GRCI 2018 France

Quels patients pour MIMI…

Loïc Belle

CH ANNECY GENEVOIS

Collège National des Cardiologues des Hôpitaux

RE.NAL

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Deferred versus conventional stent implantation in patients with ST-segment elevation myocardial infarction (DANAMI 3-DEFER): an open-label, randomised controlled trial

Henning Kelbæk, Dan Eik Høfsten, Lars Køber, Steffen Helqvist, Lene Kløvgaard, Lene Holmvang, Erik Jørgensen, Frants Pedersen, Kari Saunamäki, Ole De Backer, Lia E Bang, Klaus F Kofoed, Jacob Lønborg, Kiril Ahtarovski, Niels Vejlstrup, Hans E Bøtker, Christian J Terkelsen, Evald H Christiansen, Jan Ravkilde, Hans-Henrik Tilsted, Anton B Villadsen, Jens Aarøe, Svend E Jensen, Bent Raungaard, Lisette O Jensen, Peter Clemmensen, Peer Grande, Jan K Madsen, Christian Torp-Pedersen, Thomas Engstrøm

www.thelancet.com Published online April 3, 2016

Danami 3 - Defer

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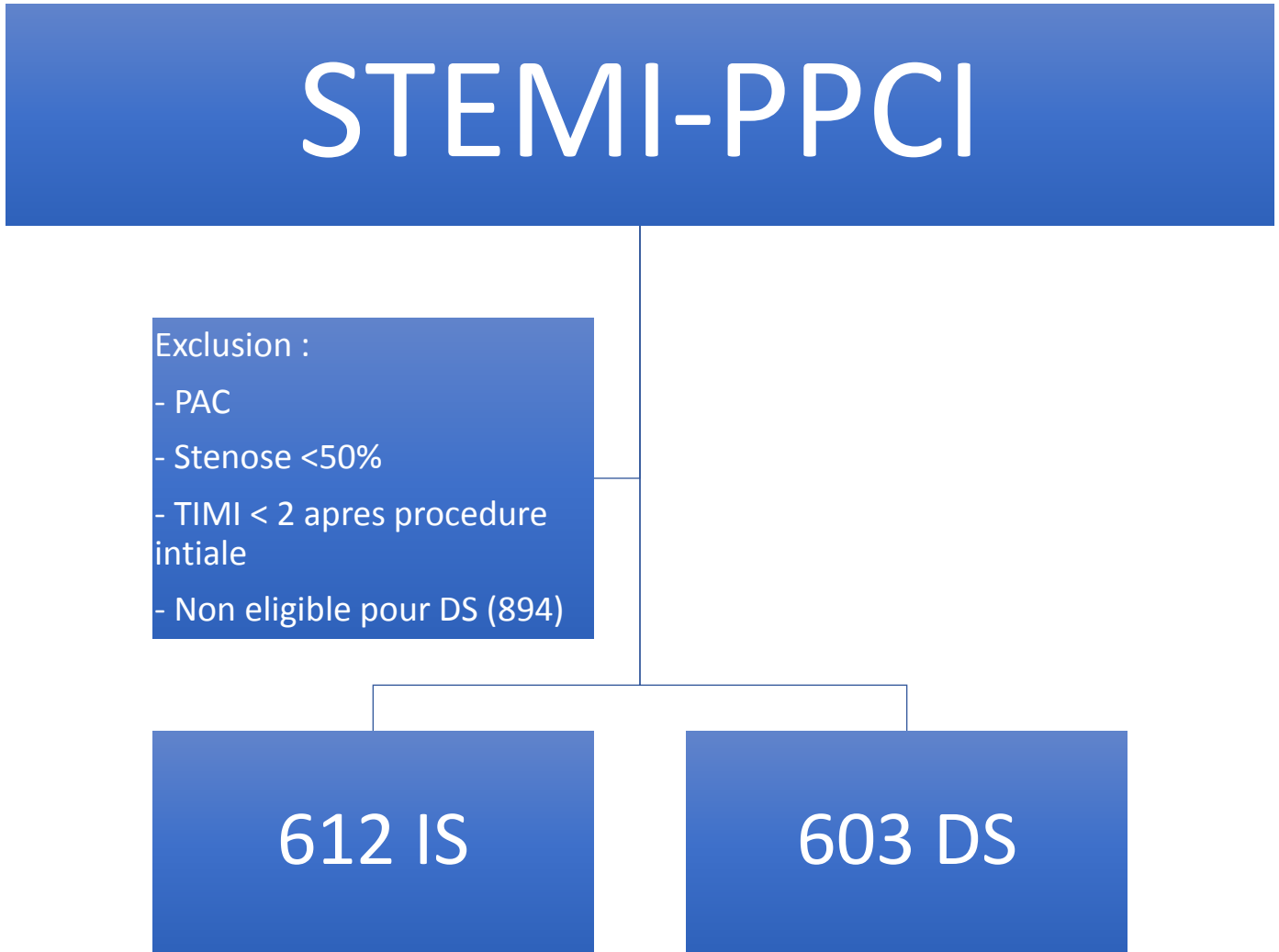

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Published online April 3, 2016

Conventional PCI group (n=612)	Deferred stent implantation group (n=603)

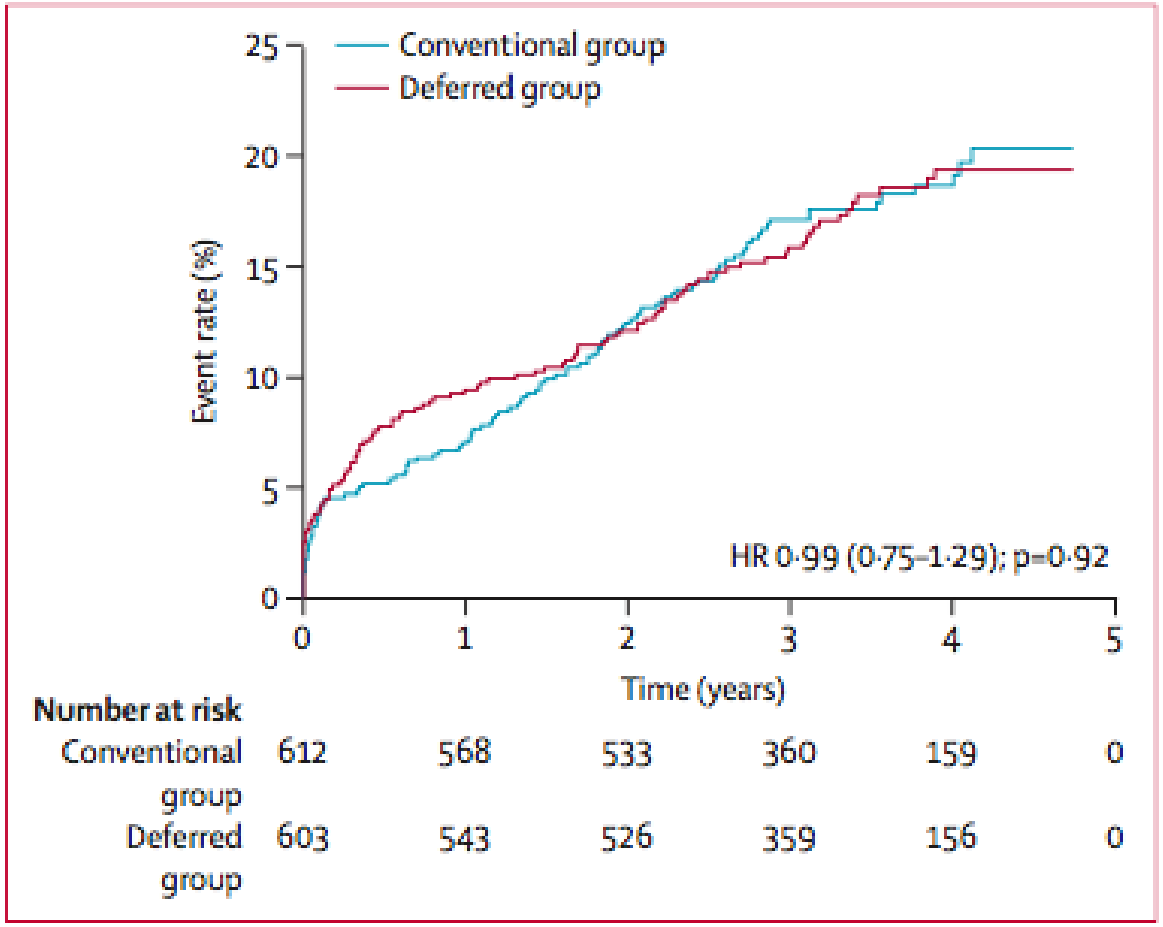

Figure 2: Event rate of the composite primary endpoints

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2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation

Routine use of deferred stenting is not recommended.[153–155]	III	B

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Comparison of Immediate With Delayed Stenting Using the Minimalist Immediate Mechanical Intervention Approach in Acute ST-Segment–Elevation Myocardial Infarction

The MIMI Study

Loic Belle, MD; Pascal Motreff, MD, PhD; Lionel Mangin, MD; Grégoire Rangé, MD; Xavier Marcaggi, MD; Antoine Marie, MD; Nadine Ferrier, MD; Olivier Dubreuil, MD; Gilles Zemour, MD; Géraud Souteyrand, MD; Christophe Caussin, MD; Nicolas Amabile, MD, PhD; Karl Isaaz, MD, PhD; Raphael Dauphin, MD; René Koning, MD; Christophe Robin, MD; Benjamin Faurie, MD; Laurent Bonello, MD; Stanislas Champin, MD; Cédric Delhaye, MD; François Cuilleret, MD; Nathan Mewton, MD, PhD; Céline Genty, MSc; Magalie Viallon, PhD; Jean Luc Bosson, MD, PhD; Pierre Croisille, MD, PhD; on behalf of the MIMI Investigators*

(*Circ Cardiovasc Interv*. 2016;9:e003388. DOI: 10.1161/CIRCINTERVENTIONS.115.003388.)

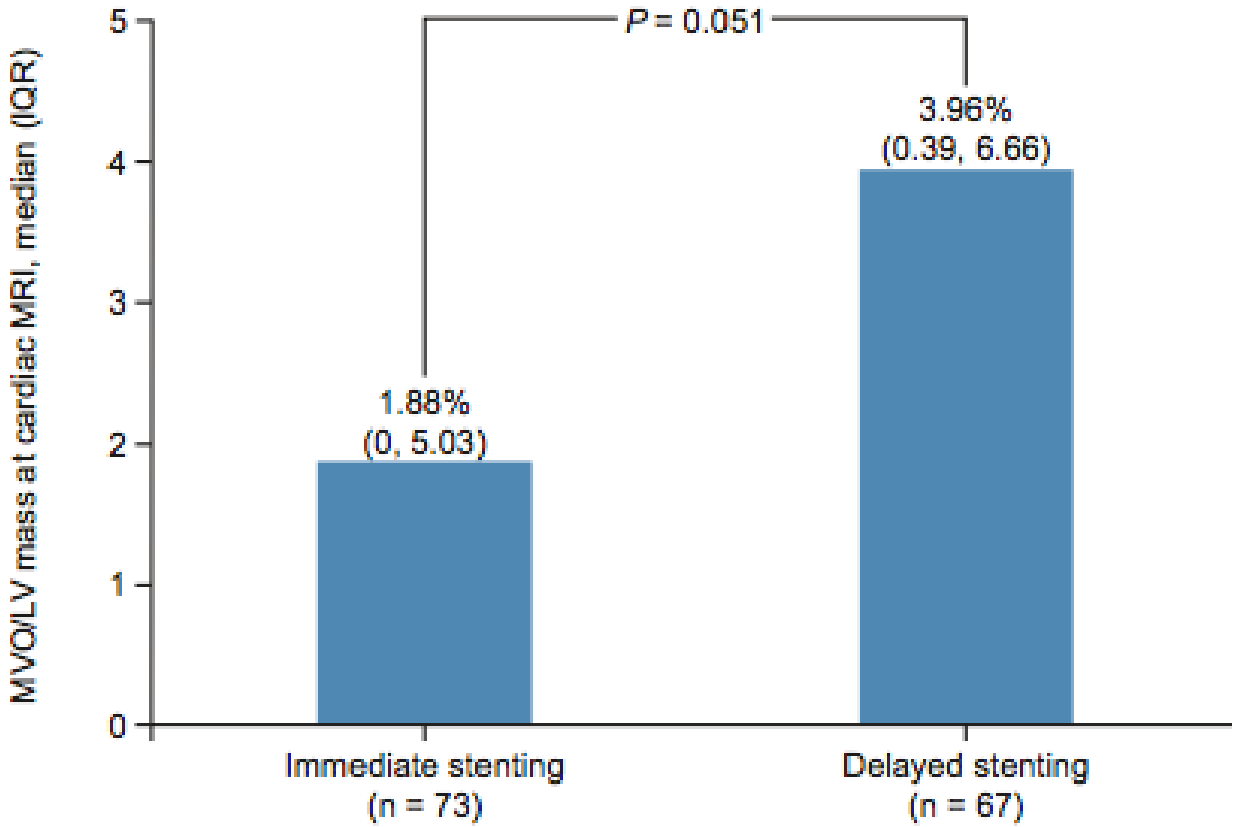

Figure 3. Median microvascular obstruction (MVO) out of the percentage left ventricular (LV) mass. *P=0.051 by Mann–Whitney test. IQR indicates interquartile range; and MRI, magnetic resonance imaging.

(*Circ Cardiovasc Interv*. 2016;9:e003388. DOI: 10.1161/CIRCINTERVENTIONS.115.003388.)

MIMI Study

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Thrombus x 4 diametre de l‘artere → Exclusion

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INNOVATION Study (Impact of Immediate Stent Implantation Versus Deferred Stent Implantation on Infarct Size and Microvascular Perfusion in Patients With ST-Segment–Elevation Myocardial Infarction)

Je Sang Kim, MD*; Hyun Jong Lee, MD*; Cheol Woong Yu, MD, PhD;
Yang Min Kim, MD, PhD; Soon Jun Hong, MD, PhD; Jae Hyung Park, MD, PhD;
Rak Kyeong Choi, MD, PhD; Young Jin Choi, MD, PhD; Jin Sik Park, MD, PhD;
Tae Hoon Kim, MD, PhD; Ho-Jun Jang, MD; Hyung Joon Joo, MD, PhD; Sang-A Cho, MS;
Young Moo Ro, MD, PhD; Do-Sun Lim, MD, PhD

(*Circ Cardiovasc Interv*. 2016;9:e004101. DOI: 10.1161/CIRCINTERVENTIONS.116.004101.)

Table 3. Contrast-Enhanced Cardiac MRI Findings After Primary PCI

Variables	Overall Patients		
	IS Group (n=57)	DS Group (n=57)	*P* Value*
Reperfusion to C-MRI time, days	31 (29–33)	28 (26–30)	0.834
Infarct size, %	19.4±12.0	15.0±9.8	0.112
Left ventricular mass, g	90±17	93±23	0.316
Infarct mass, g	17.0±11.2	15.0±12.3	0.665
Presence of MVO, %	57.4	42.6	0.196
MVO size, %	0.6±0.7	0.4±0.6	0.156
MVO mass, g	0.5±0.6	0.3±0.6	0.175
MVO to infarct ratio	2.6±3.0	1.4±1.9	0.027
LVEF, %	50±10	52±10	0.268

(*Circ Cardiovasc Interv*. 2016;9:e004101. DOI: 10.1161/CIRCINTERVENTIONS.116.004101.)

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(*Circ Cardiovasc Interv*. 2016;9:e004101. DOI: 10.1161/CIRCINTERVENTIONS.116.004101.)

INNOVATION Study

Table 3. Contrast-Enhanced Cardiac MRI Findings After Primary PCI

Variables	Overall Patients			Anterior Wall MI		
	IS Group (n=57)	DS Group (n=57)	*P* Value*	IS Group (n=37)	DS Group (n=32)	*P* Value†
Reperfusion to C-MRI time, days	31 (29–33)	28 (26–30)	0.834	31 (29–33)	29 (26–33)	0.765
Infarct size, %	19.4±12.0	15.0±9.8	0.112	22.7±12.7	16.1±10.4	0.017
Left ventricular mass, g	90±17	93±23	0.316	[illegible]	[illegible]	[illegible]
Infarct mass, g	17.0±11.2	15.0±12.3	0.665	20.2±11.8	16.4±14.2	0.231
Presence of MVO, %	57.4	42.6	0.196	70.3	43.8	0.047
MVO size, %	0.6±0.7	0.4±0.6	0.156	0.7±0.7	0.4±0.6	0.06
MVO mass, g	0.5±0.6	0.3±0.6	0.175	0.6±0.6	0.4±0.5	0.043
MVO to infarct ratio	2.6±3.0	1.4±1.9	0.027	2.8±2.6	1.4±1.9	0.031
LVEF, %	50±10	52±10	0.268	48±10	52±11	0.037

Data are presented as n (%), mean±SD, or median (interquartile range). C-MRI indicates cardiac magnetic resonance image; DS, deferred stenting; IS, immediate stenting; LVEF, left ventricular ejection fraction; MI, myocardial infarction; MVO, microvascular obstruction; and PCI, percutaneous coronary intervention.

(*Circ Cardiovasc Interv*. 2016;9:e004101. DOI: 10.1161/CIRCINTERVENTIONS.116.004101.)

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A Randomized Trial of Deferred Stenting Versus Immediate Stenting to Prevent No- or Slow-Reflow in Acute ST-Segment Elevation Myocardial Infarction (DEFER-STEMI)

David Carrick, BMedSci, MBChB,*† Keith G. Oldroyd, MBChB, MD,*
Margaret McEntegart, MBChB, PhD,† Caroline Haig, PhD,‡ Mark C. Petrie, MBChB, MD,*
Hany Eteiba, MBChB, MD,* Stuart Hood, MBChB, MD,* Colum Owens, MBChB, MD,*
Stuart Watkins, MBChB, PhD,* Jamie Layland, MBChB,*† Mitchell Lindsay, MBChB, MD,*
Eileen Peat, MBChB, MD,* Alan Rae, MBChB, MD,† Miles Behan, MBChB, MD,§
Arvind Sood, MBChB, MD,‖ W. Stewart Hillis, MBChB, MD,* Ify Mordi, MBChB,*†
Ahmed Mahrous, MSc,† Nadeem Ahmed, MBChB,* Rebekah Wilson, BMedSci,*
Laura Lasalle, MPH,¶ Philippe Généreux, MD,¶ Ian Ford, PhD,‡ Colin Berry, MBChB, PhD*†

Glasgow, Dunbartonshire, Edinburgh, and Lanarkshire, United Kingdom; and New York, New York

(J Am Coll Cardiol 2014;63:2088–98)

Inclusion si un critère present

1) clinical history of myocardial infarction, age >65 years of age, duration of symptoms >6 h

2) TIMI flow grade 0/1, heavy thrombus burden, lesion length > 24 mm, vessel diameter < 2.5 mm

3) persistent ST-segment elevation >50%.

Table 2 Primary and Secondary Angiographic and Electrocardiographic Outcomes

Outcome	Randomly Assigned Groups: Immediate Stenting (n = 49)	Randomly Assigned Groups: Deferred Stenting (n = 51)*	Odds Ratio (95% CI)	p Value†	Registry (N = 310)
Primary outcome					
No- or slow-reflow (TIMI 0 to 2)‡					
Yes	14 (28.6)	3 (5.9)	0.16 (0.03–0.63)	0.005	45 (14.5)

(J Am Coll Cardiol 2014;63:2088–98)

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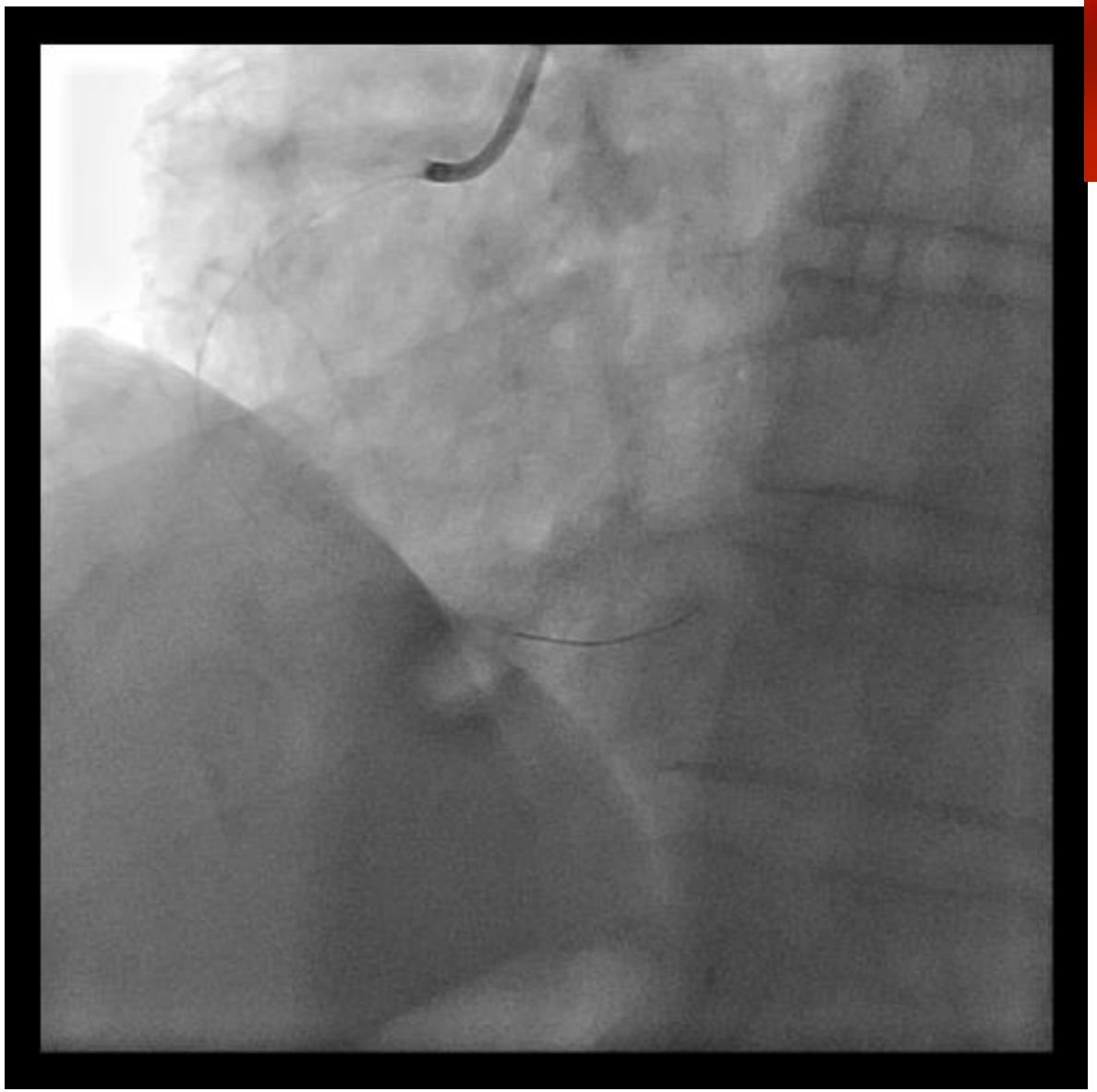
2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation

Routine use of deferred stenting is not recommended.[153–155]	III	B



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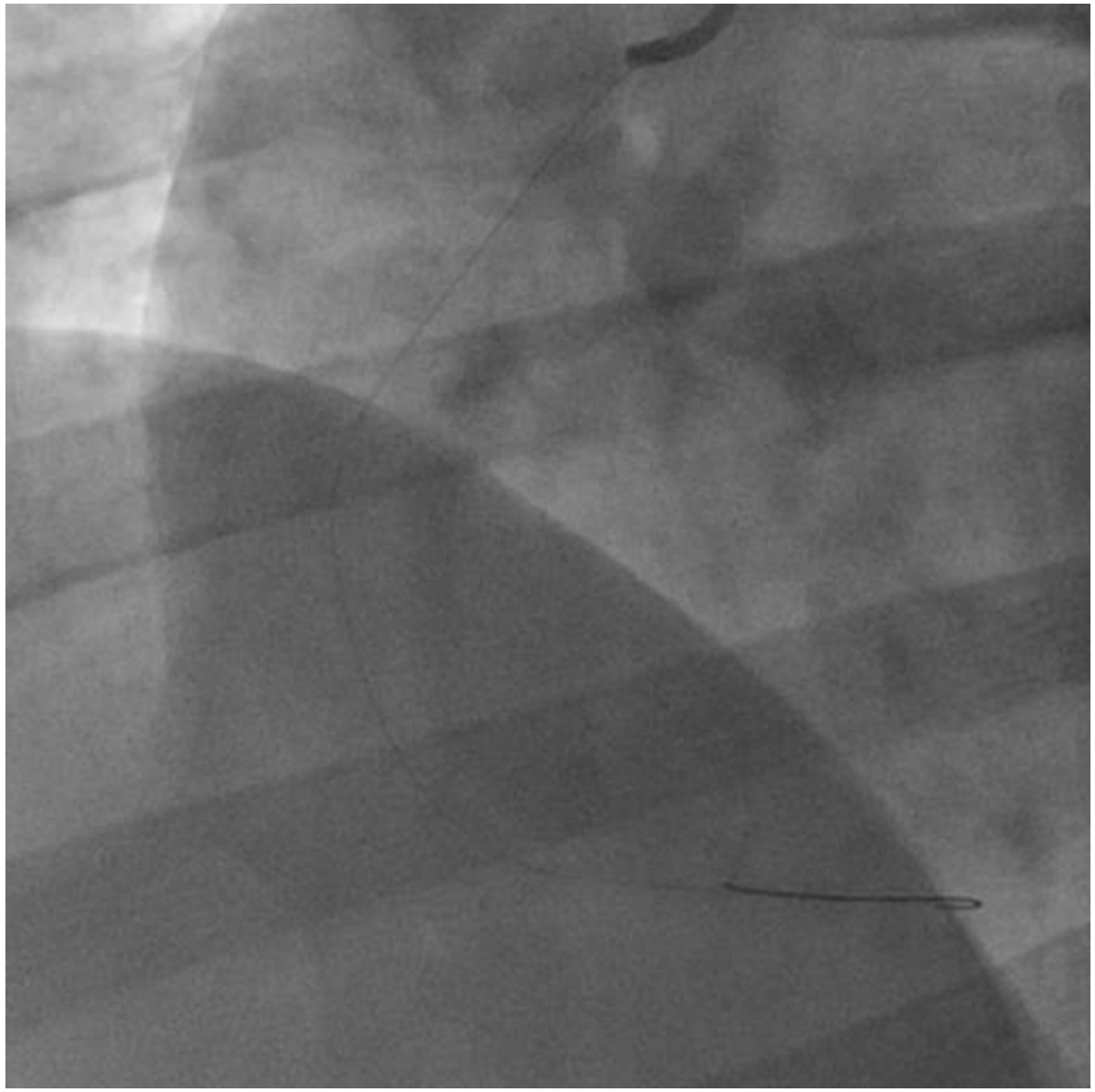

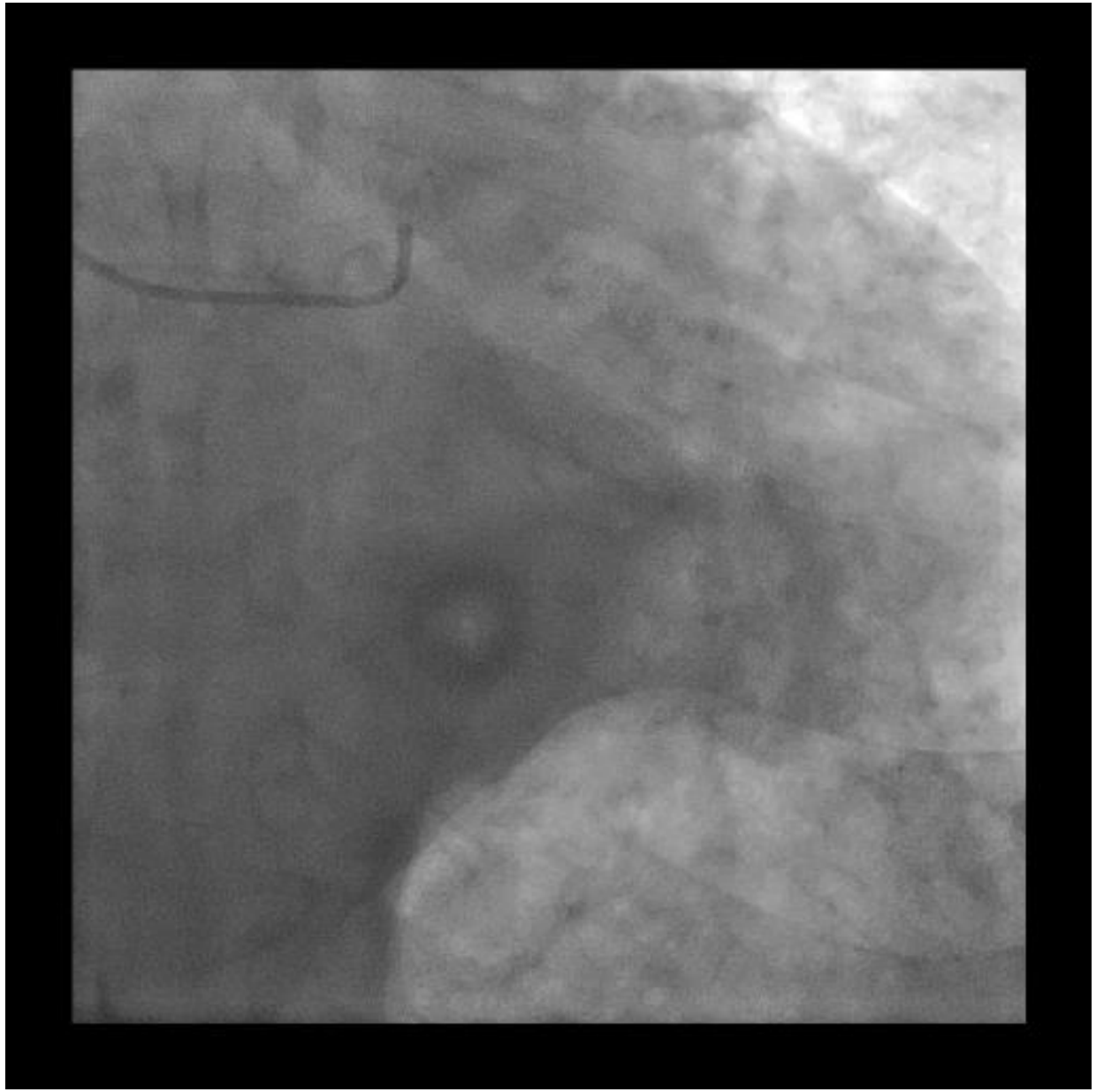

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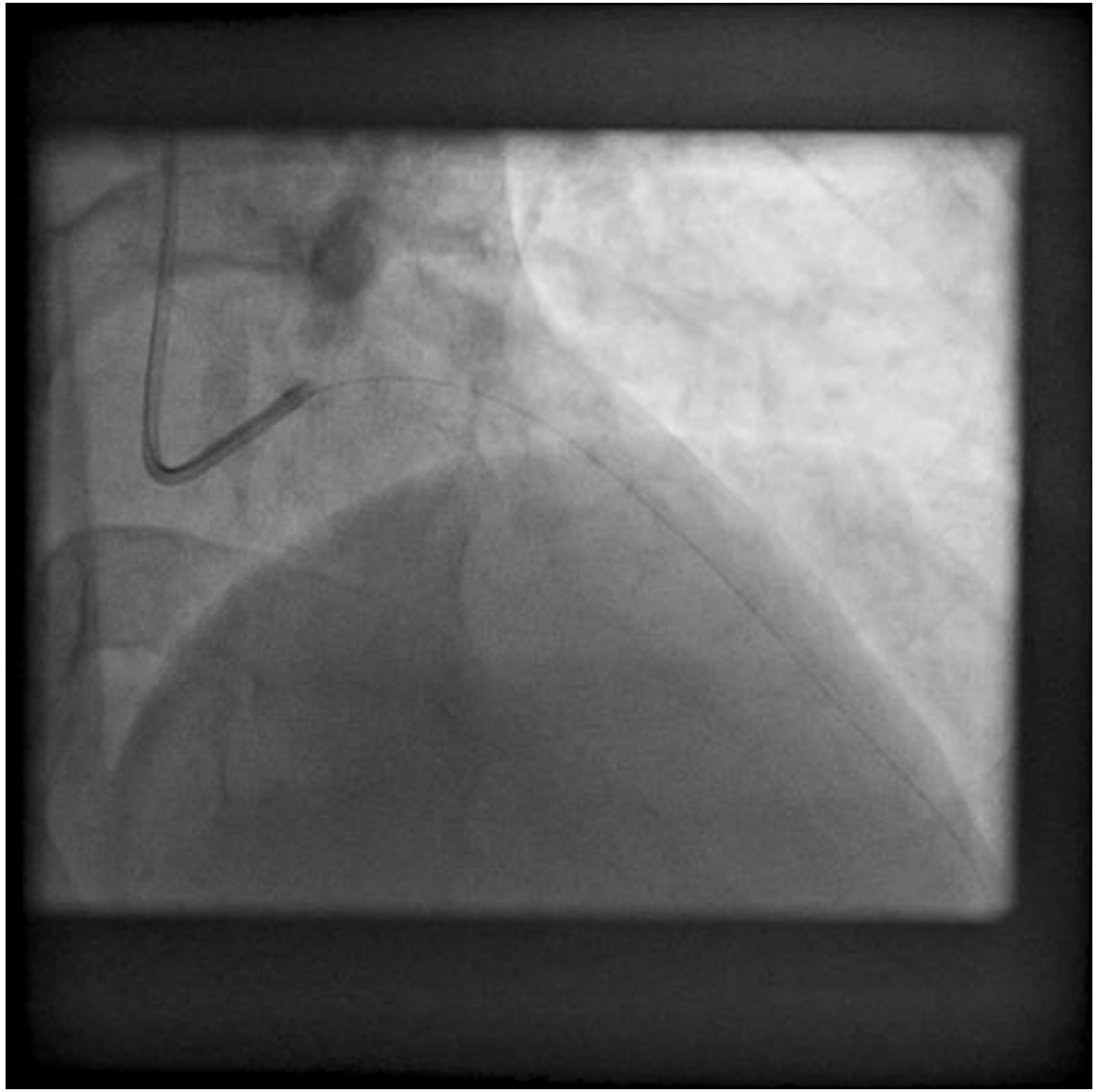

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DANAMI 3-DEFER

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	Conventional PCI group (n=612)	Deferred stent implantation group (n=603)
PCI		
Radial access	27 (4%)	36 (6%)
Arteries treated per patient	1 (1–1)	1 (1–1)*
Implanted stents	1 (1–2)	1 (1–2)*
Stent diameter (mm)	3·5 (3·0–4·0)	3·5 (3·0–3·5)
Total stent length (mm)	22 (15–33)	18 (12–28)*
No stenting	21 (3%)	93 (15%)*

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At least seven days delayed stenting using minimalist immediate mechanical intervention (MIMI) in ST-segment elevation myocardial infarction: the SUPER-MIMI study

Petru Mester[1], MD; Helene Bouvaist[2], MD; Nicolas Delarche[3], MD; Frédéric Bouisset[4], MD; Mohamed Abdellaoui[5], MD; Pierre-Yves Petiteau[6], MD; Olivier Dubreuil[7], MD; Ziad Boueri[8], MD; Mohamed Chettibi[9], MD; Géraud Souteyrand[10], MD; Hend Madiot[1]; Loic Belle[1]*, MD; on behalf of the SUPER-MIMI Investigators

1. Annecy-Genevois Hospital, Annecy, France; 2. Grenoble University Hospital, Grenoble, France; 3. Pau Hospital, Pau, France; 4. Toulouse University Hospital, Toulouse, France; 5. Mutualiste Hospital Group, Grenoble, France; 6. St Vincent Private Hospital, Besançon, France; 7. St Luc St Joseph Hospital, Lyon, France; 8. Bastia Hospital, Bastia, France; 9. Blida University Hospital, Blida, Algeria; 10. Clermont-Ferrand University Hospital, Clermont-Ferrand, France

EuroIntervention 2017;13:1-7

Thrombus volumineux

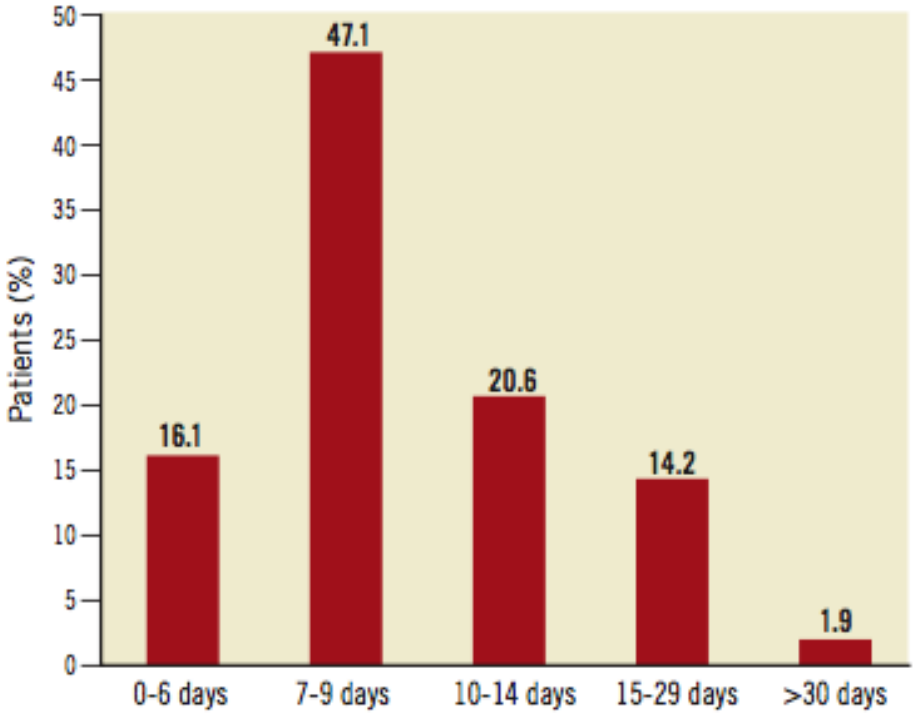

Figure 2. *Delay between the two procedures.*

EuroIntervention 2017;13:1-7

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Thrombus volumineux

	Overall population (n=155)	GPI (n=81)	No GPI (n=74)
Reocclusion from the first to the second procedure	**2**	**0**	**2**

EuroIntervention 2017;13:1-7

Table 3. Treatment between procedures and characteristics of the second coronary procedure.

		Overall population (n=155)	GPI (n=81)	No GPI (n=74)
Medications between the two procedures	Aspirin	153 (98.7)	81 (100)	72 (97.3)
	Prasugrel	74 (47.7)	25 (30.9)	49 (66.2)
	Ticagrelor	66 (42.6)	45 (55.6)	21 (28.4)
	Clopidogrel*	21 (13.6)	13 (16.3)	8 (10.8)
	Unfractionated heparin§	30 (19.6)	22 (27.8)	8 (10.8)
	Enoxaparin	100 (64.5)	59 (72.8)	41 (55.4)
	Bivalirudin	12 (7.7)	9 (11.1)	3 (4.1)
Radial access		135 (87.1)	69 (85.2)	66 (89.2)
Same access site in both procedures		119 (76.8)	55 (67.9)	64 (86.5)
Stent	Implanted	97 (62.6)	42 (51.9)	55 (74.3)
	Drug-eluting stent‡	67 (69.1)	24 (57.1)	43 (78.2)
	Diameter, mm	3.5 (3-4)	3.5 (3-4)	3.5 (3-3.5)
	Length, mm	20 (15-30)	19 (15-28)	22 (15.5-30)
Medical treatment		56 (36.1)	37 (45.7)	19 (25.7)
Decision for coronary artery bypass graft		1 (0.6)	1 (1.2)	0
Deferred PCI		1 (0.6)	1 (1.2)	0

Values are n (%) or median (interquartile range). *80 GPI and 74 no-GPI patients. §79 GPI and 74 no-GPI patients. ‡Of those with stents.

EuroIntervention 2017;13:1-7

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Invasive management without stents in selected acute coronary syndrome patients with a large thrombus burden: a prospective study of optical coherence tomography guided treatment decisions

Geraud Souteyrand[1,2]*, MD; Nicolas Amabile[3], MD, PhD; Nicolas Combaret[1,2], MD; Sami Hammas[3], MD; Francesco Prati[4], MD, PhD; Colin Berry[5], MD, PhD; Bruno Pereira[6], MD; Jean-Rene Lusson[1,2], MD; Christophe Caussin[3], MD; Pascal Motreff[1,2], MD, PhD

EuroIntervention 2015;11:895-904

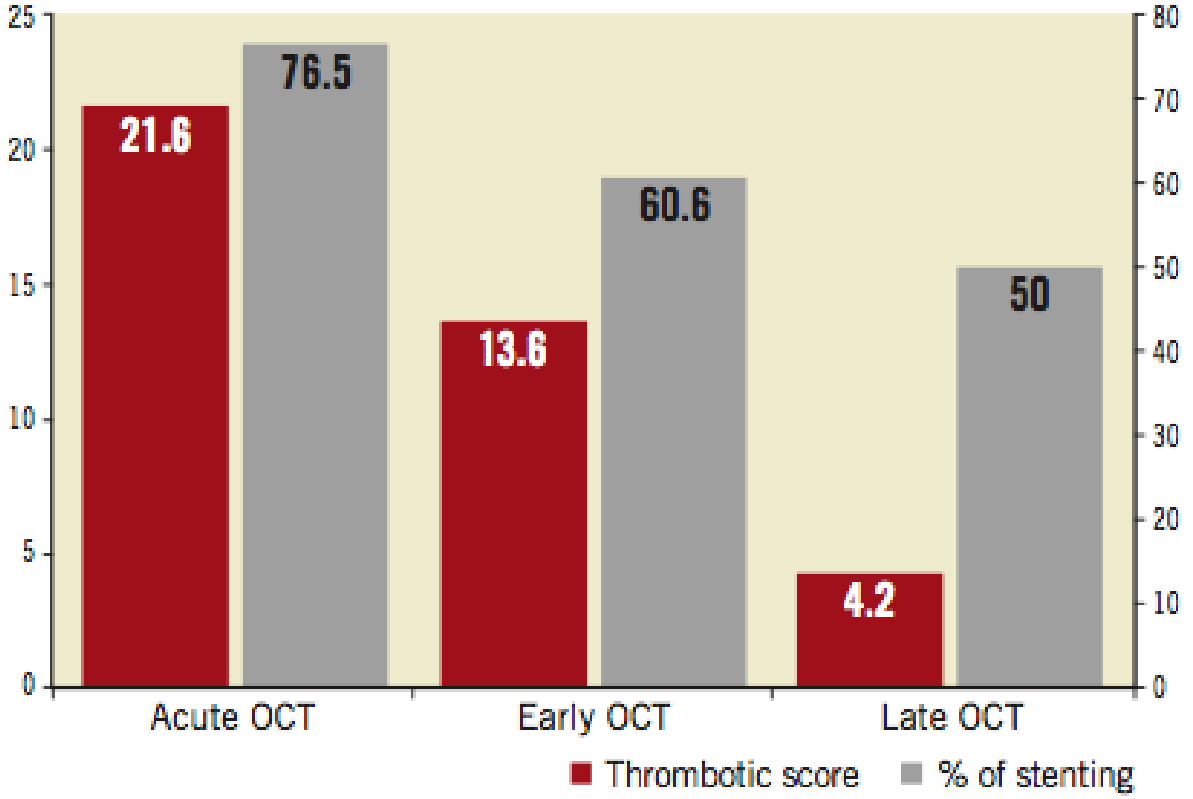

Figure 4. *Thrombotic score (red boxes) and stenting rate (grey boxes) in each group: acute (D0 to D2), early (D3 to D6) and late OCT (D7 to D30).*

EuroIntervention 2015;11:895-904

Delayed stenting for ST-elevation acute myocardial infarction in daily practice: A single center experience

Julien Pascal, MD, Aurélie Veugeois, MD, Michel Slama, MD, Saliah Rahal, MD, Loic Belle, MD, Christophe Caussin, MD, Nicolas Amabile, MD, PhD

	Standard Strategy (N=223)	MIMI Strategy (N=56)	p
CABG, n(%)	8 (3)	1 (2)	0.49
Culprit lesion stenting, n(%)	190 (85)	39 (70)	0.006
BMS, n(%)	129 (58)	10 (18)	<0.001
DES, n(%)	61 (27)	29 (52)	<0.001
No additional PCI on culprit lesion, n(%)	25 (12)	16 (28)	0.001

Stent differé →Pas de stent

	Stent differé	Pas de stent, n (%)
MIMI	67	4
DANAMI	603	93 (15%)
OTOCLAV	34 (late)	17 (50%)
Amabile	56	16 (28%)
SUPER MIMI	155	56 (36%)

MIMI :

- **Pour les thrombus volumineux (surtout quand je pense qu'il n'y a pas de sténose sous jacente)**
- **GPI**
- **Délais >4-10 j**

Pas de stent…