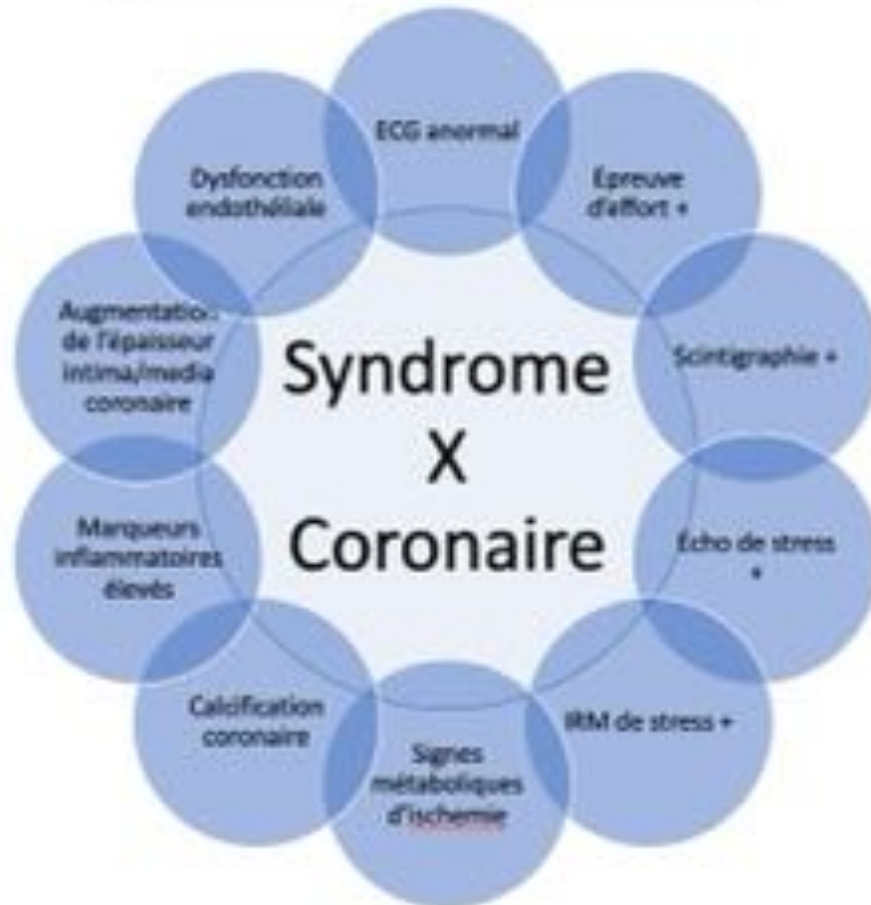# La microcirculation en 2022

Julien Adjedj
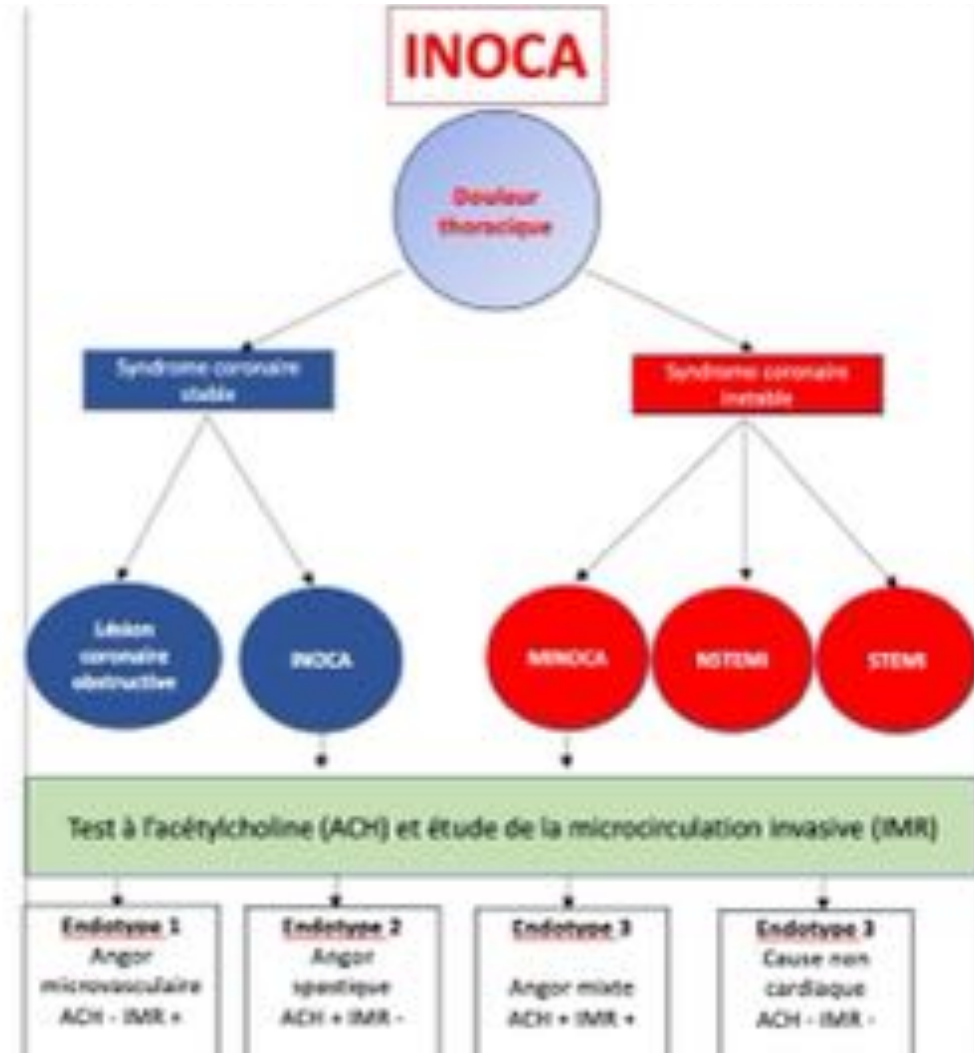
01/06/2022

Introduction: du syndrome X à l'INOCA
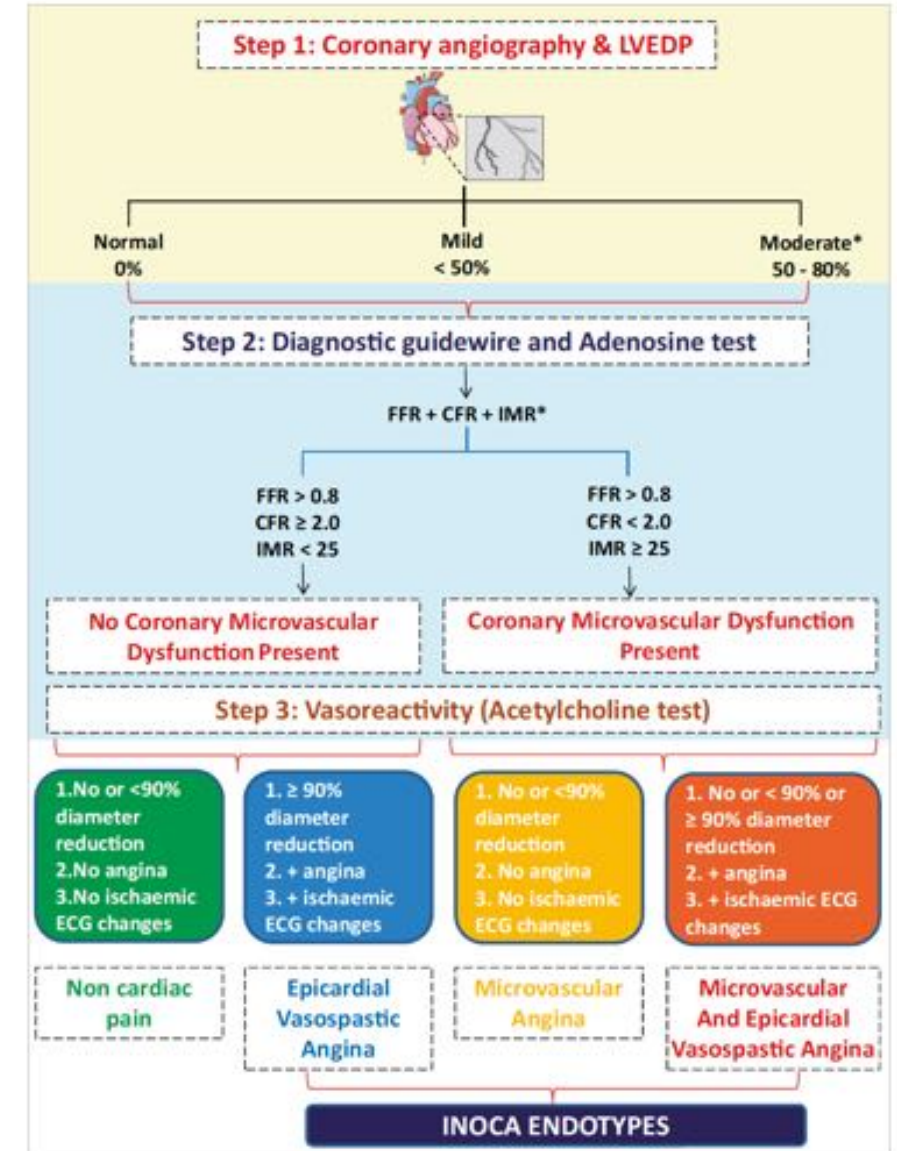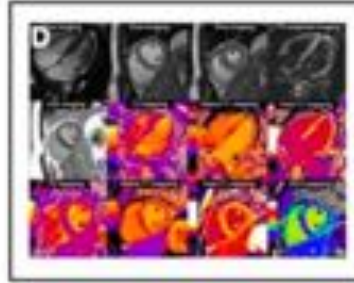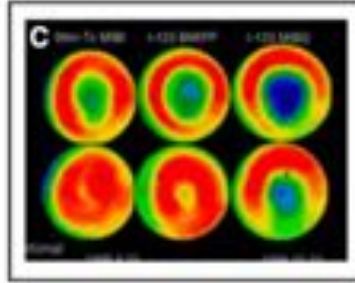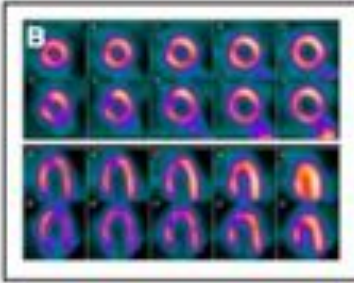
Diagnostic et traitement

Kunadian et al. European Heart Journal (2020) 41, 3504–3520
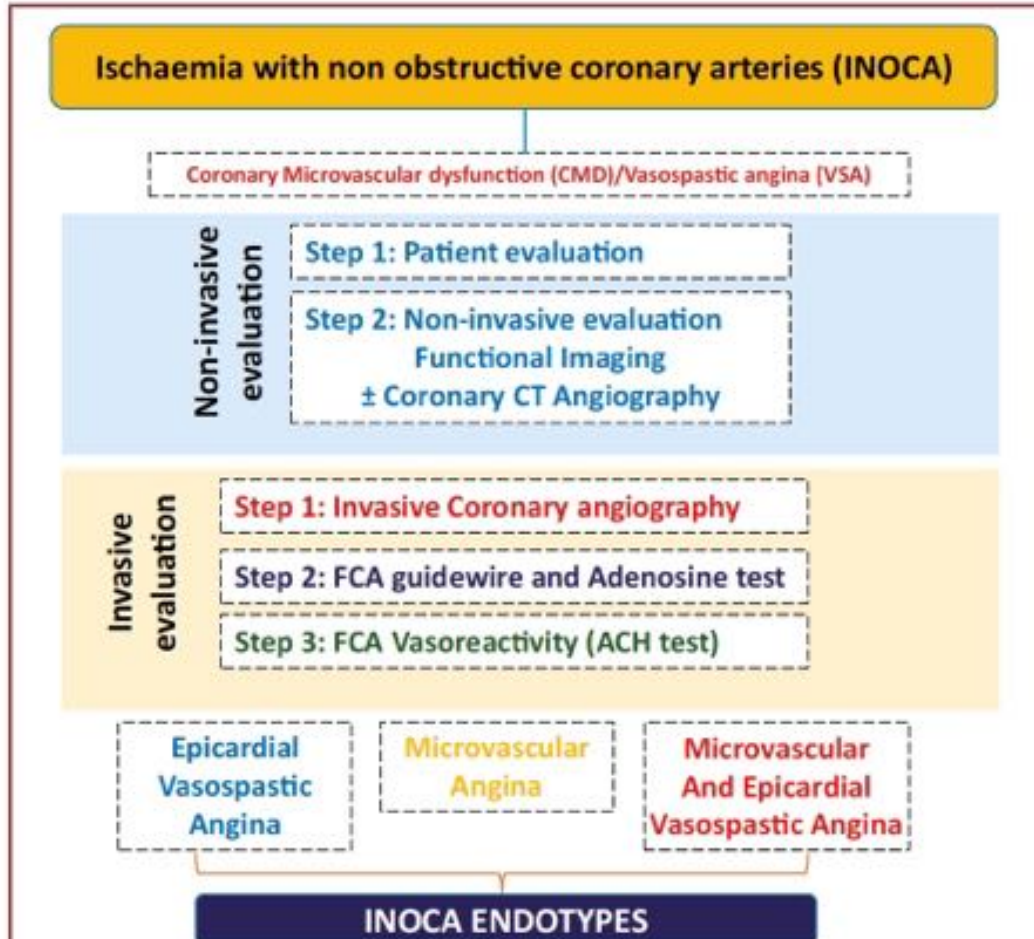
Prévalence
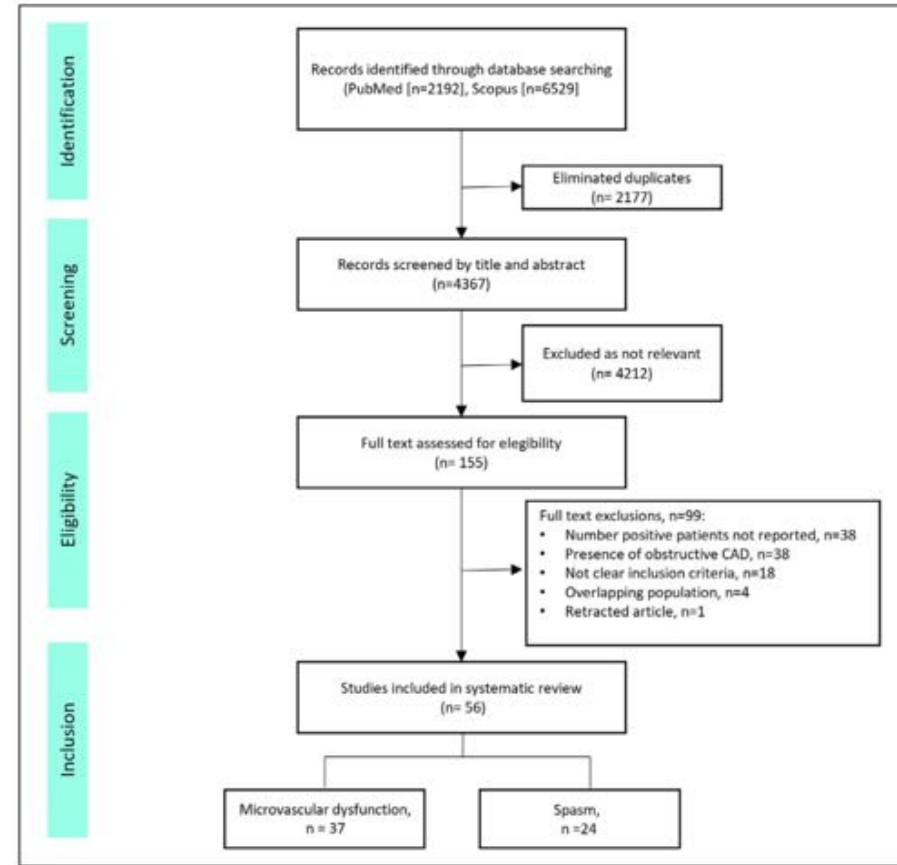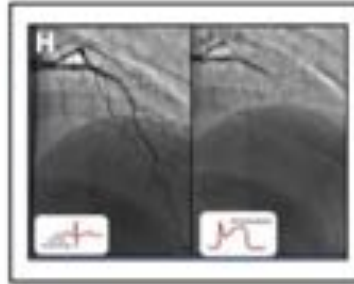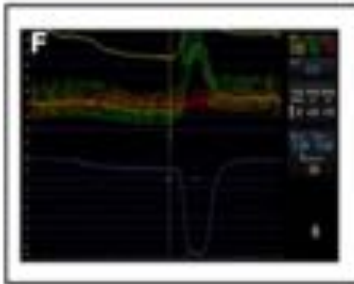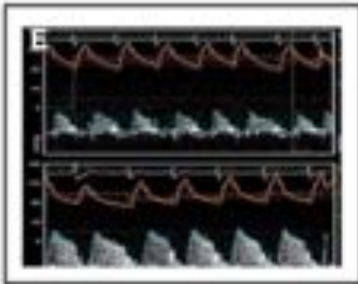
CLINICAL PERSPECTIVE

What Is New?

- In patients with no obstructive coronary artery disease, approximately half of cases present with underlying disease, either coronary microvascular disease or coronary vasospasm.
- Coronary microvascular disease is more prevalent in female patients; nonetheless, male patients are affected in a significant proportion.
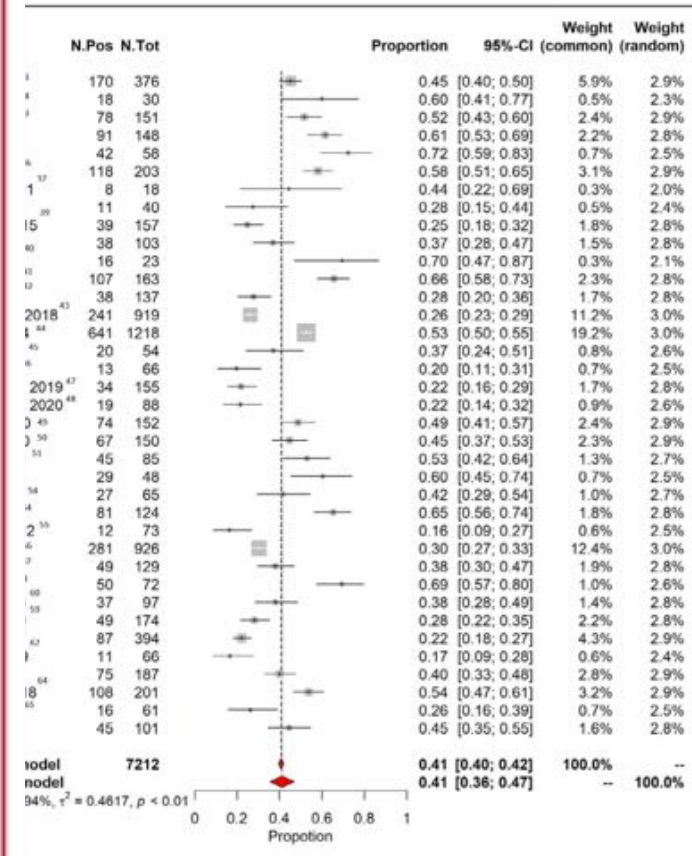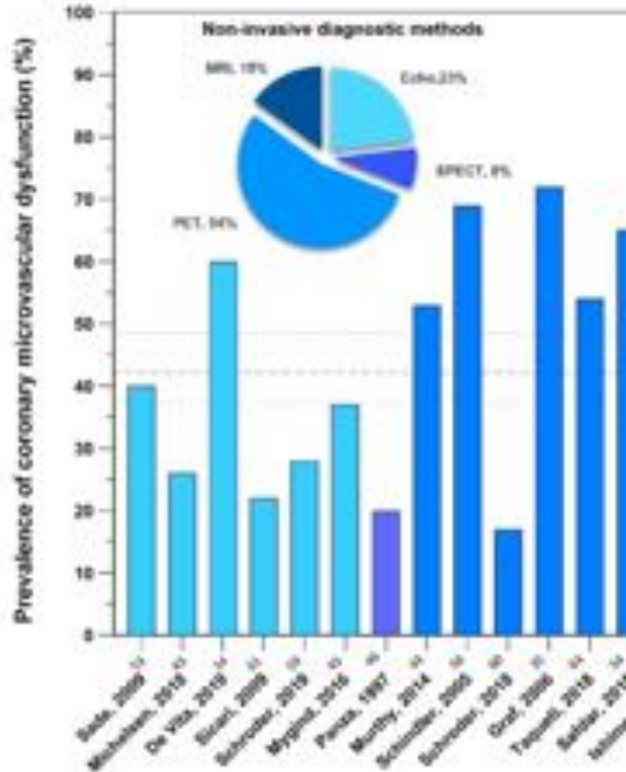- Invasive and noninvasive diagnostic methods identified a similar proportion of patients with coronary microvascular disease.
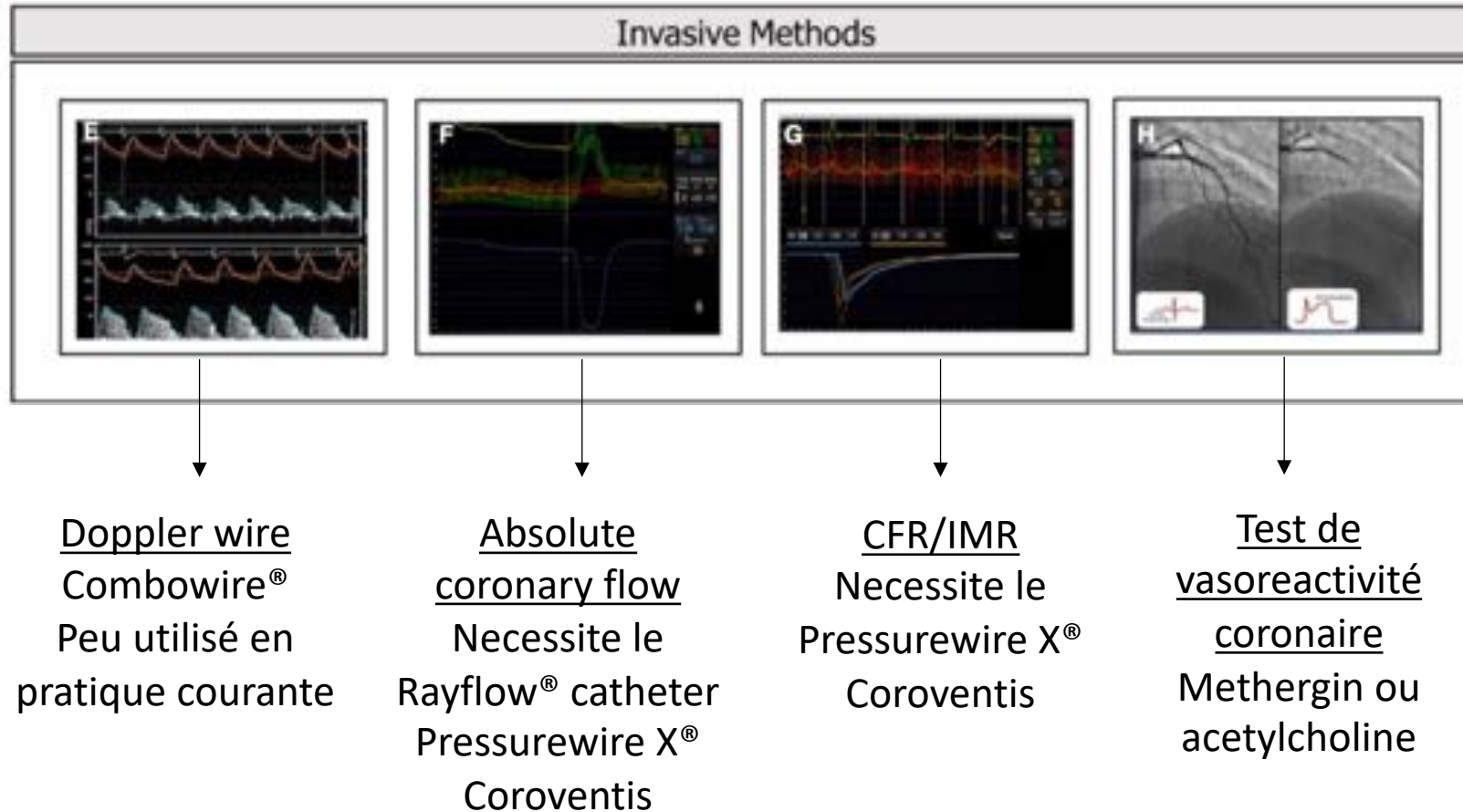
What Are the Clinical Implications?

- The large variability of methods, definitions, and thresholds for diagnosing coronary microvascular disease and coronary vasospasm is a call to a refinement and standardization of diagnostic tools.
- Greater awareness among physicians of ischemia with no obstructive coronary arteries is urgently needed for proper diagnosis and patient-tailored management.

lence of coronary microvascular dysfunction.

Méthodes de mesure

Invasive Methods

Doppler wire
Combowire®
Peu utilisé en pratique courante

Absolute coronary flow
Necessite le Rayflow® catheter
Pressurewire X®
Coroventis

CFR/IMR
Necessite le Pressurewire X®
Coroventis

Test de vasoreactivité coronaire
Methergin ou acetylcholine
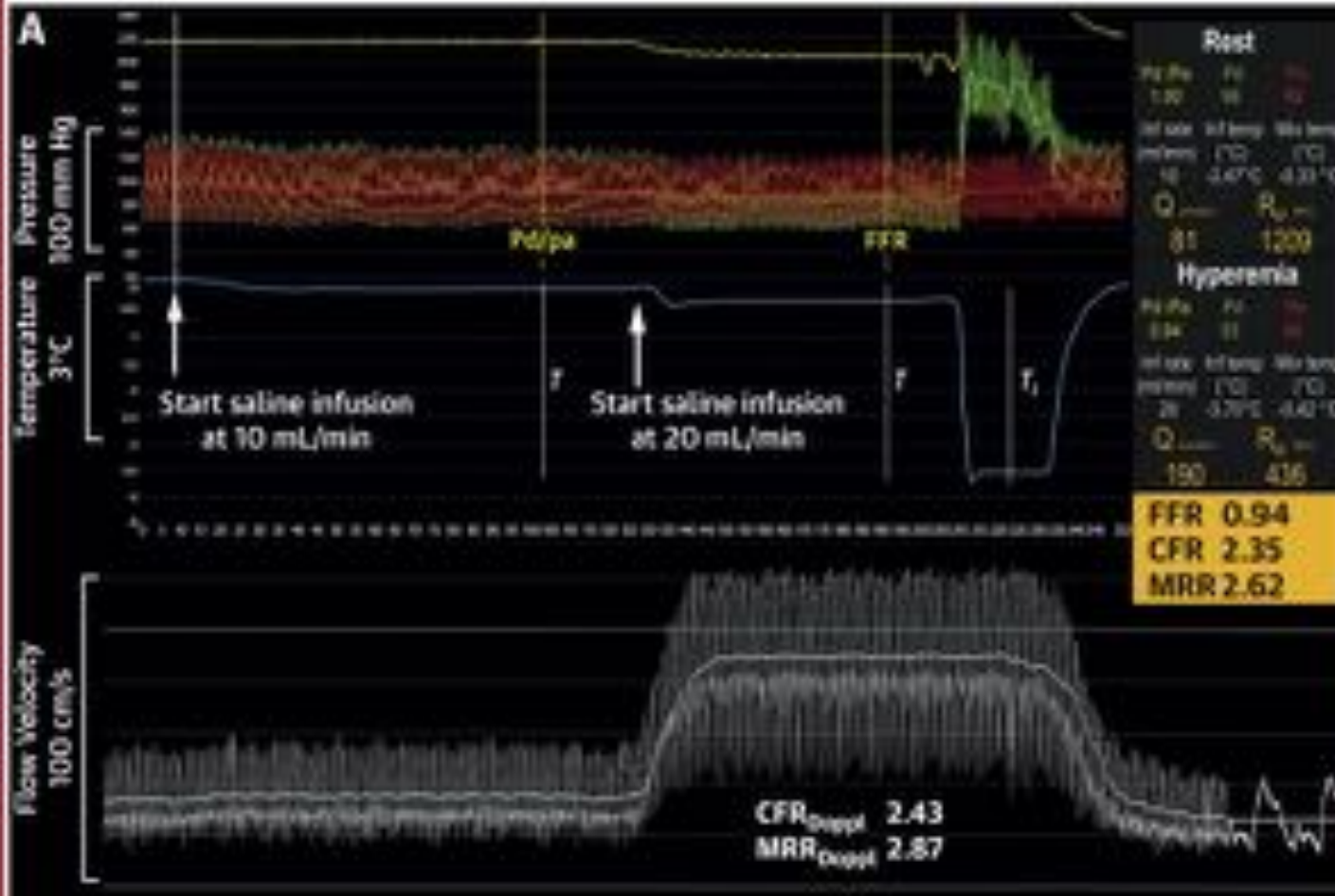
Mileva et al. J Am Heart Assoc. 2022;11:e023207.

Index of Microvascular Resistance (IMR)

Pressurewire® Abbott + Coroventis

Microvascular Resistance Reserve

CENTRAL ILLUSTRATION: Simultaneous Registration of Pressures, Temperature, and Flow Velocity in the Right Coronary Artery

De Bruyne, B. et al. J Am Coll Cardiol. 2021;78(15):1541-1549.

Méthodes de mesure

Picard et al. CCI 2019

Résumé

CFR
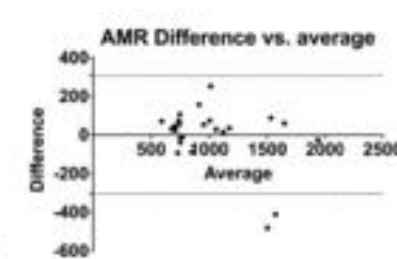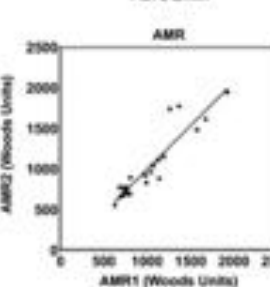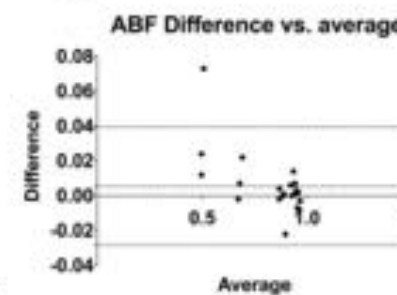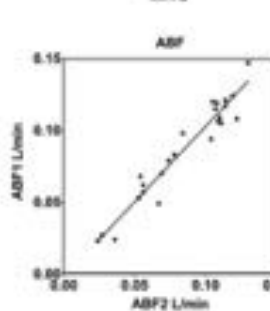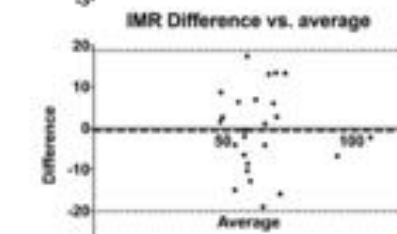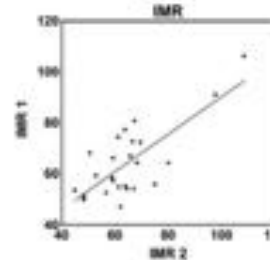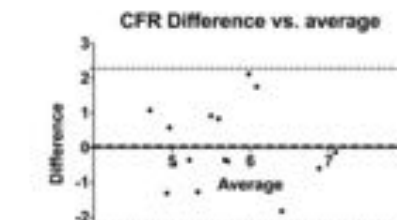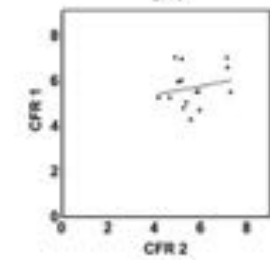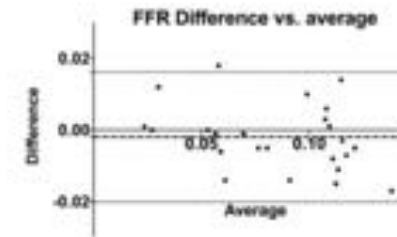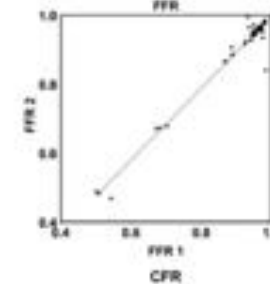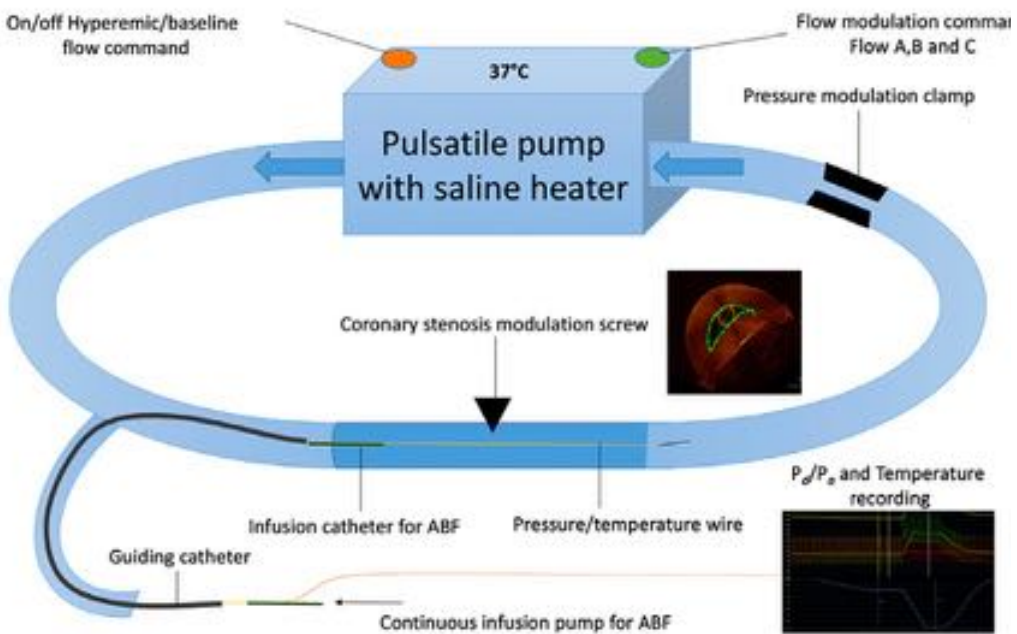
Pressurewire
+
Coroventis

FFR

IMR

Débit max & Débit "repos"

Pressurewire
+
Rayflow
+
Coroventis

FFR

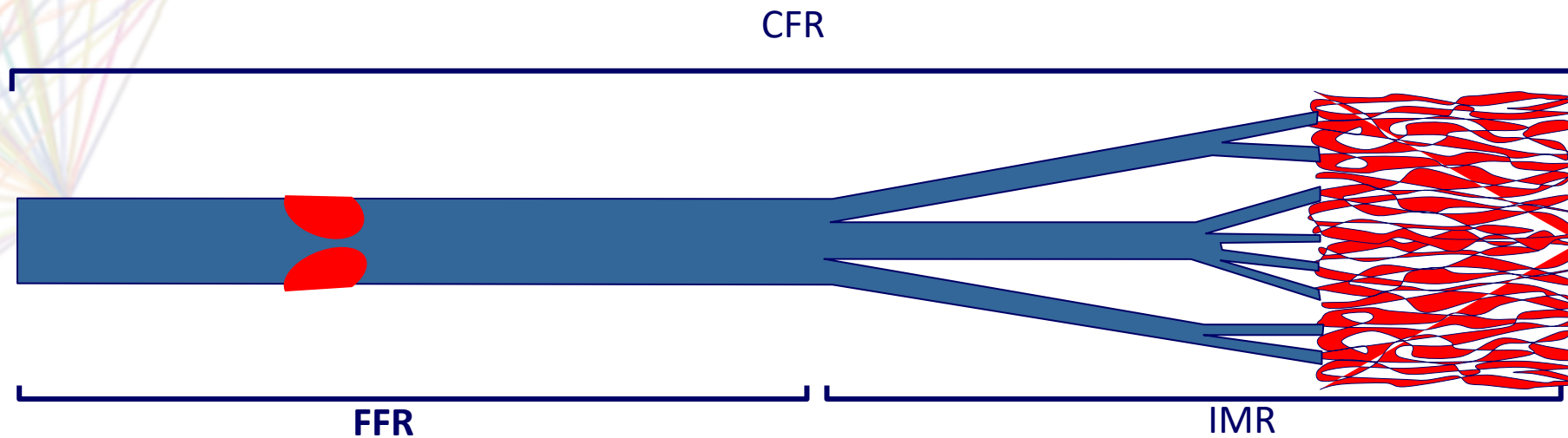Résistances absolues/MRR
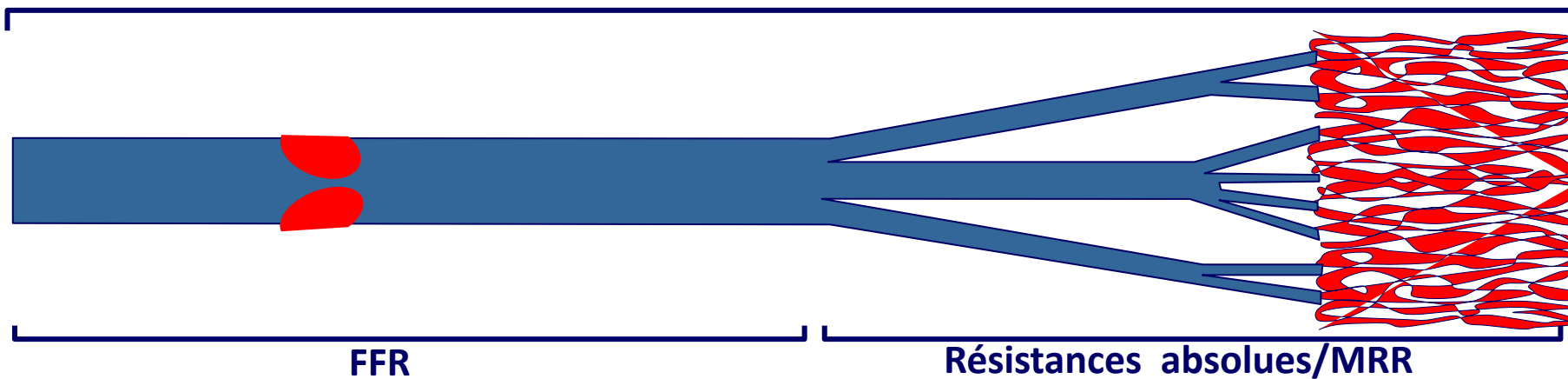
Perspectives

How was the study executed?

An example of angio-IMR derivation

QFR = 0.96

58 mm

Start frame

Contrast flow Velocity = 22 cm/seg

End frame
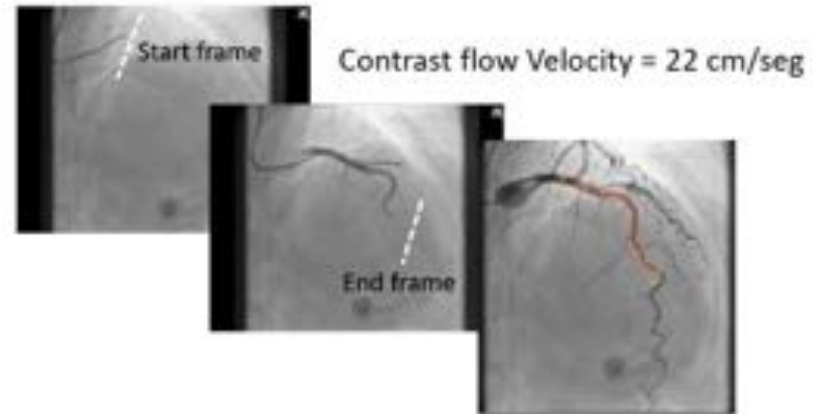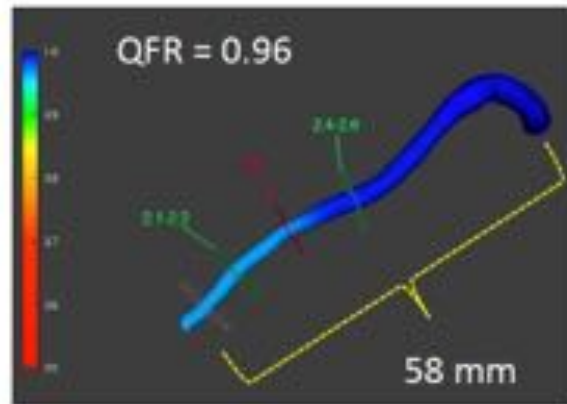
Pa = 93 mmHg ➡ catheter
D = 58 mm ➡ 3D-QCA
V = 22 cm/seg ➡ Frame counting
QFR = 0.96 ➡ FCA

* Angio-IMR = $(Pa_{rest} - [0.1 \times Pa\ rest]) \times cQFR \times (length/v)$

Angio-IMR = $(93 - [0.1 \times 93]) \times 0.96 \times (0.058/0.22)$

Angio-IMR = 21 U

* Mejia-Renteria et al. Catheter Cardiovasc Interv. 2021

Mejia-Renteria et al. EuroPCR 2022.

Perspectives

Diagnostic performance of angio-IMR
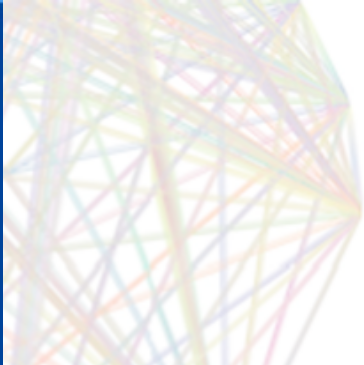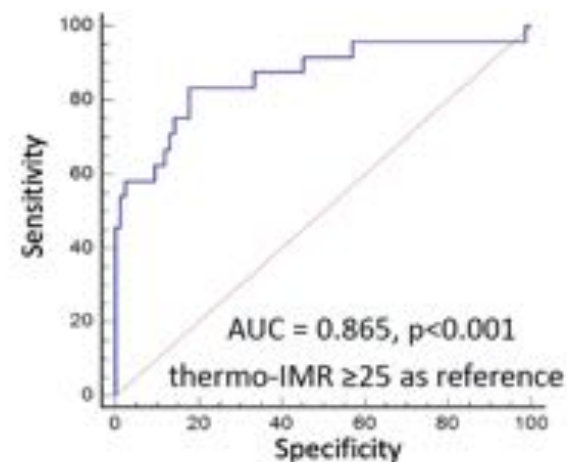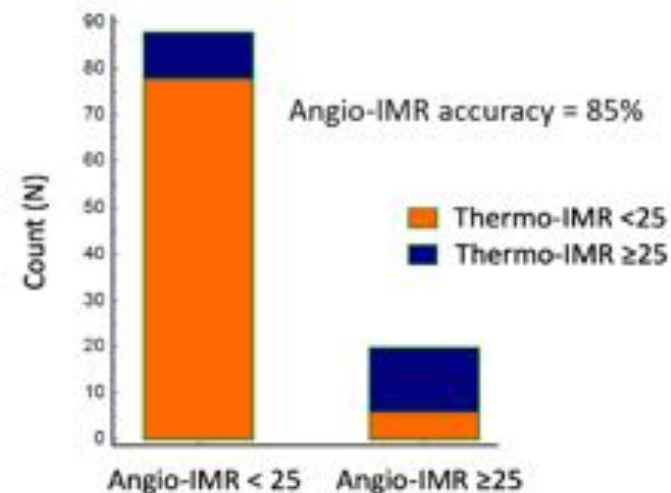
Correlation and agreement between angio-IMR and thermo-IMR

Mejia-Renteria et al. EuroPCR 2022.
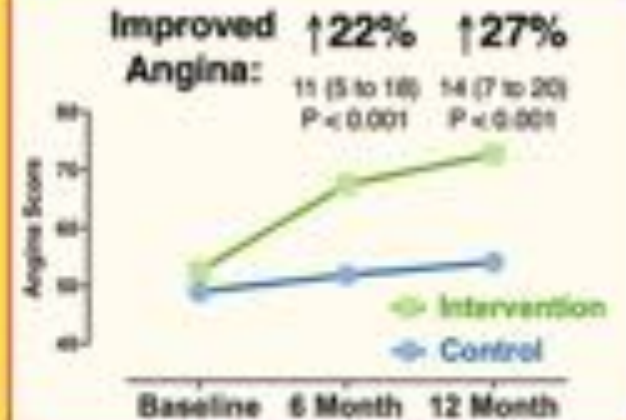
Thérapeutique

Cas clinique: Patient de 59 ans angor d'effort Coroscanner pont myocardique
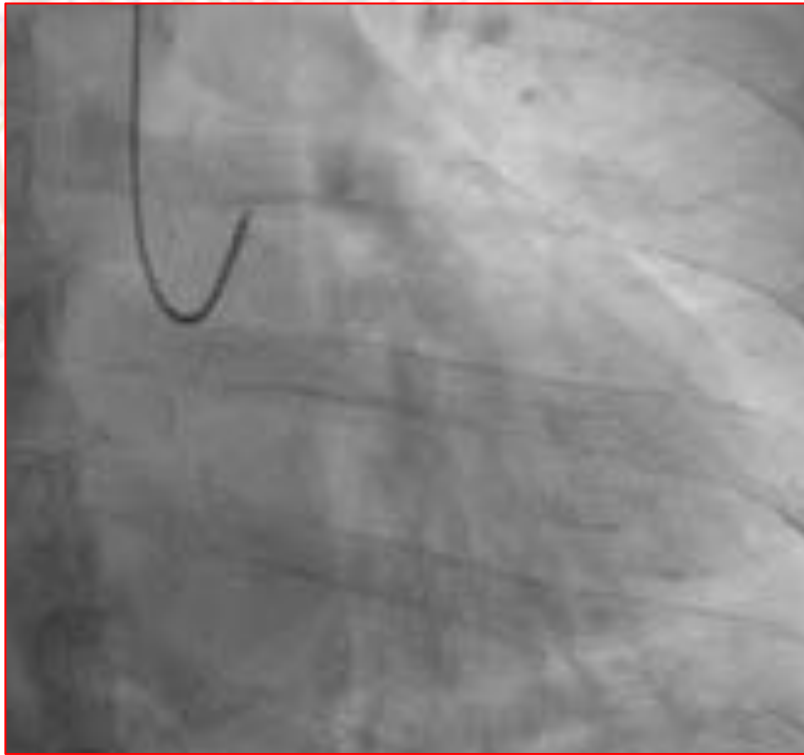
Base

Acétylcholine 100 mcg

Nitrés

Evaluation de la microcirculation

Cas clinique: Patient de 59 ans angor d'effort Coroscanner pont myocardique

Conclusion angor sur:

Spasme coronaire IVA

Trouble de la microcirculation IVA

Pont myocardique (FFR 0,83)

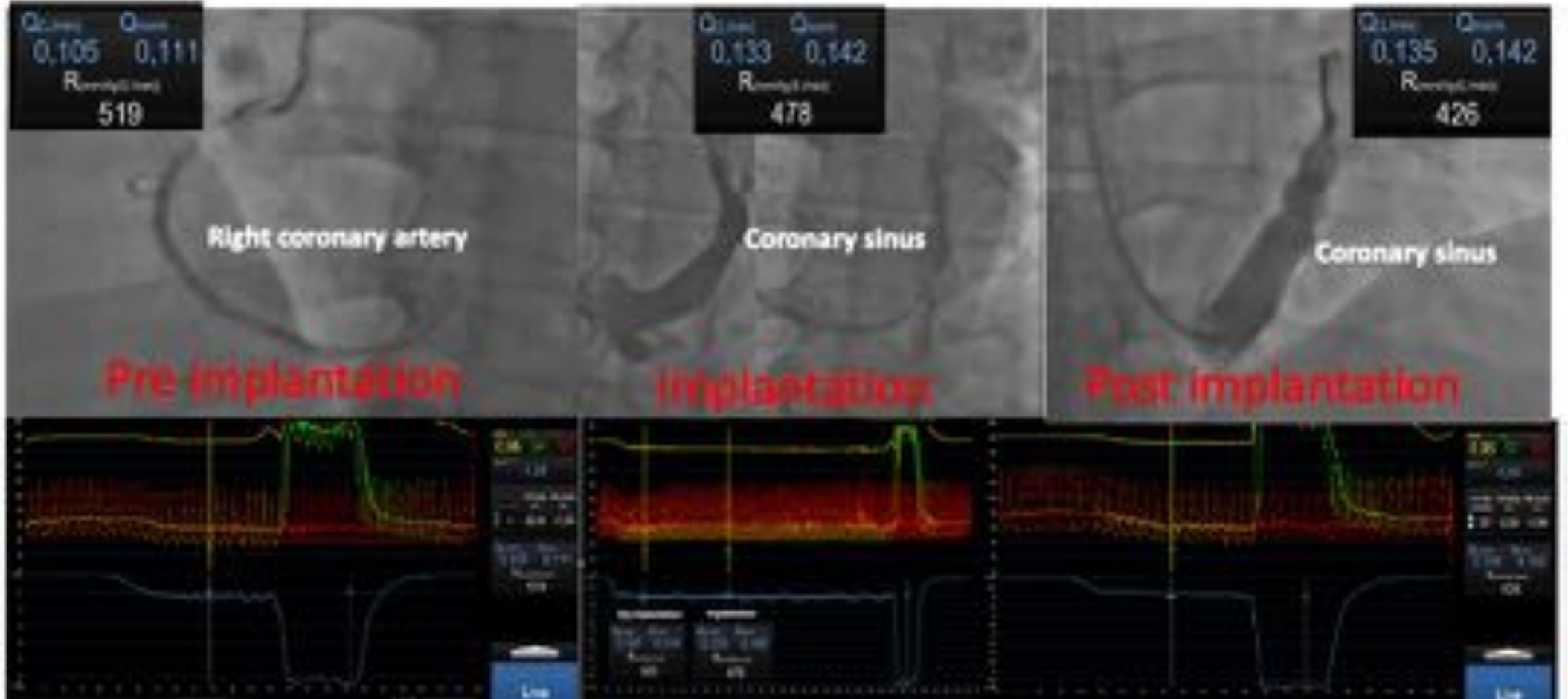**Traitement de sortie:**

Tildiem 60 mg x 3

Trinipatch 10 mg

Perspectives thérapeutiques

Giannini et al. accepted in EHJ Case Report 2022

Conclusion microcirculation en 2022

- **INOCA est fréquent 40-50% des angors sans atteinte coronaire**

- **Majorité de femme**

- **Plusieurs méthodes de mesure (plus reproductible, moins invasive)**

- **Réel impact thérapeutique**

- **Nouvelles thérapeutiques à venir**