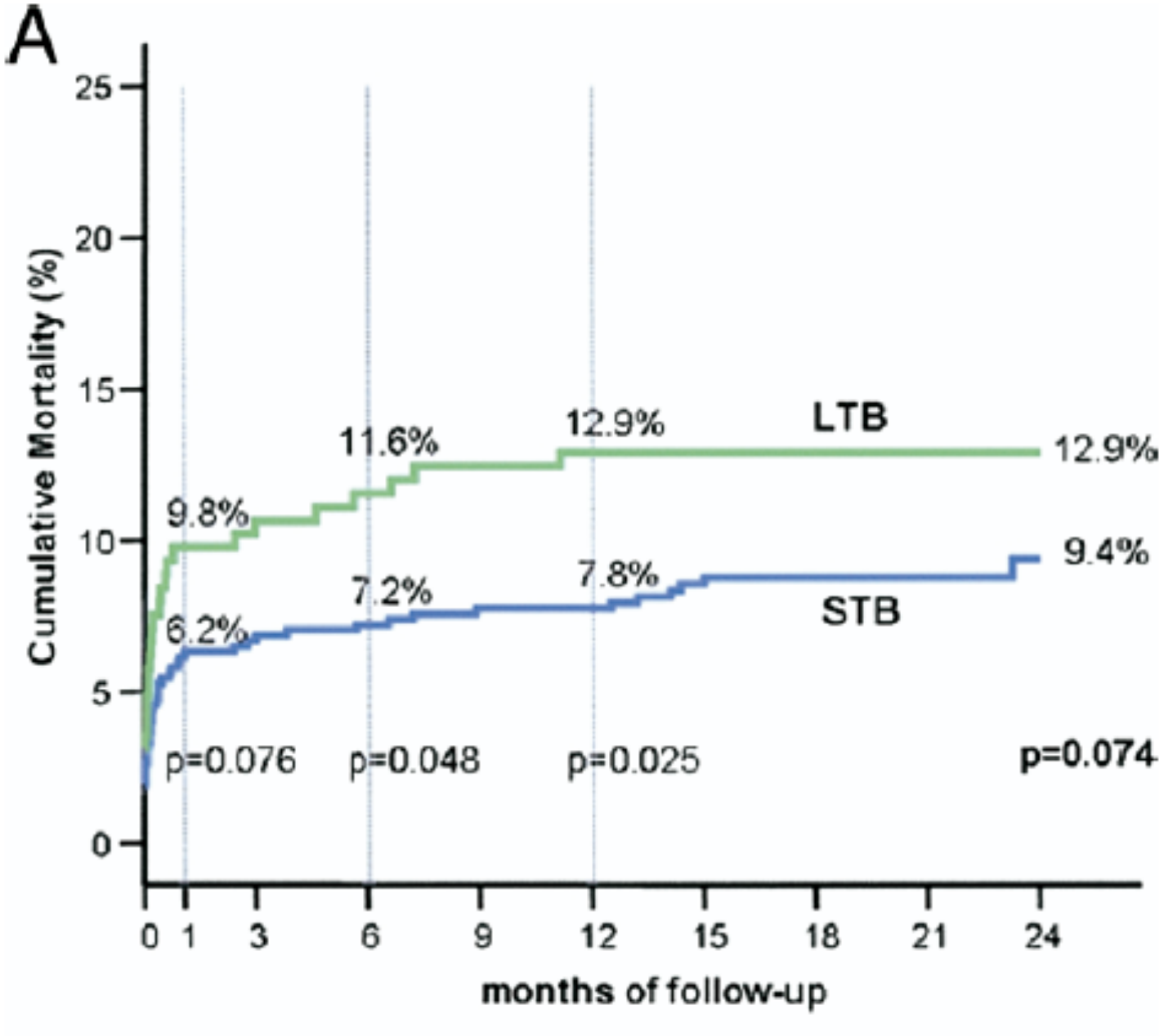


Figure 5 **Infarct-Related Artery Stent Thrombosis**

Two-year cumulative infarct-related artery stent thrombosis (IRA-ST) rate for the total population and according to the existence of large thrombus burden (LTB) or small thrombus burden (STB) at the index procedure.


A
Cumulative Mortality (%)
25
20
15
10
5
0
11.6%
12.9%
LTB
12.9%
9.8%
9.4%
7.2%
7.8%
STB
6.2%
p=0.076
p=0.048
p=0.025
p=0.074
0 1 3 6 9 12 15 18 21 24
months of follow-up

A Randomized Comparison of Direct Stenting With Conventional Stent Implantation in Selected Patients With Acute Myocardial Infarction

Christophe Loubeyre, MD, Marie-Claude Morice, MD, FESC, FACC, Thierry Lefèvre, MD, FSCAI, FESC, Jean-François Piéchaud, MD, Yves Louvard, MD, Pierre Dumas, MD

Quincy-sous-Sénart, France

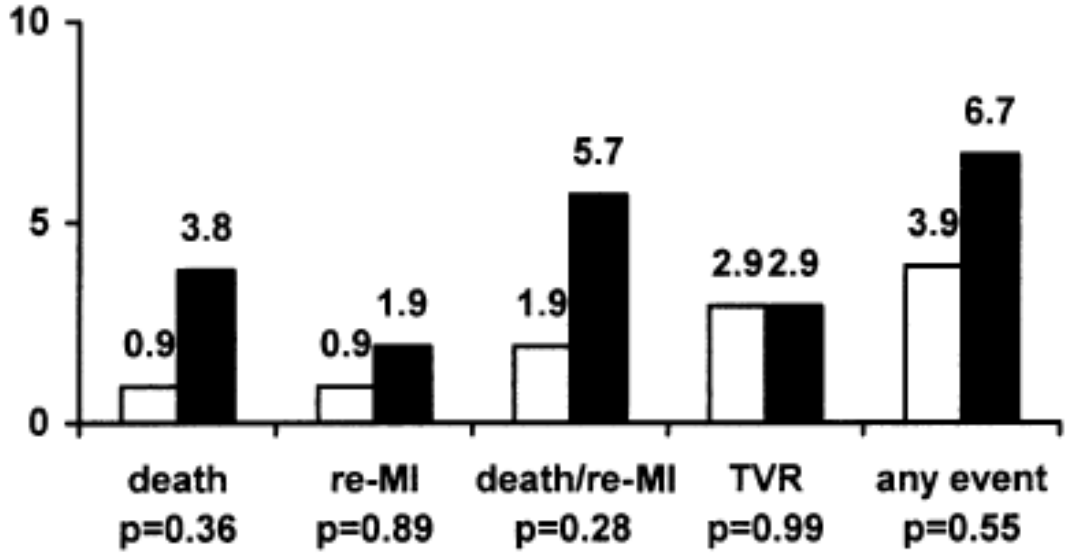
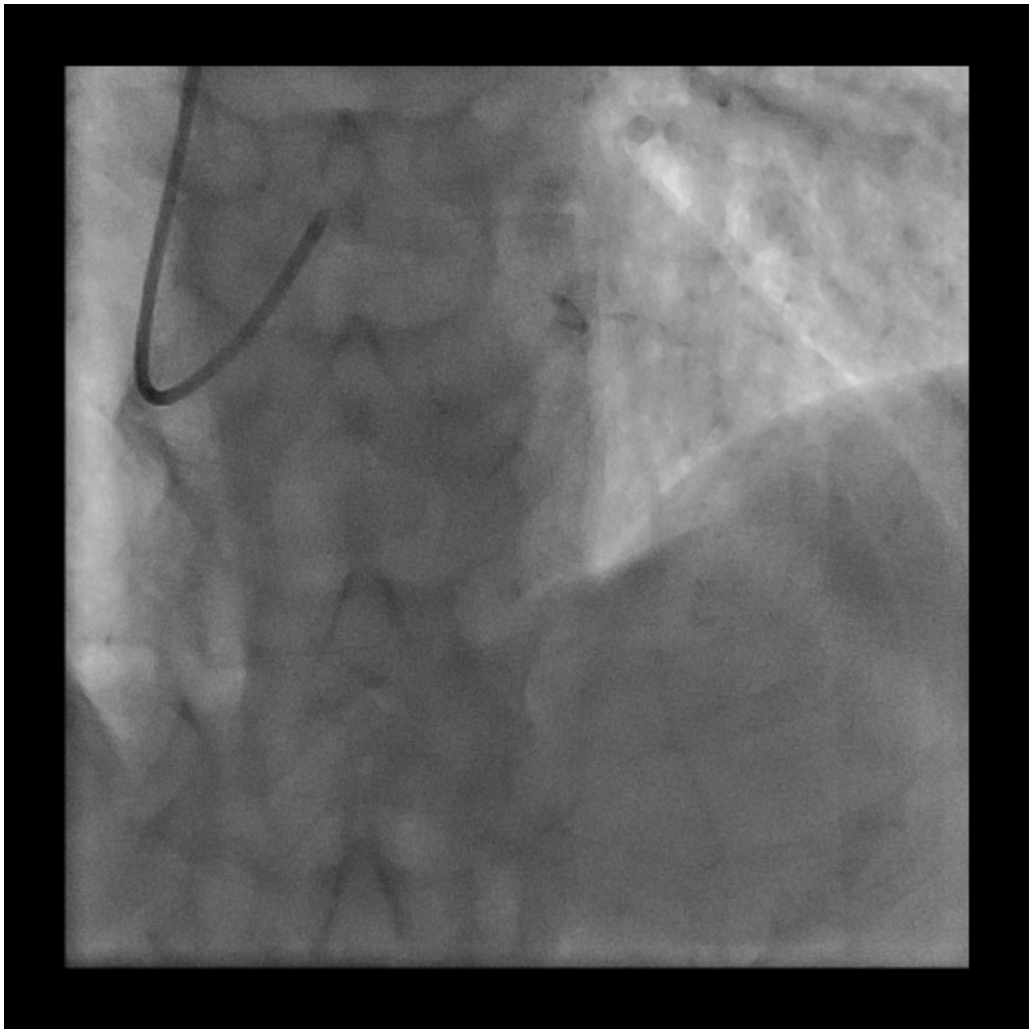


Figure 2. In-hospital clinical outcome (numbers indicate percent of events) in both study groups. **Open bar** = direct stent; **solid bar** = conventional. Re-MI = recurrent myocardial infarction; TVR = target-vessel revascularization.

JACC Vol. 39, No. 1, 2002
January 2, 2002:15–21

PPCI



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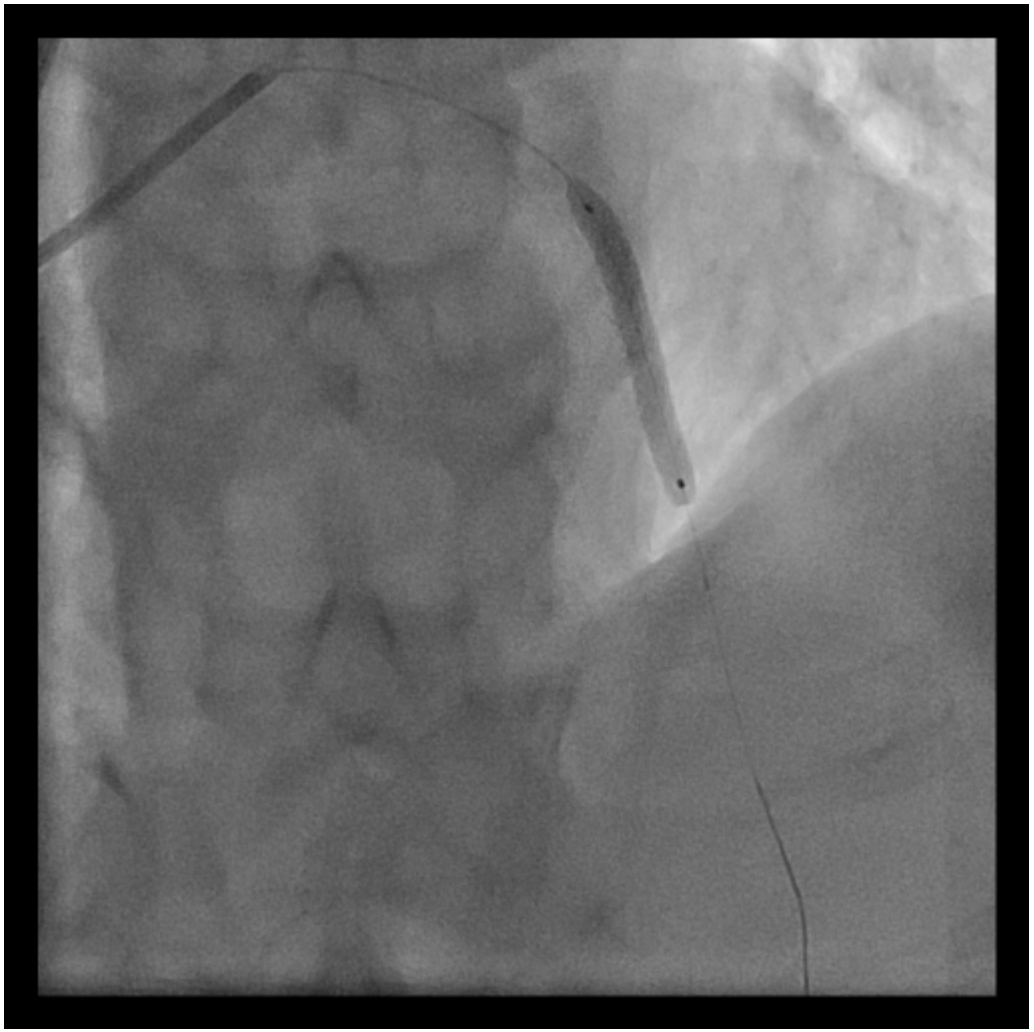

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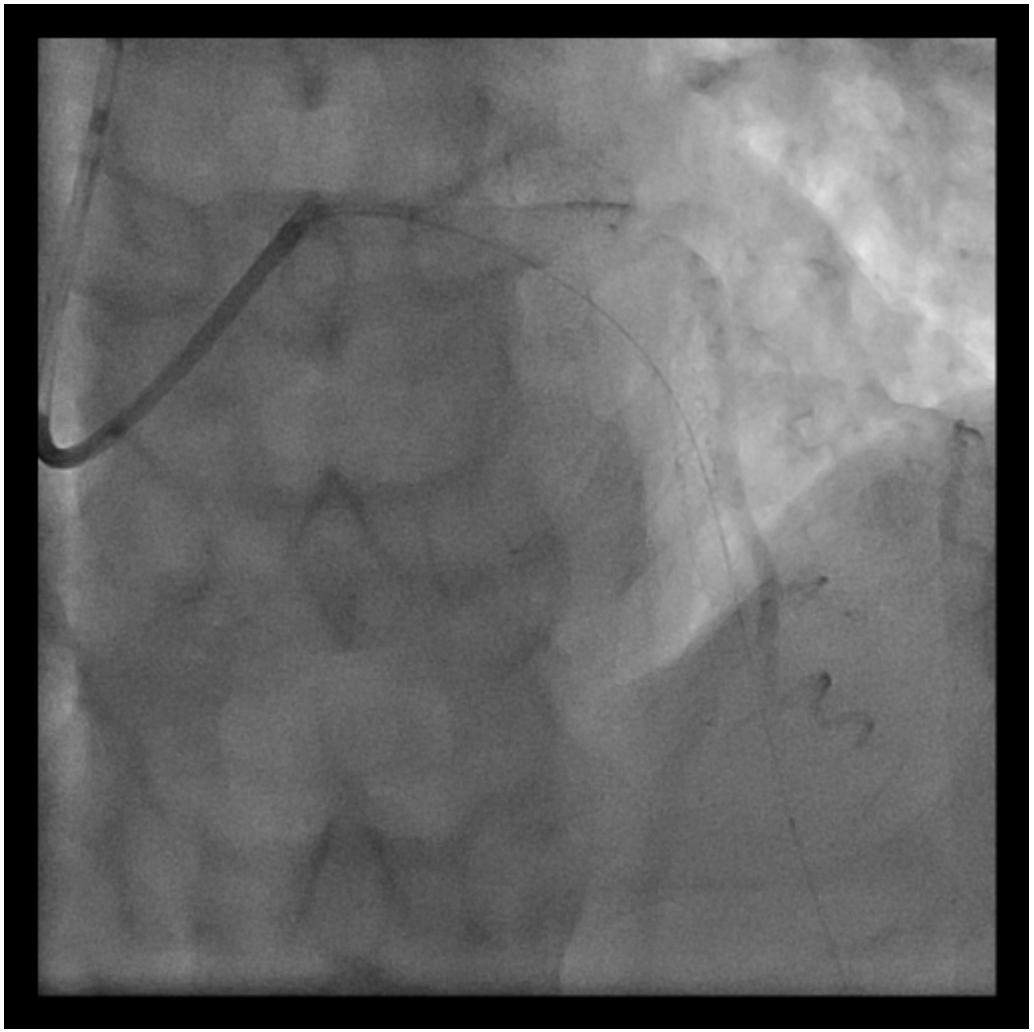

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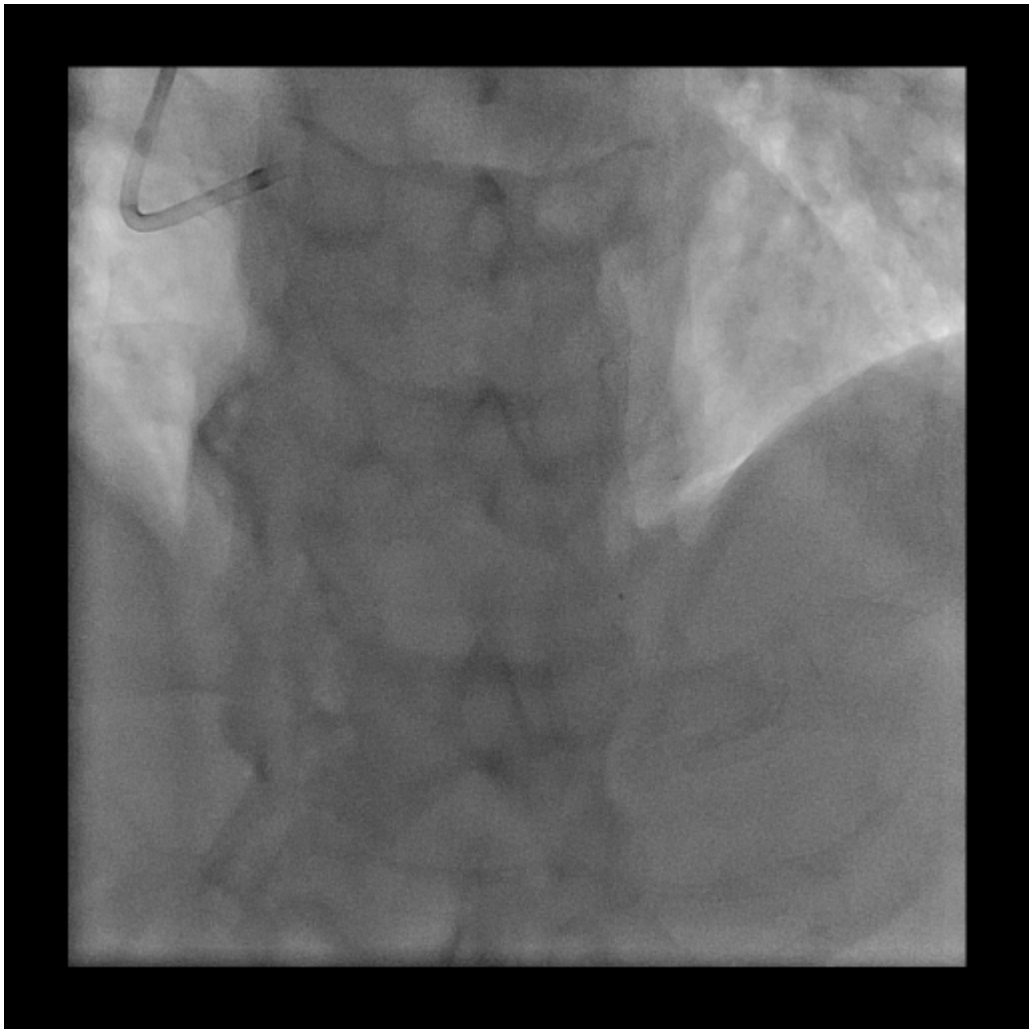

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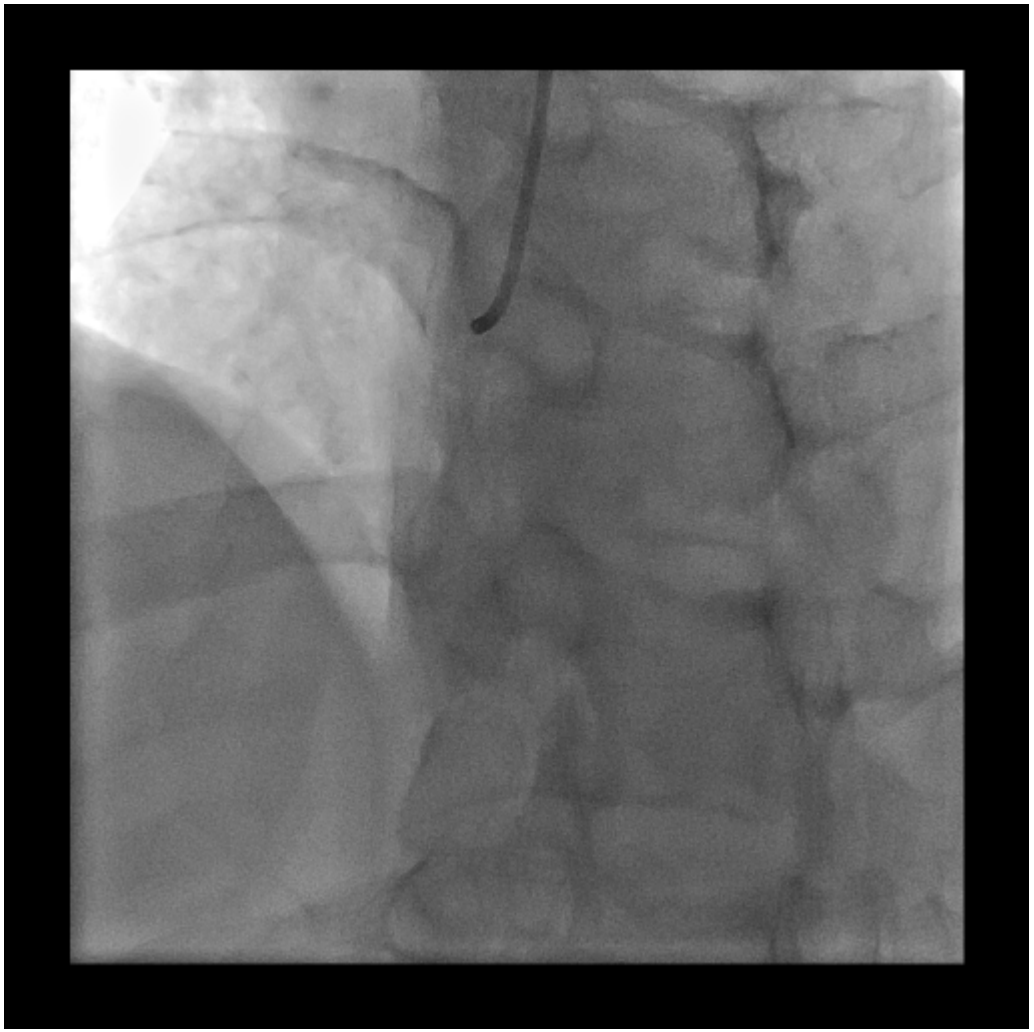

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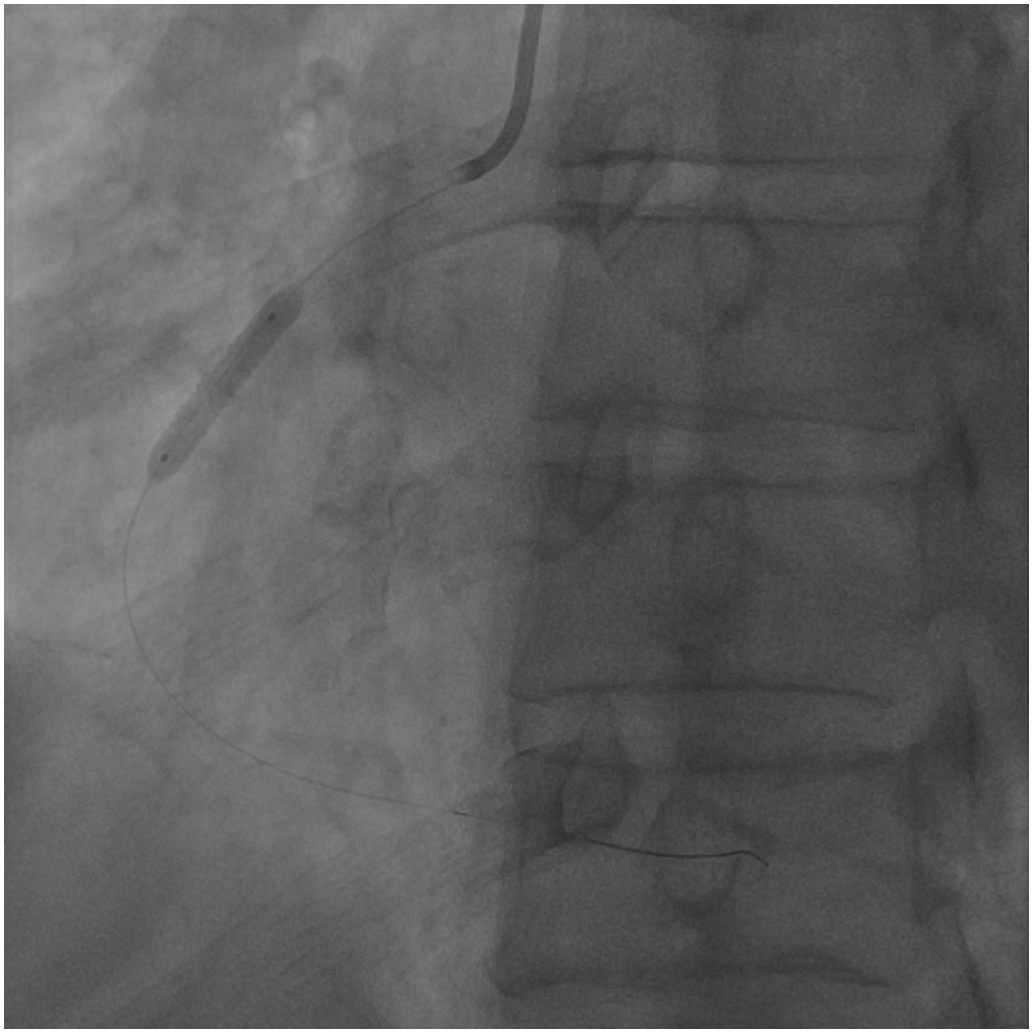

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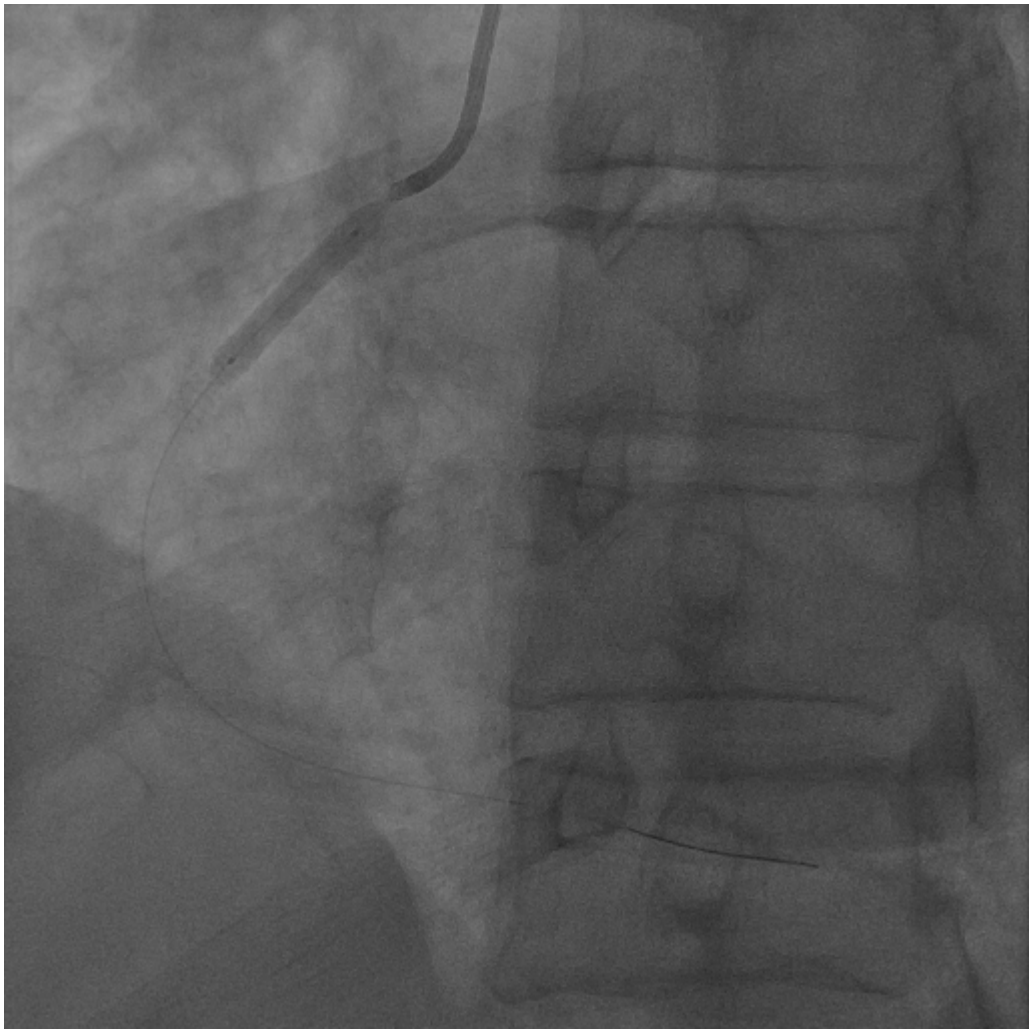

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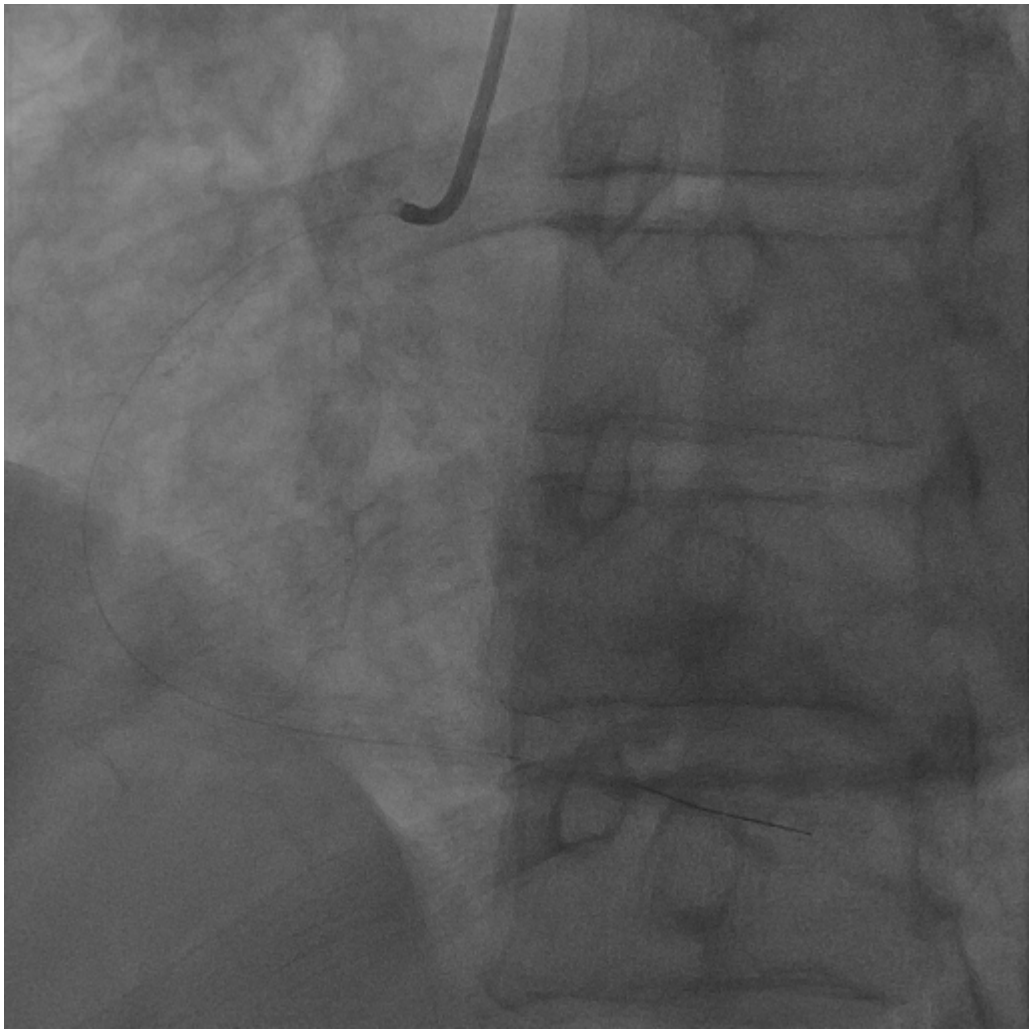
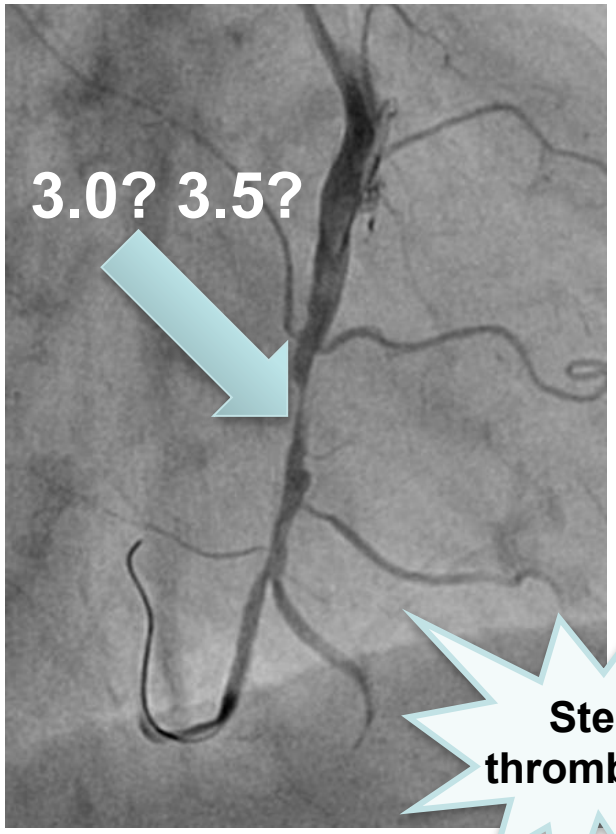
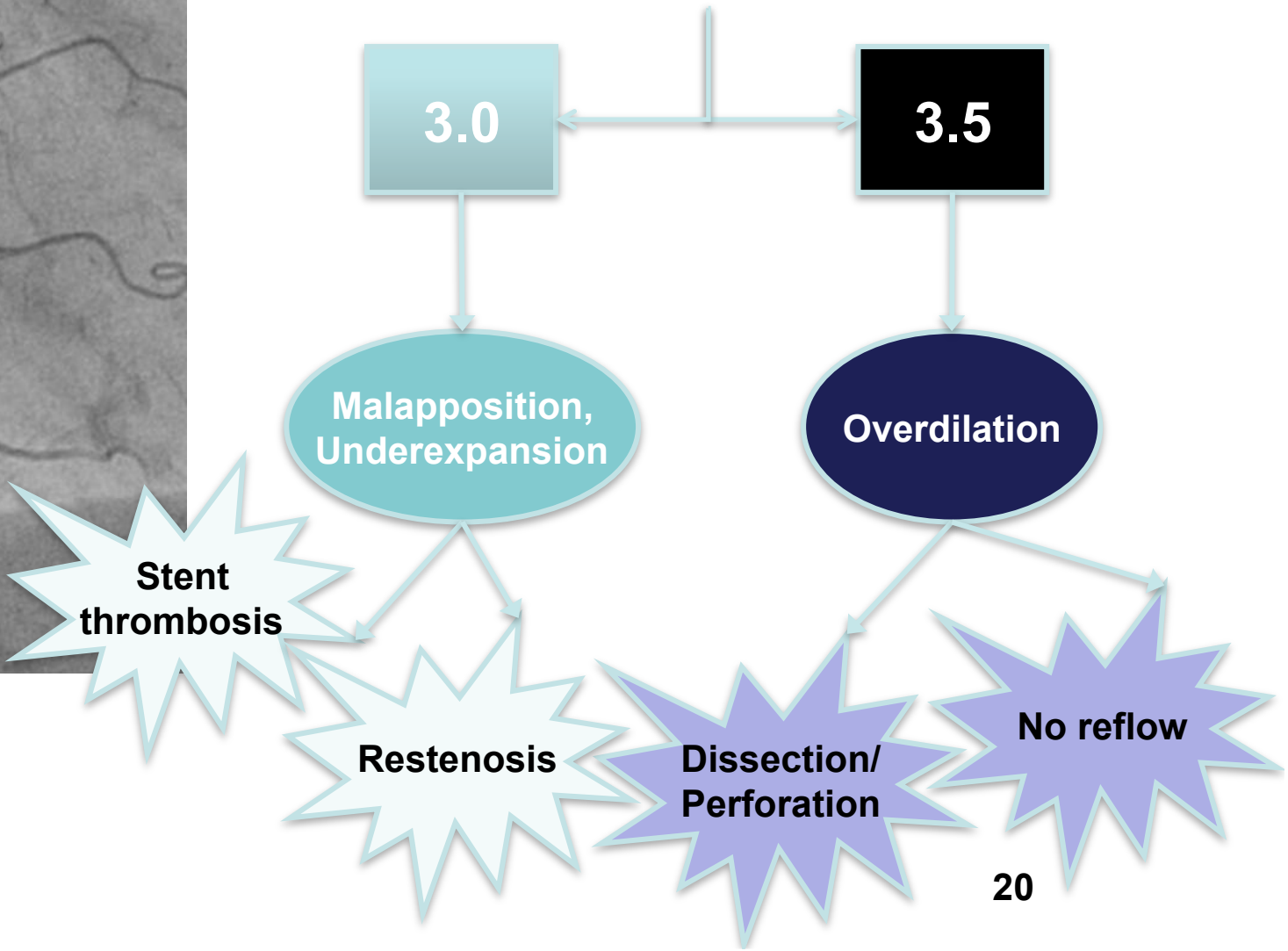


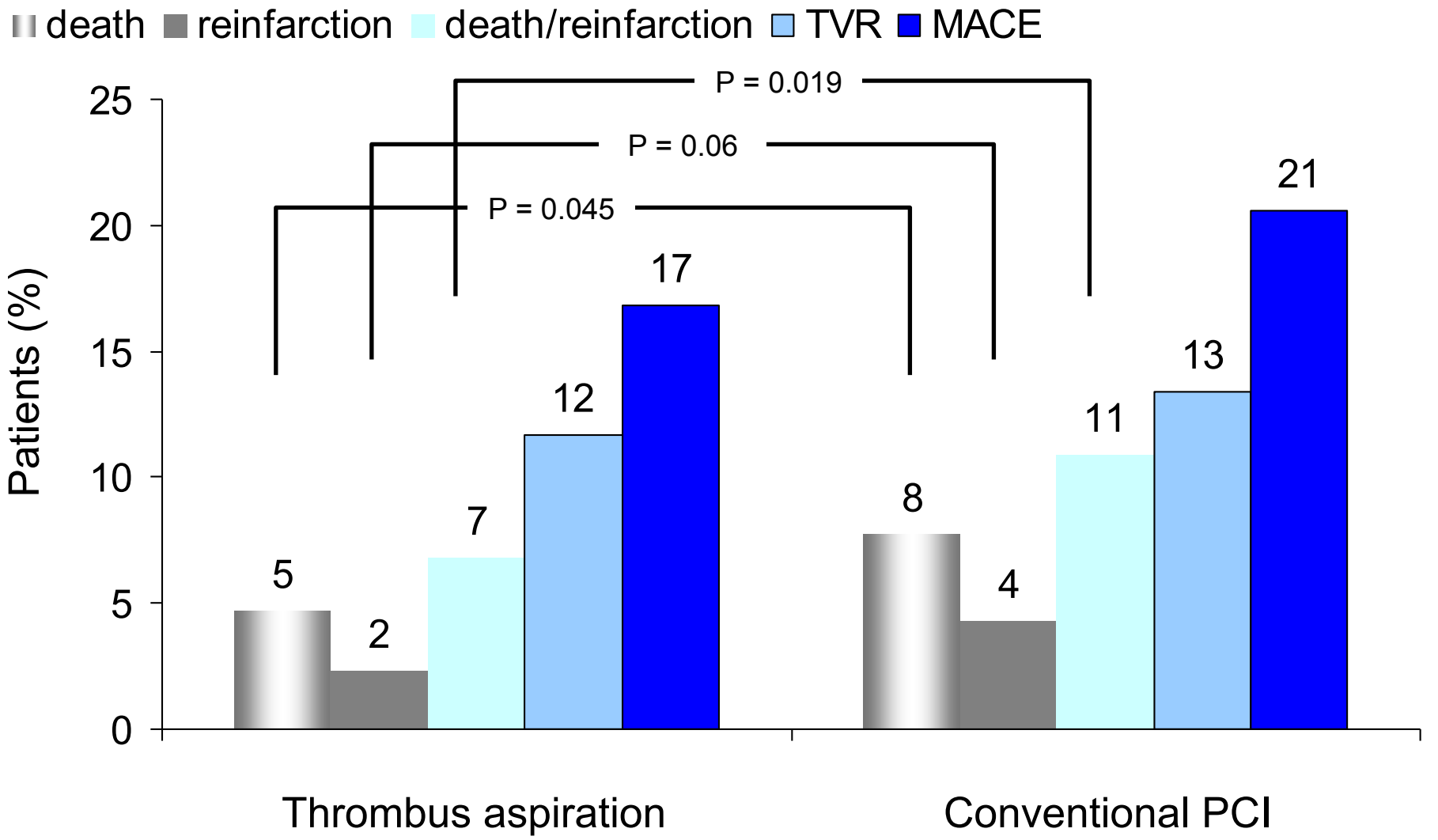
How important is stent sizing?



STEMI case



TAPAS Study – 1 Year



Vlaar P. et al., Lancet, June 7, 2008, Vol. 371:1915-20

Thrombus Aspiration During Primary Percutaneous Coronary Intervention Improves Myocardial Reperfusion and Reduces Infarct Size

The EXPIRA (Thrombectomy With Export Catheter in Infarct-Related Artery During Primary Percutaneous Coronary Intervention) Prospective, Randomized Trial

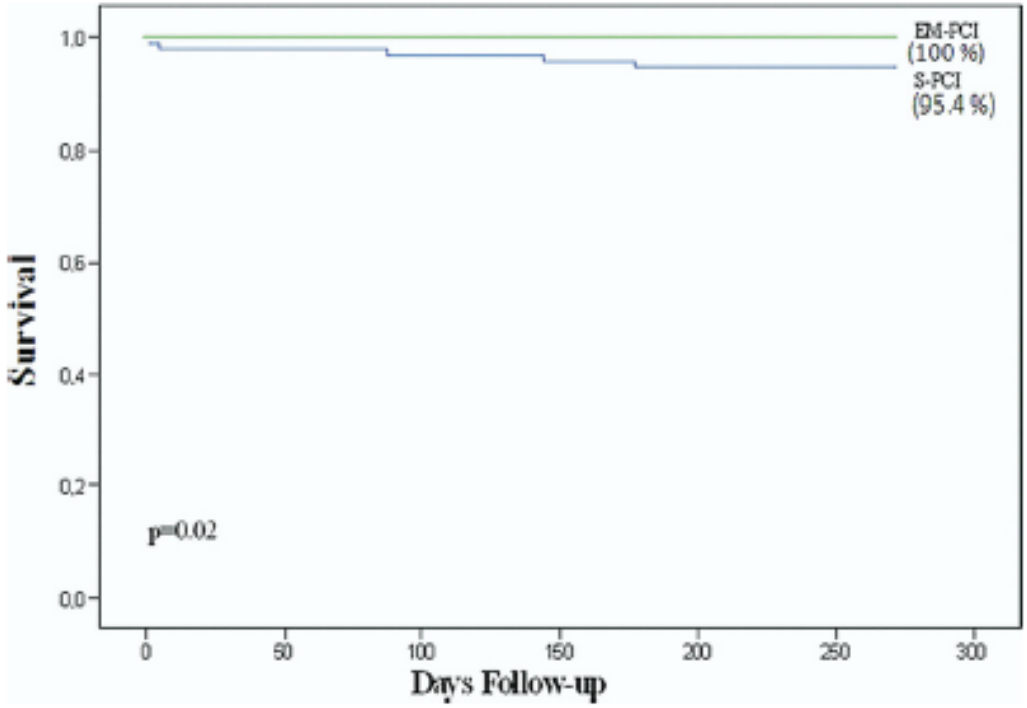


Figure 3 Kaplan-Meier 9-Month Event-Free Survival for End Point of Death

Kaplan-Meier analysis shows 9-month event-free survival for the end point of death in the standard percutaneous coronary intervention (S-PCI) treatment group as compared with the Export Medtronic percutaneous coronary intervention (EM-PCI) treatment group.

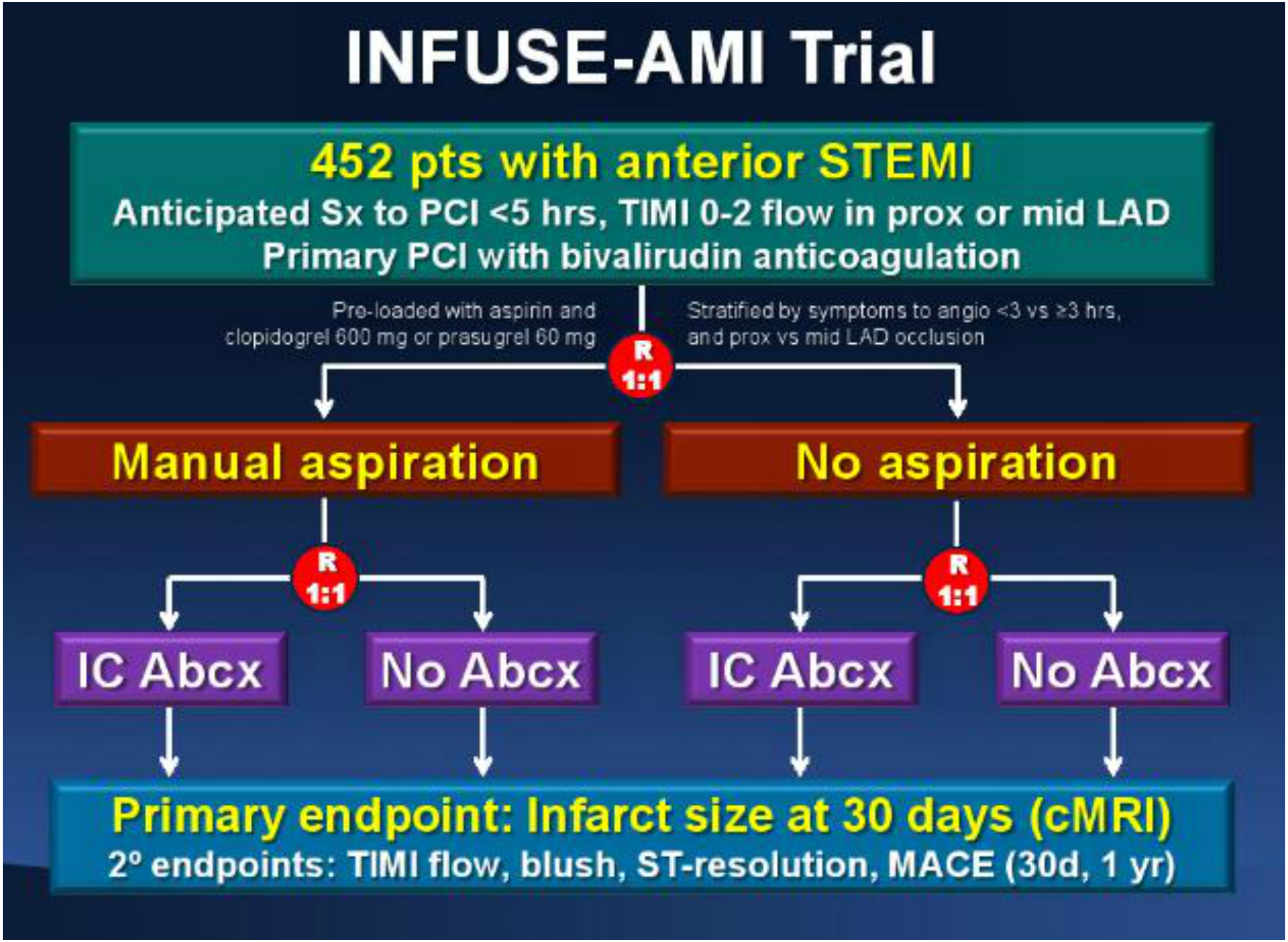
INFUSE-AMI

A 2x2 Factorial, Multicenter, Prospective, Randomized Evaluation of Intracoronary Abciximab and Aspiration Thrombectomy in Patients Undergoing Primary PCI for Anterior STEMI

Gregg W. Stone, MD

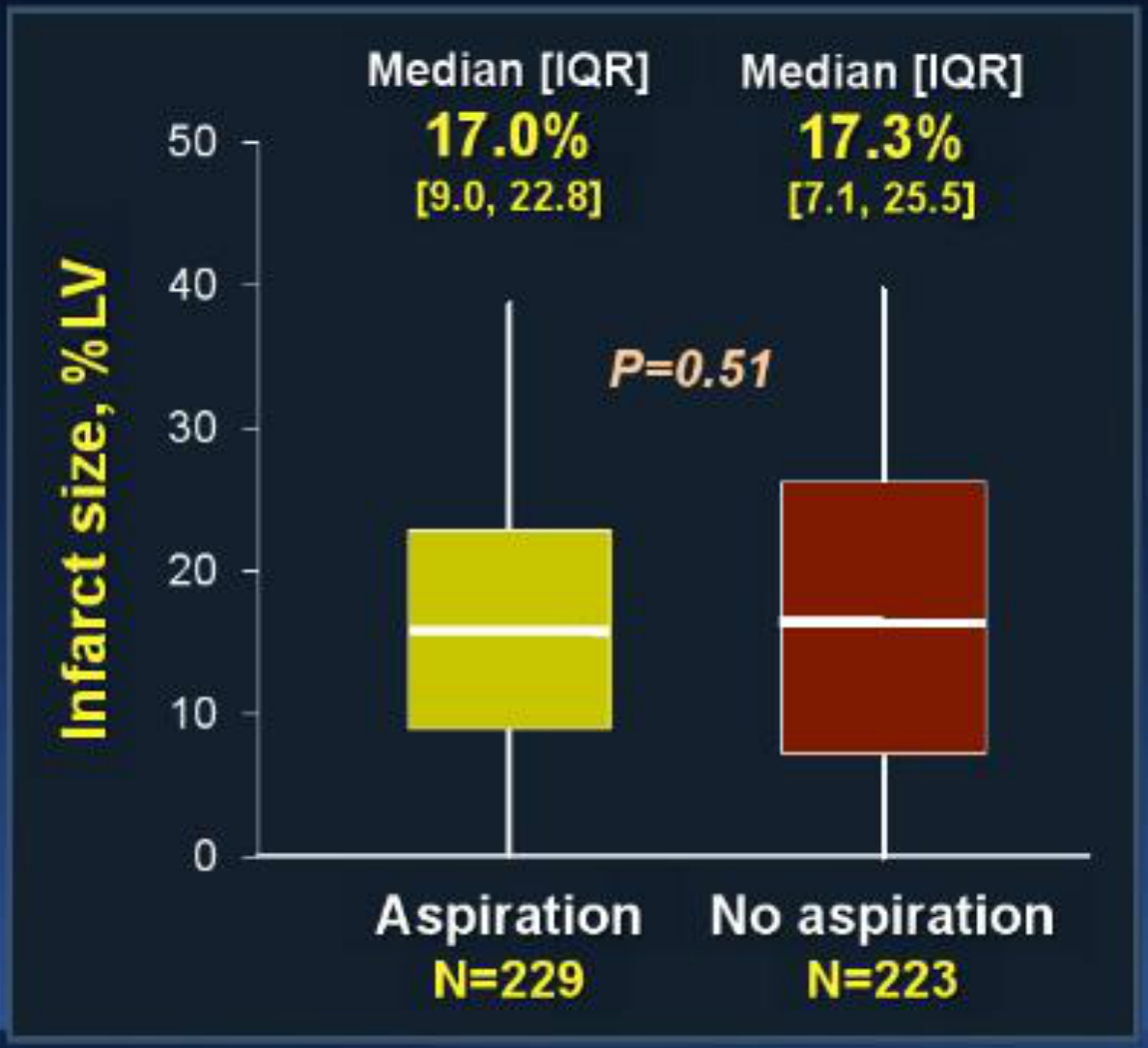
Columbia University Medical Center
NewYork-Presbyterian Hospital
Cardiovascular Research Foundation

ClinicalTrials.gov number:
NCT00976521


INFUSE-AMI Trial
452 pts with anterior STEMI
Anticipated Sx to PCI <5 hrs, TIMI 0-2 flow in prox or mid LAD
Primary PCI with bivalirudin anticoagulation
Pre-loaded with aspirin and clopidogrel 600 mg or prasugrel 60 mg
Stratified by symptoms to angio <3 vs ≥3 hrs, and prox vs mid LAD occlusion
R 1:1
Manual aspiration
No aspiration
R 1:1
R 1:1
IC Abcx
No Abcx
IC Abcx
No Abcx
Primary endpoint: Infarct size at 30 days (cMRI)
2º endpoints: TIMI flow, blush, ST-resolution, MACE (30d, 1 yr)

INFUSE-AMI: Infarct size at 30 days*

- Major secondary endpoint -

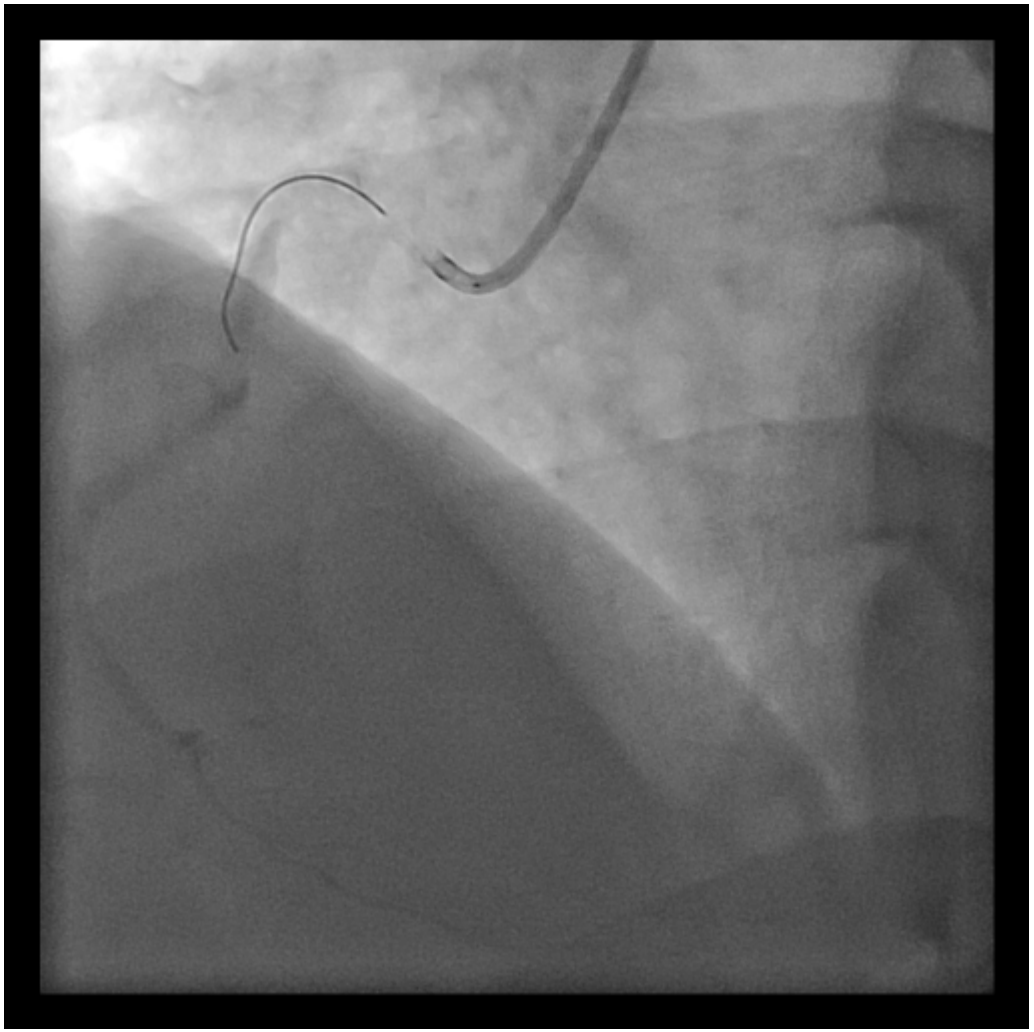


*Core laboratory assessed. No interaction was present between the 2 randomization groups for the primary 30-day infarct size endpoint (p=0.46)

Infuse AMI

The final word on aspiration in STEMI awaits the ongoing large-scale randomized TOTAL and TASTE trials

PPCI



PPCI

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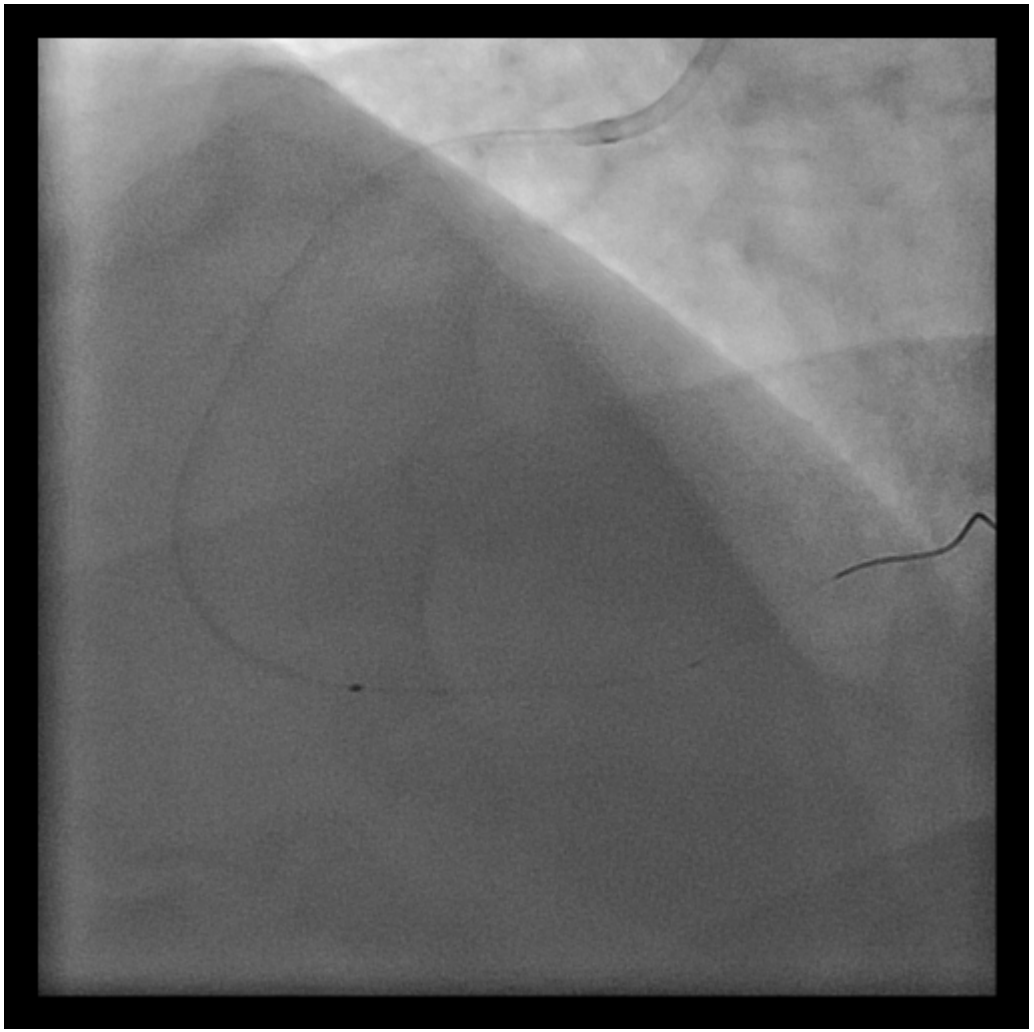

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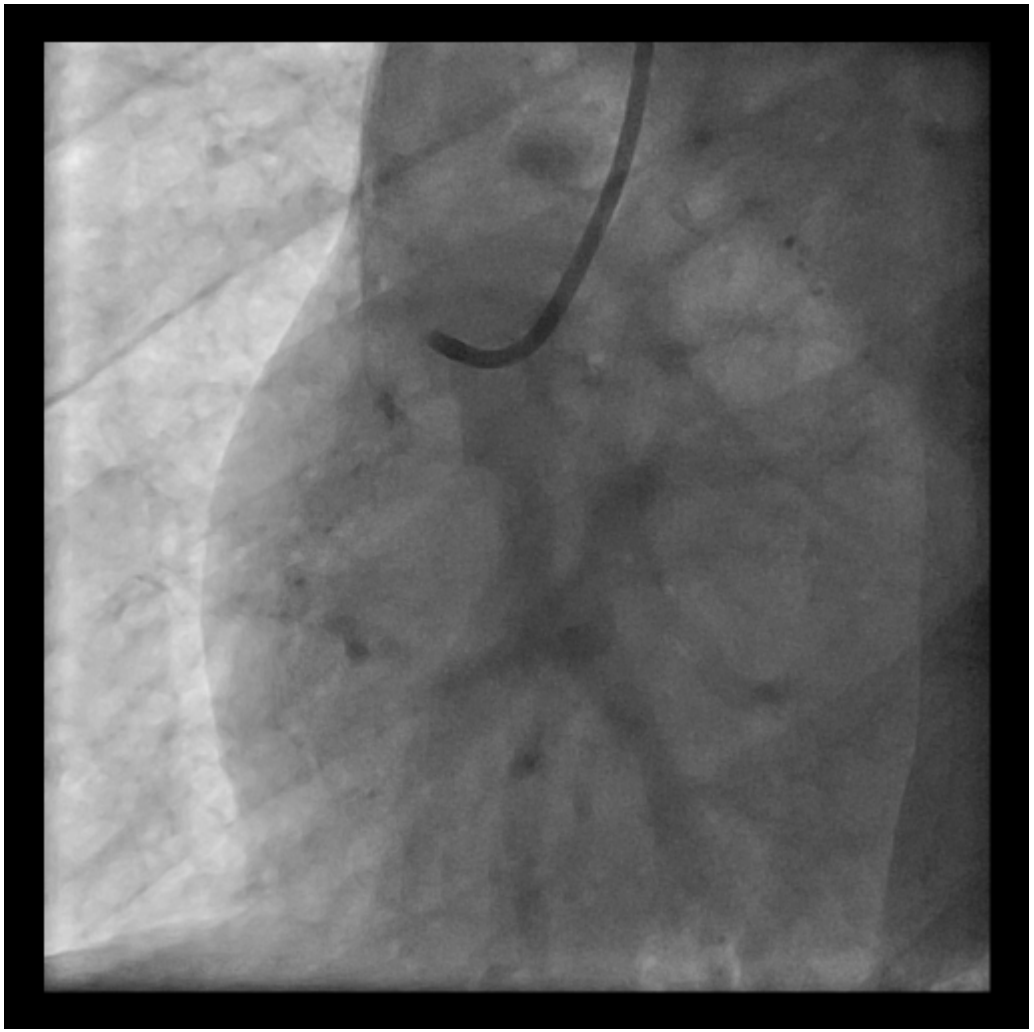

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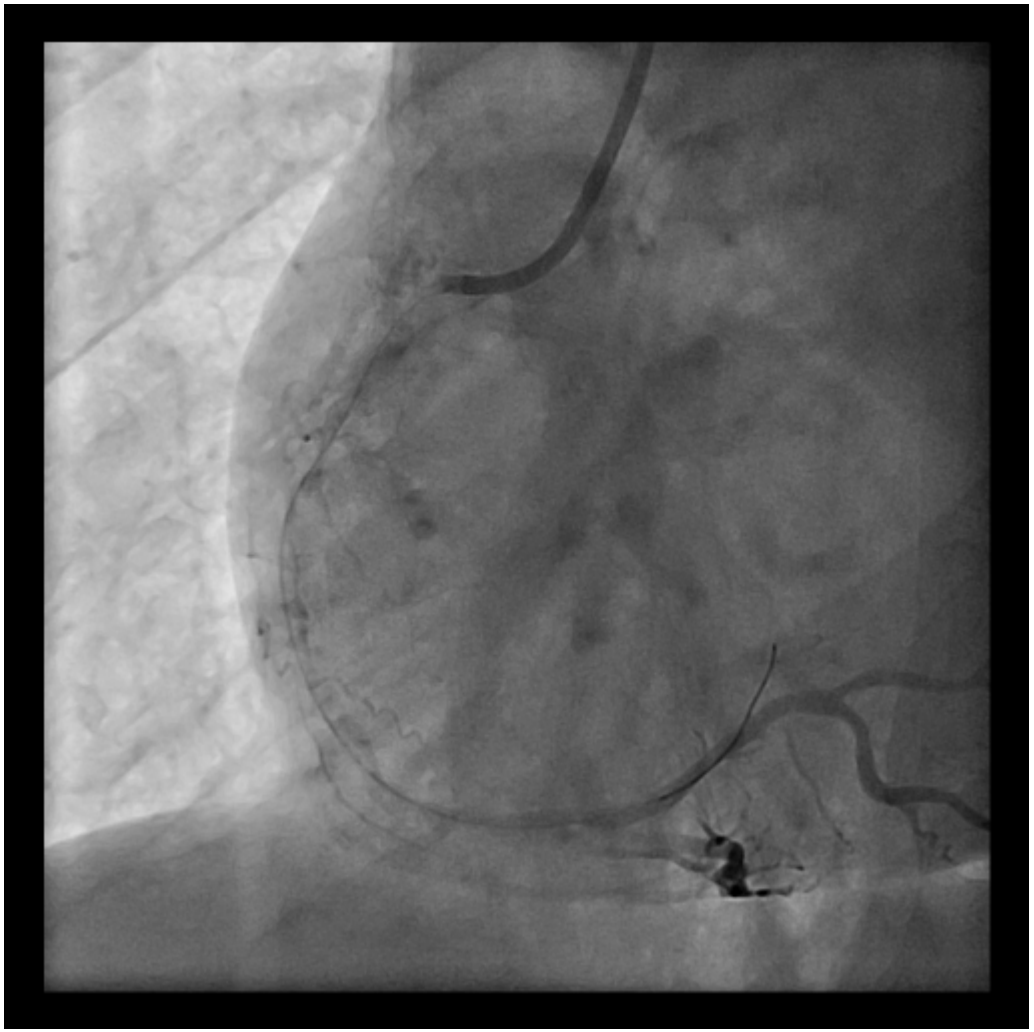

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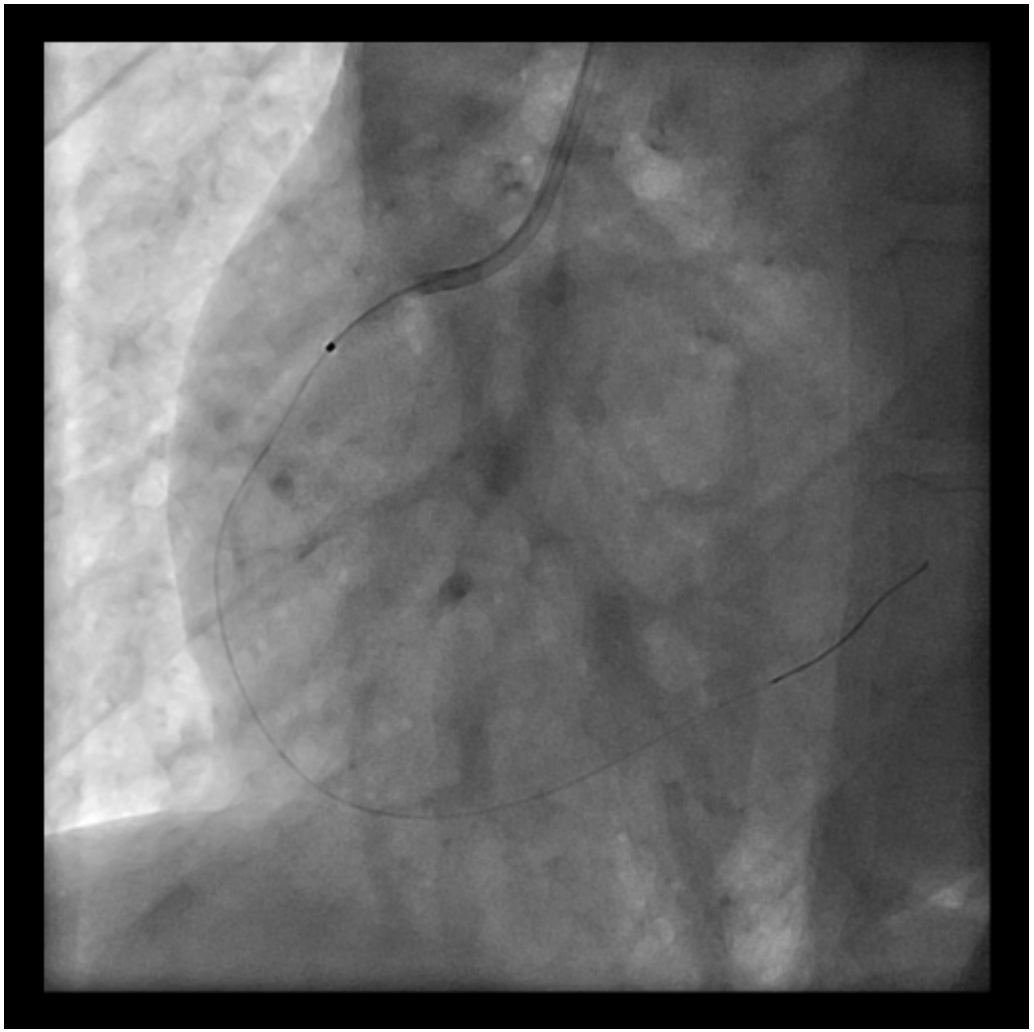

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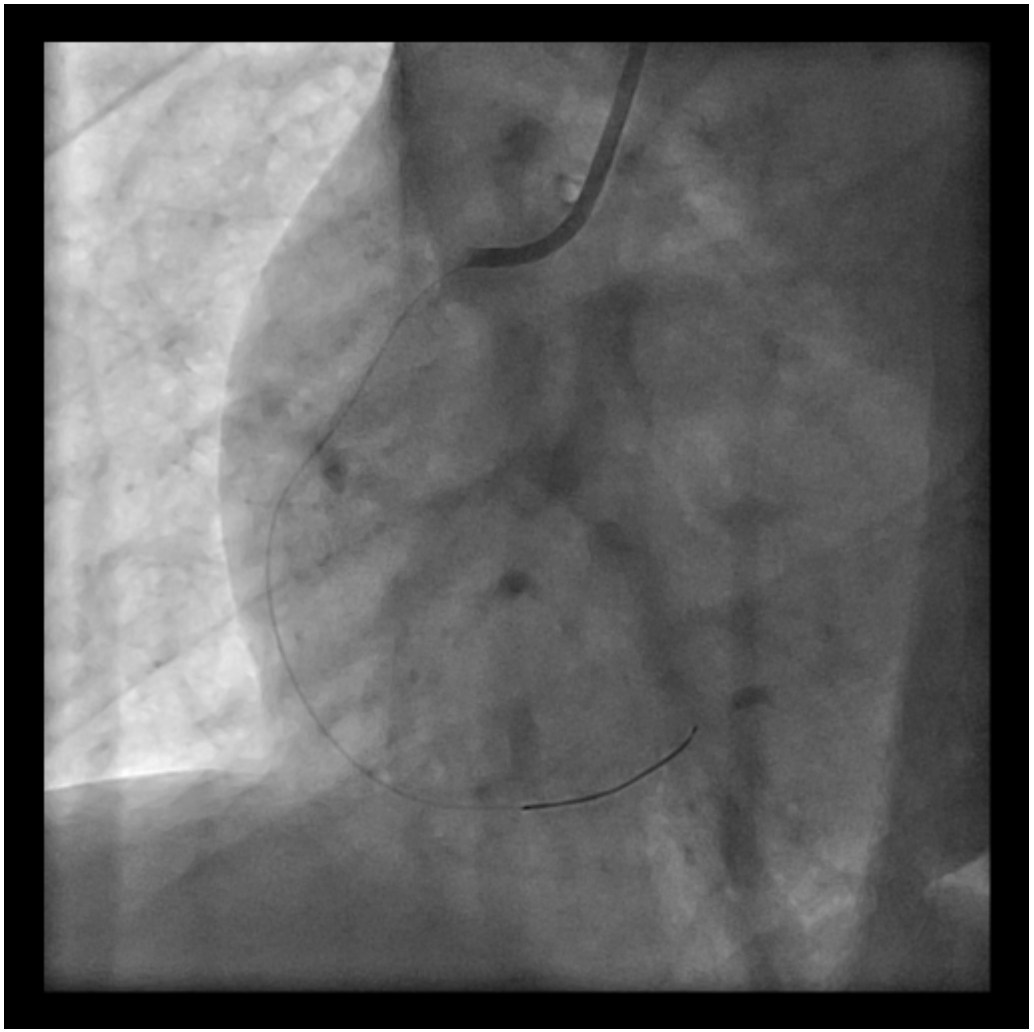

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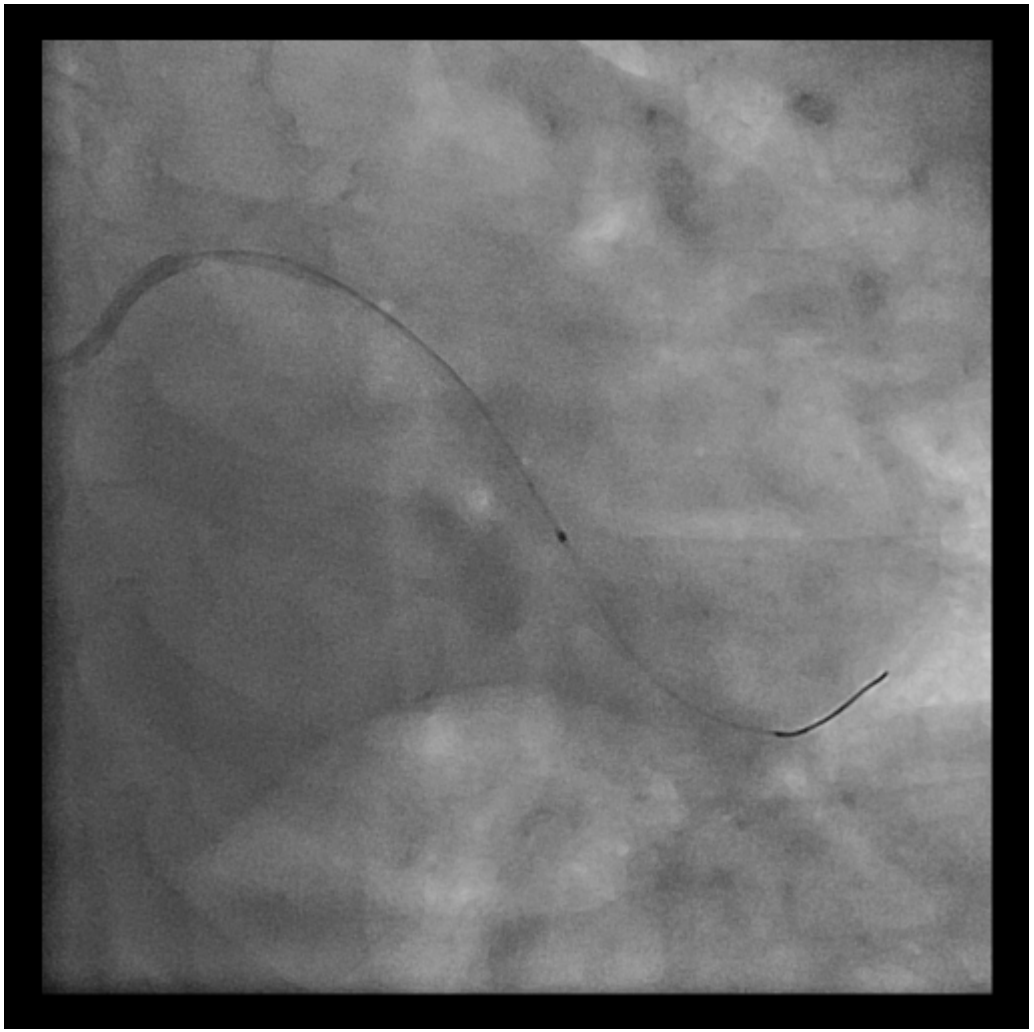

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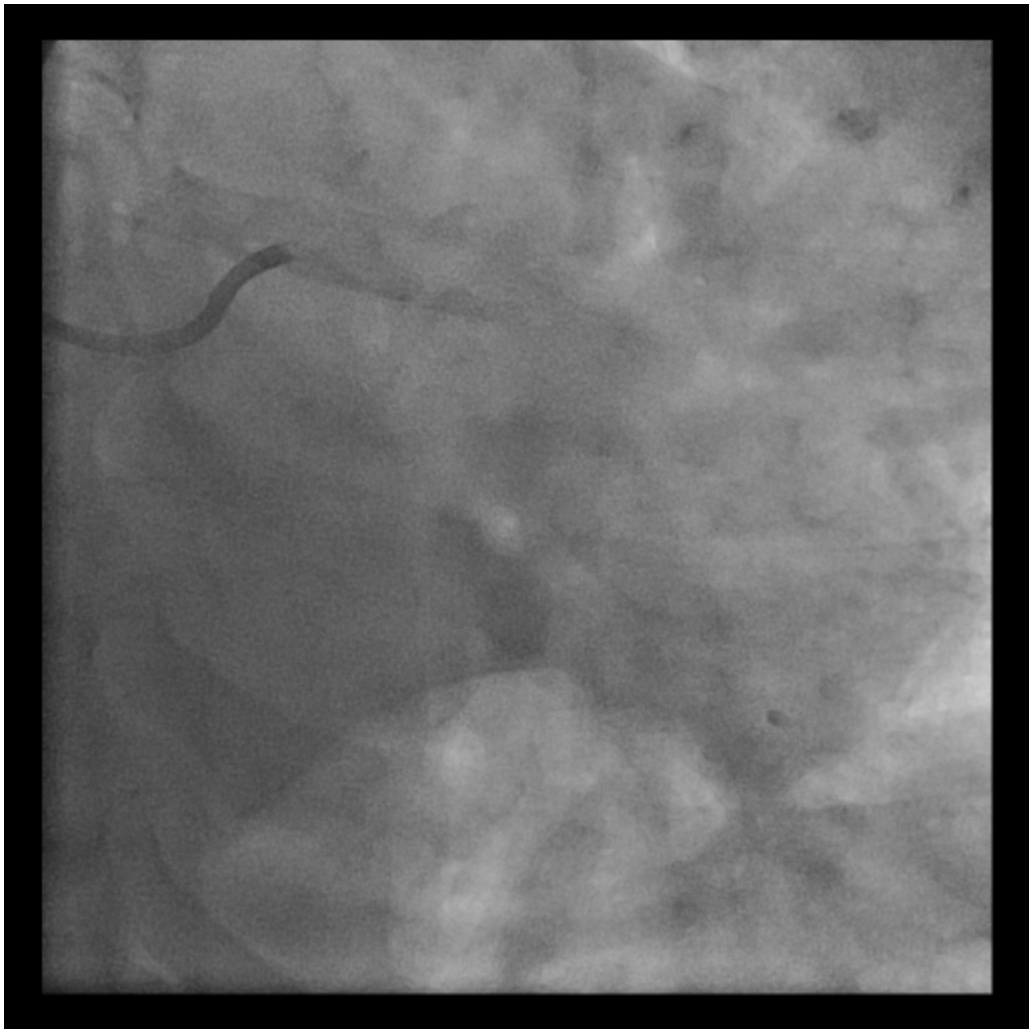

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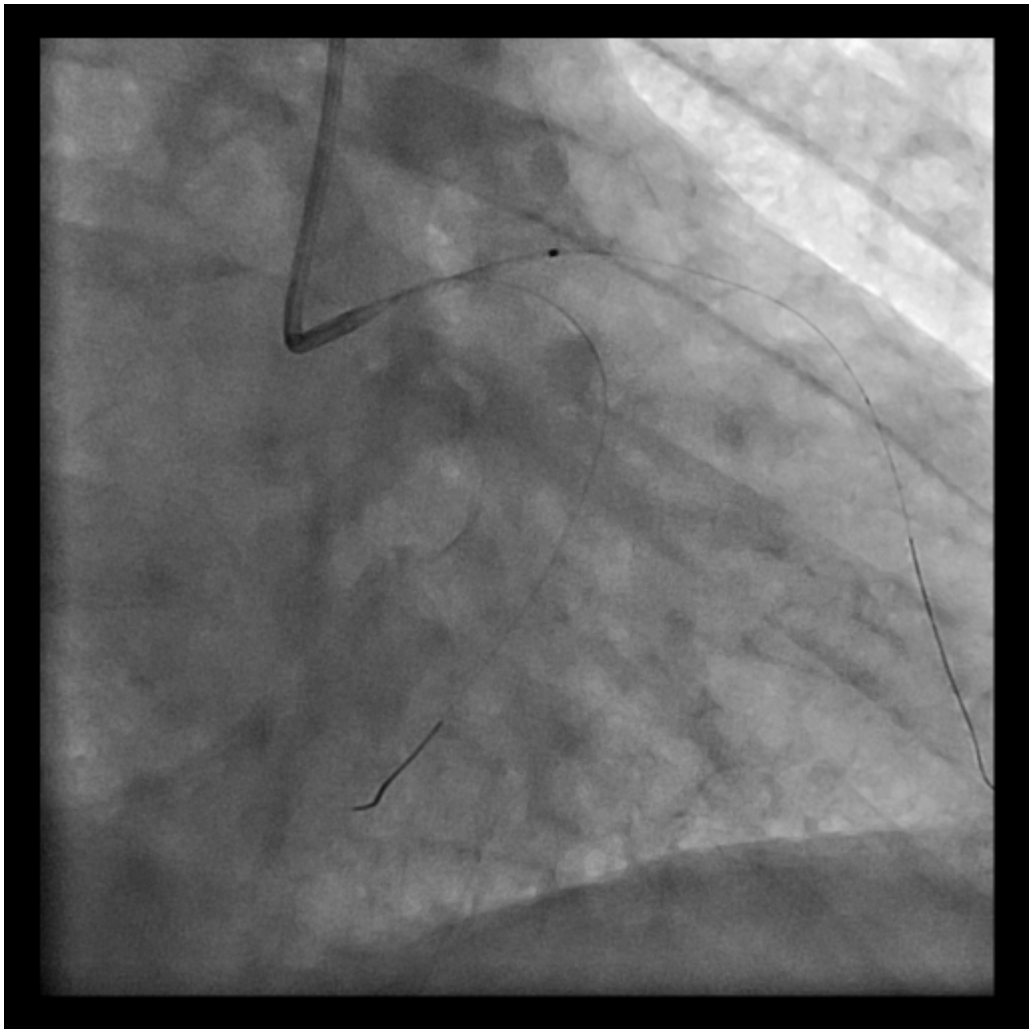

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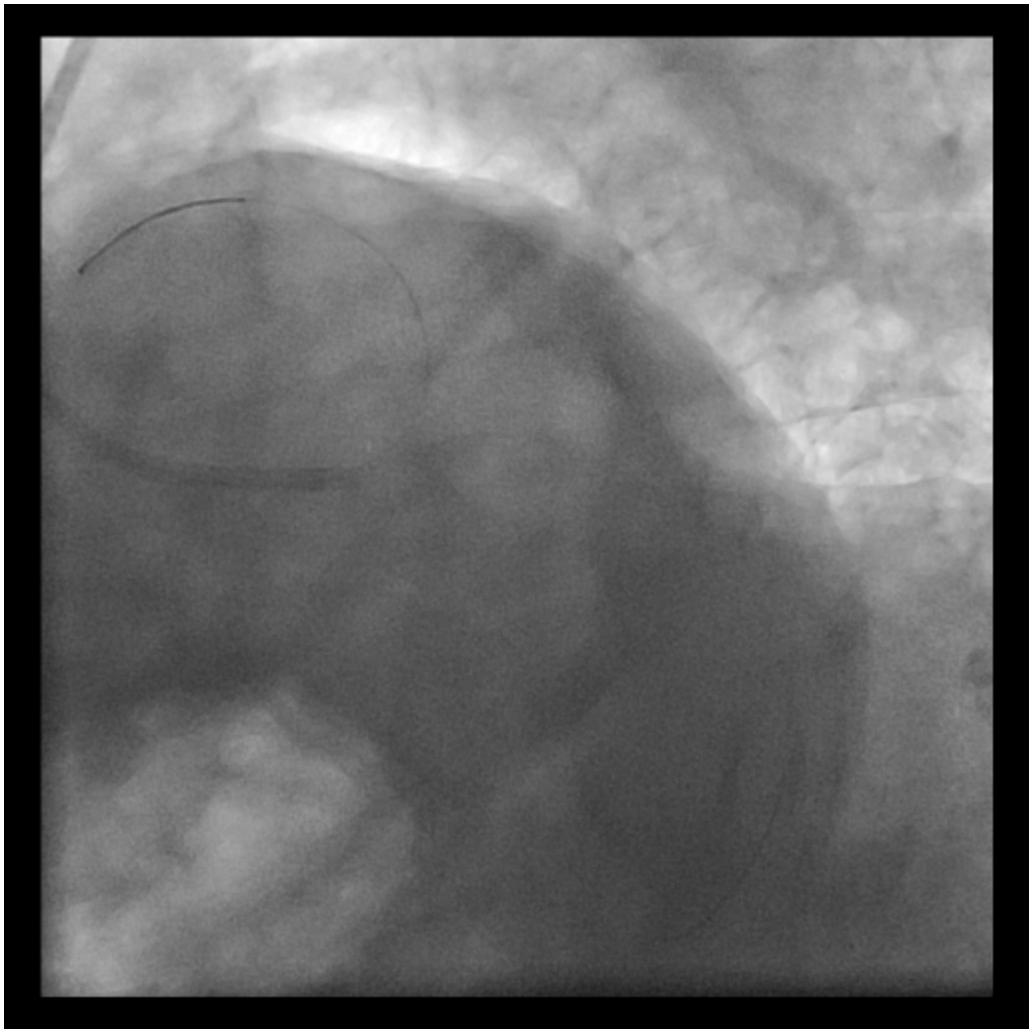

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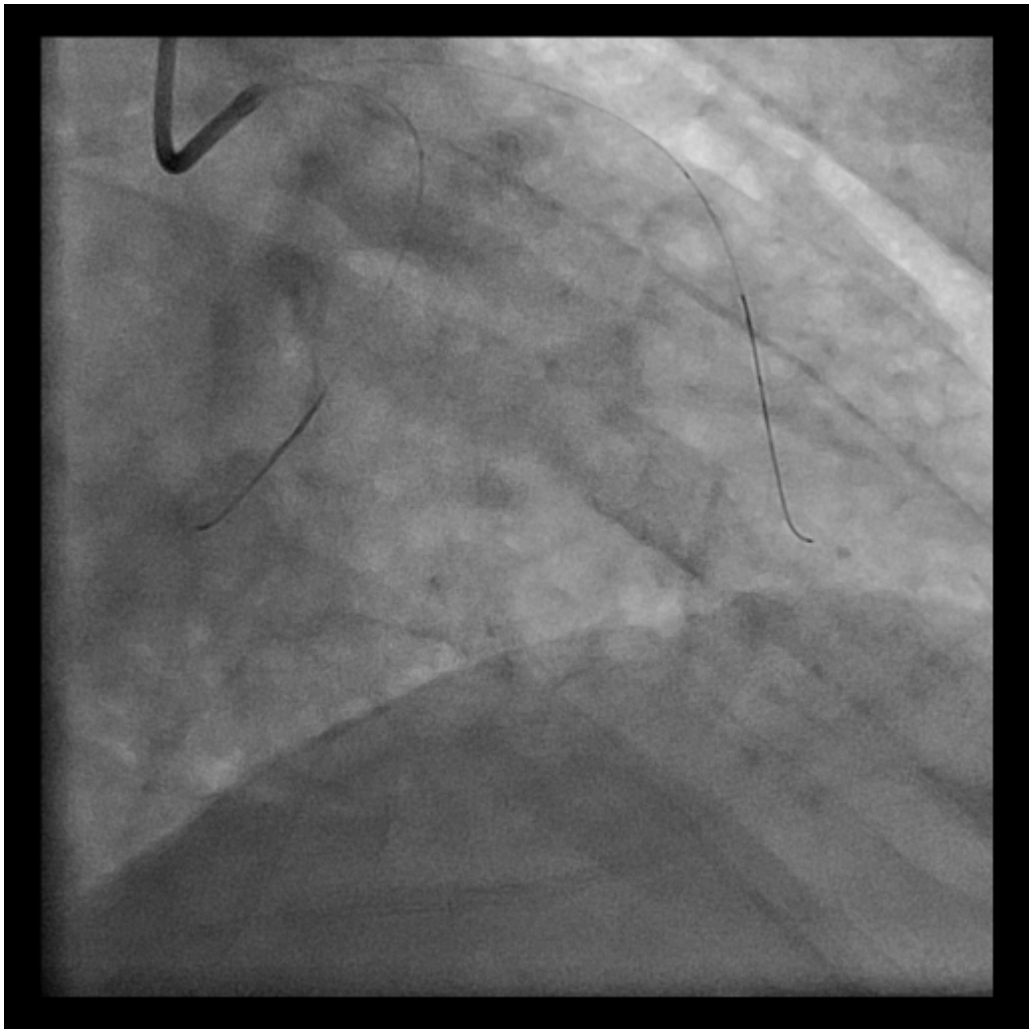

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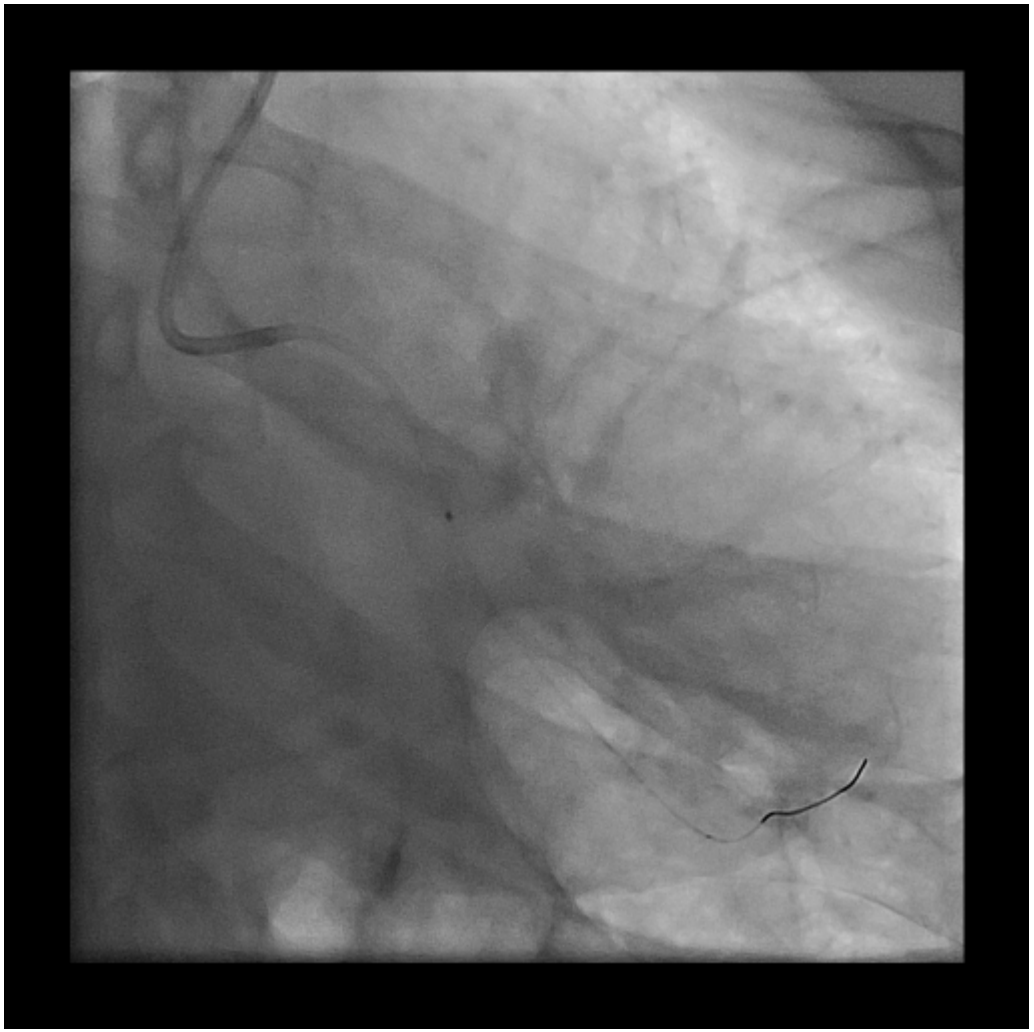

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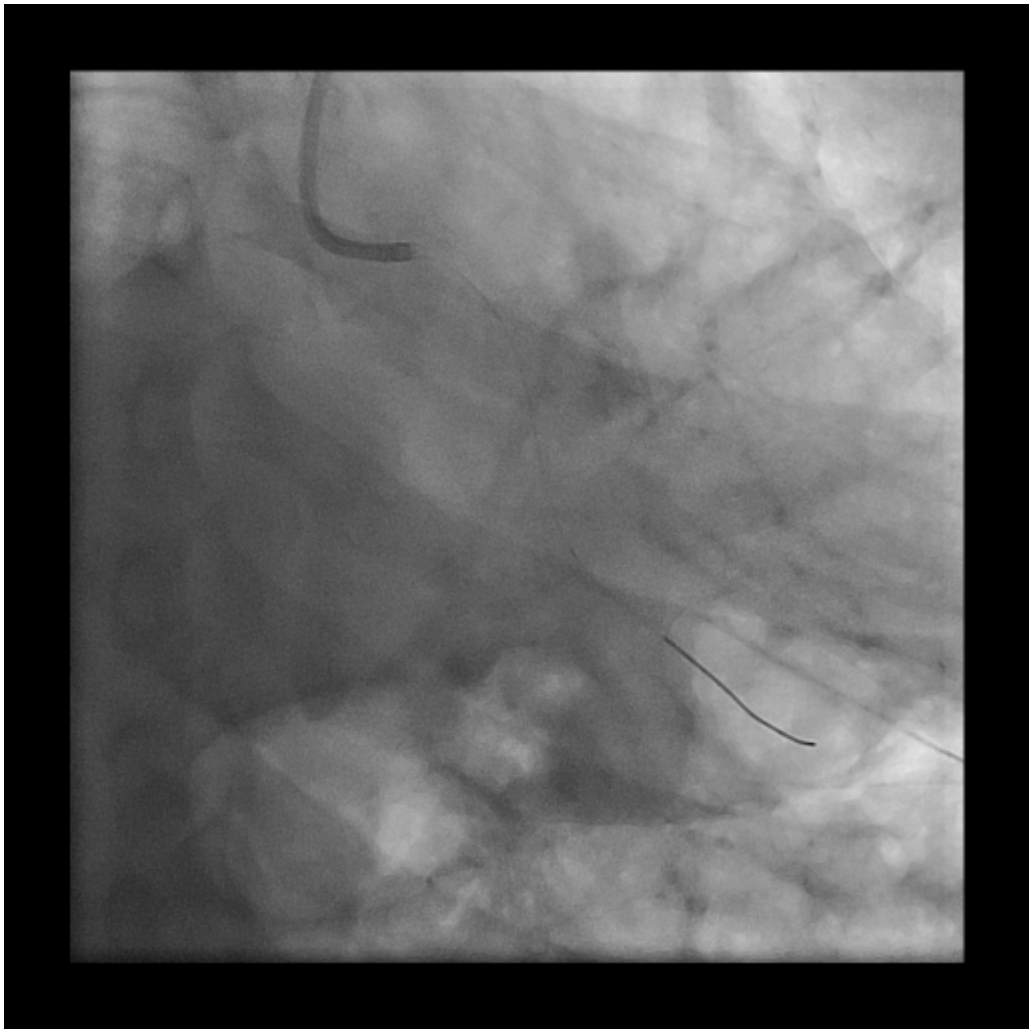

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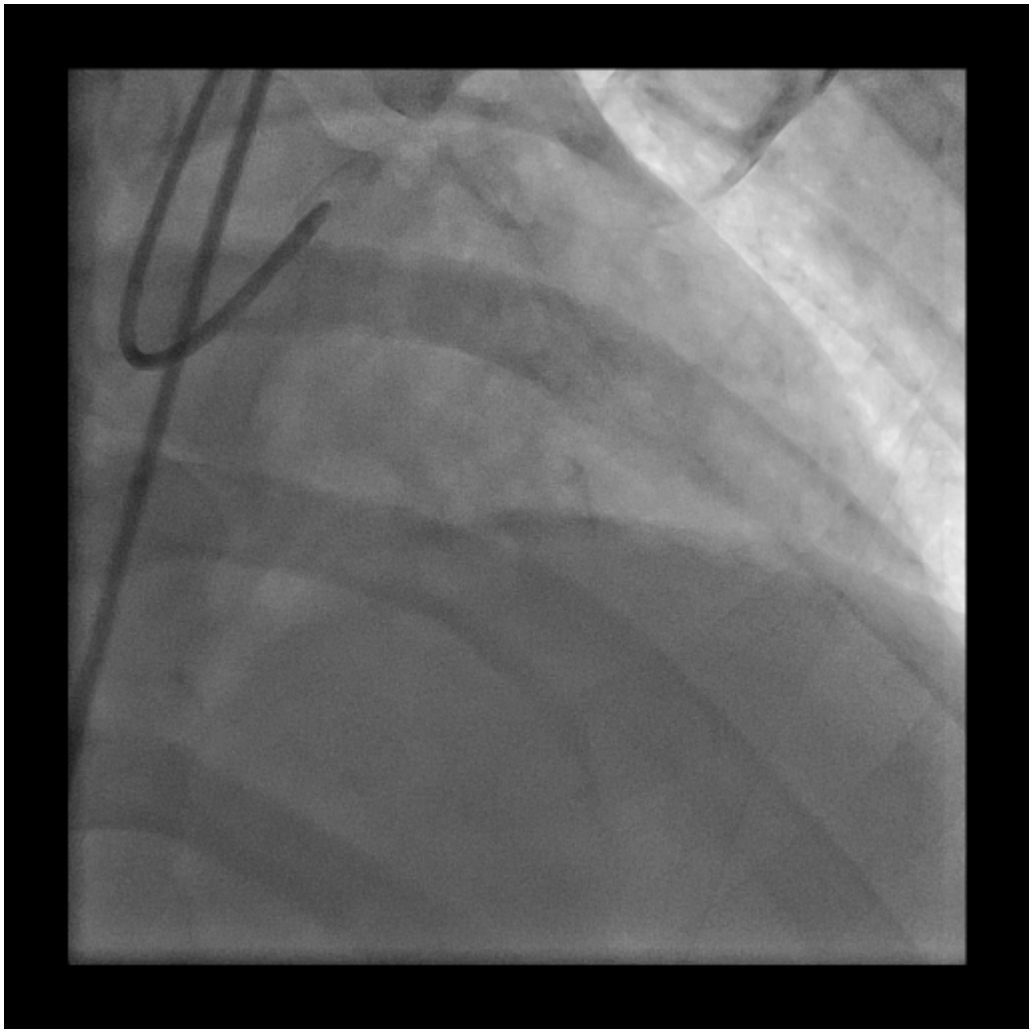
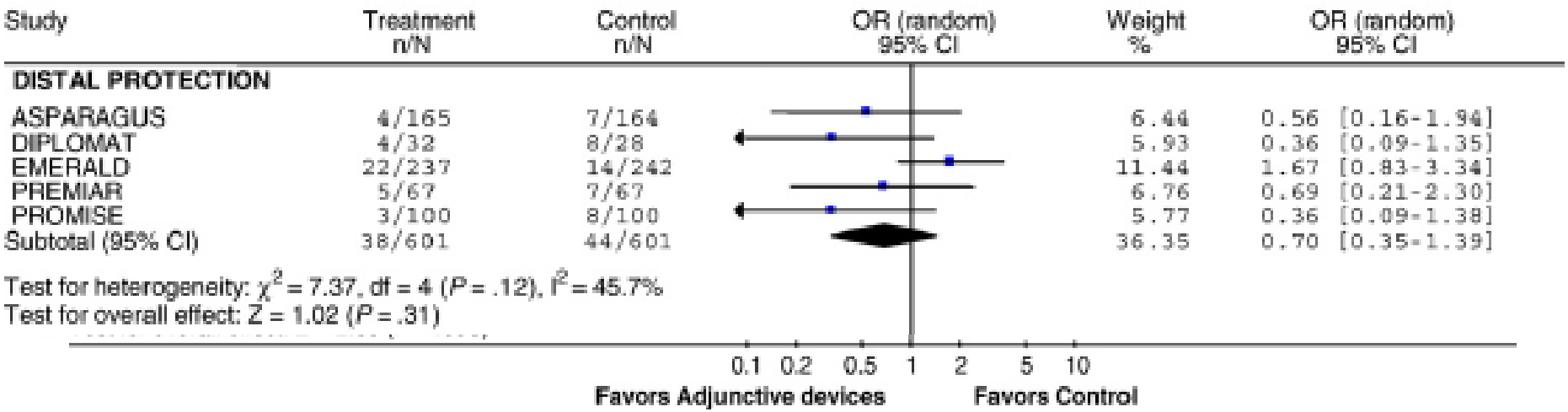
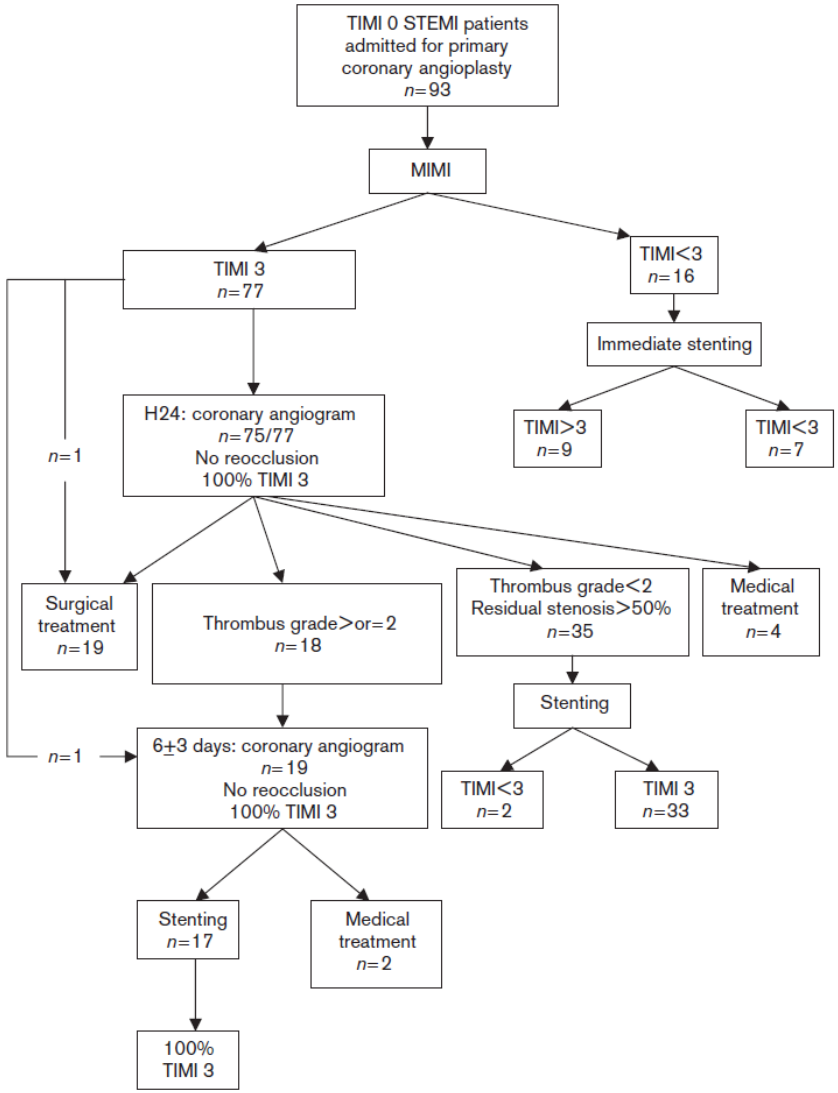




Adjunctive mechanical devices and distal embolization, with ORs and 95% CIs. The size of the data markers (squares) is approximately proportional to the statistical weight of each trial.

A new approach of primary angioplasty for ST-elevation acute myocardial infarction based on minimalist immediate mechanical intervention

Karl Isaaz, Christophe Robin, Alexis Cerisier, Michel Lamaud, Laure Richard, Antoine Da Costa, Mohamed Hassan Sabry, Claude Gerenton



Coronary Artery Disease 2006, Vol 17 No 3

Immediate versus delayed angioplasty in infarct-related arteries with TIMI III flow and ST segment recovery: a matched comparison in acute myocardial infarction patients

Nicolas Meneveau
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Joanna Dutheil
Romain Chopard
Fiona Ecarnot
Florent Briand
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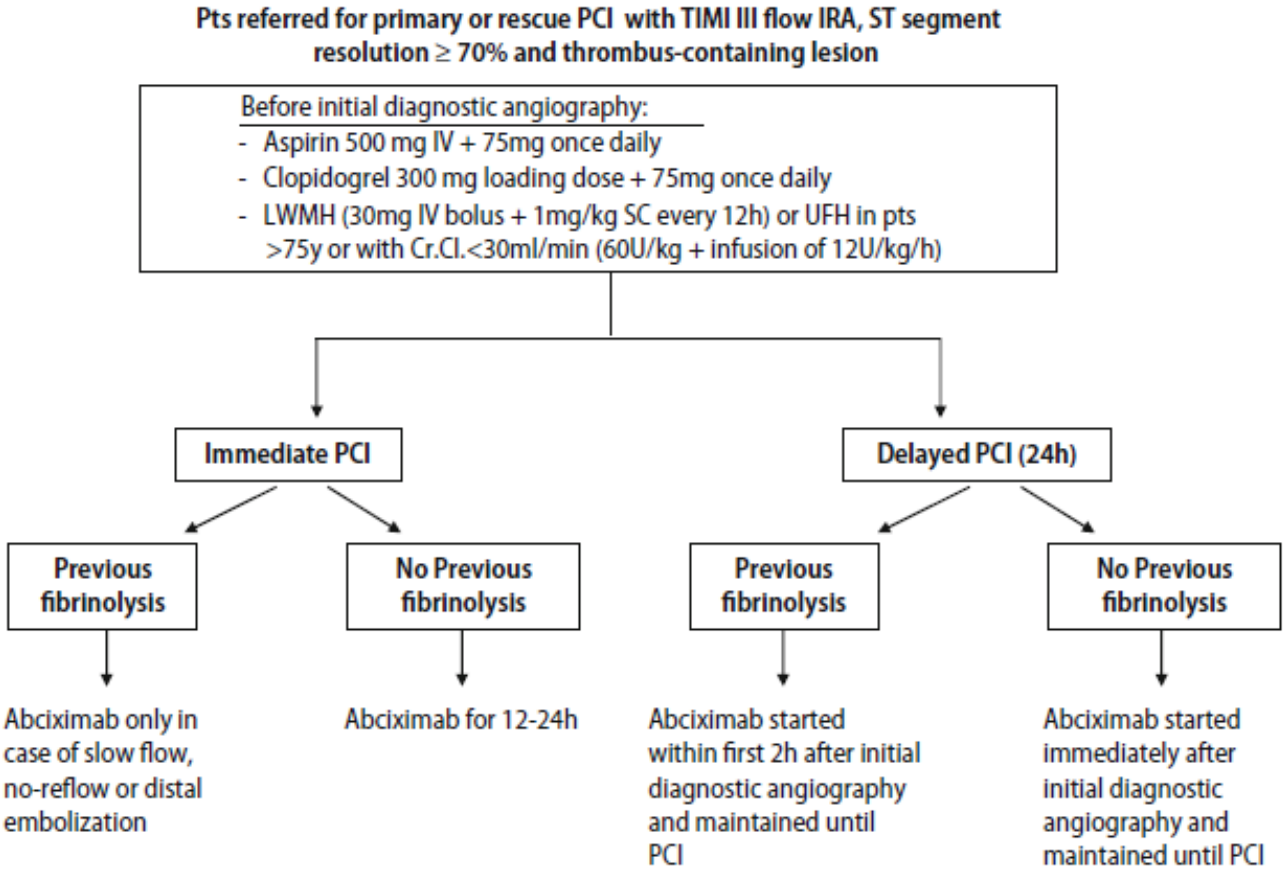

Table 3 Post-procedural angiographic data

	Immediate PCI ($n = 39$)	Delayed PCI ($n = 39$)	P
PCI	39 (100%)	35 (90%)	0.04
Direct stenting	20 (51%)	22 (62%)	0.32
Reference diameter post-PCI (mm)	3.08 ± 0.5	3.24 ± 0.6	0.27
MLD post-PCI (mm)	2.63 ± 0.5	2.85 ± 0.6	0.12
% diameter stenosis post-PCI	15.7 ± 8	13.4 ± 7	0.21
TIMI 3 flow	35 (90%)	39 (100%)	0.04
Corrected TIMI frame count	26.5 ± 16	11.8 ± 3.6	0.02
Distal embolisation	7 (18%)	2 (5%)	0.008
No reflow or slow flow	6 (15%)	1 (3%)	0.03
Procedural success	30 (77%)	37 (95%)	0.008

PCI percutaneous coronary intervention, *MLD* minimal lumen diameter

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MIMI Study

MIMI - STUDY DESIGN

PPCI (STEMI<12 h): TIMI 0 => Thromboaspiration => TIMI 3

ASA-THIENOPERIDINE
HNF/HBPM-GPI

N= 140

Double-blind

Intentional direct stenting

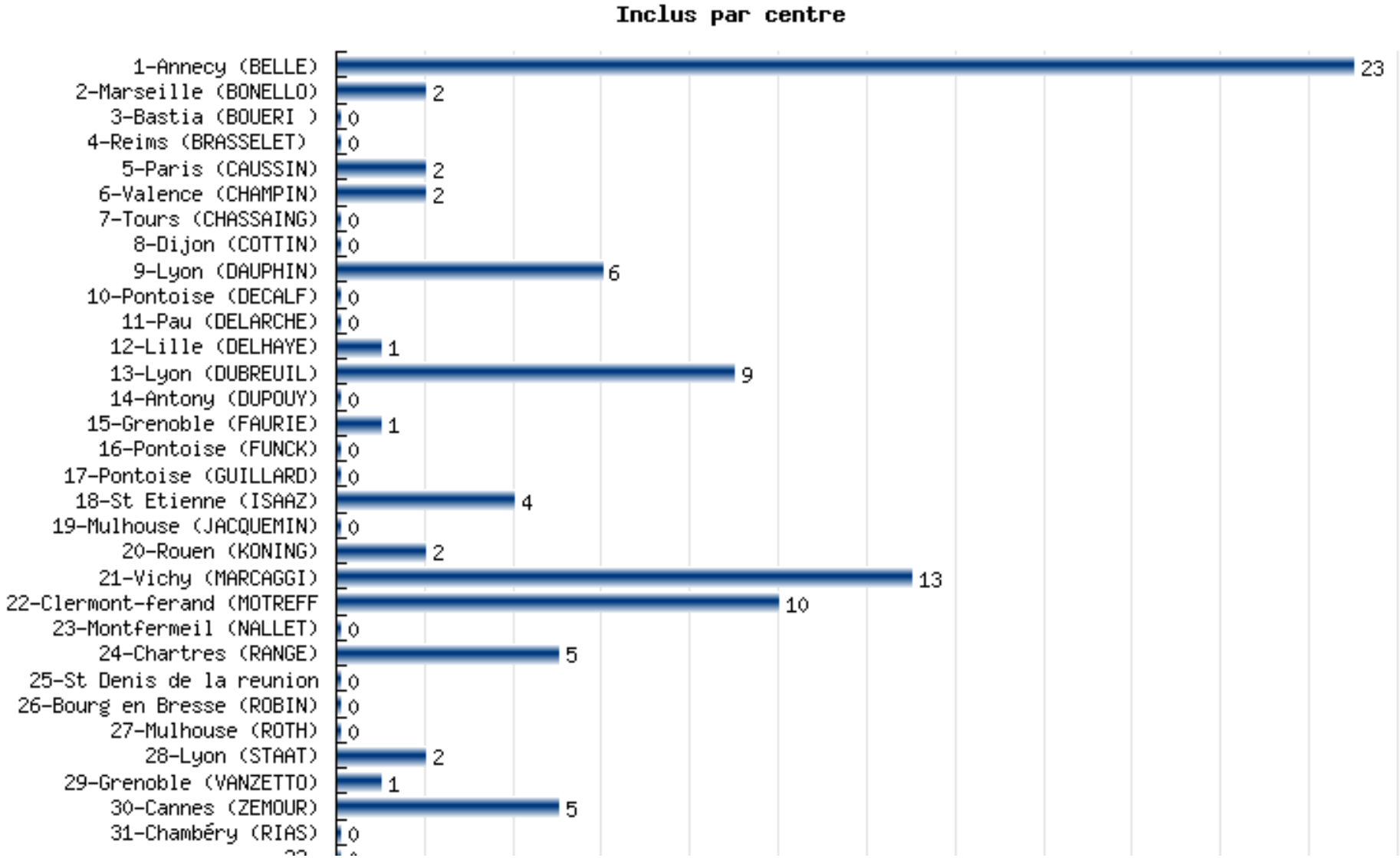
MIMI : Intentional 24-48 h stenting

1º endpoint: 4-7 Day MRI micovascular obstruction

2º endpoints: Post procedure TIMI, Blush, ST, artery diameter, thrombus burden, type of revascularisation.
Recurrent culprit artery occlusion
6 month MACE.

MIMI Study

Total des inclusions : 88 patients



Aspirate and wait: deferred stenting during primary angioplasty after prolonged anticoagulation. A single center safety and feasibility study

1143 PPCI

↓

114 Thrombus aspiration → TIMI 3 and ST résolution : STOP

↓ **1-2 weeks of anticoagulation**

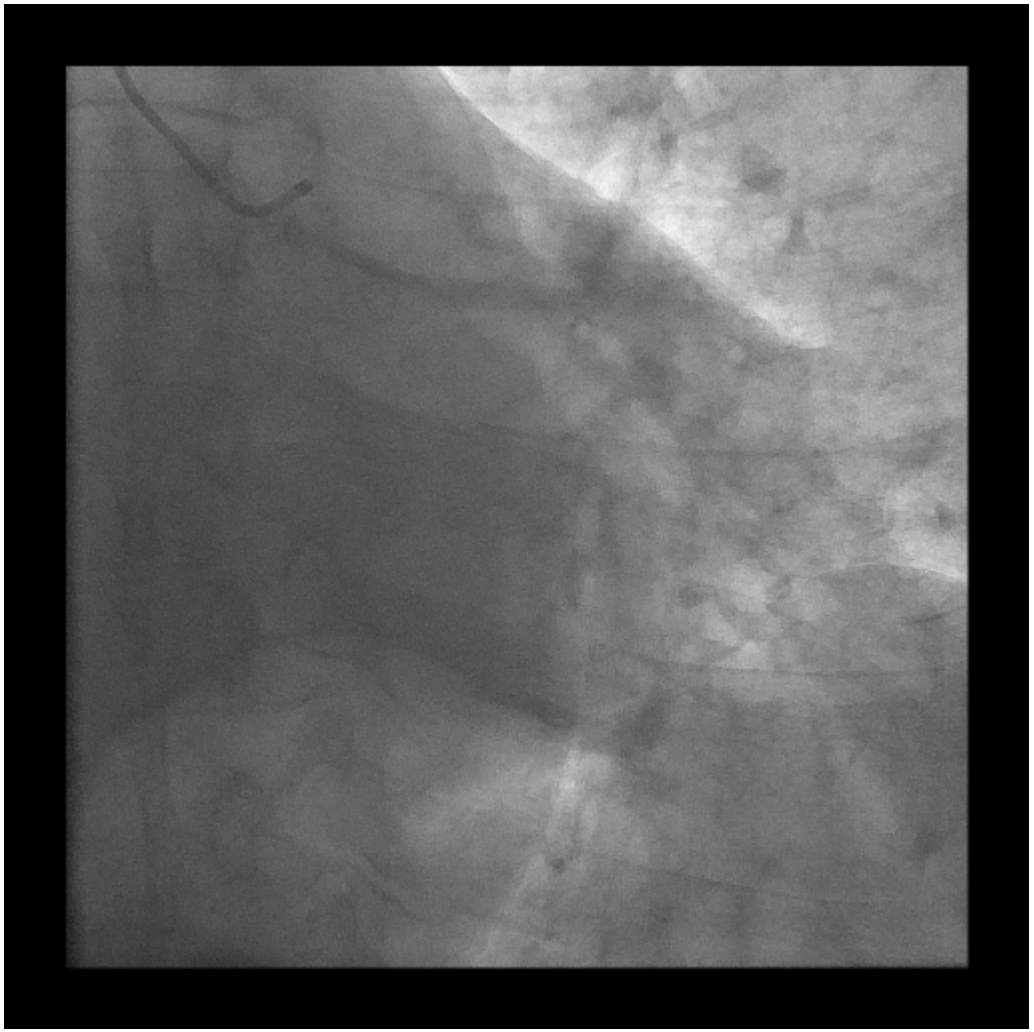
No MACE
No IRA occlusion
74 stents

ESC Congress 2011
27 Aug 2011 - 31 Aug 2011 - France

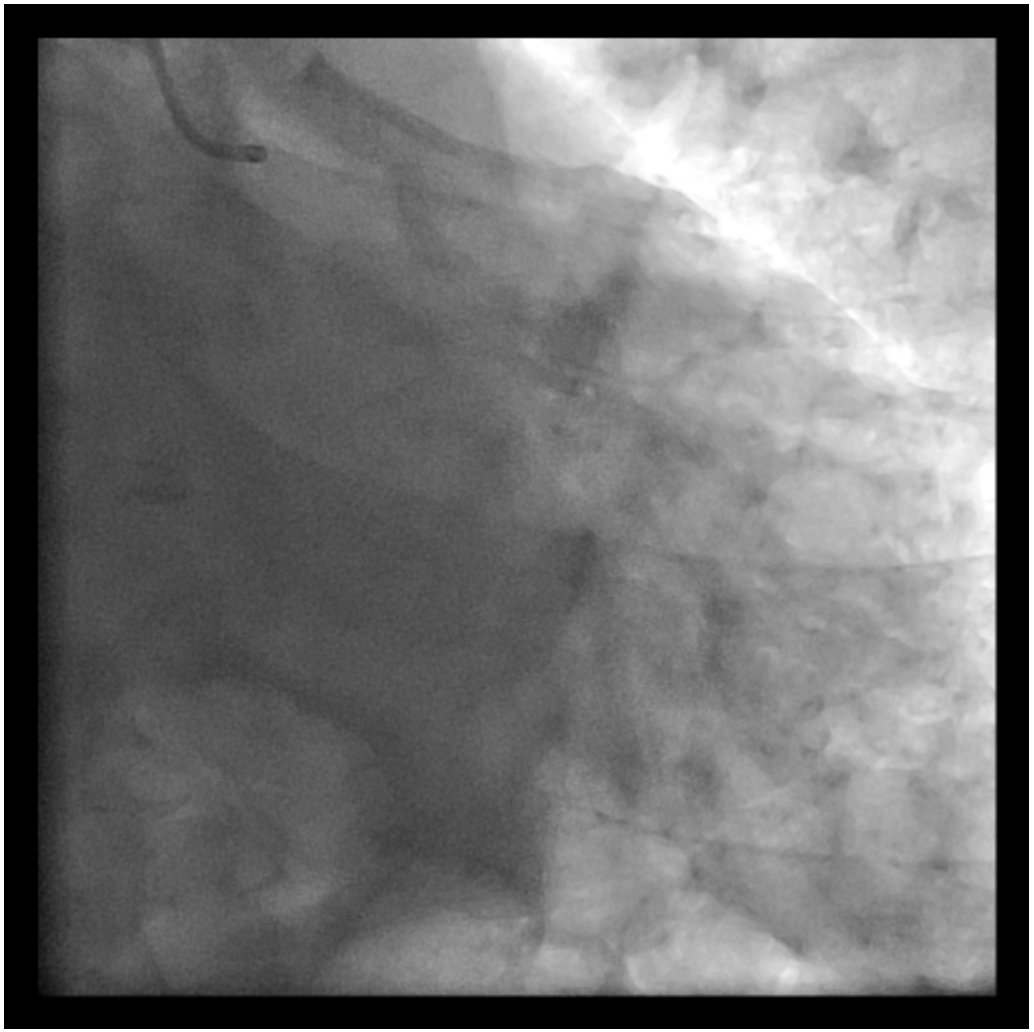
L. Niccoli (Spedali Civili, brescia /Italy)

European Heart Journal (2011) 32 (Abstract Supplement), 1043

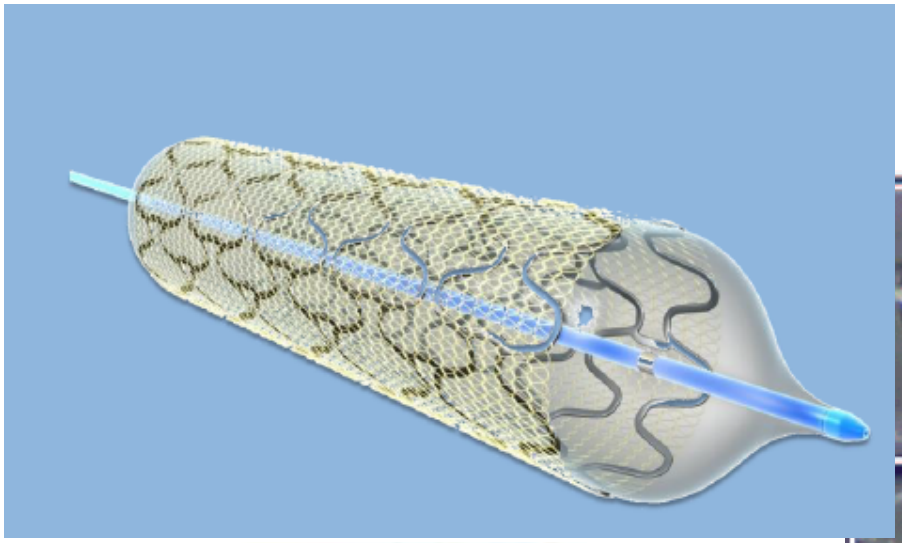
Super MIMI

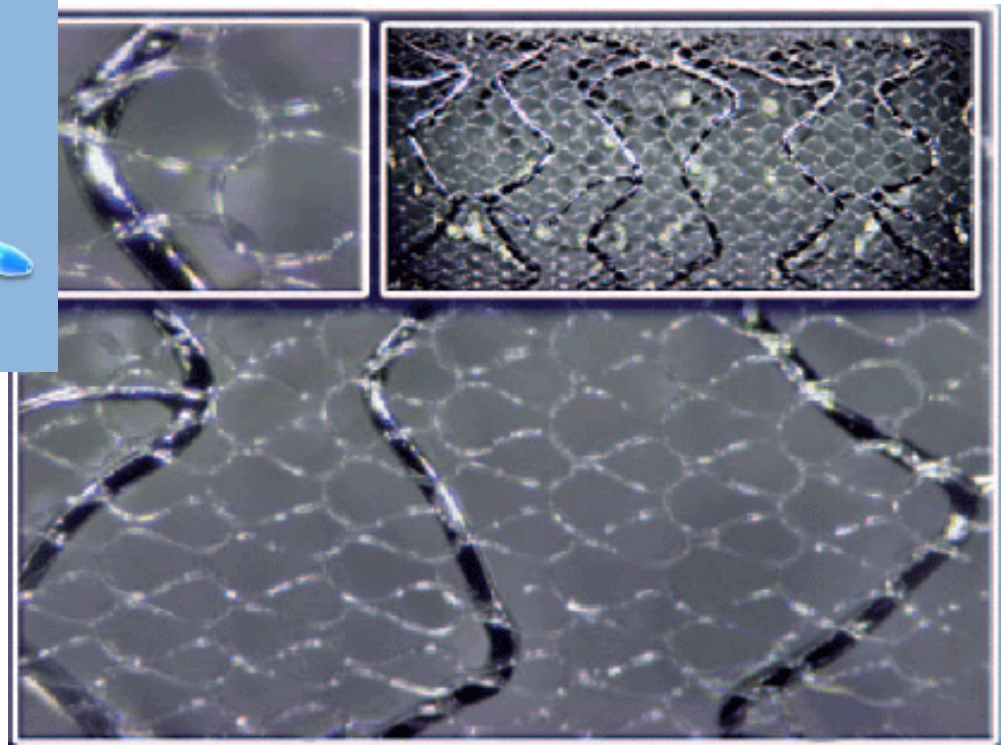


Super MIMI



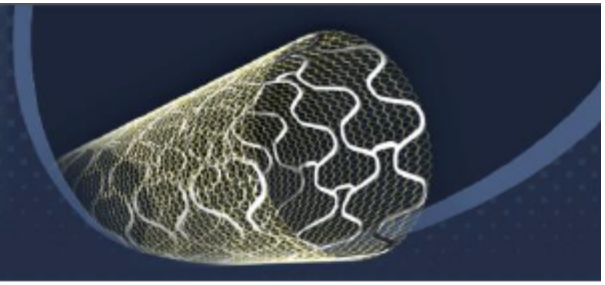
MGUARD
Net Protective Stent





InspireMD

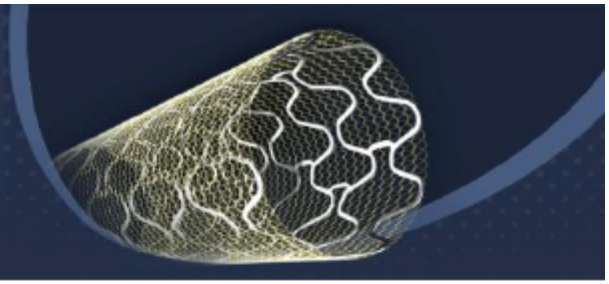
MGuard in STEMI - a Meta Analysis
Perfusion with MGuard

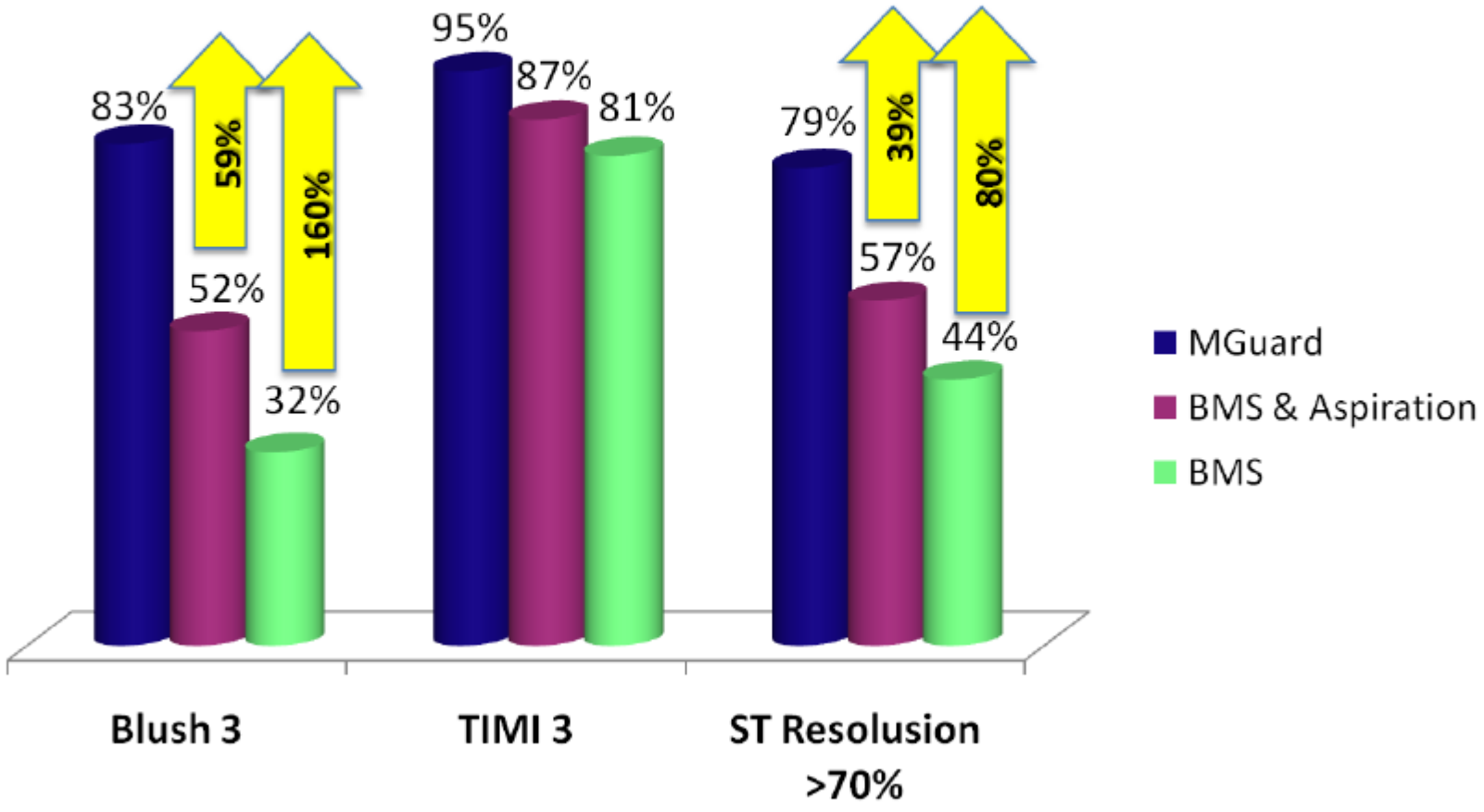


	N	TIMI 3	Blush 3	Complete ST res.
Piscione	100	N/A	90%	90%
Dudek	60	90%	73%	61%
Weerackody	51	100%	N/A	N/A
Apro	100	96%	N/A	N/A
Average	**311**	**95%** (n=211)	**83%** (n=160)	**79%** (n=160)

InspireMD

MGuard vs. standard care
Perfusion results



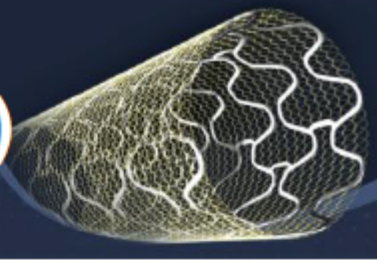


* Giuseppe De Luca; European Heart Journal (2008) 29, 3002–3010, *TAPAS study, N Engl J Med 2008;358:557-67, MGurad meta-analysis.*

** No direct comparison performed between MGuard and the other therapy strategies

InspireMD

MGuard in the ESC Guidelines (2010)



In the 2010 European Guidelines on Myocardial revascularization, mesh-based protection, is now recommended for use:

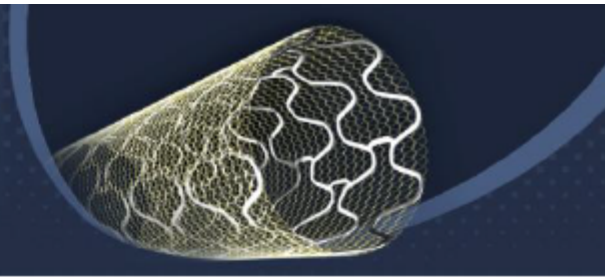
"Mesh-based protection may be considered for PCI of highly thrombotic or SVG lesions" (class IIb/c recommendation)

IVUS-guided stent implantation may be considered for unprotected left main PCI.	IIb	C
Mesh based protection may be considered for PCI of highly thrombotic or SVG lesions	**IIb**	**C**
For PCI of unstable lesions, intracoronary nitroprusside or other vasodilators may be considered for pharmacological		

*European Heart Journal (31):2051-2555 -doi:10.1093/eurheartj/ehq277

InspireMD

The Master Trial Design
Randomized Controlled Trial



432 patients with STEMI

pain <12 hrs, *de novo* lesions

↓

Pre-dilatation and/or Aspiration

TIMI 2 or 3

↓

R

1:1

↓

MGuard stent

BMS or DES

Primary Endpoint: complete ST resolution (at 60-90 min)

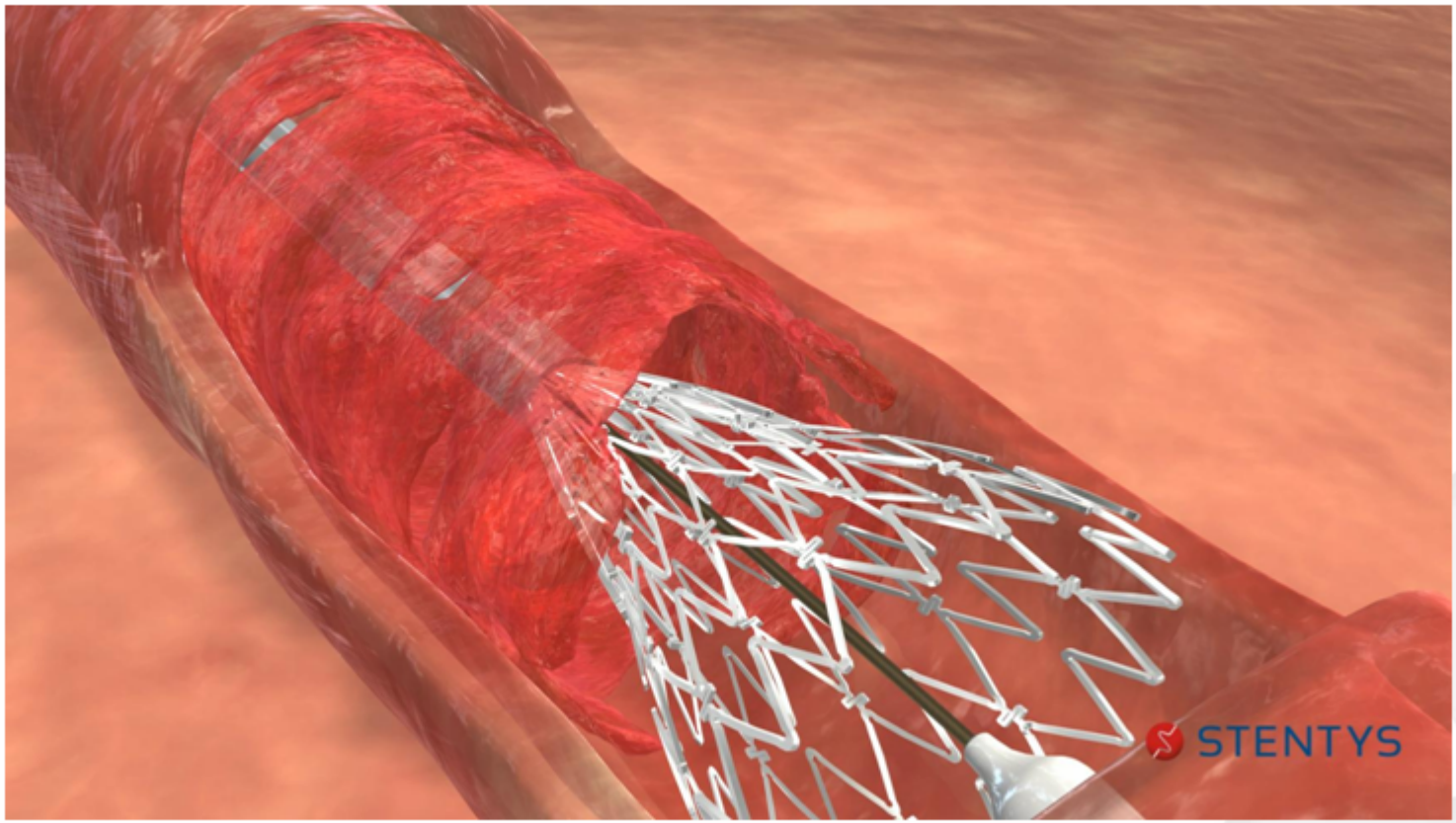
Main 2nd endpoints: TIMI flow, MBG, MACE (30d, 6m, 12m)

Sub studies: angiographic follow-up , cardiac MRI

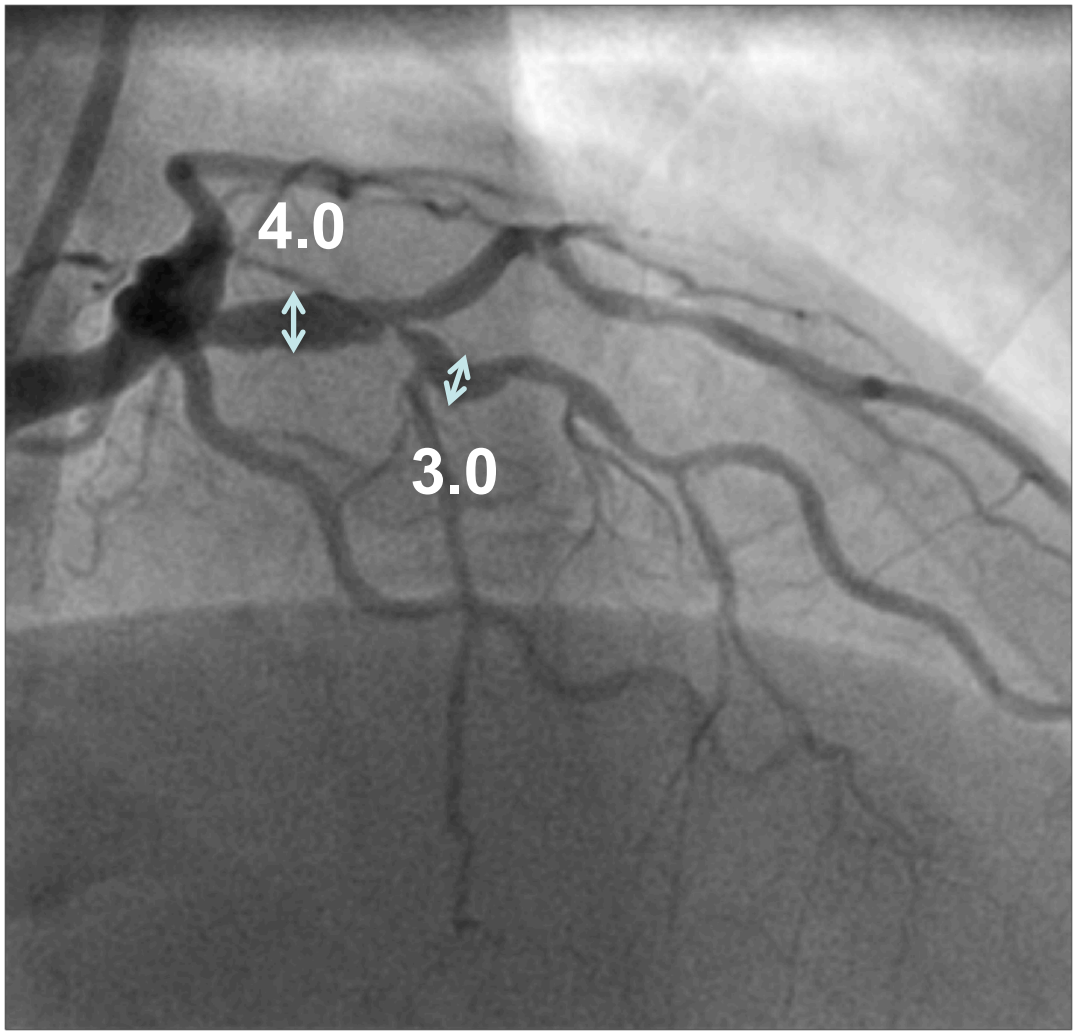
Study chairman: Gregg Stone PIs: Alexandre Abizaid, Dariusz Dudek, Sigmund Silber

InspireMD

The Self-Apposing Stent for varying anatomy



The Sizing Dilemma in bifurcations



Picture from STENTYS OPEN I bifurcation trial

Conclusion

- **Thromboaspiration prudente**
- **Filtres**
- **M'Guard**
- **MIMI**
- **Super MIMI**
- **Drogues : Antiagregants Pq oraux, GPI, Cyclosprorine**