



# Apport de la coronarographie après un ACEH

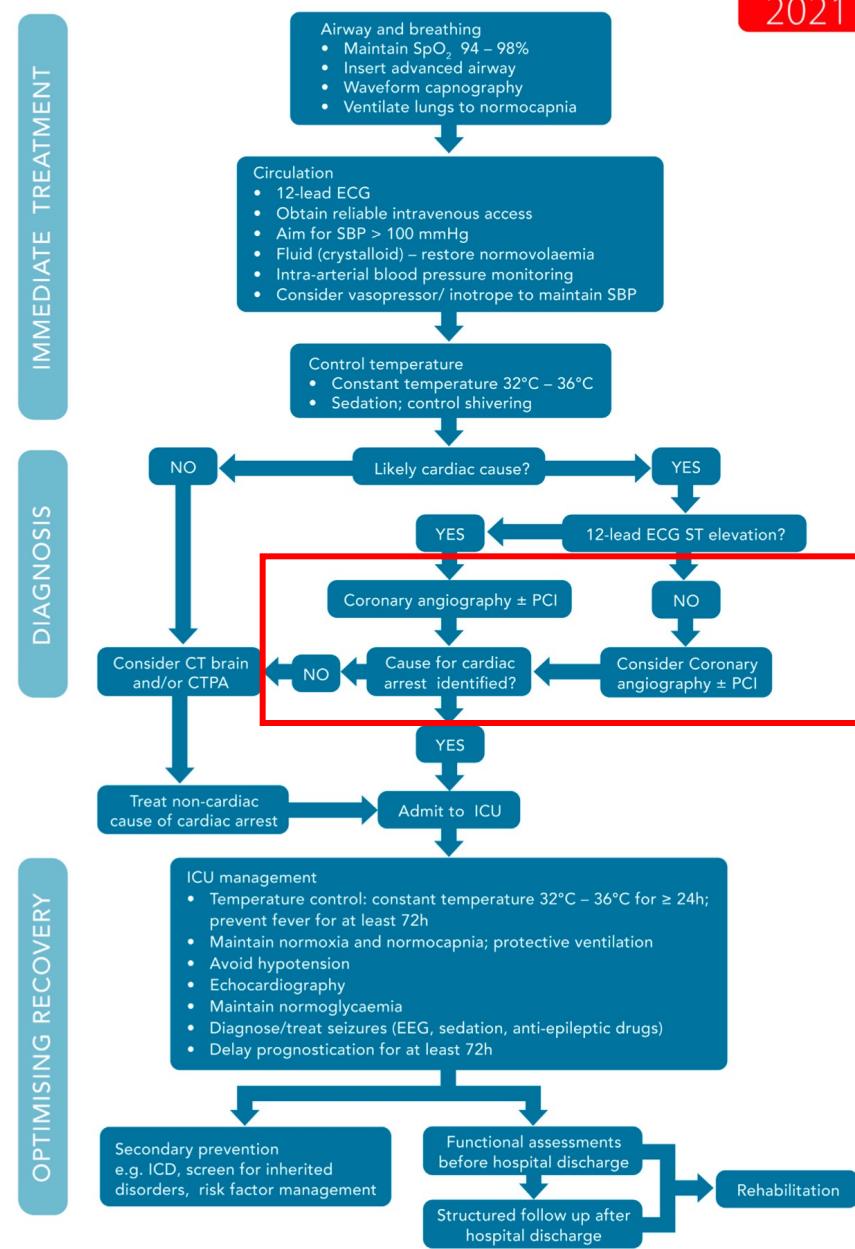
Olivier Varenne  
Hôpital Cochin  
Paris



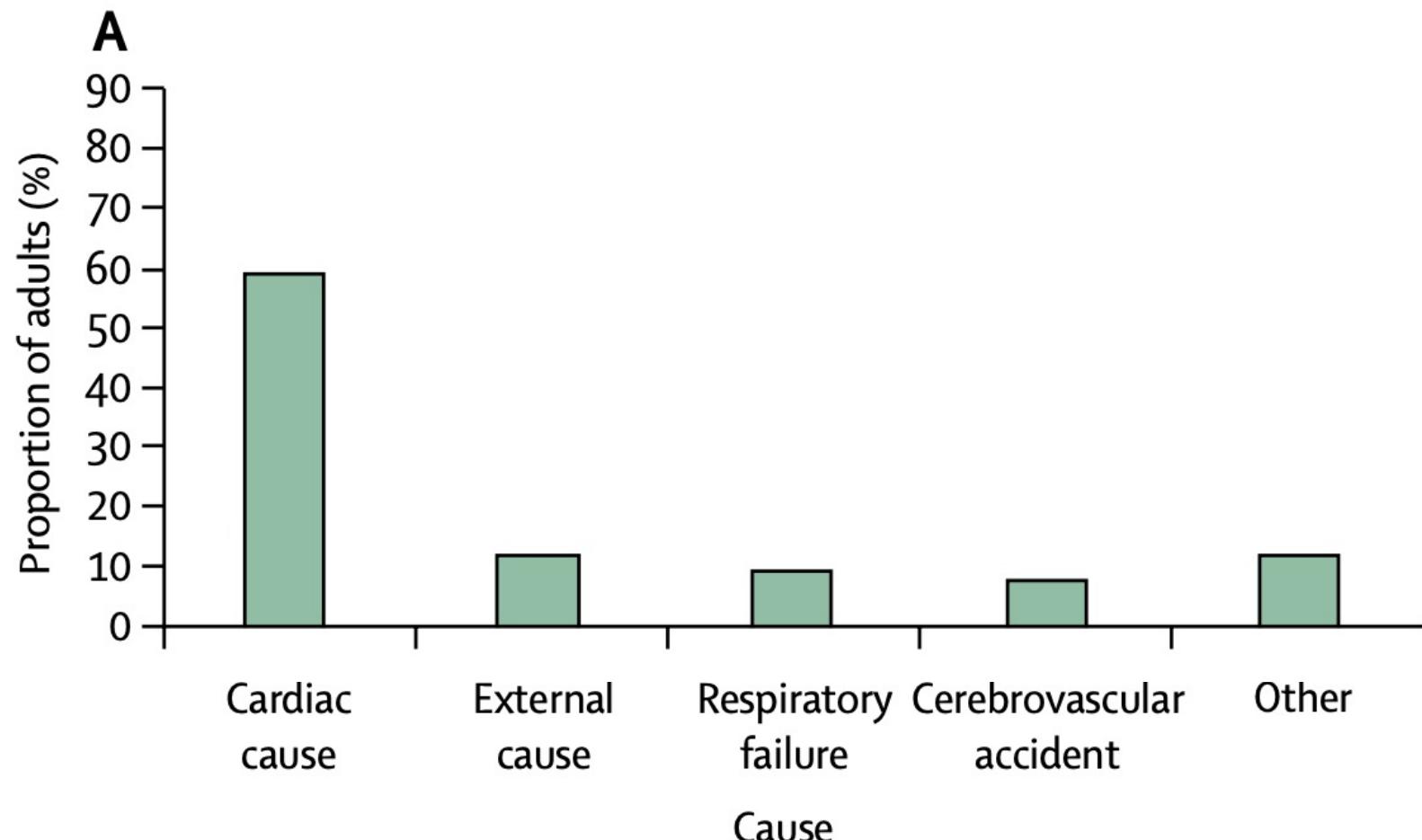
## Olivier Varenne a les potentiels conflits d'intérêt suivants:

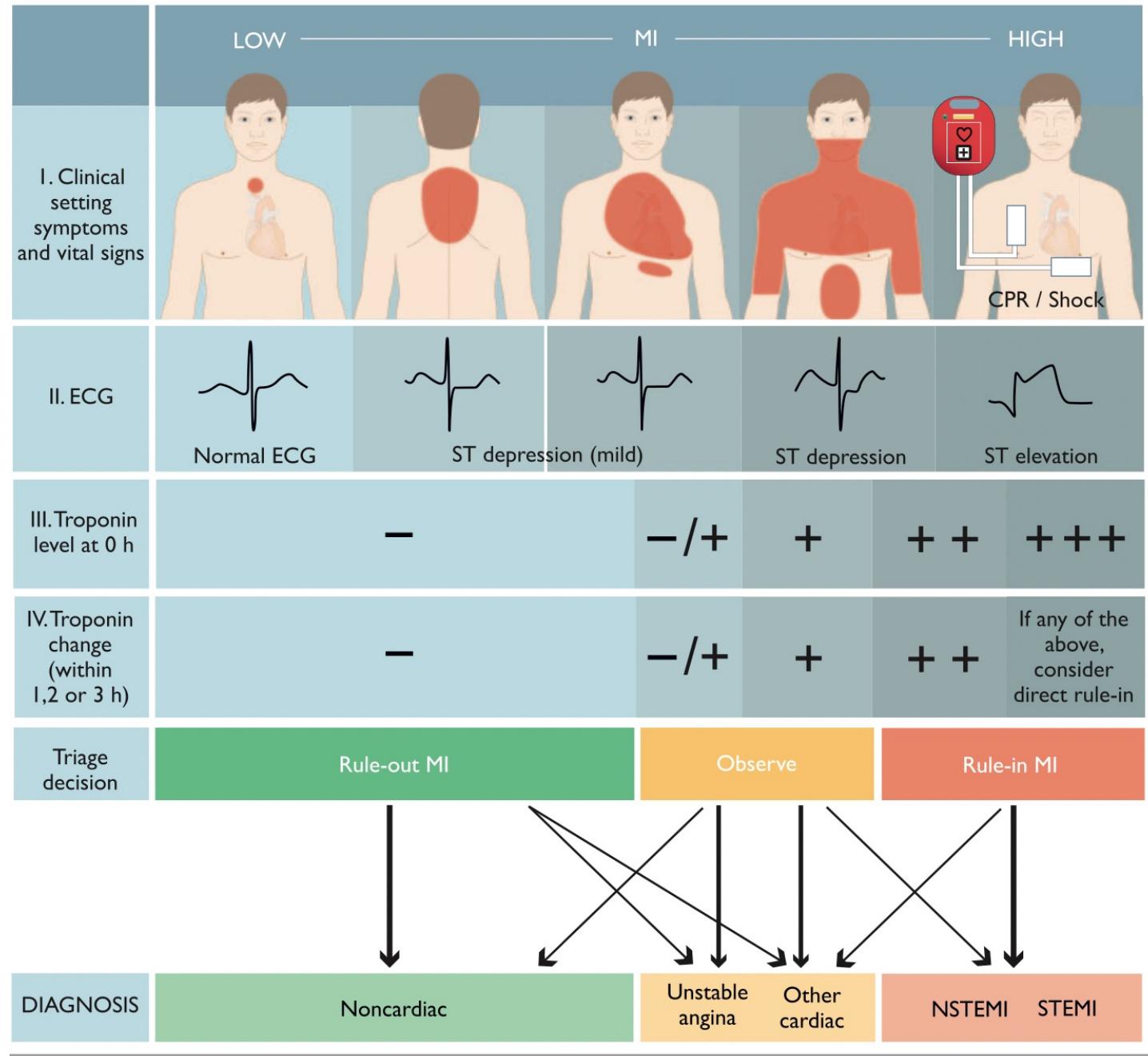
- Bourses de recherche clinique: Boston Scientific, Abbott Vascular
- Congrès/Transports: Astra Zeneca, Biosensors, Boston Scientific
- Lectures: Servier, Abbott Vascular, Boston Scientific

# POST-RESUSCITATION CARE



# Pourquoi une coro?





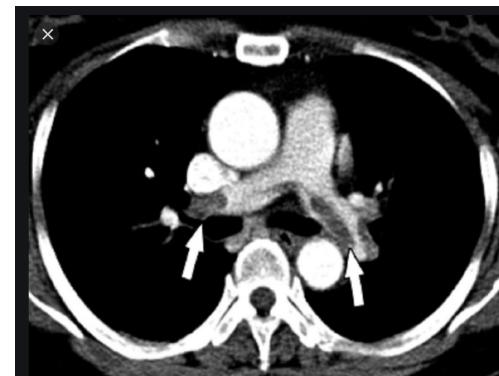
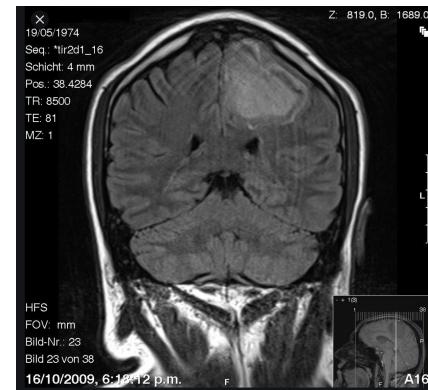
ST+ = coro

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
A primary PCI strategy is recommended in patients with resuscitated cardiac arrest and an ECG consistent with STEMI. <sup>395,397,436,437</sup>	I	B

- ACEH et ST+ = coro urgence

# Pas de ST+ sur ECG

-Cause extra coronaire



# Pas de ST+ sur ECG

-Cause extra coronaire

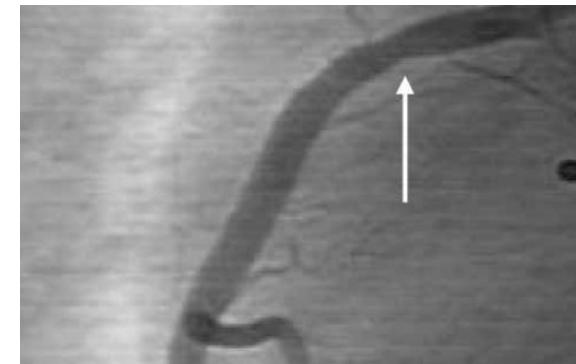
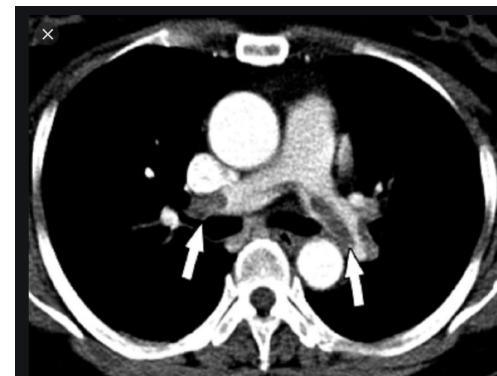
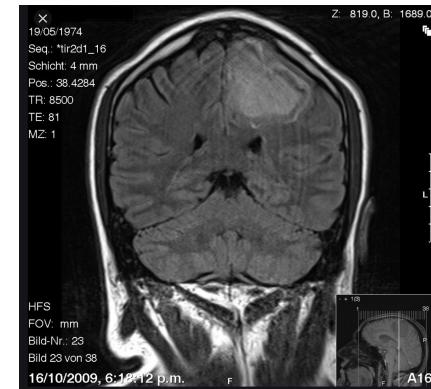
ou

-Cause coronaire:

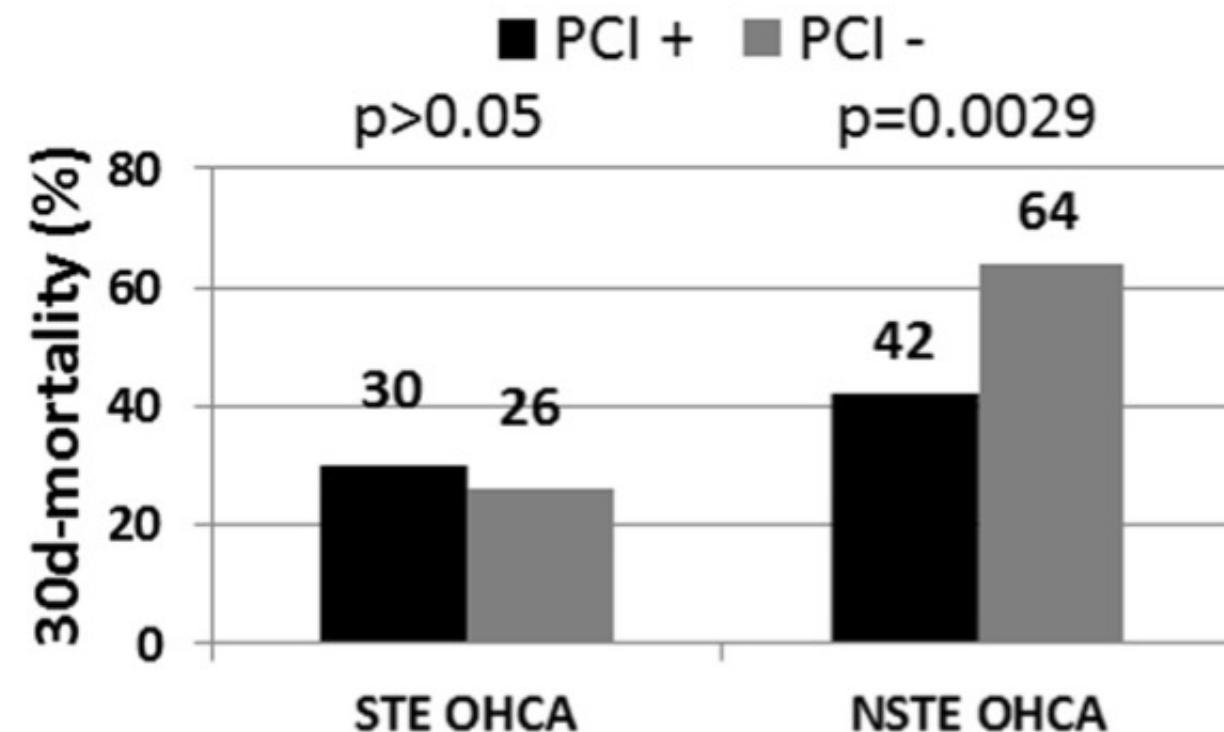
Syndrome coronaire aigu ST-  
SCAD

Syndrome coronaire chronique...

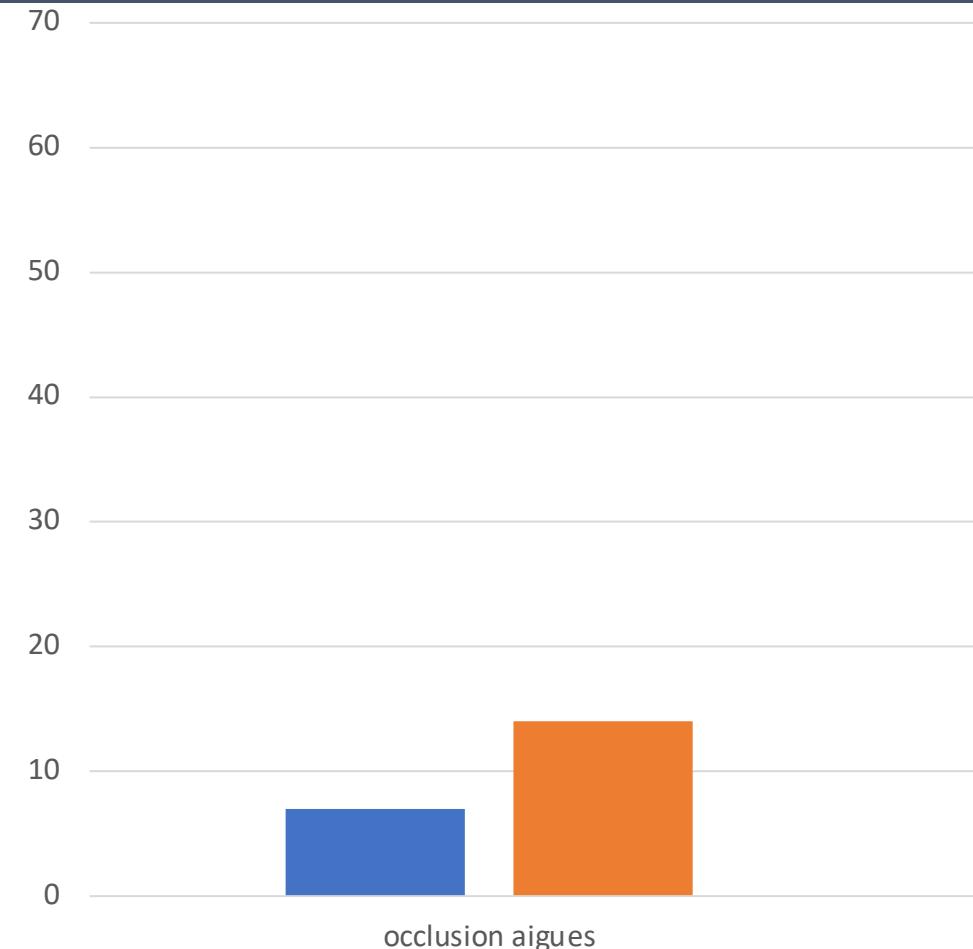
Spasme coronaire



# Registre HACORE



# Pas de ST+... si vous ne faites pas la coro...



**Vous manquez jusqu'à  
14% d'occlusions  
aiguës...**

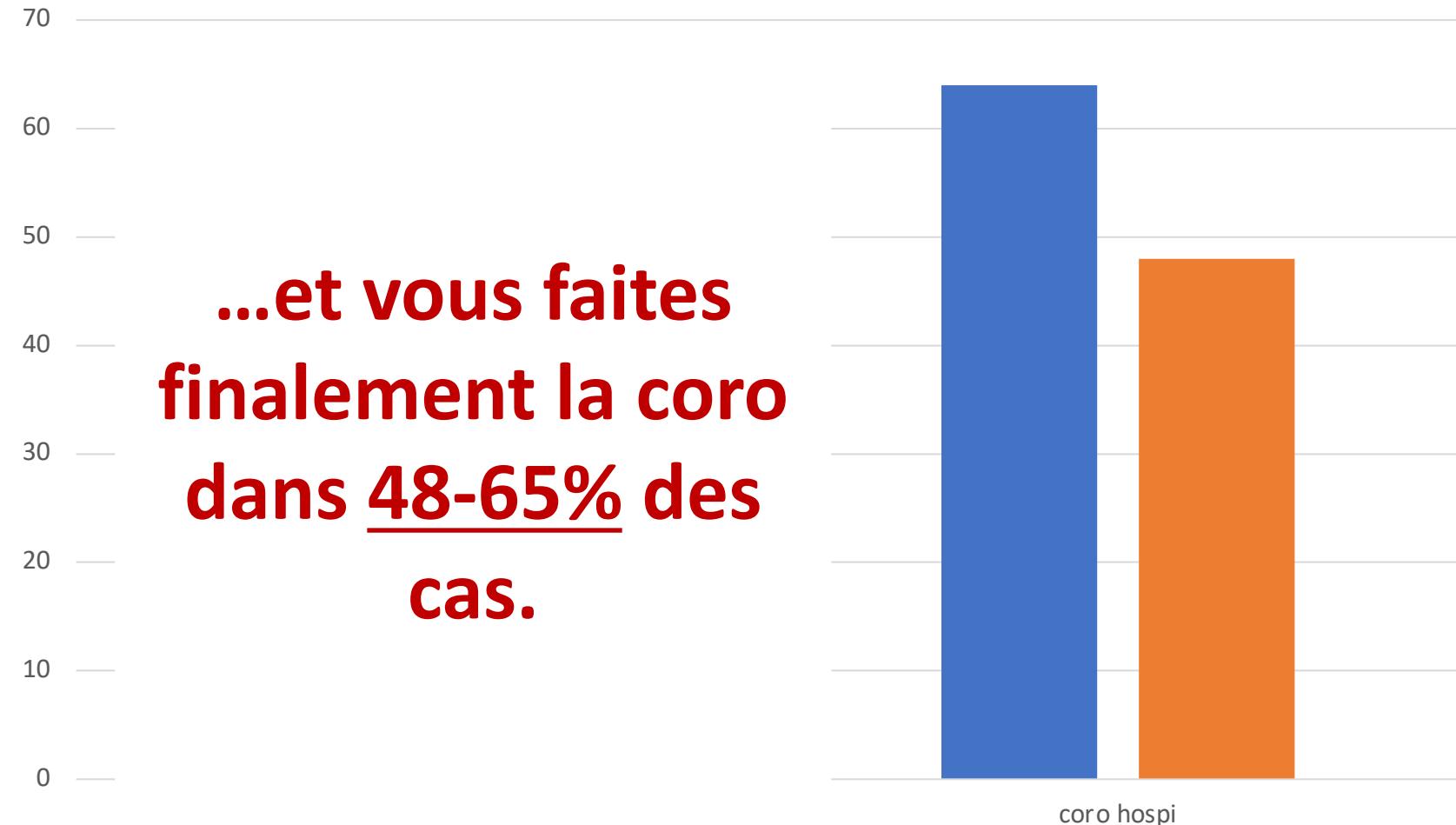


COACT



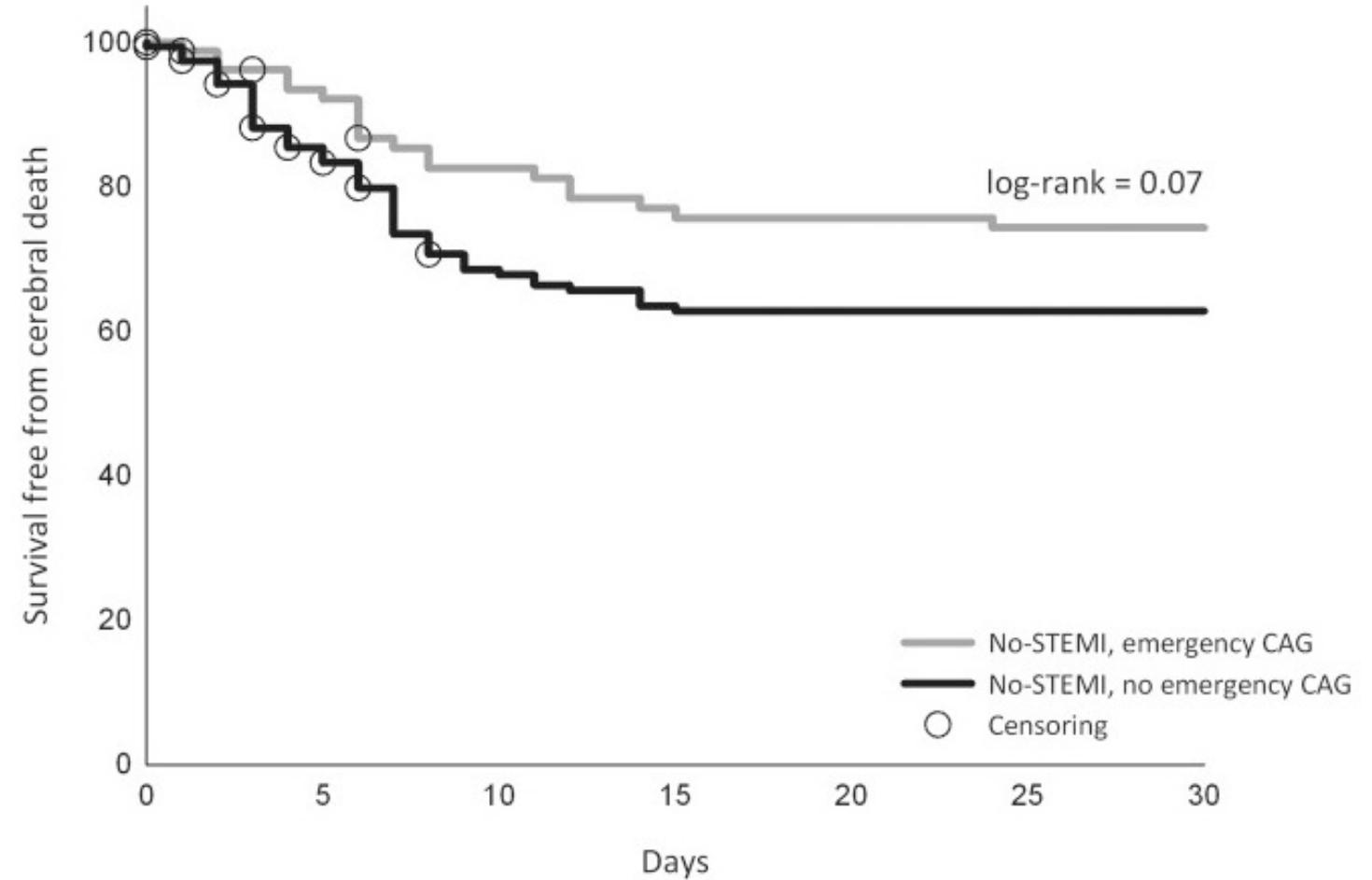
PEARL

...et vous la ferez quand même!

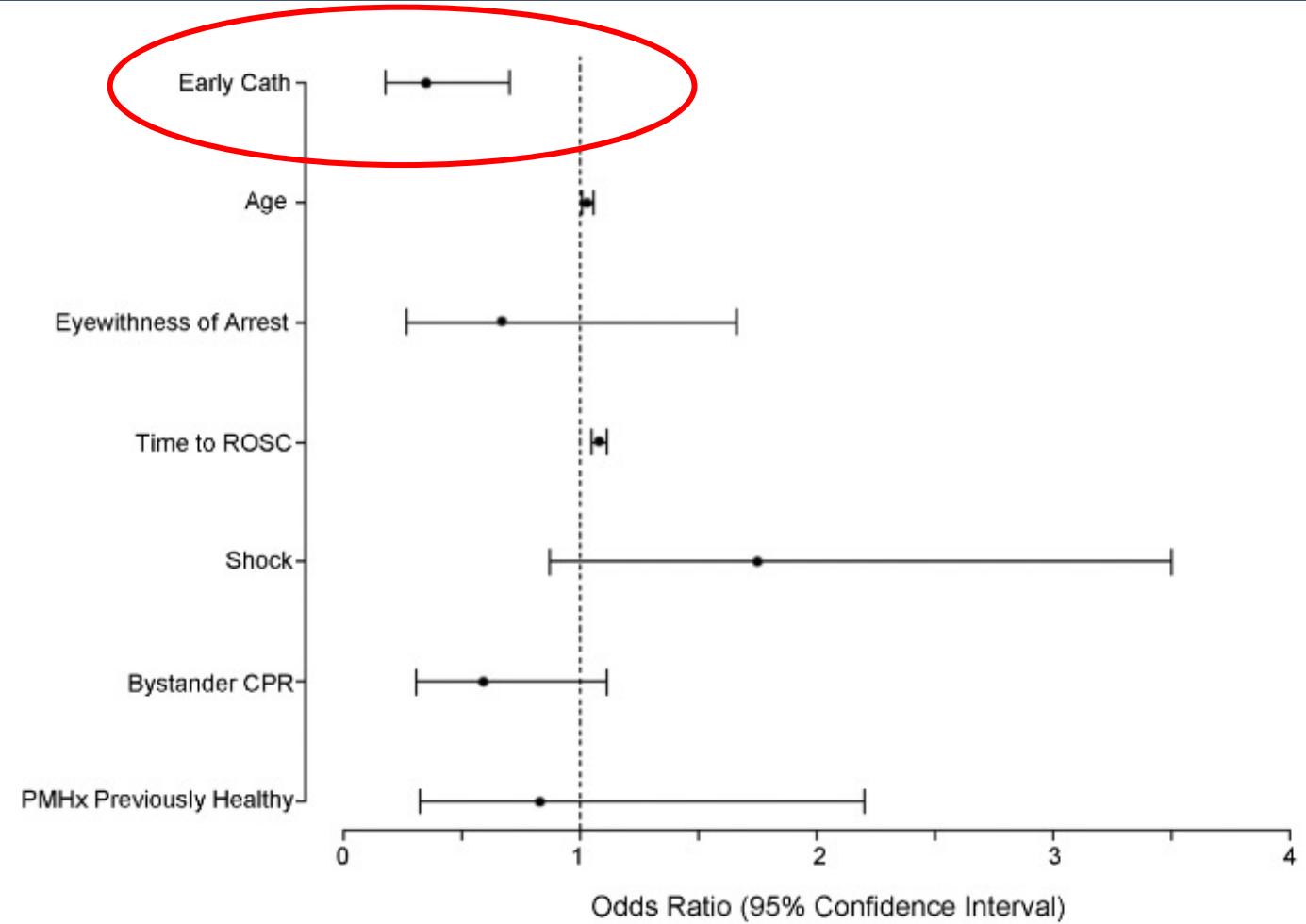


...et vous faites  
finalement la coro  
dans 48-65% des  
cas.

# Survie après ACEH sans ST+



# Pronostic après ACEH



# Pronostic

	<b>OR (95% CI)</b>	<b>p Value</b>
Male	1.0 (0.7-1.5)	0.81
Age, per year	0.96 (0.95-0.97)	<0.001
Home location	0.5 (0.4-0.7)	<0.001
Bystander CPR	1.6 (1.1-2.5)	0.02
Initial shockable rhythm	4.5 (3.1-6.4)	<0.001
CA to CPR >4 min	0.5 (0.4-0.7)	<0.001
CPR to ROSC >20 min	0.3 (0.2-0.4)	<0.001
Epinephrine dose >3 mg	0.2 (0.1-0.3)	<0.001
TTM	1.1 (0.8-1.7)	0.46
Early invasive strategy	1.2 (0.8-1.9)	0.35

# 5 TOP MESSAGES

## 1. After ROSC use ABC approach

- Insert an advanced airway (tracheal intubation when skills available)
- Titrate inspired oxygen to an  $\text{SpO}_2$  of 94-98% and ventilate lungs to achieve normocapnia
- Obtain reliable intravenous access, restore normovolaemia, avoid hypotension (aim for systolic BP > 100mmHg)

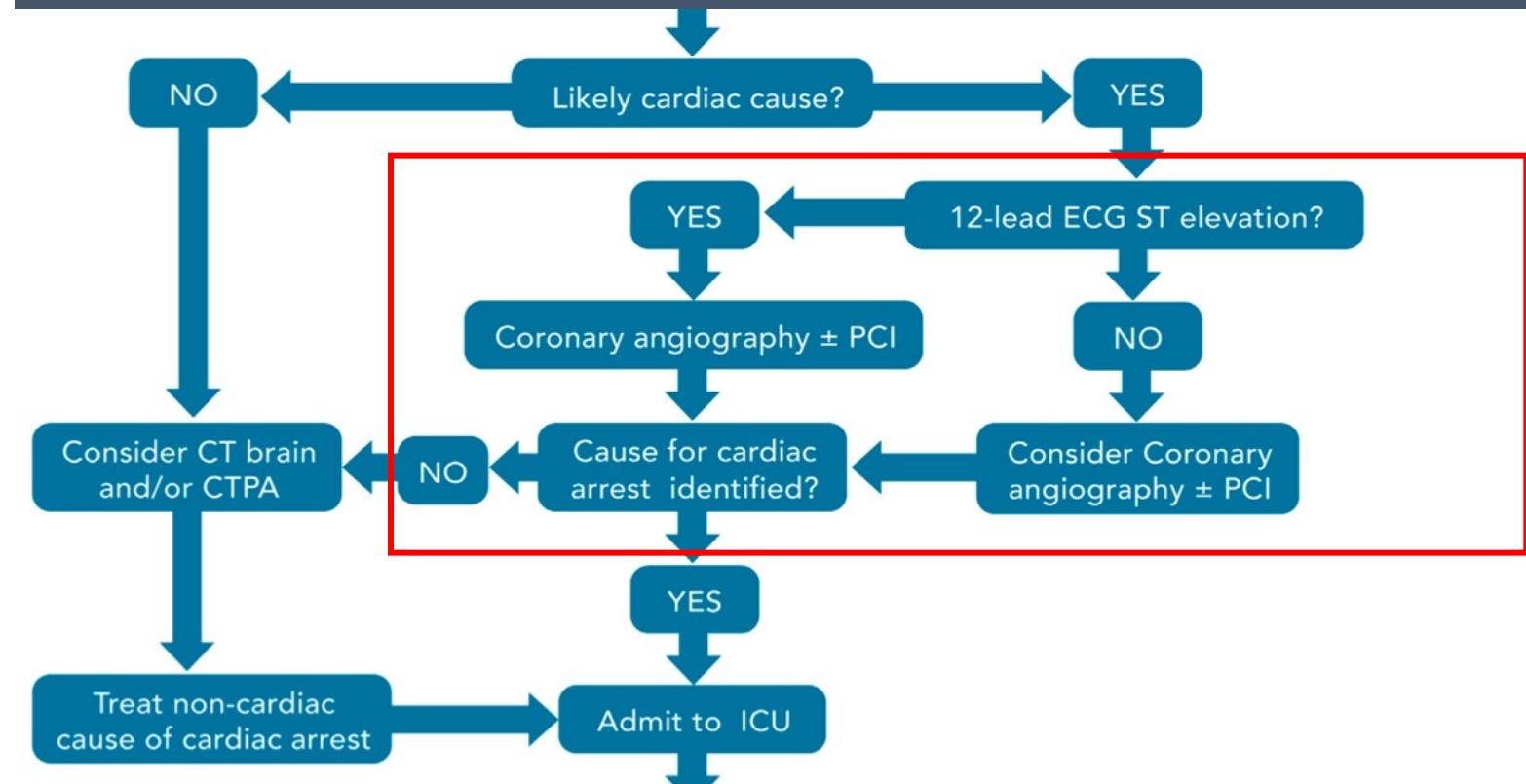
## 2. Emergent cardiac catheterisation +/- immediate PCI after cardiac arrest of suspected cardiac origin and ST-elevation on the ECG

## 3. Use targeted temperature management (TTM) for adults after either OHCA or IHCA (with any initial rhythm) who remain unresponsive after ROSC

## 4. Use multimodal neurological prognostication using clinical examination, electrophysiology, biomarkers, and imaging

## 5. Assess physical and non-physical impairments before and after discharge from the hospital and refer for rehabilitation if necessary

# ERC 2021

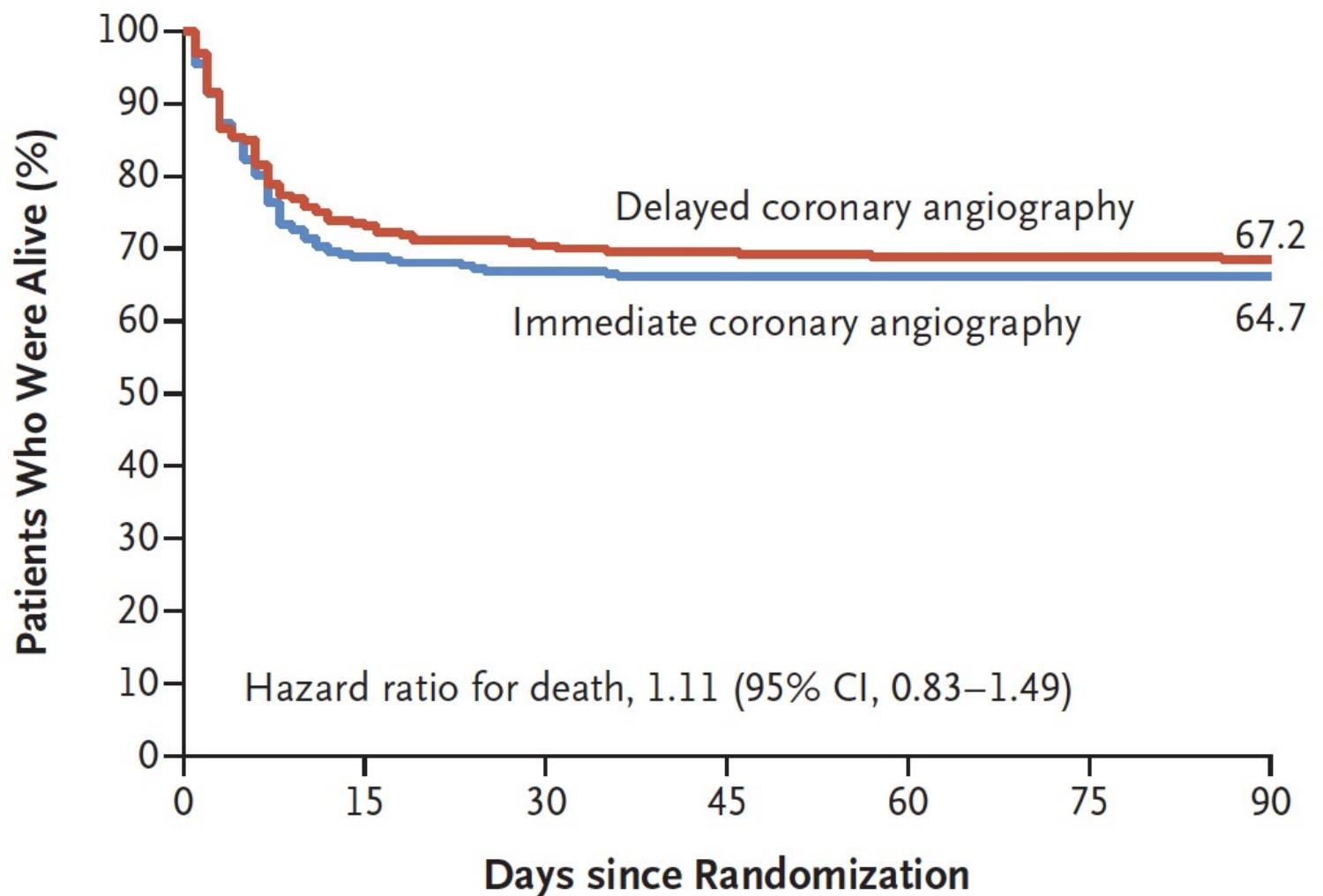


<b>Recommendations</b>	<b>Class<sup>a</sup></b>	<b>Level<sup>b</sup></b>
A primary PCI strategy is recommended in patients with resuscitated cardiac arrest and an ECG consistent with STEMI. <sup>395,397,436,437</sup>	I	B
Urgent angiography (and PCI if indicated) should be considered in patients with resuscitated cardiac arrest without diagnostic ST-segment elevation but with a high suspicion of ongoing myocardial ischaemia.	IIa	C
In patients with electrical storm, urgent coronary angiography and revascularization (as required) should be considered.	IIa	C

- ACEH et ST+ = coro urgence

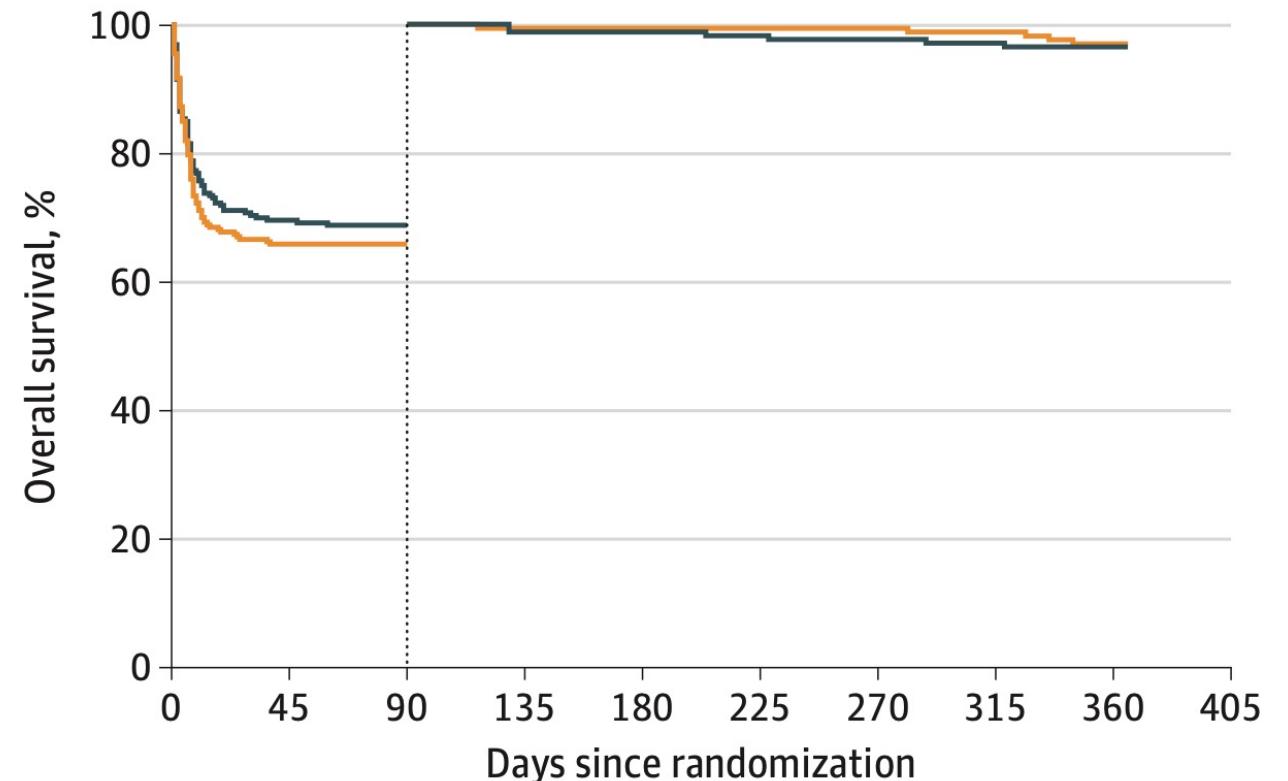
- ACEH sans ST+ = coro urgente ssi forte suspicion ischémie myocardique

## COACT

**No. at Risk**

Delayed	265	191	183	181	179	179	178
Immediate	273	183	178	176	176	176	176

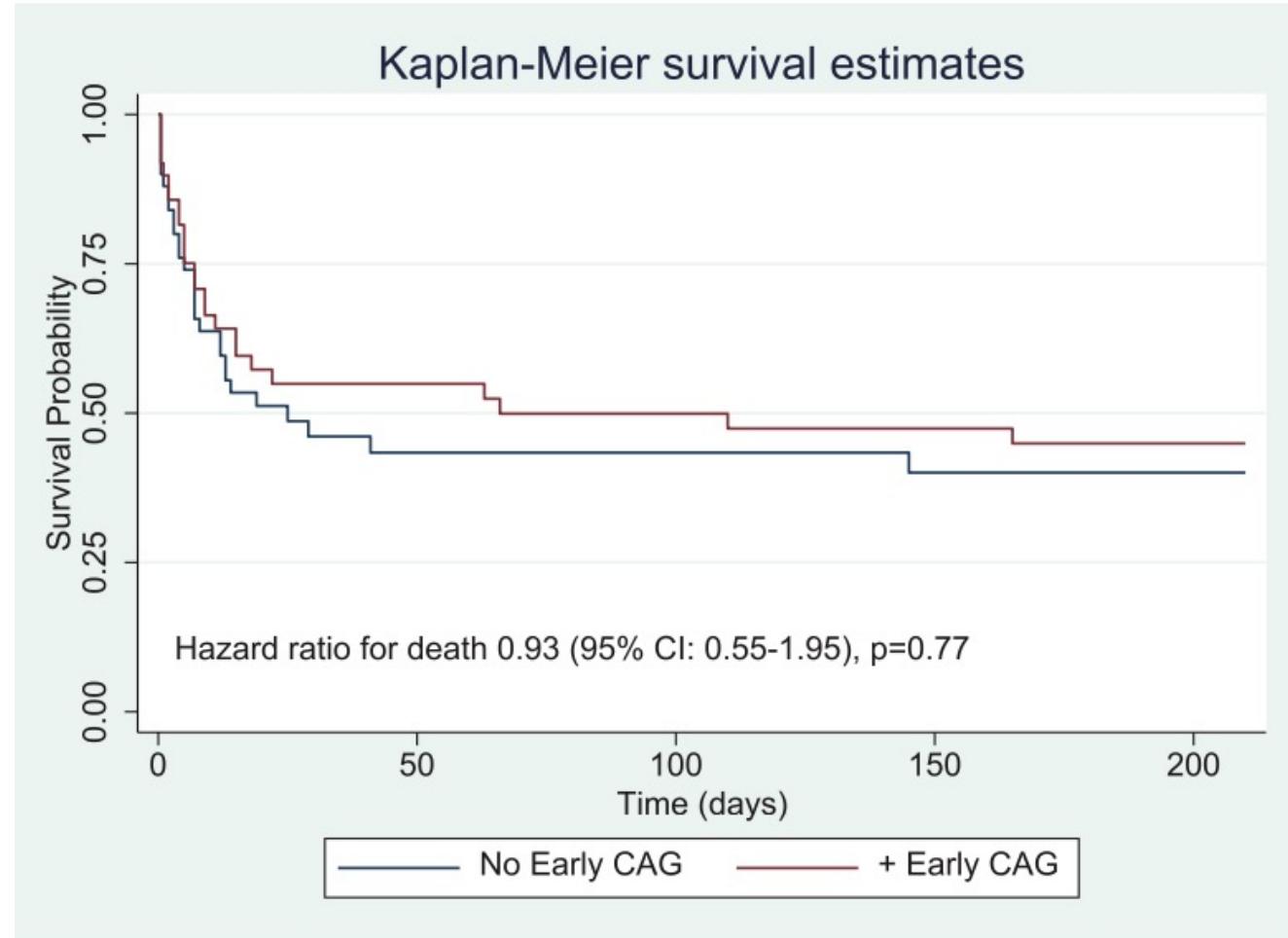
## COACT 1an



## No. at risk

Delayed	265	181	178	169	169	168	167	166	160
Immediate	273	176	176	167	166	166	165	164	157

## PEARL



# Retarder la coro?

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
<b>Timing of invasive strategy</b>  Delayed as opposed to immediate angiography should be considered among haemodynamically stable patients without ST-segment elevation successfully resuscitated after out-of-hospital cardiac arrest. <sup>358,364</sup>	IIa	B

# Limites

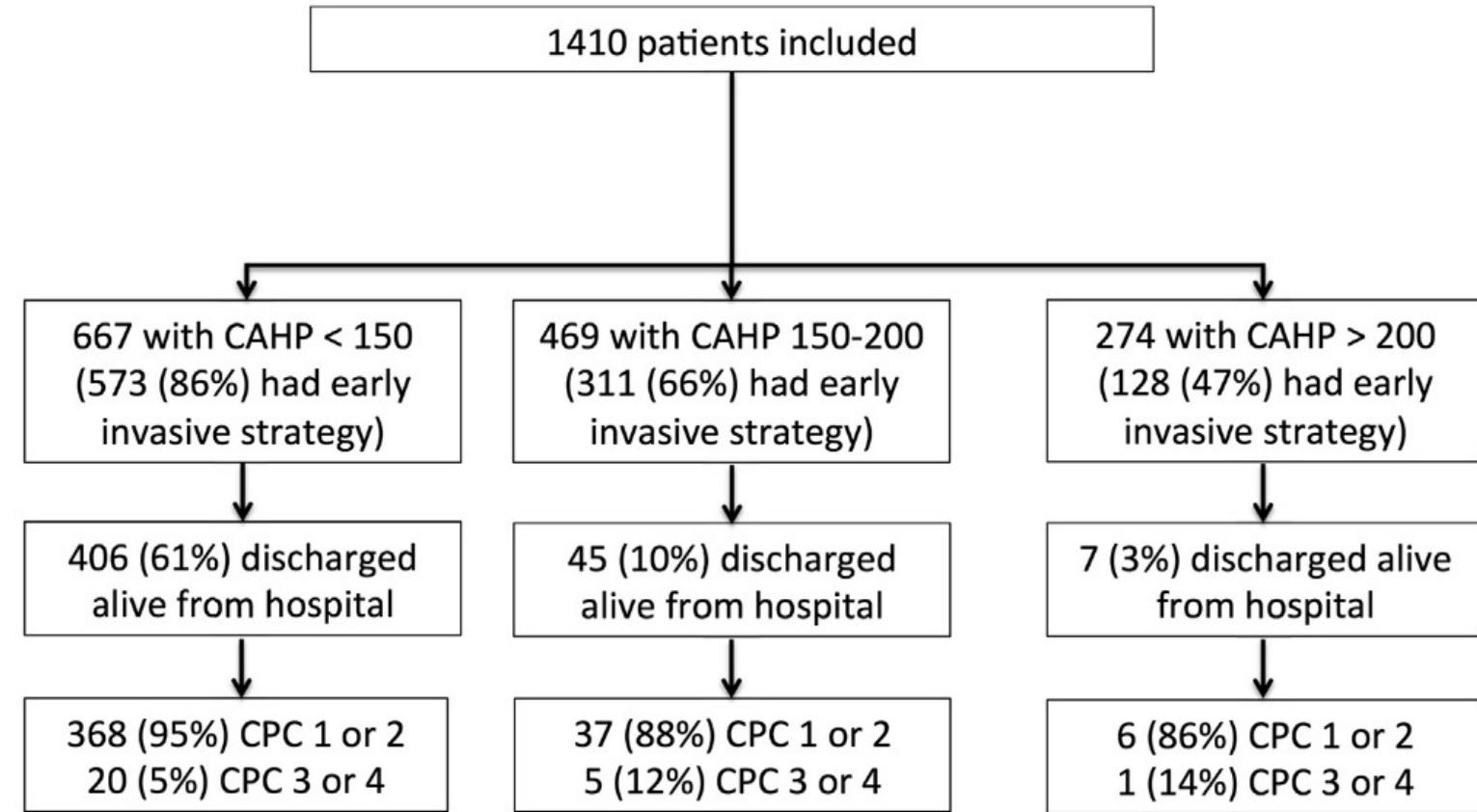
	Coro immédiate N=264	Coro retardée N=258	P
Décès 90j	35,5%	32,8%	ns

# Limites

	Coro immédiate N=264	Coro retardée N=258	p
Décès 90j	35,5%	32,8%	ns *
Décès 90j + IDM+ Revasc Urg	35,5%	46,8%	p=?

- Le choix du PEP est primordial!

# Score CAHP



- Stratégie interventionnelle futile chez patients à mauvais pronostic!

# Limites

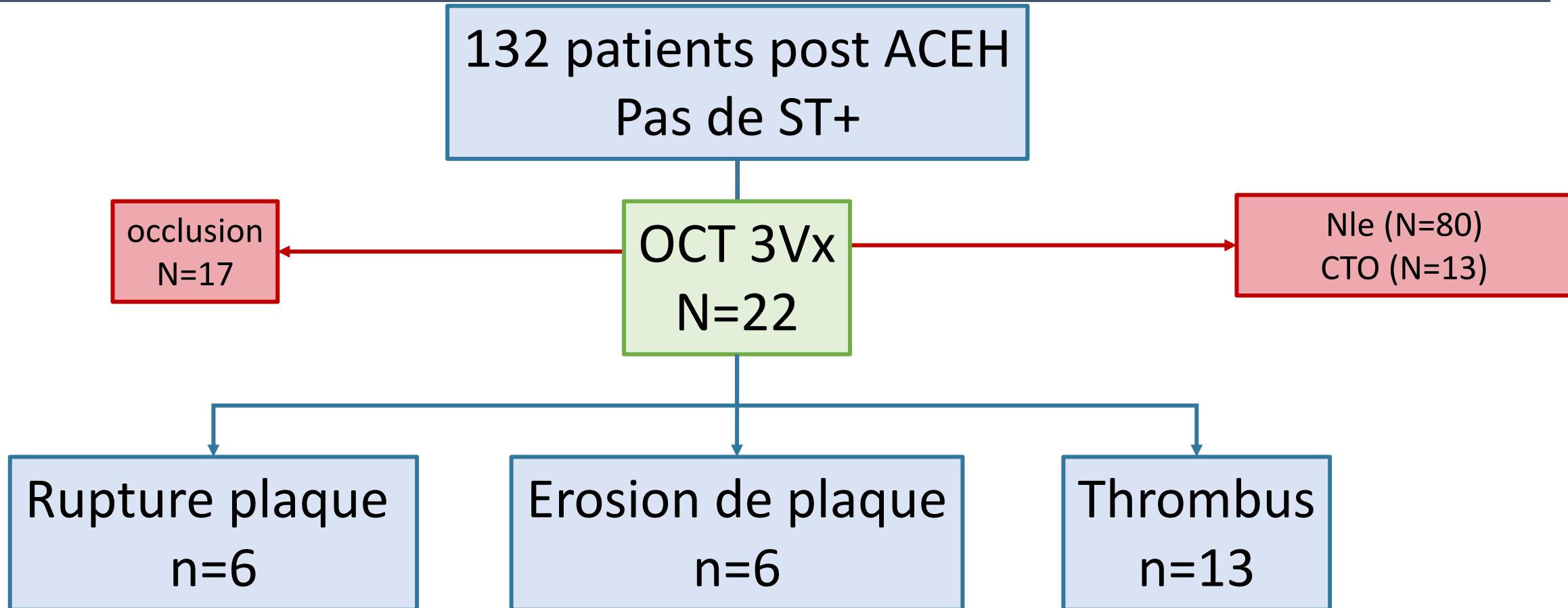
	Coro immédiate N=264	Coro retardée N=258
Maladie coronaire	164 (62%)	57 (66%)
Occlusion aiguë	8 (3,1%)	13 (7,8%)
PCI	33%	24%
Coro en urgence	na	38 (14%)
Lésion instable	13%	16%
PCI lésion stable	20% (?)	8% (?)

- Près de 20% des patients auraient bénéficié d'une coro plus rapide
- Les investigateurs ont dilaté bcp de lésions "stables"

# La question...

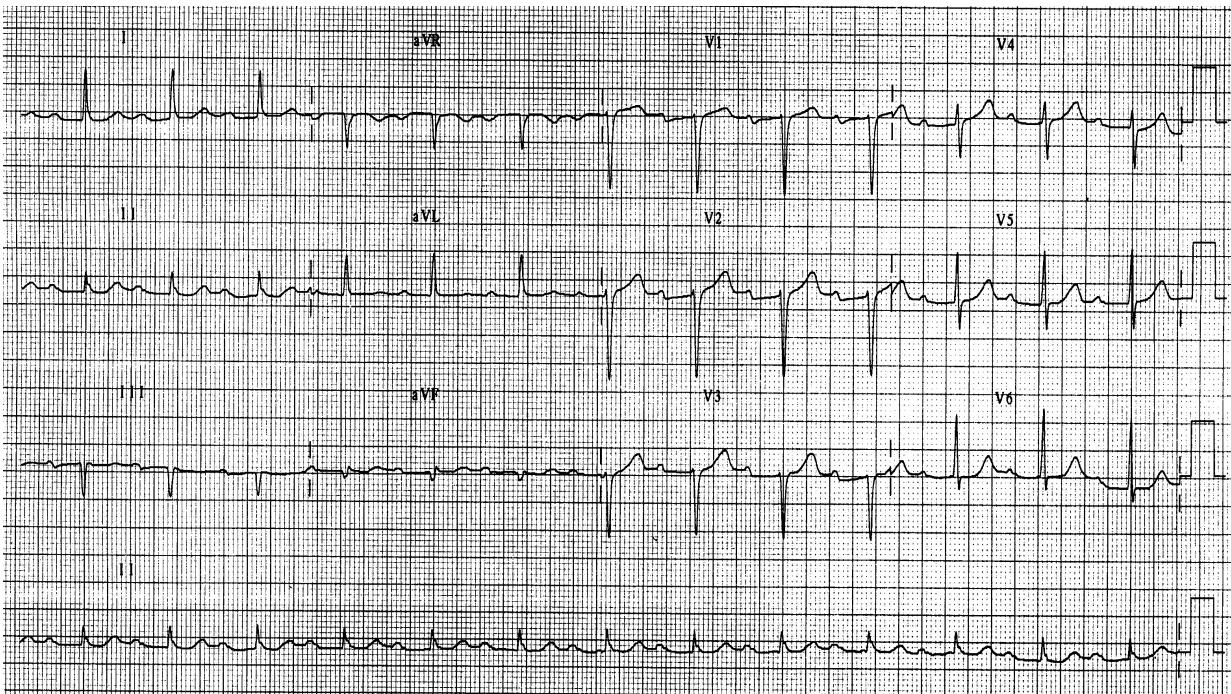
- Ce n'est pas de savoir si il existe une maladie coronaire
- C'est de savoir si c'est la maladie coronaire qui est **LA CAUSE** de l'ACEH:
  - occlusion aiguë: **CERTAIN**
  - lésion instable angio: **CERTAIN (+/-)**
  - rupture/érosion de plaque + thrombus OCT: **CERTAIN**
  - SCAD: **CERTAIN**
  - lésion stable: **POSSIBLE à PROBABLE**
  - coro normale: **POSSIBLE**

# ACEH sans ST+



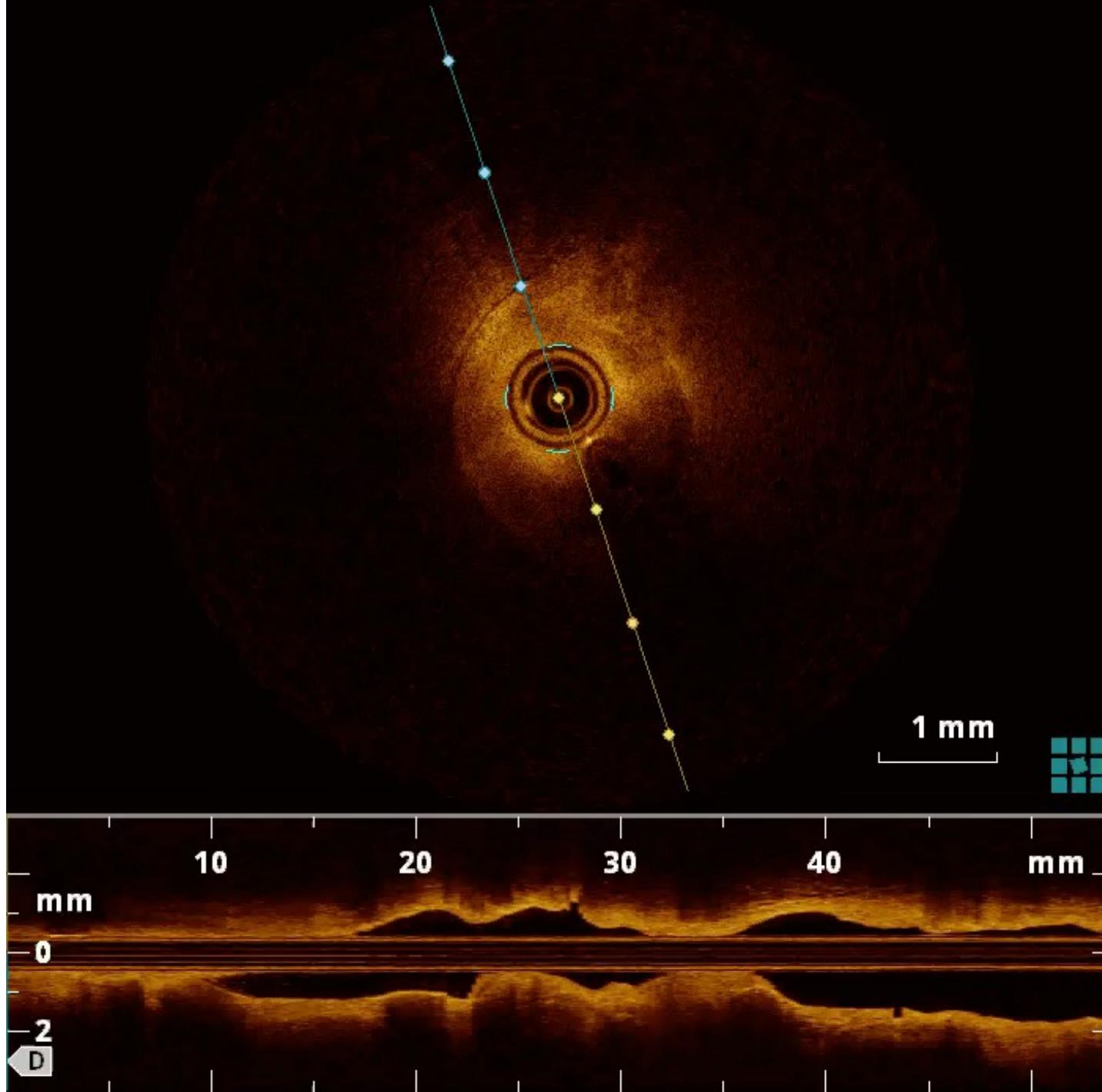
# Cas clinique

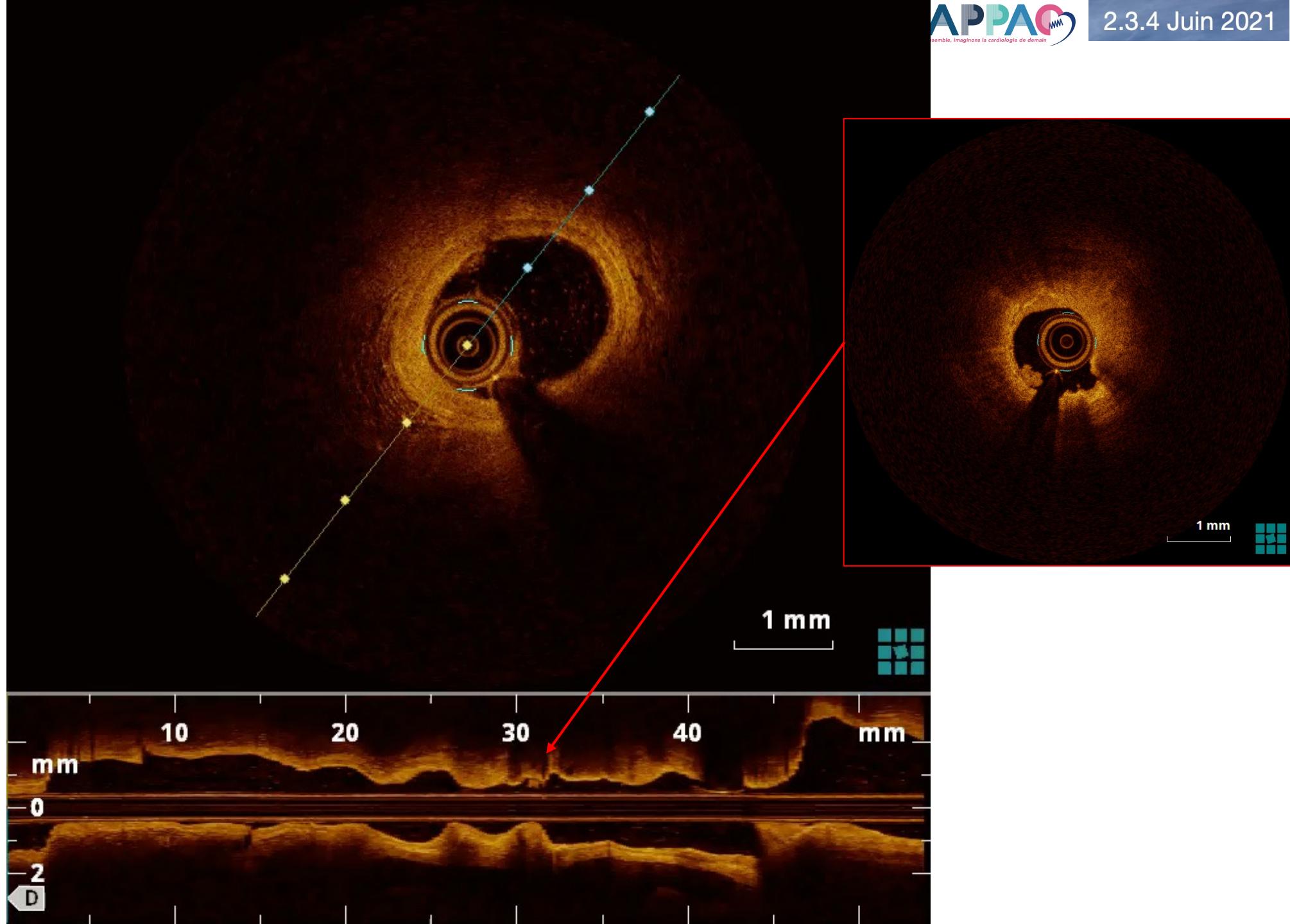
- 65 ans
- Facteurs de Risque CV
- Arrêt cardiaque devant une pharmacie
- No flow <1min
- Low Flow 5 min
- ECG FV: 360J
- ECG post ROSC: pas de ST+



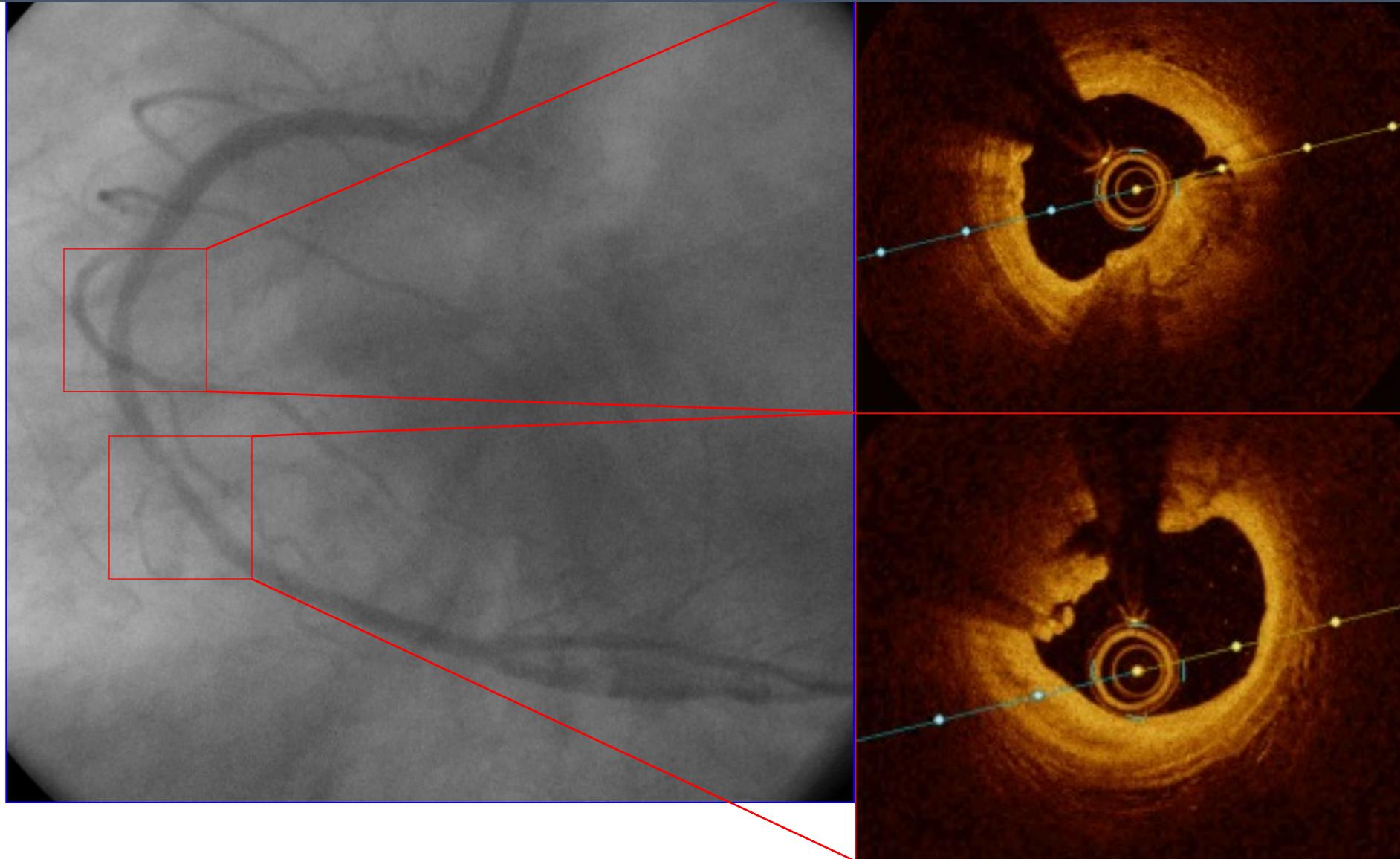


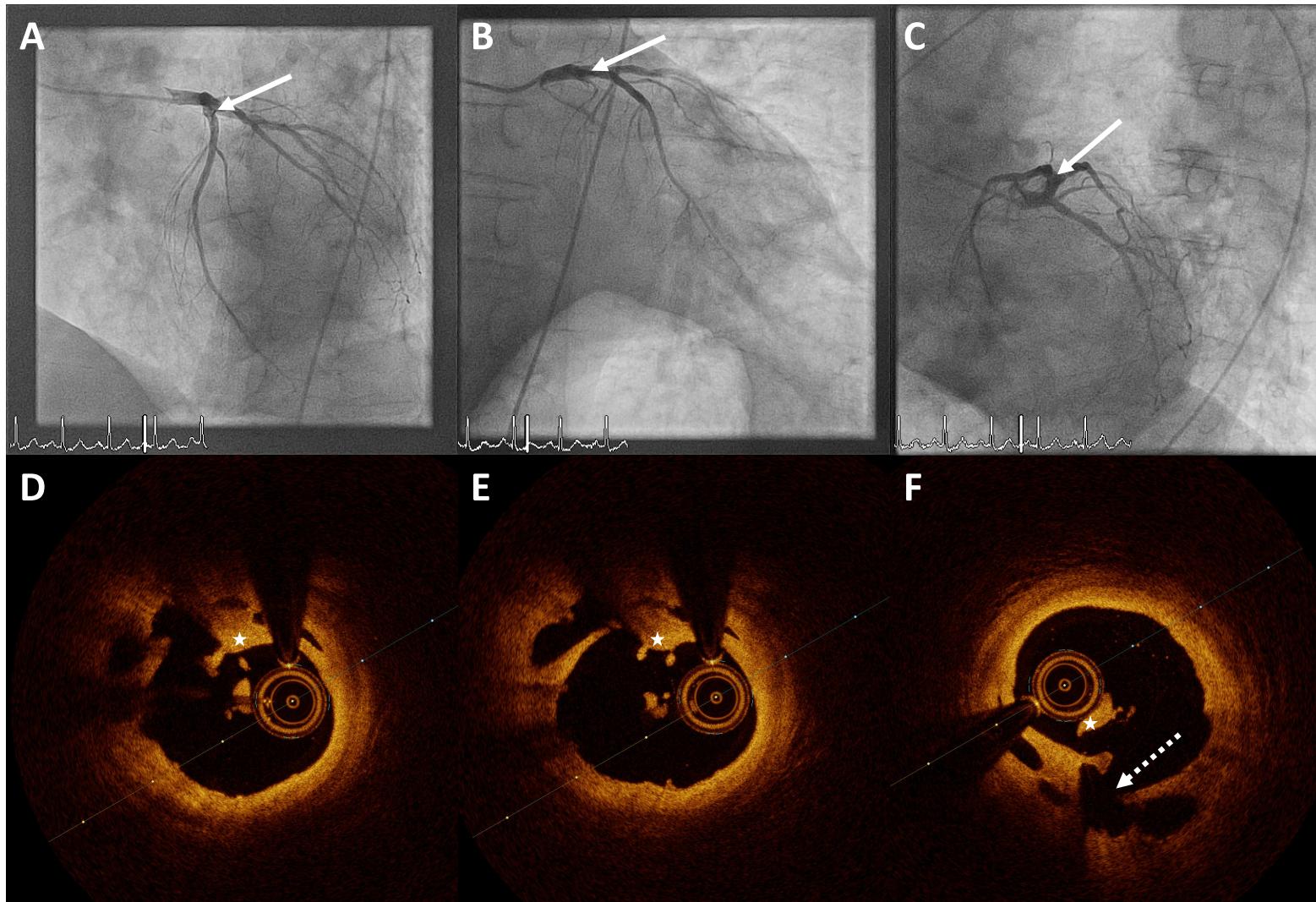




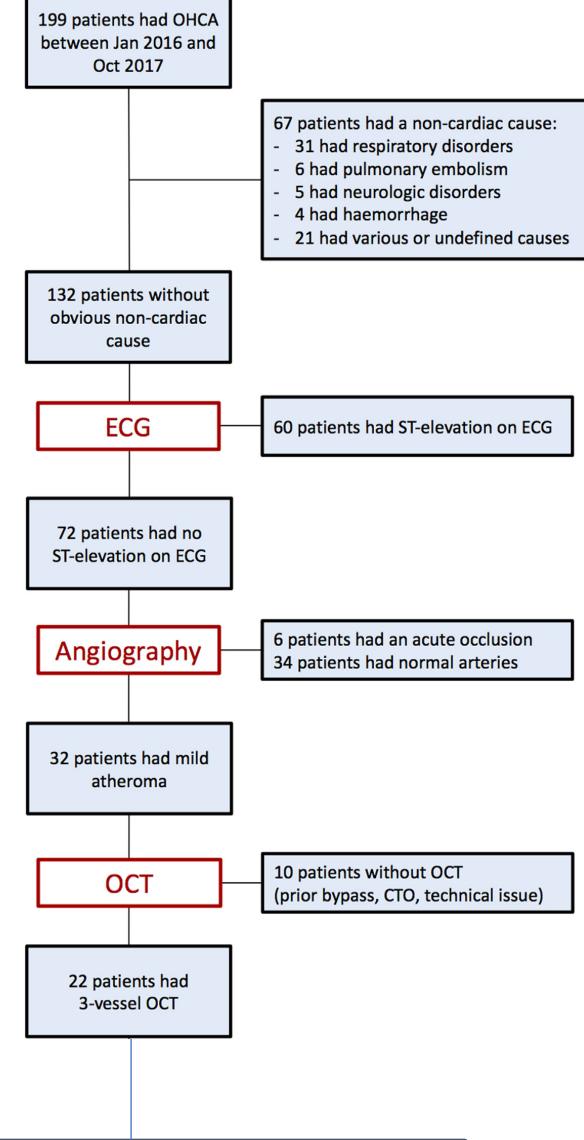


# Cas clinique

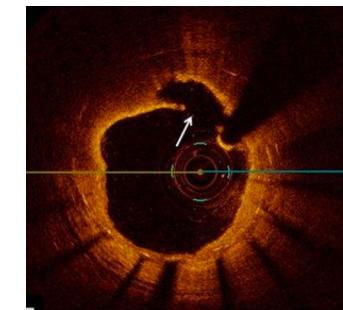
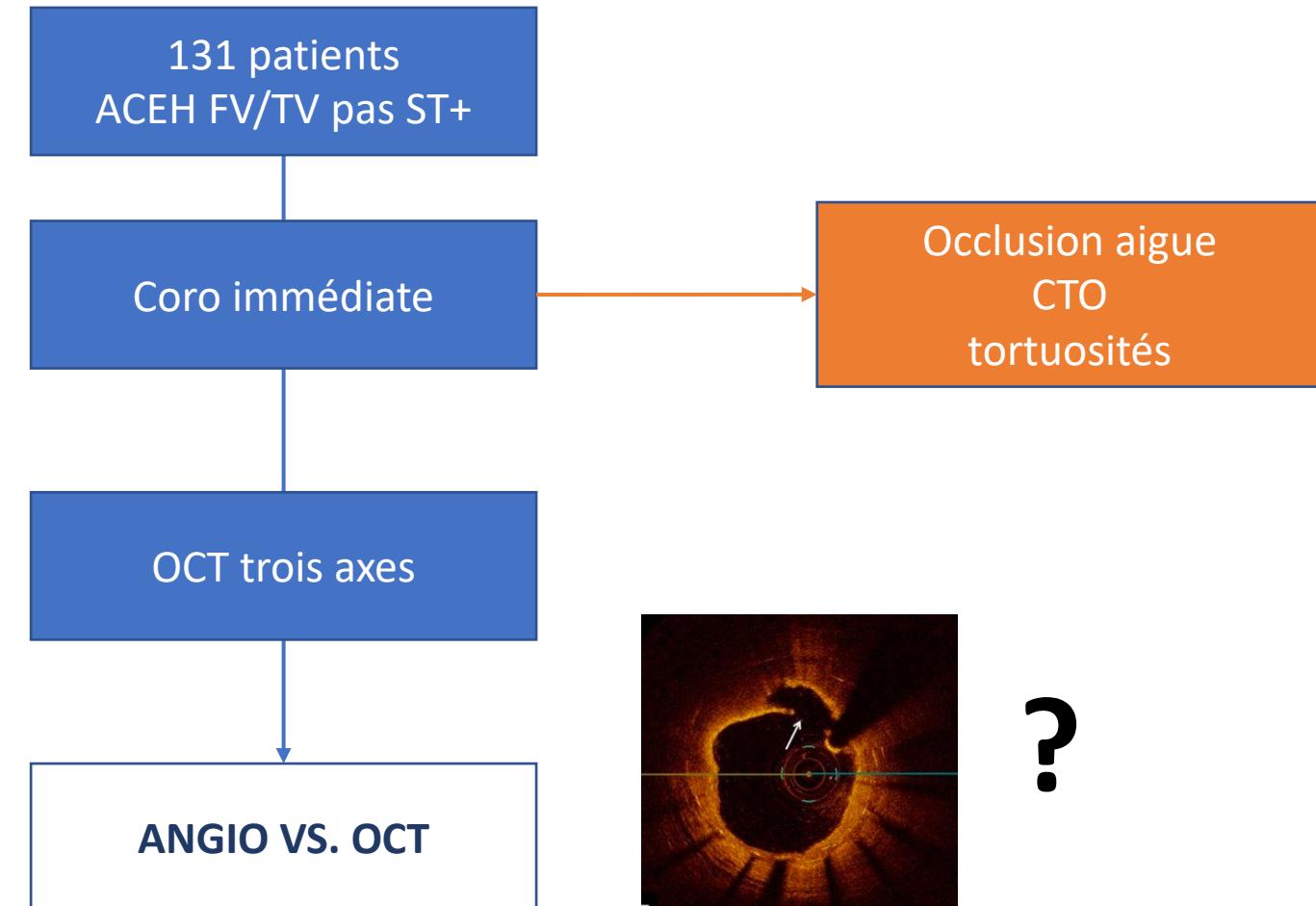




Rupture/Erosion n=12 Thrombus n= 13



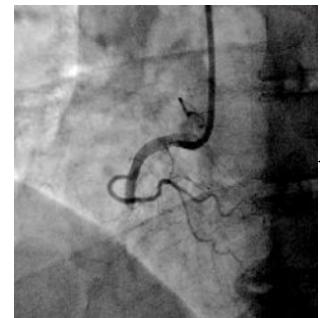
# CA OCT



?

## ACEH avec ST+

coronarographie

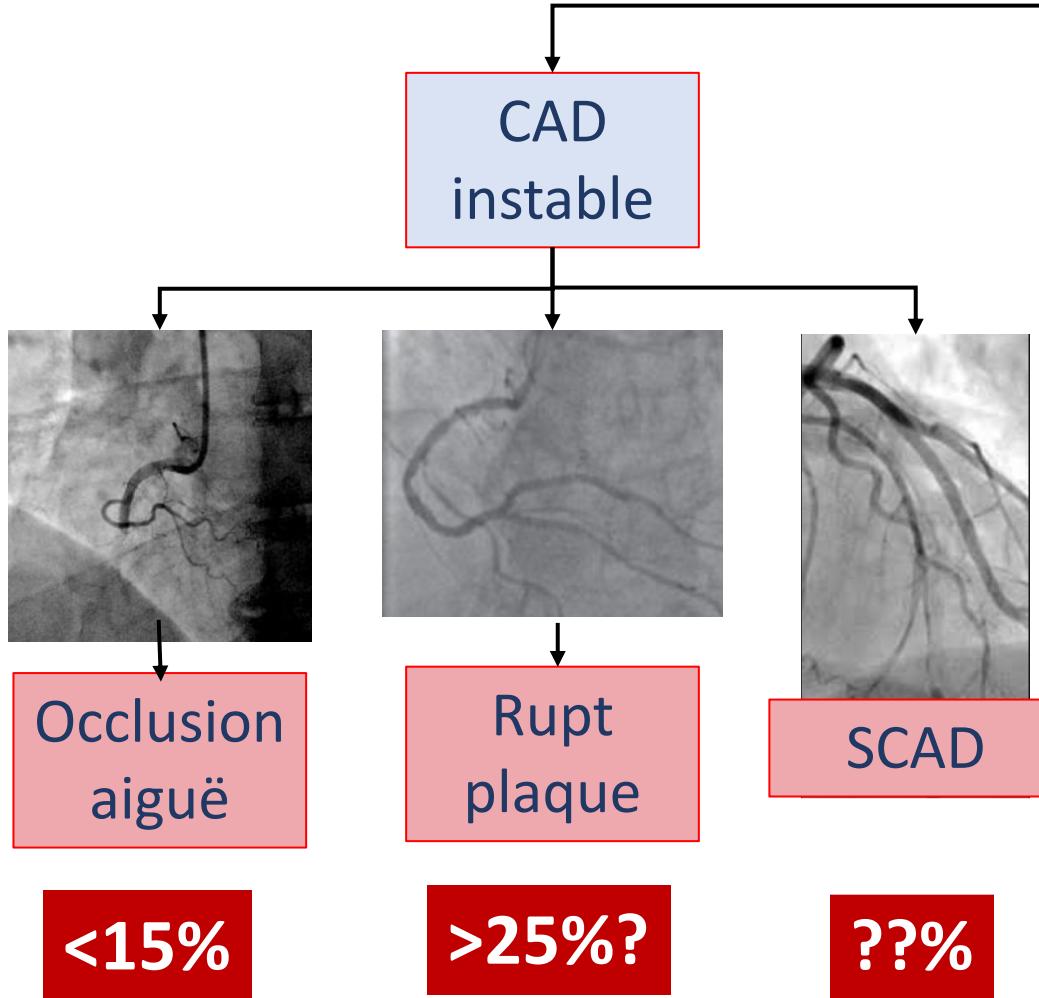


Occlusion  
aiguë

80%

# ACEH sans ST+

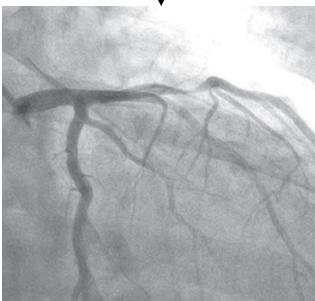
## coronarographie



# ACEH sans ST+

coronarographie

CAD  
stable



Stable

CTO

40%

30%

**ACEH sans ST+**

**coronarographie**

**Coro  
Nle**

**35%**

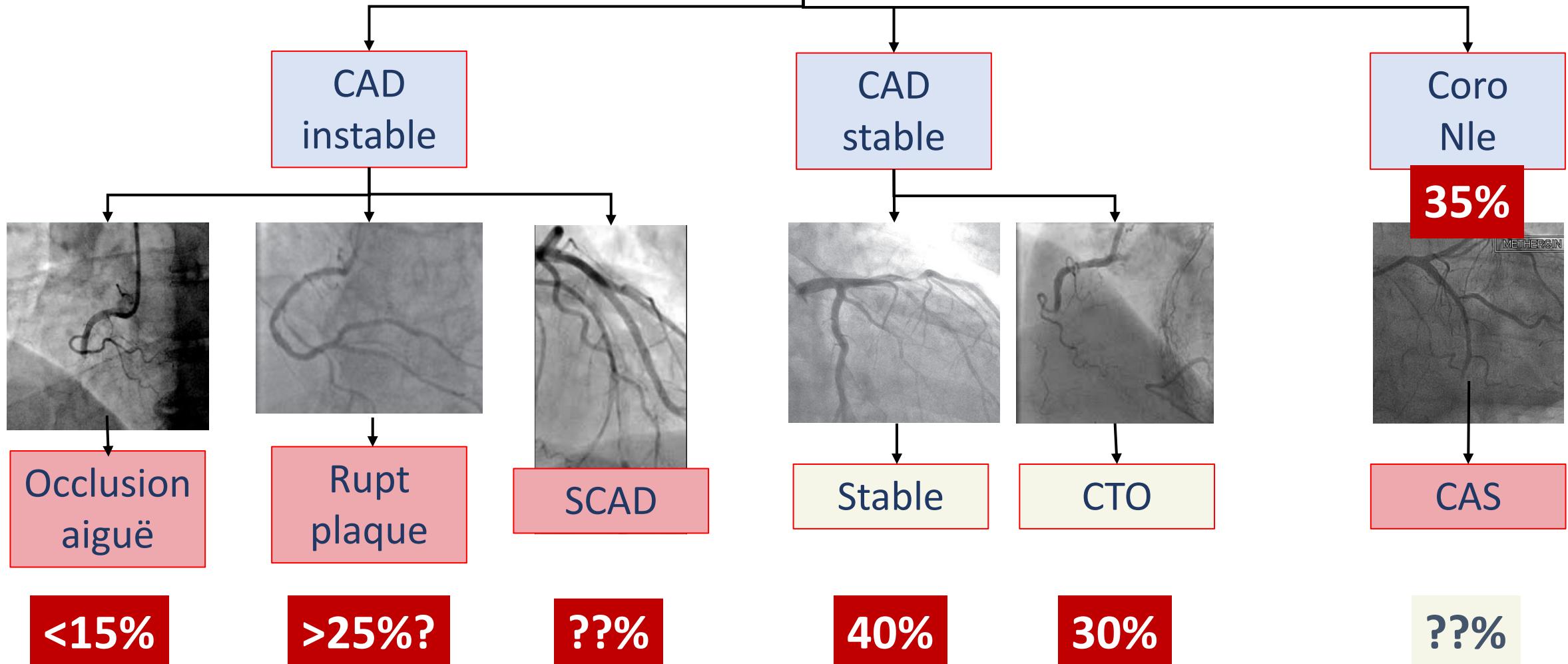


**CAS**

**??%**

# ACEH sans ST+

## coronarographie



# Apport de la coro dans l'ACEH

- 1- ST+ sur ECG post RACS: **coro précoce** suivie d'angioplastie

# Apport de la coro dans l'ACEH

- 1- ST+ sur ECG post RACS: coronaro **précoce** suivie d'angioplastie
- 2- Pas de ST+ sur ECG post RACS: **coro fréquente... timing?**  
**contre:** pas de bénéfice clinique documenté (score?)  
retarde réanimation non spécifique  
risque de dilater lésion non responsable+++

# Apport de la coro dans l'ACEH

- 1- ST+ sur ECG post RACS: coronaro **précoce** suivie d'angioplastie
- 2- Pas de ST+ sur ECG post RACS: coronaro **fréquente...** timing?

**pro:**

- rechercher occlusion aiguë
- rechercher lésion instable (OCT+++)
- rechercher une lésion significative
- penser au spasme

# Apport de la coro dans l'ACEH

- 
- 1- ST+ sur ECG post RACS: coronaro **précoce** suivie d'angioplastie
  - 2- Pas de ST+ sur ECG post RACS: coronaro **fréquente...** timing?
    - pro: rechercher occlusion aiguë
    - rechercher lésion instable (OCT+++)
    - rechercher une lésion significative
    - penser au spasme
  - 3- QQ soit l' ECG post RACS: **pas de coronaro si mauvais pronostic (score)**



Tony Gershlick 1951-2020



# CAHP

Age	65	years
Setting	Public setting	
	Home	
Initial rhythm	Shockable	
	Non-shockable	
Duration from collapse to CPR begun	2	min
Duration from CPR to ROSC	12	min
Admission pH	7.1	
Total Epinephrine given, mg	0	1-2
	≥3	

**114** points

CAHP Score

**Low** risk

Risk of poor outcome

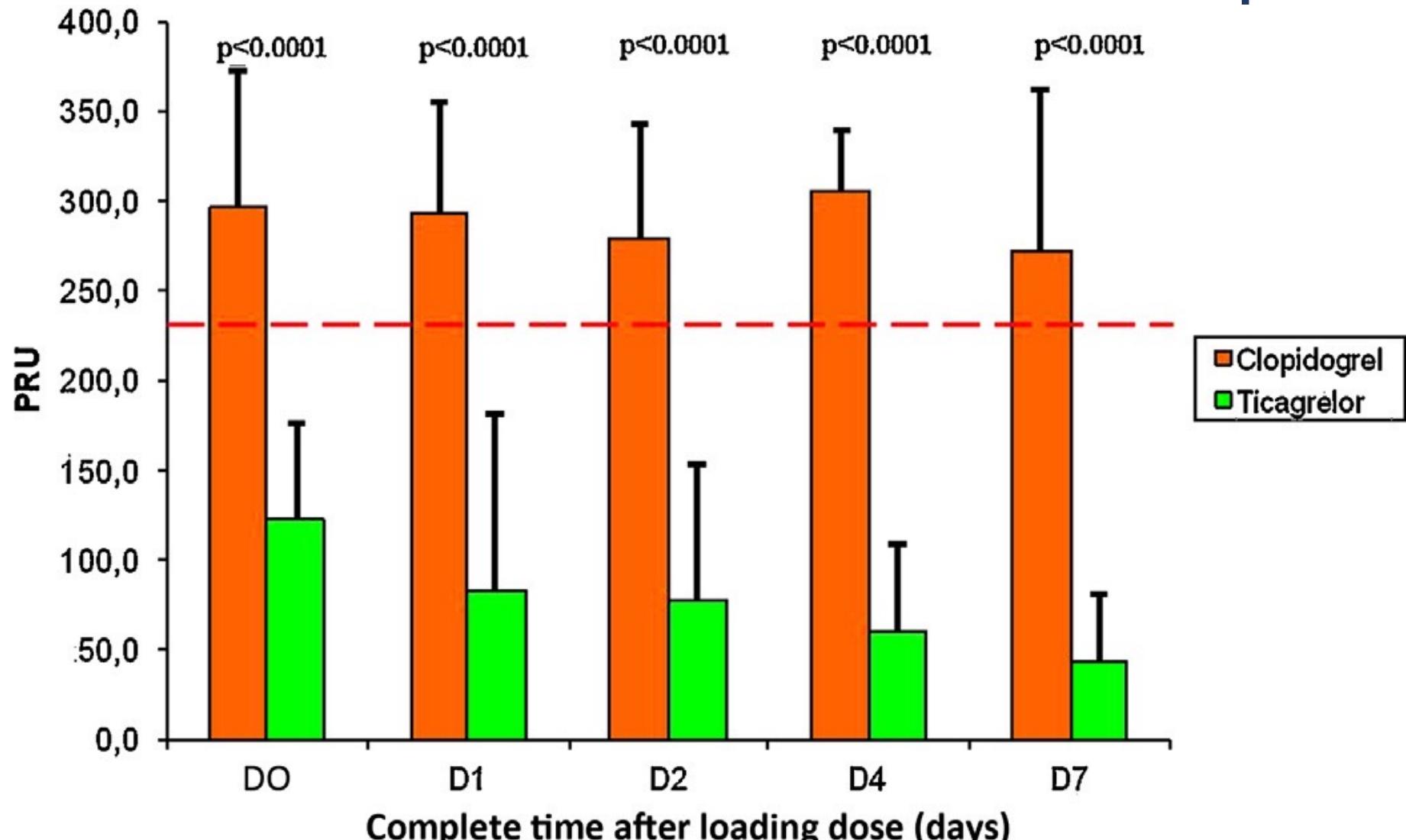
**39** %

Poor neurological outcome

Copy Results 

Next Steps >>>

# Activité Plaquettaire



# FLUCTUATE

