

GESTION MECANIQUE DU THROMBUS EN SALLE DE KT

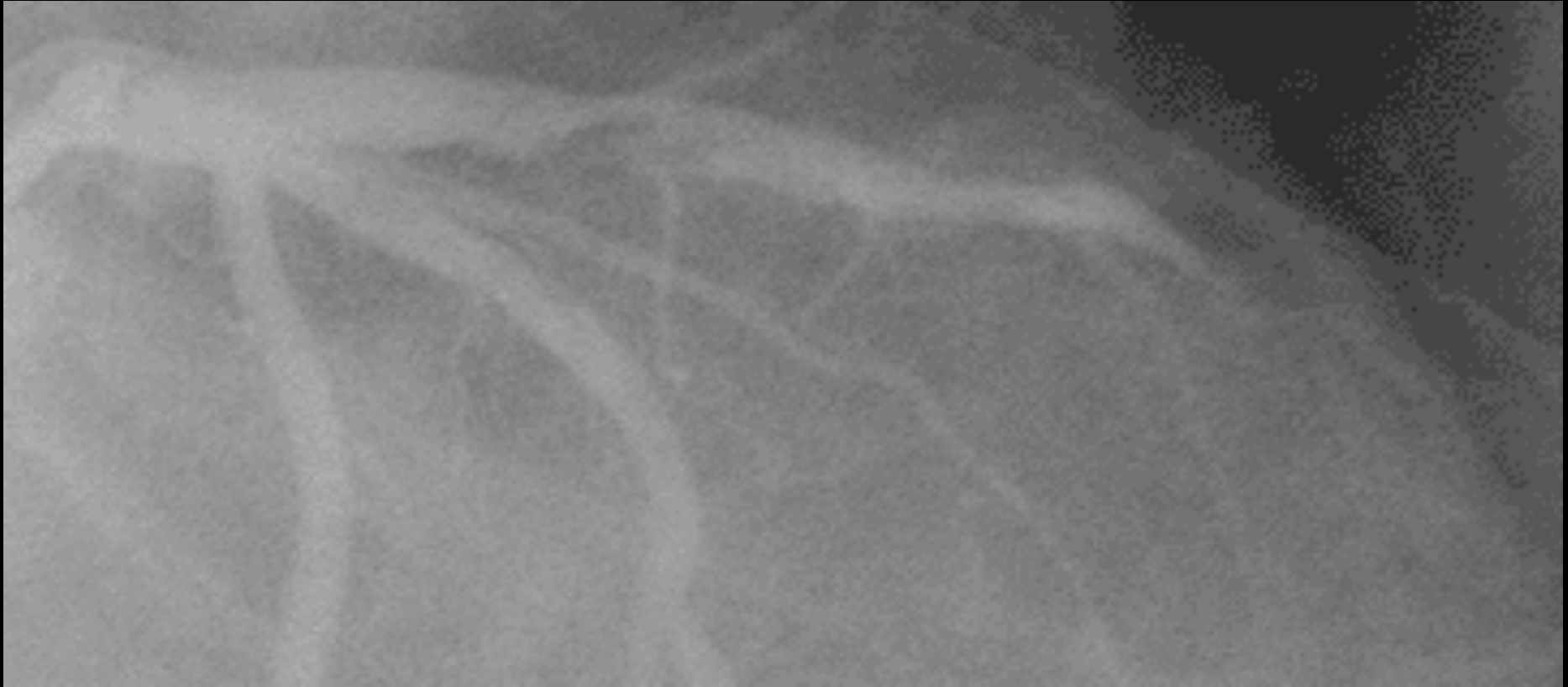
K boughalem
Hôpital Henri Mondor
Clinique Allera Labrouste

APPAC 2012

- Kamel BOUGHALEM
- Clinique Allera Labrouste
- CHU Henri Mondor

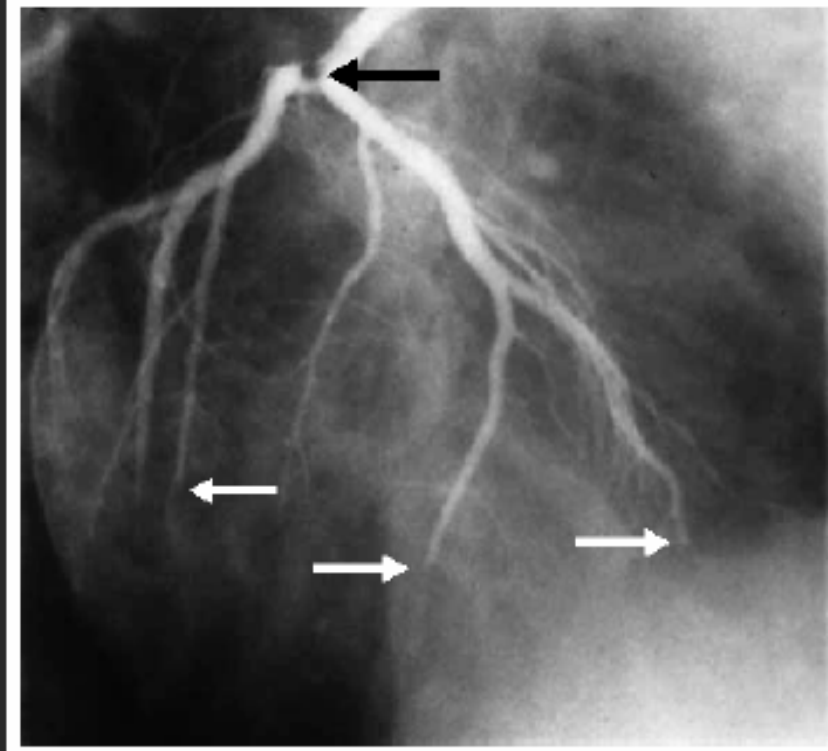
- Déclare n' avoir aucun conflit d' intérêt concernant les données de ma communication

Embolisation coronaire

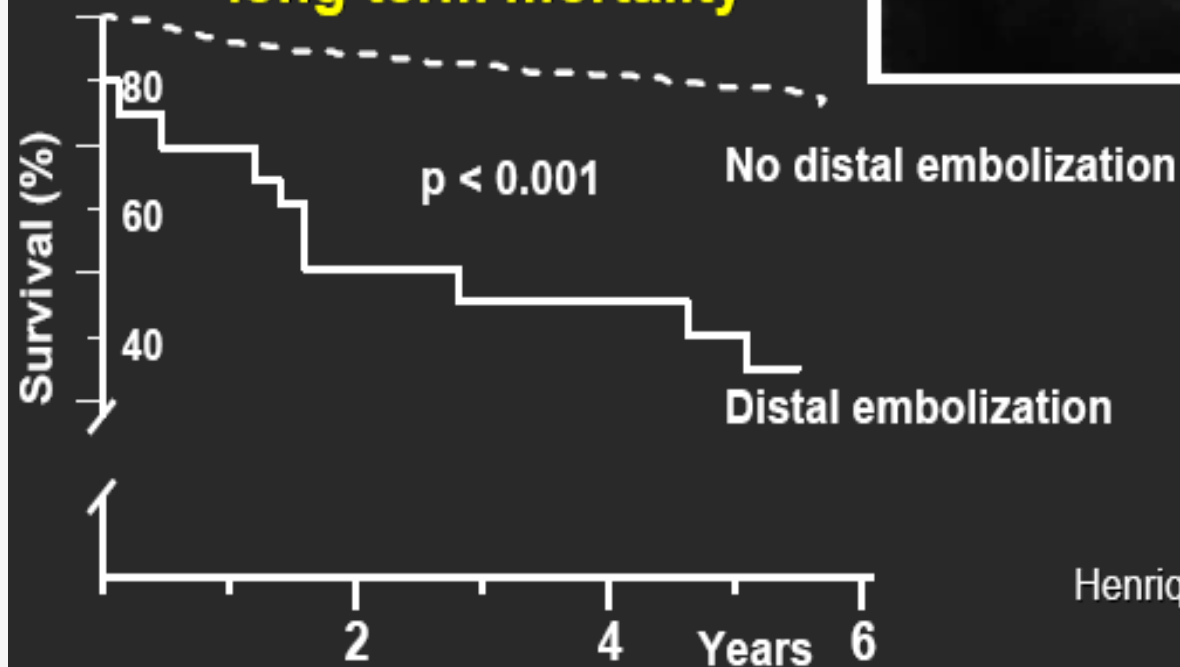


Distal embolization in AMI

Occurred in 27/178 pts (15%)
after primary PCI



long-term mortality



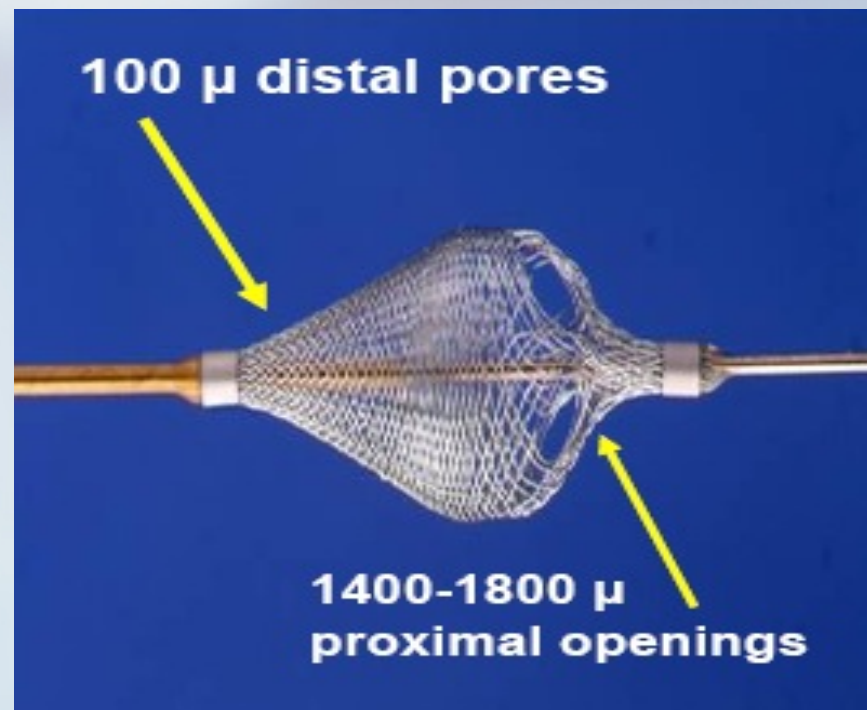
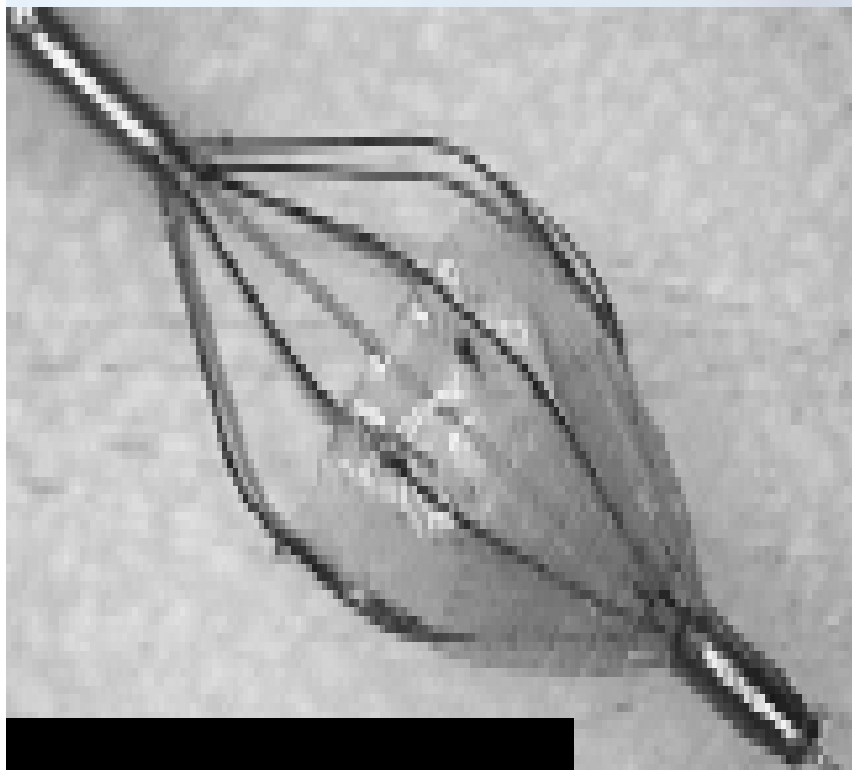
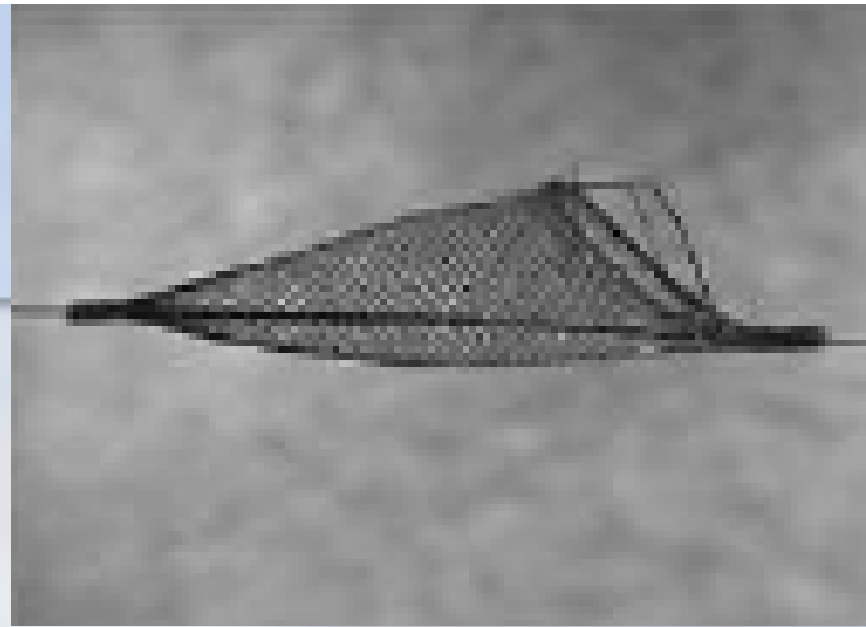
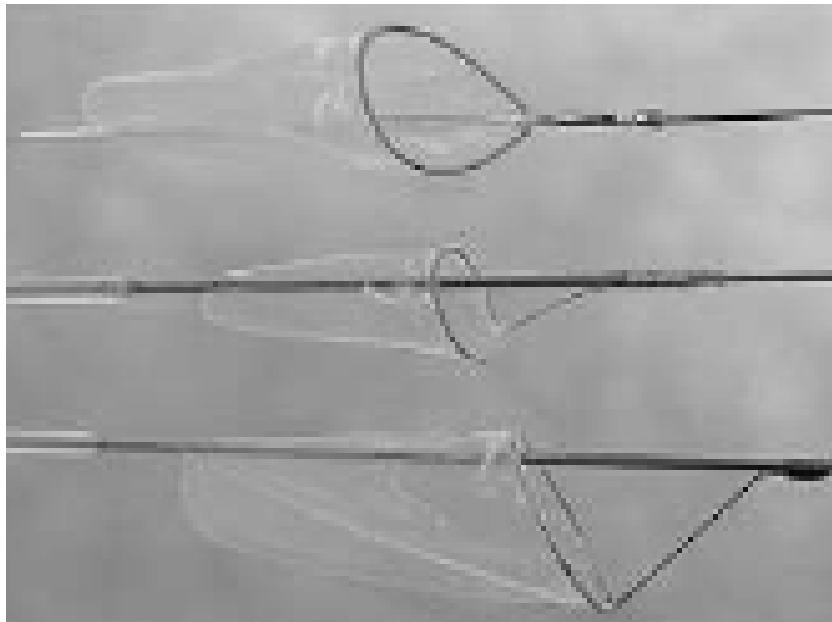
Grade blush
ST résolution
Atteinte de la
microcirculation

Henriques EHJ 2002;23:1112-7

3 types de systèmes

- Systèmes de protection du lit d'aval lors des manœuvres instrumentales
 - Filtres
 - Ballons
- Systèmes d'extraction:
 - Thrombectomie rhéolytique
 - Thrombectomie par aspiration

Les systèmes de délivrance locale



Filtres

Avantages

- Préservation du flux
- Possibilité de réaliser un contrôle angiographique pendant la procédure

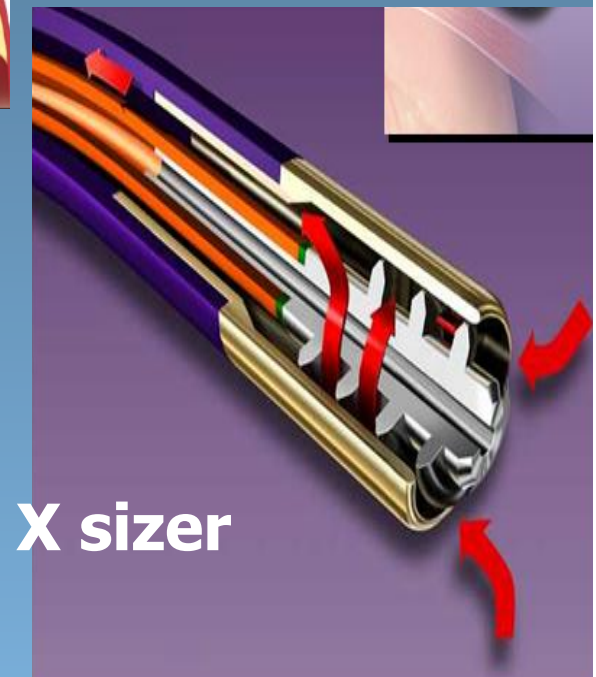
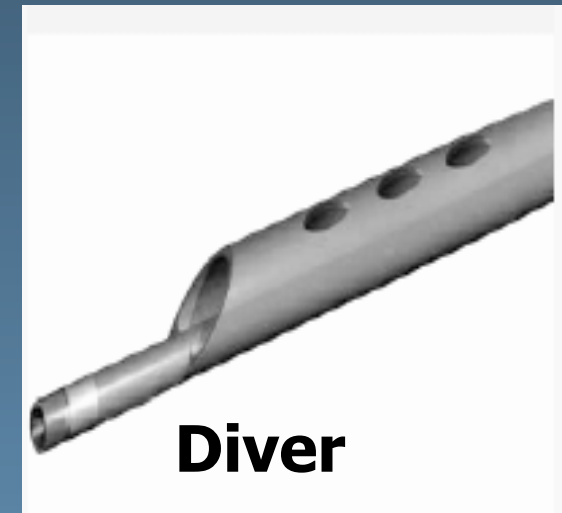
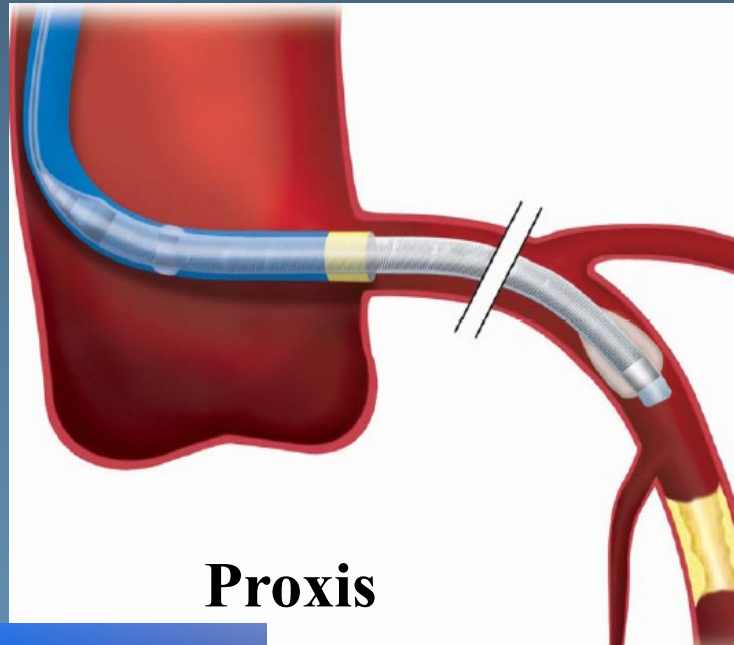
Inconvénients

- Passage des particules les plus petites et des médiateurs humoraux
- Profil de franchissement élevé
- Thrombose potentielle du filtre
- Non protection des branches collatérales
- Nécessité d'une zone distale de positionnement

Protection dans l' IDM

Trial	Design	Significant Particle rec	Outcome
Limbruno (Filterwire)	Case- controlled study	√	Improved cTFC Improved ST res Improved Grade 3 blush
DIPLOMAT (Angioguard)	60 pt RCT	√	No difference in cTFC or TIMI flow
EMERALD (PercuSurge)	427 pt RCT	√	No difference in infarct size No diff in CTFC, ST res or blush
PROMISE (Filterwire)	200 pt RCT	√	No difference in infarct size No difference in CFR or LVEF
ASPARAGUS (Filterwire)	200 pt RCT	√	No difference in CK, ST resolution, TIMI flow, or blush

Systèmes de thrombectomie endocoronaire



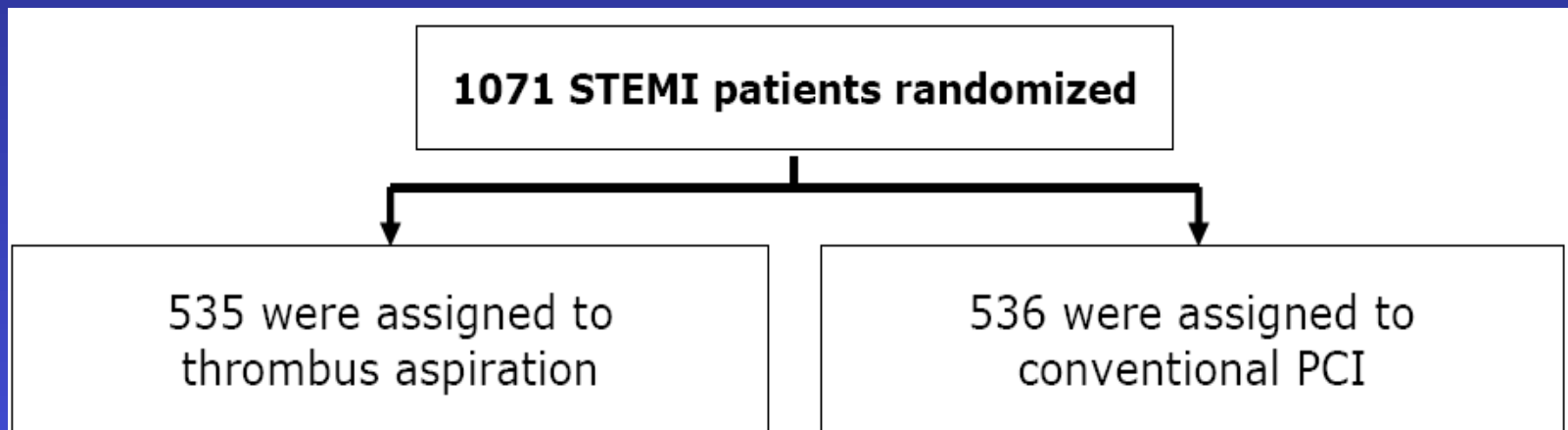
TAPAS TRIAL

Single center, prospective randomized trial

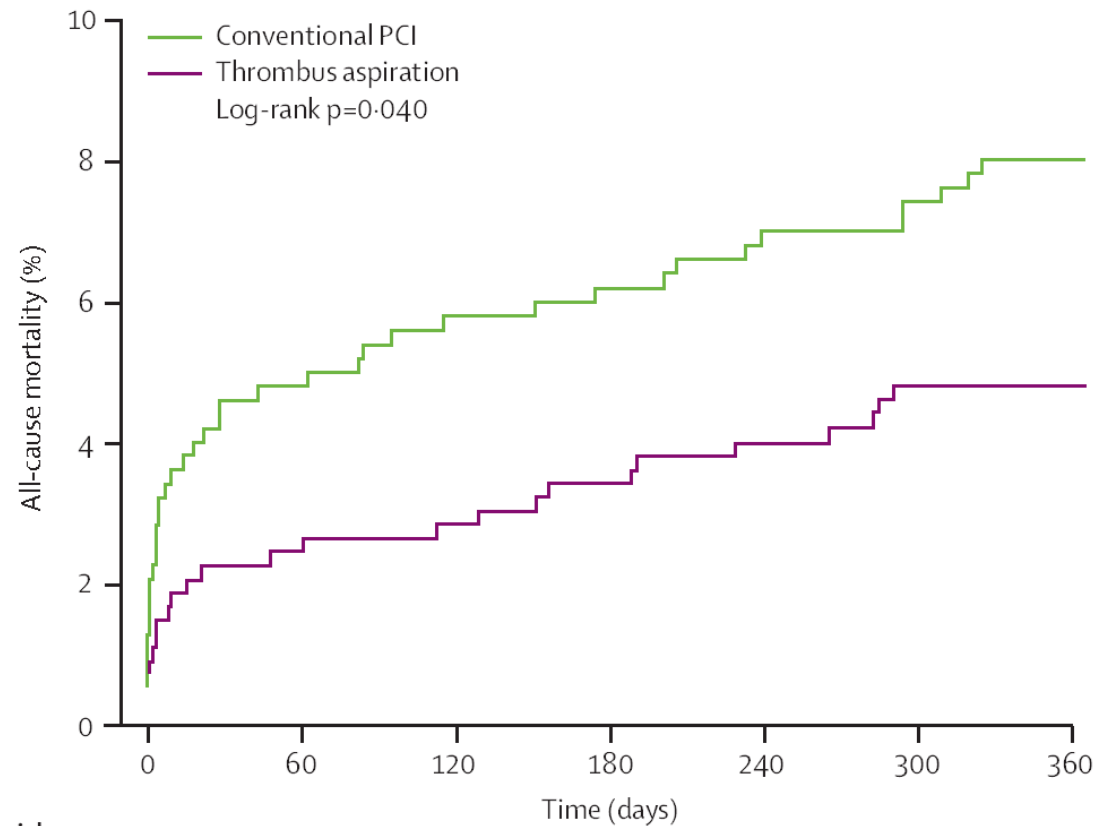
Consecutive patients, randomized before angiography

Endpoints:

- MBG (grade 0 ou 1)
- ST resolution (30 to 60 mn after PCI)
- 30-day death / 30-day death-reMI
- 1-year death / 1-year death-reMI



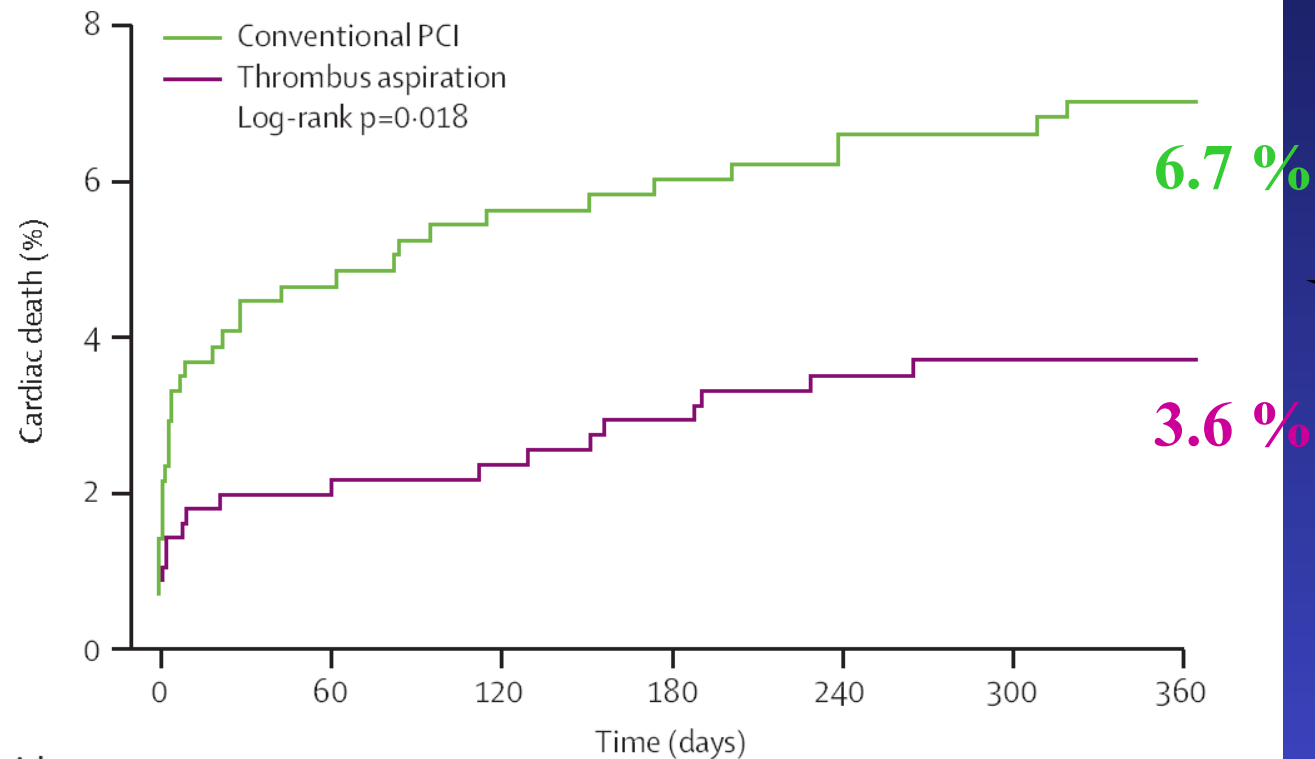
TAPAS TRIAL (1 year)



-38%

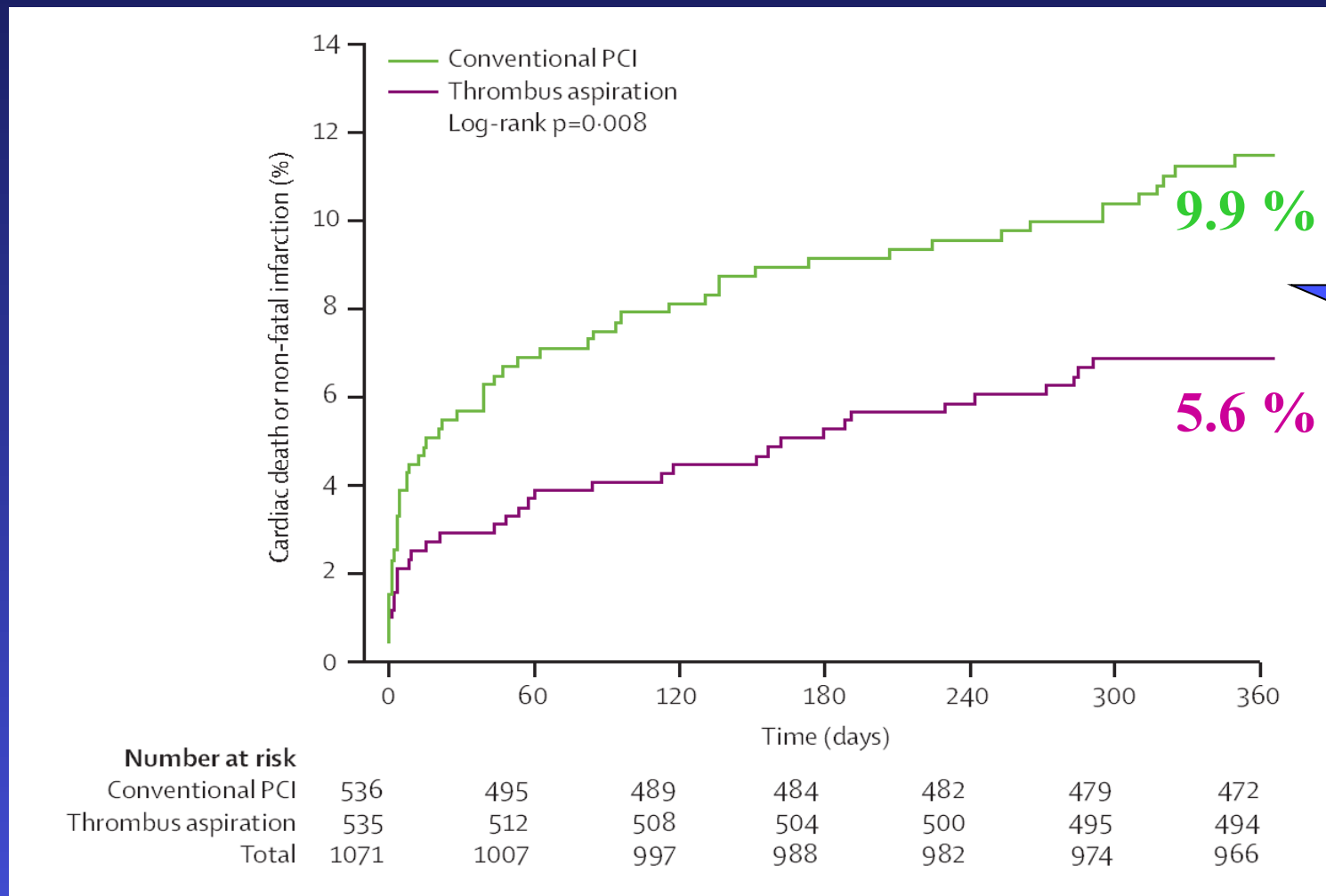
TAPAS TRIAL (1 year)

NNT pour sauver une vie: 32



Number at risk							
Conventional PCI	536	506	501	499	495	494	489
Thrombus aspiration	535	519	517	514	510	506	505
Total	1071	1025	1018	1013	1005	1000	994

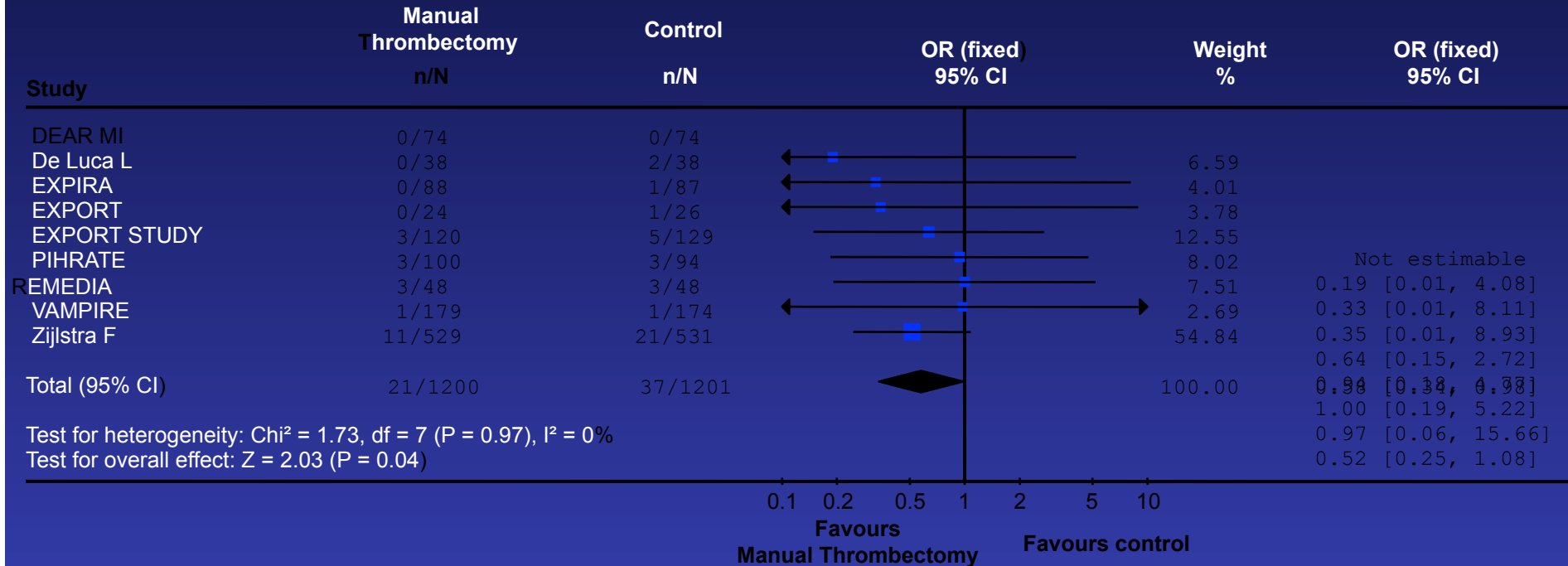
TAPAS TRIAL (1 year)





Thrombus aspiration – meta-analysis

30-day mortality



“Use of adjunctive manual thrombectomy devices is associated with better epicardial and myocardial perfusion, less distal embolization and significant reduction in 30-day mortality. Thus, adjunctive manual thrombectomy devices, if not anatomically contraindicated, should be routinely used among STEMI patients undergoing primary angioplasty.”



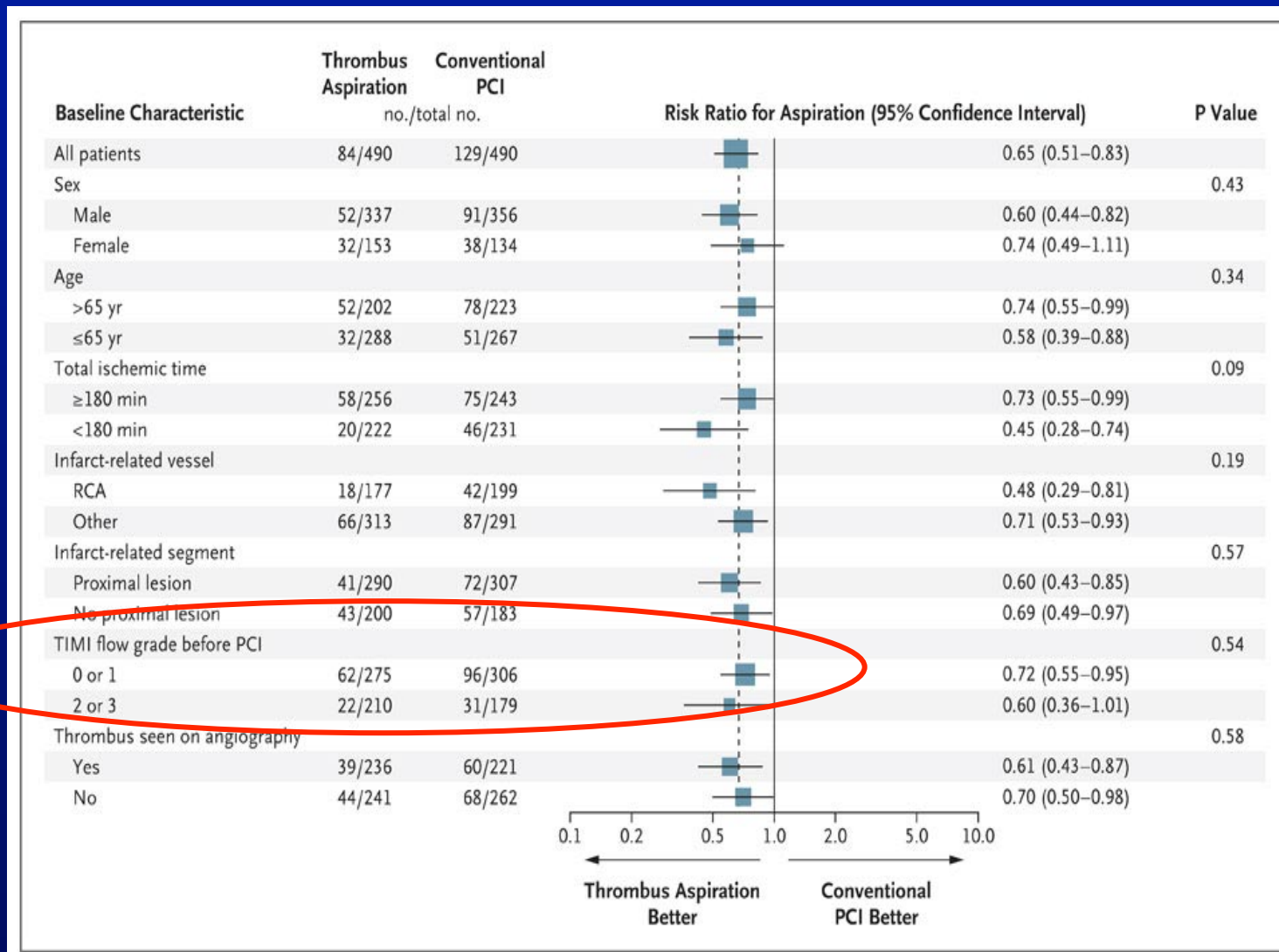
Recommendations for prevention and treatment of no-reflow

Recommendations	Class	LOE
<u>Prevention</u>		
■ Thrombus aspiration	IIa	B
■ Abciximab 0.25 mg/kg bolus and 0.125 µg/kg/min infusion for 12-24 h	IIa	B
<u>Treatment</u>		
■ Adenosine: 70 µg/kg/min i.v. over 3 h i.v. during and after PCI	IIb	B
■ Adenosine: bolus of 30 to 60 µg i.c. during PCI	IIb	C
■ Verapamil: bolus 0.5 -1 mg i.c. during PCI	IIb	C

Thrombectomie systématique ?

- Je n'utilise la thromboaspiration qu'en cas de flux TIMI 0/1 !

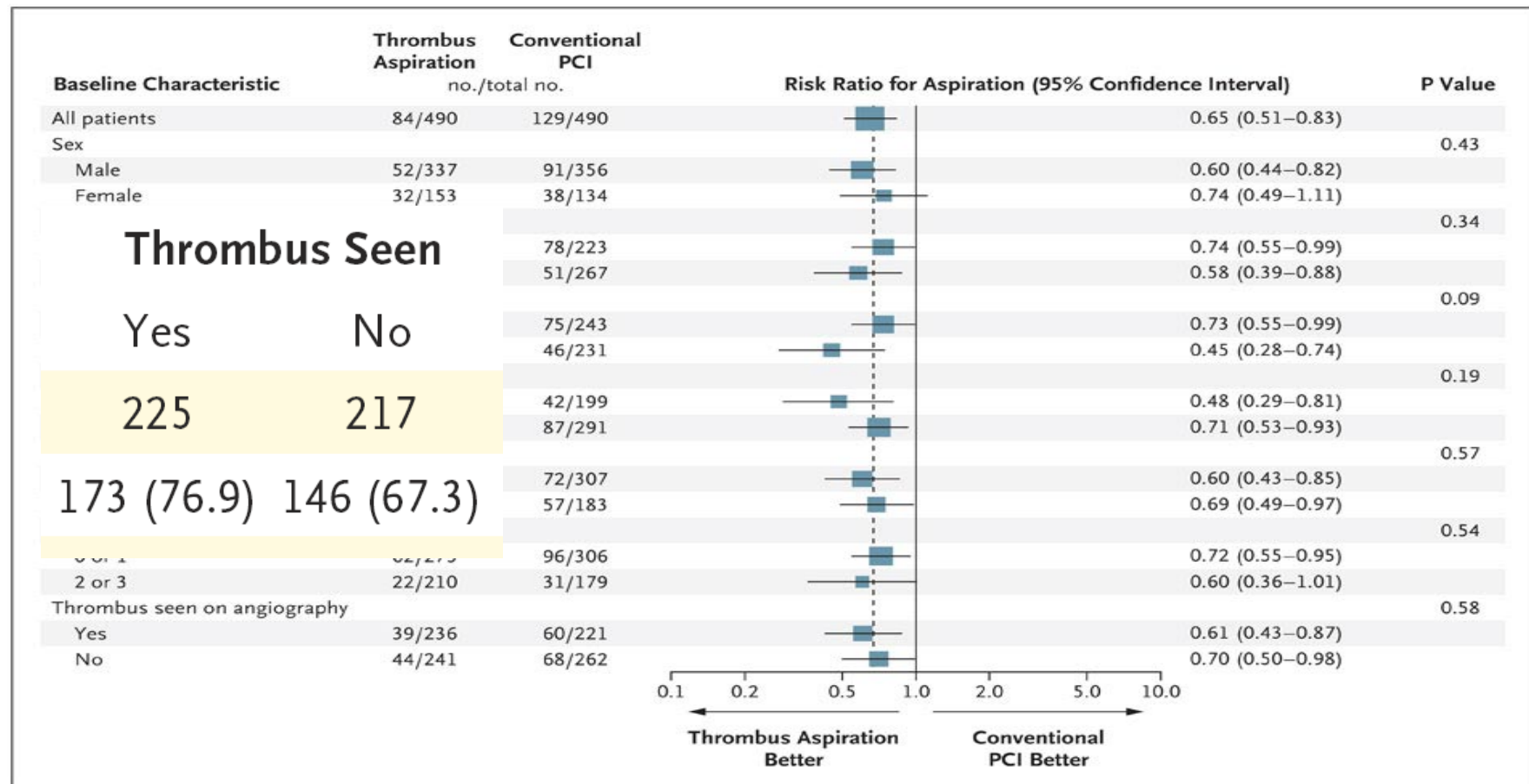
Flux TIMI before PCI



Thrombectomie systématique ?

- Je n'utilise la thromboaspiration qu'en cas de thrombus angiographiquement visible !

Only large thrombus – TAPAS I



TAPAS Study

Thrombo aspiration systematic or not ?

- Coronary angiography thrombus seen:
 - Yes – in 225 patients
 - Aspirate collected in 173 (76.9% of 225 patients)
 - No – in 217 patients
 - Aspirate collected in 146 (67.3% of 217 patients)
- ***Even if thrombus not visible at coronary angiography, it can still be present and patients can benefit from thrombus aspiration according to this study.***

Thrombectomie systématique ?

- Je n'ai pas besoin de la thromboaspiration car j'utilise des anti GPIIb/IIIa !

Association avec les anti GPIIb/IIIa

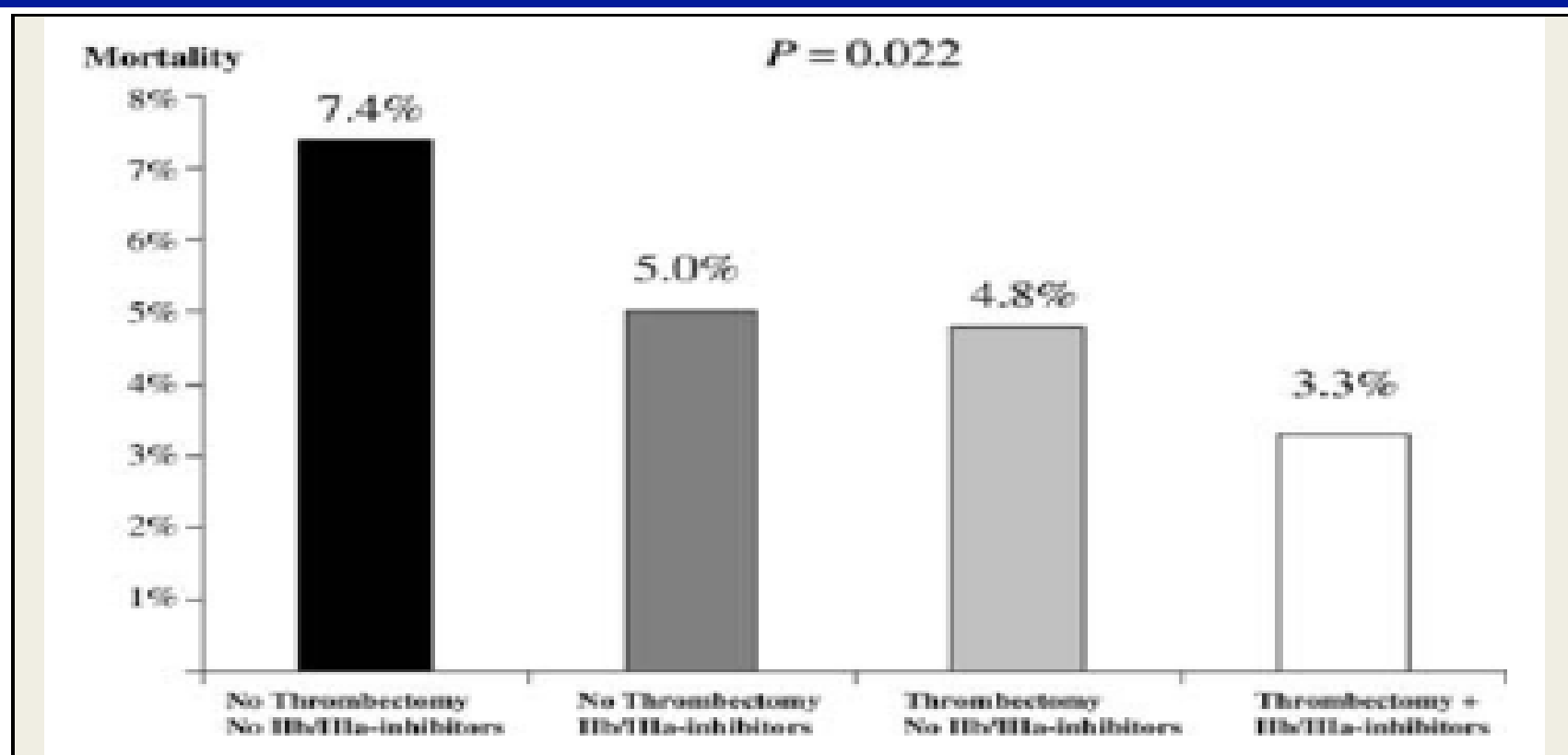


Figure 6 Mortality rates observed in the ATTEMPT database according to thrombectomy and to administration of IIb/IIIa-inhibitors. Comparison between four treatment subgroups performed by Fisher test.

Burzota F et al. ATTEMPT. Eur Heart J 2009

Thrombectomie systématique ?

- Je n'ai pas besoin de la thromboaspiration car je fais du stenting direct !

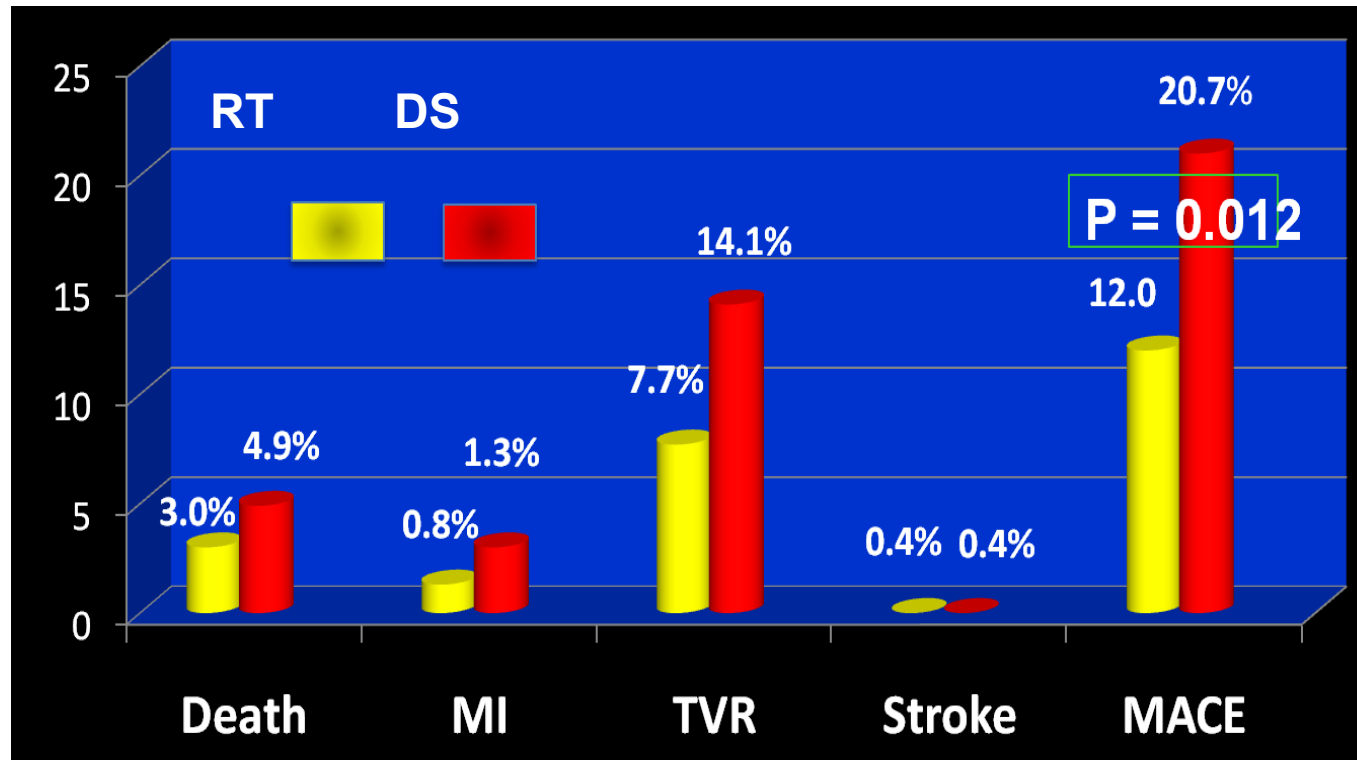
Direct stenting ?

Comparison of AngioJET** Rheolytic
Thrombectomy
Before Direct Infarct Artery
STENTing with Direct Stenting Alone
in Patients with Acute Myocardial
Infarction:
the **JETSTENT trial****



David Antoniucci on behalf of the JETSTENT Investigators

6-Month Outcome



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**

IC Abcx

No Abcx

**R
1:1**

IC Abcx

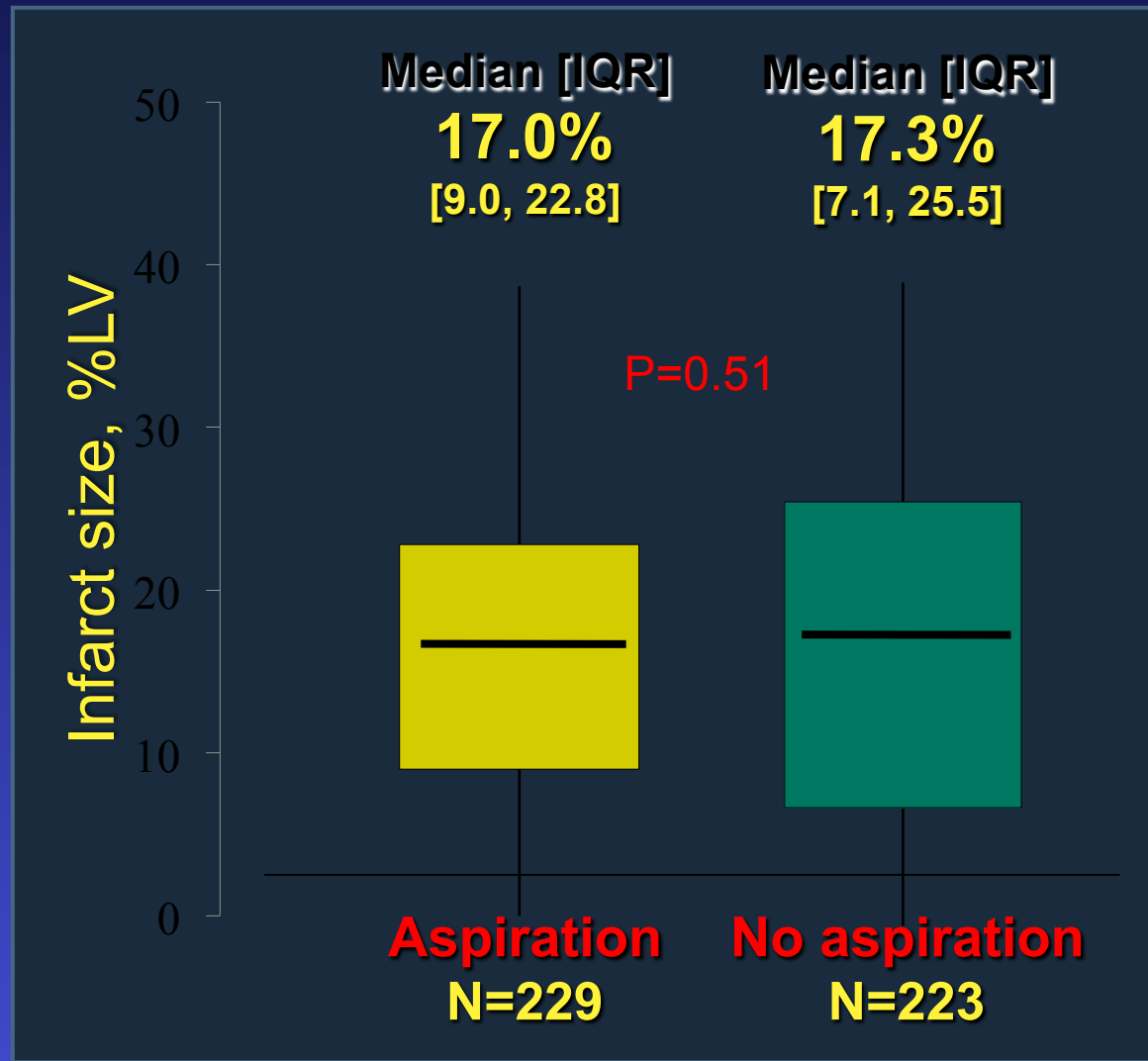
No Abcx

Primary endpoint: Infarct size at 30 days (cMRI)

2° endpoints: TIMI flow, blush, ST-resolution, MACE (30d, 1 yr)

INFUSE-AMI: Infarct size at 30 days*

- Major secondary endpoint -

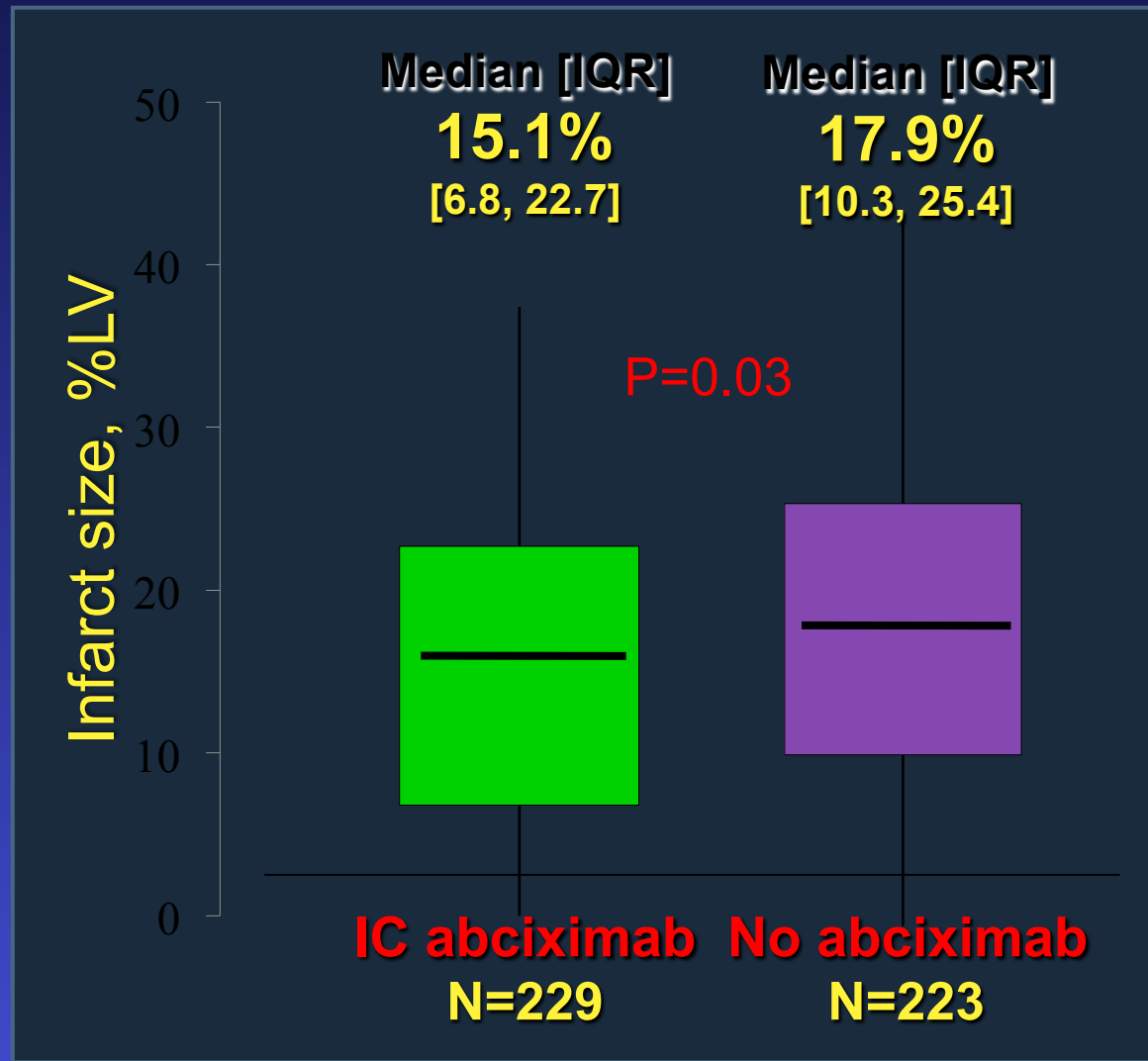


*Core laboratory assessed. No interaction was present between the 2 randomization groups for the primary 30-day infarct size endpoint (p=0.46)

Stone et al, JAMA.2012;307(17):doi:10.1001/jama.2012.421

INFUSE-AMI: Infarct size at 30 days*

- Primary endpoint -



*Core laboratory assessed

Stone et al, JAMA.2012;307(17):doi:10.1001/jama.2012.421

Infuse AMI

In conclusion, among patients with large anterior STEMI presenting early after infarct onset and undergoing primary PCI with bivalirudin anticoagulation, infarct size was reduced by bolus intracoronary abciximab delivered to the site of the infarct lesion, but not by manual aspiration thrombectomy.

Stone et al, JAMA.2012;307(17):doi:10.1001/jama.2012.421

GP IIb/IIIa Antagonists have been shown to improve the microvascular flow in various studies.

This might be due to the protective effect on the microcirculation through GPIIb/IIIa receptor blockade, as platelet aggregation is completely inhibited.

Prognostic Role of Thrombus Aspiration and GP IIb/IIIa Inhibitors during Primary Percutaneous Coronary Intervention

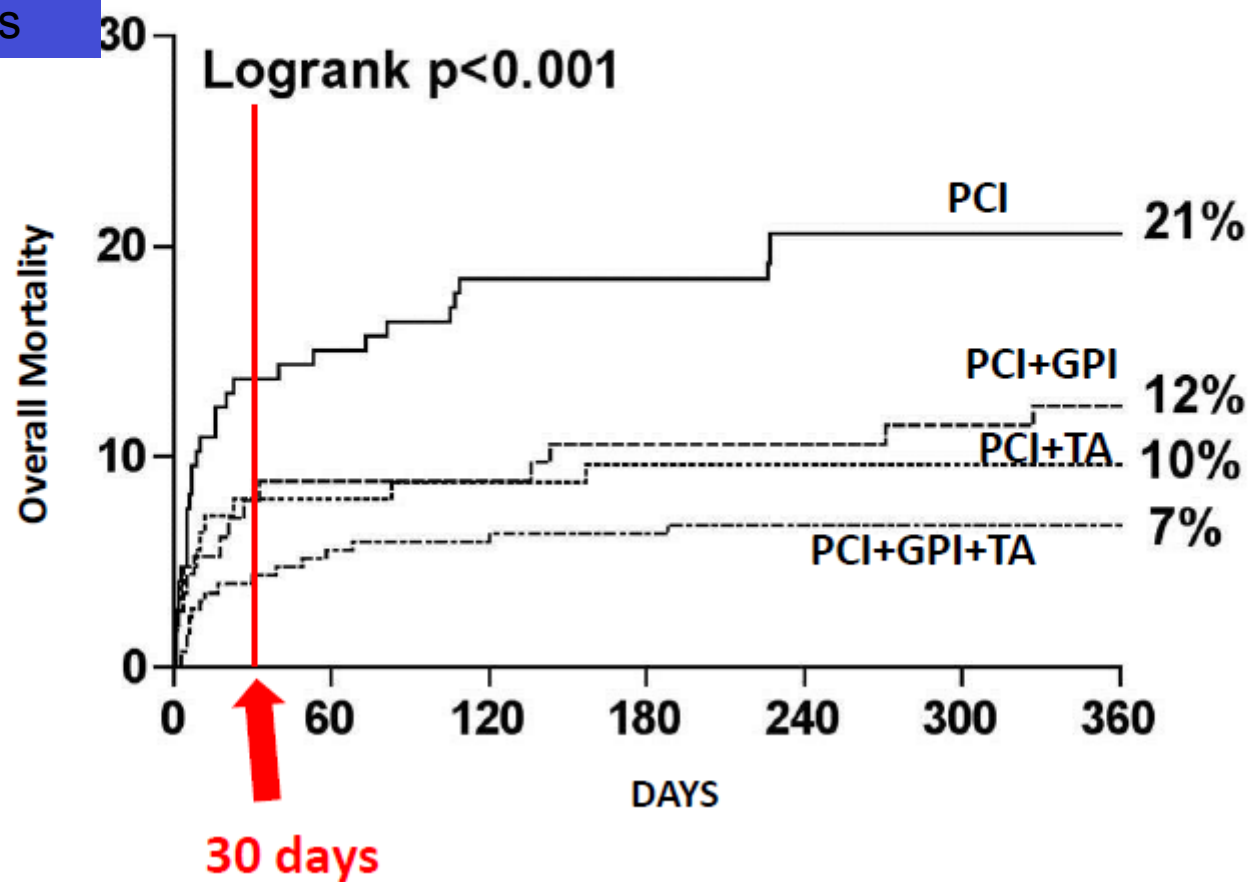
Stylianos A. Pyxaras, MD*‡, Fabio Mangiacapra, MD*, Luigi Di Serafino, MD, PhD*,
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Mortality at 1 year

644pts



Les Systèmes d'infusion locale

BALLON D'INFUSION: LE Clearway

Petits effectifs, avec infusion d'héparine,
d'antiGPIIb/IIIa ou de vasodilatateurs

PROMETTEUR !

Thrombectomy and platelet glycoprotein IIb/IIIa blockade for stent thrombosis

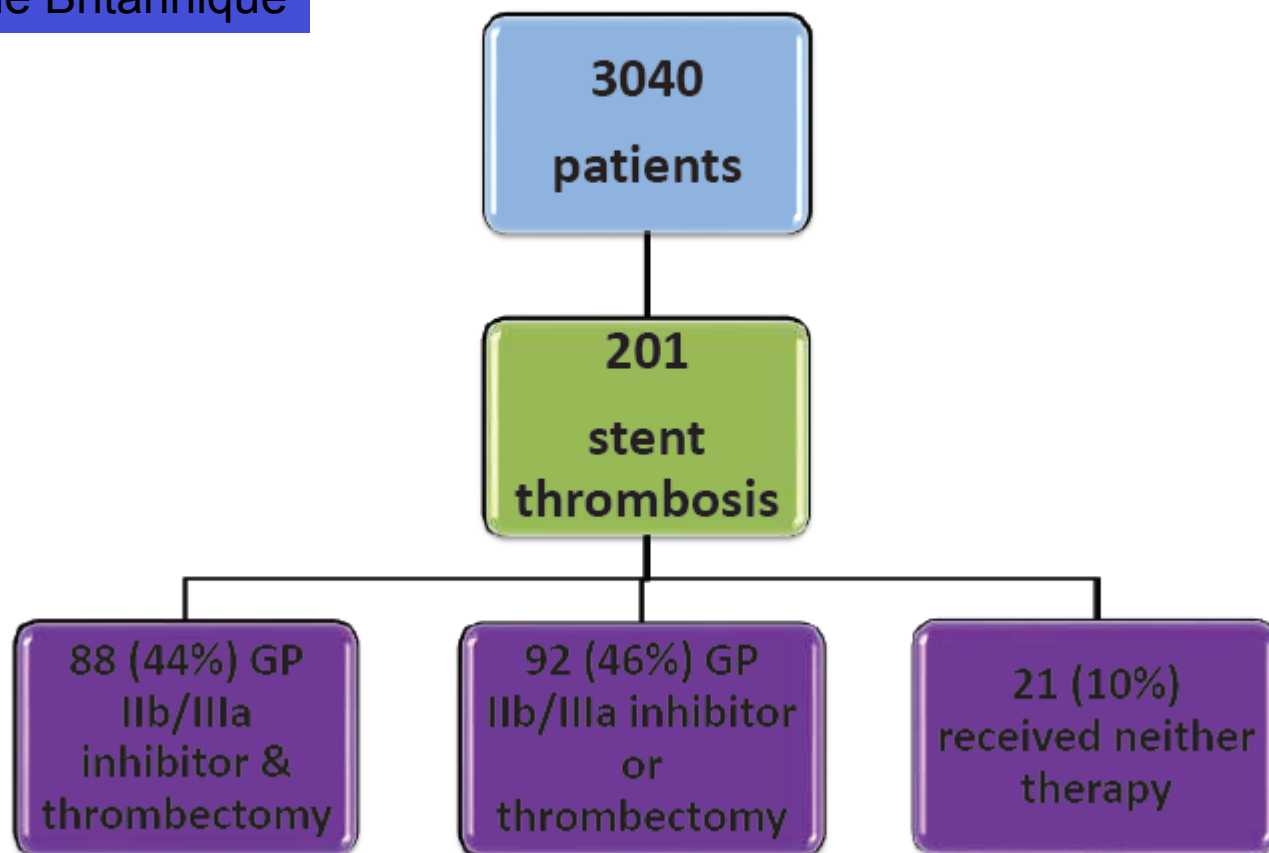
Bromage DI, Jones DA, Gallagher S, Akhtar M, Sammut
E, Rathod KS, Jain A, Knight C, Mathur A, Wragg A

Department of Cardiology, Barts Health NHS Trust, London, United
Kingdom

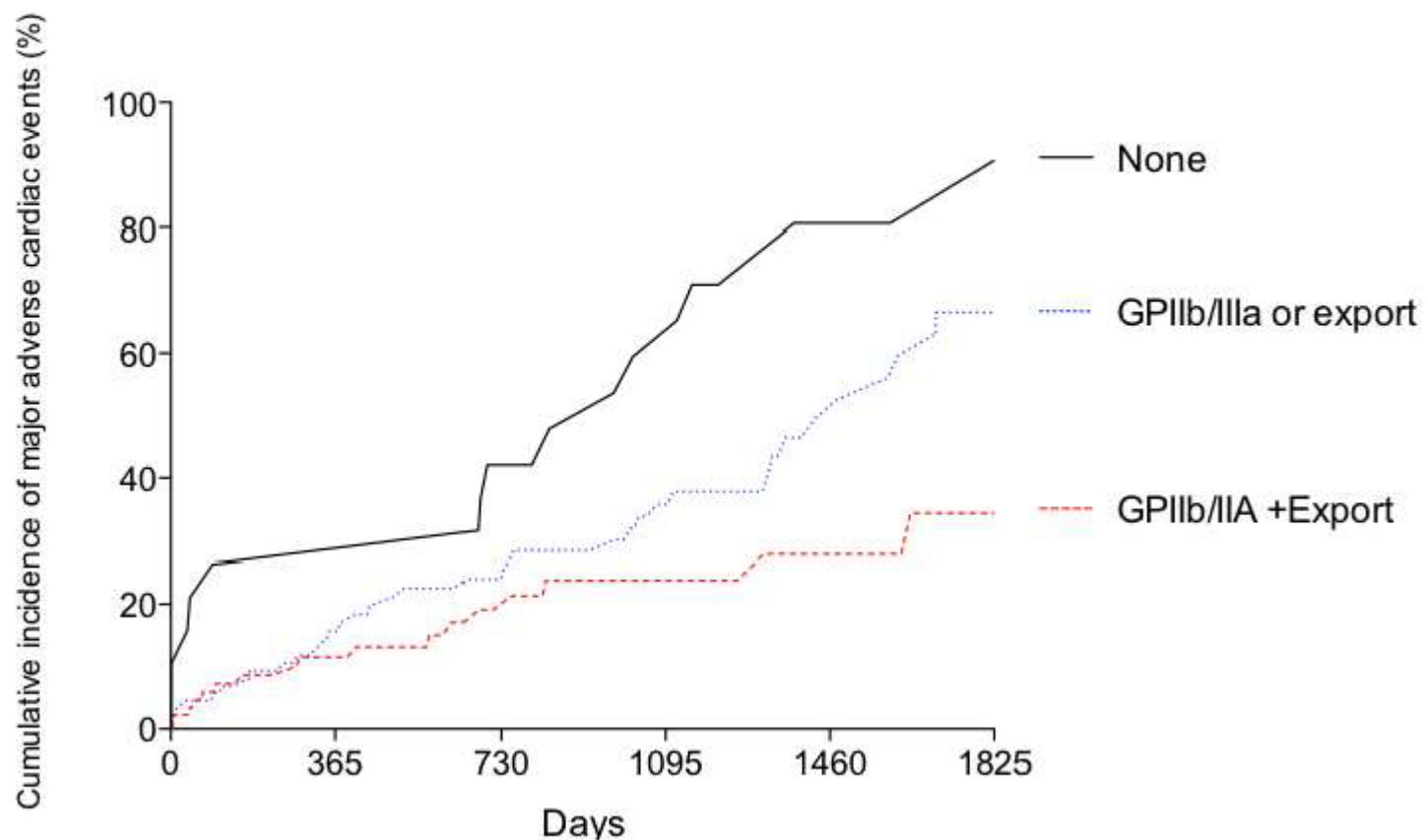


Results

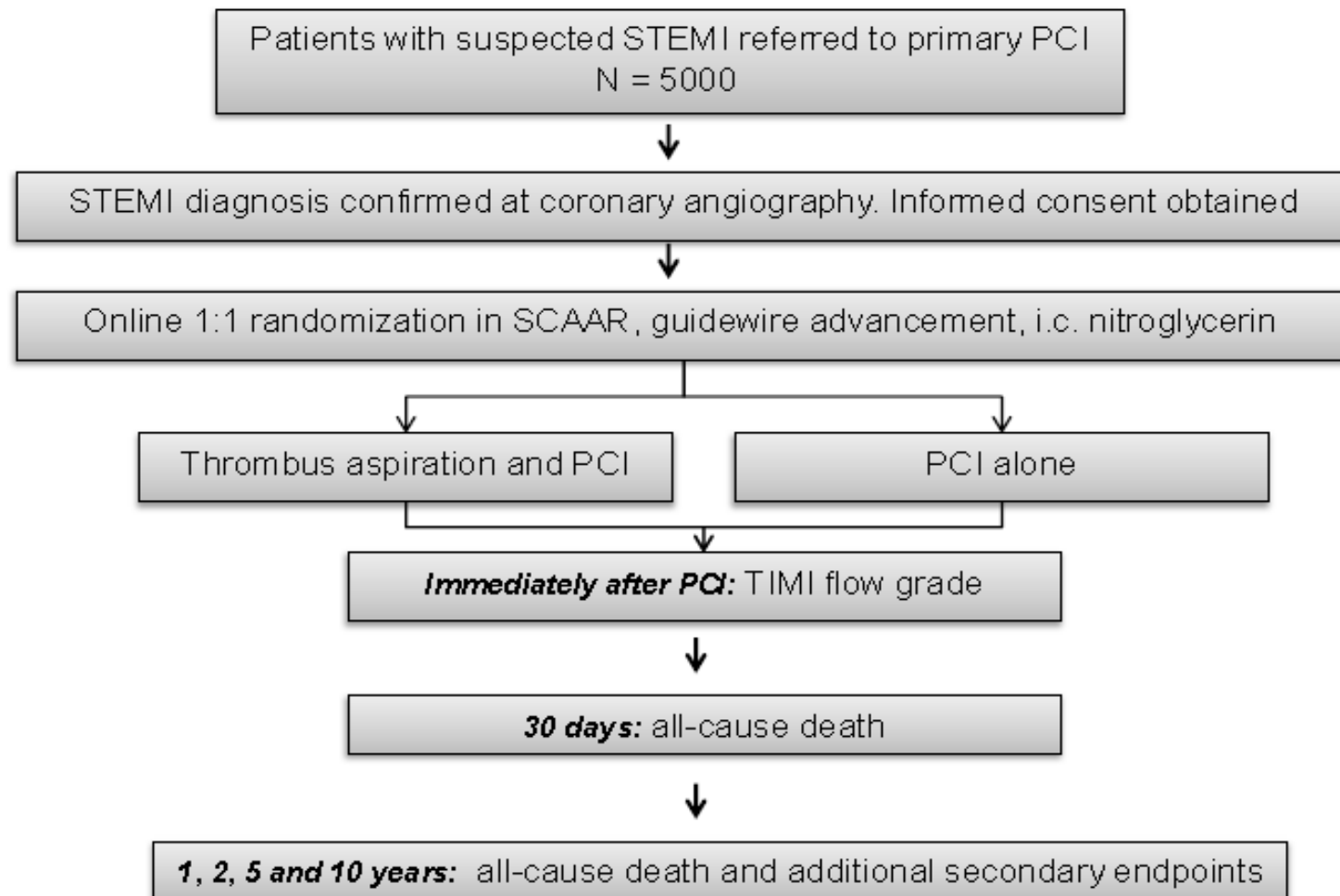
Etude Britannique

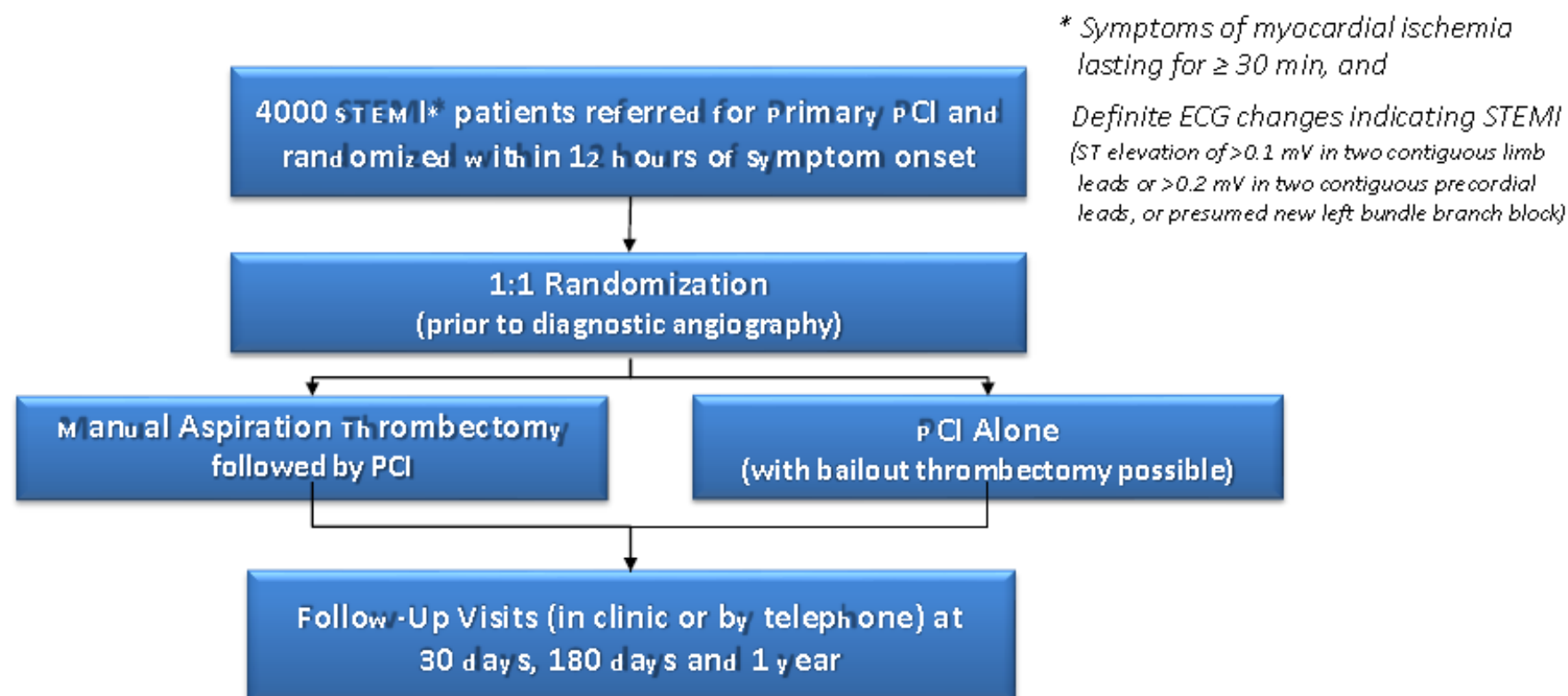


Kaplan Meier curve showing cumulative probability of MACE after PPCI comparing the different treatment strategies



TASTE trial flow chart





Contact email: total@phri.ca

Primary outcome: CV death, recurrent MI, cardiogenic shock and new or worsening NYHA Class IV HF at 180 days

Aspirez ,aspirez il en restera toujours quelque chose

- La thromboaspiration manuelle est une technique simple, qui bien que reposant sur des données factuelles encore incomplètes, semble avoir une place incontournable dans l'arsenal thérapeutique en phase aiguë, quelque soit la charge thrombotique visible en angiographie.
- L'utilisation locale d'anti GPIIb IIIa peut être utile en association avec la TA.
- Les systèmes de protection distale ont une place marginale à ce jour.
- L'association de moyens chimiques et mécaniques apparaît nécessaire, mais encore insuffisante (40% des IDM aigus reperfusés par angioplastie , gardent des troubles de la microcirculation)