Best of 2020 en Urgences Cardiaques

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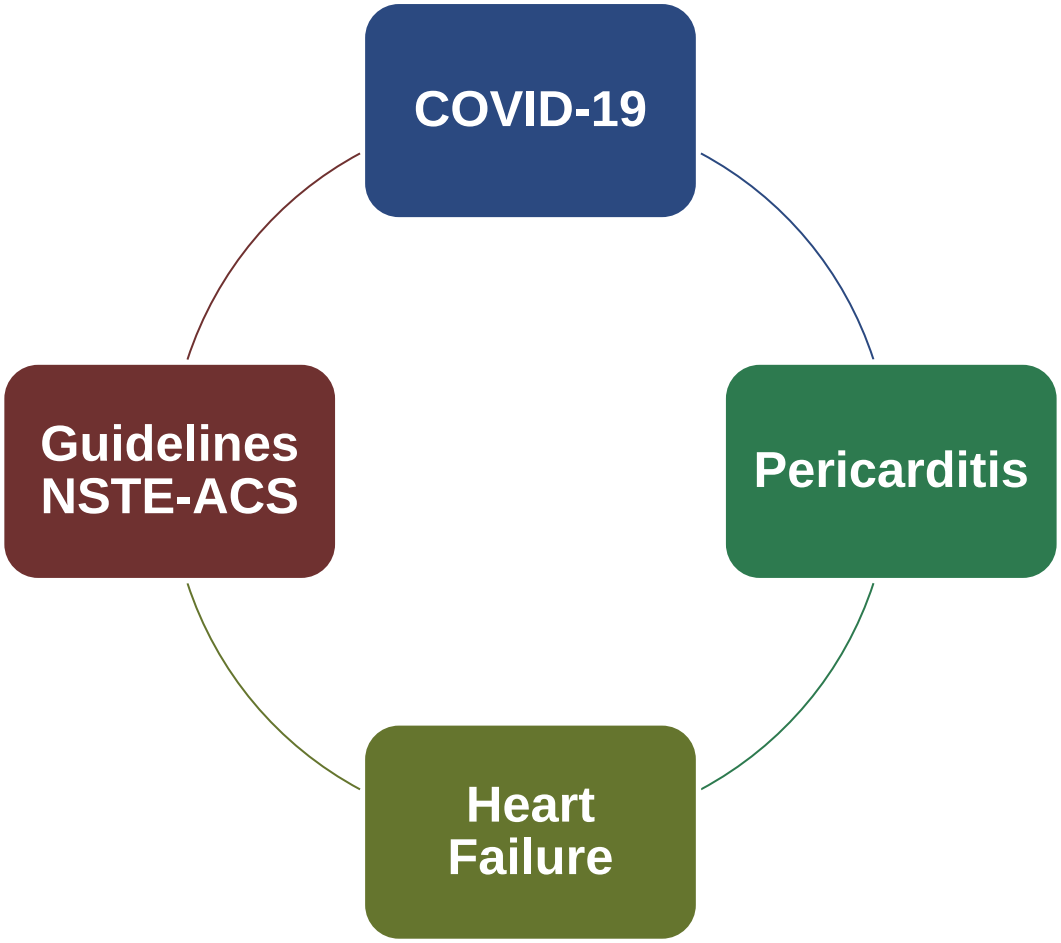
Conflicts of interest

Fees for lectures and/or consulting: Amgen, Astra-Zeneca, BMS, Bayer, Biotronick, Boehringer Ingelheim, Daiichi-Sankyo, Lilly, MSD, Novartis, Pfizer, The Medicine Company, Sanofi, Saint Jude Medical, Servier

Best of 2020 en Urgences Cardiaques



COVID-19 and intensive cardiac care

Interactions COVID-19 & CV system

SARS-CoV-2

Interactions avec le système cardiovasculaire

DIRECTE

- **Réponse à l'inflammation systémique**
- **Décharge de cytokines**
- **Liaison du virus aux récepteurs de l'ACE2**

✓ **Hypotension**
✓ **Tachycardie**
✓ **Bradycardie**
✓ **Arythmies**
✓ **Mort subite**
✓ **…**

INDIRECTE

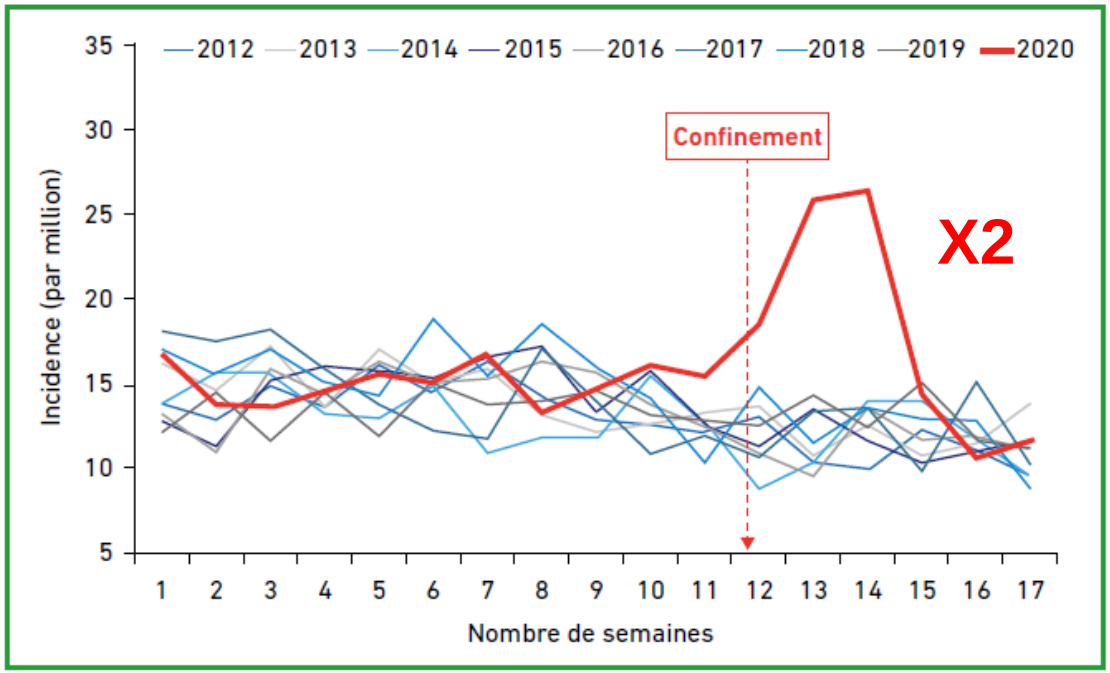
- **Inflammation systémique**
- **Activité pro coagulante**

✓ **Décompensations cardiaques**
✓ **Infarctus du myocarde**
✓ **Myocardites**
✓ **Maladies thromboemboliques**

D'après Xiong TY et al. EHJ 2020

Extra-hospital cardiac arrest (EHCA)

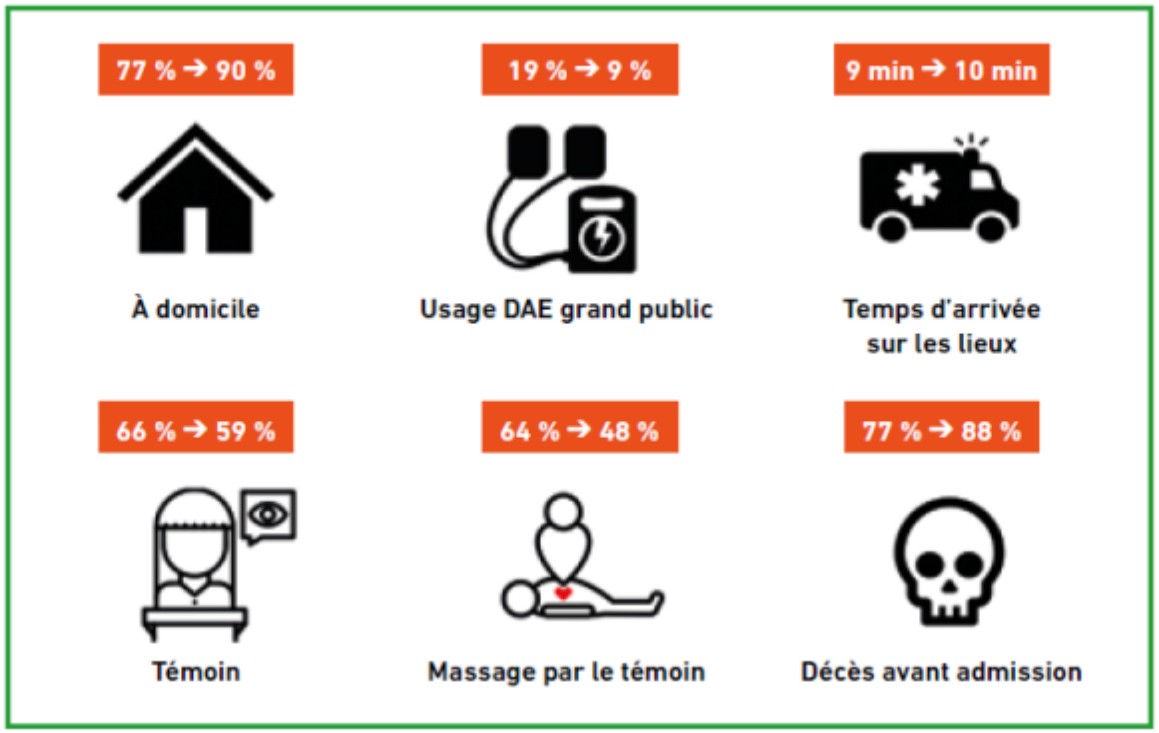
Incidence of EHCA (Paris, Hauts-de-Seine, Seine-Saint-Denis, Val de Marne)



Marijon E et al. Lancet Public Health 2020

Extra-hospital cardiac arrest (EHCA)

Variation in the conditions of EHCA occurrence (2020 vs. Previous years)



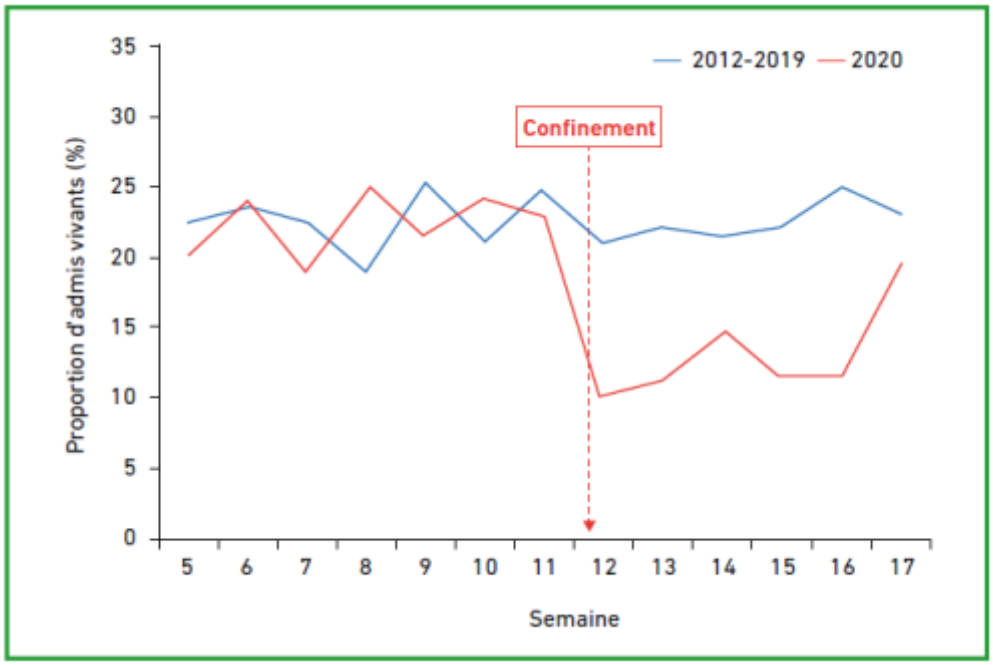
- 1 patient / 2 non réanimé (vs. 1/3)
- 12% des patients transportés vivant (vs. 23%)

- Adaptation des prises en charge (risque de contagion)

Marijon E et al. Lancet Public Health 2020

Extra-hospital cardiac arrest (EHCA)

Proportion of patients admitted alive at hospital (2020 vs. Previous years)

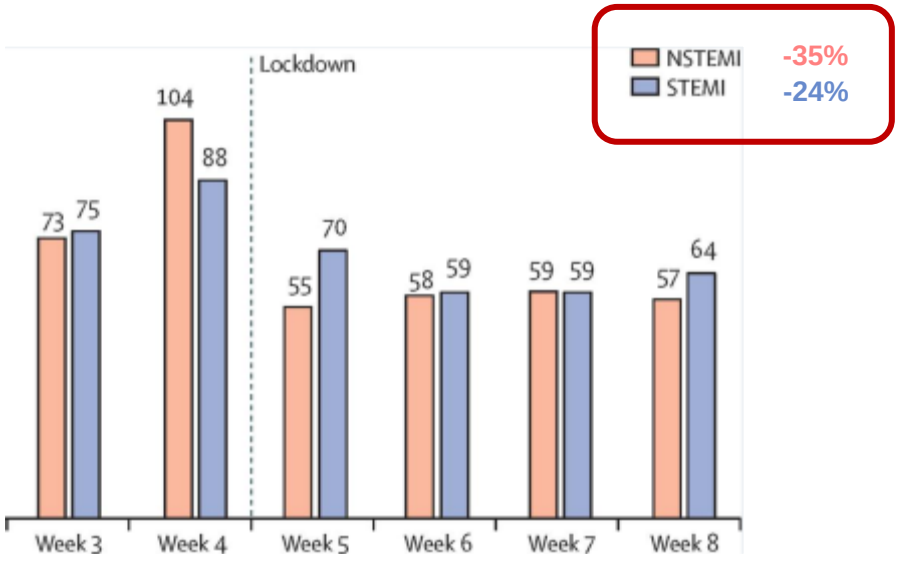


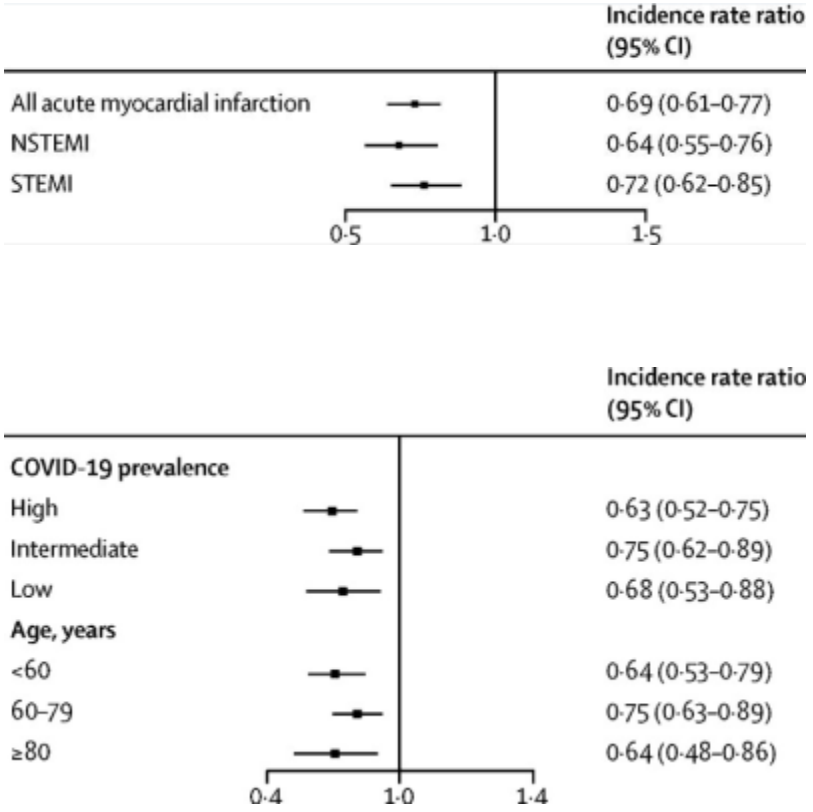
- **Effets directs du COVID-19**
- **Effets indirects du COVID-19** (via le confinement : Δ comportement, Δ des offres de soins …)

Marijon E et al. Lancet Public Health 2020

Covid-19 & Acute Coronary Syndrom

Hospital admissions for acute myocardial infarction before and after lockdown according to regional prevalence of COVID-19 and patient profile in France





A marked decrease in hospital admissions was observed following the lockdown, irrespective of patient characteristics and regional prevalence of COVID-19

Mesnier J et al. Lancet Public Heath 2020

COVID-19 & Myocarditis

Groupe USIC

Coordinateur : C. Delmas

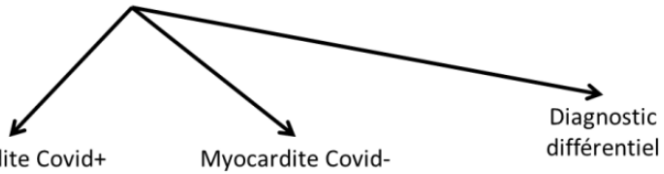
Registre hospitalier de myocardites aigues :

Évolution de la proportion de cas SARS-Cov-2 positifs pendant la pandémie de Covid19, caractéristiques et pronostic des cas

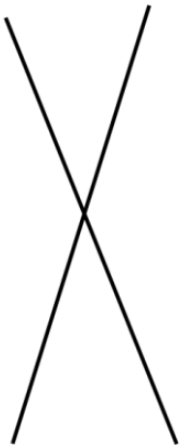
MYOCOVID

Patient suspect de myocardite: DT + troponine élevée (>N) + contexte évocateur +/- syndrome inflammatoire clinique ou biologique

Bilan complet détaillé plus haut
=> Inclusion dans l'étude MYCOVID



Données hospitalières	Identiques	
Suivi J30	Clinique: statut vital	
Suivi à 1 an	Clinique: Statut vital, réhospitalisations, récidive myocardite, NYHA Biologique: NtproBNP, CRP, tropo ECG et ETT (+/-IRM)	



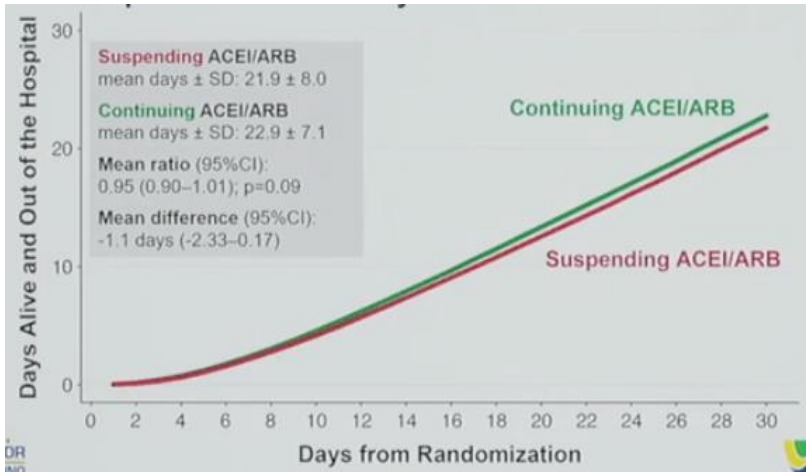
BRACE CORONA

Continuing vs. Suspending ACE Inhibitors and ARBs in COVID-19

659 patients C0VID-19 + (mean age 56 ans)
HTA : 100%
Diabetes : 32%
BMI : 31 kg/m²

ACE-I/ARB : continuing vs. suspending

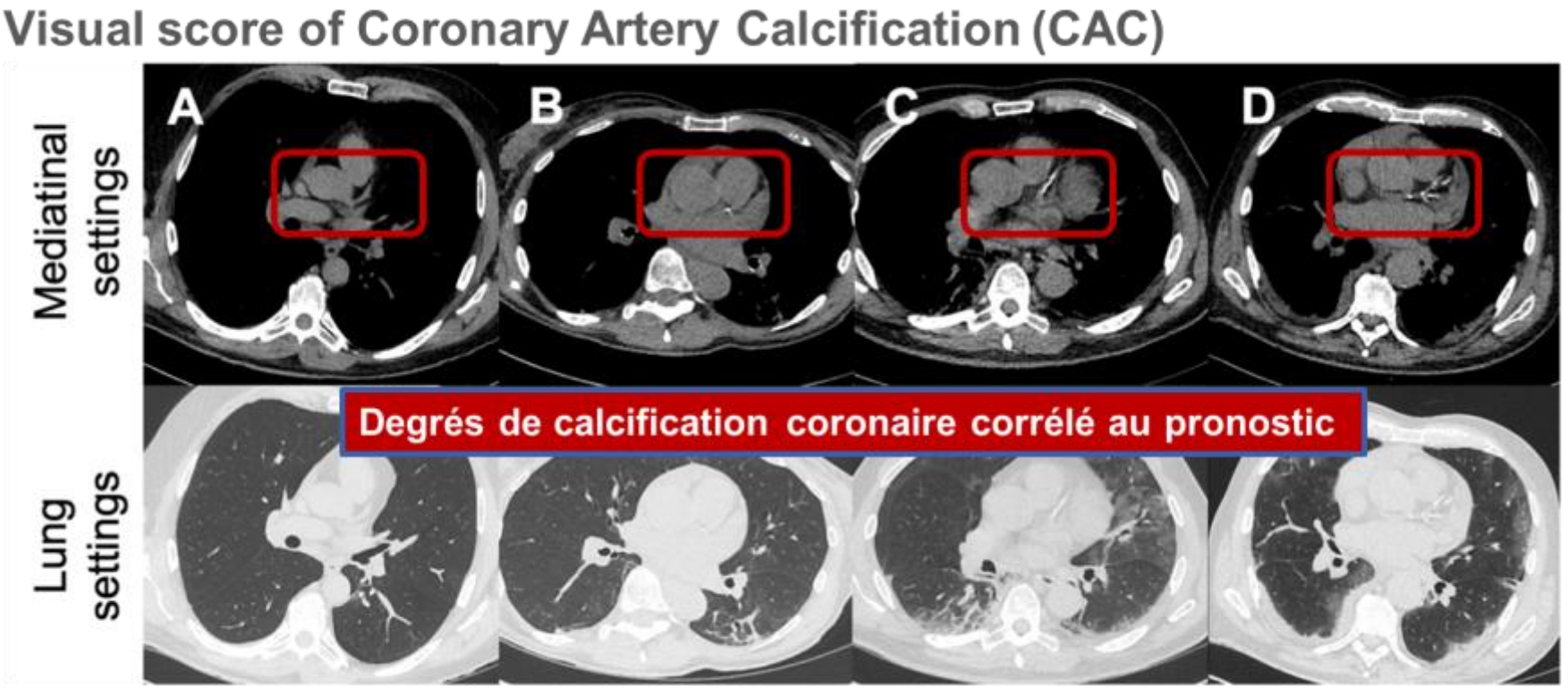
Follow up (days)



In patients hospitalized for COVID-19, no impact was observed at 30-days (survival) between continuing vs. suspending ACE Inhibitors and ARBs

Hotlines ESC 2020

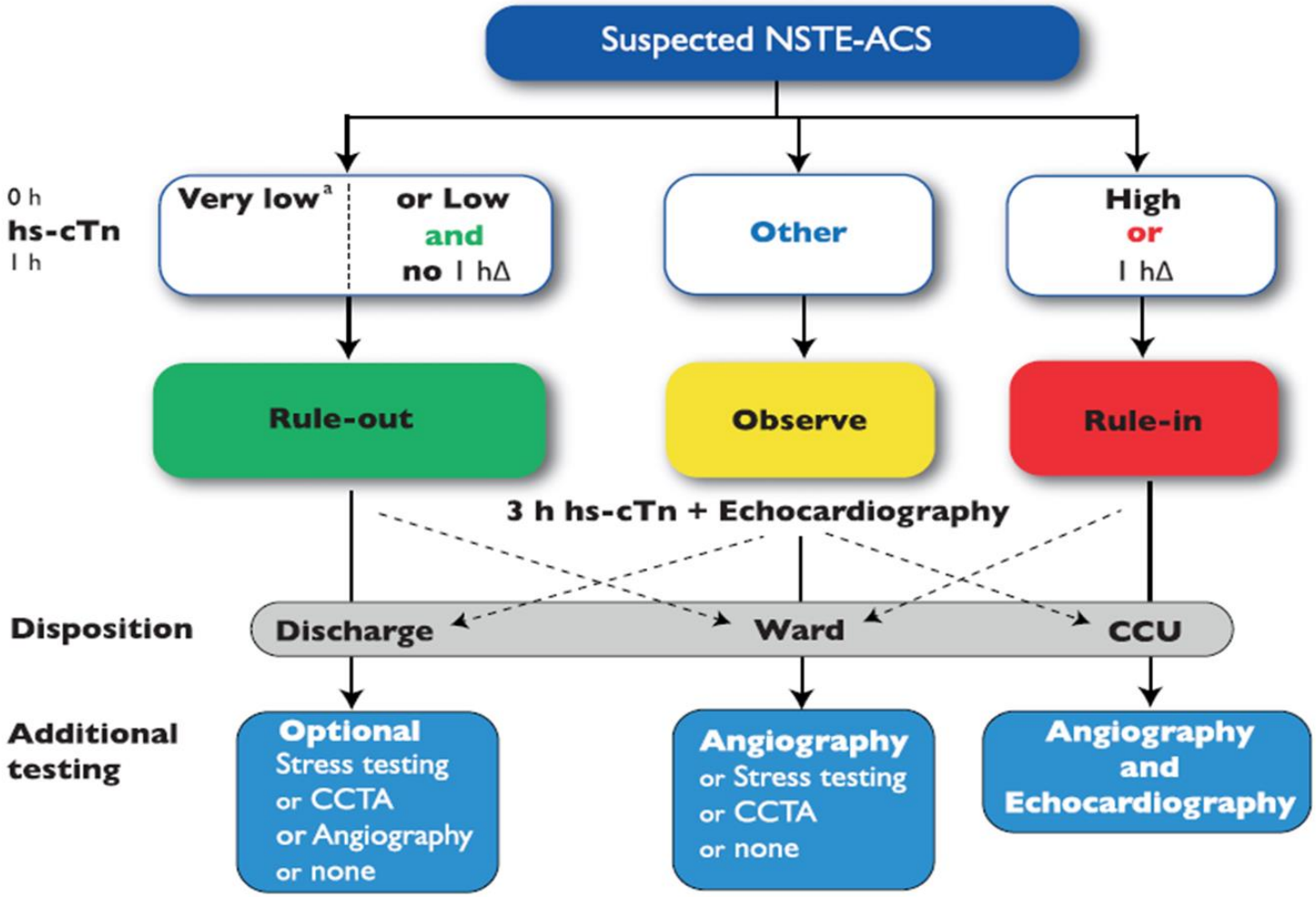
Coronary artery calcification in COVID-19 patients



Mousseaux E et al, submitted

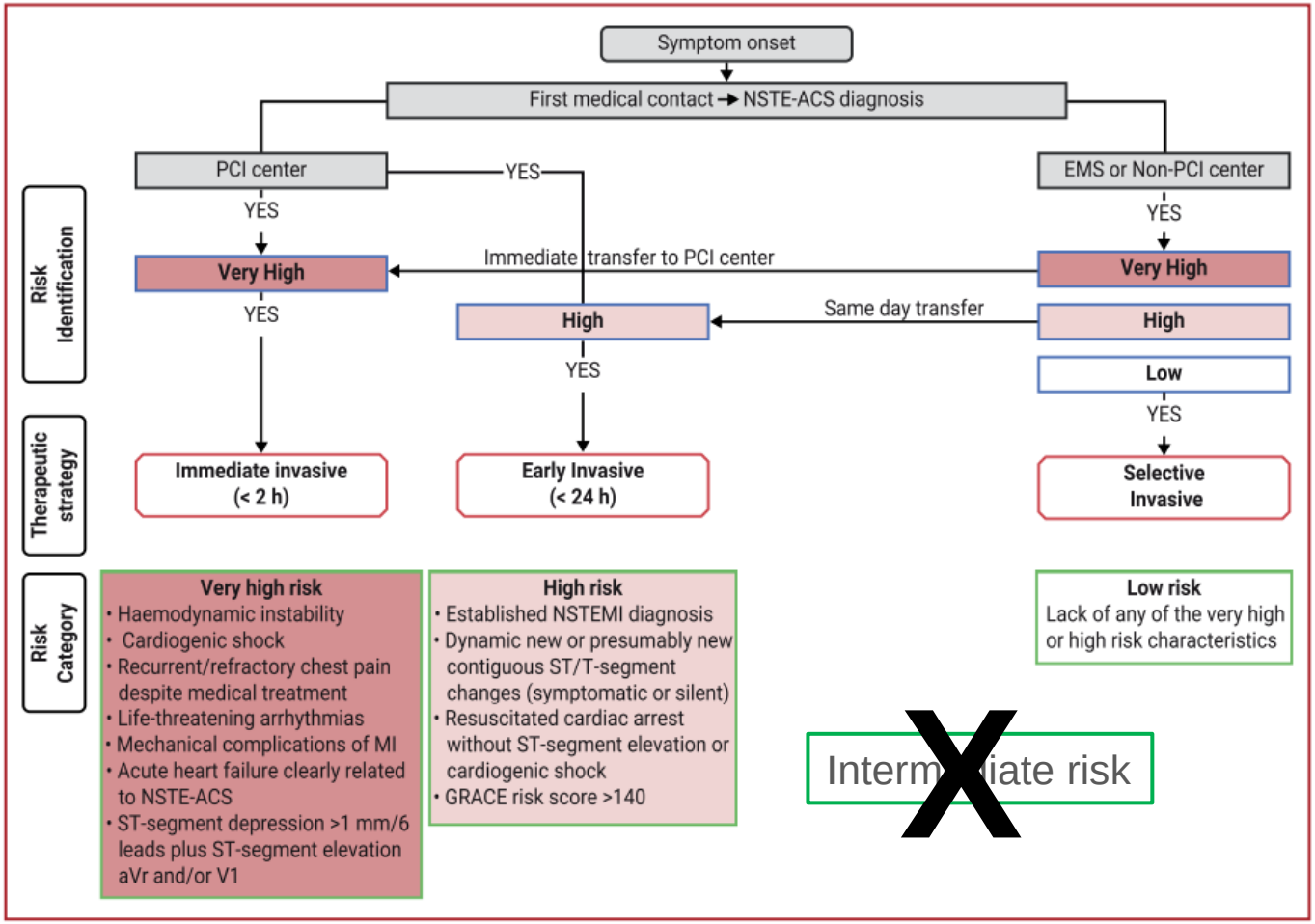
Acute Coronary Syndrom (ACS)

Diagnostic algorithm



2020 ESC Guidelines for NSTE-ACS. EHJ 2020

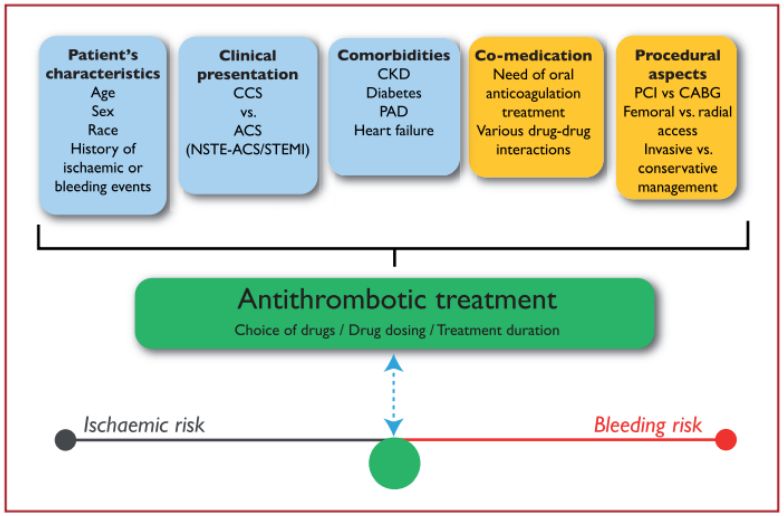
Place of the invasive strategy



« STEMI like »

2020 ESC Guidelines for NSTE-ACS. EHJ 2020

Risk assessment : ischaemic and bleeding



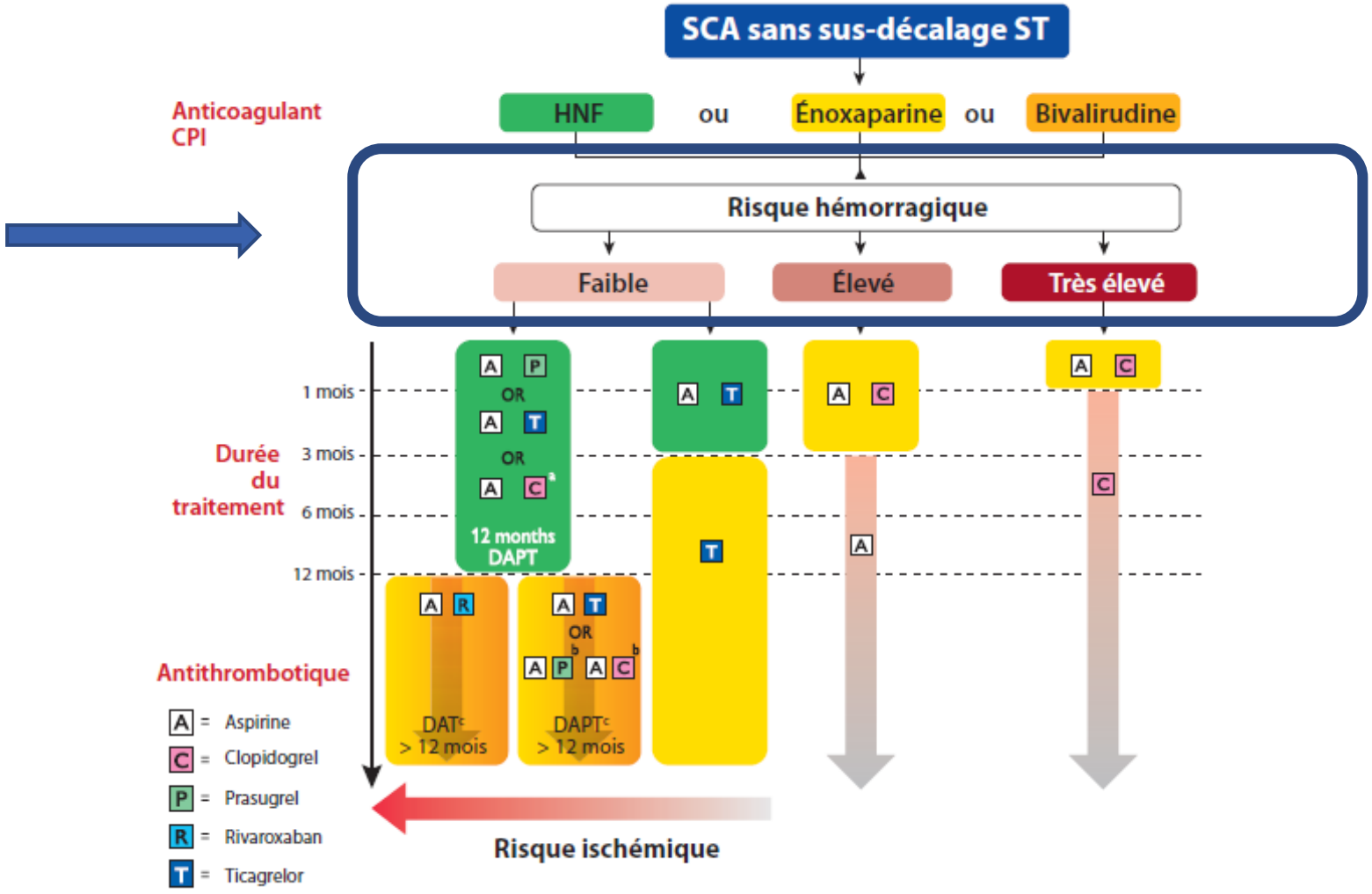
Major	Minor
• Anticipated use of long-term OAC[a]	• Age ≥ 75 years
• Severe or end-stage CKD (eGFR <30 mL/min)	• Moderate CKD (eGFR 30–59 mL/min)
• Haemoglobin <11 g/dL	• Haemoglobin 11–12.9 g/dL for men or 11–11.9 g/dL for women
• Spontaneous bleeding requiring hospitalization and/or transfusion in the past 6 months or at any time, if recurrent	• Spontaneous bleeding requiring hospitalization and/or transfusion within the past 12 months not meeting the major criterion
• Moderate or severe baseline thrombocytopenia[b] (platelet count <100 × 10^9/L)	• Chronic use of oral non-steroidal anti-inflammatory drugs or steroids
• Chronic bleeding diathesis	• Any ischaemic stroke at any time not meeting the major criterion
• Liver cirrhosis with portal hypertension	
• Active malignancy[c] (excluding non-melanoma skin cancer) within the past 12 months	
• Previous spontaneous intracranial haemorrhage (at any time) • Previous traumatic intracranial haemorrhage within the past 12 months • Presence of a brain arteriovenous malformation • Moderate or severe ischaemic stroke[d] within the past 6 months	
• Recent major surgery or major trauma within 30 days prior to PCI • Non-deferrable major surgery on DAPT	

CKD = chronic kidney disease; DAPT = dual antiplatelet therapy; eGFR = estimated glomerular filtration rate; OAC = oral anticoagulation/anticoagulant; PCI = percutaneous coronary intervention.
[a]This excludes vascular protection doses.[162]
[b]Baseline thrombocytopenia is defined as thrombocytopenia before PCI.
[c]Active malignancy is defined as diagnosis within 12 months and/or ongoing requirement for treatment (including surgery, chemotherapy, or radiotherapy).
[d]National Institutes of Health Stroke Scale score >5.

Bleeding risk is high :
if at least one major or two minor criteria

2020 ESC Guidelines for NSTE-ACS. EHJ 2020

Algorithm for antithrombotic therapy



2020 ESC Guidelines for NSTE-ACS. EHJ 2020

Algorithm for antithrombotic therapy

Risk criteria for extended treatment with a second antithrombotic agent

High thrombotic risk (Class IIa)	Moderate thrombotic risk (Class IIb)
Complex CAD and at least 1 criterion	**Non-complex CAD and at least 1 criterion**
Risk enhancers	
Diabetes mellitus requiring medication	Diabetes mellitus requiring medication
History of recurrent MI	History of recurrent MI
Any multivessel CAD	Polyvascular disease (CAD plus PAD)
Polyvascular disease (CAD plus PAD)	CKD with eGFR 15–59 mL/min/1.73 m^2
Premature (<45 years) or accelerated (new lesion within a 2-year time frame) CAD	
Concomitant systemic inflammatory disease (e.g. human immunodeficiency virus, systemic lupus erythematosus, chronic arthritis)	
CKD with eGFR 15–59 mL/min/1.73 m^2	
Technical aspects	
At least 3 stents implanted	
At least 3 lesions treated	
Total stent length >60 mm	
History of complex revascularization (left main, bifurcation stenting with ≥2 stents implanted, chronic total occlusion, stenting of last patent vessel)	
History of stent thrombosis on antiplatelet treatment	

In line with guideline recommendations, CAD patients are stratified into two different risk groups (high vs. moderately increased thrombotic or ischaemic risk). Stratification of patients towards complex vs. non-complex CAD is based on individual clinical judgement with knowledge of patients' cardiovascular history and/or coronary anatomy. Selection and composition of risk-enhancing factors are based on the combined evidence of clinical trials on extended antithrombotic treatment in CAD patients[162,212,214] and on data from related registries.[228–230]

CAD = coronary artery disease; CKD = chronic kidney disease; eGFR = estimated glomerular filtration rate; MI = myocardial infarction; PAD = peripheral artery disease.

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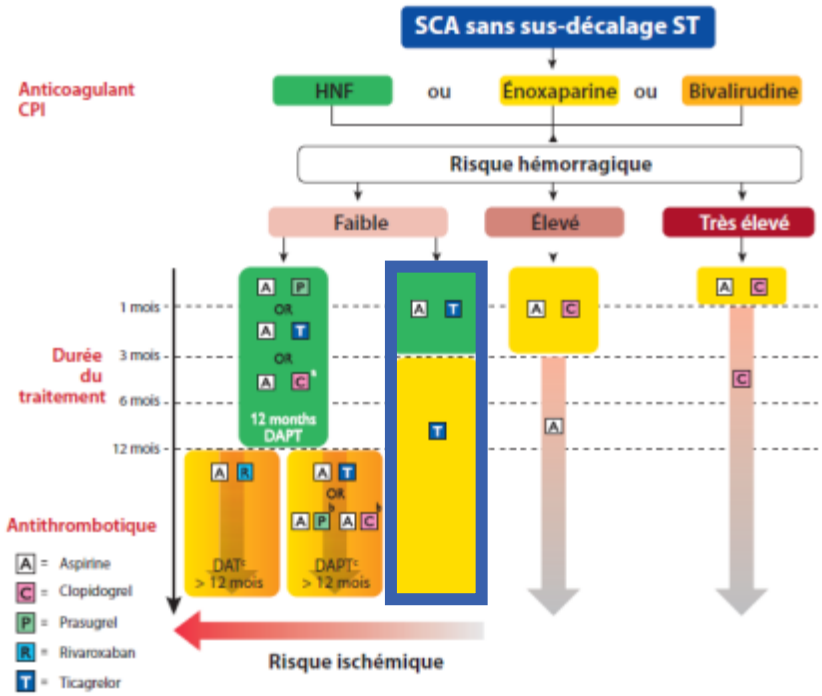
Prise en charge thérapeutique

Stratégie « TWILIGHT » :
≥ 1 critère(s) clinique(s) + ≥ 1 critère(s) angiographique(s)



Critère clinique	Critère angiographique
Age ≥ 65 ans	Pluri tronculaire coronaire
Sexe féminin	Longueur total de stent >30mm (lésion coupable)
SCA avec troponine +	Lésion coupable thrombotique
Athérome documenté (ATCD IdM, AOMI ou revascularisation coronaire/périphérique)	Lésion de bifurcation : Medina X,1,1 ou ≥ 2 stents
Diabète sucré traité	Lésion du tronc commun (≥50%) ou IVA prox (≥70%)
Insuffisance rénale (eGFR <60ml/min/1.73m2)	Lésion calcifiées nécessitant une athérectomie

2020 ESC Guidelines for NSTE-ACS. EHJ 2020

REALITY

A Randomized Trial of Transfusion Strategies in patients with Myocardial Infarction and Anemia 30-day results

Primary Clinical Outcome*: the restrictive strategy is non-inferior to the liberal strategy in both Per Protocol and ITT populations

PP

PP	Restrictive strategy n=327 n (%)	Liberal strategy n=321 n (%)	Difference [95%CI]	Relative Risk (Restrictive vs. Liberal)	One sided 97.5%CI
MACE	36 **11.0%**	45 **14.0%**	-3.0% [-8.4% ; 2.4%]	0.79	]-inf ; **1.18**]

NI margin: 1.25

ITT

ITT	Restrictive strategy n=342 n (%)	Liberal strategy n=324 n (%)	Difference [95%CI]	Relative Risk (Restrictive vs. Liberal)	One sided 97.5%CI
MACE	38 **11.1%**	46 **14.2%**	-3.1% [-8.4% ; 2.3%]	0.78	]-inf ; **1.17**]

NI margin: 1.25

*MACE: all-cause death, reinfarction, stroke, and emergency revascularization prompted by ischemia

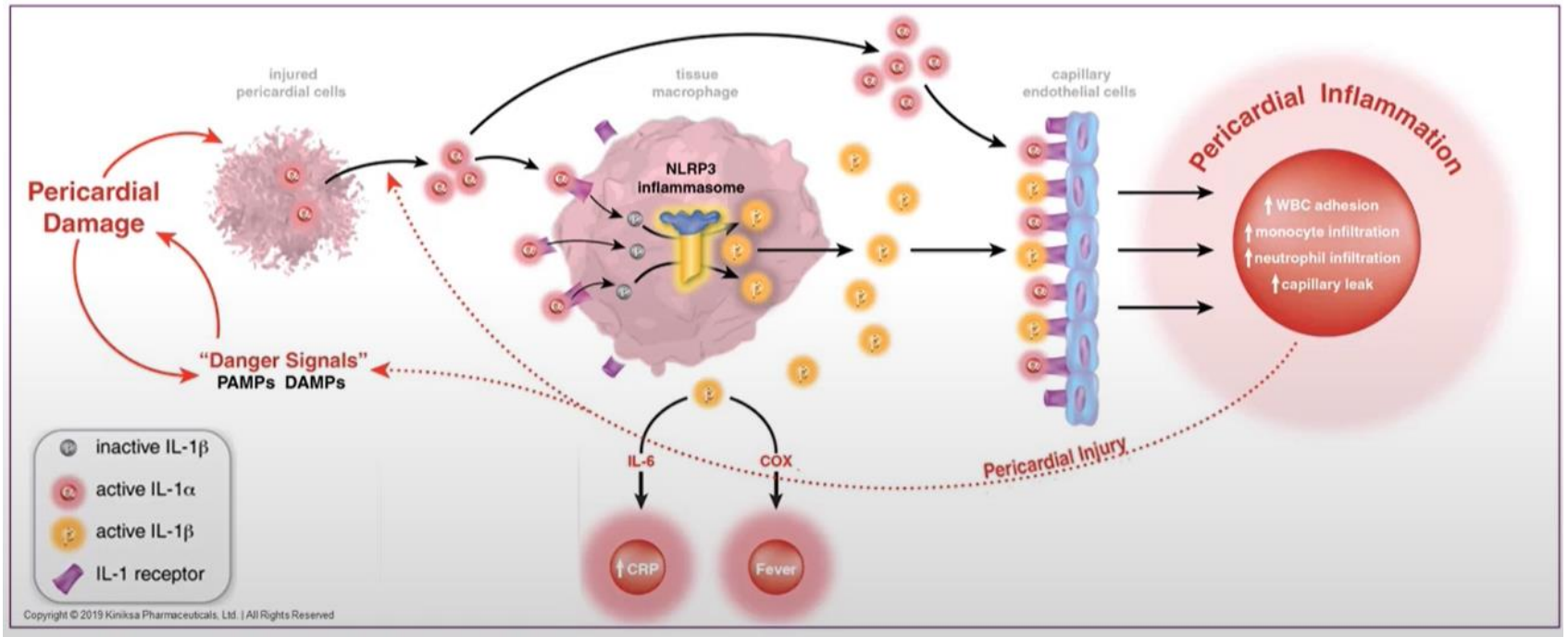
Steg G et al. ESC 2020

Recurrent Pericarditis

RHAPSODY

Phase 3 Trial of Interleukin-1 Trap Rilonacept in Recurrent Pericarditis

- ✓ Interleukin-1 (IL-1) has been implicated as a mediator of recurrent pericarditis
- ✓ The efficacy and safety of rilonacept, an IL-1α and IL-1β cytokine trap, were studied previously in a phase 2 trial involving patients with recurrent pericarditis



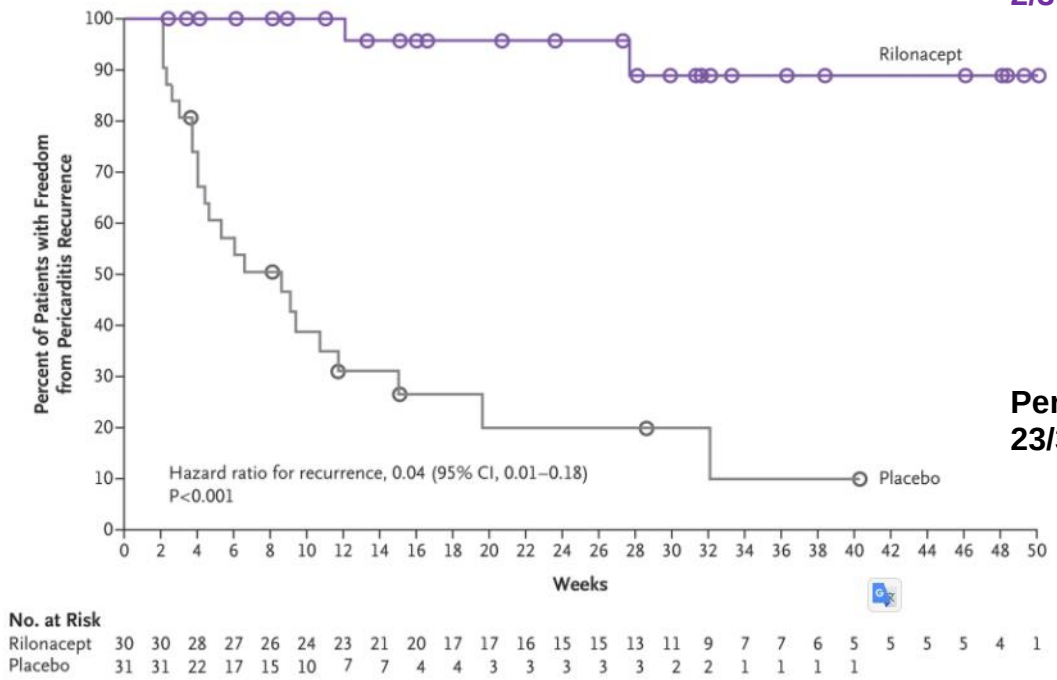
Klein AL et al. NEJM 2020

RHAPSODY

Phase 3 Trial of Interleukin-1 Trap Rilonacept in Recurrent Pericarditis

86 patients with pericarditis pain and an elevated CRP level were enrolled

Pericarditis recurrence 2/30 patients (7%)



Pericarditis recurrence 23/31 patients (74%)

Among patients with recurrent pericarditis, rilonacept led to rapid resolution of recurrent pericarditis episodes and to a significantly lower risk of pericarditis recurrence than placebo

Klein AL et al. NEJM 2020

Acute heart failure

2020

DAPA-HF/CKD
Dapagliflozin

VICTORIA
Vericiguat

EMPEROR REDUCED
Empagliflozin

ACUTE HEART FAILURE

AFFIRM-AHF
Ferric carboxymaltose

SOLOIST
Sotagliflozin

GALACTIC-HF
Omecamtiv mecarbil

VICTORIA

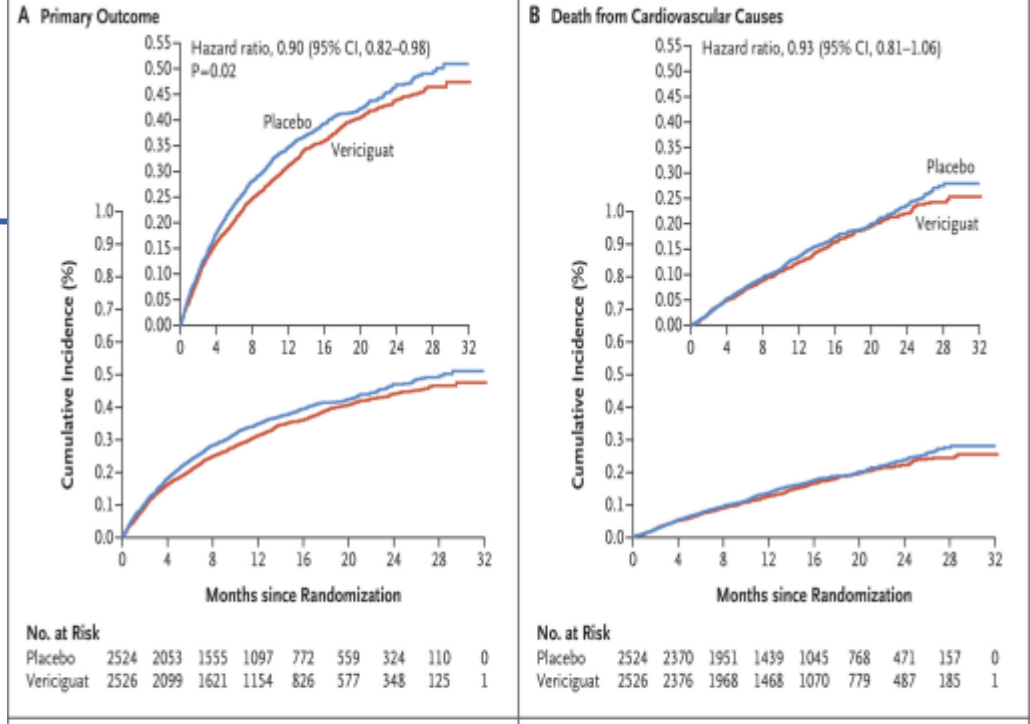
Vericiguat* in Patients with Heart Failure and Reduced Ejection Fraction

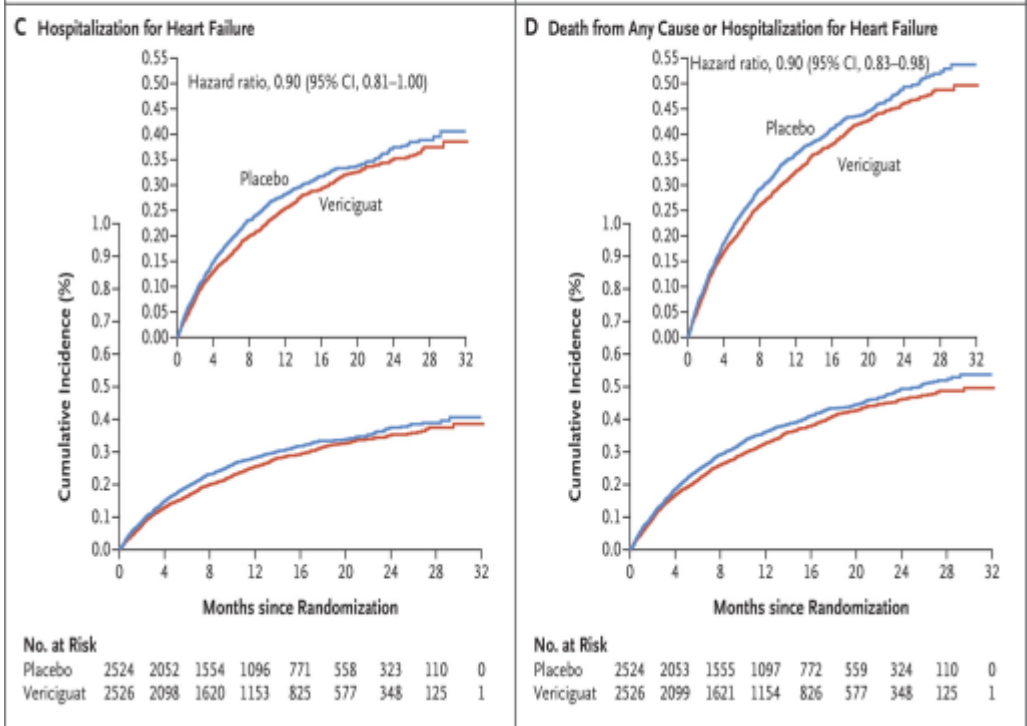
VERICIGUAT vs. PLACEBO

- 5,050 patients (âge moyen 67 ans, 24% de femme)
- NYHA II-IV
- FEVG ≤ 45%
- BNP ≥ 300 pg/ml

** Stimule la guanylate cyclase soit directement, soit par augmentation de la sensibilité au monoxyde d'azote (NO). Cela entraîne une vasodilatation avec une baisse de la pression systolique de l'artère pulmonaire et une amélioration de la fonction du cœur droit.*

Armstrong PW. NEJM 2020





2020

DAPA-HF/CKD
Dapagliflozin

EMPEROR REDUCED
Empagliflozin

SOLOIST
Sotagliflozin

VICTORIA
Vericiguat

ACUTE HEART FAILURE

AFFIRM-AHF
Ferric carboxymaltose

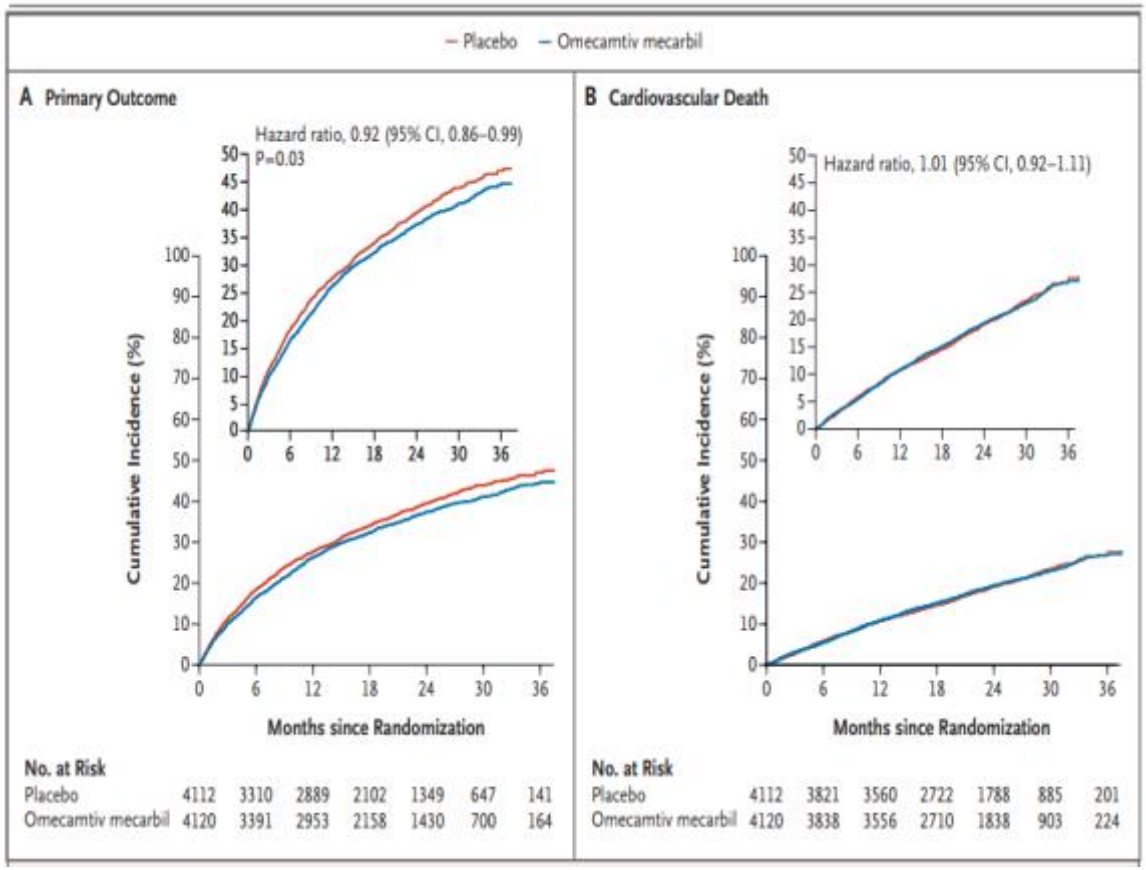
GALACTIC-HF
Omecamtiv mecarbil

GALACTIC-HF

Cardiac Myosin Activation with Omecamtiv Mecarbil in Systolic Heart Failure

Omecamtiv mecarbil vs. PLACEBO

- 8,256 patients avec FEVG ≤ 35%
- RRR de 8% sur le critère de de jugement principal (décompensation cardiaque ou décès CV)
- Pas de diminution de la mortalité CV



Teerlink JR. NEJM 2020

2020

DAPA-HF/CKD
Dapagliflozin

EMPEROR REDUCED
Empagliflozin

SOLOIST
Sotagliflozin

ACUTE HEART FAILURE

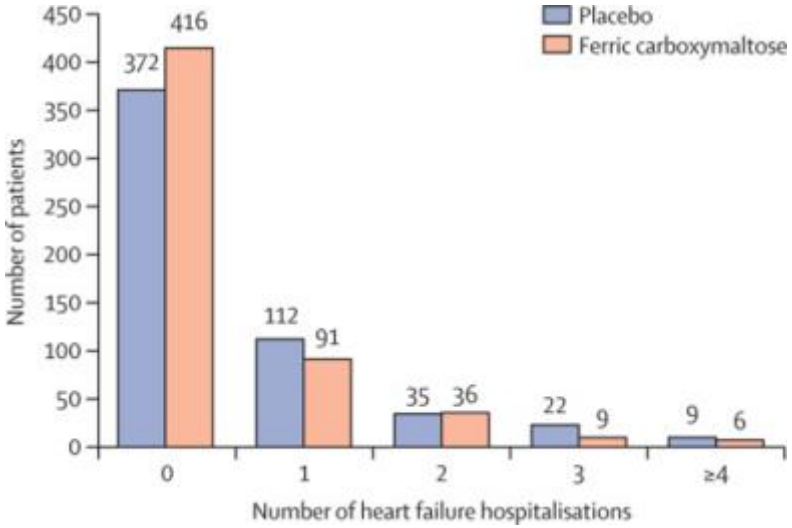
VICTORIA
Vericiguat

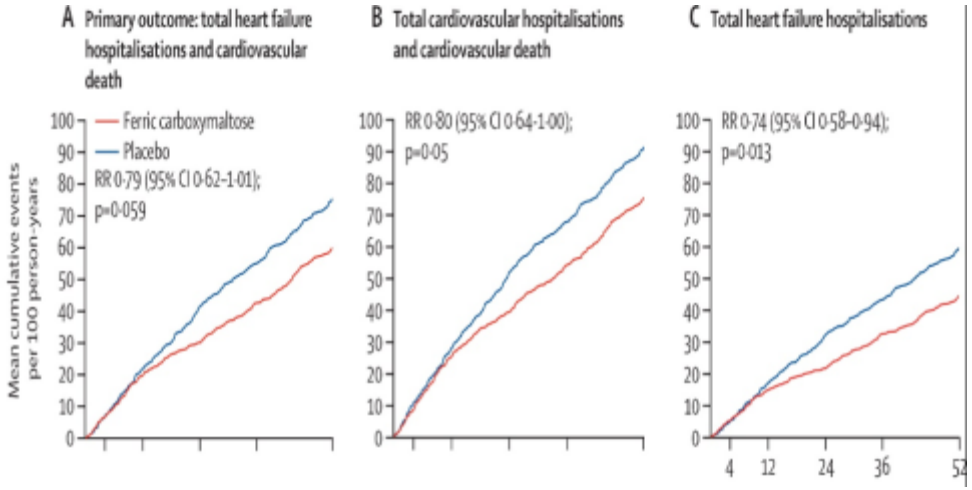
AFFIRM-AHF
Ferric carboxymaltose

GALACTIC-HF
Omecamtiv mecarbil

AFFIRM-AHF

A Randomised, Double-Blind Placebo Controlled Trial Comparing the Effect of Intravenous Ferric Carboxymaltose on Hospitalisations and Mortality in Iron Deficient Patients Admitted for AHF





Among patients with acute heart failure with iron deficiency, intravenous ferric carboxymaltose was associated with a numerical reduction in total heart failure hospitalizations and cardiovascular death (52.5% vs. 67.6%; P=0,059)

Ponikowski P et al. Lancet 2020

Merci de votre attention