

Débats autour du SCA :

Traitement lésion coupable vs Revascularisation complète

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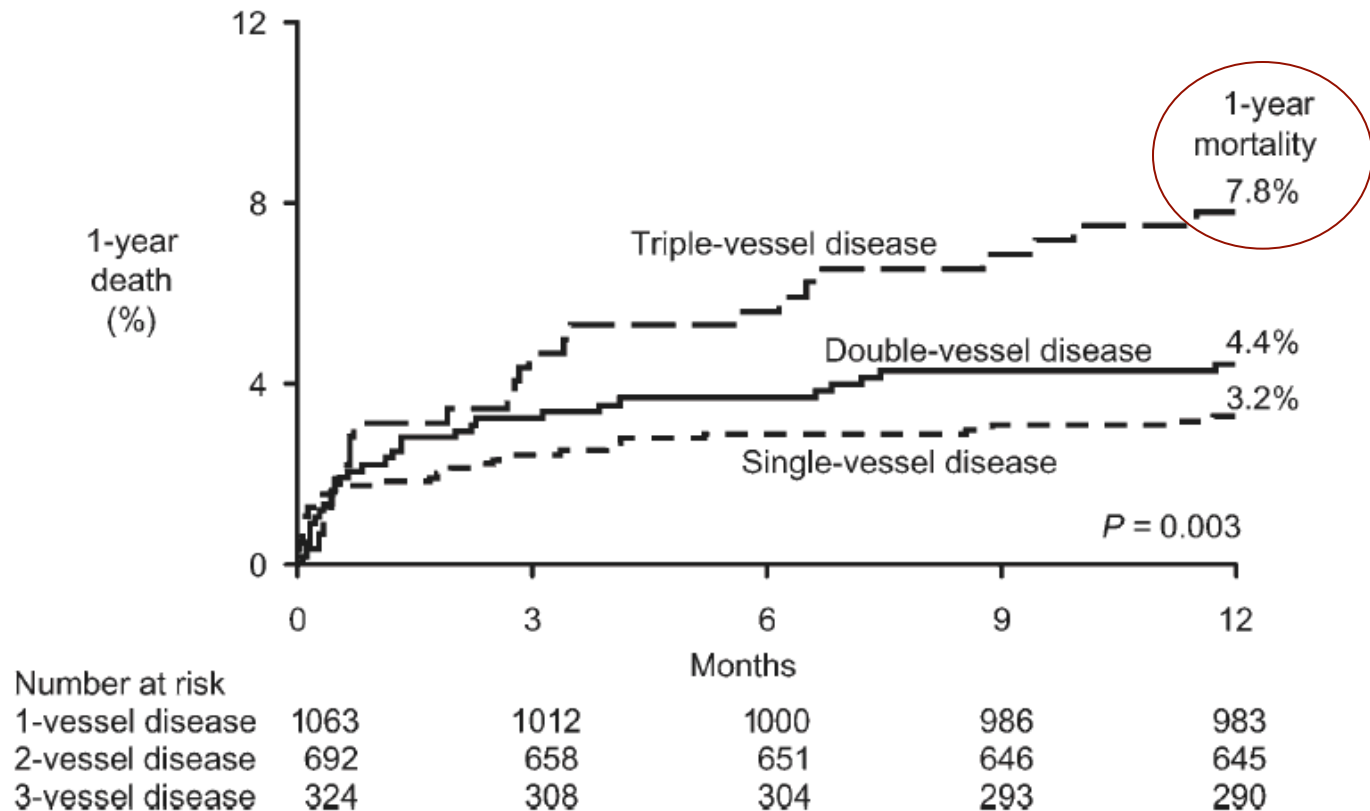
Biarritz le 05/06/2014

CONFLITS D INTERETS

- Aucun conflit d'intérêt à déclarer

Atteinte multi tronculaire et STEMI : Fréquence / Impact pronostic

- 40 – 65 % STEMI : Atteinte pluri- coronarienne



Atteinte multi tronculaire et STEMI :

Impact pronostic

	Single vessel (n = 1066)	Double vessel (n = 692)	Triple vessel (n = 324)	P-value
30-day (%)				
Death	1.8	2.2	3.1	0.37
Re-infarction	1.1	0.6	0.6	0.53
Recurrent ischaemia	6.5	9.9	10.0	0.02
Ischaemic TVR	2.9	3.5	5.0	0.21
Disabling stroke	0.5	1.2	1.6	0.11
Any stroke	0.5	1.2	1.6	0.11
Major adverse cardiac events	5.0	5.8	8.3	0.08
Non-TVR	0.9	10.8	13.4	<0.0001
1 year (%)				
Death	3.2	4.4	7.8	0.003
Re-infarction	2.0	3.0	2.3	0.46
Recurrent ischaemia	19.6	26.0	25.0	0.003
Ischaemic TVR	11.3	15.2	16.2	0.02
Disabling stroke	0.3	0.8	1.0	0.26
Any stroke	1.1	2.4	2.2	0.09
Major adverse cardiac events	14.8	19.5	23.6	0.0006
Non-TVR	3.5	21.8	23.8	<0.0001

Table 4 Multivariable predictors of 1-year clinical endpoints

	Hazard ratio	95% confidence interval	P-value
Death			
Triple-vessel disease	2.60	1.27, 5.31	0.009
Anterior myocardial infarction	2.36	1.22, 4.59	0.01
Age	1.05	1.03, 1.08	0.0001
Decreased left ventricular ejection fraction	1.05	1.03, 1.09	<0.0001
Female gender	1.79	0.97, 3.30	0.06
Hyperlipidaemia	0.37	0.17, 0.80	0.01

Atteinte multi tronculaire et **STEMI** :

CONSENSUS : « The MISSION IS TO OPEN THE CULPRIT »

Great Debate, PCR 2014, Pr Flavio RIBICHINI

Autres lésions significatives : 3 possibilités

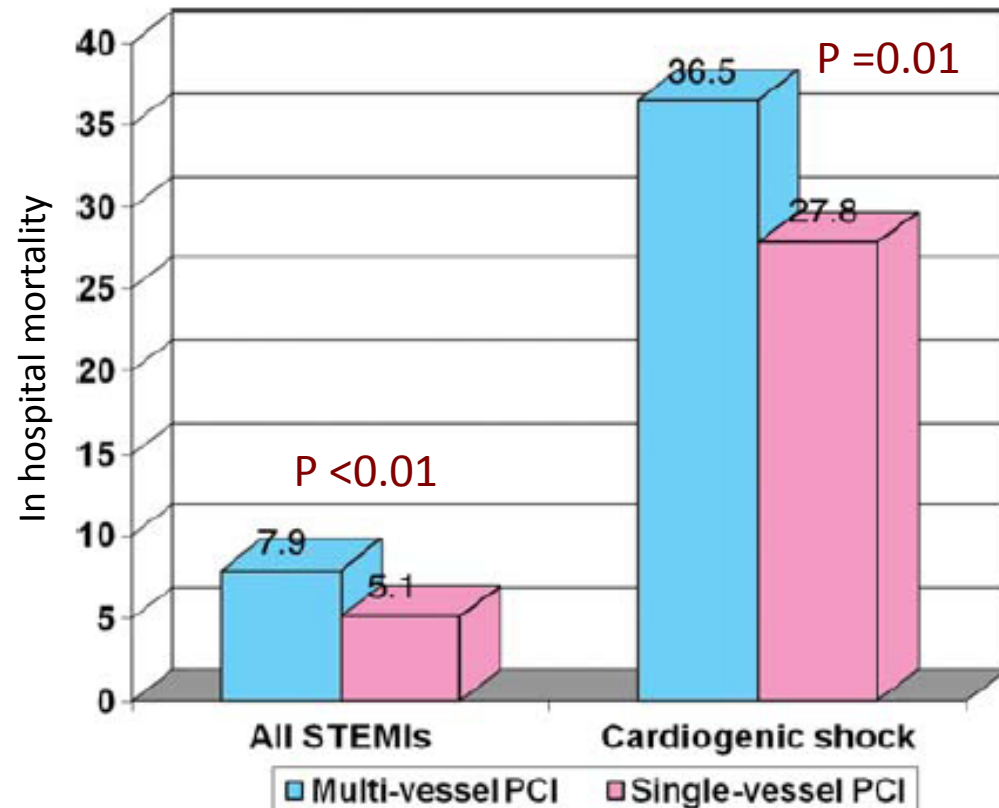
- Revascularisation « complète » : **MULTIPLE PCI**
 - Pendant la phase aigue : traitement de toutes les lésions angiographiques
- Revascularisation différé : **STAGED PCI**
 - Même hospitalisation / quelques semaines après ATC primaire
 - Données de l'angiogramme / étude fonctionnelle
- Traitement conservateur : **CULPRIT LESION ALONE**
 - Approche médicale post Angioplastie Primaire

Atteinte multi tronculaire et STEMI : Approche « MULTIPLE PCI »

Table I Acute multi-vessel percutaneous coronary intervention during ST-segment elevation myocardial infarction

Advantages	Disadvantages
Complete revascularization	Increased contrast load/risk of contrast-induced nephropathy
Treat ischaemia at a distance	Radiation exposure
Treat secondary unstable lesions (plaque instability may not be limited to the culprit lesion)	Complications of treating additional lesions may be potentially fatal
Patient preference/comfort	Haemodynamic and general clinical instability treating additional lesions
	Increased risk of stent thrombosis in patients with clopidogrel resistance/intolerance.
	Prothrombotic and inflammatory milieu in the acute phase of STEMI
	Coronary spasm may lead to possible overestimation of stenosis severity in non-infarct arteries

The US National Cardiovascular Data Registry : 28 936 STEMI patients



Atteinte multi tronculaire et **STEMI** :

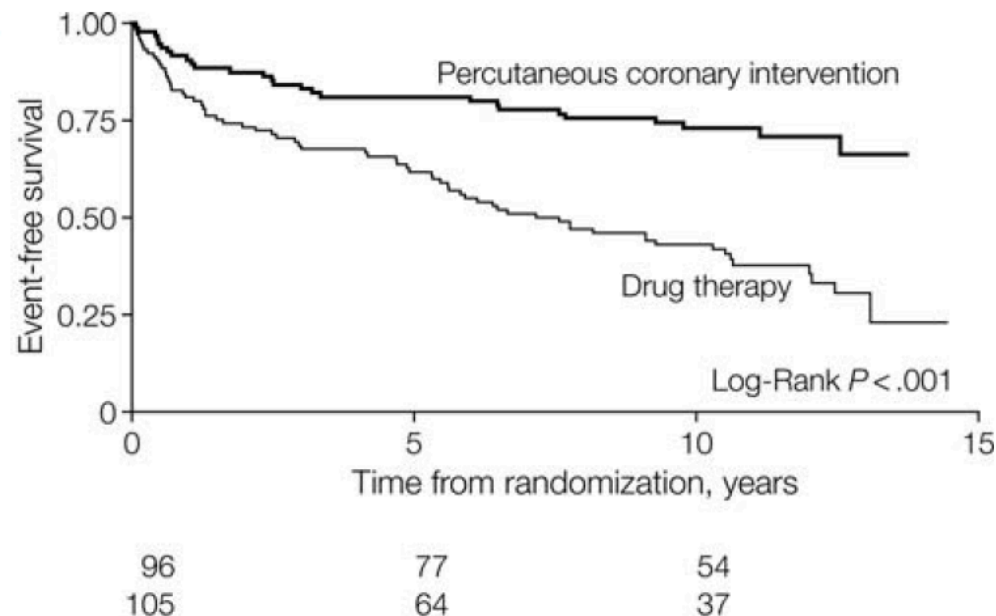
Approche « **STAGED** »

Table 3 Infarct-related artery culprit lesions then staged secondary lesions

Advantages	Disadvantages
Optimize potential for complete revascularization	Economics
PCI of a stable stenosis might be intervened more safely at a later phase, after stabilization	May treat asymptomatic lesions
	Complications of treating secondary lesions early after index event
	Timing uncertain

SWISSI II Trial :

Supériorité de l'angioplastie programmée vs traitement médical avec preuve ischémique post STEMI



Atteinte multi tronculaire et STEMI : Approche « CULPRIT LESION ALONE»

Table 2 Infarct-related artery culprit lesions alone then monitor for ischaemia

Advantages	Disadvantages
Treat only culprit lesion	May leave behind significant ischaemia-producing lesions
Avoid complications associated with treating other lesions	May not treat other less severe unstable lesions
The indication for non-infarct artery PCI can be supported by the objective evidence for myocardial ischaemia in regions supplied by this non-infarct artery	May not prevent recurrent ischaemia
The ability to discuss with patients and their families the relative risks and benefits of treating the non-infarct related lesion vs. continued medical therapy or surgical options	Patients have to return to laboratory routinely

Multivessel PCI vs Culprit PCI Alone:

Reinfarction : 13.0% vs 2.8% , $P < .001$

Revascularisation : 25% vs 15%, $P = .007$

MACEs : 40% vs 28%; $P = .006$

Atteinte multi tronculaire et STEMI :

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Interventional Cardiology

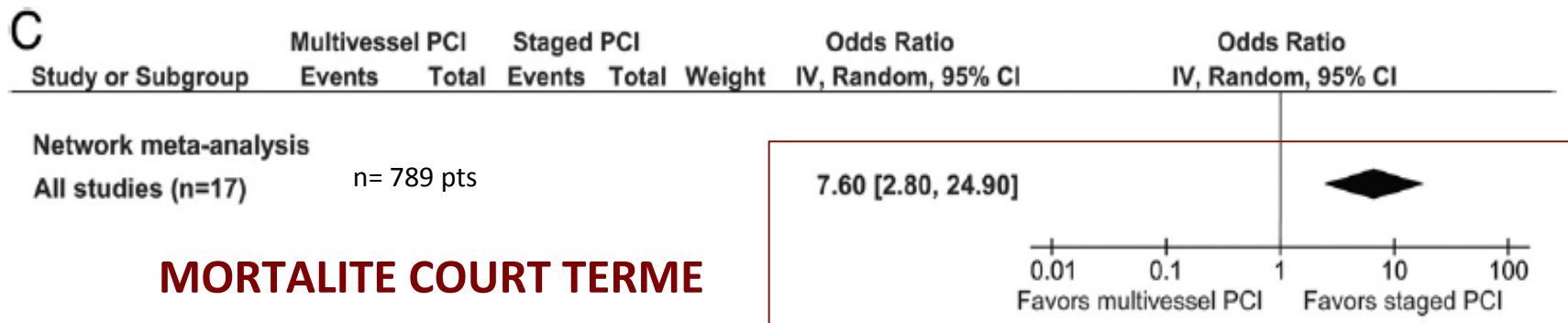
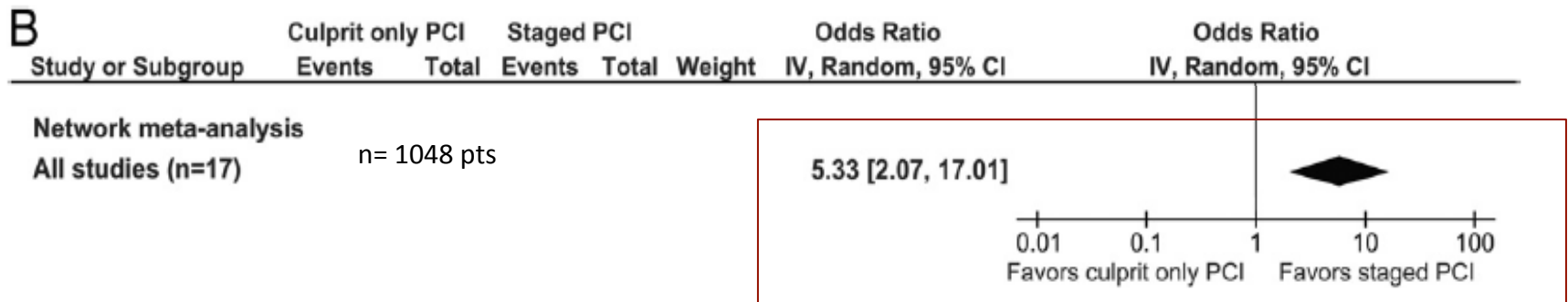
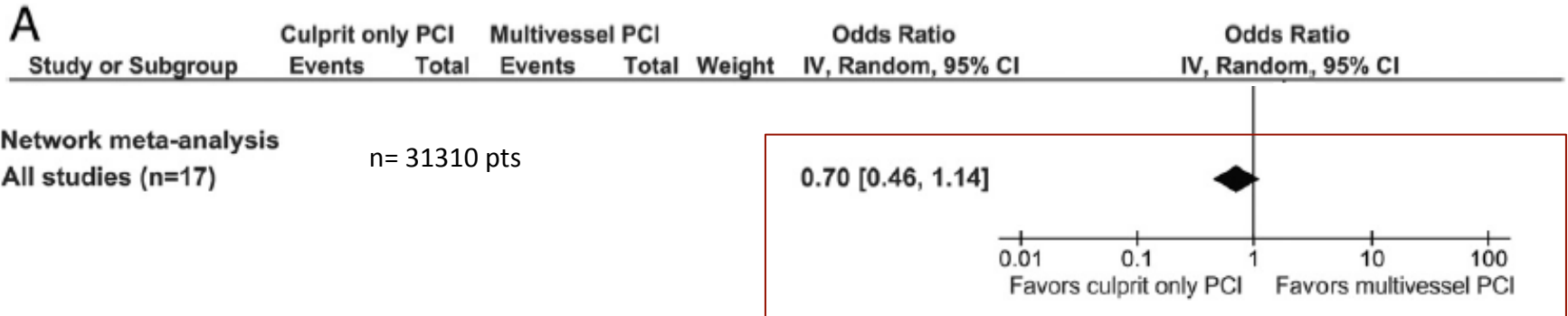
Culprit Vessel Only Versus Multivessel and Staged Percutaneous Coronary Intervention for Multivessel Disease in Patients Presenting With ST-Segment Elevation Myocardial Infarction

A Pairwise and Network Meta-Analysis

Pieter J. Vlaar, MD, PhD,* Karim D. Mahmoud, BS,* David R. Holmes, JR, MD, PhD,†
Gert van Valkenhoef, MS,‡ Hans L. Hillege, MD, PhD,*‡ Iwan C. C. van der Horst, MD, PhD,*
Felix Zijlstra, MD, PhD,§ Bart J. G. L. de Smet, MD, PhD*

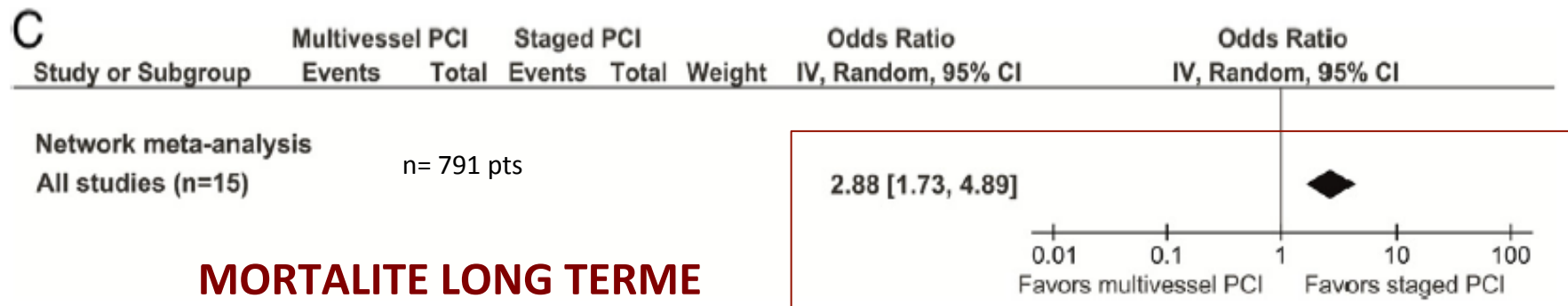
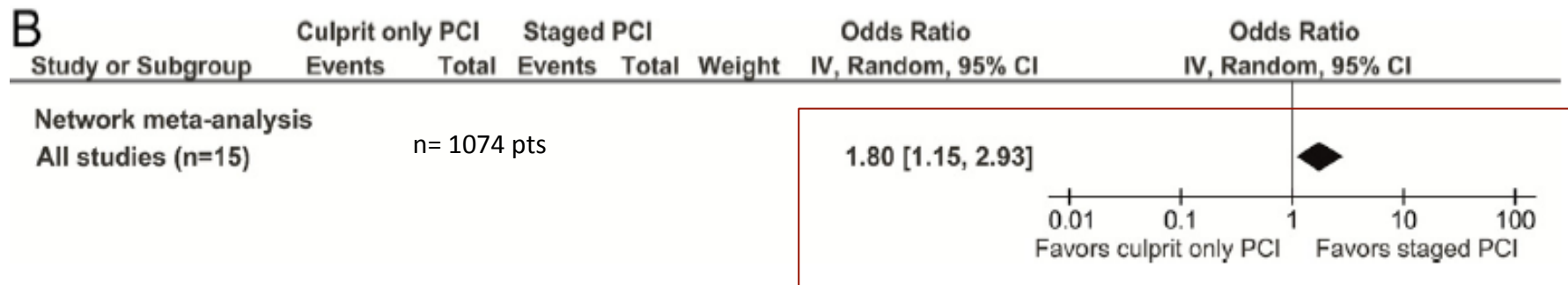
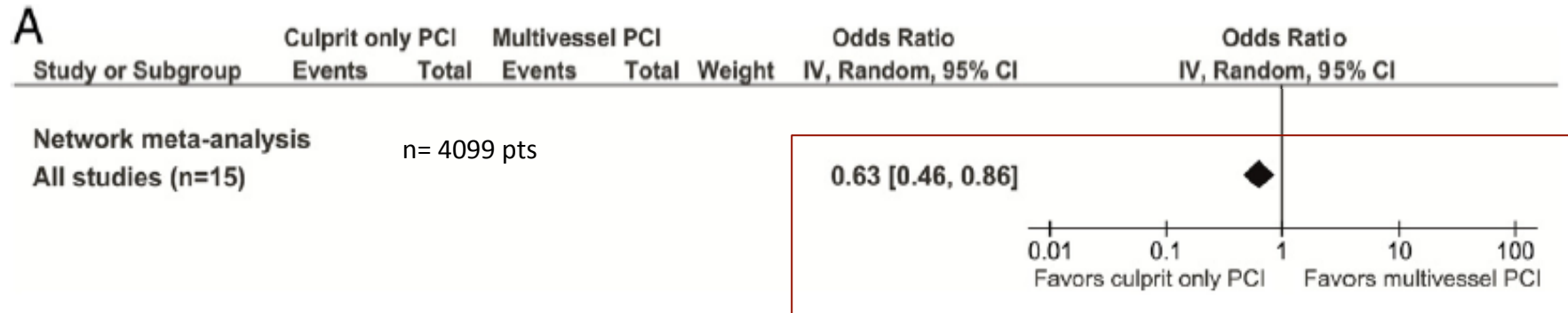
Groningen and Rotterdam, the Netherlands; and Rochester, Minnesota

Culprit Vessel Only Versus Multivessel and Staged Percutaneous Coronary Intervention for Multivessel Disease in Patients Presenting With ST-Segment Elevation Myocardial Infarction



MORTALITE COURT TERME

Culprit Vessel Only Versus Multivessel and Staged Percutaneous Coronary Intervention for Multivessel Disease in Patients Presenting With ST-Segment Elevation Myocardial Infarction



MORTALITE LONG TERME

Culprit Vessel Only Versus Multivessel and Staged Percutaneous Coronary Intervention for Multivessel Disease in Patients Presenting With ST-Segment Elevation Myocardial Infarction

- **Staged PCI** was associated with lower short- and long term mortality compared with culprit-vessel-only and multivessel PCI.
- **Multivessel PCI** was linked to the highest mortality rates at both short and long term follow up.
- The best strategy in patients with **cardiogenic shock** remains uncertain.

Atteinte multi tronculaire et STEMI : Concrètement ?



Complete vs culprit-only revascularization for patients with multivessel disease undergoing primary percutaneous coronary intervention for ST-segment elevation myocardial infarction: A systematic review and meta-analysis

Kevin R. Bainey, MD, MSC, ^a Shamir R. Mehta, MD, MSC, ^b Tony Lai, MBBS, ^b and Robert C. Welsh, MD ^a *Alberta, and Ontario, Canada*

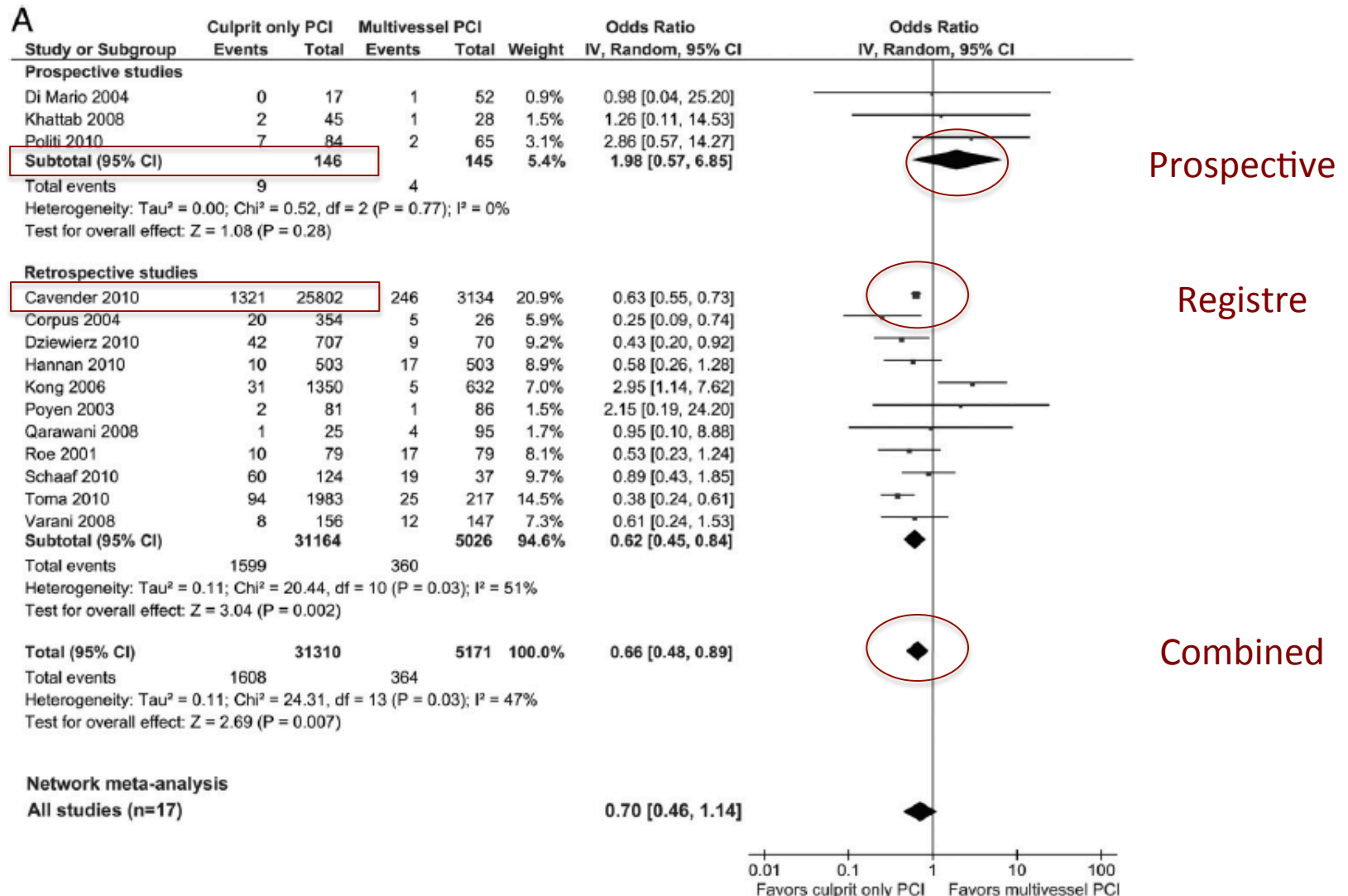
In-hospital Mortality :

Multivessel PCI vs Culprit Lesion
(OR 1.35, 95% CI 1.19-1.54; P<.001)

Staged Procedure vs Culprit Lesion
(OR 0.35, 95% CI 0.21-0.59; P<.001)

Où se trouve la controverse ?

Ou se trouve la controverse ? Hétérogénéité de la littérature



Atteinte multi tronculaire et STEMI : L'étude qui soulève des questions : PRAMI

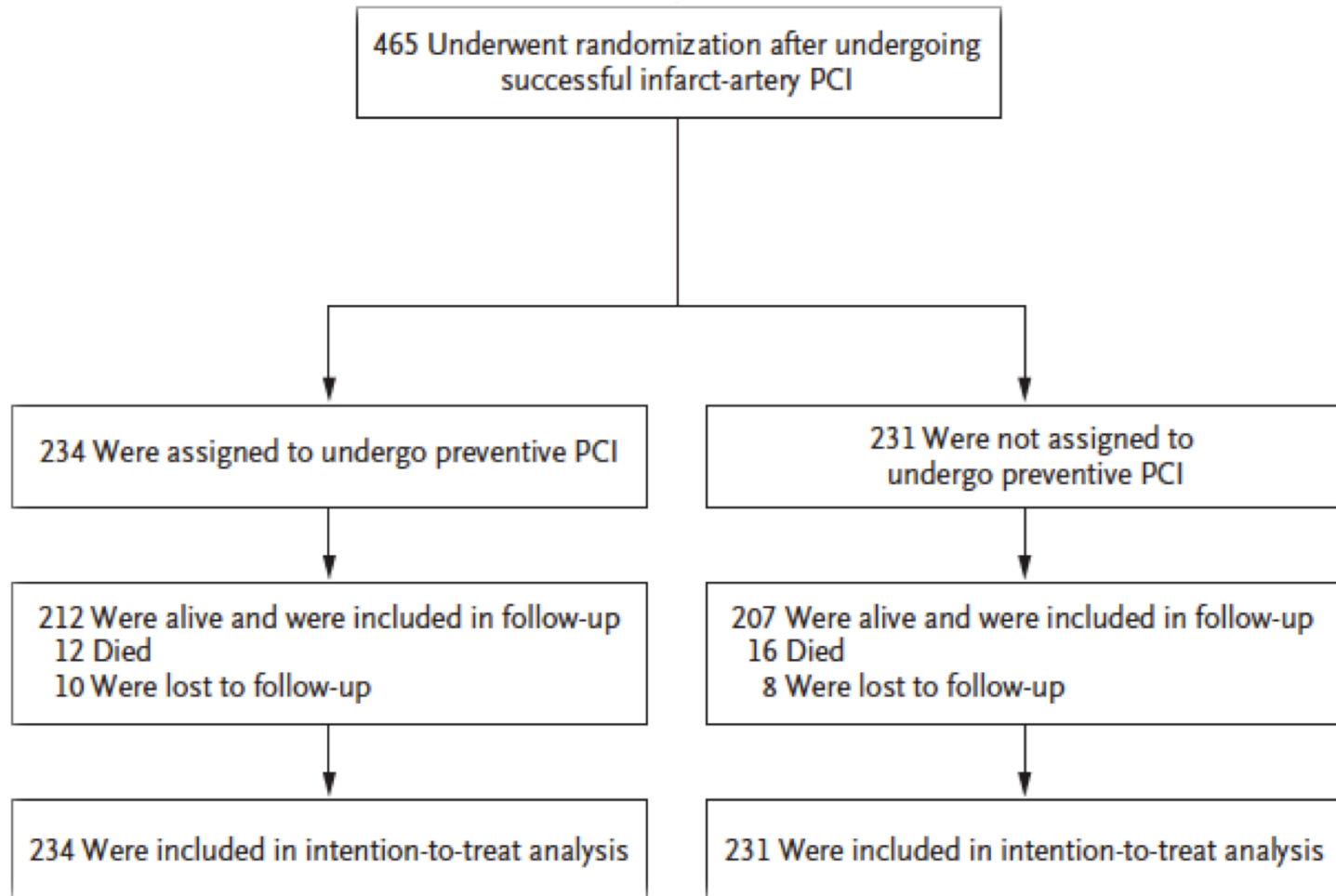
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Randomized Trial of Preventive Angioplasty in Myocardial Infarction

Etude PRAMI :
Hotline ESC Congress 2013

Atteinte multi tronculaire et STEMI : L'étude qui soulève des questions : PRAMI



Atteinte multi tronculaire et STEMI :

L'étude qui soulève des questions : PRAMI

Outcome	Preventive PCI (N = 234) <i>no. of events</i>	No Preventive PCI (N = 231) <i>no. of events</i>	Hazard Ratio (95% CI)	P Value
Primary outcome				
Death from cardiac causes, nonfatal myocardial infarction, or refractory angina†	21	53	0.35 (0.21–0.58)	<0.001
Death from cardiac causes or nonfatal myocardial infarction†	11	27	0.36 (0.18–0.73)	0.004
Death from cardiac causes	4	10	0.34 (0.11–1.08)	0.07
Nonfatal myocardial infarction	7	20	0.32 (0.13–0.75)	0.009
Refractory angina	12	30	0.35 (0.18–0.69)	0.002
Secondary outcomes				
Death from noncardiac causes	8	6	1.10 (0.38–3.18)	0.86
Repeat revascularization	16	46	0.30 (0.17–0.56)	<0.001

L'étude qui soulève des questions : PRAMI

Nombreuses Limites

- Statistiques ? Malgré un traitement médical optimal ...
 - 8,7% avec récurrence d'infarctus groupe « No Preventive PCI » ?
 - 12% avec angine réfractaire groupe « No Preventive PCI » ?
- Seul 30% des patients dans le groupe « No Preventive PCI » ont bénéficié d'une **recherche d'ischémie associée (pour angor réfractaire)**
- Pas de donnée angiographique du groupe « No Preventive PCI »
- Interruption prématurée de l'étude (long term effect ?)
- Etude de petite taille / taux d'exclusion important (73%)
- Angioplastie de toute les lésion > 50% : Rationnel ?
- Pas de données de FEVG / Moins de 40% d'infarctus antérieur

Les Recommandations

Atteinte multi tronculaire et STEMI : Que disent les Recommandations ?



European Heart Journal (2010) 31, 2501–2555
doi:10.1093/eurheartj/ehq277

ESC/EACTS GUIDELINES



Guidelines on myocardial revascularization

Ad hoc PCI

Haemodynamically unstable patients (including cardiogenic shock).

Culprit lesion in STEMI and NSTEMI-ACS.

Stable low-risk patients with single or double vessel disease (proximal LAD excluded) and favourable morphology (RCA, non-ostial LCx, mid- or distal LAD).

Non-recurrent restenotic lesions.

Atteinte multi tronculaire et STEMI : Que disent les Recommandations ?

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



European Heart Journal (2012) 33, 2569–2619
doi:10.1093/eurheartj/ehs215

Primary PCI should be limited to the culprit vessel with the exception of cardiogenic shock and persistent ischaemia after PCI of the supposed culprit lesion.

Ila

B

In cardiogenic shock non-culprit lesions without critical stenoses should not routinely be stented.

Atteinte multi tronculaire et STEMI : Quand réaliser la « staged » strategy ?

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



European Heart Journal (2012) 33, 2569–2619
doi:10.1093/eurheartj/ehs215

In STEMI patients with multivessel disease initially treated with primary or post-thrombolysis culprit-artery PCI and confirmed presence of ischaemia in non-infarcted territories, staged revascularization may be performed before discharge or in the days to weeks after initial PCI.¹

Atteinte multi tronculaire et STEMI : Quand réaliser la « staged » strategy ?

2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction

PCI of a Noninfarct Artery Before Hospital Discharge: Recommendations

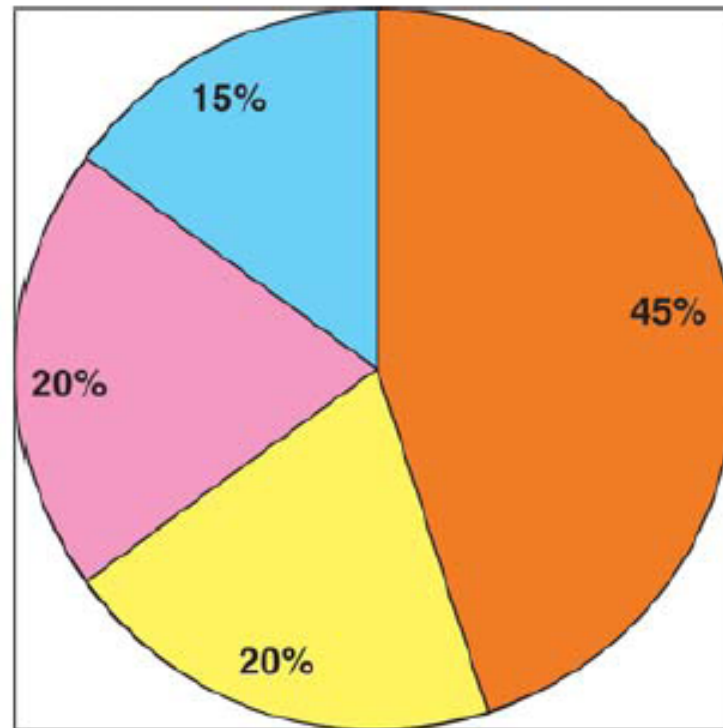
CLASS I

1. PCI is indicated in a noninfarct artery at a time separate from primary PCI in patients who have spontaneous symptoms of myocardial ischemia. (*Level of Evidence: C*)

CLASS IIa

1. PCI is reasonable in a noninfarct artery at a time separate from primary PCI in patients with intermediate- or high-risk findings on noninvasive testing (216,232,233). (*Level of Evidence: B*)

Atteinte multi tronculaire et STEMI : Dans la vraie vie ?



- Single-vessel disease
- Primary PCI of infarct-related artery only
- Primary multi-vessel PCI
- Staged PCI

Atteinte multi tronculaire et NSTEMI :

<i>Ad hoc PCI</i>	
Haemodynamically unstable patients (including cardiogenic shock).	
Culprit lesion in STEMI and NSTE-ACS.	
Stable low-risk patients with single or double vessel disease (proximal LAD excluded) and favourable morphology (RCA, non-ostial LCx, mid- or distal LAD).	
Non-recurrent restenotic lesions.	

The revascularization strategy (*ad-hoc* culprit lesion PCI/ multivessel PCI/CABG) should be based on the clinical status as well as the disease severity, i.e. distribution and angiographic lesion characteristics (e.g. SYNTAX score), according to the local 'Heart Team' protocol.

I

C

Conclusion

Atteinte pluri-coronarienne : **fréquente et grave** dans le cadre du SCA

Entité polymorphe : **approche personnalisée**

Actuellement les recommandations :

- Angioplastie de la **lésion coupable à la phase aigue** de l'infarctus

- Angioplastie de plusieurs lésions en phase aigue **si et seulement si instabilité hémodynamique et autres lésions critiques (>90%)**

- Quid des autres lésions significatives :

- Angioplastie différée (« Staged »)** orientée par des tests d'ischémie ou le degrés de gravité angiographique : **REFERENCE** (timing ?)

- Traitement médical envisageable mais semble associé dans les meta-analyses à un moins bon pronostic Cardio-Vasculaire

TOULONNAIS TAKE HOME MESSAGE

Recommandations 2014-2105

CULPRIT LESION



PRIMARY PCI



Merci de votre attention

Atteinte multi tronculaire et STEMI : Multiplaque Rupture VS Multivessel Disease

MULTIPLE COMPLEX CORONARY PLAQUES IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

70% patients ont des critères IVUS de rupture de plaque d'au moins une lésion considérée comme non coupable du SCA

Notion de
« vulnerable multivessel
Disease »

