SCA
LE PRE TRAITEMENT POUR TOUS?

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ASSISTANCE PUBLIQUE-HOPITAUX DE PARIS
CHU AMBROISE PARE

- Absence de conflits d’intérêt

Rationnel du « pré-traitement »

-Occlusion partielle ou totale de la coronaire par un thrombus

-« Environnement thrombotique » majoré lors de l'angioplastie coronaire

-Risque d'embolies distales

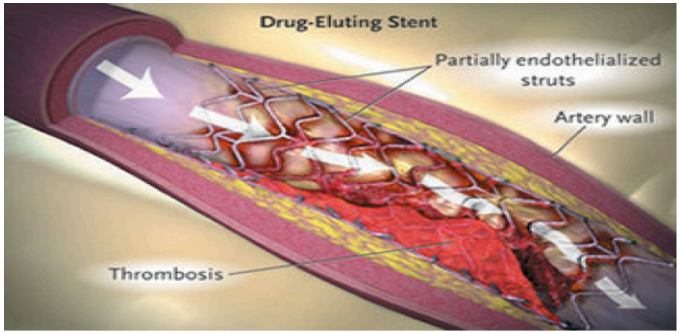
-Donc inhibition des plaquettes nécessaire au moment du geste

→ Lutter contre l'occlusion coronaire per-angioplastie

→ Lutter contre la thrombose précoce de stent

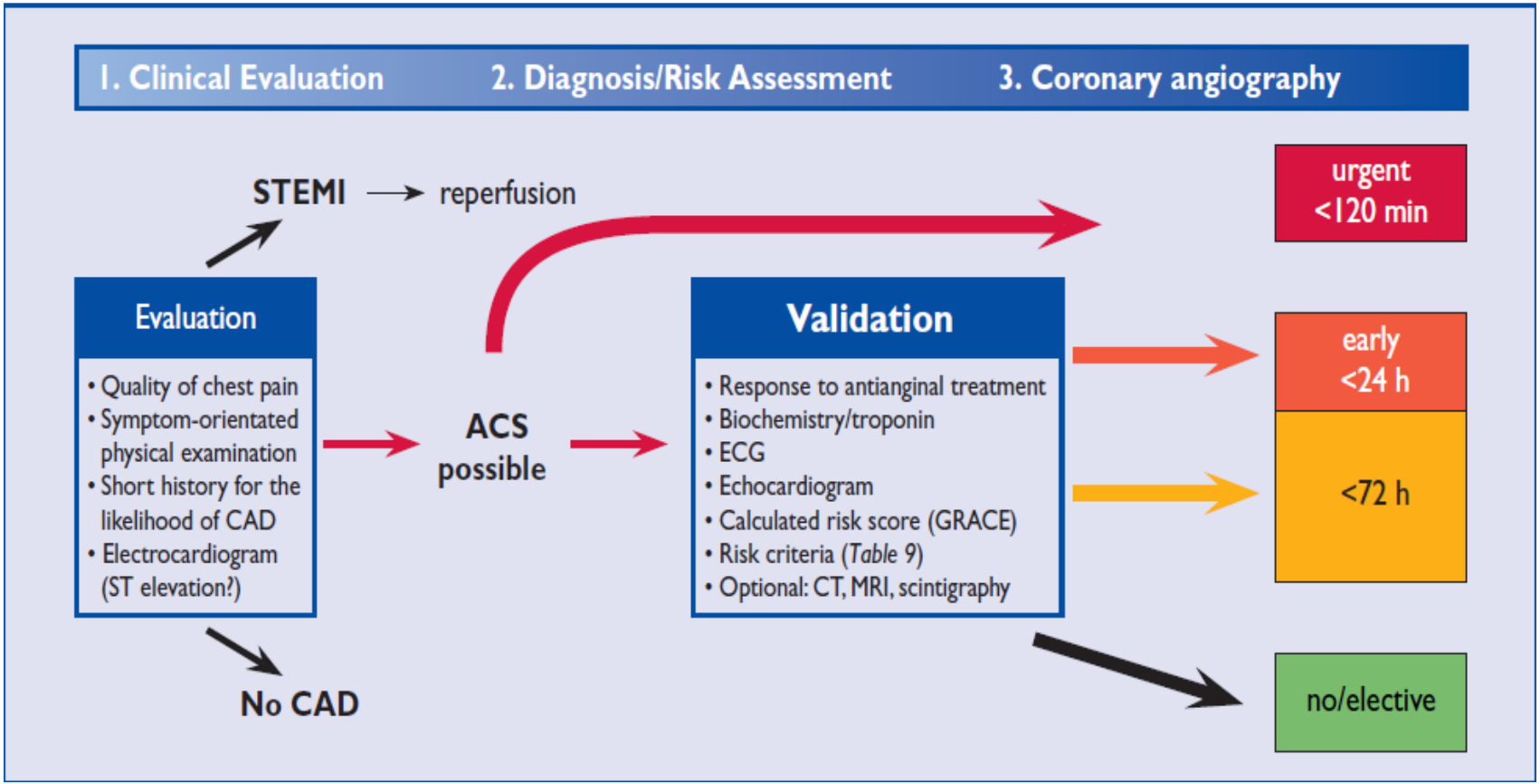
Inconvénients

- Risque de traiter des « erreurs diagnostiques »
- Augmentation risque hémorragique péri-procédure
- Risque hémorragique augmenté si PAC indiqué



« PREPARER A L'ANGIOPLASTIE »

Que disent les recommandations?



European Heart Journal (2011) 32, 2999–3054

Recommendations	Class [a]	Level [b]
In patients with a suspected NSTE-ACS, diagnosis and short-term ischaemic/bleeding risk stratification should be based on a combination of clinical history, symptoms, physical findings, ECG (repeated or continuous ST monitoring), and biomarkers.	I	A
ACS patients should be admitted preferably to dedicated chest pain units or coronary care units.	I	C
It is recommended to use established risk scores for prognosis and bleeding (e.g. GRACE, CRUSADE).	I	B
A 12-lead ECG should be obtained within 10 min after first medical contact and immediately read by an experienced physician. This should be repeated in the case of recurrence of symptoms, and after 6–9 and 24 h, and before hospital discharge.	I	B
Additional ECG leads (V_{3R}, V_{4R}, V_7–V_9) are recommended when routine leads are inconclusive.	I	C
Blood has to be drawn promptly for troponin (cardiac troponin T or I) measurement. The result should be available within 60 min. The test should be repeated 6–9 h after initial assessment if the first measurement is not conclusive. Repeat testing after 12–24 h is advised if the clinical condition is still suggestive of ACS.	I	A
A rapid rule-out protocol (0 and 3 h) is recommended when highly sensitive troponin tests are available (see *Figure 5*).	I	B
An echocardiogram is recommended for all patients to evaluate regional and global LV function and to rule in or rule out differential diagnoses.	I	C
Coronary angiography is indicated in patients in whom the extent of CAD or the culprit lesion has to be determined (see Section 5.4).	I	C
Coronary CT angiography should be considered as an alternative to invasive angiography to exclude ACS when there is a low to intermediate likelihood of CAD and when troponin and ECG are inconclusive.	IIa	B
In patients without recurrence of pain, normal ECG findings, negative troponins tests, and a low risk score, a non-invasive stress test for inducible ischaemia is recommended before deciding on an invasive strategy.	I	A

European Heart Journal (2011) 32, 2999–3054

Table 5 Mortality in hospital and at 6 months[50] in low, intermediate, and high risk categories in registry populations, according to the GRACE risk score

Risk category (tertile)	GRACE risk score	In-hospital death (%)
Low	≤108	<1
Intermediate	109–140	1–3
High	>140	>3
Risk category (tertile)	**GRACE risk score**	**Post-discharge to 6-month death (%)**
Low	≤88	<3
Intermediate	89–118	3-8
High	>118	>8

European Heart Journal (2011) 32, 2999–3054

CRUSADE Bleeding Score Calculator

Enter values in drop-down boxes below:

Baseline Hematocrit [?] HCT (%)

Prior Vascular Disease [?] -Select-

GFR: Cockcroft-Gault [?] mL/min

Calculate GFR

Diabetes Mellitus -Select-

Heart rate on admission bpm

Signs of CHF on admission [?] -Select-

Systolic blood pressure on admission mmHg

Sex -Select-

Clear Selections

Table 9 Criteria for high risk with indication for invasive management

Primary
• Relevant rise or fall in troponin[a] • Dynamic ST- or T-wave changes (symptomatic or silent)
Secondary
• Diabetes mellitus • Renal insufficiency (eGFR <60 mL/min/1.73 m²) • Reduced LV function (ejection fraction <40%) • Early post infarction angina • Recent PCI • Prior CABG • Intermediate to high GRACE risk score (*Table 5*)

[a]Rise/fall of troponin relevant according to precision of assay (see Section 3.2.3). CABG = coronary artery bypass graft; eGFR = estimated glomerular filtration rate; GRACE = Global Registry of Acute Coronary Events; LV = left ventricular; PCI = percutaneous coronary intervention.

Recommendations for invasive evaluation and revascularization

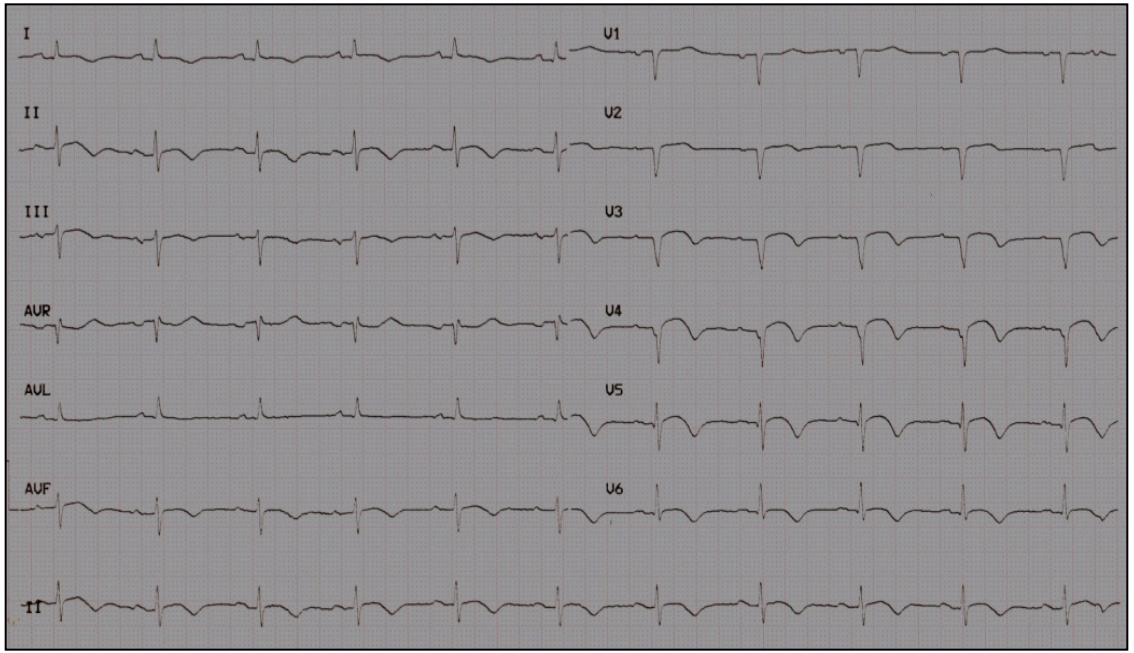
Recommendations	Class[a]	Level[b]	Ref[c]
An invasive strategy (within 72 h after first presentation) is indicated in patients with: • at least one high-risk criterion (*Table 9*); • recurrent symptoms.	I	A	148
Urgent coronary angiography (<2 h) is recommended in patients at very high ischaemic risk (refractory angina, with associated heart failure, life-threatening ventricular arrhythmias, or haemodynamic instability).	I	C	148, 209
An **early** invasive strategy (<24 h) is recommended in patients with a GRACE score >140 or with at least one primary high-risk criterion.	I	A	212, 215

European Heart Journal (2011) 32, 2999–3054

- Femme de 82 ans
- HTA, insuffisance rénale
- ACFA paroxystique
- NSTEMI antérieur
- Tn+
- GRACE >140

Traitement antithrombotique en USIC?

- Aspirine 250mg
- Héparine NF
- Inhibiteur Récepteurs P2Y12?



European Heart Journal (2014) 35, 2541–2619
doi:10.1093/eurheartj/ehu278

ESC/EACTS GUIDELINES

2014 ESC/EACTS Guidelines on myocardial revascularization

Recommendations	Class[a]	Level[b]
Antiplatelet therapy		
ASA is recommended for all patients without contraindications at an initial oral loading dose of 150–300 mg (or 80–150 mg i.v.), and at a maintenance dose of 75–100 mg daily long-term regardless of treatment strategy.	I	A
A $P2Y_{12}$ inhibitor is recommended in addition to ASA, and maintained over 12 months unless there are contraindications such as excessive risk of bleeding. Options are:	I	A
• Prasugrel (60 mg loading dose, 10 mg daily dose) in patients in whom coronary anatomy is known and who are proceeding to PCI if no contraindication	I	B
• Ticagrelor (180 mg loading dose, 90 mg twice daily) for patients at moderate-to-high risk of ischaemic events, regardless of initial treatment strategy including those pre-treated with clopidogrel if no contraindication	I	B
• Clopidogrel (600 mg loading dose, 75 mg daily dose), only when prasugrel or ticagrelor are not available or are contraindicated	I	B
GP IIb/IIIa antagonists should be considered for bail-out situation or thrombotic complications.	IIa	C
Pre-treatment with prasugrel in patients in whom coronary anatomy is not known, is not recommended.	III	B
Pre-treatment with GP IIb/IIIa antagonists in patients in whom coronary anatomy is not known, is not recommended.	III	A

Recommendations for antithrombotic treatment in patients with **NSTE-ACS** undergoing PCI

Table 8 $P2Y_{12}$ inhibitors

	Clopidogrel	Prasugrel	Ticagrelor
Class	Thienopyridine	Thienopyridine	Triazolopyrimidine
Reversibility	Irreversible	Irreversible	Reversible
Activation	Prodrug, limited by metabolization	Prodrug, not limited by metabolization	Active drug
Onset of effect[a]	2–4 h	30 min	30 min
Duration of effect	3–10 days	5–10 days	3–4 days
Withdrawal before major surgery	5 days	7 days	5 days

[a]50% inhibition of platelet aggregation.

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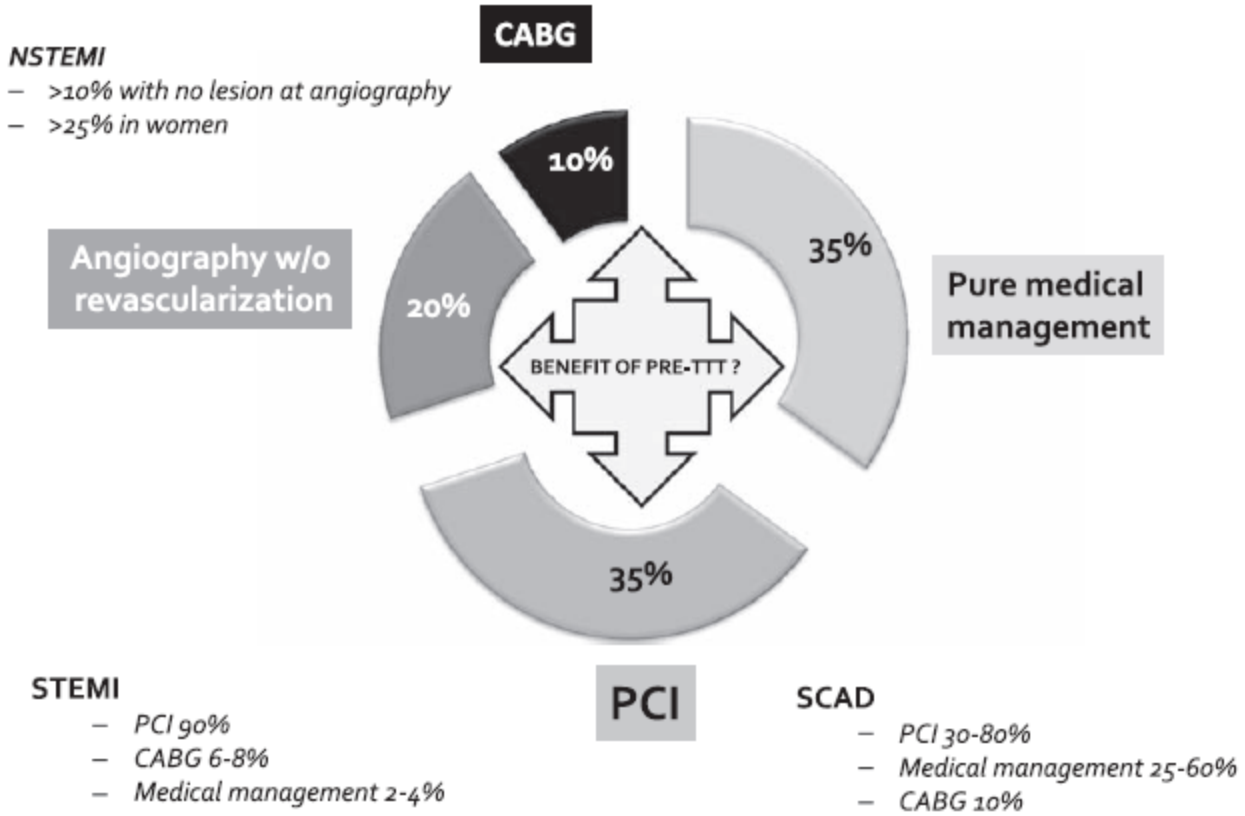
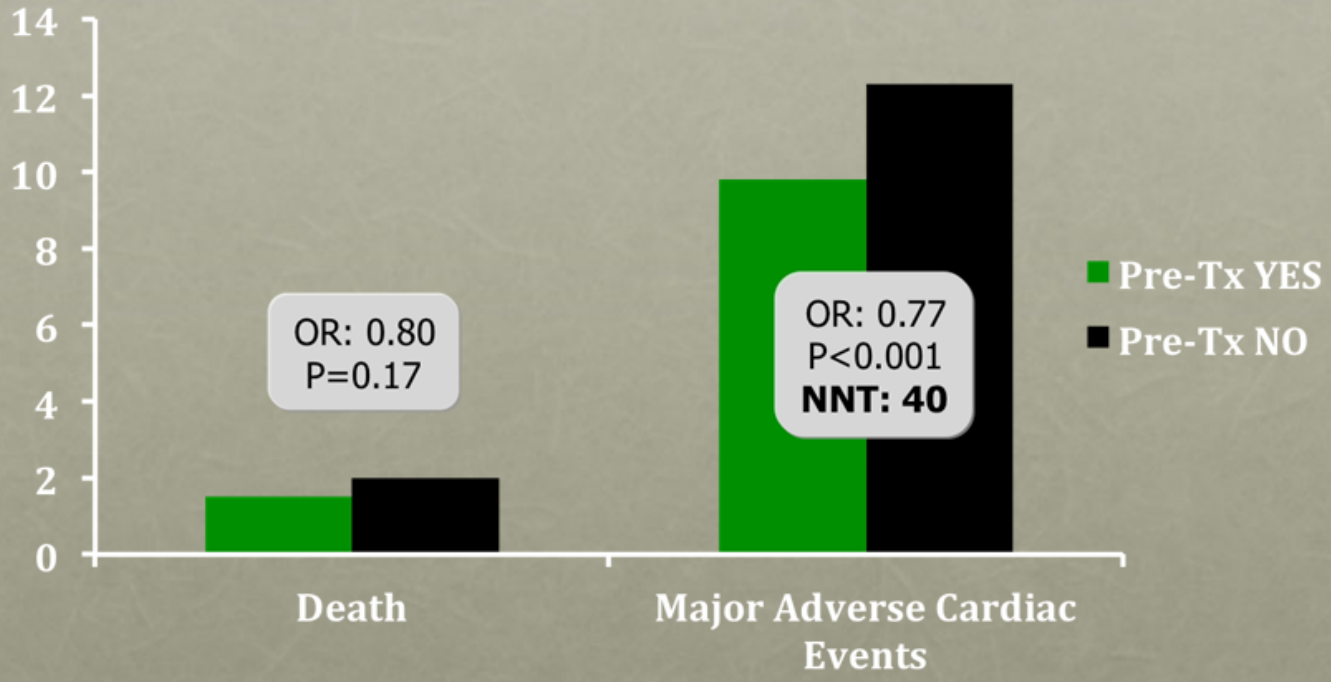
NSTE-ACS in the Real World of All-comers



Pretreatment with P2Y12 Inhibitors in Non–ST-Segment– Elevation Acute Coronary Syndrome: An Outdated and Harmful Strategy. Collet and al. *Circulation. 2014;130:1904-1914*

Quel pré-traitement? Clopidogrel?

8608 patients de 7 RCTs avec PCI, NSTEMI, STEMI, and PCI élective



Bellemain-Appaix A, et al. *JAMA*. 2012;308:2507-16.

Quel pré-traitement? Clopidogrel?

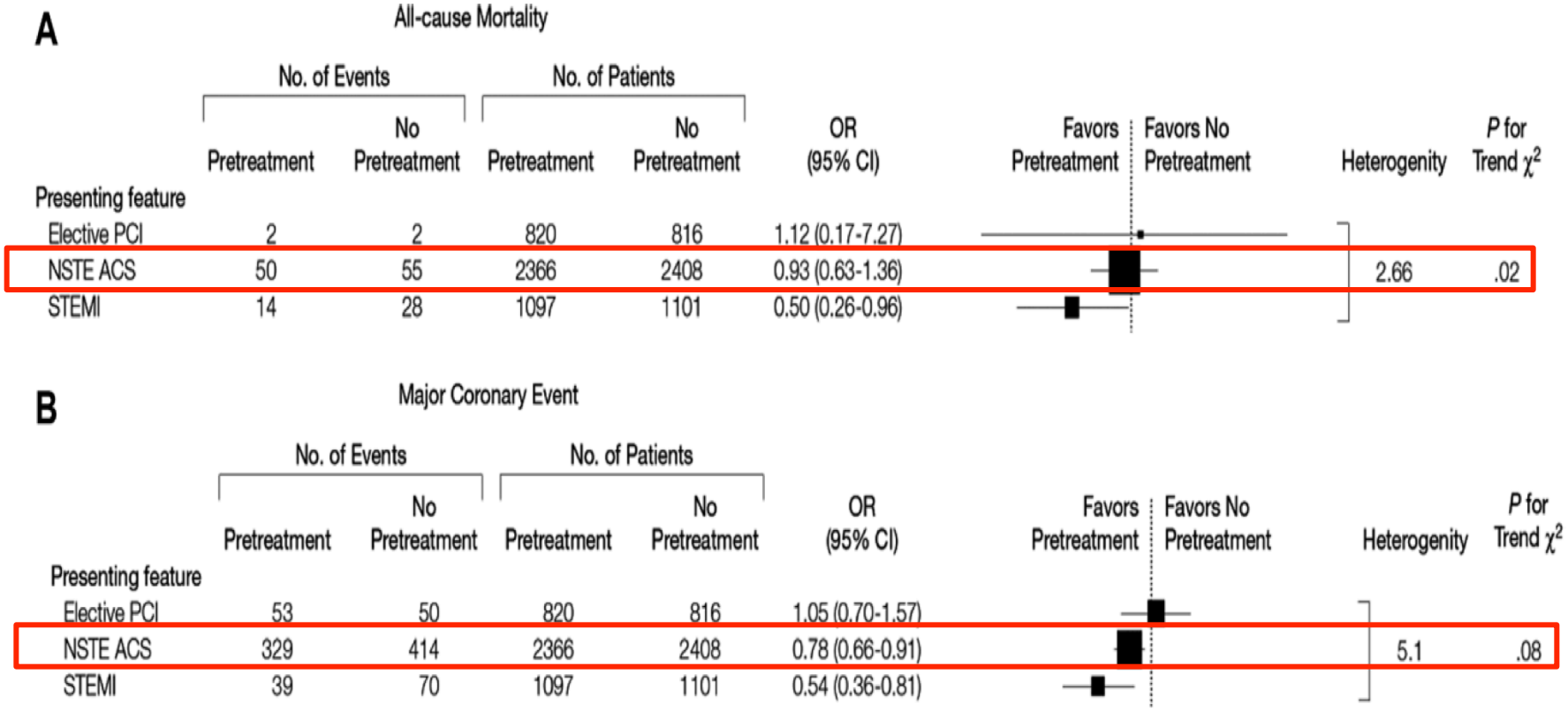
40 000 patients, dont 8000 d'études randomisées

Major Coronary Event

	No. of Events		No. of Patients		
	Pretreatment	No Pretreatment	Pretreatment	No Pretreatment	OR (95% CI)
Presenting feature					
Elective PCI	53	50	820	816	1.05 (0.70-1.57)
NSTE ACS	329	414	2366	2408	0.78 (0.66-0.91)
STEMI	39	70	1097	1101	0.54 (0.36-0.81)
Loading dose					
≤300 mg	363	472	3299	3338	0.74 (0.63-0.87)
600-900 mg	58	62	984	987	0.93 (0.64-1.36)

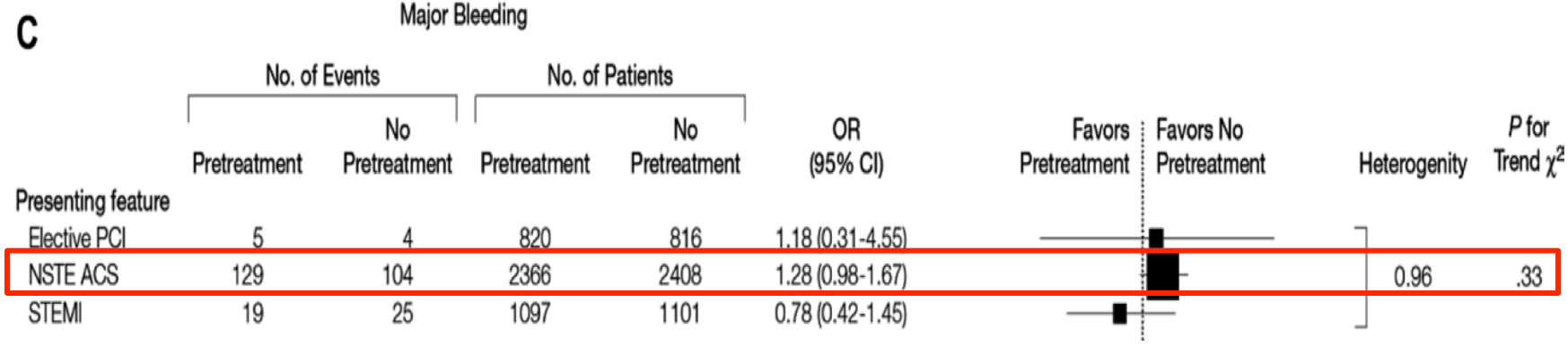
Bellemain-Appaix A, et al. ***JAMA***. 2012;308:2507-16.

Quel pré-traitement? Clopidogrel?



Bellemain-Appaix A, et al. ***JAMA***. 2012;308:2507-16.

Quel pré-traitement? Clopidogrel?



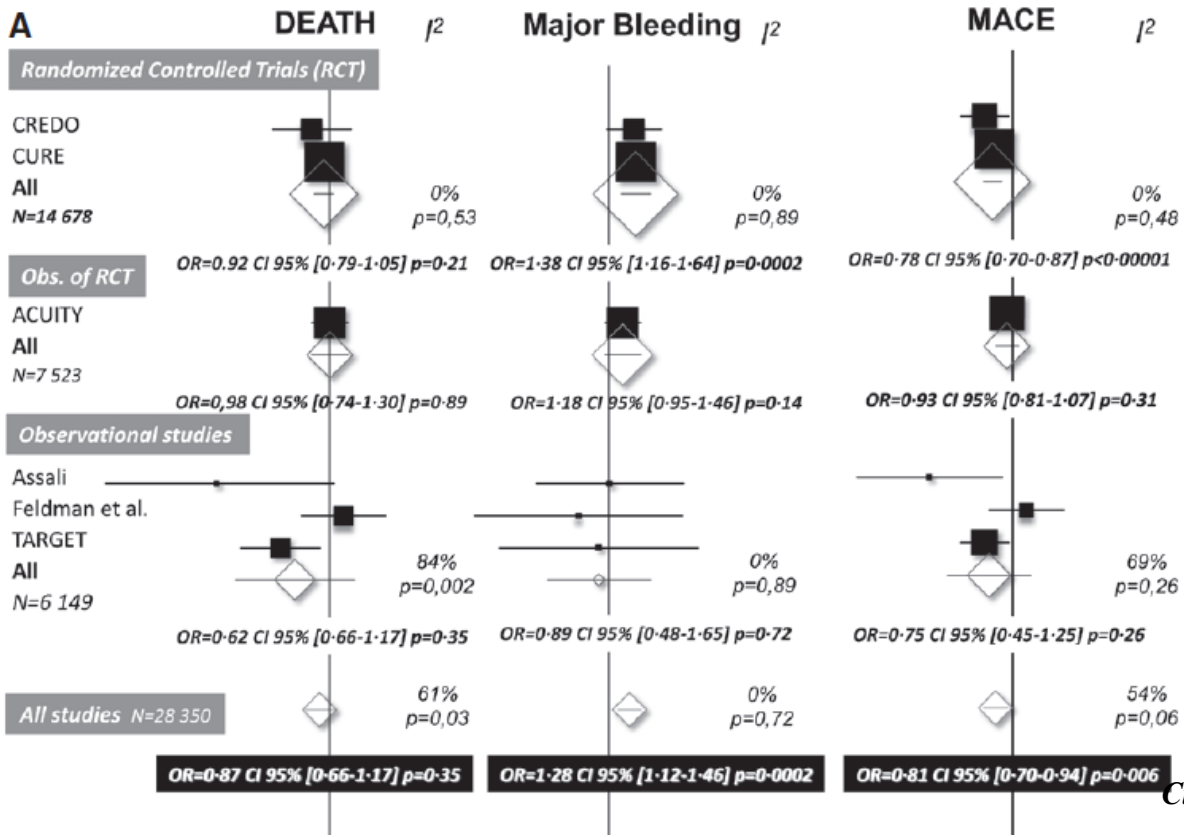
Bellemain-Appaix A, et al. ***JAMA***. 2012;308:2507-16.

Quel pré-traitement? Clopidogrel?

All-cause Mortality

	No. of Events		No. of Patients		
	Pretreatment	No Pretreatment	Pretreatment	No Pretreatment	OR (95% CI)
Presenting feature					
Elective PCI	2	2	820	816	1.12 (0.17-7.27)
NSTE ACS	50	55	2366	2408	0.93 (0.63-1.36)
STEMI	14	28	1097	1101	0.50 (0.26-0.96)
Loading dose					
≤300 mg	63	79	3299	3338	0.79 (0.54-1.17)
600-900 mg	3	6	984	987	0.62 (0.15-2.61)

Bellemain-Appaix A, et al. ***JAMA***. 2012;308:2507-16.

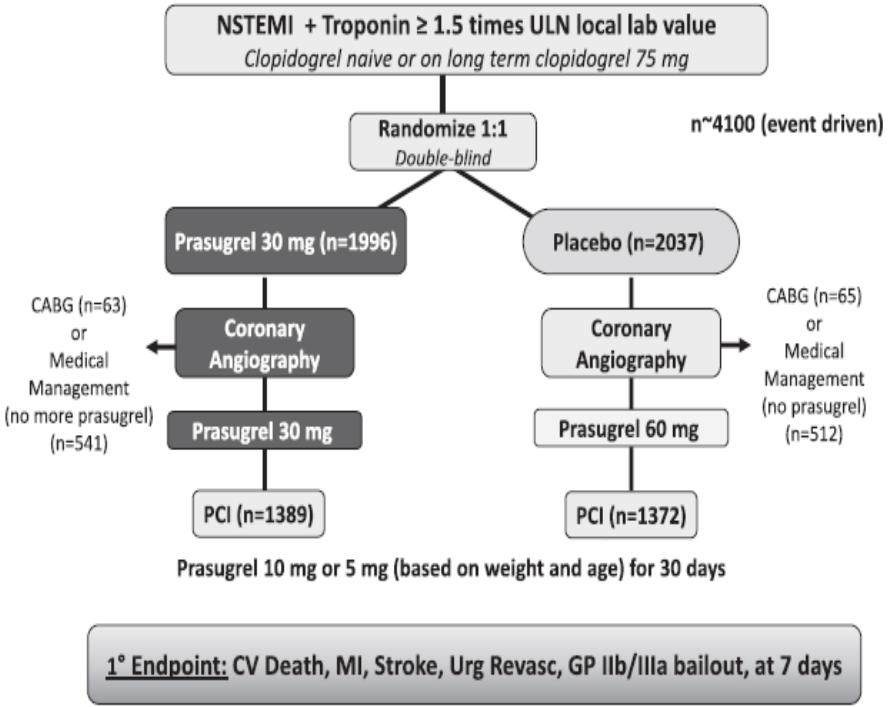


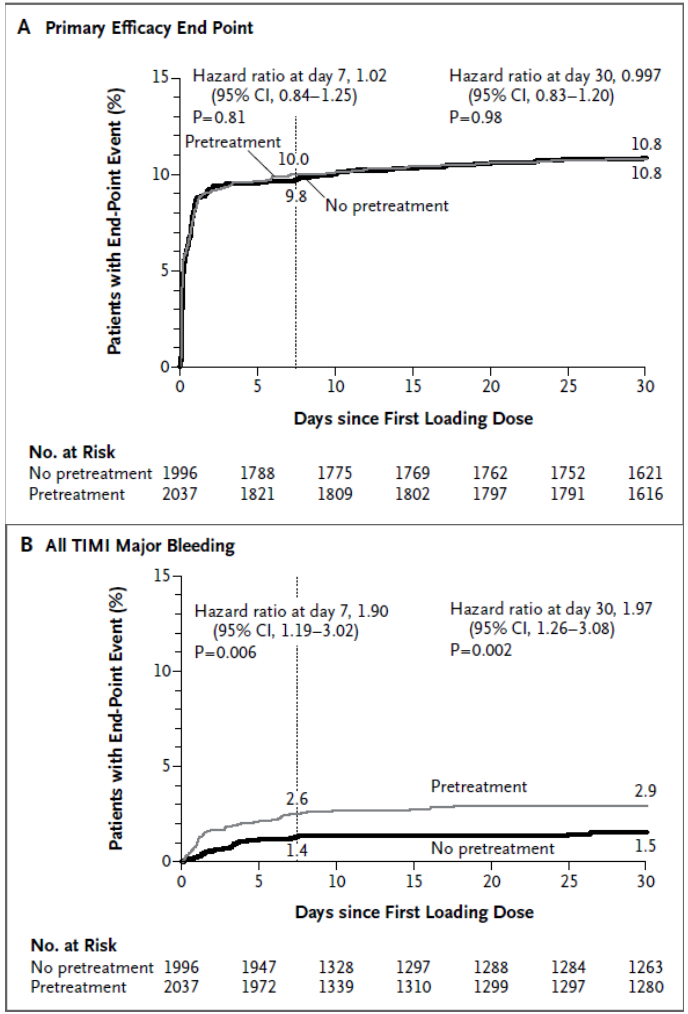
Circulation **November 18, 2014**

Collet et al Pretreatment in NSTE-ACS

Meta-analysis of randomized trials of pretreatment in non–ST-segment–elevation acute coronary syndrome (NSTEACS)

Quel pré-traitement? Prasugrel?: ACCOAST



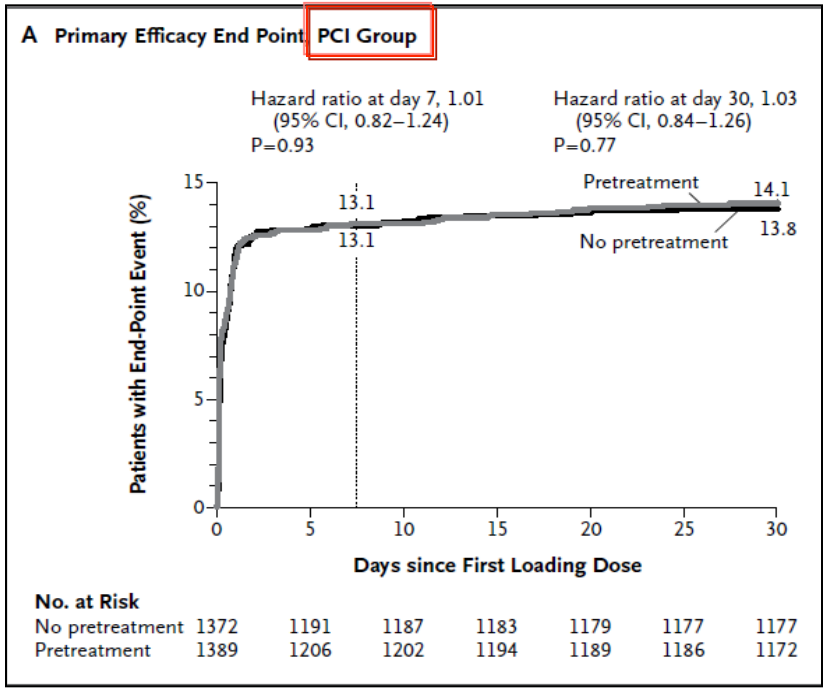


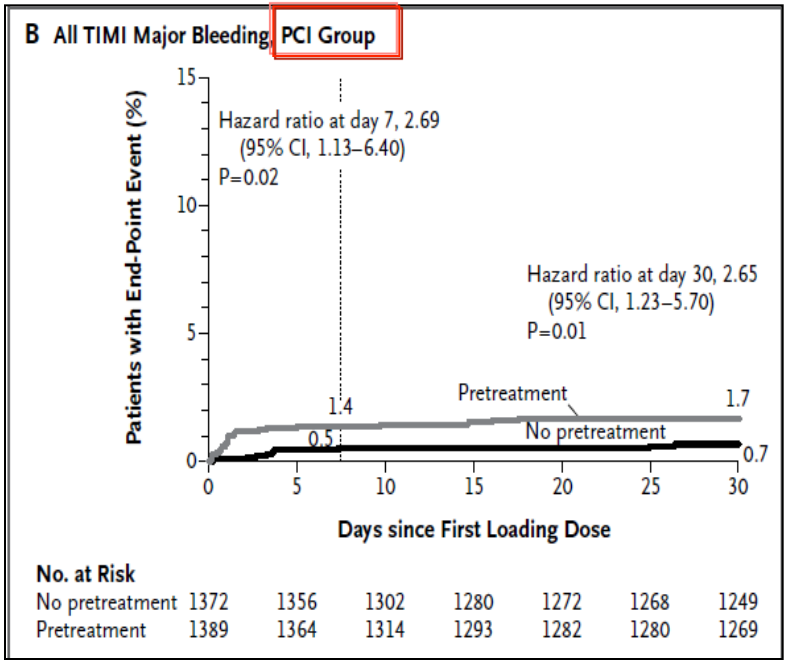
Montalescot G et al. N Engl J Med 2013;369:999-1010

Table 1. Baseline Characteristics of the Total Study Population.*

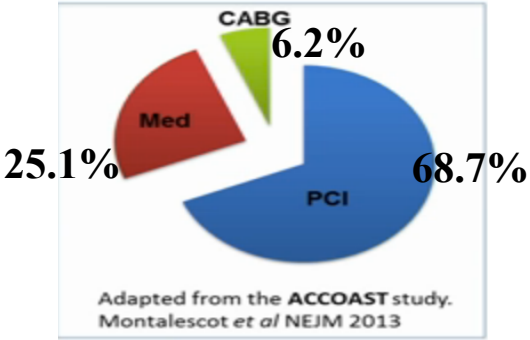
Characteristic	Pretreatment (N = 2037)	No Pretreatment (N = 1996)
Mean age — yr	63.8	63.6
Female sex — no. (%)	552 (27.1)	558 (28.0)
Mean weight — kg†	81.7	81.5
BMI ≥30 — no. (%)‡	591 (29.0)	562 (28.2)
Cardiovascular risk factors — no./total no. (%)		
Diabetes mellitus	413/2037 (20.3)	407/1996 (20.4)
Hypercholesterolemia	914/2037 (44.9)	900/1996 (45.1)
Hypertension	1279/2037 (62.8)	1225/1996 (61.4)
Current smoker	693/2031 (34.1)	647/1992 (32.5)
GRACE score — no./total no. (%)§		
<140	1503/1984 (75.8)	1526/1947 (78.4)
≥140	481/1984 (24.2)	421/1947 (21.6)
Median CRUSADE score¶	34.0	34.0
Creatinine clearance ≤30 ml/min — no./total no. (%)	65/2016 (3.2)	46/1972 (2.3)
Access — no./total no. (%)		
Femoral	1140/2013 (56.6)	1136/1981 (57.3)
Radial	869/2013 (43.2)	842/1981 (42.5)

Montalescot G et al. *N Engl J Med* 2013;369:999-1010





Montalescot G et al. *N Engl J Med* 2013;369:999-1010

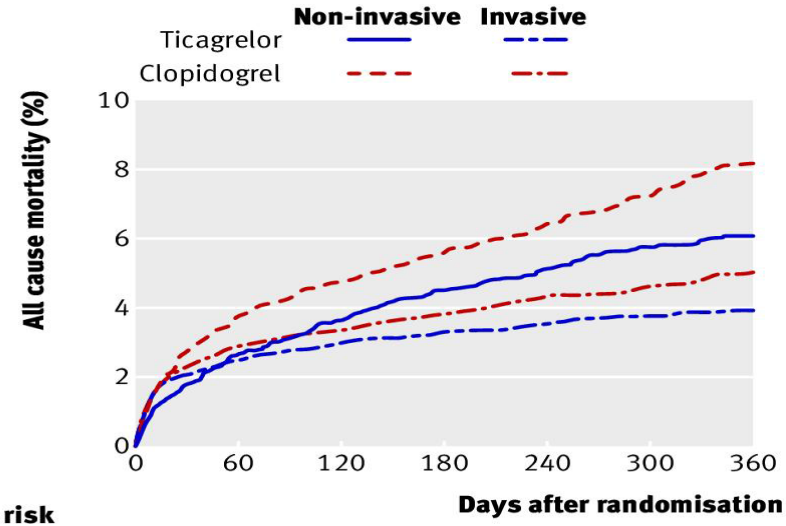


Quel pré-traitement?
Ticagrelor?: PLATO

- STEMI : 38%
- Age médian : 62 ans (>75 ans : 15%)
- PCI 64%, Stent 60% (BMS 40%) ; CABG 10%
- Héparine 57%, enoxaparine 9%, AntiGp2B3A 26%
- Plavix : pas de dose/info manquante = 50%, 300mg =20%, 600mg = 13%
- Dose de charge :
  - STEMI : Dès le diagnostic
  - NSTEMI : après randomisation (Tps médian coro 3,9h)

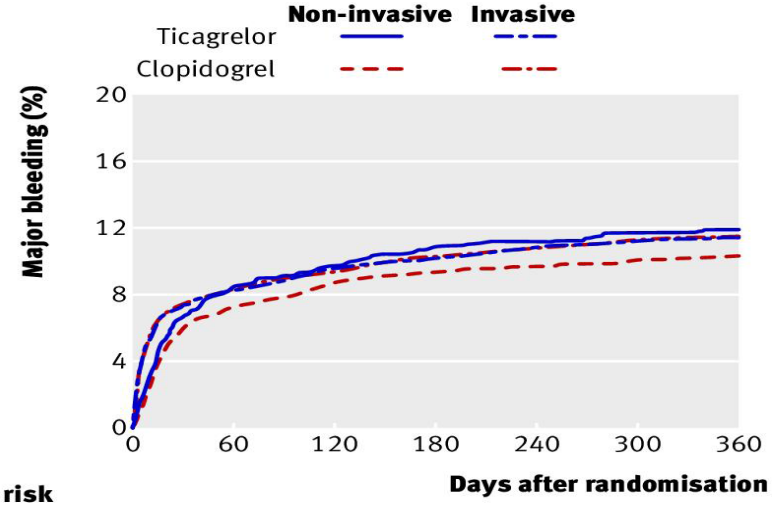
Quel pré-traitement?
Ticagrelor?: PLATO

Ticagrelor (PLATO)
Mortalité toutes causes



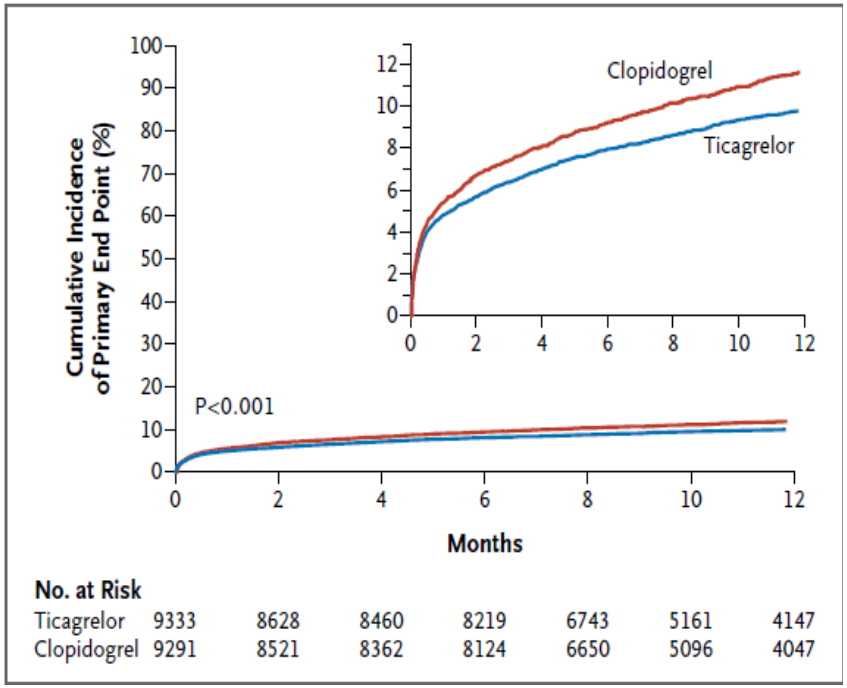
No at risk

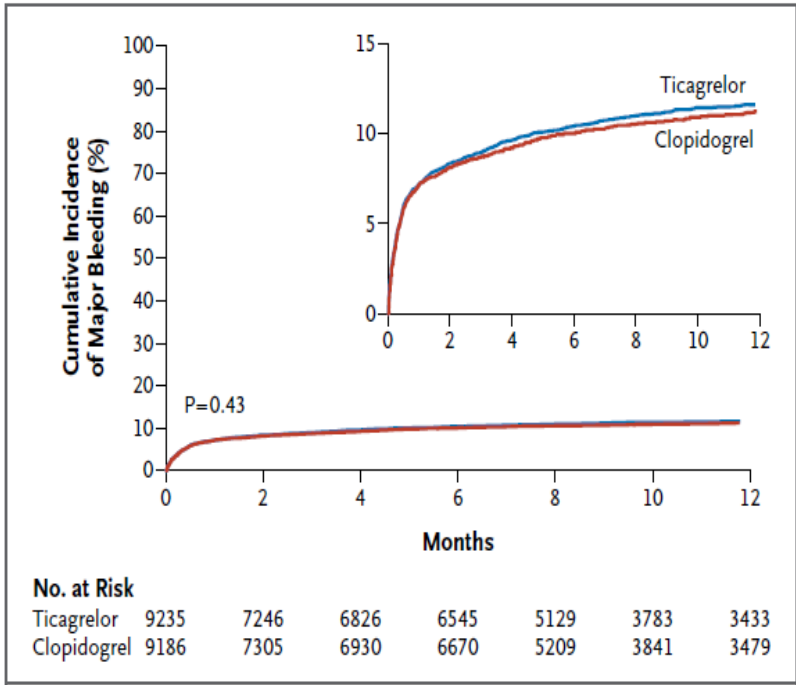
Ticagrelor (PLATO)
Saignements majeurs



No at risk

Quel pré-traitement?
Ticagrelor?: PLATO

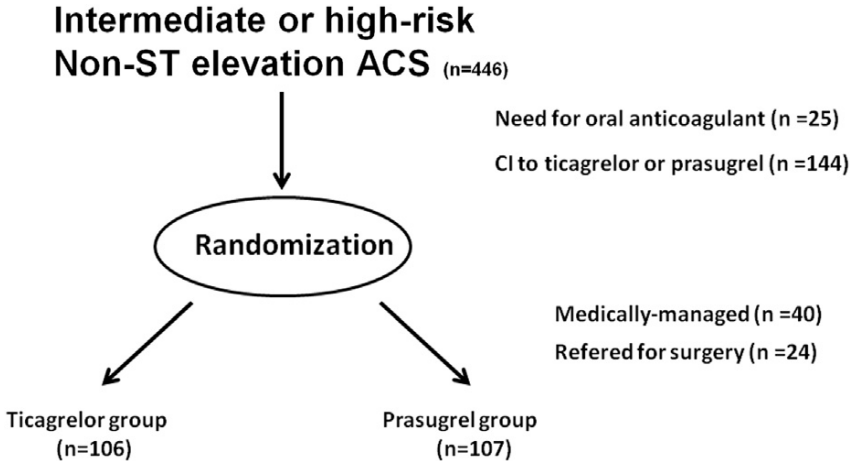




ECG findings at study entry — no./total no. (%)			
Persistent ST-segment elevation	3497/9333 (37.5)	3511/9291 (37.8)	
ST-segment depression	4730/9333 (50.7)	4756/9291 (51.2)	
T-wave inversion	2970/9333 (31.8)	2975/9291 (32.0)	
Positive troponin I test at study entry — no./total no. (%)	7965/9333 (85.3)	7999/9291 (86.1)	
Final diagnosis of ACS — no./total no. (%)			
ST-elevation MI	3496/9333 (37.5)	3530/9291 (38.0)	
Non–ST-elevation MI	4005/9333 (42.9)	3950/9291 (42.5)	
Unstable angina	1549/9333 (16.6)	1563/9291 (16.8)	
Other diagnosis or missing data§	283/9333 (3.0)	248/9291 (2.7)	
Time from first dose of study drug to PCI — hr			0.78
Patients with ST-elevation MI			
Median	0.25	0.25	
IQR	0.05–0.75	0.05–0.72	
Patients with non–ST-elevation MI			
Median	3.93	3.65	
IQR	0.48–46.9	0.45–50.8	

Comparison of Ticagrelor Versus Prasugrel to Prevent Periprocedural Myonecrosis in Acute Coronary Syndromes

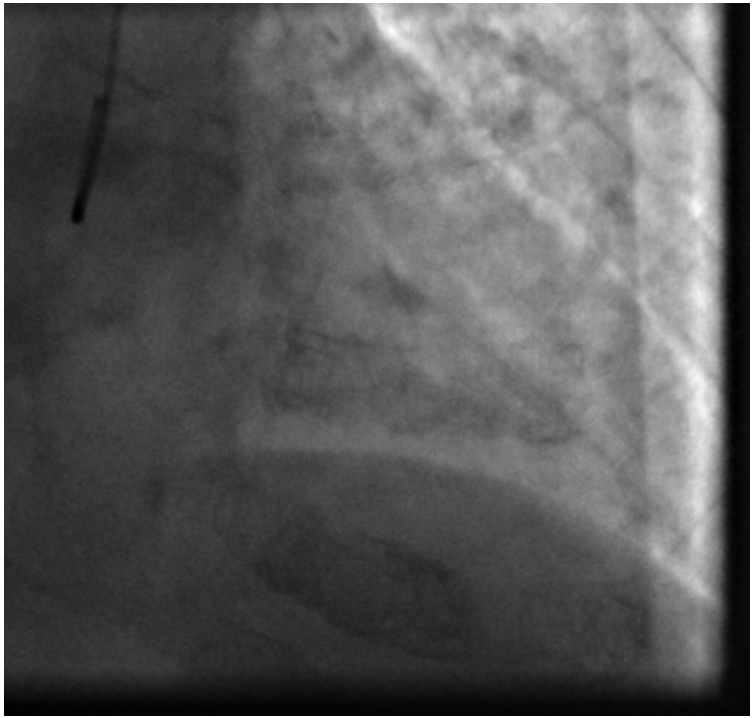
Laurent Bonello, MD, PhD[a,b,*], Marc Laine, MD[a], Marion Cluzel, MD[a], Corinne Frere, MD, PhD[b], Julien Mancini, MD, PhD[c,d], Aurasse Hasan, MD[e], Franck Thuny, MD, PhD[a], Mélanie Gaubert, MD[a], Régis Guieu, MD, PhD[f,g], Françoise Dignat-George, PhD[b,h], Pierre Michelet, MD, PhD[f,i], Franck Paganelli, MD, PhD[a], and François Kerbaul, MD, PhD[f,j]

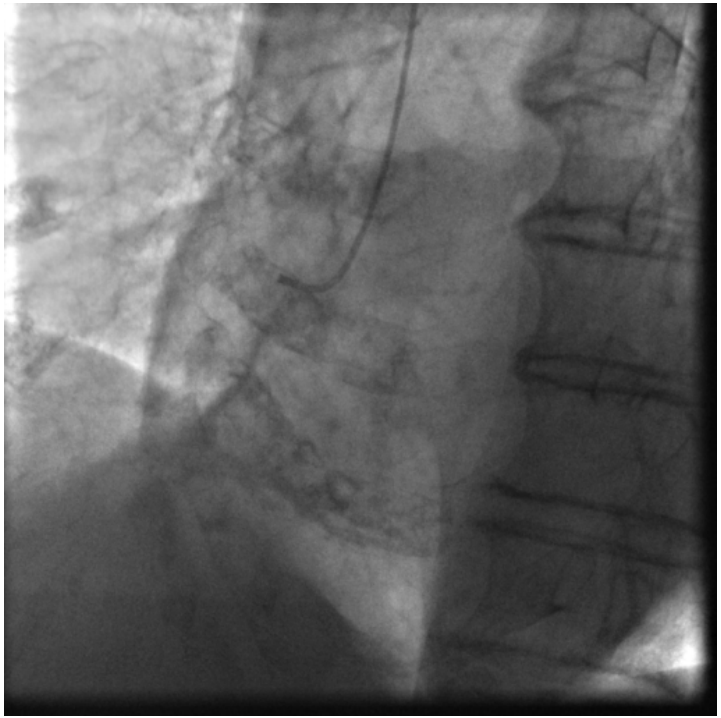


Primary and secondary endpoints

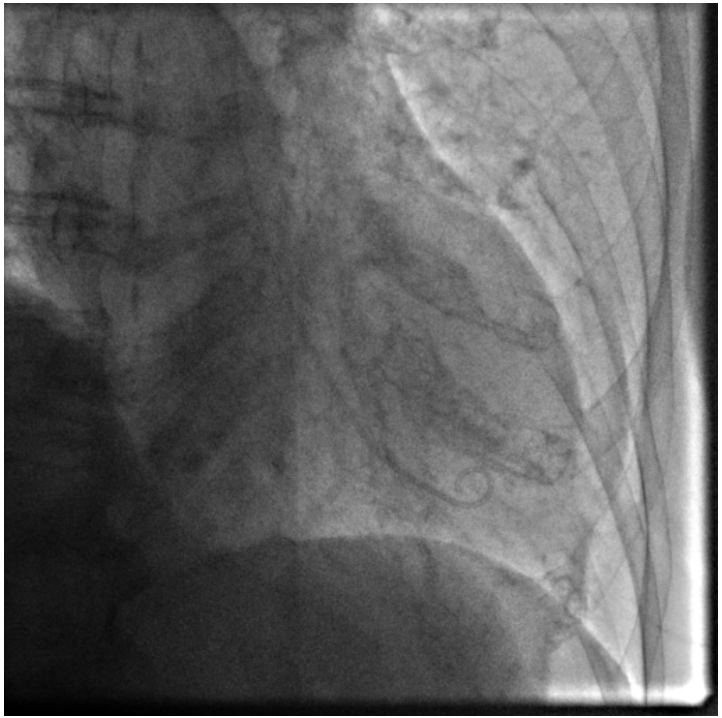
Variable	Ticagrelor	Prasugrel	p Value
Peri-procedural Myonecrosis			
5 x99th percentiles or >20% increase cTnI	21 (20%)	41 (38%)	0.03
Myocardial insult			
> 99th percentiles or any increase in cTnI	44 (42%)	76 (72%)	<0.001
Follow-up at 1 month			
Ischemic events			
Cardiovascualr death	0	0	-
Acute coronary syndrome	4 (4%)	4 (4%)	1
Stroke	0	1 (0,9)	1
Major Adverse Cardiovascular Event	**4 (4%)**	**5 (5%)**	**1**
Bleeding events			
Bleeding Academic Research Consortium >2	7 (7%)	8 (8%)	1

Finalement 300 mg de Clopidogrel puis coro à J1





Angiographie VG



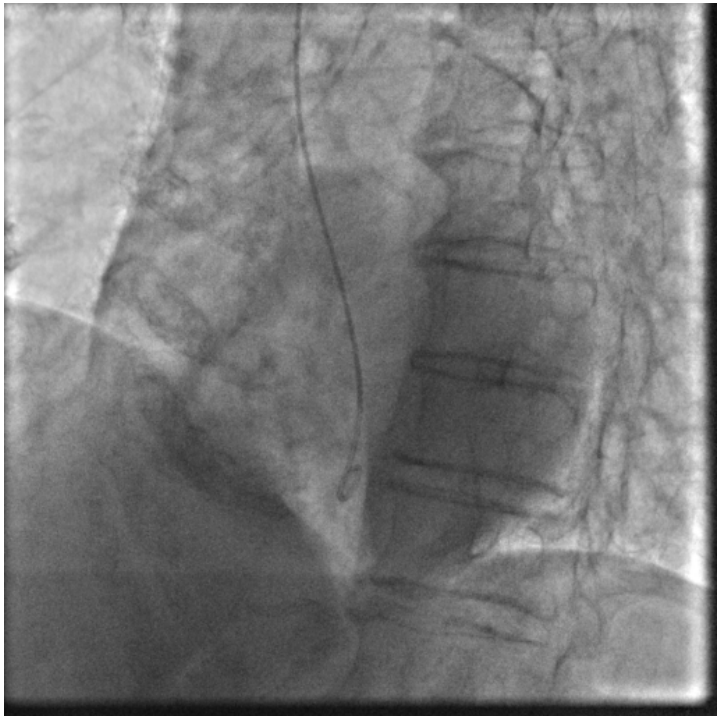
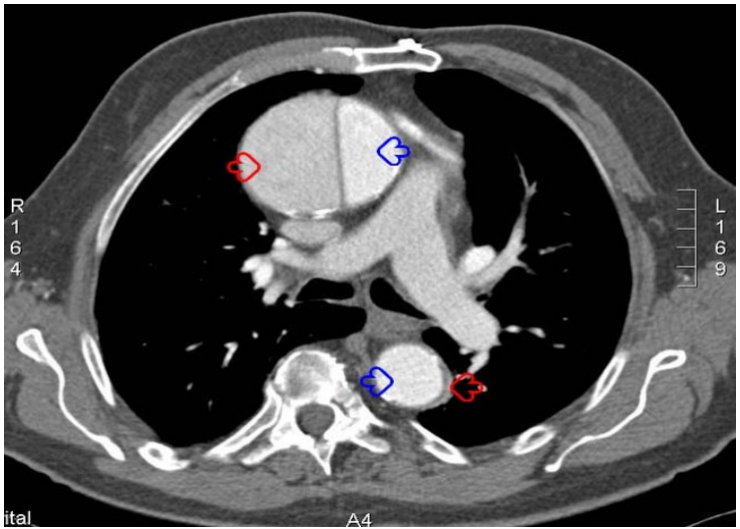


Table 3 Possible non-acute coronary syndrome causes of troponin elevation (bold: important differential diagnoses)

• **Chronic or acute renal dysfunction**
• Severe congestive **heart failure** – acute and chronic
• **Hypertensive crisis**
• **Tachy- or bradyarrhythmias**
• **Pulmonary embolism**, severe pulmonary hypertension
• Inflammatory diseases, e.g. **myocarditis**
• Acute neurological disease, including **stroke**, or subarachnoid haemorrhage
• Aortic dissection, aortic valve disease or hypertrophic cardiomyopathy
• Cardiac contusion, ablation, pacing, cardioversion, or endomyocardial biopsy
• Hypothyroidism
• Apical ballooning syndrome (Tako-Tsubo cardiomyopathy)
• Infiltrative diseases, e.g. amyloidosis, haemochromatosis, sarcoidosis, sclerodermia
• Drug toxicity, e.g. adriamycin, 5-fluorouracil, herceptin, snake venoms
• Burns, if affecting >30% of body surface area
• Rhabdomyolysis
• Critically ill patients, especially with respiratory failure, or sepsis

Au risque d'erreur diagnostique
Avec la «Tn us »



- Homme de 65 ans
- Diabète négligé
- STEMI inférieur vu à H2
- Prise en charge SMUR
- Transfert Cath-lab

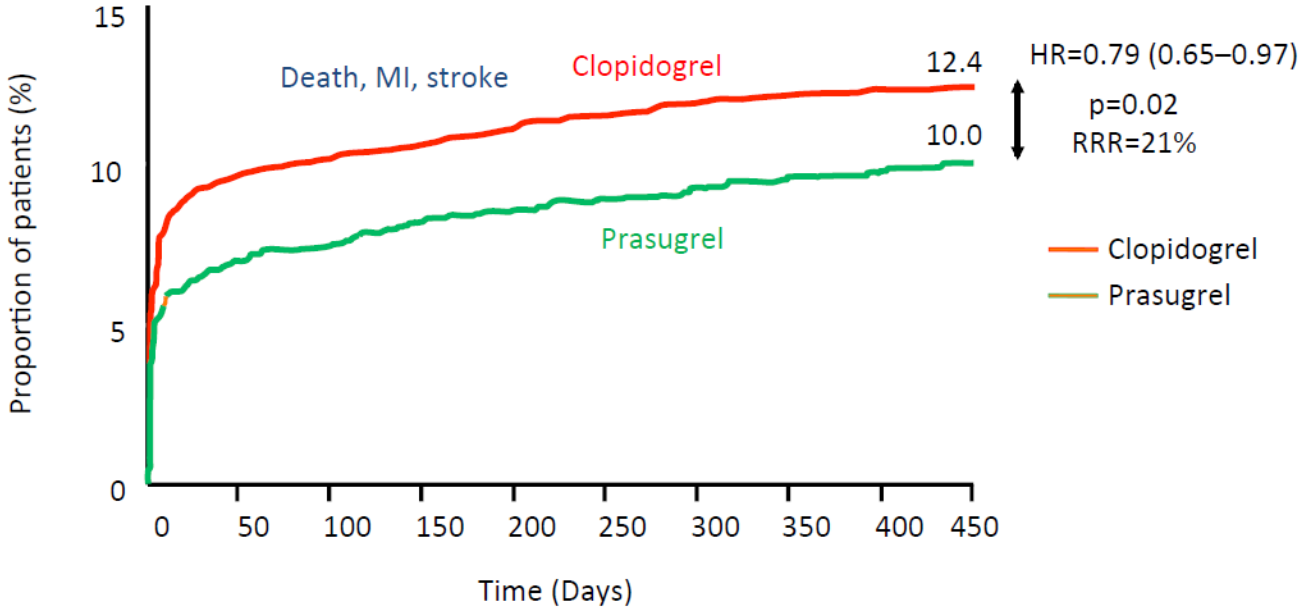
Traitement antithrombotique Préhospitalier?

- Aspirine 250mg
- Héparine NF 4000 UI
- Inhibiteur Récepteurs P2Y12?

Recommendations	Class[a]	Level[b]
Antiplatelet therapy		
ASA is recommended for all patients without contraindications at an initial oral loading dose of 150–300 mg (or 80–150 mg i.v.) and at a maintenance dose of 75–100 mg daily long-term regardless of treatment strategy.	I	A
A $P2Y_{12}$ inhibitor is recommended in addition to ASA and maintained over 12 months unless there are contraindications such as excessive risk of bleeding. Options are:	I	A
• Prasugrel (60 mg loading dose, 10 mg daily dose) if no contraindication	I	B
• Ticagrelor (180 mg loading dose, 90 mg twice daily) if no contraindication	I	B
• Clopidogrel (600 mg loading dose, 75 mg daily dose), only when prasugrel or ticagrelor are not available or are contraindicated.	I	B
It is recommended to give $P2Y_{12}$ inhibitors at the time of first medical contact.	I	B
GP IIb/IIIa inhibitors should be considered for bail-out or evidence of no-reflow or a thrombotic complication.	IIa	C
Upstream use of a GP IIb/IIIa inhibitor (vs. in-lab use) may be considered in high-risk patients undergoing transfer for primary PCI.	IIb	B
Anticoagulants		
Anticoagulation is recommended for all patients in addition to antiplatelet therapy during PCI.	I	A
The anticoagulation is selected according to both ischaemic and bleeding risks, and according to the efficacy–safety profile of the chosen agent.	I	C
Unfractionated heparin: 70–100 U/kg i.v. bolus when no GP IIb/IIIa inhibitor is planned; 50–70 U/kg i.v. bolus with GP IIb/IIIa inhibitor.	I	C
Bivalirudin 0.75 mg/kg i.v. bolus followed by i.v. infusion of 1.75 mg/kg/h for up to 4 hours after the procedure.	IIa	A

Recommendations for antithrombotic treatment in patients with **STEMI** undergoing primary PCI

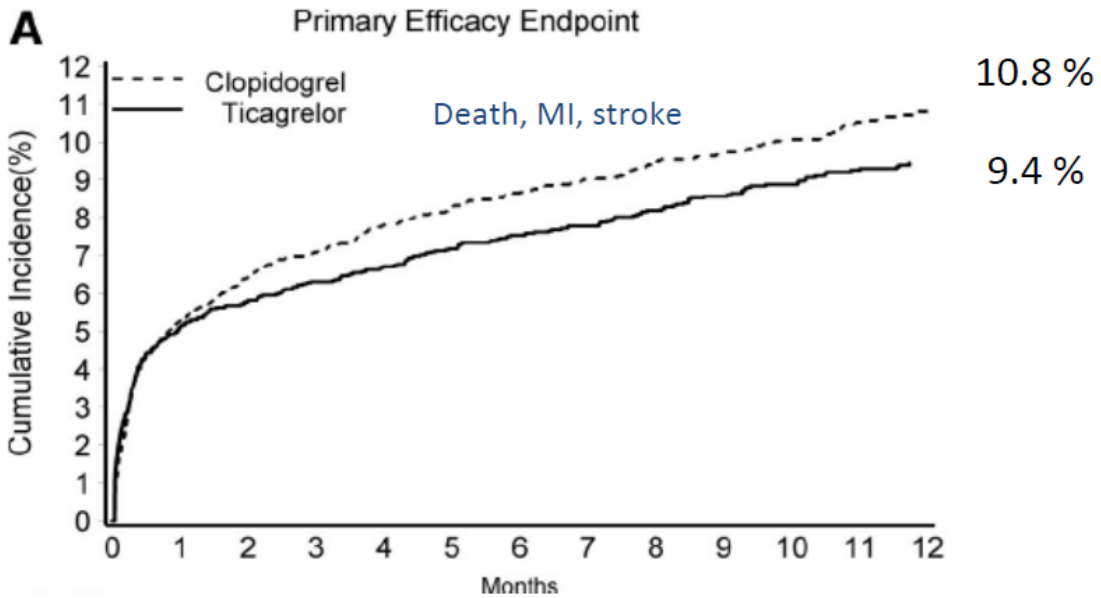
Prasugrel in STEMI: TRITON



No excess of bleeding in STEMI

Montalescot et al. Lancet 2009

Ticagrelor IN STEMI: PLATO



No excess of bleeding in STEMI

Steg et al, Circulation 2010

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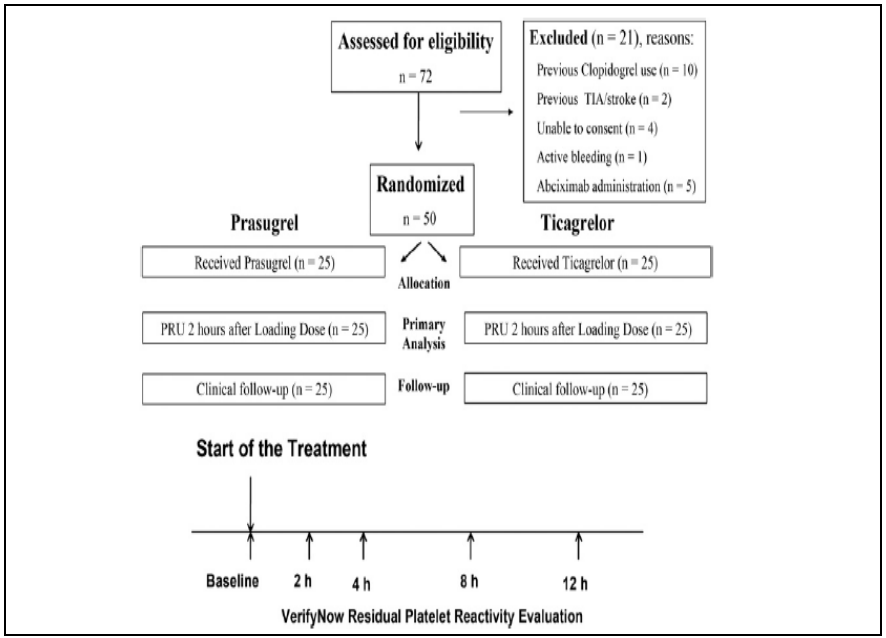
Comparison of Prasugrel and Ticagrelor Loading Doses in ST-Segment Elevation Myocardial Infarction Patients

RAPID (Rapid Activity of Platelet Inhibitor Drugs) Primary PCI Study

Guido Parodi, MD, PhD, Renato Valenti, MD, Benedetta Bellandi, MD, Angela Migliorini, MD, Rossella Marcucci, MD, Vincenzo Comito, MD, Nazario Carrabba, MD, Alberto Santini, MD, Gian Franco Gensini, MD, Rosanna Abbate, MD, David Antoniucci, MD



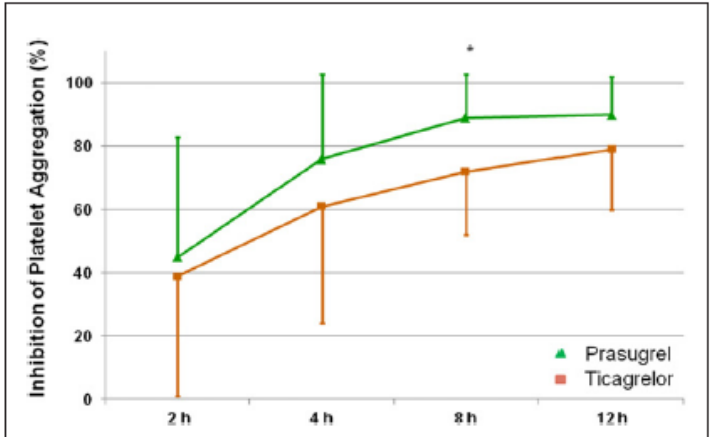
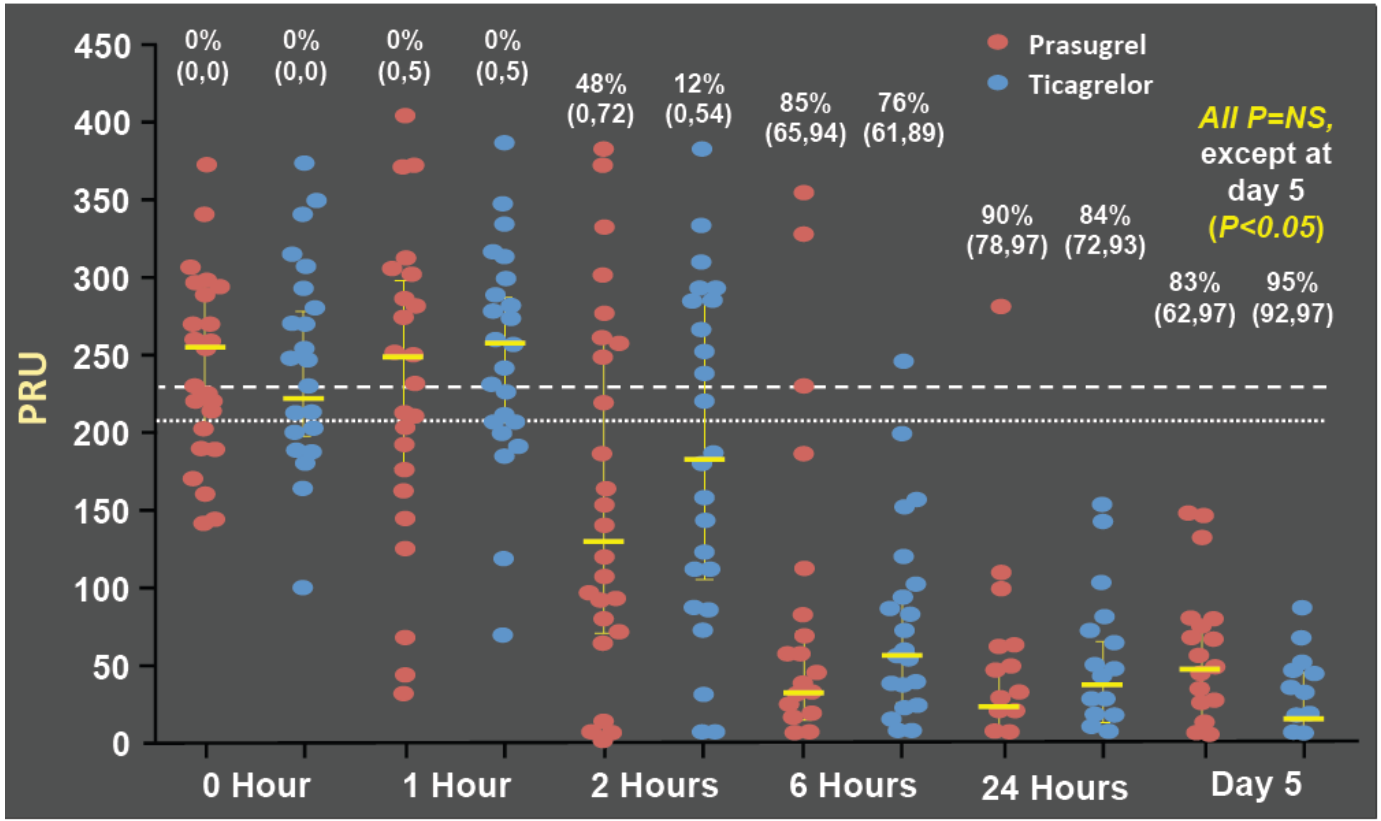


Figure 4 **Inhibition of Platelet Aggregation Over Time**

Inhibition of platelet aggregation by VerifyNow at 2, 4, 8, and 12 h after drug loading dose in patients with prasugrel **(triangles)** and ticagrelor **(squares)**. *$p < 0.01$ versus ticagrelor.

Ticagrelor and Prasugrel PD in STEMI



Alexopoulos D et al. Circ Cardiovasc Interv.2012

- A quel moment?

Quel pré-traitement?
Ticagrelor?: ATLANTIC

Table 2. Coprimary Efficacy End Points and Related Secondary End Points in the Modified Intention-to-Treat Population.*

End Point	Prehospital Ticagrelor (N=906)	In-Hospital Ticagrelor (N=952)	Odds Ratio (95% CI)†	P Value†	Difference (95% CI)‡
	no./no. of patients who could be evaluated (%)				
Coprimary end points					
Absence of ST-segment elevation resolution ≥70% before PCI	672/774 (86.8)	722/824 (87.6)	0.93 (0.69 to 1.25)	0.63	−0.008 (−0.041 to 0.025)
Absence of TIMI flow grade 3 in infarct-related artery at initial angiography	681/824 (82.6)	711/856 (83.1)	0.97 (0.75 to 1.25)	0.82	−0.004 (−0.040 to 0.032)
Met one or both coprimary end points					
Both	541/744 (72.7)	571/777 (73.5)	0.96 (0.77 to 1.21)	0.73	−0.008 (−0.052 to 0.037)
One or both	677/719 (94.2)	710/751 (94.5)	0.93 (0.60 to 1.45)	0.75	−0.004 (−0.027 to 0.020)

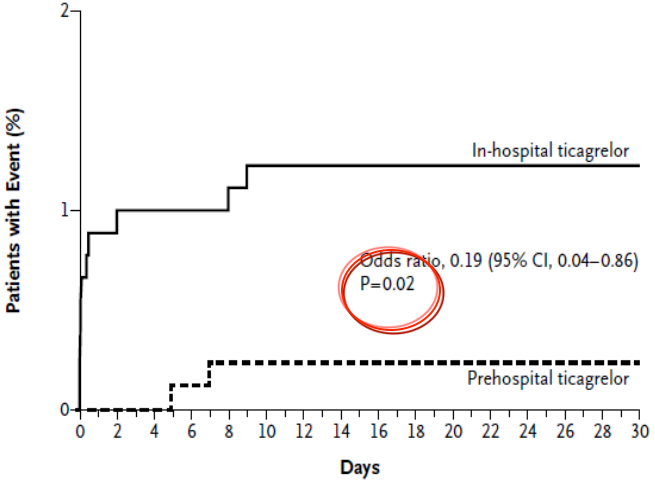


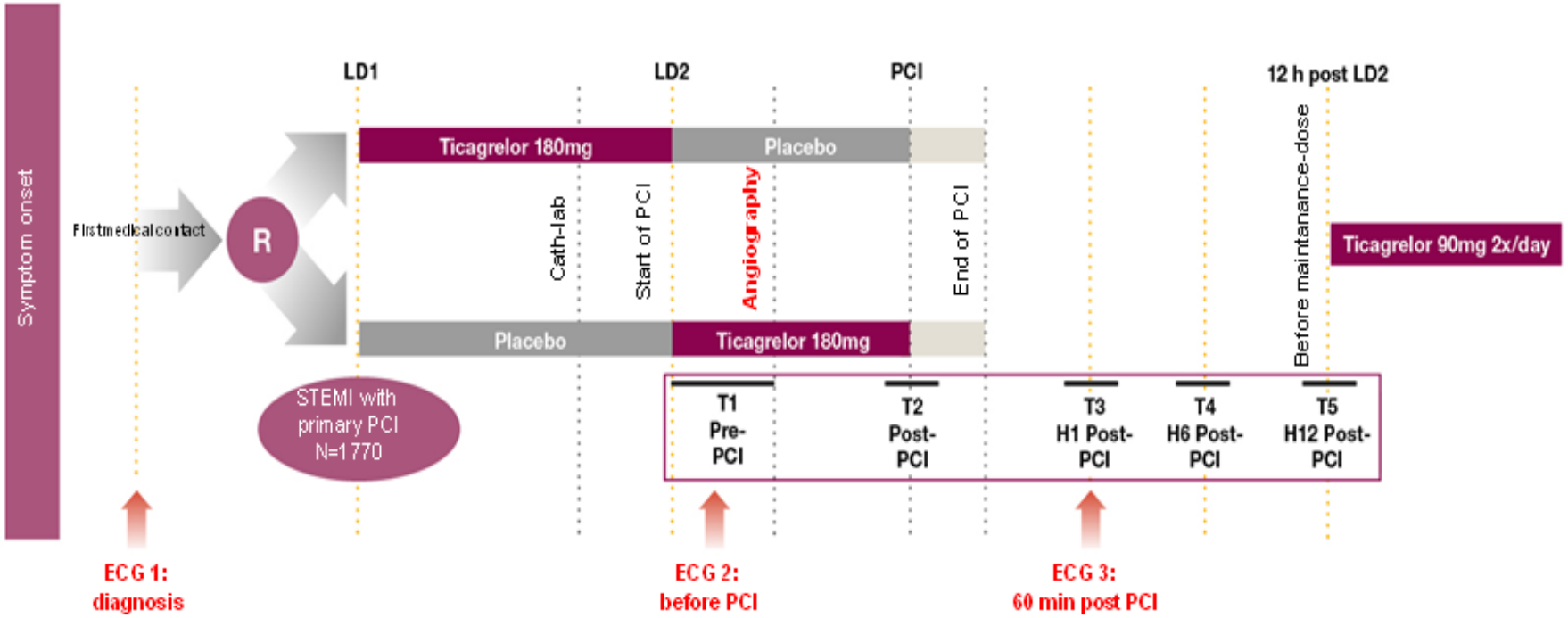
Figure 2 Definite Stent Thrombosis up to 30 Days after Ticagrelor Administration in the Modified Intention-to-Treat Population.

Montalescot et al. N Engl J Med 2014;371:1016-27.

Table 3. Clinical End Points at 30 Days in the Modified Intention-to-Treat Population and Bleeding Events at 30 Days in the Safety Population.*

Variable	Prehospital Ticagrelor	In-Hospital Ticagrelor	Odds Ratio (95% CI)	P Value	Difference (95% CI)†
Ischemic end point					
No. of patients who could be evaluated	906	952			
Composite of death, myocardial infarction, stroke, urgent revascularization, or definite stent thrombosis — no. (%)	41 (4.5)	42 (4.4)	1.03 (0.66 to 1.60)	0.91	0.001 (–0.018 to 0.020)
Composite of death, myocardial infarction, or urgent revascularization — no. (%)	39 (4.3)	34 (3.6)	1.22 (0.76 to 1.94)	0.42	0.007 (–0.010 to 0.025)
Stent thrombosis — no. (%)					
Definite at ≤24 hr after index PCI	0	8 (0.8)	—	0.008‡	0.008 (–0.017 to –0.003)§
Definite at 30 days	2 (0.2)	11 (1.2)	0.19 (0.04 to 0.86)	0.02‡	–0.009 (–0.017 to –0.002)§
Definite or probable at 30 days¶	21 (2.3)	20 (2.1)	1.11 (0.60 to 2.05)	0.75	0.002 (–0.011 to 0.016)
Death from any cause — no. (%)	30 (3.3)	19 (2.0)	1.68 (0.94 to 3.01)	0.08	0.013 (–0.001 to 0.028)
Myocardial infarction — no. (%)	7 (0.8)	10 (1.1)	0.73 (0.28 to 1.94)	0.53	–0.003 (–0.011 to 0.006)
Stroke — no. (%)	4 (0.4)	2 (0.2)	2.11 (0.39 to 11.53)	0.39	0.002 (–0.004 to 0.009)§
Transient ischemic attack — no. (%)	0	1 (0.1)	—	NE	–0.001 (–0.006 to 0.003)§
Urgent coronary revascularization — no. (%)	5 (0.6)	8 (0.8)	0.66 (0.21 to 2.01)	0.46	–0.003 (–0.010 to 0.005)
Thrombotic bailout with glycoprotein IIb/IIIa inhibitors — no. (%)	78 (8.6)	100 (10.5)	0.80 (0.59 to 1.10)	0.17	–0.019 (–0.046 to 0.008)
Bleeding events					
No. of patients who could be evaluated	908	950			
Non–CABG-related bleeding event, according to PLATO criteria — no. (%)					
≤48 hr after first dose					
Major	16 (1.8)	15 (1.6)	—	0.76	—
Minor	8 (0.9)	9 (0.9)	—	0.88	—
Composite of major and minor	24 (2.6)	24 (2.5)	—	0.87	—
>48 hr and ≤30 days after first dose					
Major	11 (1.2)	11 (1.2)	—	0.92	—
Minor	7 (0.8)	5 (0.5)	—	0.51	—
Composite of major and minor	18 (2.0)	16 (1.7)	—	0.63	—

PRIVATE-ATLANTIC: Pre-specified substudy of ATLANTIC



LD = Loading Dose

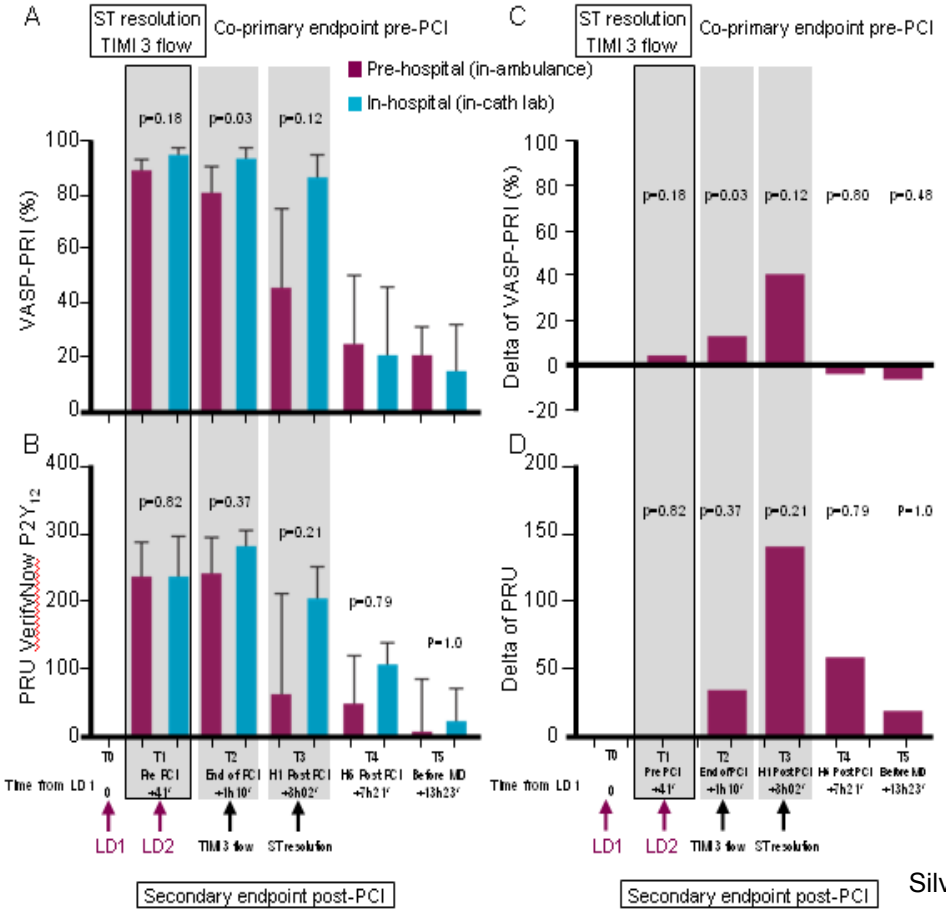
Silvain J | ACC 2015

Results

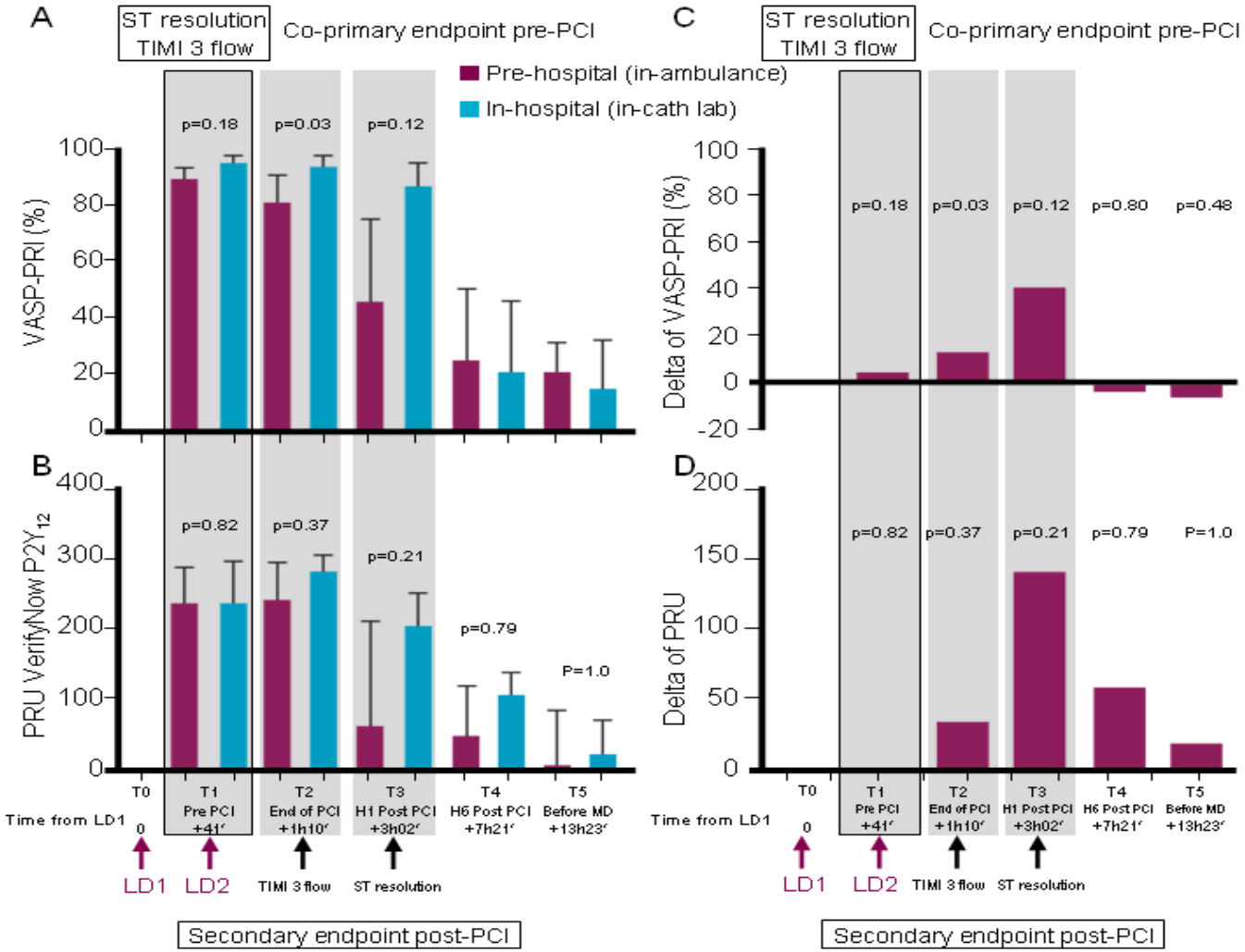
- 37 patients enrolled at 5 centers in France and the UK. Most were male and relatively few had a prior history of cardiovascular disease
- The time difference between the pre- and in-hospital ticagrelor loading doses in PRIVATE-ATLANTIC **was only 41 min**

Conclusion

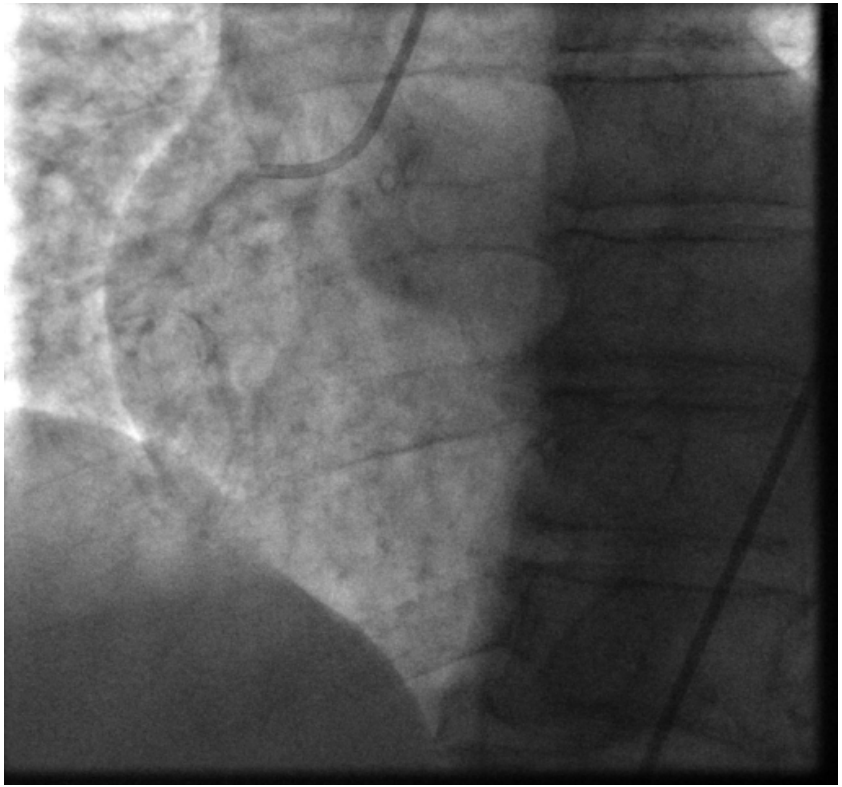
- With a time difference of 41 min between the 2 LD, pre-hospital ticagrelor administration did not improve platelet inhibition compared with in-hospital administration at the time of initial angiography, due to the absence of significant levels of ticagrelor and its main metabolite
- The maximum between-group differences in PK and platelet inhibition were detected 1 h post-PCI but were not significant due to lack of power
- These results support the overall findings of the ATLANTIC trial

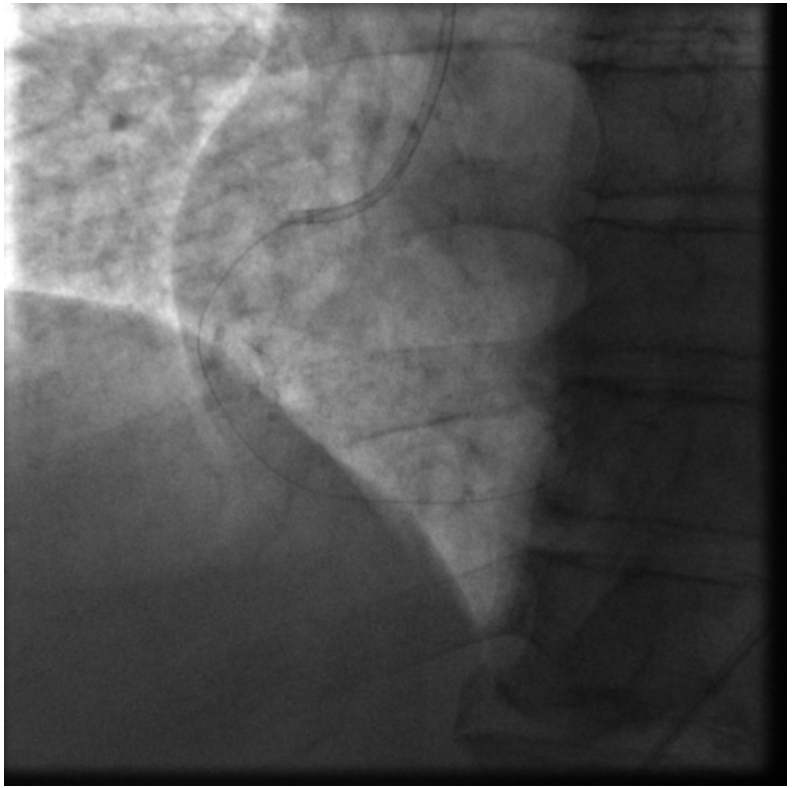


Silvain J | ACC 2015

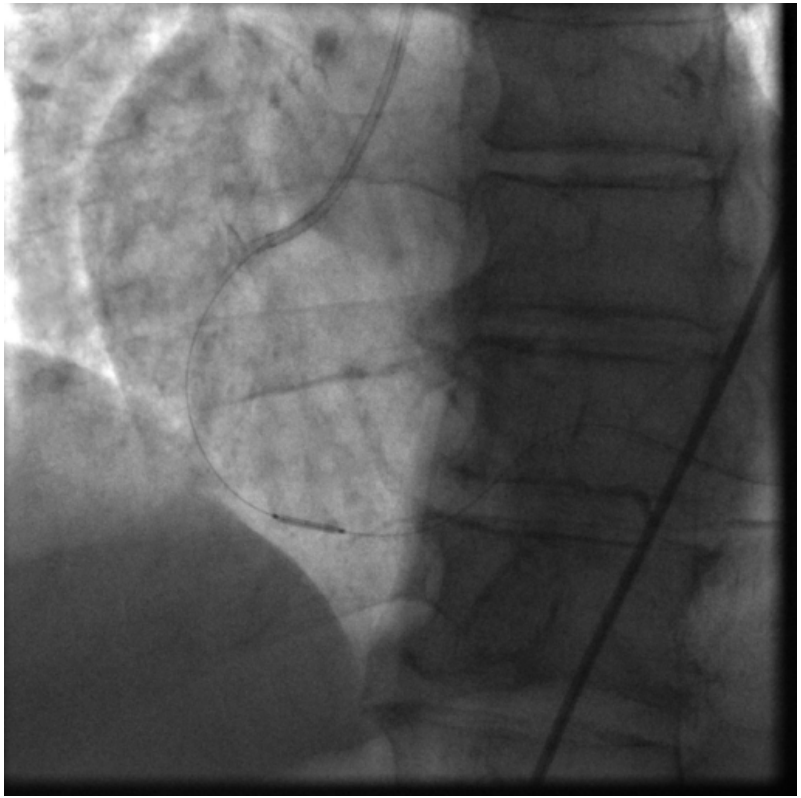

A
ST resolution TIMI 3 flow
Co-primary endpoint pre-PCI
Pre-hospital (in-ambulance)
In-hospital (in-cath lab)
VASP-PRI (%)
p=0.18
p=0.03
p=0.12
B
PRU VerifyNow P2Y12
p=0.82
p=0.37
p=0.21
p=0.79
P=1.0
T0
T1 Pre PCI +41′
T2 End of PCI +1h10′
T3 H1 Post PCI +3h02′
T4 H6 Post PCI +7h21′
T5 Before MD +13h23′
Time from LD1
0
LD1
LD2
TIMI 3 flow
ST resolution
Secondary endpoint post-PCI
C
ST resolution TIMI 3 flow
Co-primary endpoint pre-PCI
Delta of VASP-PRI (%)
p=0.18
p=0.03
p=0.12
p=0.80
p=0.48
D
Delta of PRU
p=0.82
p=0.37
p=0.21
p=0.79
P=1.0
T0
T1 Pre PCI +41′
T2 End of PCI +1h10′
T3 H1 Post PCI +3h02′
T4 H6 Post PCI +7h21′
T5 Before MD +13h23′
Time from LD1
0
LD1
LD2
TIMI 3 flow
ST resolution
Secondary endpoint post-PCI

Finalement 60 mg de Prasugrel puis coro

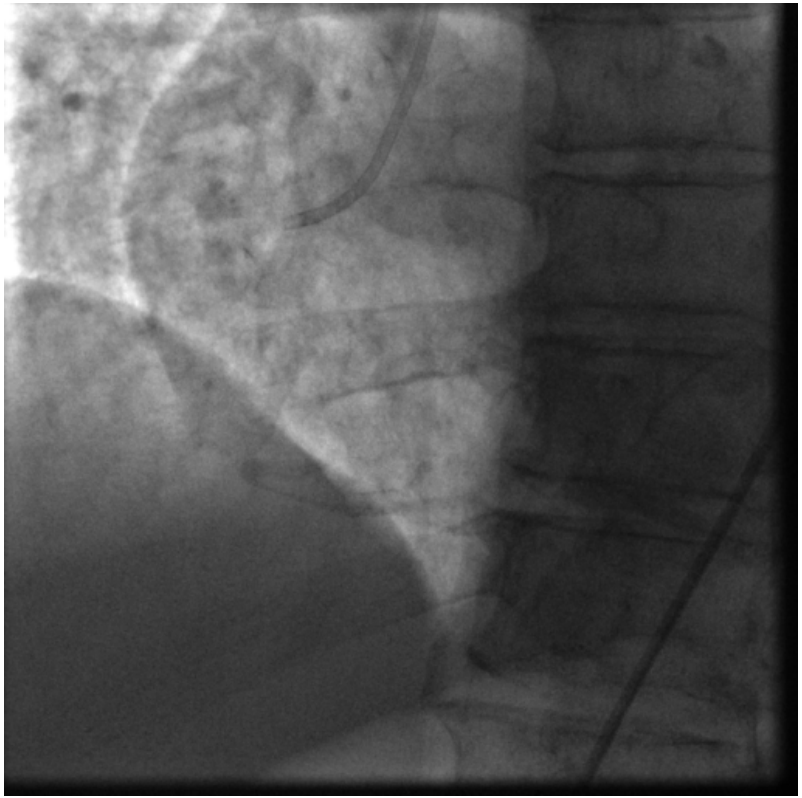




Après thrombo-aspiration



DES 3.0x16mm en direct stenting

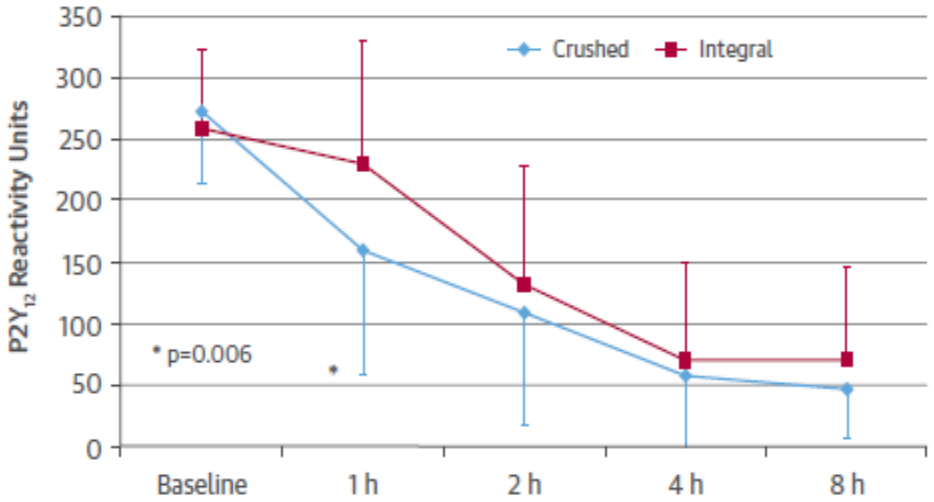


Résultat final

NOUVELLE FORME?

Ticagrelor Crushed Tablets Administration in STEMI Patients;The MOJITO Study

FIGURE 1 Platelet Inhibition Over Time



Platelet reactivity was assessed at baseline, 1, 2, 4, and 8 h after a 180-mg ticagrelor loading dose in patients treated by crushed tablets **(diamonds)** or integral tablets **(squares)**. Data are expressed as mean ± SD.

JACC Vol.65, no.5, 201.Feb 10,2015:511-8

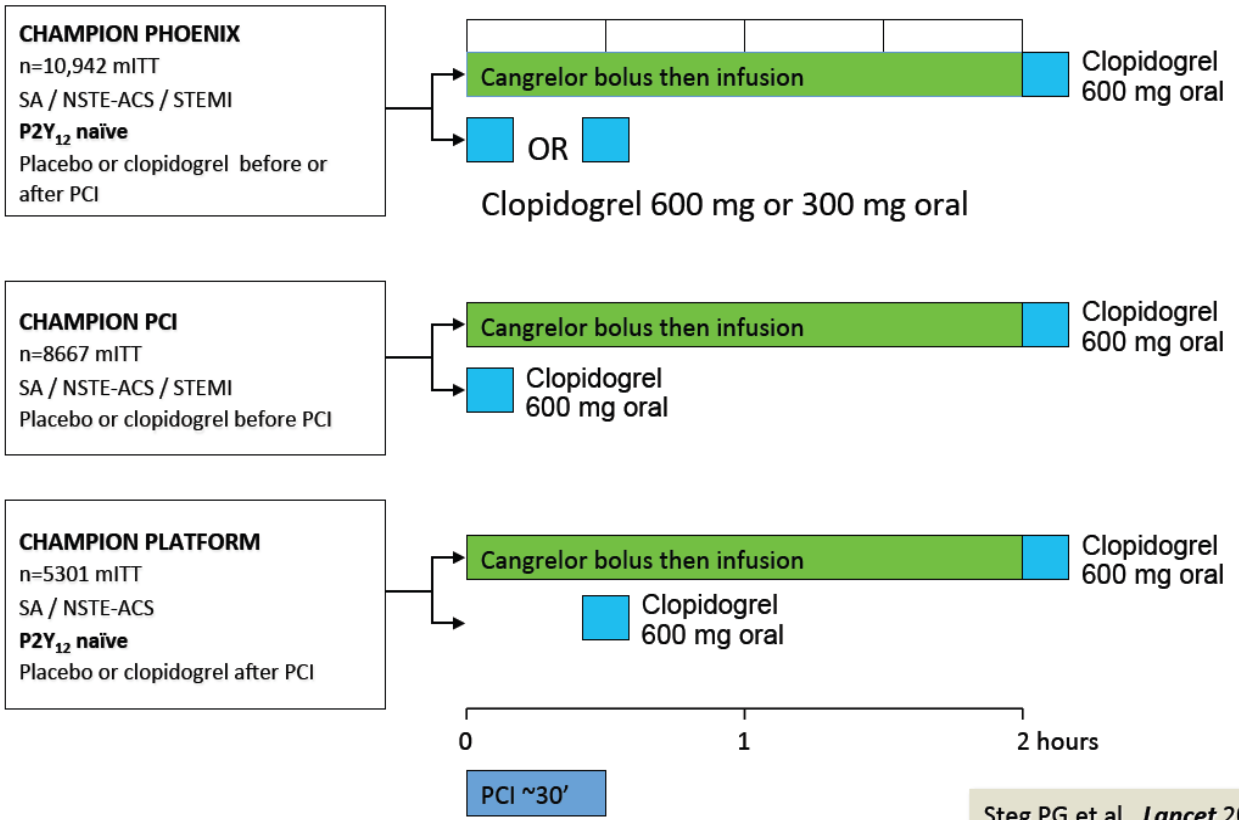
CONCLUSIONS

- Je continue à prétraiter:
  - STEMI pris en charge par angioplastie primaire
  - NSTEMI à haut risque ischémique sans sur-risque hémorragique à fortiori si délai de coronarographie >48H (et plutôt par Ticagrelor?)
  - « STEMI like »

- Je ne pré-traite plus:
  - NSTEMI à risque faible ou intermédiaire
  - NSTEMI à risque hémorragique à fortiori sous anticoagulants
  - Doutes diagnostiques: « wait and see »

CHAMPION Trials Study Designs

Randomised, Double Blind, Controlled Trials of patients undergoing PCI



Steg PG,et al.. *Lancet* 2013

Primary Efficacy Outcomes at 48 Hours, MITT

	Cangrelor (N=12,475)	Clopidogrel (N=12,435)	OR (95% CI)	P-value
Death/MI/IDR/ST	**473/12,459 (3.8%)**	**579/12,422 (4.7%)**	**0.81 (0.71-0.91)**	**0.0007**

Secondary Efficacy Outcomes at 48 Hours, MITT

Stent thrombosis	62/12,459 (0.5%)	105/12,422 (0.8%)	0.59 (0.43-0.80)	0.0008
Death/MI/IDR	446/12,459 (3·6%)	543/12,422 (4·4%)	0·81 (0·71–0·92)	0.0014
MI	387/12,459 (3.1%)	453/12,422 (3.6%)	0.85 (0.74-0.97)	0.0182
Q-wave MI	19/12,459 (0.2%)	36/12,422 (0.3%)	0.53 (0.30-0.92)	0.0211
IDR	66/12,459 (0.5%)	92/12,422 (0.7%)	0.71 (0.52-0.98)	0.0363
Death	33/12,459 (0.3%)	45/12,422 (0.4%)	0.73 (0.47-1.15)	0.1694

Steg PG, Bhatt DL, Hamm CW et al…. Harrington RA. *Lancet* 2013