SCA ST+, quoi de neuf dans les nouvelles recommandations ESC 2017

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Vendredi 6 Octobre 2017

ESC
European Society of Cardiology

Introduction

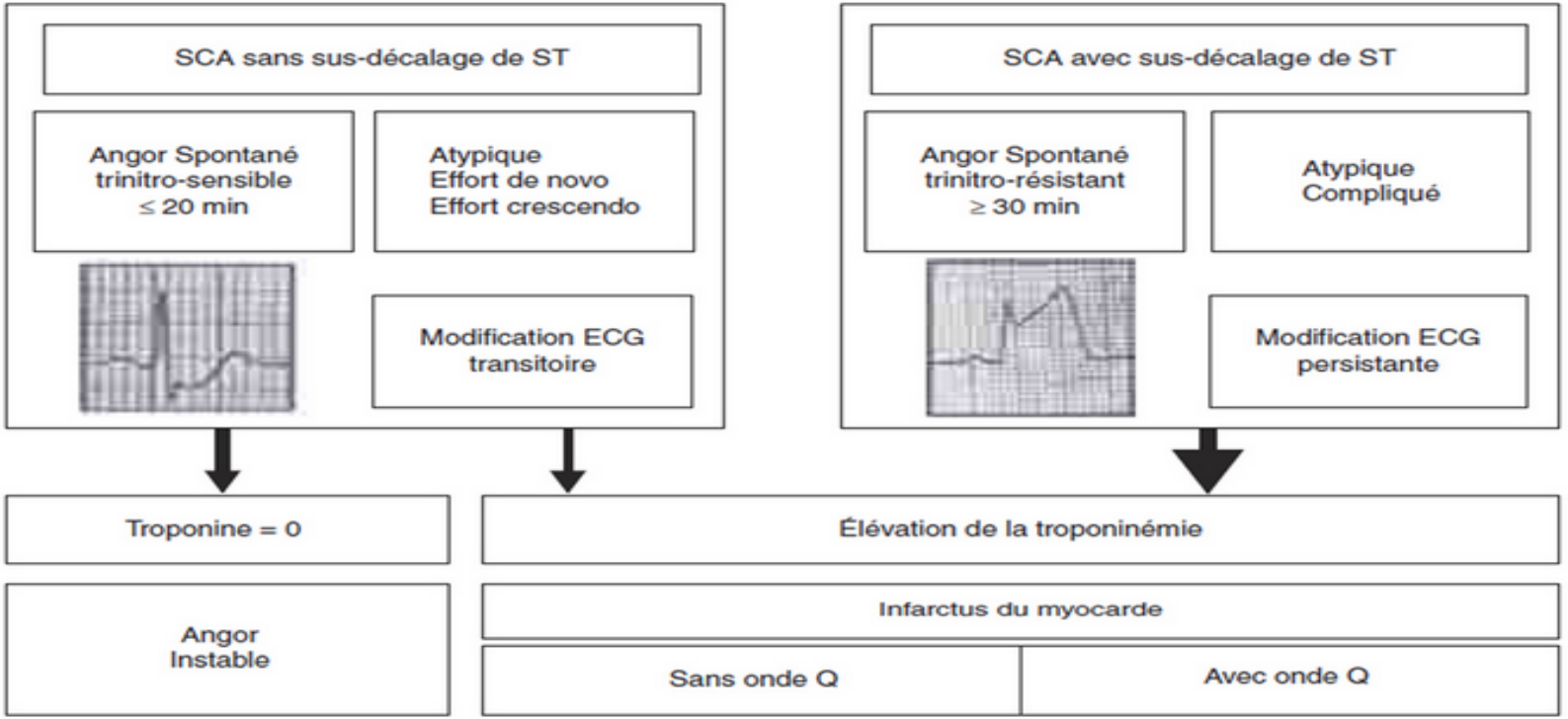
- **Mortalité hospitalière 6 à 14% (1)**
- **Mortalité à 6 mois 12% (2)**
- **Statistiques nationales ?**
- **1° registre national STEMI en cours**

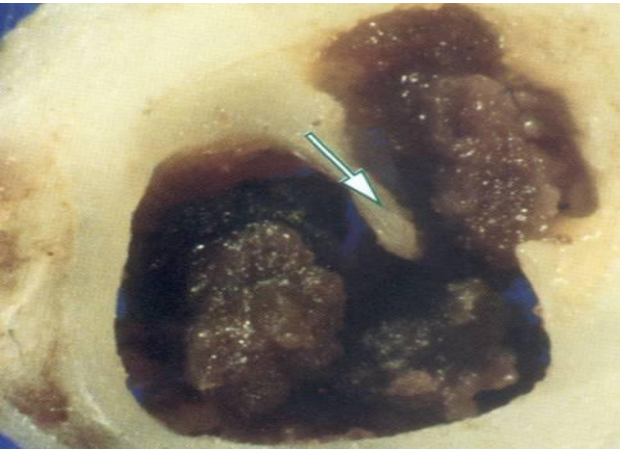
1 : Mandelzweig L, second Euro Heart Survey on ACS: characteristics, treatment, and outcome of patients with ACS in Europe and the Mediterranean Basin. Eur Heart J 2006;27:2285–2293.
2 : Fox KA. Prediction of risk of death and myocardial infarction in the six months after presentation with ACS : prospective multinational observational study (GRACE). Br Med J 2006;333:1091.

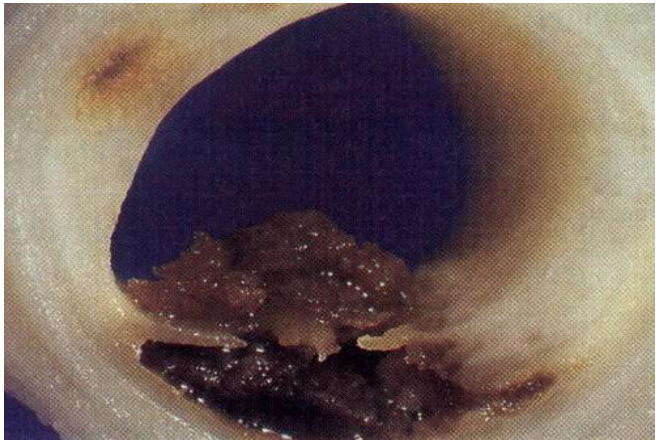
Introduction

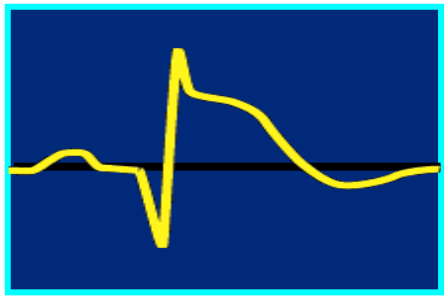
- SCA: hétérogène
- Insuffisance coronarienne aigue: Angor instable, IDM
- Athérosclerose ++++
- Physiopathologie Prise en charge ttt variable
- Revascularisation : progrès considérable

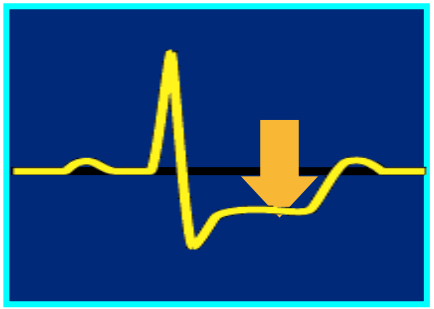
Classification

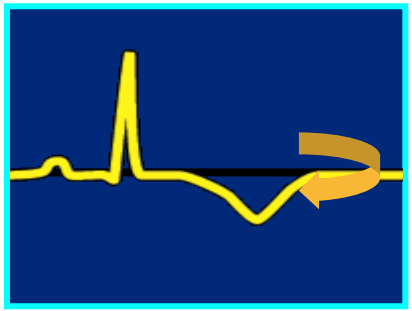












Questions à l'audience

PRISE EN CHARGE PRE HOSPITALIERE

D'après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST:

A- Un bloc de branche droit de novo associé à une douleur thoracique ne peut faire évoquer un infarctus

B- Le traitement de la douleur par opioïdes est recommandé quasi systématiquement pour diminuer la douleur et améliorer la dyspnée

C- La mise sous oxygène est systématique pour améliorer la perfusion coronaire même en l'absence de désaturation

D- Le patient doit être dirigé vers une salle de cathétérisme coronaire si une reperfusion par angioplastie est réalisable dans les 120 minutes

Questions à l'audience

THROMBOLYSE OU ANGIOPLASTIE

D'après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST:

A- Le traitement par thrombolyse doit être réalisé dans les 10 minutes du diagnostic de l'infarctus, même en dehors d'un milieu hospitalier

B- Un traitement par thrombolyse doit être préféré dans la première heure de l'infarctus même si la reperfusion par angioplastie peut être réalisée dans les 120 minutes

C- Le traitement par thrombolyse doit être réalisé à demi-dose chez les patients de >75 ans

D- Après succès de thrombolyse, la coronarographie peut être réalisée dès la 2ème heure et jusqu'à 24 heures après.

E- Après 12 heures d'évolution de l'infarctus, la thrombolyse n'a plus sa place

Questions à l'audience

TRAITEMENTS ANTITHROMBOTIQUES

D'après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST: A- L'héparine est l'anticoagulant de référence

B- La bivalirudine doit être utilisée lorsqu'elle est disponible et que le risque hémorragique est important

C- Le cangrelor est une alternative fiable lorsqu'il est disponible et que le patient n'a pas reçu de traitement antiP2Y12 au préalable

D- Les antiGpIIbIIIa peuvent être utilisés en pré-hospitalier pour diminuer la charge thrombotique lors des infarctus antérieurs étendus mal tolérés

Questions à l’audience

ACCES VASCULAIRE

D’après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST:

A- La voie radiale doit être préférée car elle diminue le risque hémorragique.

B- La voie fémorale doit être préférée car elle permet une meilleure rapidité et une technique plus simple pour gagner le plus de temps et donc sauver le plus de muscle viable.

C- Les voies radiales et fémorales sont équivalentes pourvues qu’elles soient bien réalisées

D- La technique utilisée doit être celle utilisée dans la pratique quotidienne de l’opérateur

Questions à l'audience

TECHNIQUE

D'après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST:

A- Après franchissement de l'occlusion, une thromboaspiration permet de diminuer la taille de l'infarctus par diminution des micro-embols et du phénomène de no-reflow

B- Lors de lésions pluritronculaires, une revascularisation de l'artère non coupable peut être envisagée même en dehors du choc cardiogénique

C- Un stent nu doit être privilégié chez les patients à risque hémorragique important

D- Les antiGpIIbIIIa peuvent être utilisés en pré-hospitalier pour diminuer la charge thrombotique lors des infarctus antérieurs étendus mal tolérés

CAS CLINIQUE N° 1

ESC European Society of Cardiology

Patiente de 46 ans,

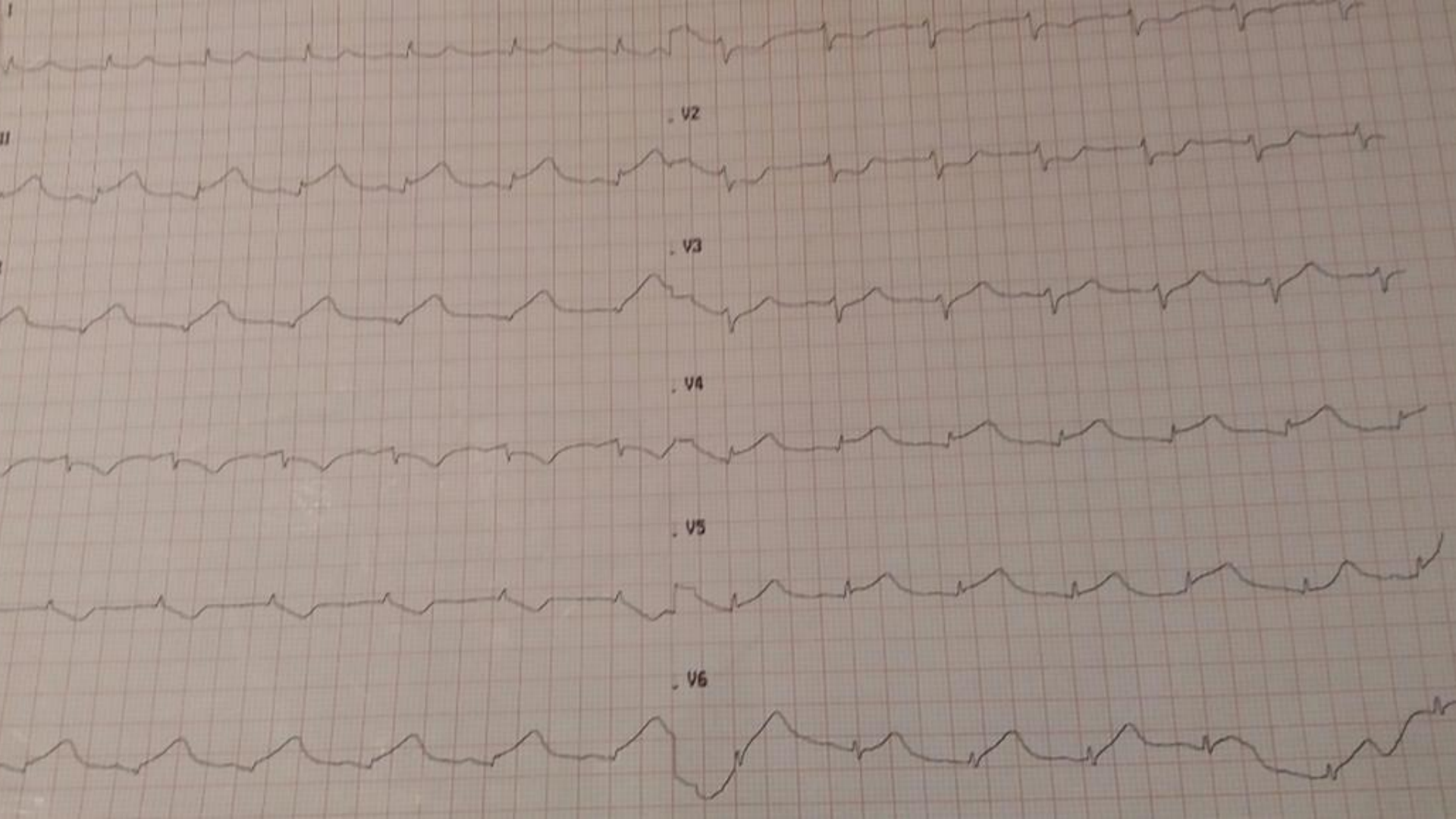
ATCDs: RAS,

FDRcvx: Surcharge pondérale

MH: Dl angineuse prolongée à H1

L'EXAMEN CARDIOVASCULAIRE +BIOLOGIE:

- TA à 110/60 mmHg, une FC à 76 bpm, P=93 kg T= 163 cm
- A l'auscultation cardiaque: RAS
- Ex pleuropulmonaire: normal
- Bilan biologique : normal


I
II
. V2
. V3
. V4
. V5
. V6

ETT:

- VG de taille normale et hypokinésie inférieure
- Bonne fonction systolique du VG
- Pressions de remplissage normales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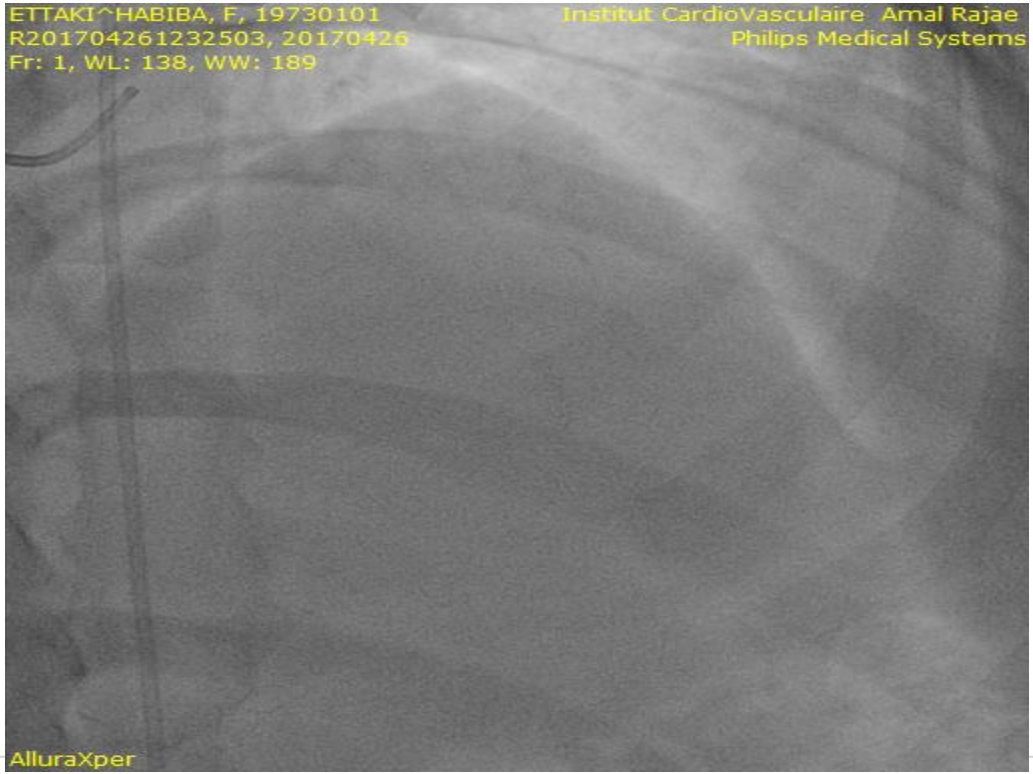
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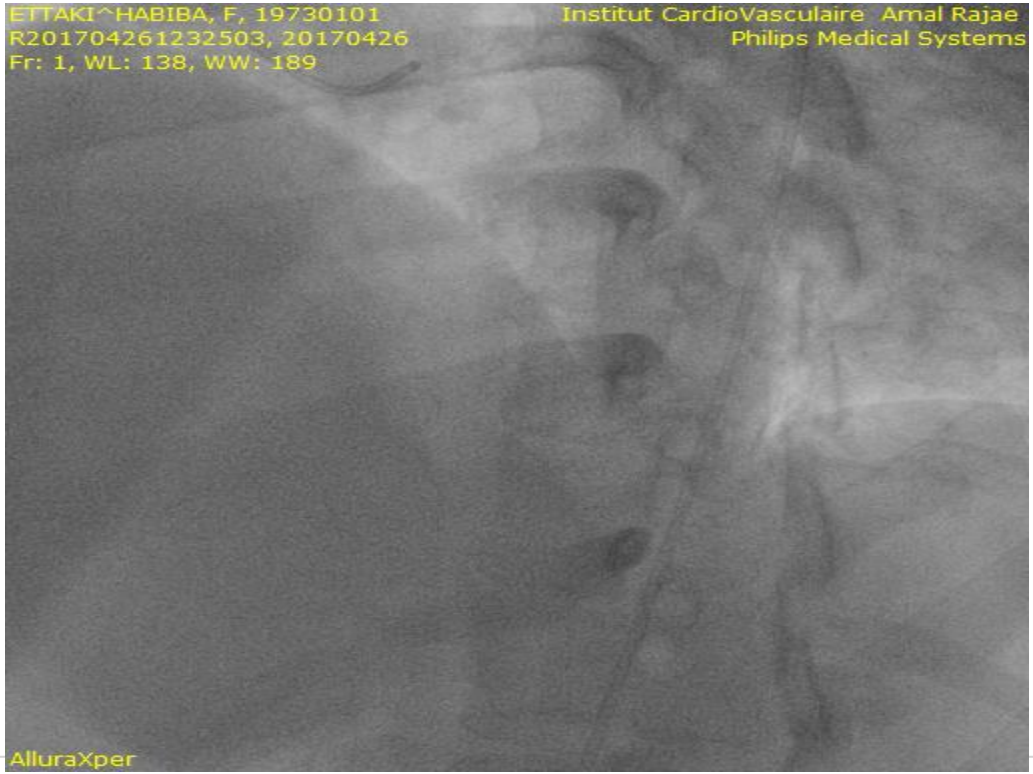
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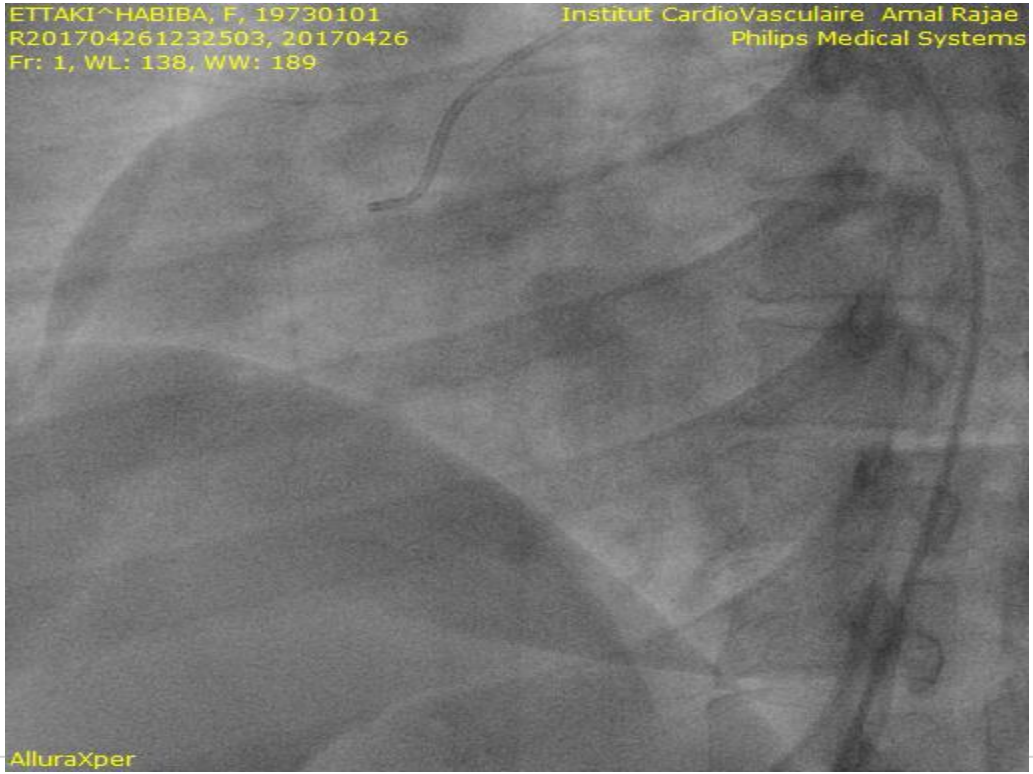
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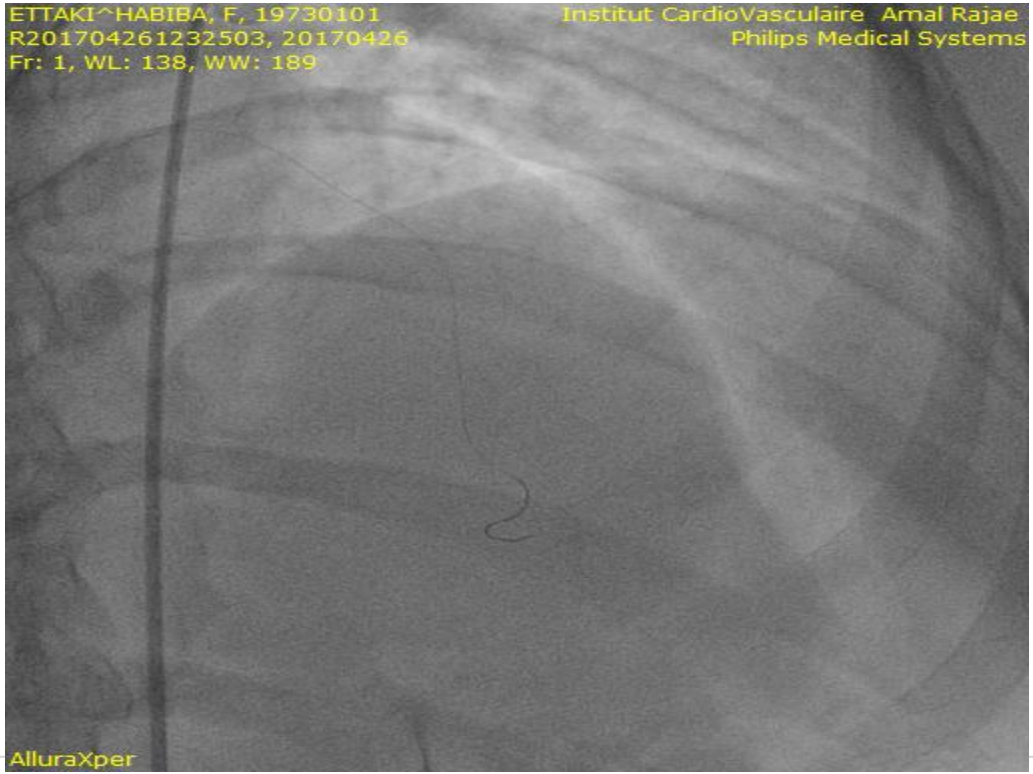
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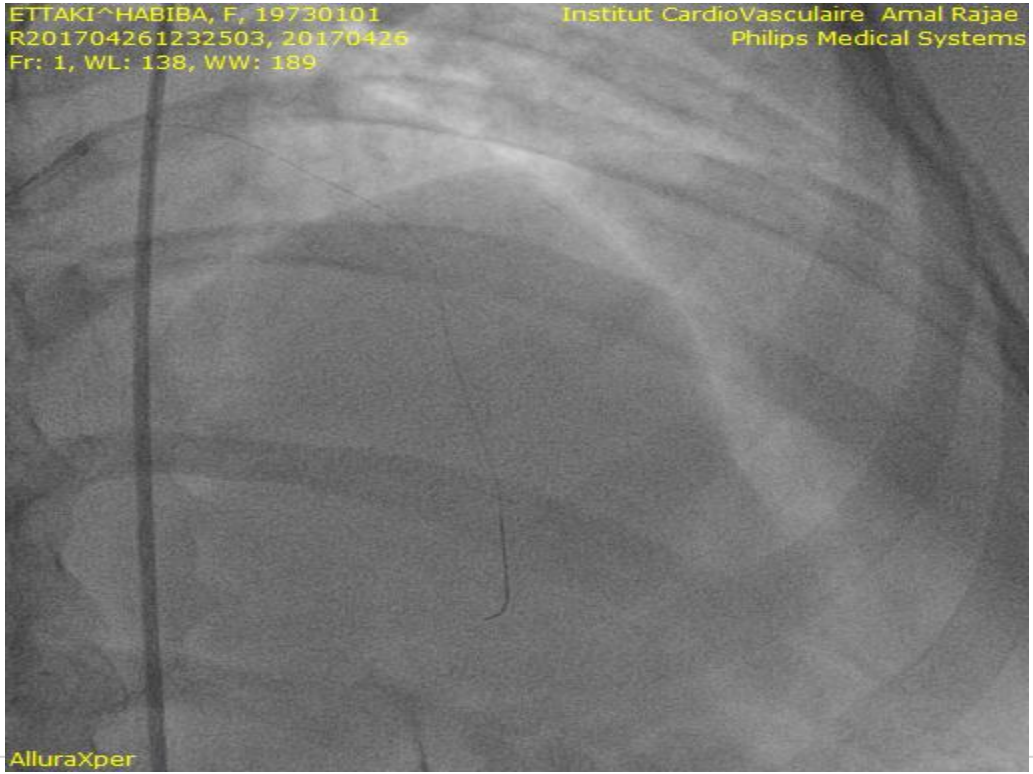
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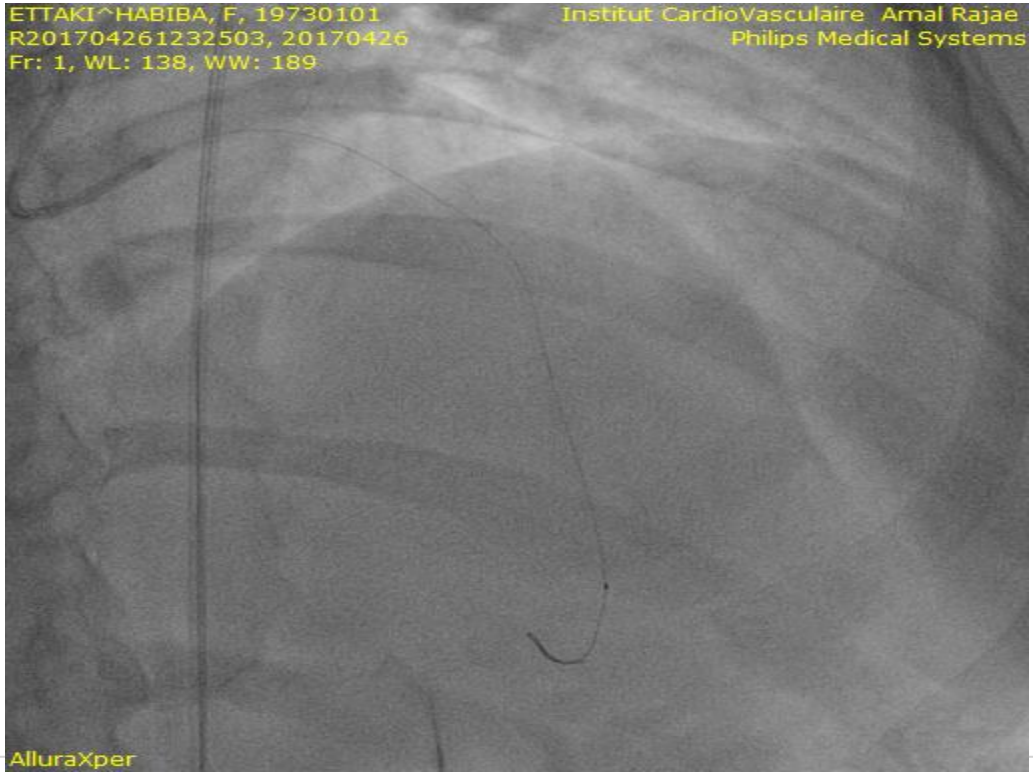
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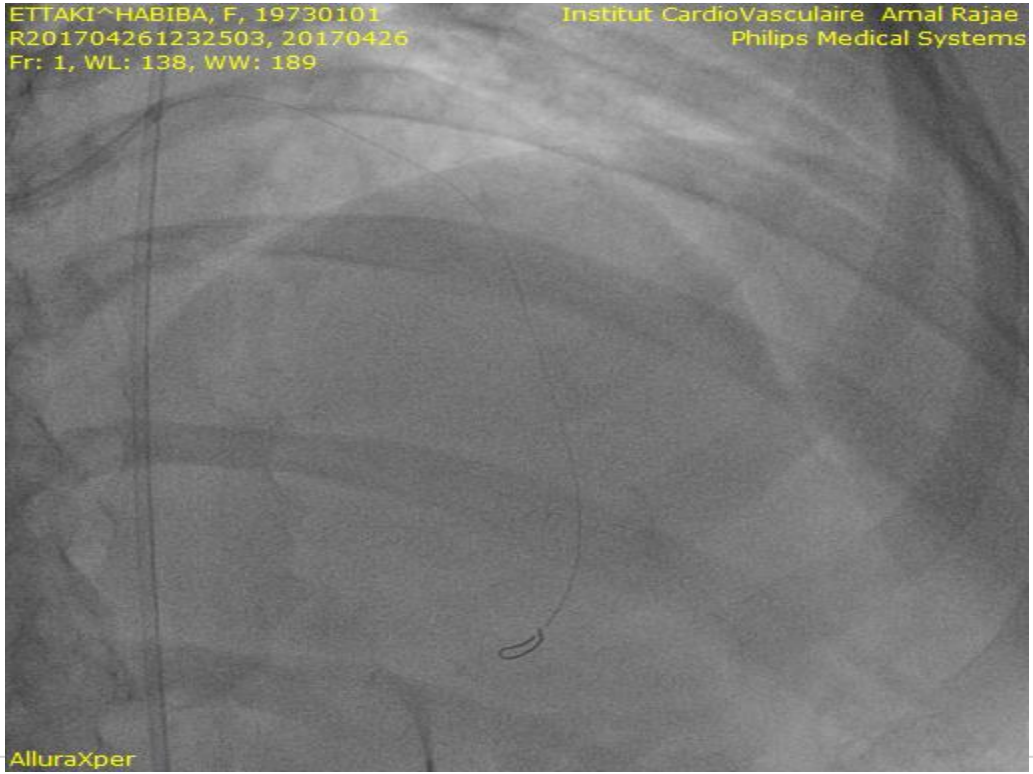
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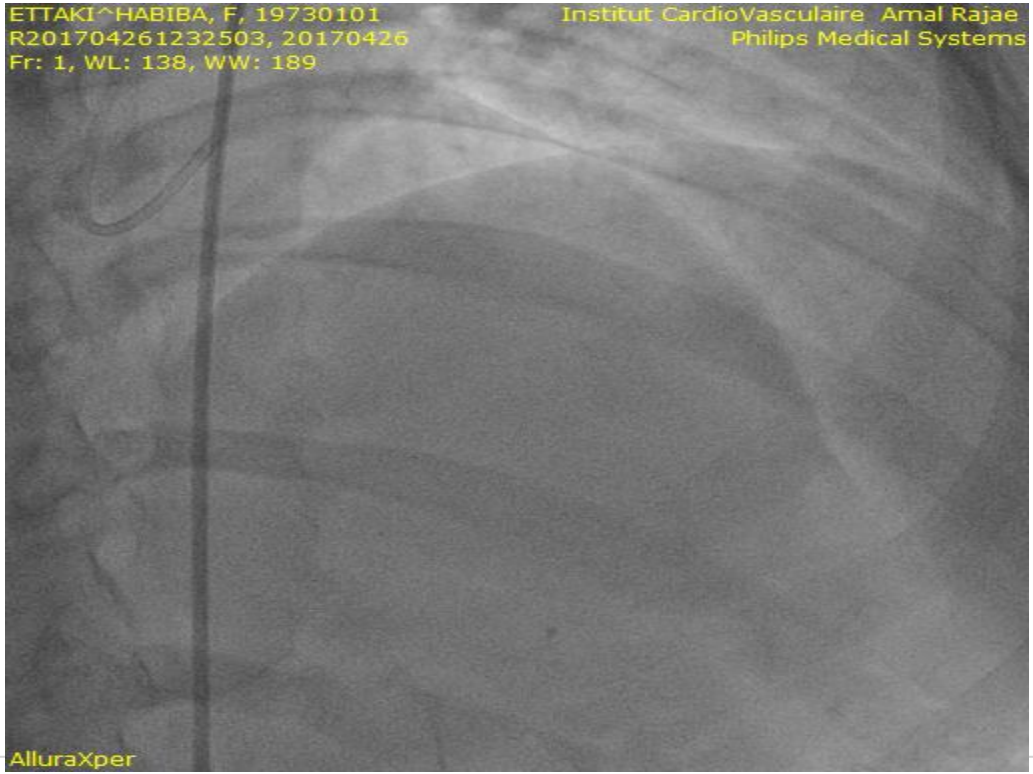
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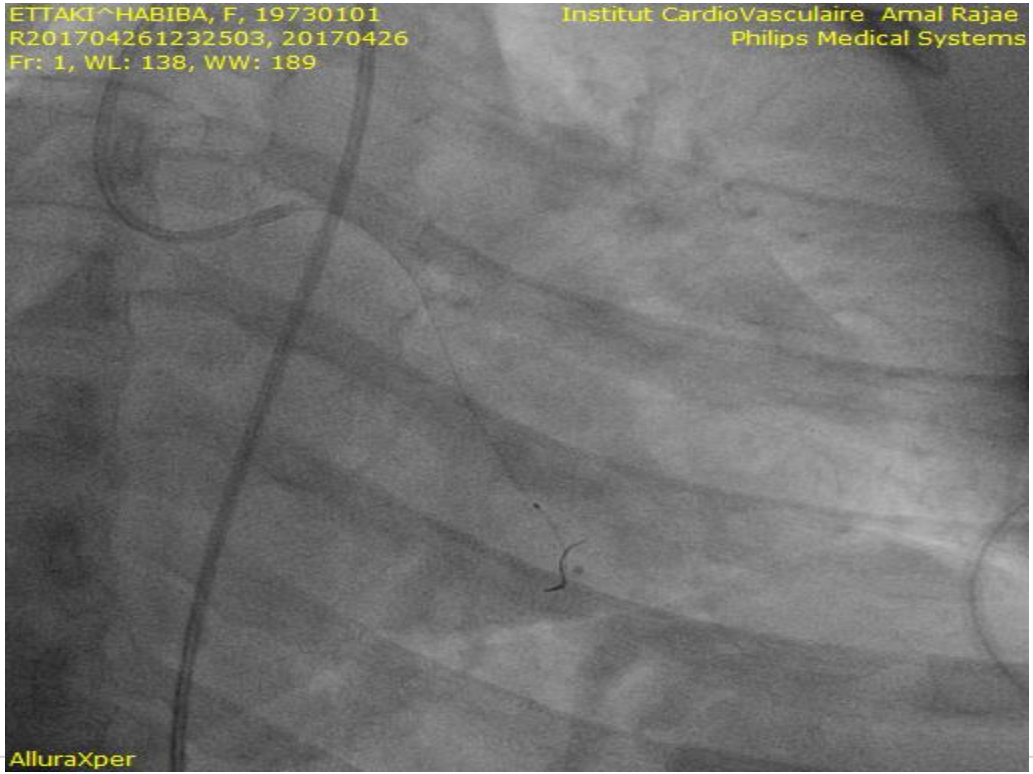
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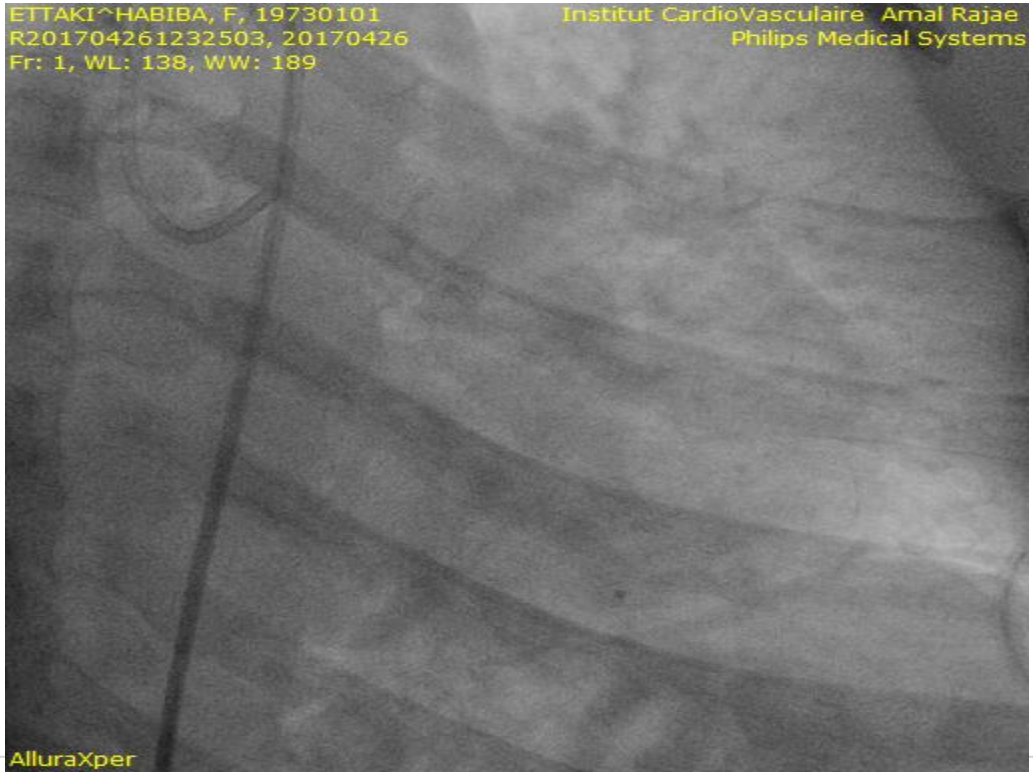
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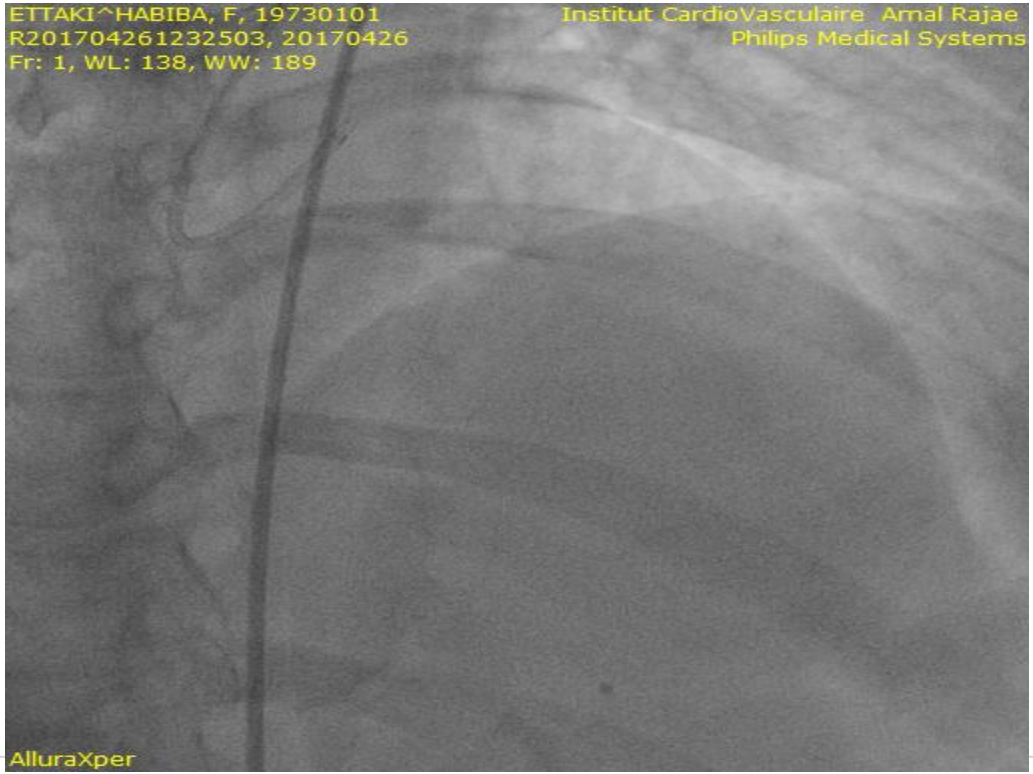
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EVOLUTION

- **Favorable : disparition des douleurs ,régression totale ST**

- **traitement :**
  - 600 mg clopidogrel + aspirine iv
  - AntiG2b3a : tirofiban
  - Betabloquants
  - Statines fortes doses
  - Ttt anticoagulant au long cours

- **Recherche étiologique :**
  - cause thromboembolique négative
  - Maladie de système non encore élucidée

Cas clinique N° 2

CAS CLINIQUE N° 2

Patient de 67 ans,

ATCDs: RAS,

FDRcvx:

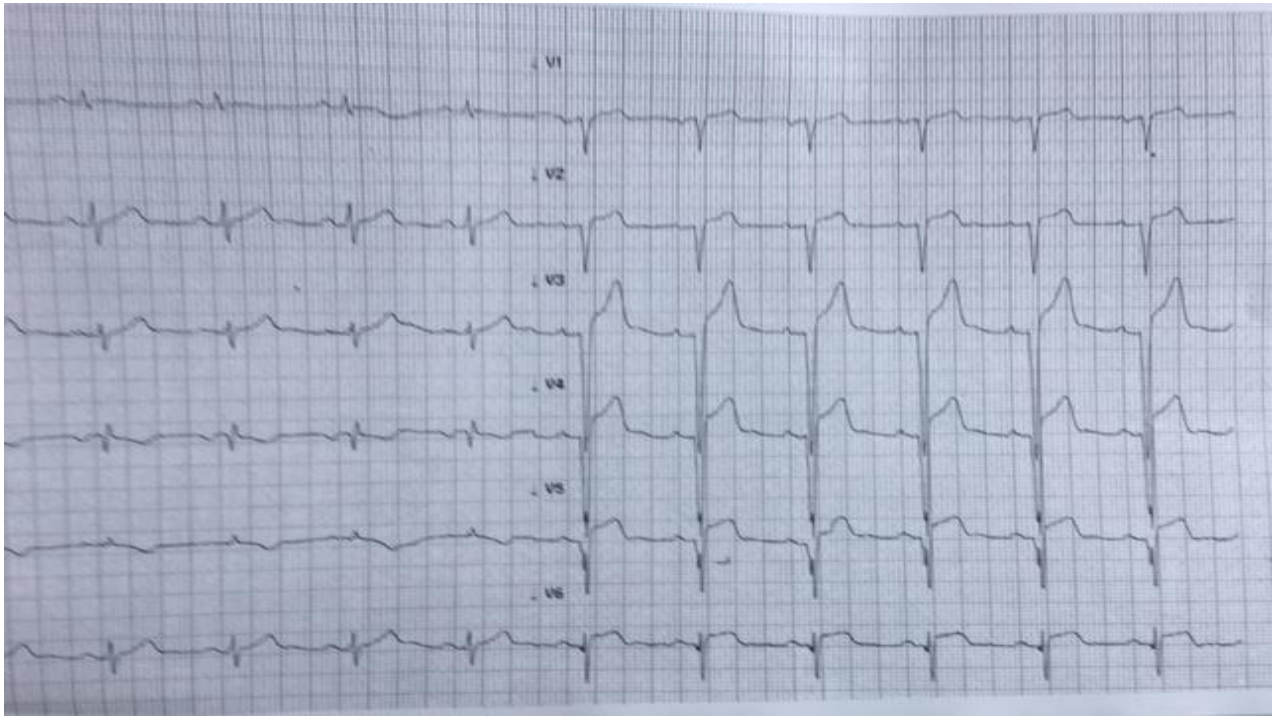
- Tabagisme modéré ancien
- Hypercholéstérolémie

MH: Douleur infarctoide reçu à H5 avec blockpnée

L'EXAMEN CARDIOVASCULAIRE +BIOLOGIE:

- **TA à 120/70 mmHg, une FC à 75 bpm, P=87 kg T= 181 cm**
- **A l'auscultation cardiaque: RAS**
- **Ex pleuropulmonaire: normal**
- **Bilan biologique : Troponine Hs élevée à h5 en cinétique croissante à H8**

Glycémie et bilan rénal normaux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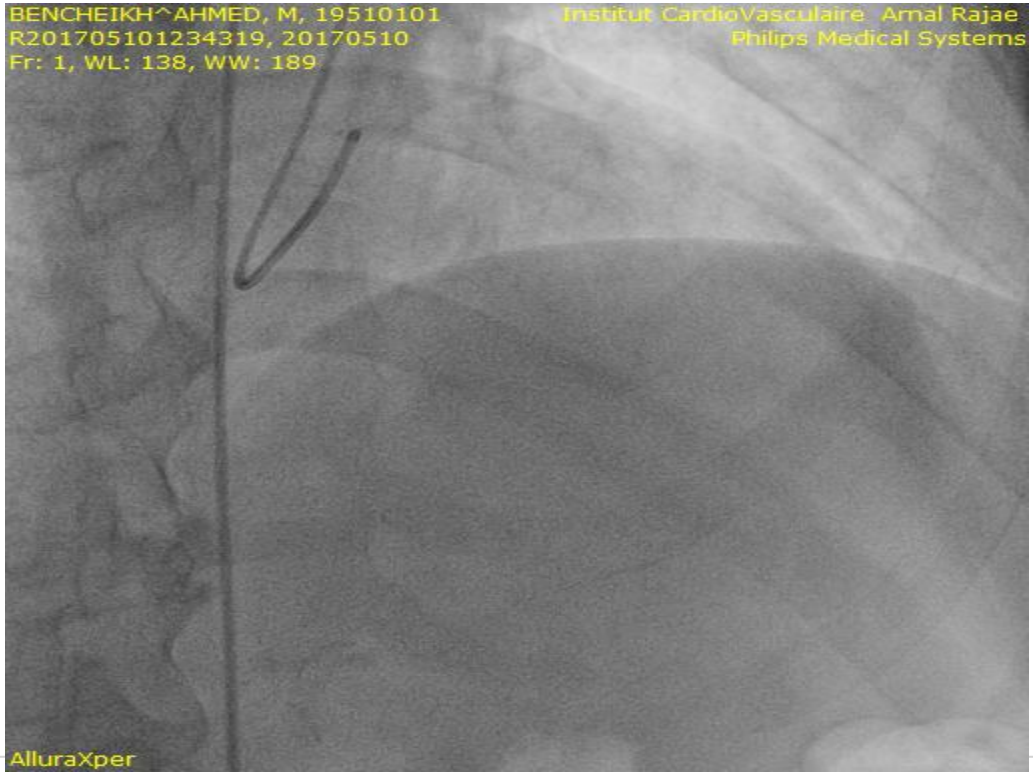
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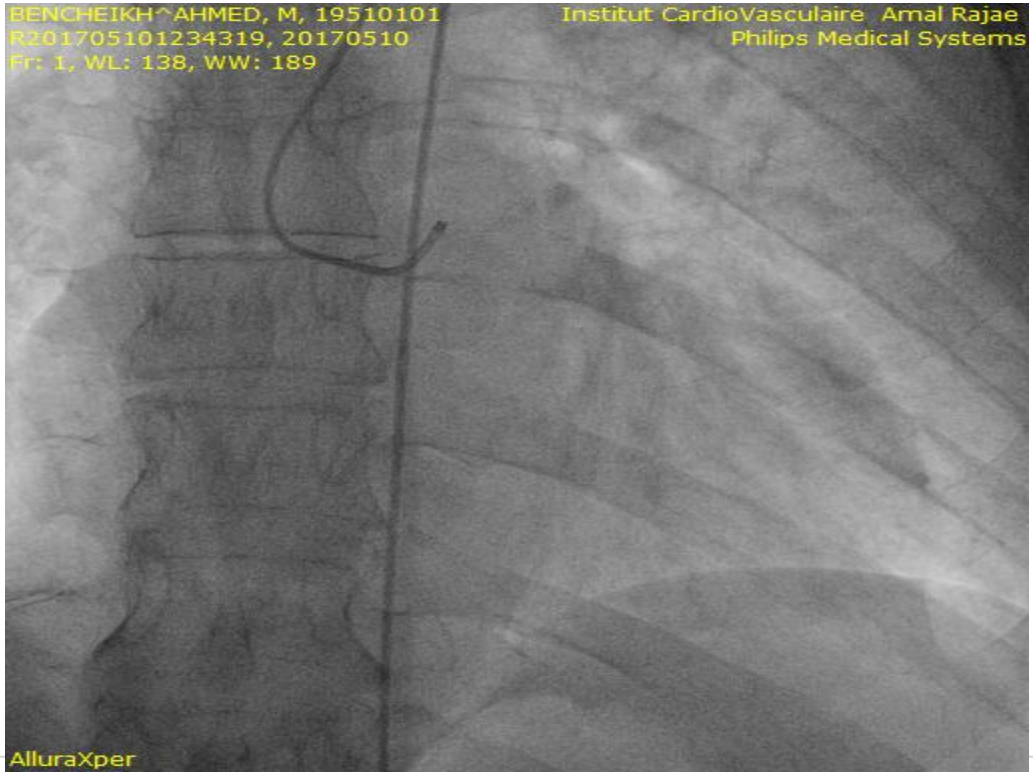
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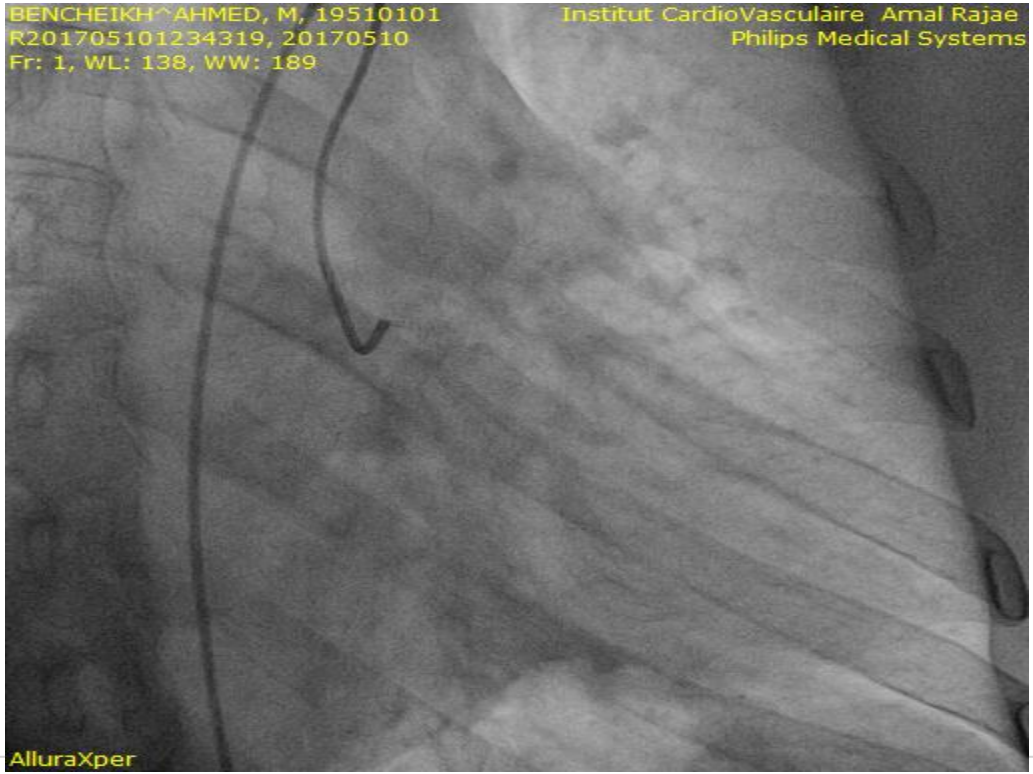
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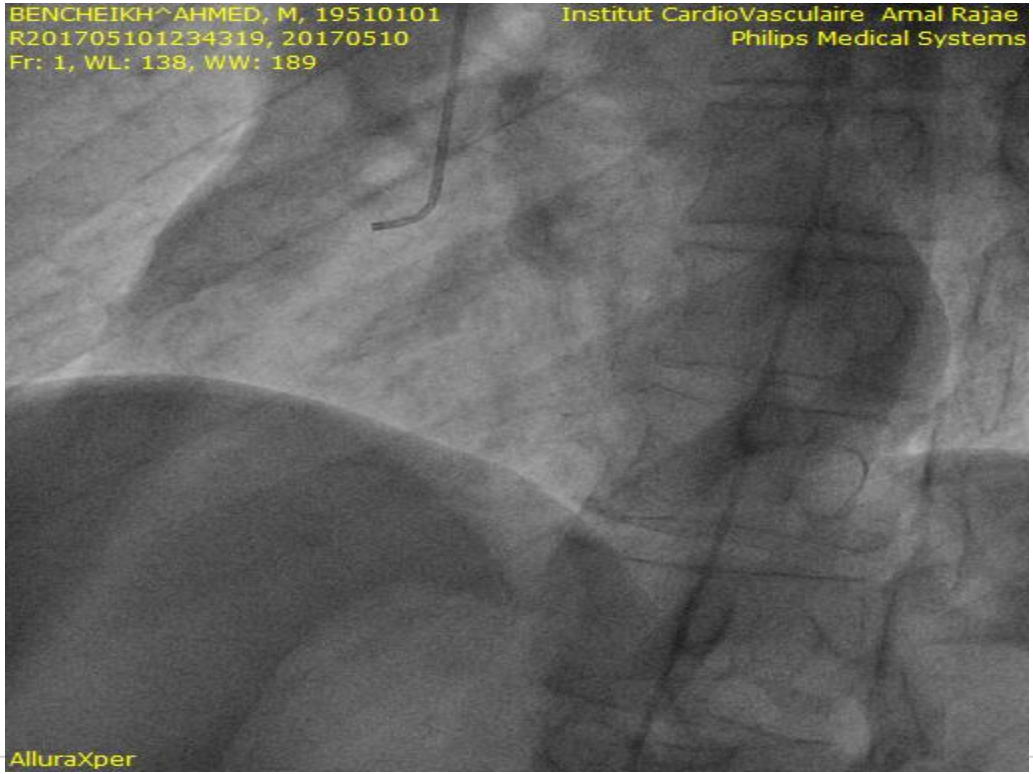
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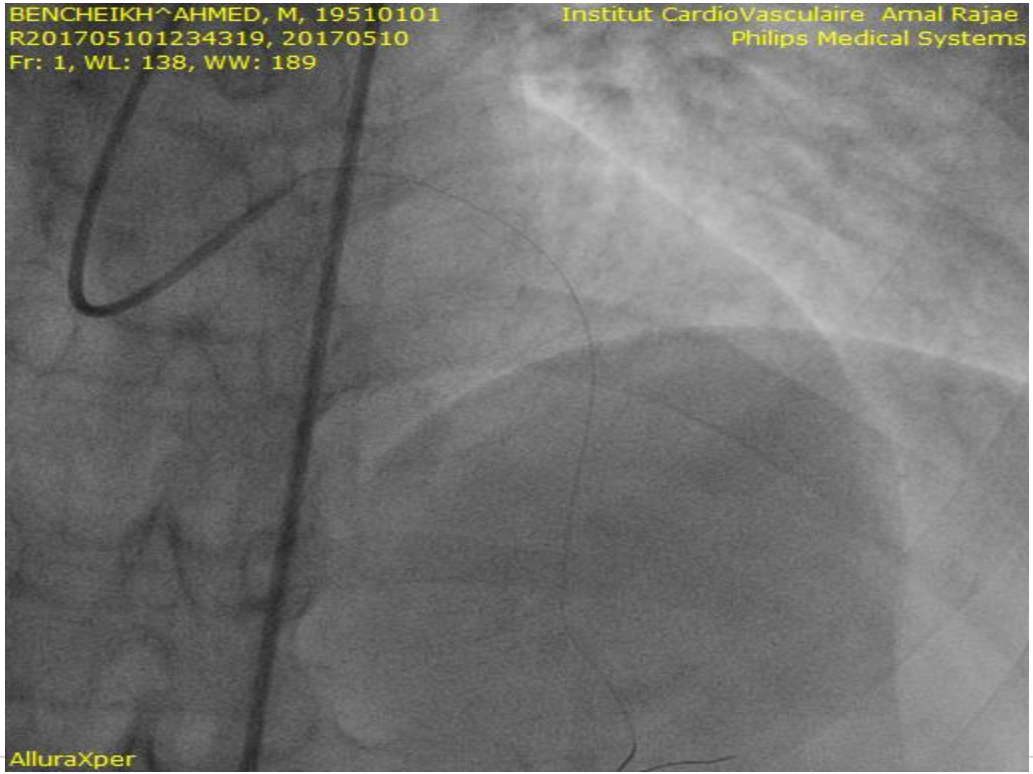
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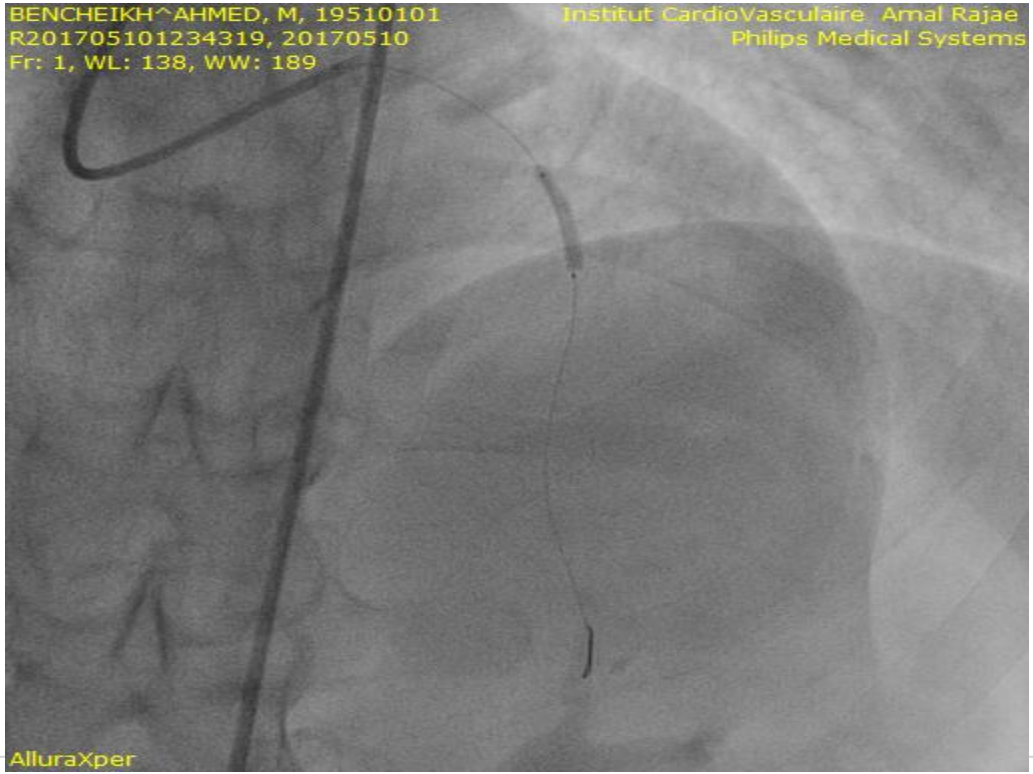
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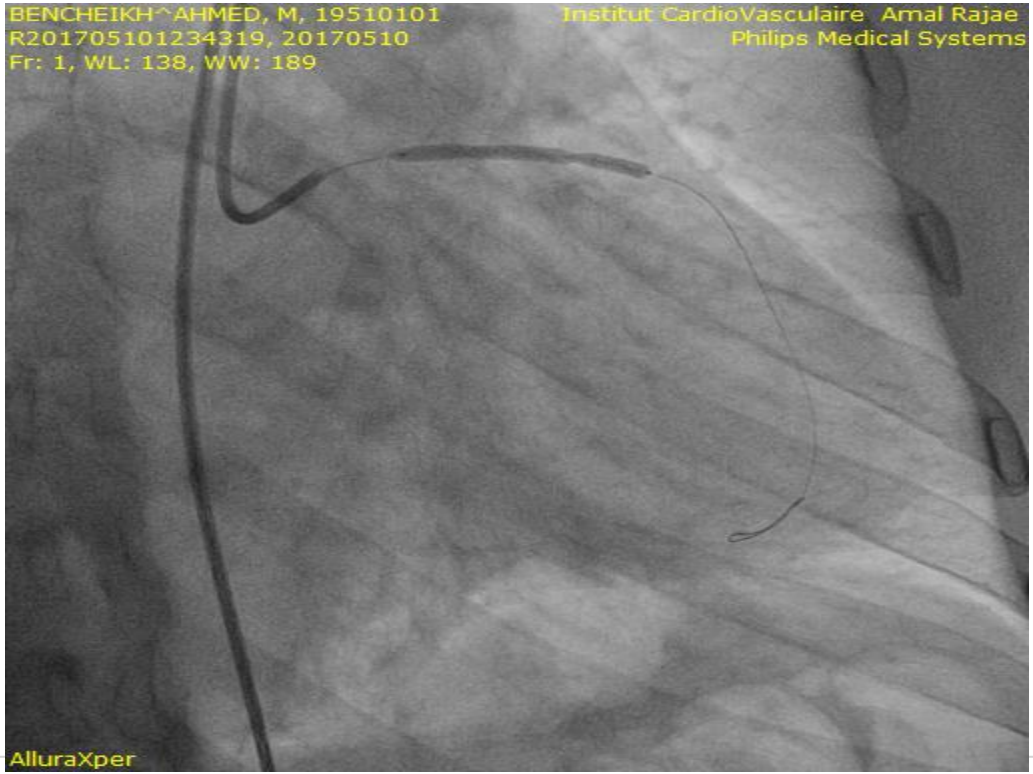
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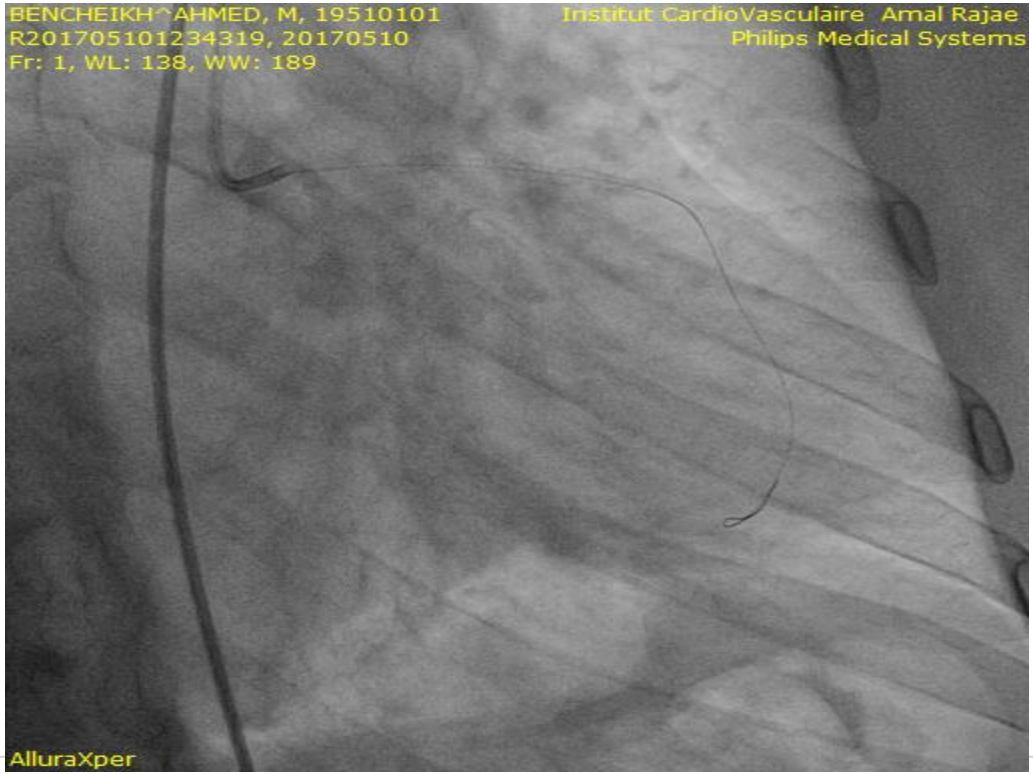
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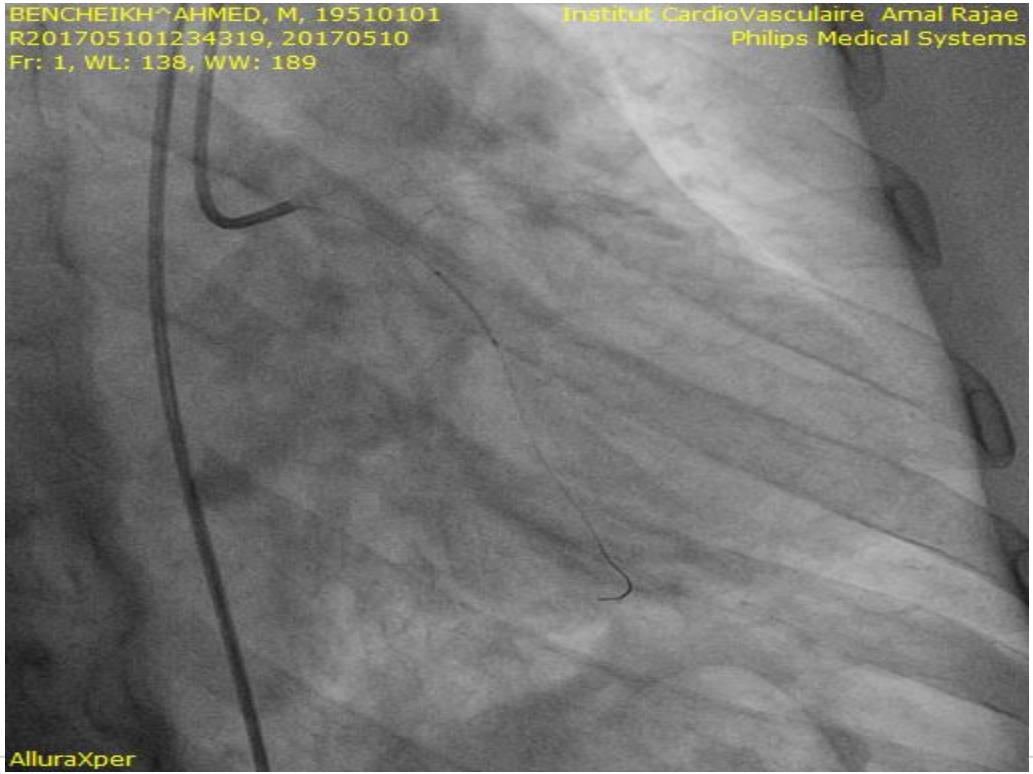
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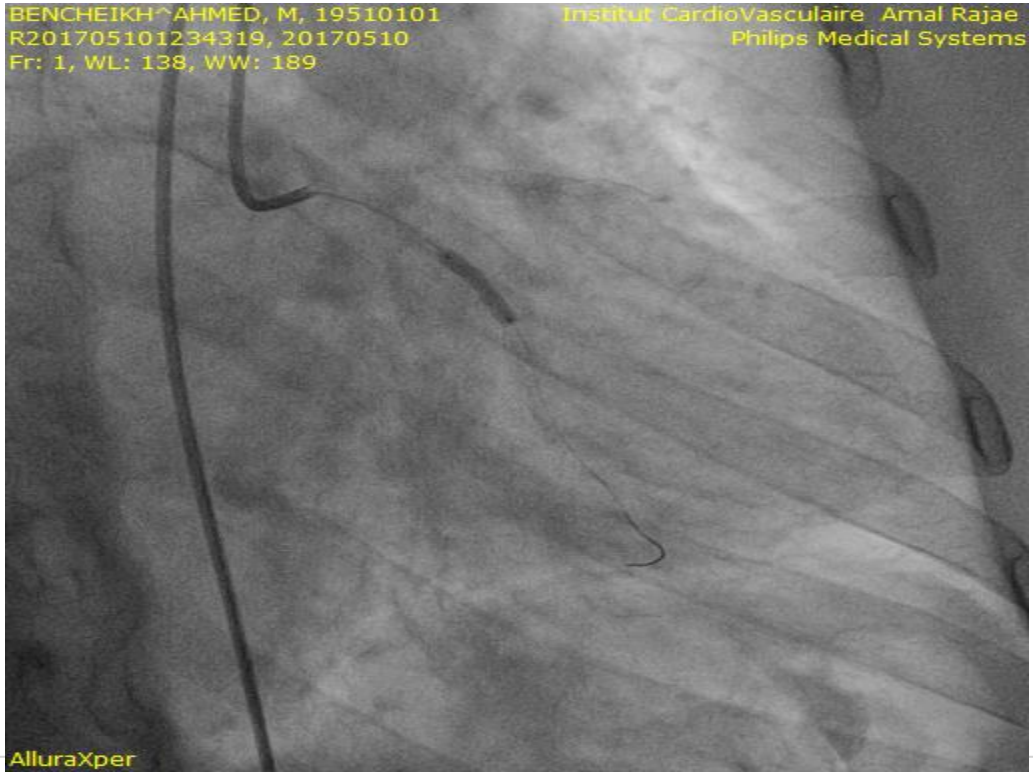
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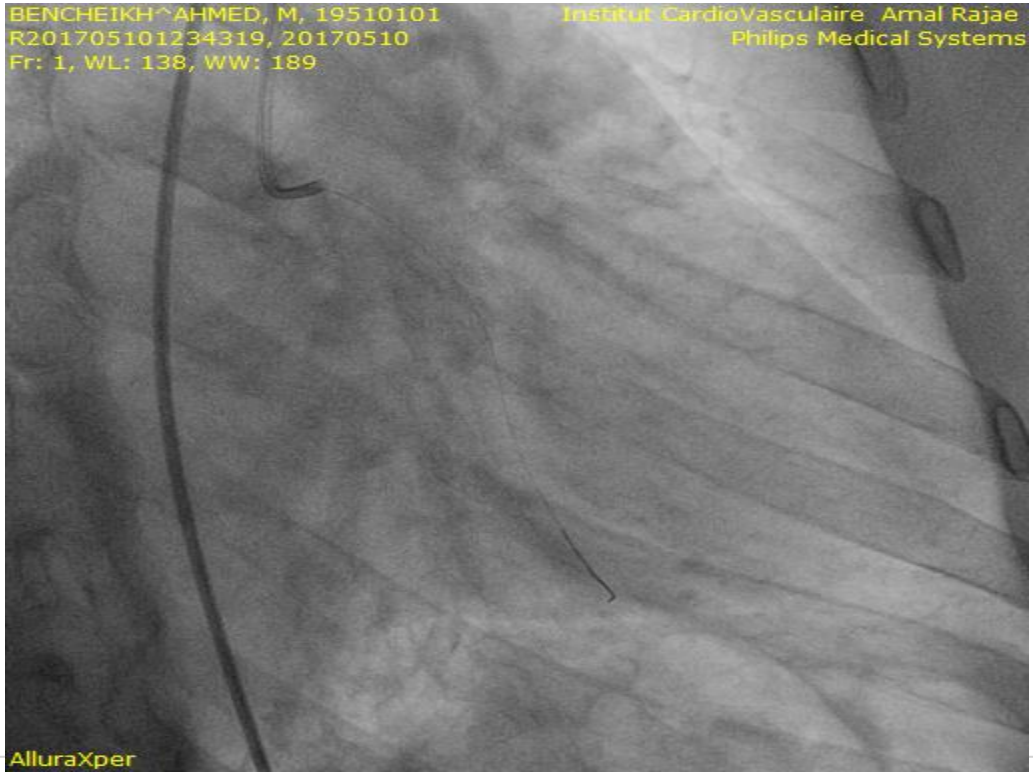
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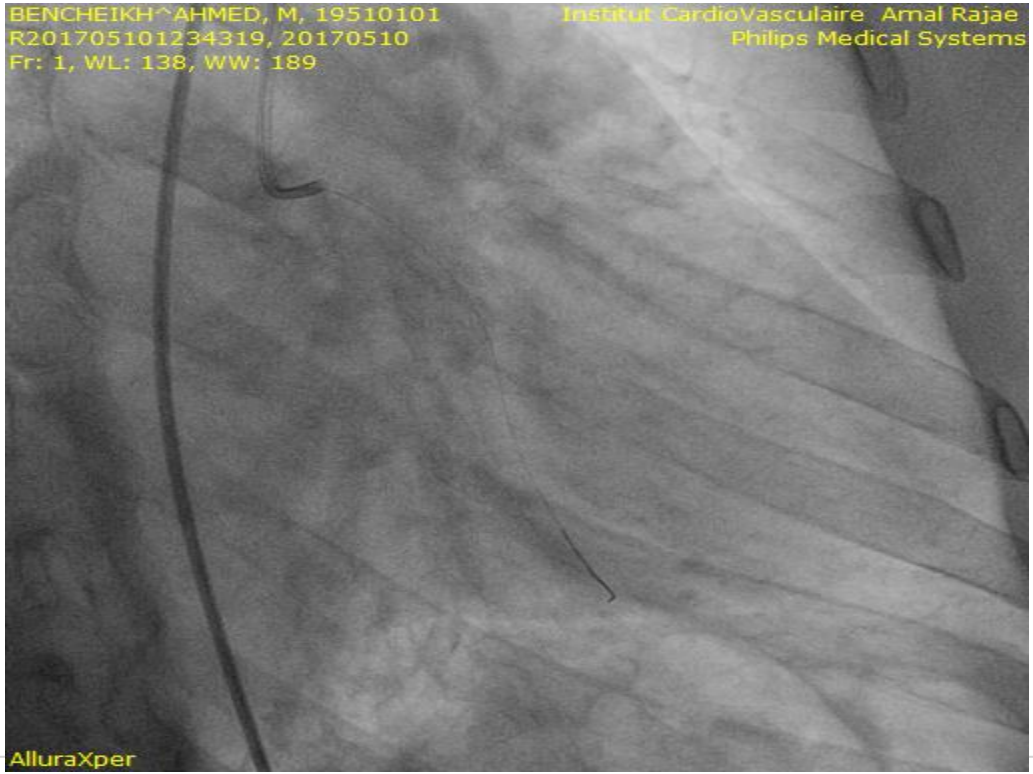
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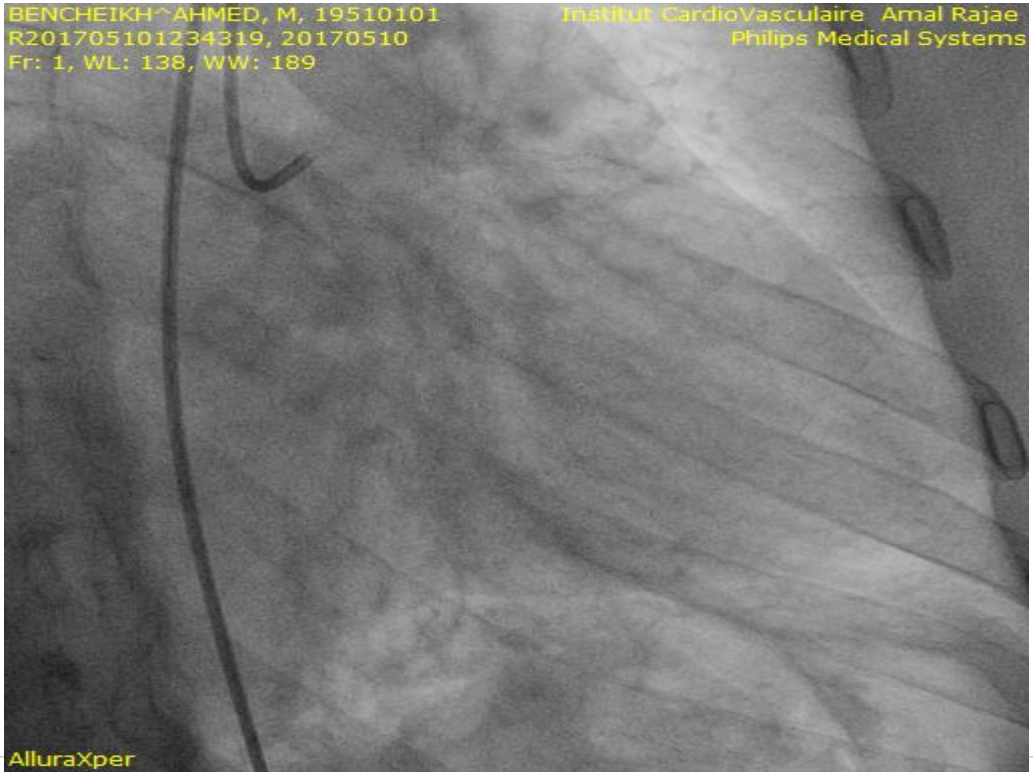
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Evolution

- **Favorable**
- **Sortie de l'hopital après 72 h**
- **Traitement au long cours**
  - DAPT 1an
  - Statines objectif ldl à 0.7 mg/l
  - Bétabloquants
  - Programme de sevrage tabagique

ESC European Society of Cardiology
European Heart Journal (2017) **00**, 1–66
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ESC European Society of Cardiology

2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation

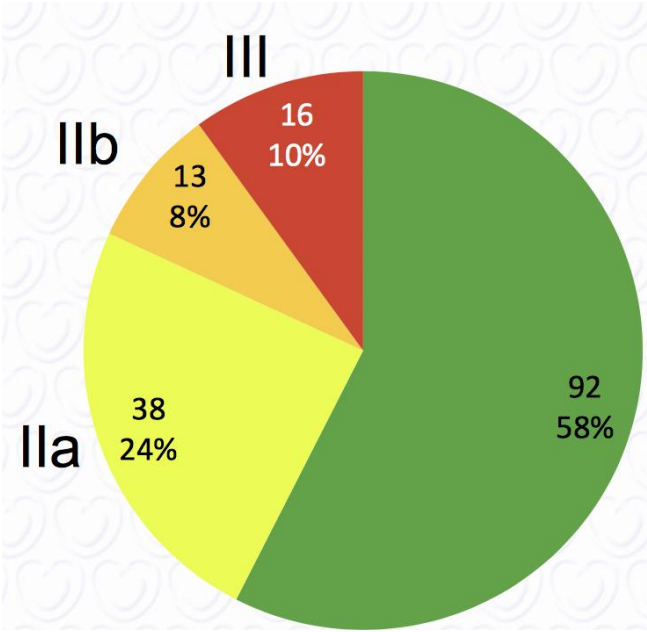
The Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC)

Authors/Task Force Members: Borja Ibanez* (Chairperson) (Spain), Stefan James* (Chairperson) (Sweden), Stefan Agewall (Norway), Manuel J. Antunes (Portugal), Chiara Bucciarelli-Ducci (UK), Héctor Bueno (Spain), Alida L. P. Caforio (Italy), Filippo Crea (Italy), John A. Goudevenos (Greece), Sigrun Halvorsen (Norway), Gerhard Hindricks (Germany), Adnan Kastrati (Germany), Mattie J. Lenzen (The Netherlands), Eva Prescott (Denmark), Marco Roffi (Switzerland), Marco Valgimigli (Switzerland), Christoph Varenhorst (Sweden), Pascal Vranckx (Belgium), Petr Widimský (Czech Republic)

Classes de recommandations

Classes of recommendations	Definition	Suggested wording to use
Class I	**Evidence and/or general agreement that a given treatment or procedure is beneficial, useful, effective.**	**Is recommended/is indicated**
Class II	**Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the given treatment or procedure.**	
Class IIa	***Weight of evidence/opinion is in favour of usefulness/efficacy.***	**Should be considered**
Class IIb	***Usefulness/efficacy is less well established by evidence/opinion.***	**May be considered**
Class III	**Evidence or general agreement that the given treatment or procedure is not useful/effective, and in some cases may be harmful.**	**Is not recommended**

159 recommandations



CHANGE IN RECOMMENDATIONS

2012		2017
	Radial access[a] MATRIX[143]	
	DES over BMS EXAMINATION[150, 151] COMFORTABLE-AMI[149], NORSTENT[152]	
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	Thrombus Aspiration[c] TOTAL[159], TASTE[157]	
	Bivalirudin MATRIX[209], HEAT-PPCI[205]	
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Oxygen when SaO2 <95%	AVOID[64], DETO2X[66]	Oxygen when SaO2 <90%
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- Additional lipid lowering therapy if LDL >1.8 mmol/L (70 mg/dL) despite on maximum tolerated statins
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I | IIa | IIb | III

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PATIENTS TAKING ANTICOAGULANTS:
- Acute and chronic management presented.

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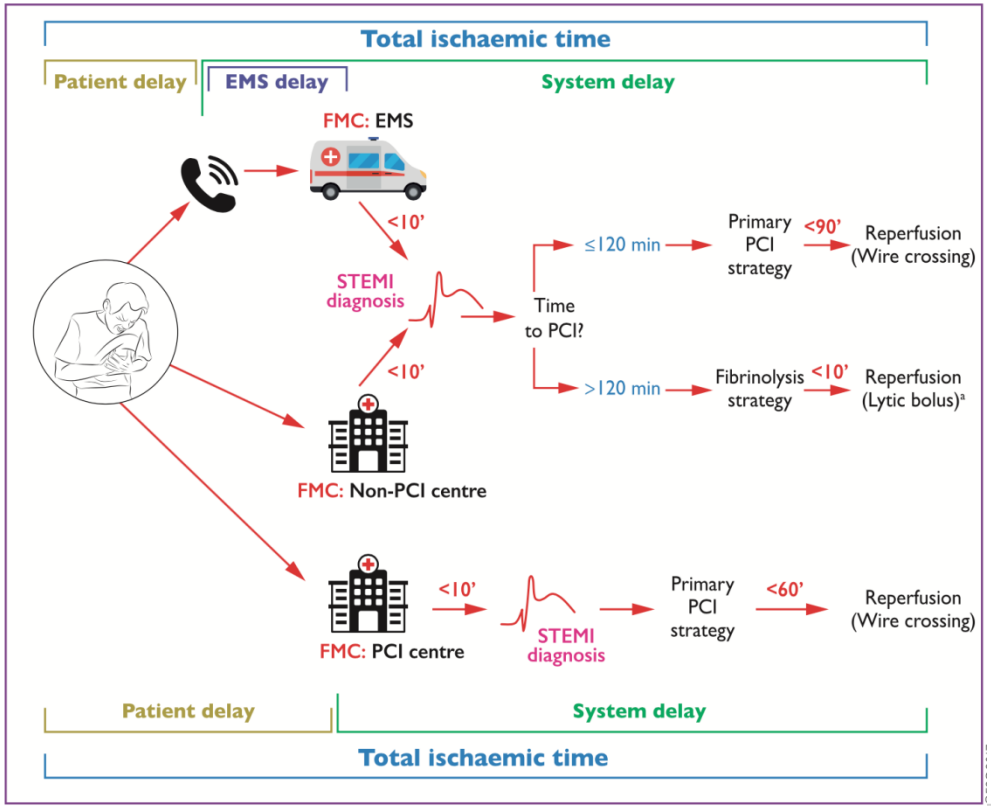
Prise en charge en urgence pré-hospitalière



A partir du premier contact médical

- **10 minutes pour le diagnostic**
- **A partir du diagnostic ECG, décision du type de reperfusion en fonction des délais**
- **En cas de décision de fibrinolyse, à réaliser dans les 10 minutes**

Prise en charge en urgence pré-hospitalière

Bundle branch block

Criteria that can be used to improve the diagnostic accuracy of STEMI in LBBB[50]:

- Concordant ST-segment elevation ≥1 mm in leads with a positive QRS complex
- Concordant ST-segment depression ≥1 mm in V_1–V_3
- Discordant ST-segment elevation ≥5 mm in leads with a negative QRS complex

The presence of RBBB may confound the diagnosis of STEMI

Ventricular paced rhythm

During RV pacing, the ECG also shows LBBB and the above rules also apply for the diagnosis of myocardial infarction during pacing; however, they are less specific

Isolated posterior myocardial infarction

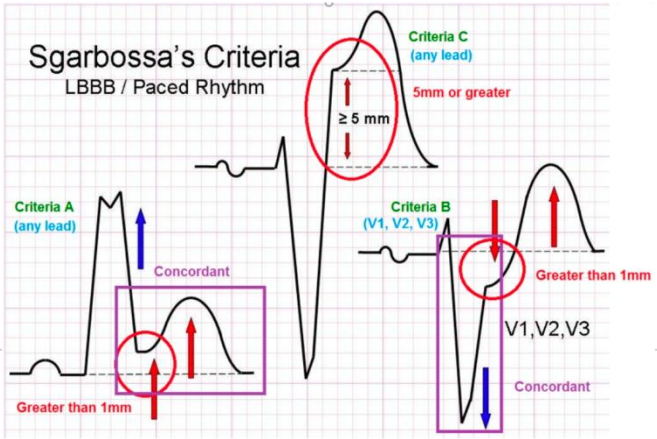
Isolated ST depression ≥0.5 mm in leads V_1–V_3 and ST-segment elevation (≥0.5 mm) in posterior chest wall leads V_7–V_9

Ischaemia due to left main coronary artery occlusion or multivessel disease

ST depression ≥1 mm in eight or more surface leads, coupled with ST-segment elevation in aVR and/or V_1, suggests left main-, or left main equivalent- coronary obstruction, or severe three vessel ischaemia

Présentations atypiques révisées

- **BBG ou BBDt, de novo ou non relève de la même prise en charge en urgence en cas de suspicion d'IDM**
- **Electro-entrainement ventriculaire**
- **Infarctus postérieur : sous-décalage ST V1-V3**
- **Ischémie due à une occlusion du TC ou multivaisseaux: sous-décalage du ST >8 dérivations associé à un sus-décalage du ST en aVR**



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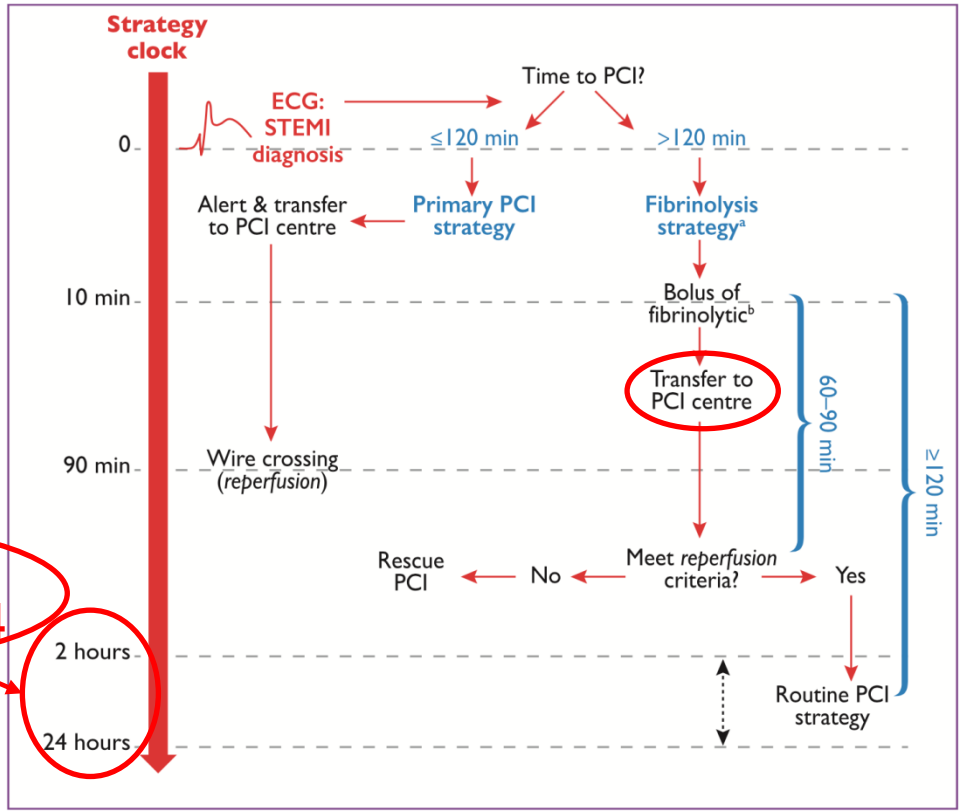

De 3 à 24 heures à 2 à 24 heures

Prise en charge en urgence pré-hospitalière

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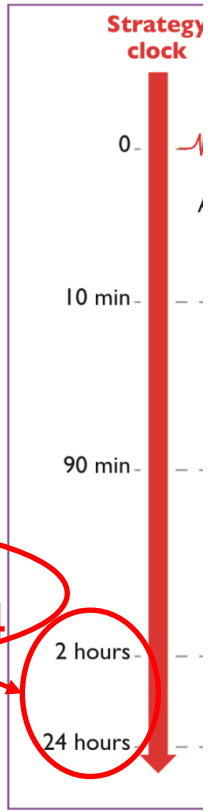
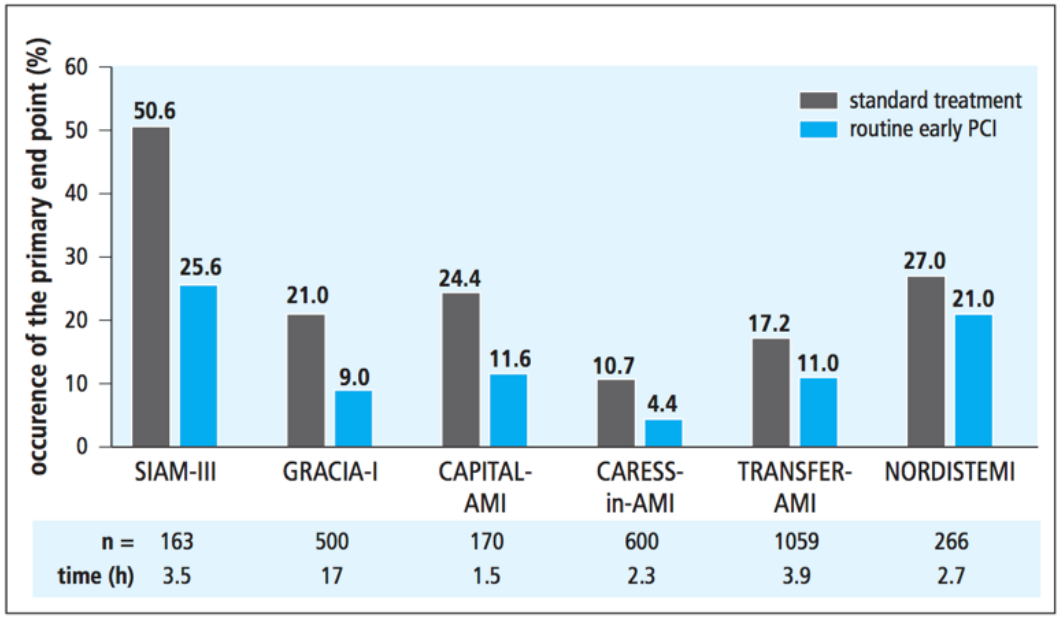


Fibrinolytic treatment of ST-elevation myocardial infarction

Update 2014

S. Halvorsen[1]; K. Huber[2] Hämostaseologie 1/2014



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Prise en charge en urgence

Relief of hypoxaemia and symptoms

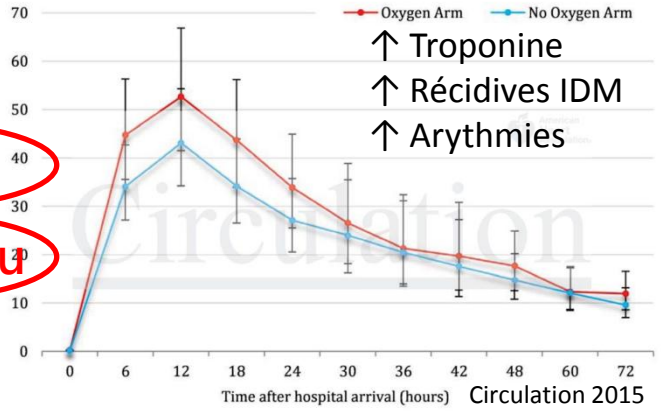
Recommendations	Class[a]	Level[b]
Hypoxia		
Oxygen is indicated in patients with hypoxaemia (SaO_2 < 90% or PaO_2 < 60 mmHg).	I	C
Routine oxygen is not recommended in patients with $SaO_2 \geq 90\%$.[64–66]	III	B
Symptoms		
Titrated i.v. opioids should be considered to relieve pain.	IIa	C
A mild tranquillizer (usually a benzodiazepine) should be considered in very anxious patients.	IIa	C

i.v. = intravenous; PaO_2 = partial pressure of oxygen; SaO_2 = arterial oxygen saturation.
[a]Class of recommendation.
[b]Level of evidence.

idem

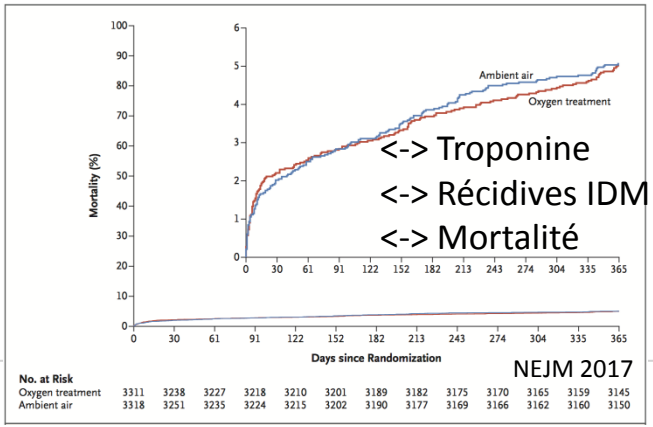
nouveau

AVOID Study, Stub et al.



Circulation 2015

DETO2X Study, Hofmann et al.



NEJM 2017

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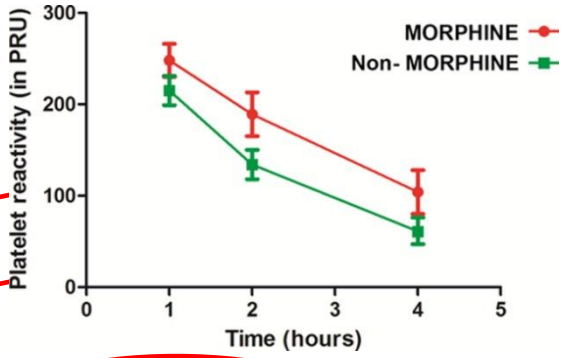
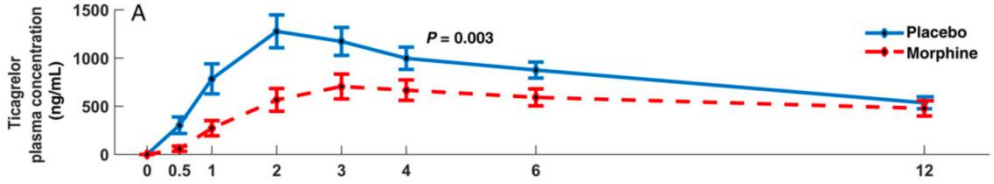


I -> IIa

300 patients sous Ticagrelor et Prasugrel
↓ réactivité plaquettaire
↑ délai action

Parodi et al
Circ Cardiovasc Int 2015

IMPRESSION trial, Kubica et al., *Eur Heart J 2016*
↓ concentration de Ticagrelor et réactivité plaquettaire
↑ délai action



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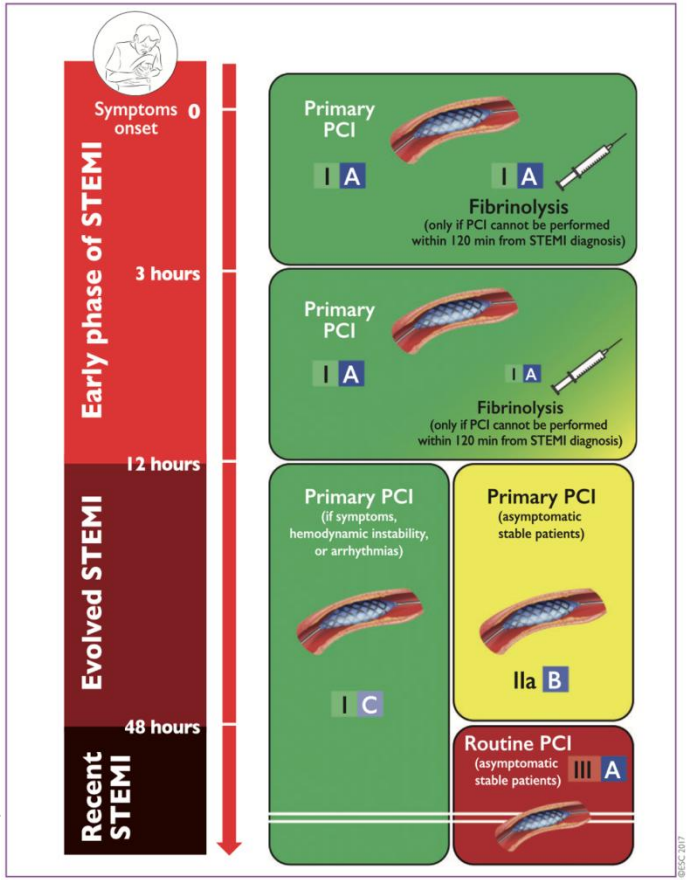
Limites de temps pour la réouverture de l'artère coupable



- **Dans les 12 premières heures: Angioplastie ou Thrombolyse selon les délais/accessibilité avec une meilleure efficacité de la thrombolyse dans les 6 premières heures.**
- **Dans les 12 à 48 heures:**
  - Classe IC: Angioplastie en cas de symptômes, instabilité hémodynamique ou arythmie
  - Classe IIa B: Angioplastie chez les patients asymptomatiques stables
- **Après 48 heures**
  - Classe IC: Angioplastie en cas de symptômes, instabilité hémodynamique ou arythmie
  - Classe III si asymptomatiques

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Fibrinolyse, nouveautés

ESC European Society of Cardiology

Recommendations	Class[a]	Level[b]
When fibrinolysis is the reperfusion strategy, it is recommended to initiate this treatment as soon as possible after STEMI diagnosis, preferably in the pre-hospital setting.[96,98,123,222]	I	A
A fibrin-specific agent (i.e. tenecteplase, alteplase, or reteplase) is recommended.[223,224]	I	B
A half-dose of tenecteplase should be considered in patients ≥75 years of age.[121]	IIa	B
Antiplatelet co-therapy with fibrinolysis		
Oral or i.v. aspirin is indicated.[213]	I	B
Clopidogrel is indicated in addition to aspirin.[225,226]	I	A
DAPT (in the form of aspirin plus a $P2Y_{12}$ inhibitor[c]) is indicated for up to 1 year in patients undergoing fibrinolysis and subsequent PCI.	I	C
Anticoagulation co-therapy with fibrinolysis		
Anticoagulation is recommended in patients treated with lytics until revascularization (if performed) or for the duration of hospital stay up to 8 days.[199,224,227–233] The anticoagulant can be:	I	A
• Enoxaparin i.v. followed by s.c. (preferred over UFH).[227–232]	I	A
• UFH given as a weight-adjusted i.v. bolus followed by infusion.[224]	I	B
• In patients treated with streptokinase: fondaparinux i.v. bolus followed by an s.c. dose 24 h later.[199,233]	IIa	B

IIa A -> I A

Nouveau

STREAM

Fibrinolyse, nouveautés

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ORIGINAL ARTICLE

Fibrinolysis or Primary PCI in ST-Segment Elevation Myocardial Infarction

Amstrong et al. 2013 The NEW ENGLAND JOURNAL of MEDICINE

Table 3. Strokes and Nonintracranial Bleeding Events within 30 Days.

Event	Fibrinolysis (N=944)	Primary PCI (N=948)	P Value
	no./total no. (%)		
Total strokes	15/939 (1.6)	5/946 (0.5)	0.03
Intracranial hemorrhage			
Any	9/939 (1.0)	2/946 (0.2)	0.04
After protocol amendment*	4/747 (0.5)	2/758 (0.3)	0.45

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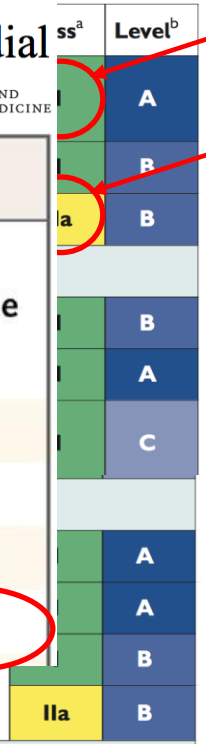

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PATIENTS TAKING ANTICOAGULANTS:
- Acute and chronic management presented.

ESC European Society of Cardiology

Traitements anticoagulants

Anticoagulant therapy		
Anticoagulation is recommended for all patients in addition to antiplatelet therapy during primary PCI.	I	C
Routine use of UFH is recommended.	I	C
In patients with heparin-induced thrombocytopenia, bivalirudin is recommended as the anticoagulant agent during primary PCI.	I	C
Routine use of enoxaparin i.v. should be considered.[200–202]	IIa	A
Routine use of bivalirudin should be considered.[209,215]	IIa	A
Fondaparinux is not recommended for primary PCI.[199]	III	B

IIb B -> IIa
A

ATOLL, Meta-analysis

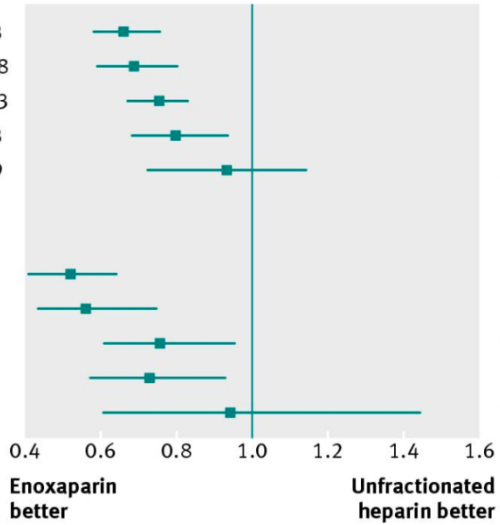
Traitements anticoagulants

Méta-analyse Sylvain et al, BMJ 2012

- Enoxaparine vs Héparine
- 23 études, 30966 patients
- Faveur enoxaparine

Anticoagulant therapy		
Anticoagulation is recommended for all patients in addition to antiplatelet therapy	I	C

Study	Number needed to treat	No of events/No in group: Enoxaparin	No of events/No in group: Unfractionated heparin	Relative risk (95% CI) random	P value	Cochran Q for heterogeneity
All PCIs						
Death	60	278/13 943	622/17 023	0.66 (0.57 to 0.76)	<0.001	0.46
Death or myocardial infarction	50	836/11 924	1351/14 968	0.68 (0.57 to 0.81)	<0.001	0.42
Complications of myocardial infarction	66	765/13 943	1135/17 023	0.75 (0.66 to 0.85)	<0.001	0.55
Major bleeding	83	295/13 852	564/16 923	0.80 (0.68 to 0.95)	0.009	0.58
Minor bleeding	-	718/13 150	793/13 669	0.92 (0.74 to 1.14)	0.45	0.21
Primary PCI for STEMI						
Death	34	112/3590	401/6653	0.52 (0.42 to 0.64)	<0.001	0.53
Death or myocardial infarction	28	139/3590	499/6653	0.56 (0.42 to 0.76)	<0.001	0.50
Complications of myocardial infarction	68	96/3590	275/6653	0.76 (0.60 to 0.96)	0.022	0.80
Major bleeding	53	92/3499	298/6553	0.72 (0.56 to 0.93)	0.01	0.69
Minor bleeding	-	138/3216	177/4372	0.94 (0.60 to 1.47)	0.78	0.56



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Nouveau

IIb B -> IIa A

ATOLL, Meta-analysis

I B -> IIa A

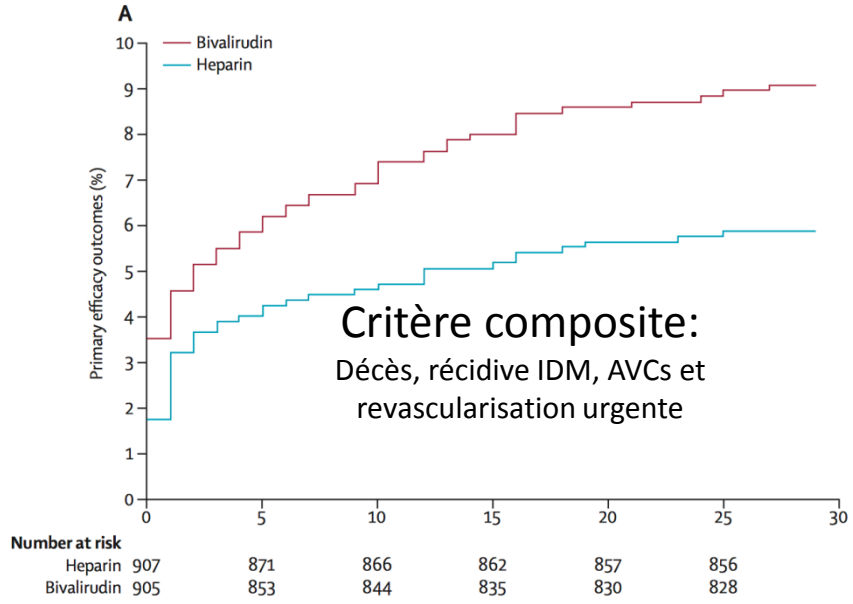
MATRIX, HEAT-PPCI

Traitements anticoagulants

Anticoagulant therapy		
Anticoagulation is recommended for all patients in addition to antiplatelet therapy during primary PCI.	I	C

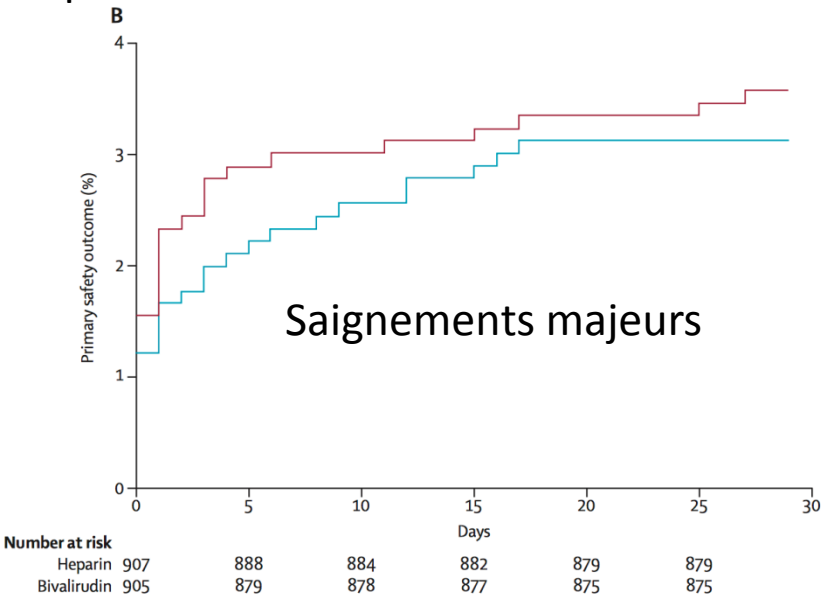
HEAT PPCI, Shahzad et al, Lancet 2014

- Bivalirudine vs Héparine
- 1812 patients
- Faveur héparine



Critère composite:

Décès, récidive IDM, AVCs et revascularisation urgente



Saignements majeurs

Traitements antiagrégants

Recommendations	Class[b]	Level[c]
Antiplatelet therapy		
A potent $P2Y_{12}$ inhibitor (prasugrel or ticagrelor), or clopidogrel if these are not available or are contraindicated, is recommended before (or at latest at the time of) PCI and maintained over 12 months, unless there are contraindications such as excessive risk of bleeding.[186,187]	I	A
Aspirin (oral or i.v. if unable to swallow) is recommended as soon as possible for all patients without contraindications.[213,214]	I	B
GP IIb/IIIa inhibitors should be considered for bailout if there is evidence of no-reflow or a thrombotic complication.	IIa	C
Cangrelor may be considered in patients who have not received $P2Y_{12}$ receptor inhibitors.[192–194]	IIb	A

Idem

Seulement en bail-out, plus en systématique en cas de forte charge thrombotique

Nouveau

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ESC European Society of Cardiology
European Heart Journal (2017) 0, 1–48
doi:10.1093/eurheartj/ehx419

ESC GUIDELINES

2017 ESC focused update on dual antiplatelet therapy in coronary artery disease developed in collaboration with EACTS

The Task Force for dual antiplatelet therapy in coronary artery disease of the European Society of Cardiology (ESC) and of the European Association for Cardio-Thoracic Surgery (EACTS)

Traitements anticoagulants et antiagrégants

Recommendations
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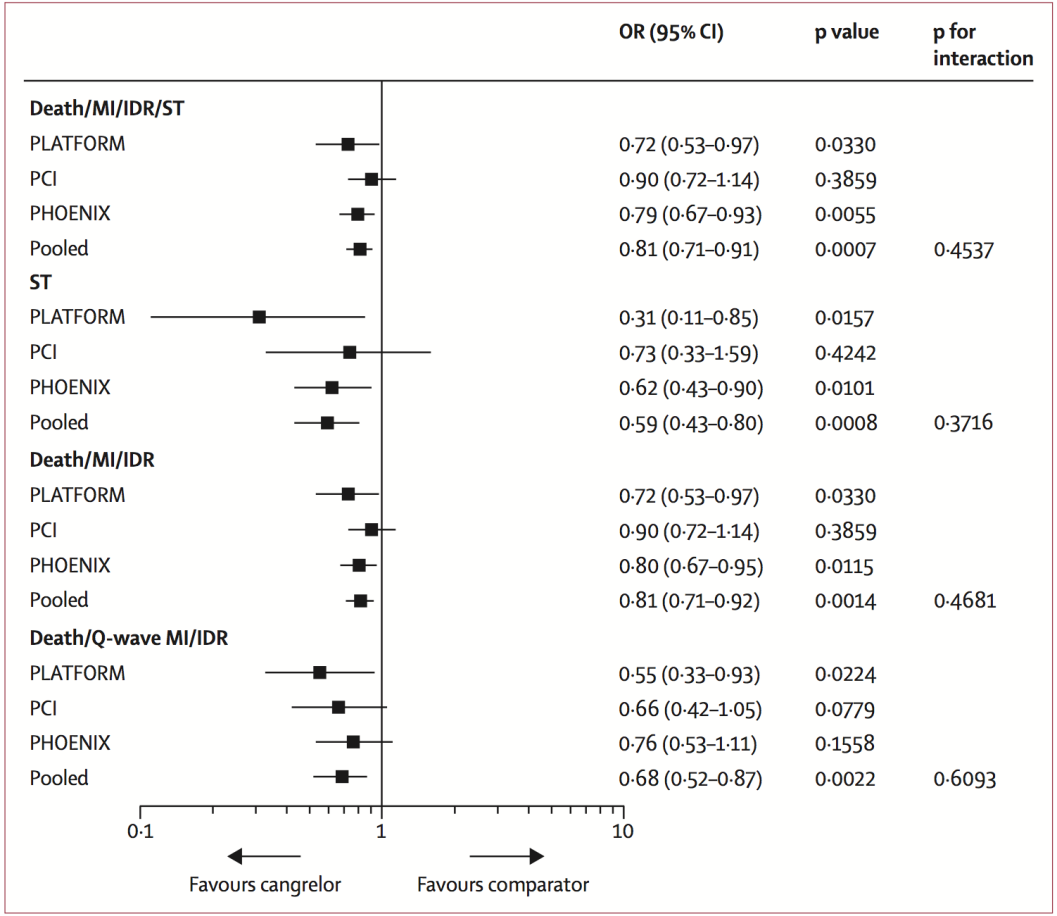

Analyse poolée

Steg et al, Lancet 2013

- Cangrelor vs Clopidogrel/Placebo
- Réduction critère composite et des thromboses de stent

CHANGE IN RECOMMENDATIONS

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	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

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  FOCUS[323]
- Routine use of deferred stenting
  DANAMI 3-DEFER[155]

I	IIa
IIb	III

2017 NEW / REVISED CONCEPTS

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Angioplastie primaire

IRA technique		
Stenting is recommended (over balloon angioplasty) for primary PCI.[146,147]	I	A
Stenting with new-generation DES is recommended over BMS for primary PCI.[148–151,178,179]	I	A
Radial access is recommended over femoral access if performed by an experienced radial operator.[143–145,180]	I	A
Routine use of thrombus aspiration is not recommended.[157,159]	III	A
Routine use of deferred stenting is not recommended.[153–155]	III	B

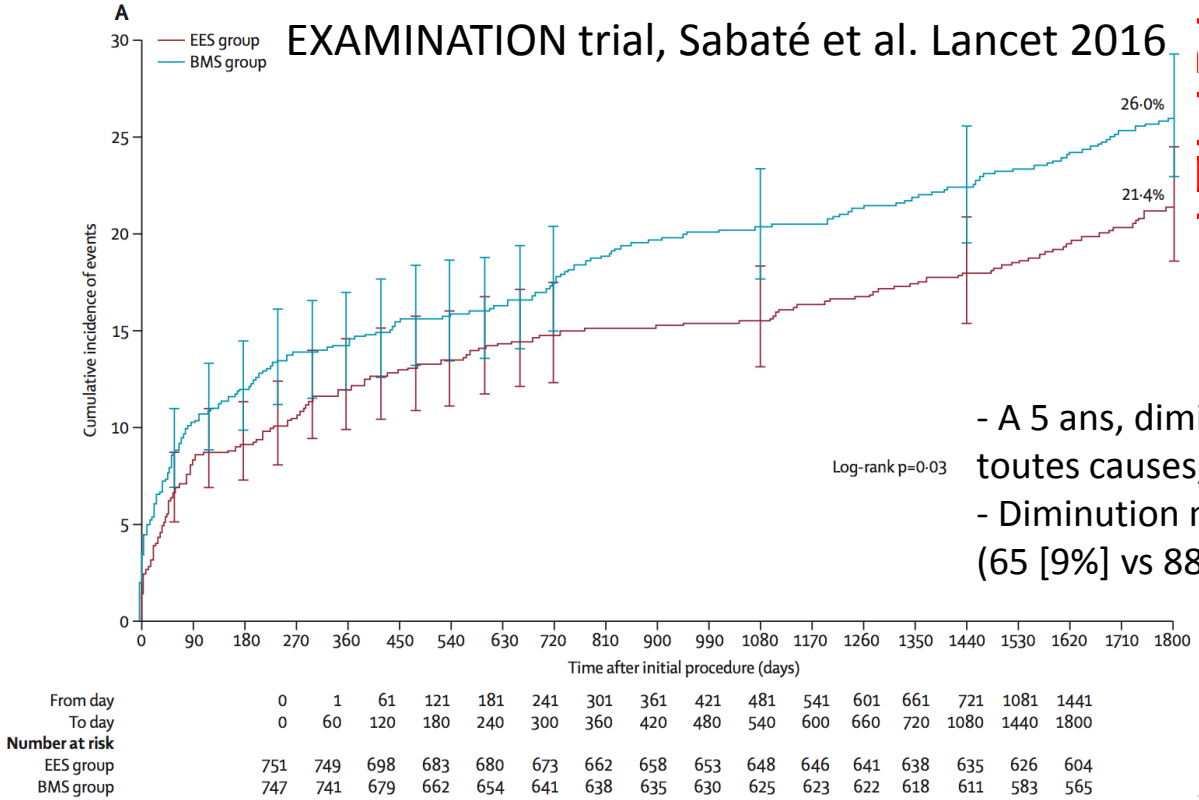
Idem

IIa A -> I A

EXAMINATION, NORSTENT, COMFORTABLE-AMI

Angioplastie primaire

EXAMINATION trial, Sabaté et al. Lancet 2016



From day	0	1	61	121	181	241	301	361	421	481	541	601	661	721	1081	1441
To day	0	60	120	180	240	300	360	420	480	540	600	660	720	1080	1440	1800
Number at risk																
EES group	751	749	698	683	680	673	662	658	653	648	646	641	638	635	626	604
BMS group	747	741	679	662	654	641	638	635	630	625	623	622	618	611	583	565

- A 5 ans, diminution du critère composite décès toutes causes, IDM et revascularisation
- Diminution mortalité toutes causes
(65 [9%] vs 88 [12%]; 0·72, 0·52–0·10; p=0·047)

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Idem

IIa A -> I A

EXAMINATION, NORSTENT, COMFORTABLE-AMI

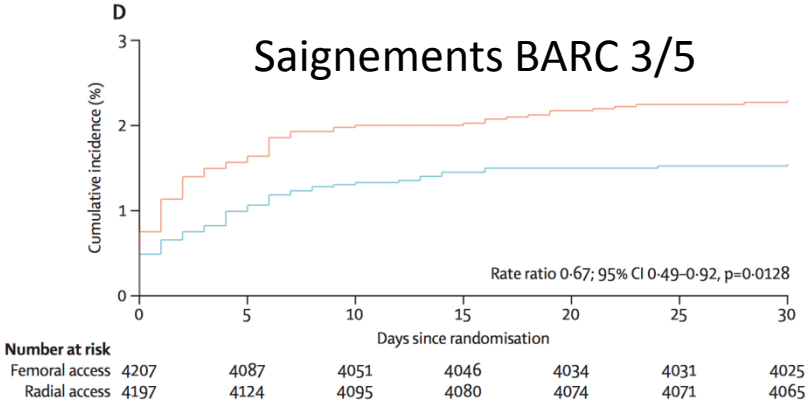
IIa B -> I A

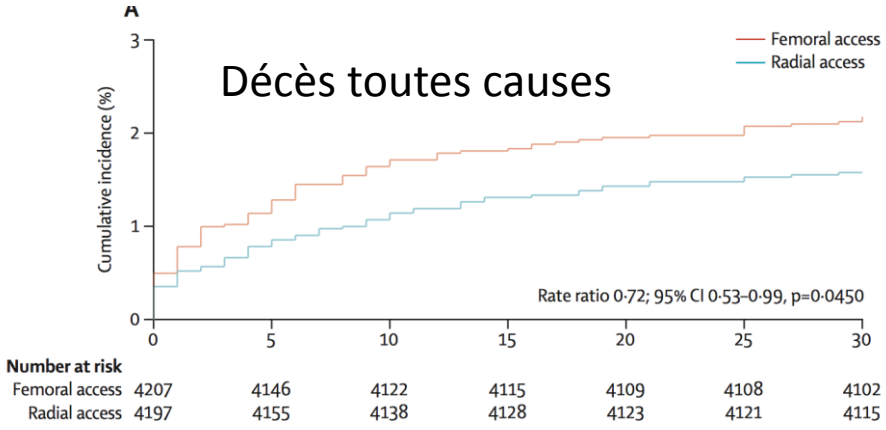
MATRIX

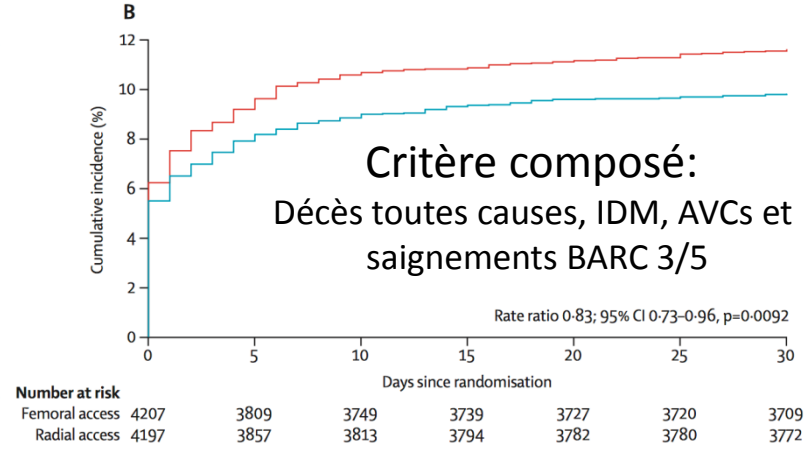
Angioplastie primaire

MATRIX study, Valgimigli et al.
Lancet 2015

- Voie Radiale vs Fémorale
- 8404 patients
- Bénéfice voie radiale important







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Idem

IIa A -> I A

EXAMINATION, NORSTENT, COMFORTABLE-AMI

IIa B -> I A

MATRIX

IIa B -> III

TOTAL, TASTE

Angioplastie primaire

TOTAL study, Jolly et al.
NEJM 2015

- Thromboaspiration vs angioplastie seule
- 5033 patients
- Critère primaire similaire, augmentation du nombre d'AVCs

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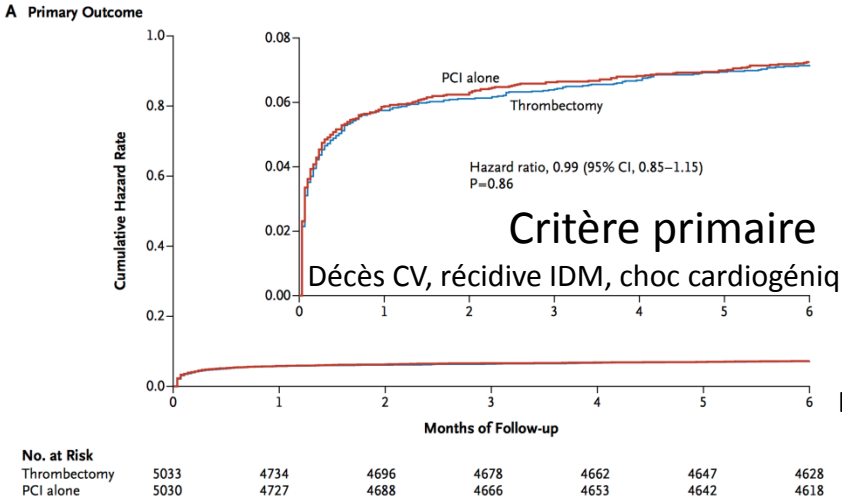
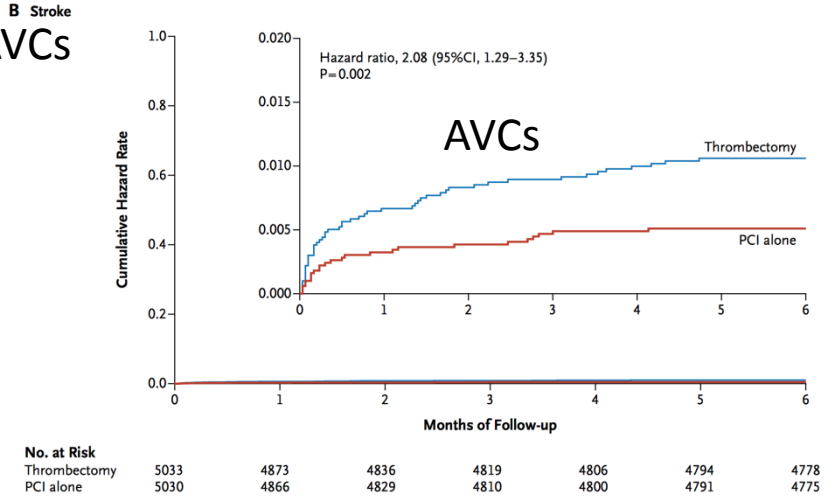


Critère primaire

Décès CV, récidive IDM, choc cardiogénique, IC NYHA 4

BLE-AMI



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EXAMINATION, NORSTENT, COMFORTABLE-AMI

IIa B -> I A

MATRIX

IIa B -> III

TOTAL, TASTE

Nouvea
u

DANAMI-3 DEFER

Angio **DANAMI-3 DEFER study**, Kelbaek et al. , Lancet 2016

IRA technic
Stenting is re(plasty) for pri
Stenting with mended over
Radial access access if perf(operator.[143–]
Routine use (recommende
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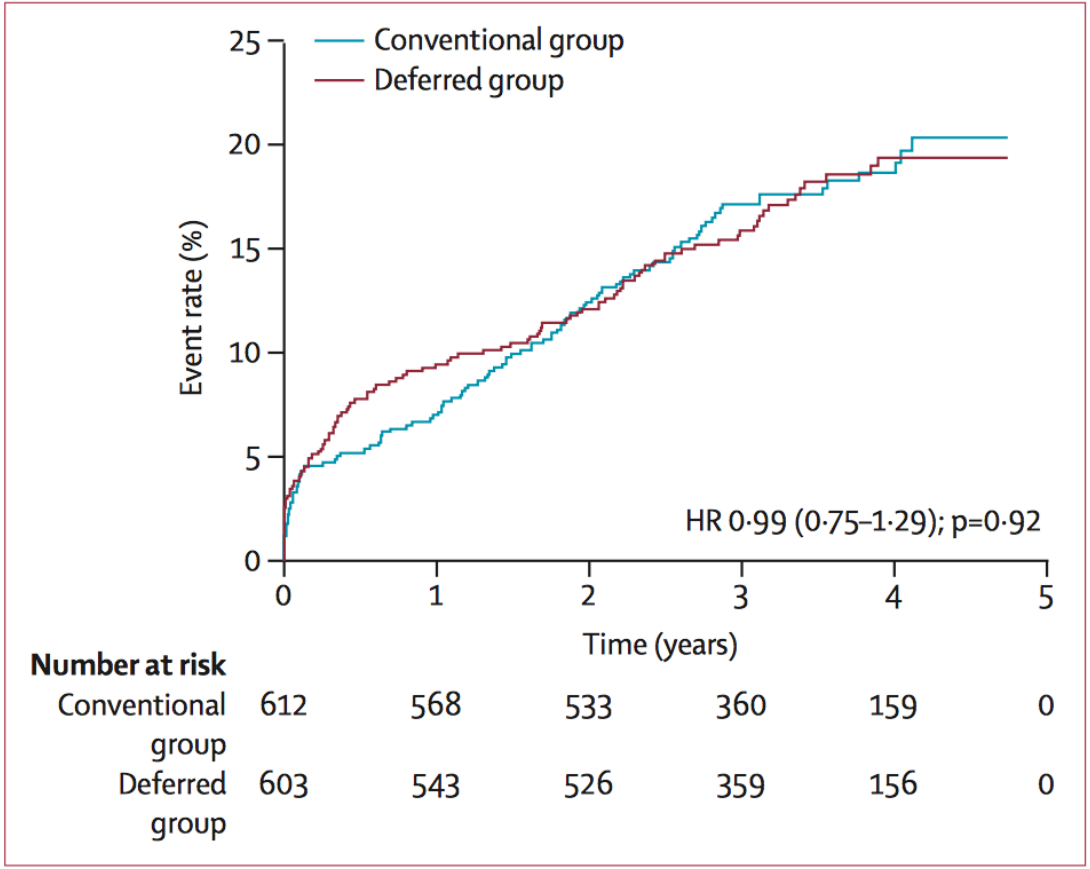

- Angioplastie immédiate vs différée
- 1215 patients
- Pas de bénéfice sur critère primaire:
décès toute cause, hospitalisation pour I. cardiaque, récidive IDM, revascularisation vaisseau traité

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I | IIa | IIb | III

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Revascularisation complémentaire

Non-IRA strategy		
Routine revascularization of non-IRA lesions should be considered in STEMI patients with multivessel disease before hospital discharge.[167–173]	IIa	A
Non-IRA PCI during the index procedure should be considered in patients with cardiogenic shock.	IIa	C
CABG should be considered in patients with ongoing ischaemia and large areas of jeopardized myocardium if PCI of the IRA cannot be performed.	IIa	C

III -> IIa A

PRAMI, DANAMI-3 PRIMULTI, CvLPRIT, COMPARE-ACUTE

Revascularisatio

COMPARE-ACUTE study, Smits et al. , NEJM 2017

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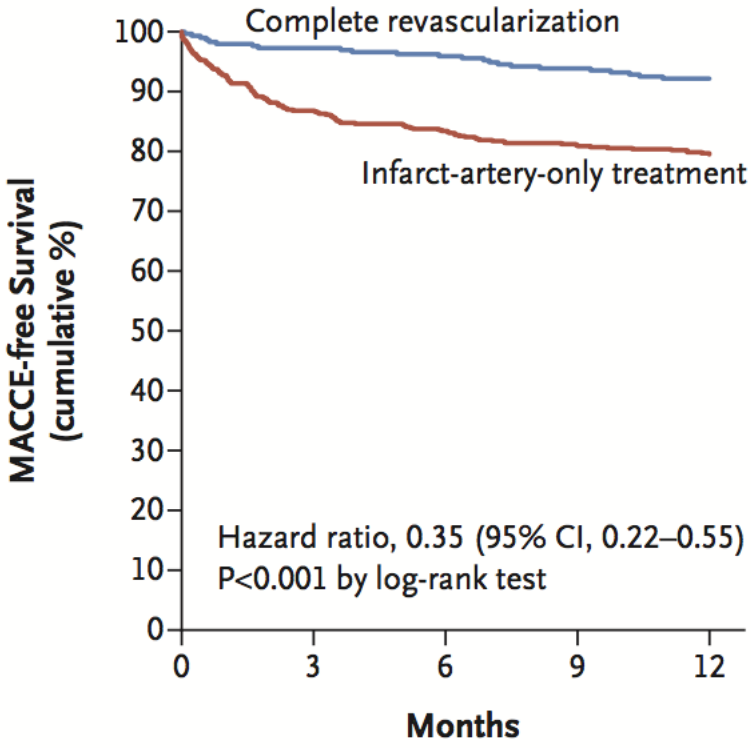

No. at Risk

Complete revascularization	295	286	281	264	215
Infarct artery	590	512	492	457	371

- Revascularisation complète vs artère coupable seule
- 885patients
- Bénéfice sur critère primaire:
décès toute cause, IDM non fatal, **revascularisation** et évènements cérébro vasculaire à 12 mois

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PRAMI, DANAMI-3 PRIMULTI, CvLPRIT, COMPARE-ACUTE

Idem

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I | IIa | IIb | III

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Après l'infarctus

ESC European Society of Cardiology

Hospital discharge		
Early discharge (within 48–72 h) should be considered appropriate in selected low-risk patients[c] if early rehabilitation and adequate follow-up are arranged.[257,259–262,264,265]	IIa	A

IIb B -> IIa A

Transfer back to a referring non-PCI hospital		
Same day transfer should be considered appropriate in selected patients after successful primary PCI, i.e. those without ongoing myocardial ischaemia, arrhythmia, or haemodynamic instability, not requiring vasoactive or mechanical support, and not needing further early revascularization.[263]	IIa	C

IIb C -> IIa C

Après l'infarctus, sevrage tabagique, réadaptation cardiaque et adhérence au traitement

ESC European Society of Cardiology

Behavioural aspects after ST-elevation myocardial infarction

Recommendations	Class[a]	Level[b]
It is recommended to identify smokers and provide repeated advice on stopping, with offers to help with the use of follow-up support, nicotine replacement therapies, varenicline, and bupropion individually or in combination.[4,302,303,325–327]	I	A
Participation in a cardiac rehabilitation programme is recommended.[4,309,328]	I	A
A smoking cessation protocol is indicated for each hospital participating in the care of STEMI patients.	I	C
The use of the polypill and combination therapy to increase adherence to drug therapy may be considered.[4,322,323]	IIb	B

I B -> I A

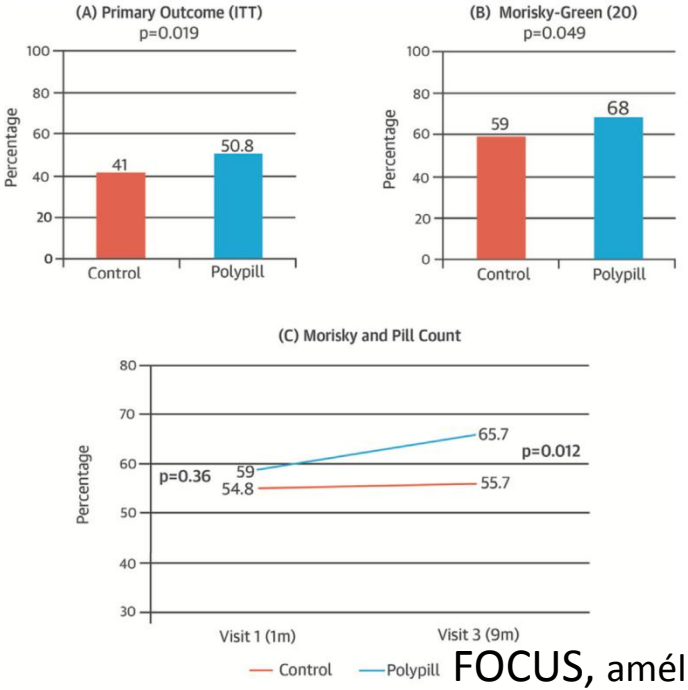
I B -> I A

Nouveau

Après l'infarctus, sevrage tabagique, réadaptation cardiaque et adhérence au traitement

Behavioural aspects after ST-elevation myocardial infarction

Recommendations	Class[a]	Level[b]
It is recommended to identify smokers and provide repeated advice on stopping, with offers to help with the use of follow-up support, nicotine replacement therapies, varenicline, and bupropion individually or in combination.[4,302,303,325–327]	I	A
Participation in a cardiac rehabilitation programme is recommended.[4,309,328]	I	A
A smoking cessation protocol is indicated for each hospital participating in the care of STEMI patients.	I	C
The use of the polypill and combination therapy to increase adherence to drug therapy may be considered.[4,322,323]	IIb	B



Castellano, J.M. et al. J Am Coll Cardiol. 2014; 64(20):2071-82.

FOCUS, amélioration de l'adhérence avec une seule gélule contenant aspirine, statine et IEC

Après l'infarctus, inhibiteurs de PCSK-9 et de l'ezetimibe en cas de LDL>0.7g/L sous ttt maximal

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Lipid lowering therapies		
It is recommended to start high-intensity statin therapy[c] as early as possible, unless contraindicated, and maintain it long-term.[364,366,368]	I	A
An LDL-C goal of < 1.8 mmol/L (70 mg/dL) or a reduction of at least 50% if the baseline LDL-C is between 1.8–3.5 mmol/L (70–135 mg/dL) is recommended.[367,369,376,382]	I	B
It is recommended to obtain a lipid profile in all STEMI patients as soon as possible after presentation.[369,406]	I	C
In patients with LDL-C ≥1.8 mmol/L (≥70 mg/dL) despite a maximally tolerated statin dose who remain at high risk, further therapy to reduce LDL-C should be considered.[376,382]	IIa	A

Nouveau

IMPROVE-IT, FOURIER

Après l'infarctus

ESC European Heart Journal (2017) 0, 1–48 doi:10.1093/eurheartj/ehx419
ESC GUIDELINES

2017 ESC focused update on dual antiplatelet therapy in coronary artery disease developed in collaboration with EACTS

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Maintenance antithrombotic strategy after ST-elevation myocardial infarction

Recommendations	Class[a]	Level[b]
Antiplatelet therapy with low-dose aspirin (75–100 mg) is indicated.[329]	I	A
DAPT in the form of aspirin plus ticagrelor or prasugrel (or clopidogrel if ticagrelor or prasugrel are not available or are contraindicated), is recommended for 12 months after PCI, unless there are contraindications such as excessive risk of bleeding.[186,187]	I	A
A PPI in combination with DAPT is recommended in patients at high risk of gastrointestinal bleeding[c].[335–337]	I	B
In patients with an indication for oral anticoagulation, oral anticoagulants are indicated in addition to antiplatelet therapy.[5]	I	C
In patients who are at high risk of severe bleeding complications, discontinuation of $P2Y_{12}$ inhibitor therapy after 6 months should be considered.[332,339,340]	IIa	B
In STEMI patients with stent implantation and an indication for oral anticoagulation, triple therapy[d] should be considered for 1–6 months (according to a balance between the estimated risk of recurrent coronary events and bleeding).[5]	IIa	C
DAPT for 12 months in patients who did not undergo PCI should be considered unless there are contraindications such as excessive risk of bleeding.	IIa	C
In patients with LV thrombus, anticoagulation should be administered for up to 6 months guided by repeated imaging.[341–343]	IIa	C
In high ischaemic-risk patients[e] who have tolerated DAPT without a bleeding complication, treatment with DAPT in the form of ticagrelor 60 mg twice a day on top of aspirin for longer than 12 months may be considered for up to 3 years.[333]	IIb	B
In low bleeding-risk patients who receive aspirin and clopidogrel, low-dose rivaroxaban (2.5 mg twice daily) may be considered.[338]	IIb	B
The use of ticagrelor or prasugrel is not recommended as part of triple antithrombotic therapy with aspirin and oral anticoagulation.	III	C

IIa C -> I B

Data limitées

Nouveau

Après l'infarctus

PEGASUS TIMI 54 study,
Bonaca et al.
NEJM 2015

- Ticagrelor 90mg x2, vs 60mg x2, vs placebo
- 1 à 3 ans après un IDM
- 21 162 patients
- Bénéfice en terme ischémique
- Augmentation des saignements (moindre à 60mg x2/j

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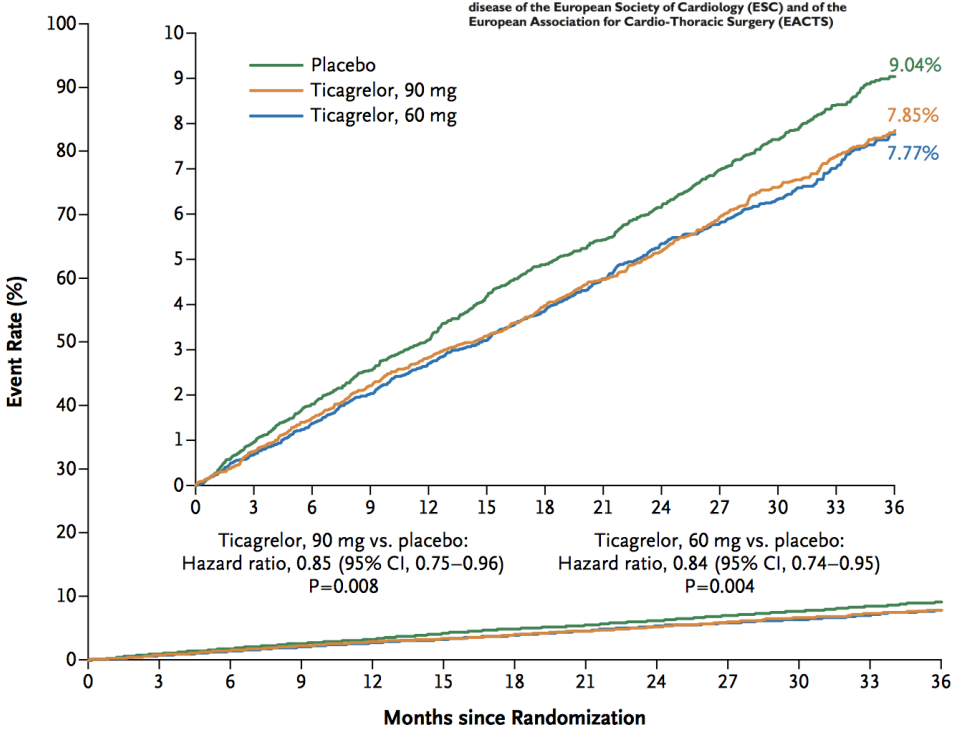

No. at Risk													
Placebo	7067	6979	6892	6823	6761	6681	6508	6236	5876	5157	4343	3360	2028
Ticagrelor, 90 mg	7050	6973	6899	6827	6769	6719	6550	6272	5921	5243	4401	3368	2038
Ticagrelor, 60 mg	7045	6969	6905	6842	6784	6733	6557	6270	5904	5222	4424	3392	2055

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[a]:
- 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.

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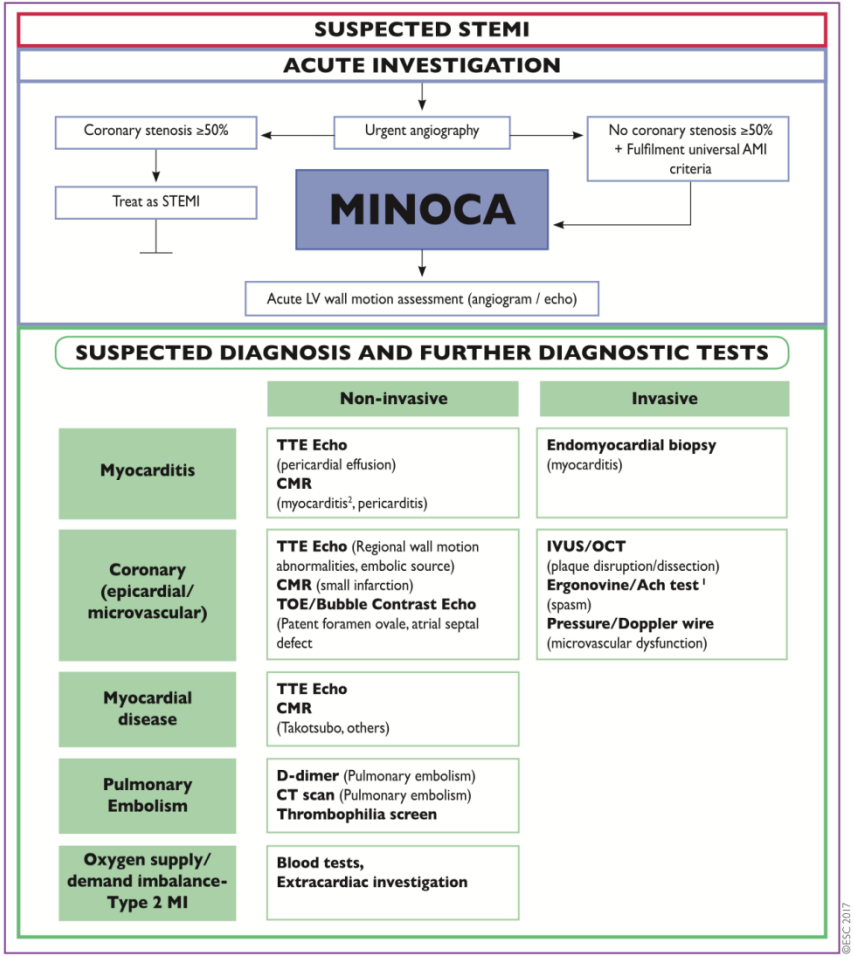
MINOCA

Infarctus à coronaires saines



Questions à l'audience

PRISE EN CHARGE PRE HOSPITALIERE

D'après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST:

A- Un bloc de branche droit de novo associé à une douleur thoracique ne peut faire évoquer un infarctus

B- Le traitement de la douleur par opioïdes est recommandé quasi systématiquement pour diminuer la douleur et améliorer la dyspnée

C- La mise sous oxygène est systématique pour améliorer la perfusion coronaire même en l'absence de désaturation

D- Le patient doit être dirigé vers une salle de cathétérisme coronaire si une reperfusion par angioplastie est réalisable dans les 120 minutes

Questions à l'audience

THROMBOLYSE OU ANGIOPLASTIE

D'après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST:

A- Le traitement par thrombolyse doit être réalisé dans les 10 minutes du diagnostic de l'infarctus, même en dehors d'un milieu hospitalier

B- Un traitement par thrombolyse doit être préféré dans la première heure de l'infarctus même si la reperfusion par angioplastie peut être réalisée dans les 120 minutes

C- Le traitement par thrombolyse doit être réalisé à demi-dose chez les patients de >75 ans

D- Après succès de thrombolyse, la coronarographie peut être réalisée dès la 2ème heure et jusqu'à 24 heures après.

Questions à l'audience

TRAITEMENTS ANTITHROMBOTIQUES

D'après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST:

A- L'héparine est l'anticoagulant de référence

B- La bivalirudine doit être utilisée lorsqu'elle est disponible et que le risque hémorragique est important

C- Le cangrelor est une alternative fiable lorsqu'il est disponible et que le patient n'a pas reçu de traitement antiP2Y12 au préalable

D- Les antiGpIIbIIIa peuvent être utilisés en pré-hospitalier pour diminuer la charge thrombotique lors des infarctus antérieurs étendus mal tolérés

Questions à l'audience

ACCES VASCULAIRE

D'après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST:

A- La voie radiale doit être préférée car elle diminue le risque hémorragique.

B- La voie fémorale doit être préférée car elle permet une meilleure rapidité et une technique plus simple pour gagner le plus de temps et donc sauver le plus de muscle viable.

C- Les voies radiales et fémorales sont équivalentes pourvues qu'elles soient bien réalisées.

D- La technique utilisée doit être celle utilisée dans la pratique quotidienne de l'opérateur.

Questions à l'audience

TECHNIQUE

D'après les recommandations ESC, en cas de syndrome coronaire avec sus-décalage du segment ST:

A- Après franchissement de l'occlusion, une thromboaspiration permet de diminuer la taille de l'infarctus par diminution des micro-embols et du phénomène de no-reflow

B- Lors de lésions pluritronculaires, une revascularisation de l'artère non coupable peut être envisagée même en dehors du choc cardiogénique

C- Un stent nu doit être privilégié chez les patients à risque hémorragique important

D- Les antiGpIIbIIIa peuvent être utilisés en pré-hospitalier pour diminuer la charge thrombotique lors des infarctus antérieurs étendus mal tolérés