Printemps 2018 de la médecine d'urgence

Nouveautés dans la prise en charge du STEMI

Eric BONNEFOY (Lyon)

Conflicts of interest

Soutien d’enseignement par AZ
sinon je n’ai pas de conflit d’intérêt

EUROPEAN SOCIETY OF CARDIOLOGY

2017

CHANGE IN RECOMMENDATIONS

2012		2017
Radial access[a]	MATRIX[143]	
DES over BMS	EXAMINATION[150,151], COMFORTABLE-AMI[149], NORSTENT[152]	
Complete Revascularization[b]	PRAMI[168], DANAMI-3-PRIMULTI[170], CVLPRIT[169], Compare-Acute[171]	
Thrombus Aspiration[c]	TOTAL[159], TASTE[157]	
Bivalirudin	MATRIX[209], HEAT-PPCI[205]	
Enoxaparin	ATOLL[200,201], Meta-analysis[202]	
Early Hospital Discharge[d]	Small trials & observational data[259–262]	
Oxygen when SaO2 <95%	AVOID[64], DETO2X[66]	Oxygen when SaO2 <90%
Dose i.V. TNK-tPA same in all patients	STREAM[121]	Dose i.V. TNK-tPA half in Pts ≥75 years

2017 NEW RECOMMENDATIONS

- Additional lipid lowering therapy if LDL >1.8 mmol/L (70 mg/dL) despite on maximum tolerated statins
  IMPROVE-IT[376], FOURIER[382]
- Complete revascularization during index primary PCI in STEMI patients in shock
  Expert opinion
- Cangrelor if $P2Y_{12}$ inhibitors have not been given
  CHAMPION[193]
- Switch to potent $P2Y_{12}$ inhibitors 48 hours after fibrinolysis
  Expert opinion
- Extend Ticagrelor up to 36 months in high-risk patients
  PEGASUS-TIMI 54[333]
- Use of polypill to increase adherence
  FOCUS[323]
- Routine use of deferred stenting
  DANAMI 3-DEFER[155]

I | IIa | IIb | III

2017 NEW / REVISED CONCEPTS

MINOCA AND QUALITY INDICATORS:
- New chapters dedicated to these topics.

STRATEGY SELECTION AND TIME DELAYS:
- Clear definition of first medical contact (FMC).
- Definition of "time 0" to choose reperfusion strategy (i.e. the strategy clock starts at the time of "STEMI diagnosis").
- Selection of PCI over fibrinolysis: when anticipated delay from "STEMI diagnosis" to wire crossing is ≤120 min.
- Maximum delay time from "STEMI diagnosis" to bolus of fibrinolysis agent is set in 10 min.
- "Door-to-Ballon" term eliminated from guidelines.

TIME LIMITS FOR ROUTINE OPENING OF AN IRA[e]:
- 0–12h (Class I); 12–48h (Class IIa); >48h (Class III).

ELECTROCARDIOGRAM AT PRESENTATION:
- Left and right bundle branch block considered equal for recommending urgent angiography if ischemic symptoms.

TIME TO ANGIOGRAPHY AFTER FIBRINOLYSIS:
- Timeframe is set in 2–24h after successful fibrinolysis.

PATIENTS TAKING ANTICOAGULANTS:
- Acute and chronic management presented.

EUROPEAN SOCIETY OF CARDIOLOGY®

2017

CHANGE IN RECOMMENDATIONS

2012		2017
Radial access[a]	MATRIX[143]	
DES over BMS	EXAMINATION[150,151] COMFORTABLE-AMI[149], NORSTENT[152]	
Complete Revascularization[b]	PRAMI[168], DANAMI-3-PRIMULTI[170], CVLPRIT[169], Compare-Acute[171]	
Thrombus Aspiration[c]	TOTAL[159], TASTE[157]	
Bivalirudin	MATRIX[209], HEAT-PPCI[205]	
Enoxaparin	ATOLL[200,201], Meta-analysis[202]	
Early Hospital Discharge[d]	Small trials & observational data[259–262]	
Oxygen when SaO2 <95%	AVOID[64], DETO2X[66]	Oxygen when SaO2 <90%
Dose i.V. TNK-tPA same in all patients	STREAM[121]	Dose i.V. TNK-tPA half in Pts ≥75 years

2017 NEW RECOMMENDATIONS

- Additional lipid lowering therapy if LDL >1.8 mmol/L (70 mg/dL) despite on maximum tolerated statins
  IMPROVE-IT[376], FOURIER[382]
- Complete revascularization during index primary PCI in STEMI patients in shock
  Expert opinion
- Cangrelor if $P2Y_{12}$ inhibitors have not been given
  CHAMPION[193]
- Switch to potent $P2Y_{12}$ inhibitors 48 hours after fibrinolysis
  Expert opinion
- Extend Ticagrelor up to 36 months in high-risk patients
  PEGASUS-TIMI 54[333]
- Use of polypill to increase adherence
  FOCUS[323]
- Routine use of deferred stenting
  DANAMI 3-DEFER[155]

I | IIa | IIb | III

2017 NEW / REVISED CONCEPTS

MINOCA AND QUALITY INDICATORS:
- New chapters dedicated to these topics.

STRATEGY SELECTION AND TIME DELAYS:
- Clear definition of first medical contact (FMC).
- Definition of "time 0" to choose reperfusion strategy (i.e. the strategy clock starts at the time of "STEMI diagnosis").
- Selection of PCI over fibrinolysis: when anticipated delay from "STEMI diagnosis" to wire crossing is ≤120 min.
- Maximum delay time from "STEMI diagnosis" to bolus of fibrinolysis agent is set in 10 min.
- "Door-to-Ballon" term eliminated from guidelines.

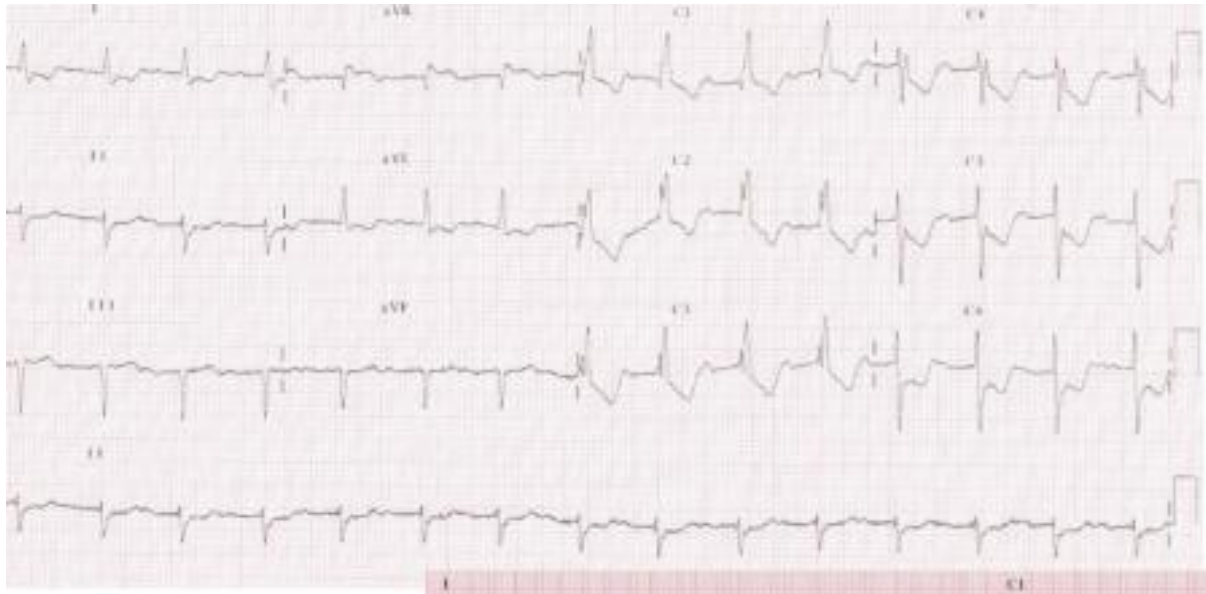
TIME LIMITS FOR ROUTINE OPENING OF AN IRA[e]:
- 0–12h (Class I); 12–48h (Class IIa); >48h (Class III).

ELECTROCARDIOGRAM AT PRESENTATION:
- Left and right bundle branch block considered equal for recommending urgent angiography if ischemic symptoms.

TIME TO ANGIOGRAPHY AFTER FIBRINOLYSIS:
- Timeframe is set in 2–24h after successful fibrinolysis.

PATIENTS TAKING ANTICOAGULANTS:
- Acute and chronic management presented.

Infarctus aigu du myocarde avec bloc de branche droit

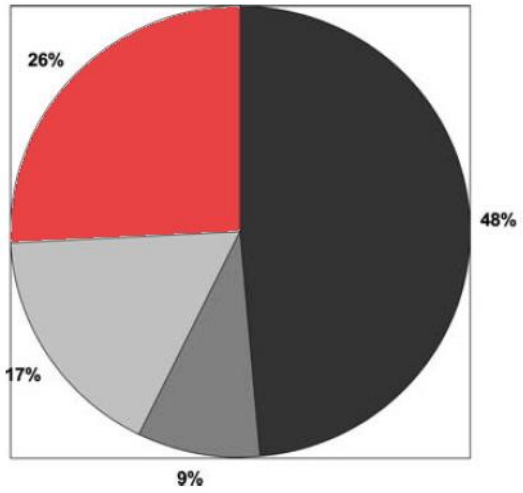


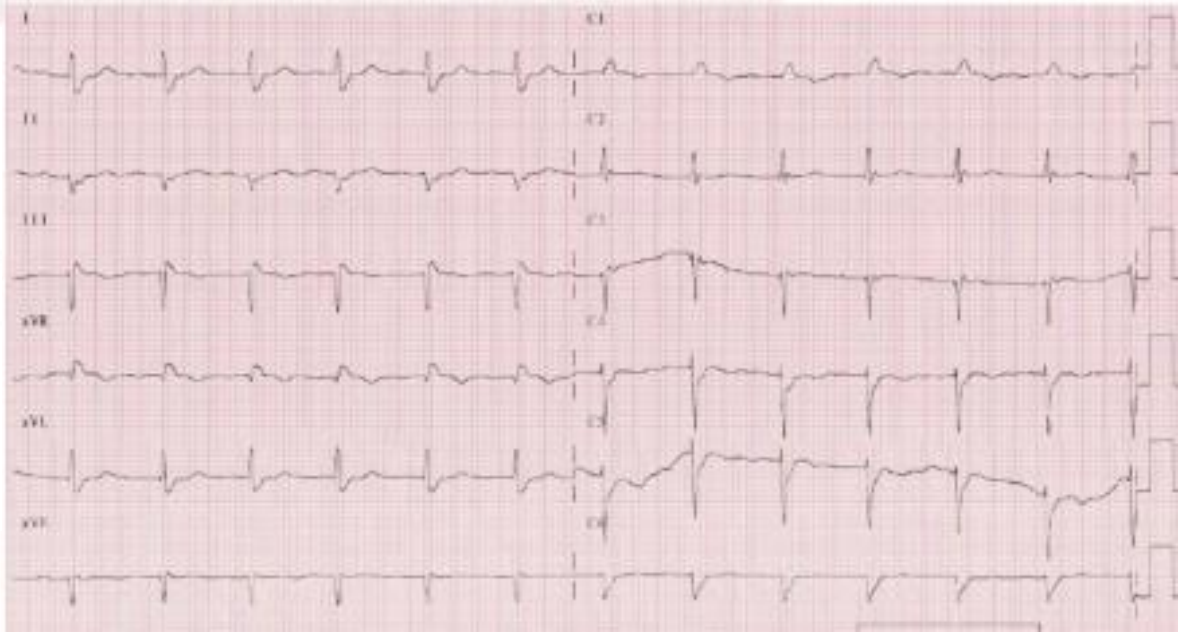
Incidence of cardiogenic shock

- STE 6.7 %
- LBBB 15.8 %
- RBBB 15.4 %

In hospital mortality

- STE 5.4 %
- LBBB 13.2 %
- RBBB 18.8 %





Widimski & al. Eur Heart J 2012;33:86–95

EUROPEAN SOCIETY OF CARDIOLOGY®

2017

CHANGE IN RECOMMENDATIONS

2012		2017
Radial access[a]	MATRIX[143]	
DES over BMS	EXAMINATION[150,151], COMFORTABLE-AMI[149], NORSTENT[152]	
Complete Revascularization[b]	PRAMI[168], DANAMI-3-PRIMULTI[170], CVLPRIT[169], Compare-Acute[171]	
Thrombus Aspiration[c]	TOTAL[159], TASTE[157]	
Bivalirudin	MATRIX[209], HEAT-PPCI[205]	
Enoxaparin	ATOLL[200,201], Meta-analysis[202]	
Early Hospital Discharge[d]		
Oxygen when SaO2 <95%	AVOID[64], DETO2X[66]	Oxygen when SaO2 <90%
same in all patients	STREAM[121]	half in Pts ≥75 years

2017 NEW RECOMMENDATIONS

- Additional lipid lowering therapy if LDL >1.8 mmol/L (70 mg/dL) despite on maximum tolerated statins
  IMPROVE-IT[376], FOURIER[382]
- Complete revascularization during index primary PCI in STEMI patients in shock
  Expert opinion
- Cangrelor if $P2Y_{12}$ inhibitors have not been given
  CHAMPION[193]
- Switch to potent $P2Y_{12}$ inhibitors 48 hours after fibrinolysis
  Expert opinion
- Extend Ticagrelor up to 36 months in high-risk patients
  PEGASUS-TIMI 54[333]
- Use of polypill to increase adherence
  FOCUS[323]
- Routine use of deferred stenting
  DANAMI 3-DEFER[155]

I | IIa | IIb | III

2017 NEW / REVISED CONCEPTS

MINOCA AND QUALITY INDICATORS:
- New chapters dedicated to these topics.

STRATEGY SELECTION AND TIME DELAYS:
- Clear definition of first medical contact (FMC).
- Definition of "time 0" to choose reperfusion strategy (i.e. the strategy clock starts at the time of "STEMI diagnosis").
- Selection of PCI over fibrinolysis: when anticipated delay from "STEMI diagnosis" to wire crossing is ≤120 min.
- Maximum delay time from "STEMI diagnosis" to bolus of fibrinolysis agent is set in 10 min.
- "Door-to-Ballon" term eliminated from guidelines.

TIME LIMITS FOR ROUTINE OPENING OF AN IRA[e]:
- 0–12h (Class I); 12–48h (Class IIa); >48h (Class III).

ELECTROCARDIOGRAM AT PRESENTATION:
- Left and right bundle branch block considered equal for recommending urgent angiography if ischemic symptoms.

TIME TO ANGIOGRAPHY AFTER FIBRINOLYSIS:
- Timeframe is set in 2–24h after successful fibrinolysis.

PATIENTS TAKING ANTICOAGULANTS:
- Acute and chronic management presented.

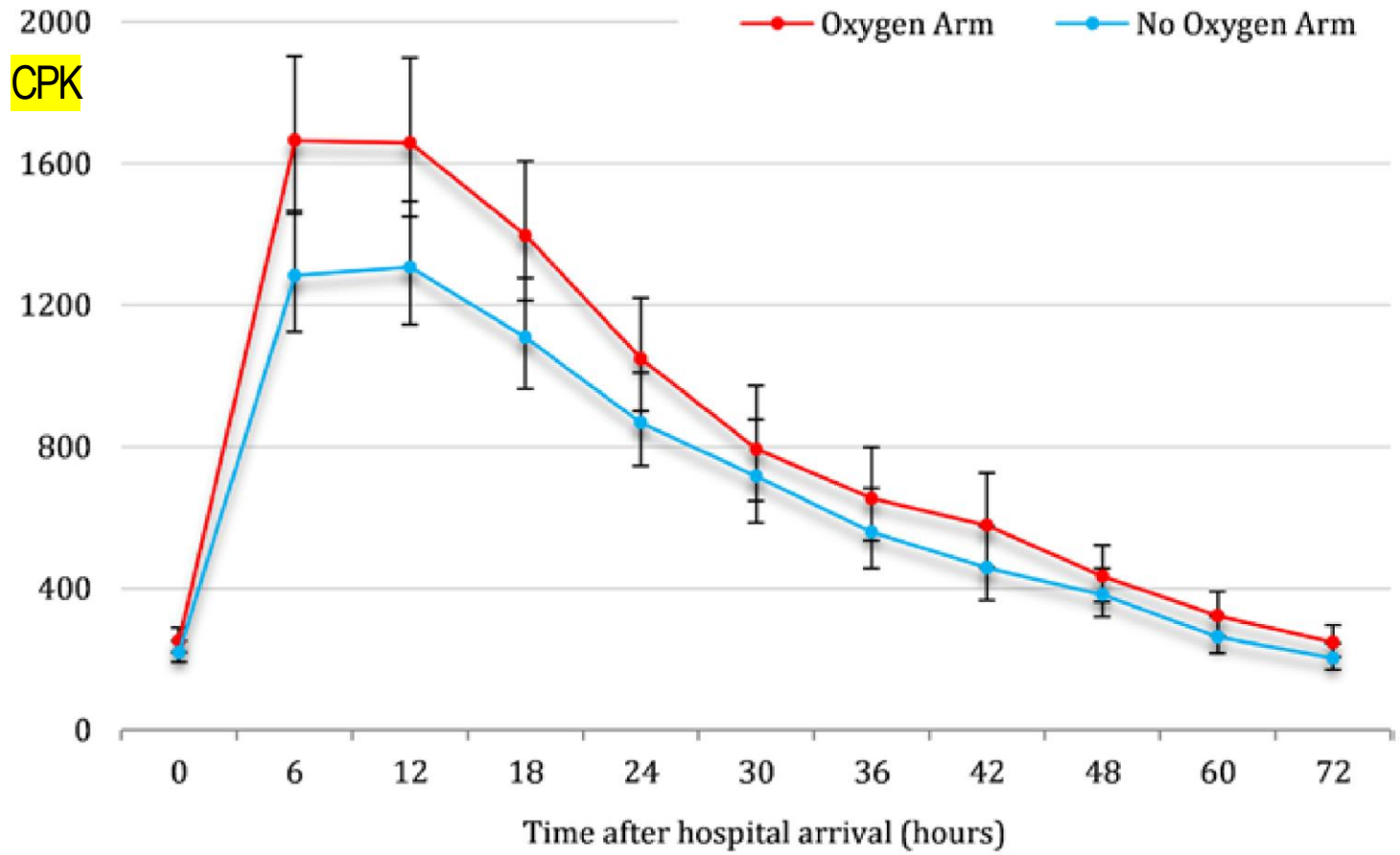
Relief of hypoxaemia and symptoms

ESC
European Society of Cardiology

Recommendations	Class	Level
Hypoxia		
Oxygen is indicated in patients with hypoxaemia (SaO2 <90% or PaO2 <60 mmHg).	I	C
Routine oxygen is not recommended in patients with SaO2 ≥90%.	III	B
Symptoms		
Titrated i.v. opioids should be considered to relieve pain.	IIa	C
A mild tranquillizer (usually a benzodiazepine) should be considered in very anxious patients.	IIa	C

Air ambiant ou O2 dans l'infarctus du myocarde avec élévation du segment ST

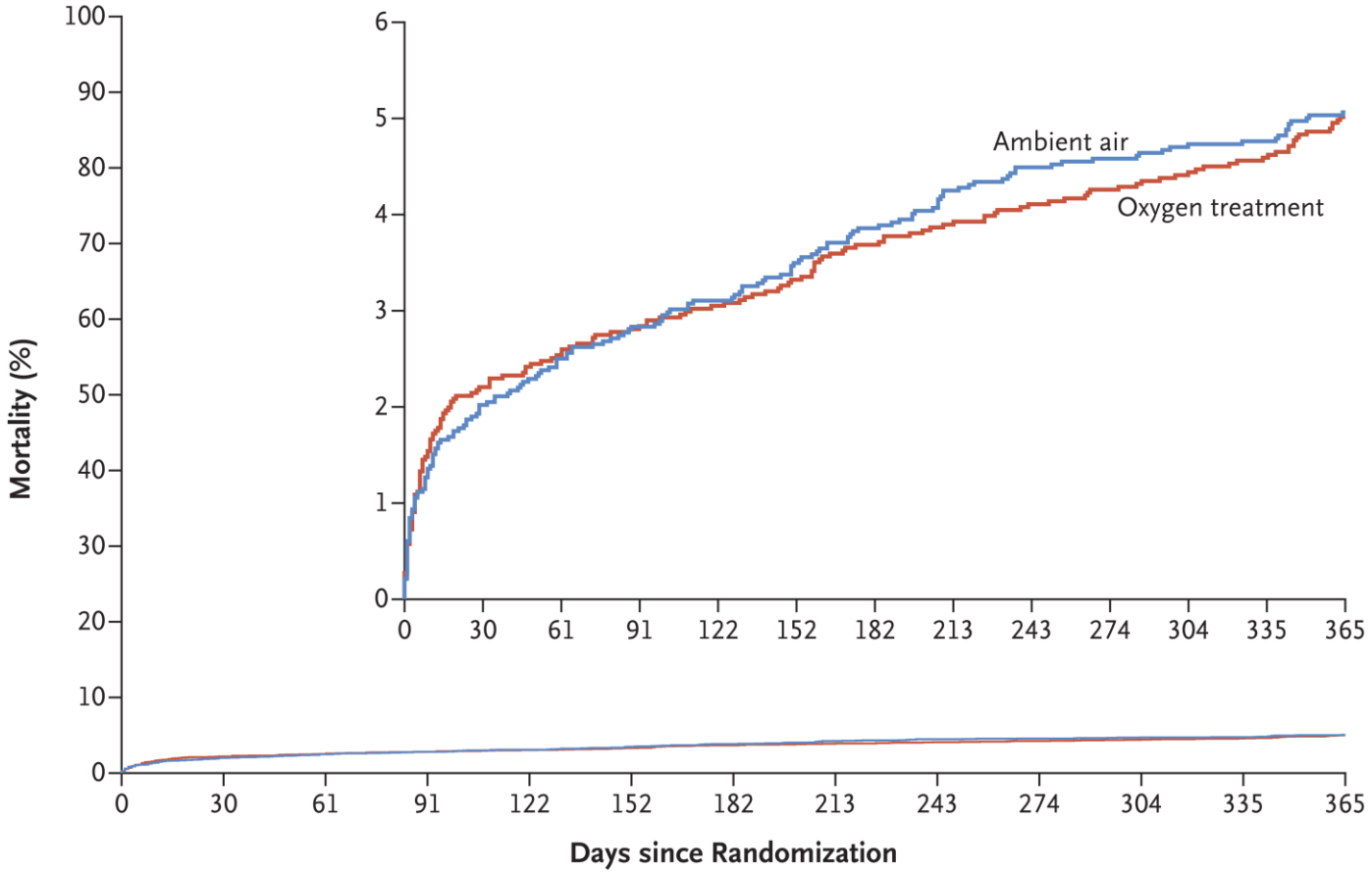
- AVOID study, 441 patients with acute STEMI and SaO_2 > 94% were randomized to receive 0 vs. 8 L/min O_2



CPK peak 1948 versus 1543 U/L;
means ratio, 1.27; 95% confdence interval, 1.04–1.52; *P*=0.01

Ellims & al. Circulation. 2015;131:2143-2150

Oxygénothérapie dans l'infarctus aigu du myocarde



Hoffmann & al N Engl J Med 2017;377:1240-1249

Oxygénothérapie dans l'infarctus aigu du myocarde

Timing and End Point	Oxygen Group (N=3311)	Ambient-Air Group (N=3318)	Hazard Ratio (95% CI)	P Value
365 Days after randomization				
Death from any cause — no. (%)	166 (5.0)	168 (5.1)	0.97 (0.79–1.21)	0.80
Rehospitalization with myocardial infarction — no. (%)	126 (3.8)	111 (3.3)	1.13 (0.88–1.46)	0.33
Composite of death from any cause or rehospitalization with myocardial infarction — no. (%)	275 (8.3)	264 (8.0)	1.03 (0.87–1.22)	0.70
30 Days after randomization				
Death from any cause — no. (%)	73 (2.2)	67 (2.0)	1.07 (0.77–1.50)	0.67
Rehospitalization with myocardial infarction — no. (%)	45 (1.4)	31 (0.9)	1.46 (0.92–2.31)	0.11
Composite of death from any cause or rehospitalization with myocardial infarction — no. (%)	114 (3.4)	95 (2.9)	1.19 (0.91–1.56)	0.21
During hospital stay				
Median highest measured level of highly sensitive troponin T (IQR) — ng/liter*	946.5 (243.0–2884.0)	983.0 (225.0–2931.0)	—	0.97

Hoffmann & al N Engl J Med 2017;377:1240-1249

EUROPEAN SOCIETY OF CARDIOLOGY®

2017

CHANGE IN RECOMMENDATIONS

2012		2017
Radial access[a]	MATRIX[143]	
DES over BMS	EXAMINATION[150,151] COMFORTABLE-AMI[149], NORSTENT[152]	
Complete Revascularization[b]	PRAMI[168], DANAMI-3-PRIMULTI[170], CVLPRIT[169], Compare-Acute[171]	
Thrombus Aspiration[c]	TOTAL[159], TASTE[157]	
Bivalirudin	MATRIX[209], HEAT-PPCI[205]	
Enoxaparin	ATOLL[200,201], Meta-analysis[202]	
Early Hospital Discharge[d]	Small trials & observational data[259–262]	
Oxygen when	AVOID[64],	Oxygen when
Dose i.V. TNK-tPA same in all patients	STREAM[121]	Dose i.V. TNK-tPA half in Pts ≥75 years

2017 NEW RECOMMENDATIONS

- Additional lipid lowering therapy if LDL >1.8 mmol/L (70 mg/dL) despite on maximum tolerated statins
  IMPROVE-IT[376], FOURIER[382]
- Complete revascularization during index primary PCI in STEMI patients in shock
  Expert opinion
- Cangrelor if $P2Y_{12}$ inhibitors have not been given
  CHAMPION[193]
- Switch to potent $P2Y_{12}$ inhibitors 48 hours after fibrinolysis
  Expert opinion
- Extend Ticagrelor up to 36 months in high-risk patients
  PEGASUS-TIMI 54[333]
- Use of polypill to increase adherence
  FOCUS[323]
- Routine use of deferred stenting
  DANAMI 3-DEFER[155]

I | IIa | IIb | III

2017 NEW / REVISED CONCEPTS

MINOCA AND QUALITY INDICATORS:
- New chapters dedicated to these topics.

STRATEGY SELECTION AND TIME DELAYS:
- Clear definition of first medical contact (FMC).
- Definition of "time 0" to choose reperfusion strategy (i.e. the strategy clock starts at the time of "STEMI diagnosis").
- Selection of PCI over fibrinolysis: when anticipated delay from "STEMI diagnosis" to wire crossing is ≤120 min.
- Maximum delay time from "STEMI diagnosis" to bolus of fibrinolysis agent is set in 10 min.
- "Door-to-Ballon" term eliminated from guidelines.

TIME LIMITS FOR ROUTINE OPENING OF AN IRA[e]:
- 0–12h (Class I); 12–48h (Class IIa); >48h (Class III).

ELECTROCARDIOGRAM AT PRESENTATION:
- Left and right bundle branch block considered equal for recommending urgent angiography if ischemic symptoms.

TIME TO ANGIOGRAPHY AFTER FIBRINOLYSIS:
- Timeframe is set in 2–24h after successful fibrinolysis.

PATIENTS TAKING ANTICOAGULANTS:
- Acute and chronic management presented.

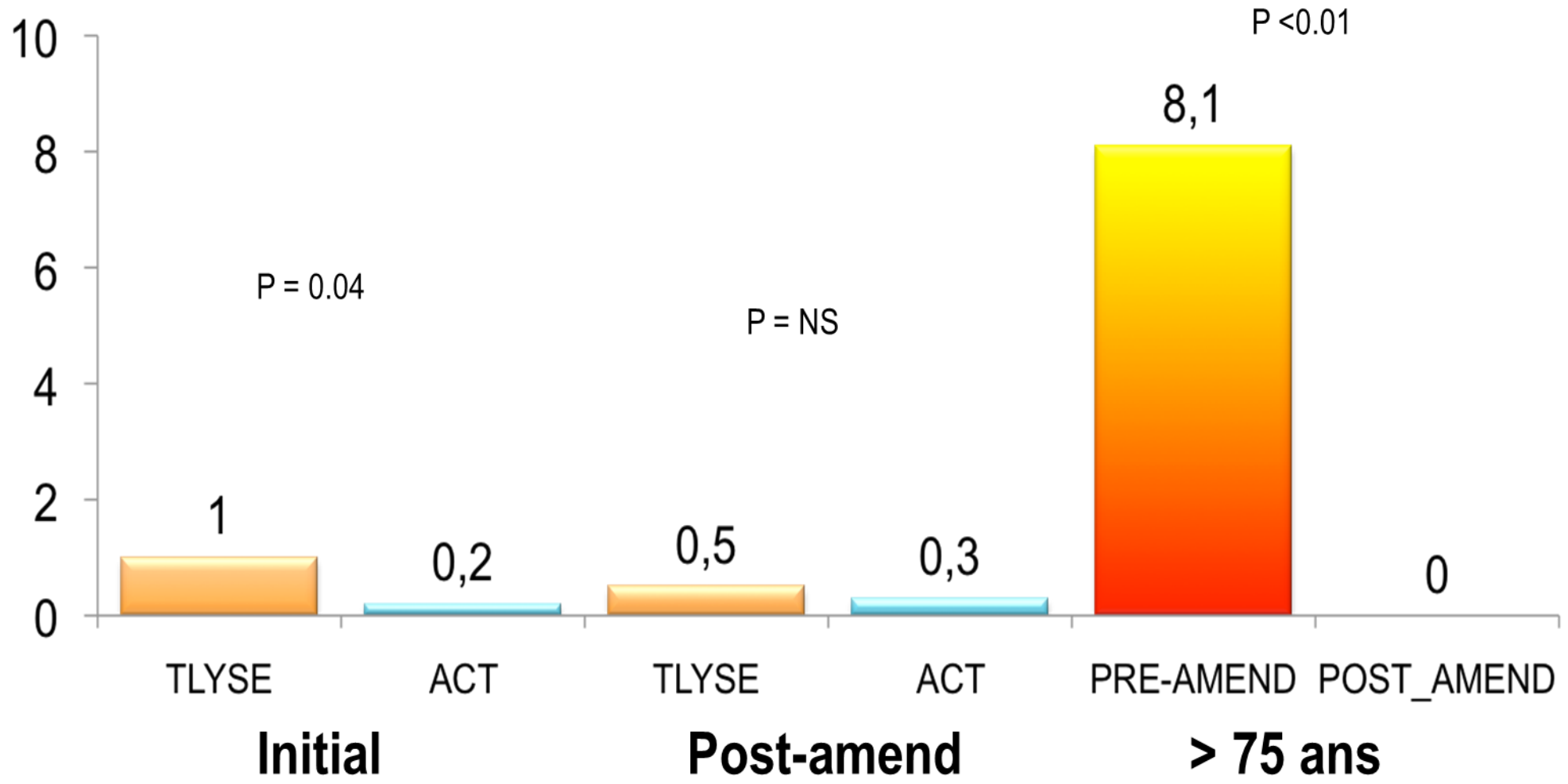
Ce que dit l'étude STREAM

1892 patients. <3H00 début des symptômes et PCI possible seulement >1H00
Fibrinolyse + rescue ou angioplastie dans les 24 heures
Angioplastie primaire

Variable	Fibrinolysis (N=944)	Primary PCI (N=948)	P Value
	no./total no. (%)		
End Point			
Primary composite end point: death, shock, congestive heart failure, or reinfarction at 30 days	116/939 (12.4)	135/943 (14.3)	0.21
Death from any cause	43/939 (4.6)	42/946 (4.4)	0.88
Cardiogenic shock	41/939 (4.4)	56/944 (5.9)	0.13
Congestive heart failure	57/939 (6.1)	72/943 (7.6)	0.18
Reinfarction	23/938 (2.5)	21/944 (2.2)	0.74
Death from cardiovascular causes	31/939 (3.3)	32/946 (3.4)	0.92
Rehospitalization for cardiac causes	45/939 (4.8)	41/943 (4.3)	0.64
Intracranial hemorrhage			
Any	9/939 (1.0)	2/946 (0.2)	0.04

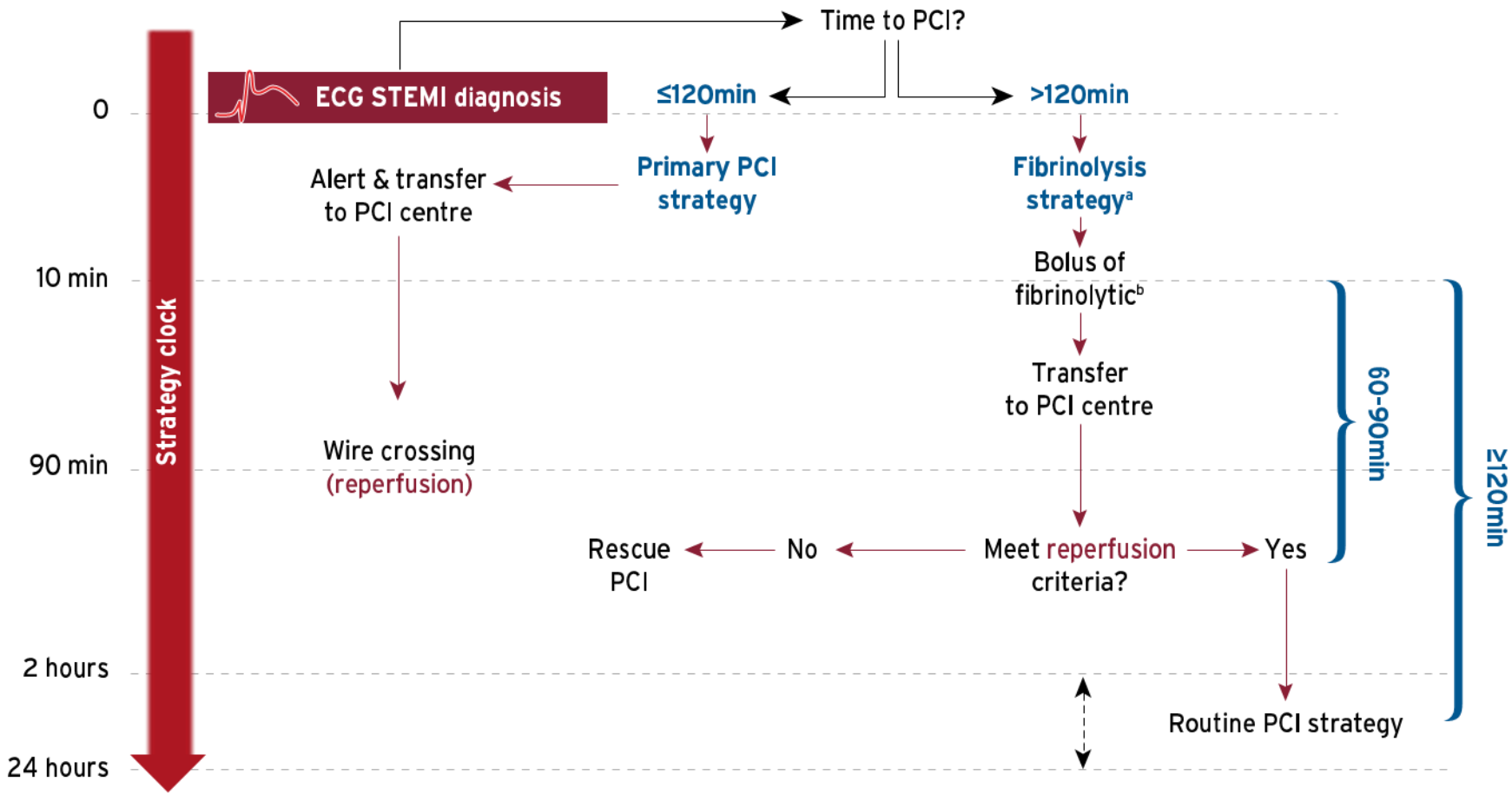
N Engl J Med 2013;368:1379-87.

TNK ½ dose >75 ans – Hémorragies cérébrales



N Engl J Med 2013;368:1379-87.

Stratégies de reperfusion



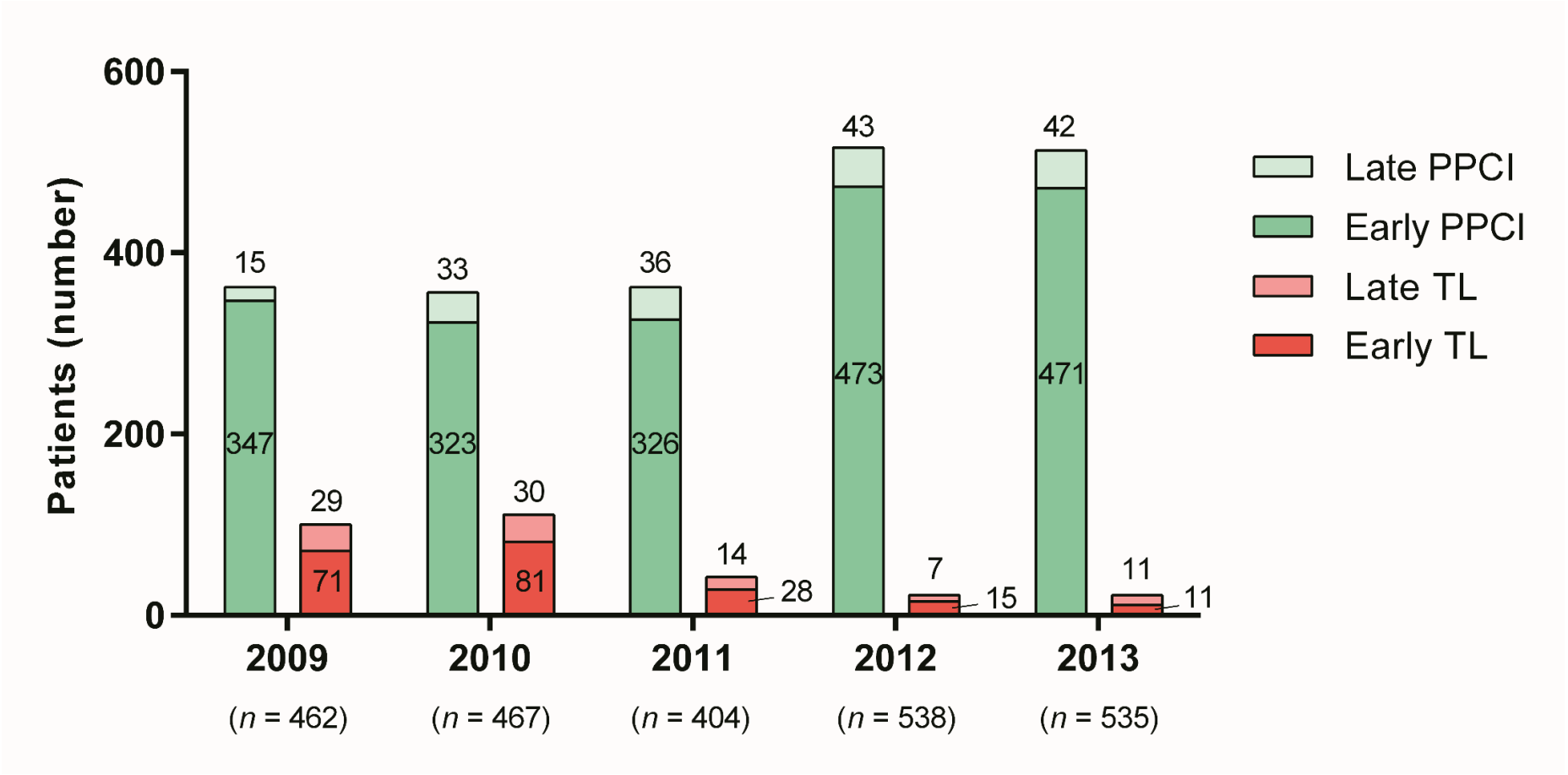
[a] If fibrinolysis is contra-indicated, direct for primary PCI strategy regardless of time to PCI.
[b] 10 min is the maximum target delay time from STEMI diagnosis to fibrinolytic bolus administration, however, it should be given as soon as possible after STEMI diagnosis (after ruling out contra-indications).

Reference: Ibañez B. Eur Heart J 2018; 39:119-177.

Web-based pdf file downloadable at: www.escardio.org/ACCA

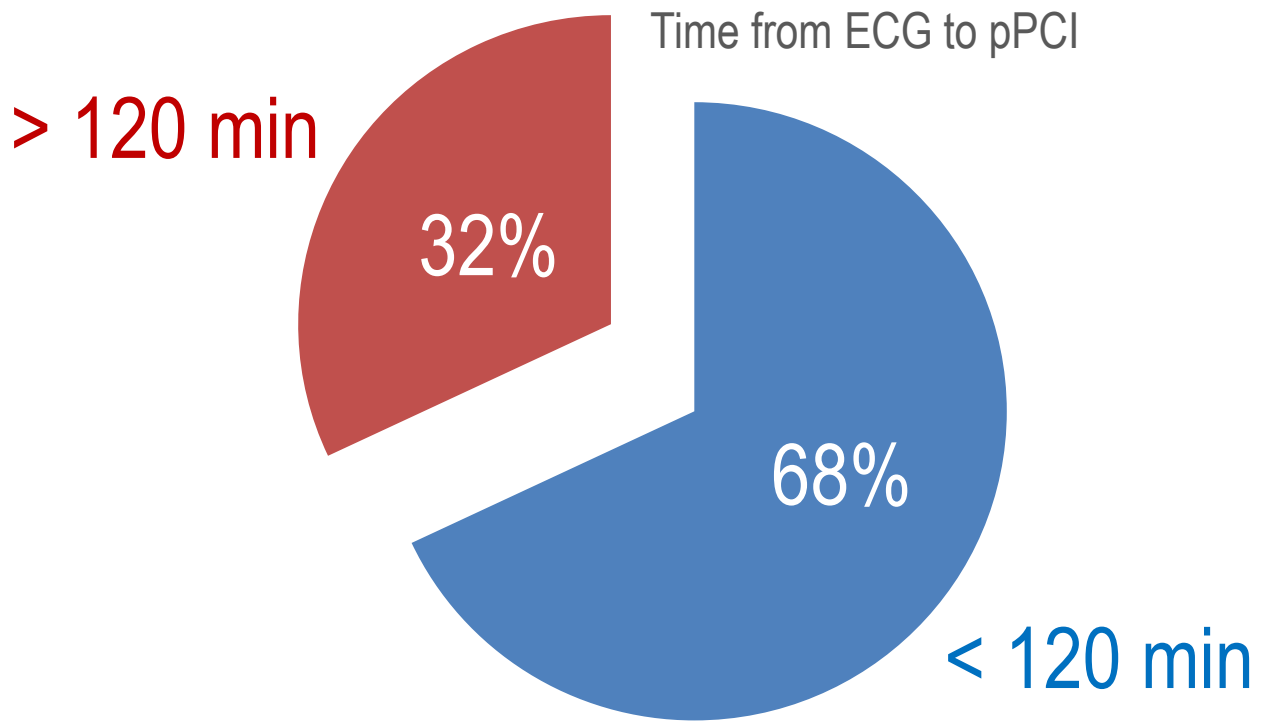
ACCA CLINICAL DECISION MAKING TOOLKIT 2018

Thrombolyse en cours de disparition ?



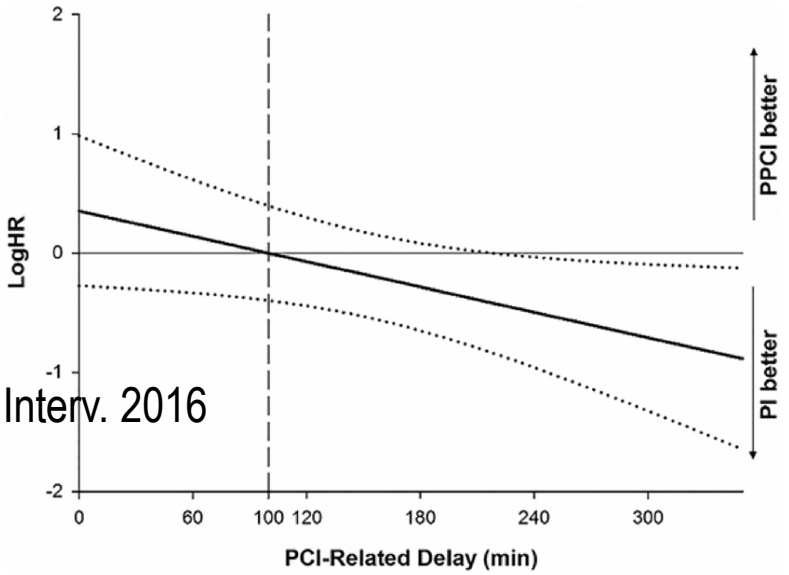
El Khoury Eur Heart J Acute Card Care 2016

En 2015 en France, un tiers des patients ont été traités par angioplastie primaire au-delà recommandé délais

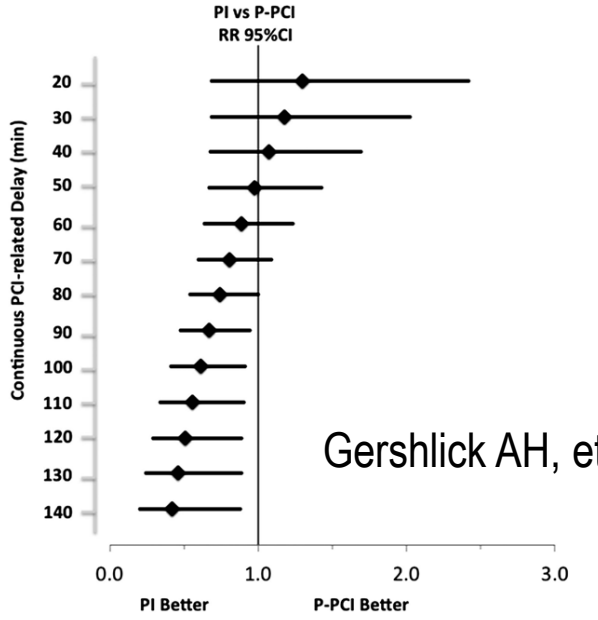


ACCA congress 2018 - N DANCHIN à partir des registres USIK et FAST MI

Bénéfice de la stratégie pharmacoinvasive dans les STEMI vs PPCI

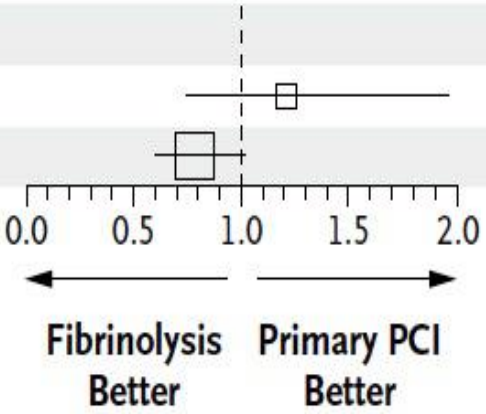


Sim Circ Cardiovasc Interv. 2016



Gershlick AH, et al. Heart 2015

Time of randomization				0.13
Before amendment	31/192 (16.1)	25/187 (13.4)	1.21 (0.74–1.97)	0.45
After amendment	85/747 (11.4)	110/756 (14.6)	0.78 (0.60–1.02)	0.07



EUROPEAN SOCIETY OF CARDIOLOGY®

2017

CHANGE IN RECOMMENDATIONS

2012		2017
Radial access[a]	MATRIX[143]	
DES over BMS	EXAMINATION[150,151] COMFORTABLE-AMI[149], NORSTENT[152]	
Complete Revascularization[b]	PRAMI[168], DANAMI-3-PRIMULTI[170], CVLPRIT[169], Compare-Acute[171]	
Thrombus Aspiration[c]	TOTAL[159], TASTE[157]	
Bivalirudin	MATRIX[209], HEAT-PPCI[205]	
Enoxaparin	ATOLL[200,201], Meta-analysis[202]	
Early Hospital Discharge[d]	Small trials & observational data[259–262]	
Oxygen when SaO2 <95%	AVOID[64], DETO2X[66]	Oxygen when SaO2 <90%
Dose i.V. TNK-tPA same in all patients	STREAM[121]	Dose i.V. TNK-tPA half in Pts ≥75 years

2017 NEW RECOMMENDATIONS

- Additional lipid lowering therapy if LDL >1.8 mmol/L (70 mg/dL) despite on maximum tolerated statins
  IMPROVE-IT[376], FOURIER[382]
- Complete revascularization during index primary PCI in STEMI patients in shock
  Expert opinion
- Cangrelor if $P2Y_{12}$ inhibitors have not been given
  CHAMPION[193]
- Switch to potent $P2Y_{12}$ inhibitors 48 hours after fibrinolysis
  Expert opinion
- Extend Ticagrelor up to 36 months in high-risk patients
  PEGASUS-TIMI 54[333]
- Use of polypill to increase adherence
  FOCUS[323]
- Routine use of deferred stenting
  DANAMI 3-DEFER[155]

I | IIa | IIb | III

2017 NEW / REVISED CONCEPTS

MINOCA AND QUALITY INDICATORS:
- New chapters dedicated to these topics.

STRATEGY SELECTION AND TIME DELAYS:
- Clear definition of first medical contact (FMC).
- Definition of "time 0" to choose reperfusion strategy (i.e. the strategy clock starts at the time of "STEMI diagnosis").
- Selection of PCI over fibrinolysis: when anticipated delay from "STEMI diagnosis" to wire crossing is ≤120 min.
- Maximum delay time from "STEMI diagnosis" to bolus of fibrinolysis agent is set in 10 min.
- "Door-to-Ballon" term eliminated from guidelines.

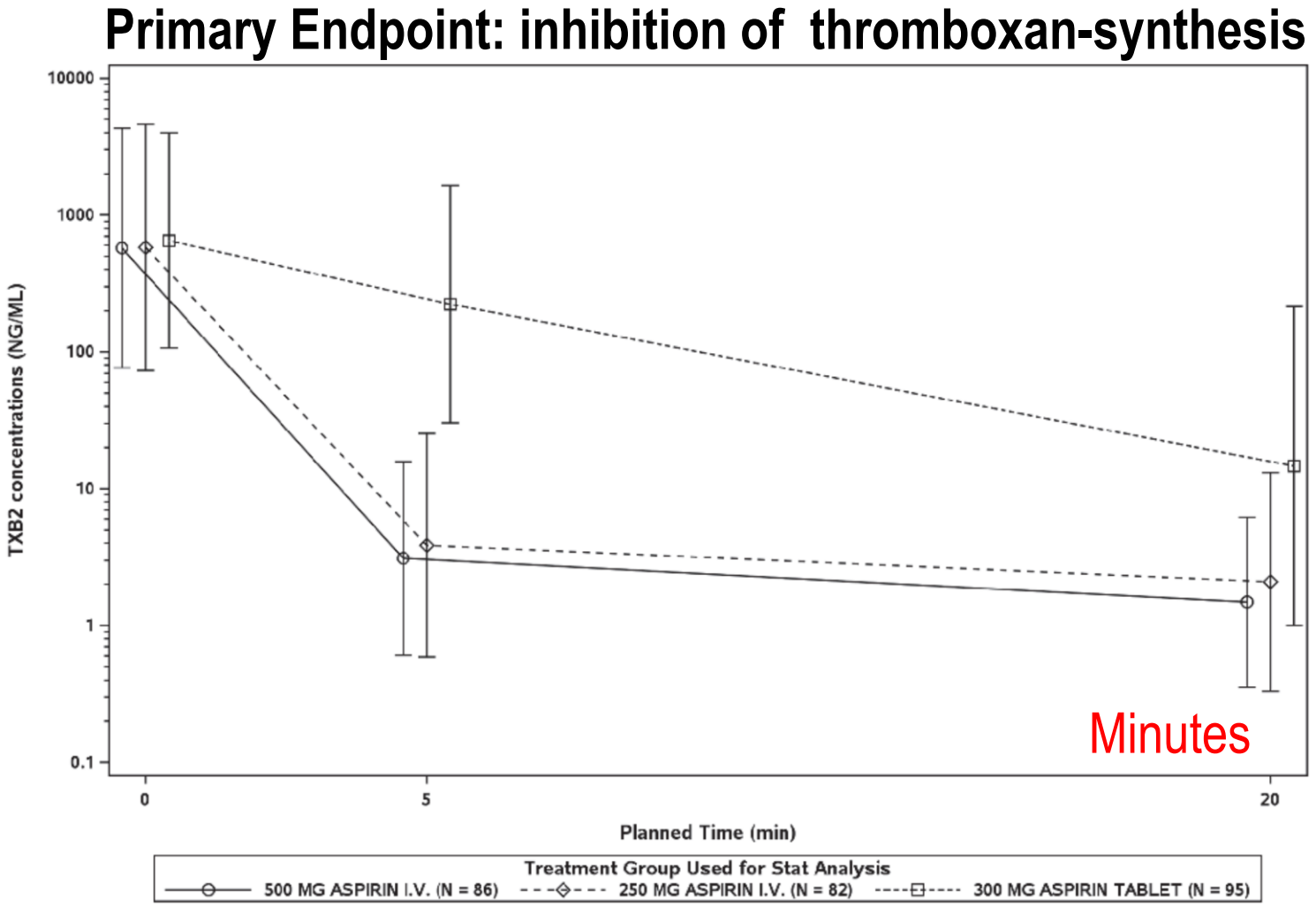
TIME LIMITS FOR ROUTINE OPENING OF AN IRA[e]:
- 0–12h (Class I); 12–48h (Class IIa); >48h (Class III).

ELECTROCARDIOGRAM AT PRESENTATION:
- Left and right bundle branch block considered equal for recommending urgent angiography if ischemic symptoms.

TIME TO ANGIOGRAPHY AFTER FIBRINOLYSIS:
- Timeframe is set in 2–24h after successful fibrinolysis.

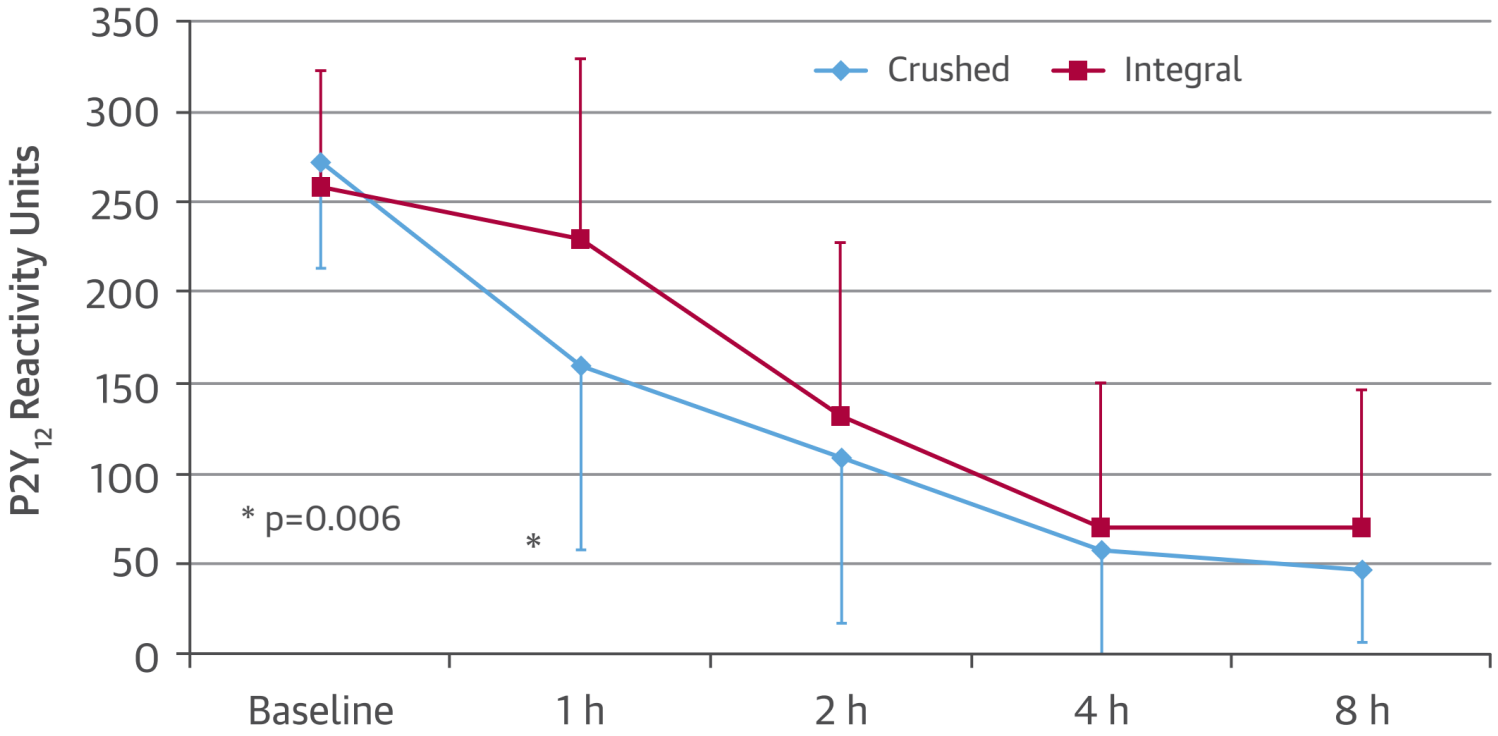
PATIENTS TAKING ANTICOAGULANTS:
- Acute and chronic management presented.

Inhibition de la synthèse du thromboxane par 500 mg et 250 mg d'acide acétylsalicylique i. v. et 300 mg p. o.

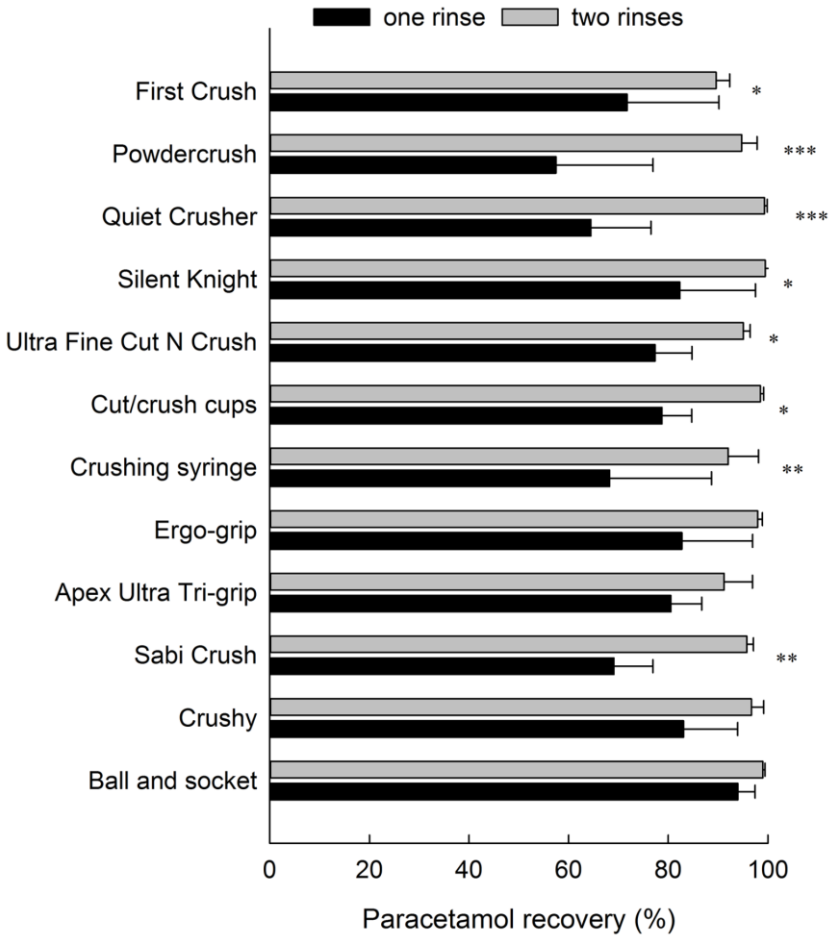


Zeymer et al. Thromb Haemost 2017

Administration de comprimés écrasés de ticagrélor chez les patients STEMI - Etude MOJITO

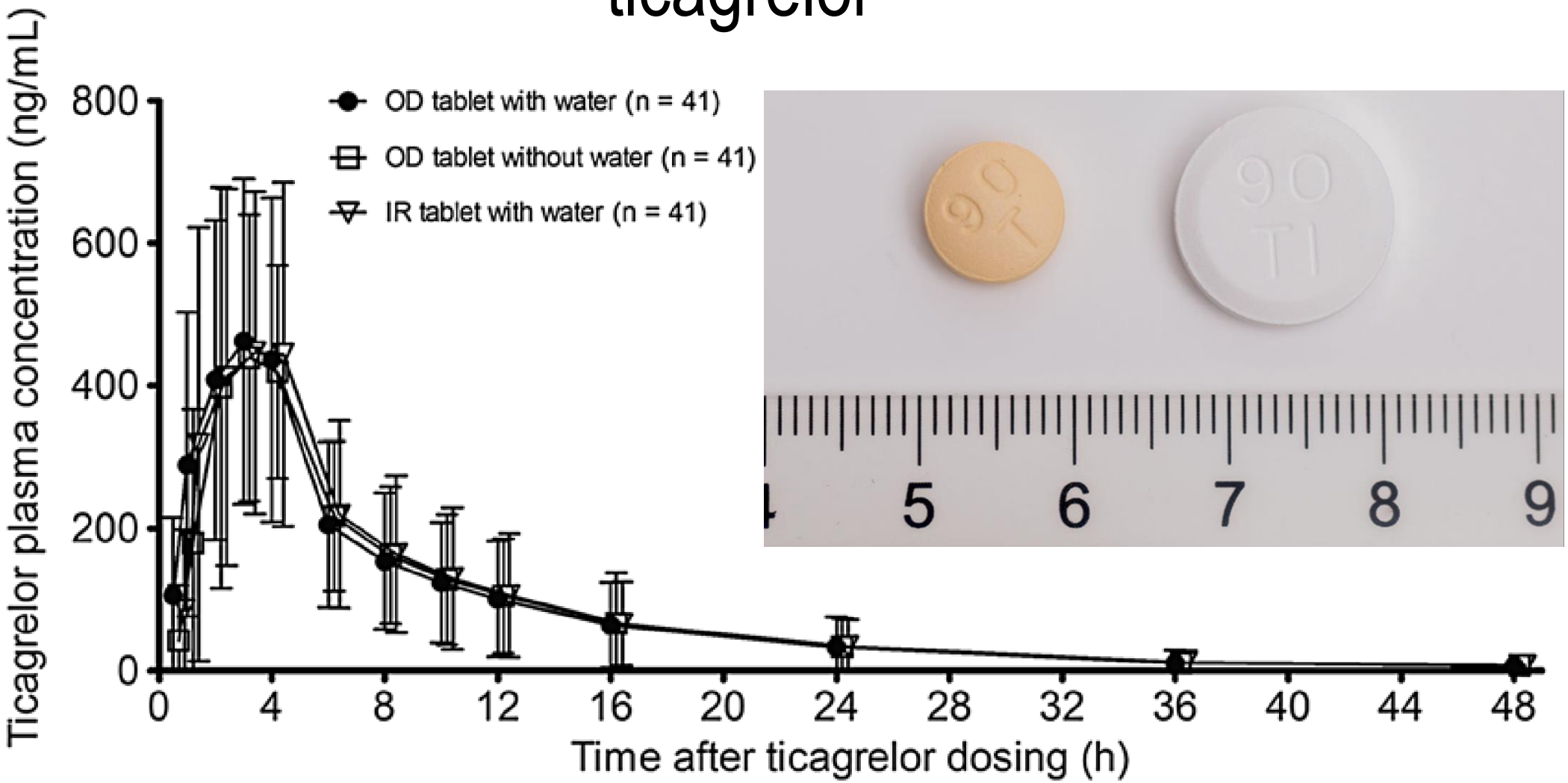


Parodi JACC 2015



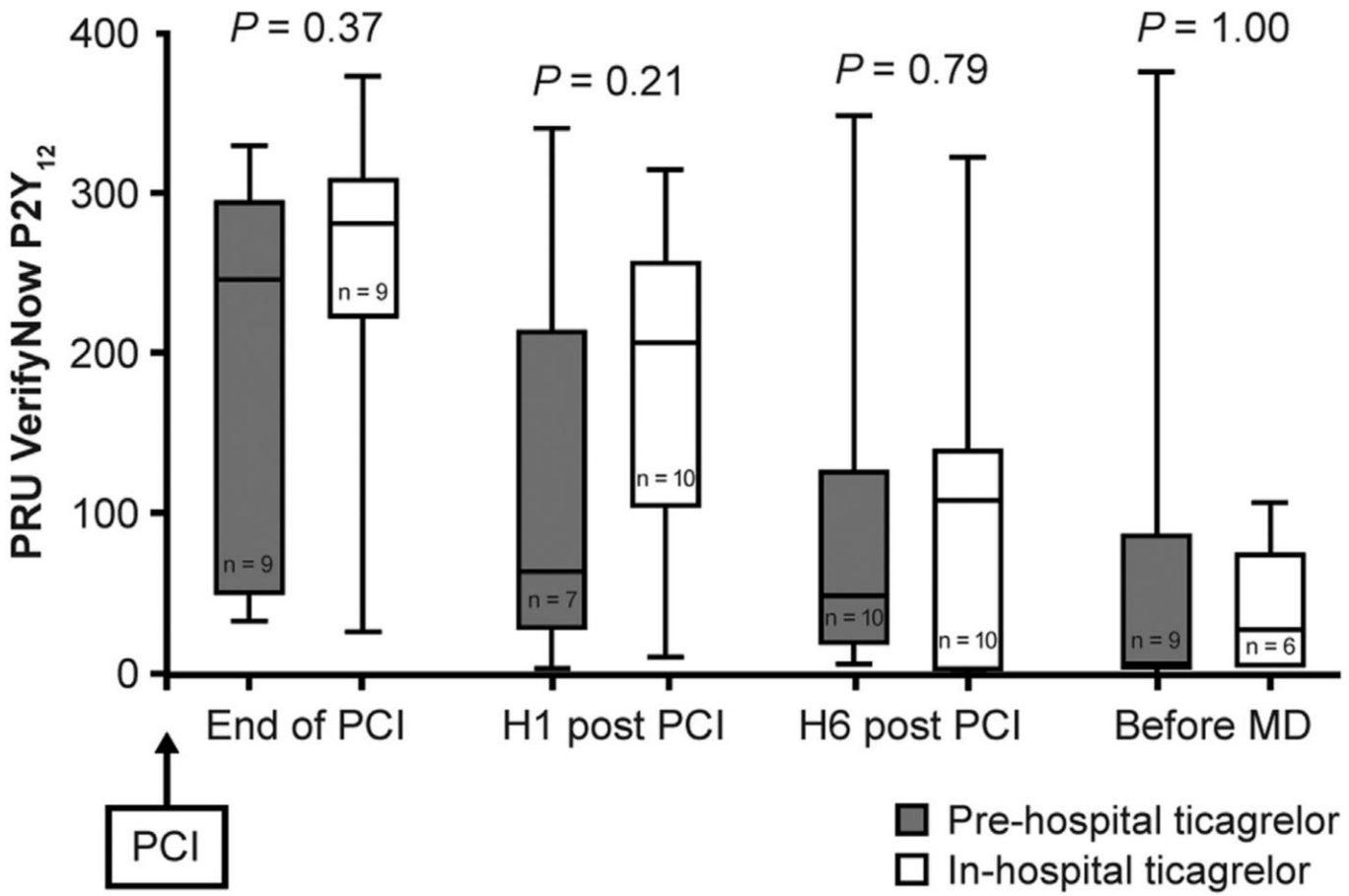
Thong PLOS ONE 2018

Profils pharmacocinétiques des comprimés de ticagrelor



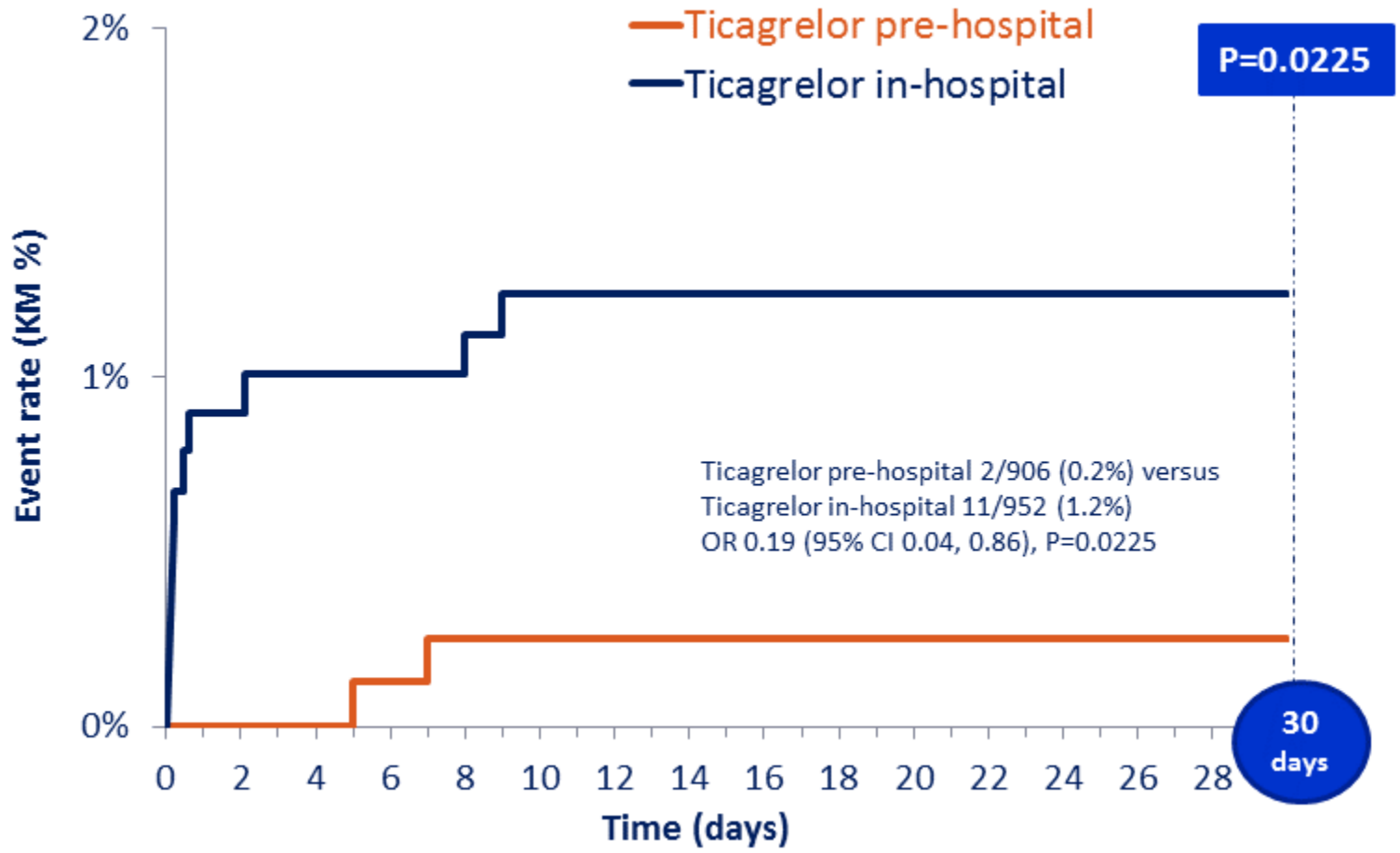
Teng Clin Drug Investig 2017

Inhibition plaquettaire dans l'étude ATLANTIC



Montalescot et al, JACC Cardiovasc Int 2016

Thrombose de stent – Etude ATLANTIC



EUROPEAN SOCIETY OF CARDIOLOGY®

2017

CHANGE IN RECOMMENDATIONS

2012		2017
	Radial access[a] MATRIX[143]	
	DES over BMS EXAMINATION[150,151] COMFORTABLE-AMI[149], NORSTENT[152]	
	Complete Revascularization[b] PRAMI[168], DANAMI-3-PRIMULTI[170], CVLPRIT[169], Compare-Acute[171]	
	Thrombus Aspiration[c] TOTAL[159], TASTE[157]	
	Bivalirudin MATRIX[209], HEAT-PPCI[205]	
	Enoxaparin	
	Early Hospital Discharge[d] Small trials & observational data[259–262]	
	SaO2 <95% DETO2X[66] SaO2 <90%	
Dose i.V. TNK-tPA same in all patients	STREAM[121]	Dose i.V. TNK-tPA half in Pts ≥75 years

2017 NEW RECOMMENDATIONS

- Additional lipid lowering therapy if LDL >1.8 mmol/L (70 mg/dL) despite on maximum tolerated statins
  IMPROVE-IT[376], FOURIER[382]
- Complete revascularization during index primary PCI in STEMI patients in shock
  Expert opinion
- Cangrelor if $P2Y_{12}$ inhibitors have not been given
  CHAMPION[193]
- Switch to potent $P2Y_{12}$ inhibitors 48 hours after fibrinolysis
  Expert opinion
- Extend Ticagrelor up to 36 months in high-risk patients
  PEGASUS-TIMI 54[333]
- Use of polypill to increase adherence
  FOCUS[323]
- Routine use of deferred stenting
  DANAMI 3-DEFER[155]

I | IIa | IIb | III

2017 NEW / REVISED CONCEPTS

MINOCA AND QUALITY INDICATORS:
- New chapters dedicated to these topics.

STRATEGY SELECTION AND TIME DELAYS:
- Clear definition of first medical contact (FMC).
- Definition of "time 0" to choose reperfusion strategy (i.e. the strategy clock starts at the time of "STEMI diagnosis").
- Selection of PCI over fibrinolysis: when anticipated delay from "STEMI diagnosis" to wire crossing is ≤120 min.
- Maximum delay time from "STEMI diagnosis" to bolus of fibrinolysis agent is set in 10 min.
- "Door-to-Ballon" term eliminated from guidelines.

TIME LIMITS FOR ROUTINE OPENING OF AN IRA[e]:
- 0–12h (Class I); 12–48h (Class IIa); >48h (Class III).

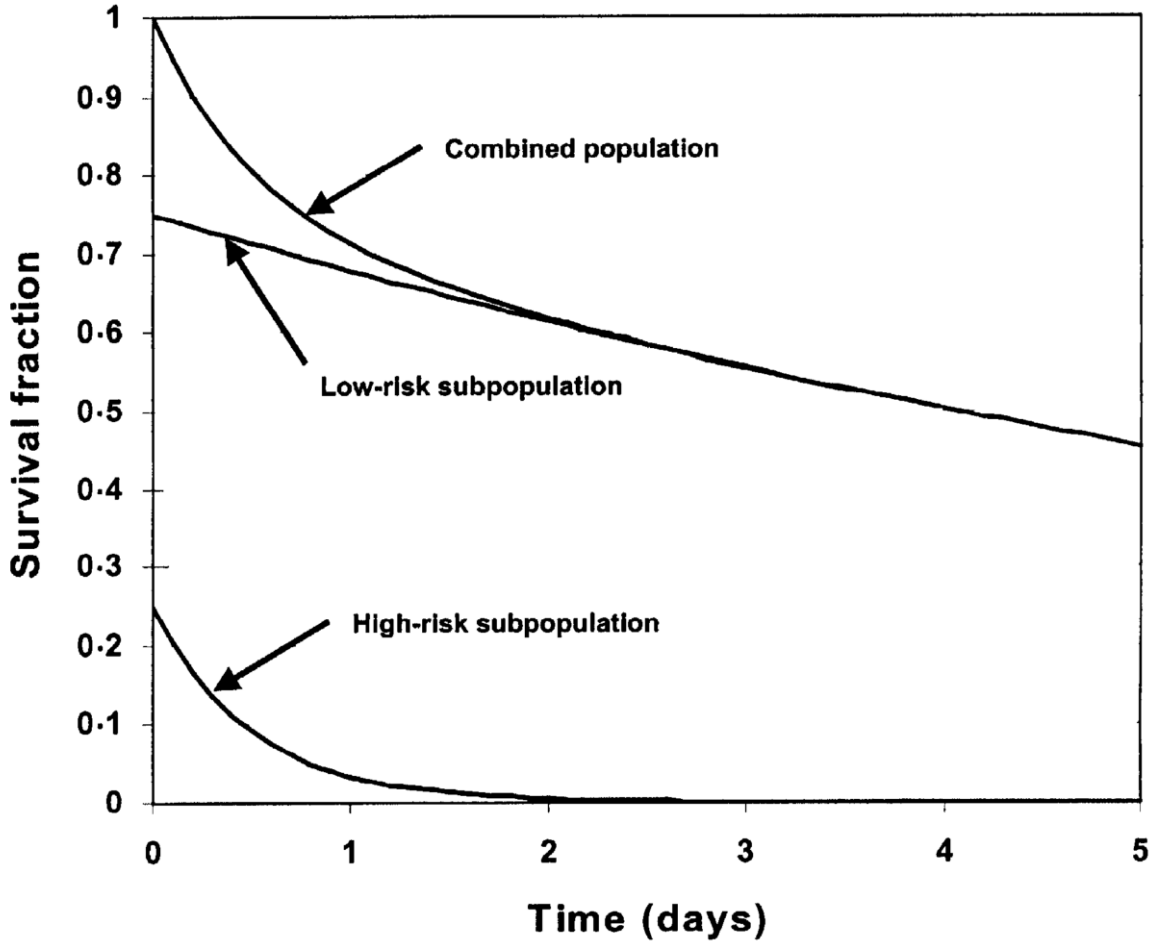
ELECTROCARDIOGRAM AT PRESENTATION:
- Left and right bundle branch block considered equal for recommending urgent angiography if ischemic symptoms.

TIME TO ANGIOGRAPHY AFTER FIBRINOLYSIS:
- Timeframe is set in 2–24h after successful fibrinolysis.

PATIENTS TAKING ANTICOAGULANTS:
- Acute and chronic management presented.

Courbe de survie dans les STEMI

Mixed-exponential hazards modelling



Newby Eur Heart J 2003

Stratification du risque des patients STEMI traités par une angioplastie primaire

ZRS – Zwolle Risk Score

Killip Class	*Points*
1	0
2	4
3-4	9
TIMI flow post	
3	0
2	1
0-1	2
Age	
< 60	0
≥ 60	2
3-vessel disease	
No	0
Yes	1
Anterior infarction	
No	0
Yes	1
Ischemia time (> 4 hours)	
No	0
Yes	1
Total score	*16*

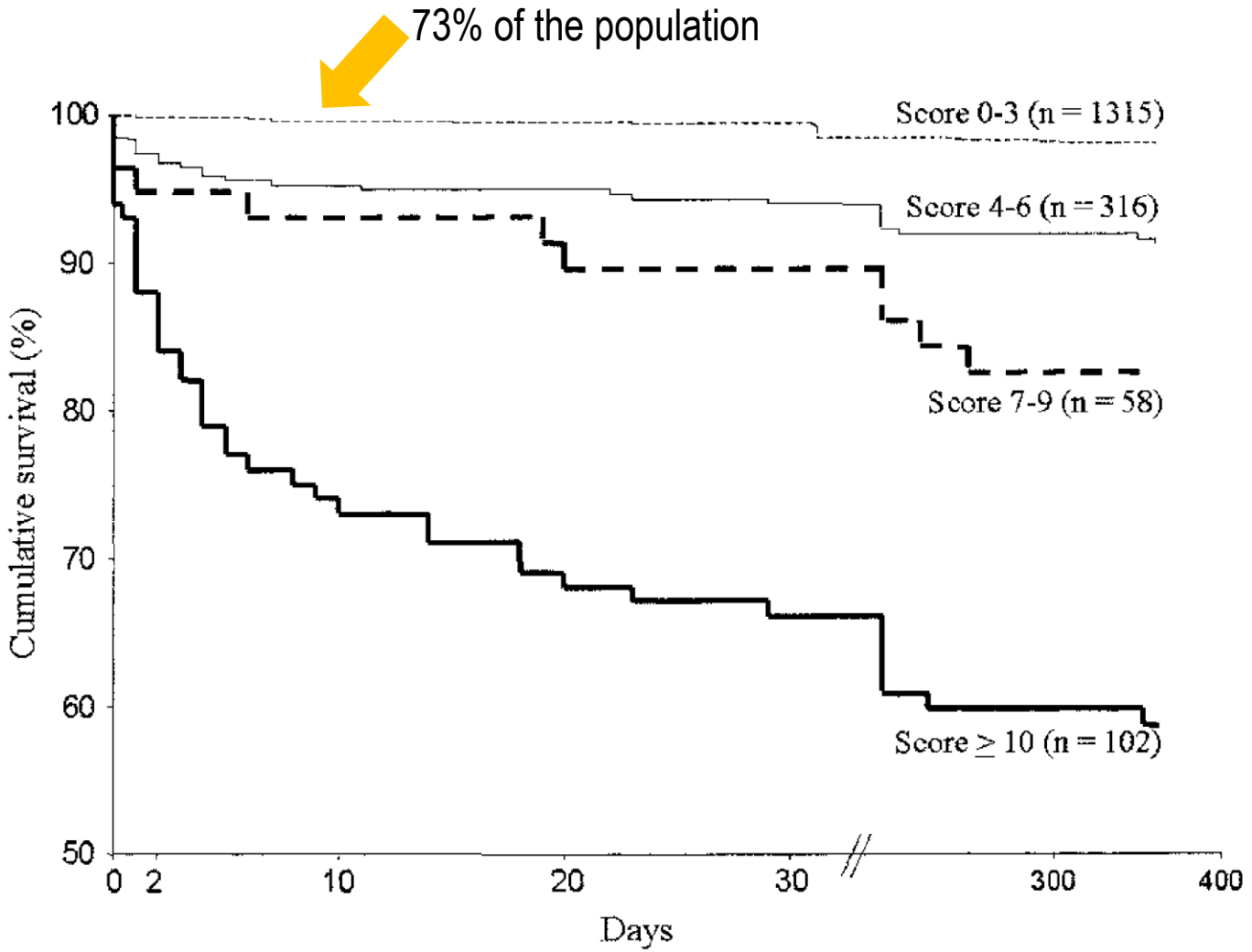
Front

PAMI Low Risk

- age < 70 years,
- no persistent arrhythmias after reperfusion
- one- or two-vessel disease
- LVEF > 45%
- Successful PTCA

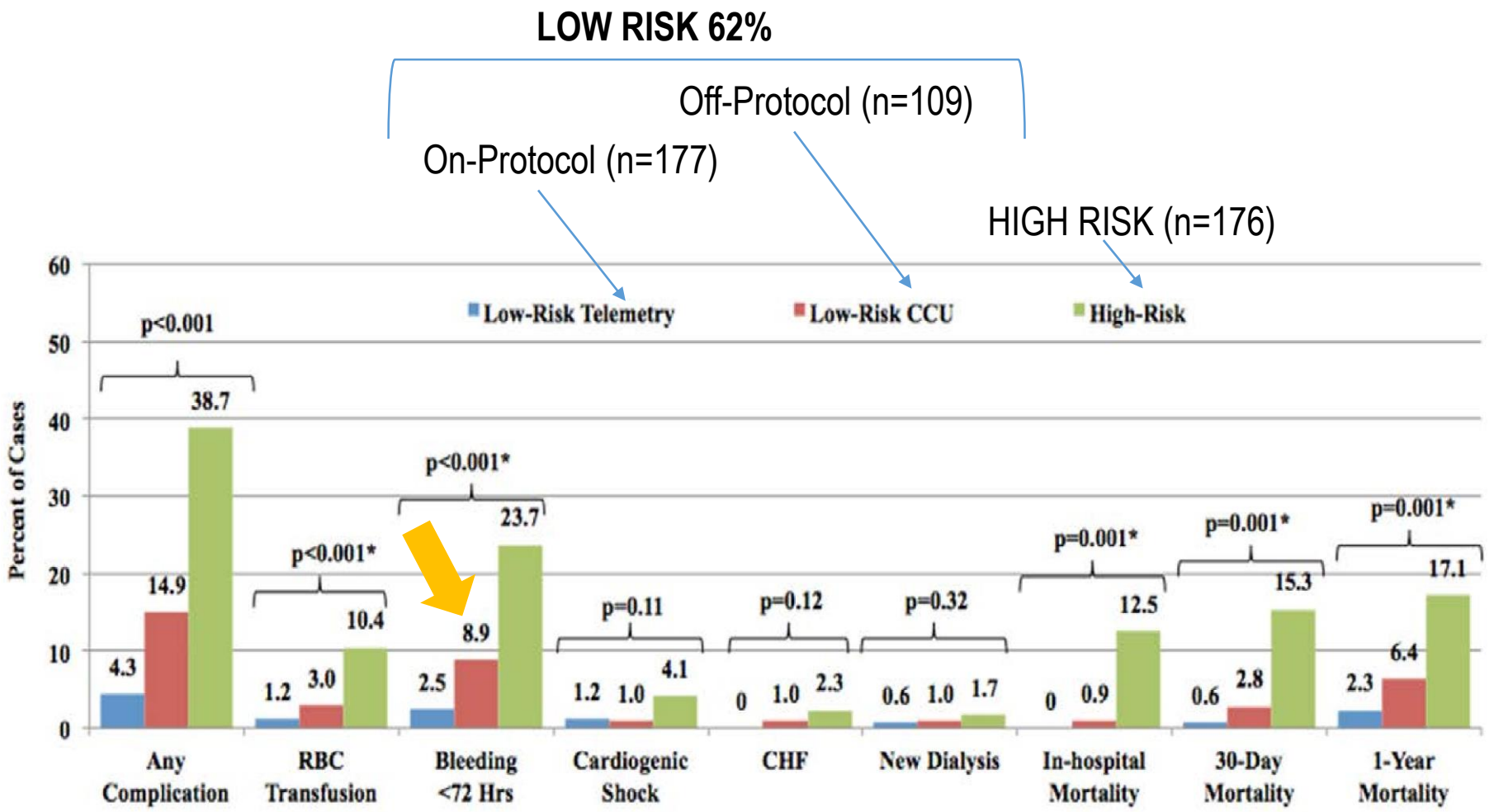
CADILLAC risk score	
EF < 40%	4
Cr clearance < 60 mL/min	3
Killip class 2 or 3	3
Final TIMI flow 0-2	2
Age > 65 yrs	2
Anemia (hemoglobin < 13.0 mg/dL for males or <12.0 mg/dL for females)	2
Three vessel disease	2

Zwolle risk score et mortalité



De Lucas Circulation 2004

Plus besoin d'USIC pour les STEMI ?



Prospective cohort	Low-risk on-protocol (n=177)	Low-risk off-protocol (n=109)	High risk (n=176)
Patient costs	$6090 ($4730, $7356)	$8412 ($6728, $10 920)	$11 783 ($7953, $25 359)

Ebinger Circ Cardiovasc Qual Outcomes. 2018

EUROPEAN SOCIETY OF CARDIOLOGY®

2017

CHANGE IN RECOMMENDATIONS

2012		2017
Radial access[a]	MATRIX[143]	
DES over BMS	EXAMINATION[150,151]	
Complete Revascularization[b]	PRAMI[168], DANAMI-3-PRIMULTI[170], CVLPRIT[169], Compare-Acute[171]	
Thrombus Aspiration	TOTAL[159], TASTE[157]	
Bivalirudin	MATRIX[209], HEAT-PPCI[205]	
Enoxaparin	ATOLL[200,201], Meta-analysis[202]	
Early Hospital Discharge[d]	Small trials & observational data[259–262]	
Oxygen when SaO2 <95%	AVOID[64], DETO2X[66]	Oxygen when SaO2 <90%
Dose i.V. TNK-tPA same in all patients	STREAM[121]	Dose i.V. TNK-tPA half in Pts ≥75 years

2017 NEW RECOMMENDATIONS

- Additional lipid lowering therapy if LDL >1.8 mmol/L (70 mg/dL) despite on maximum tolerated statins
- Complete revascularization during index primary PCI in STEMI patients in shock
  Expert opinion
- CHAMPION[193]
- Switch to potent $P2Y_{12}$ inhibitors 48 hours after fibrinolysis
  Expert opinion
- Extend Ticagrelor up to 36 months in high-risk patients
  PEGASUS-TIMI 54[333]
- Use of polypill to increase adherence
  FOCUS[323]
- Routine use of deferred stenting
  DANAMI 3-DEFER[155]

I | IIa | IIb | III

2017 NEW / REVISED CONCEPTS

MINOCA AND QUALITY INDICATORS:
- New chapters dedicated to these topics.

STRATEGY SELECTION AND TIME DELAYS:
- Clear definition of first medical contact (FMC).
- Definition of "time 0" to choose reperfusion strategy (i.e. the strategy clock starts at the time of "STEMI diagnosis").
- Selection of PCI over fibrinolysis: when anticipated delay from "STEMI diagnosis" to wire crossing is ≤120 min.
- Maximum delay time from "STEMI diagnosis" to bolus of fibrinolysis agent is set in 10 min.
- "Door-to-Ballon" term eliminated from guidelines.

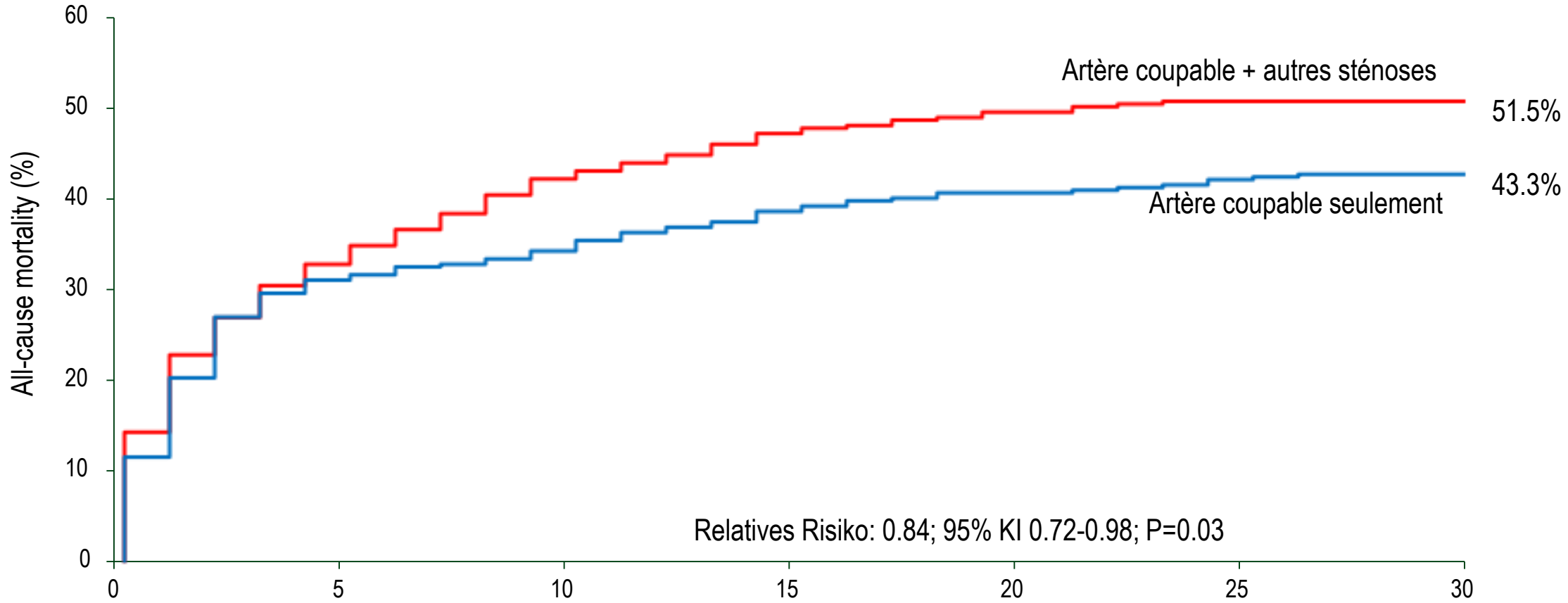
TIME LIMITS FOR ROUTINE OPENING OF AN IRA[e]:
- 0–12h (Class I); 12–48h (Class IIa); >48h (Class III).

ELECTROCARDIOGRAM AT PRESENTATION:
- Left and right bundle branch block considered equal for recommending urgent angiography if ischemic symptoms.

TIME TO ANGIOGRAPHY AFTER FIBRINOLYSIS:
- Timeframe is set in 2–24h after successful fibrinolysis.

PATIENTS TAKING ANTICOAGULANTS:
- Acute and chronic management presented.

Mortalité totale



Number at risk:

Culprit lesion only PCI	344	237	226	211	203	198	193
Immediate multivessel PCI	341	229	197	179	170	166	165

Thiele et al. NEJM 2017; 377:2419-2432

Merci de votre attention