



L'ANNÉE EN IMAGERIE

Ateliers
d'imagerie
du CNCF

IRM CARDIAQUE

AVIGNON
24-25 mars
2023

Olivier LAIREZ
CHU de Toulouse

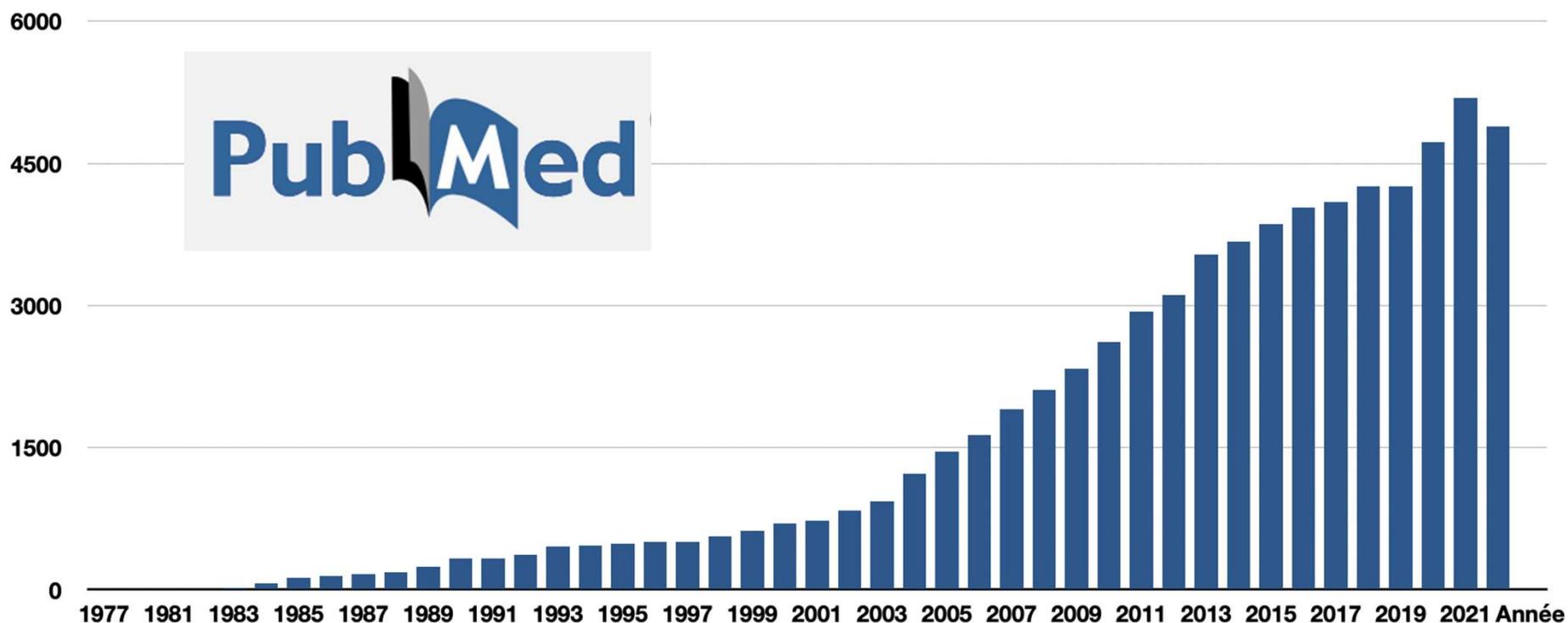
LIENS D'INTÉRÊT

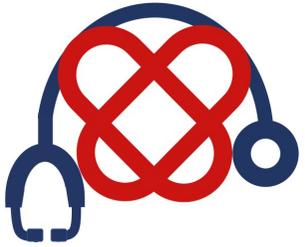
Olivier LAIREZ

Aucun



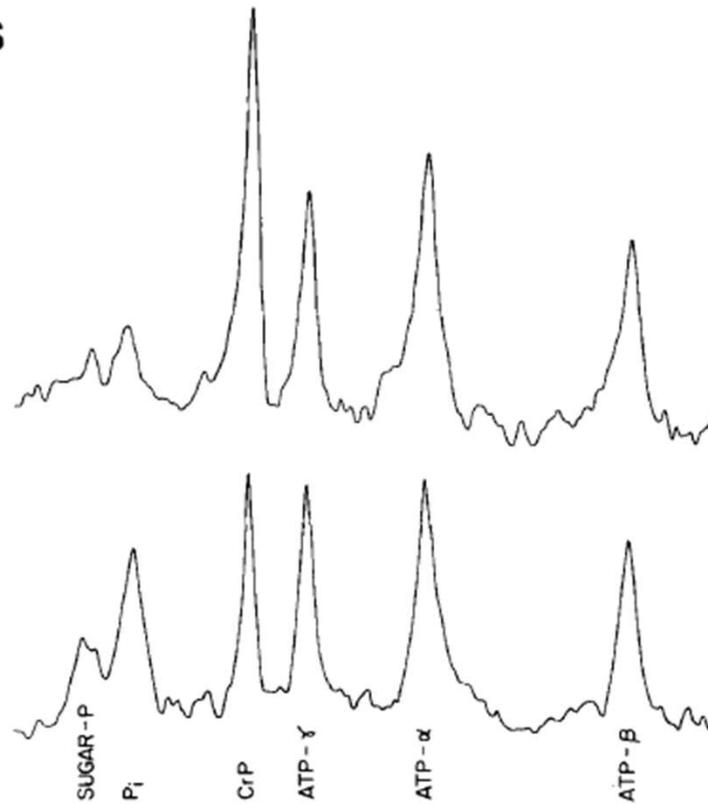
IRM CARDIAQUE JUSQU'EN 2022



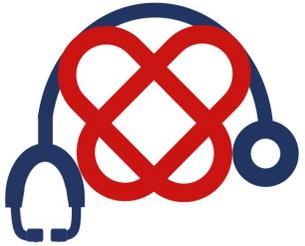


DANS LES ANNÉES 1980

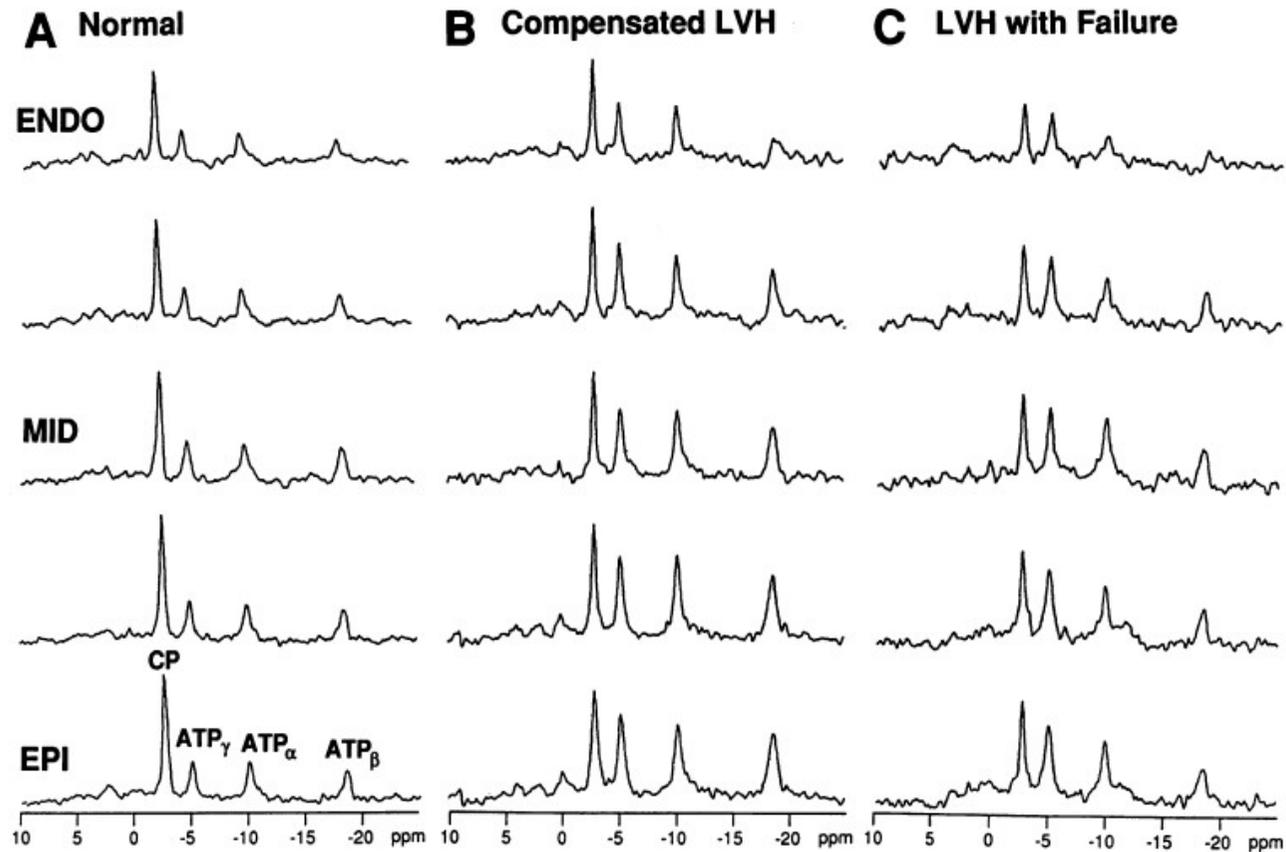
Nuclear Magnetic Resonance Imaging: Potential Cardiac Applications



Spectroscopie par
résonance magnétique



SPECTROSCOPIE PAR RÉSONNANCE DU PHOSPHORE





Randomized controlled trial of perhexiline on regression of left ventricular hypertrophy in patients with symptomatic hypertrophic cardiomyopathy (RESOLVE-HCM trial)

RESOLVE-HCM TRIAL TIMELINE

Quarter 1-2	Quarter 3-4						
2020		2021		2022		2023	

PROJECT PREPARATION
 Draft protocol
 Confirm protocol
 HREC approval
 Employ personnel
 Acquire study drug and placebo

PATIENT RECRUITMENT
 Multiple Australian centres

PATIENT FOLLOW-UP

ECHOCARDIOGRAPHY AND CMR ANALYSIS

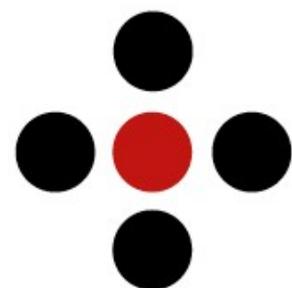
CLOSE OUT
 Data clearing and verification
 Data analysis
 Dissemination of results

ClinicalTrials.gov Identifier: NCT04426578

Recruitment Status ⓘ : Recruiting

First Posted ⓘ : June 11, 2020

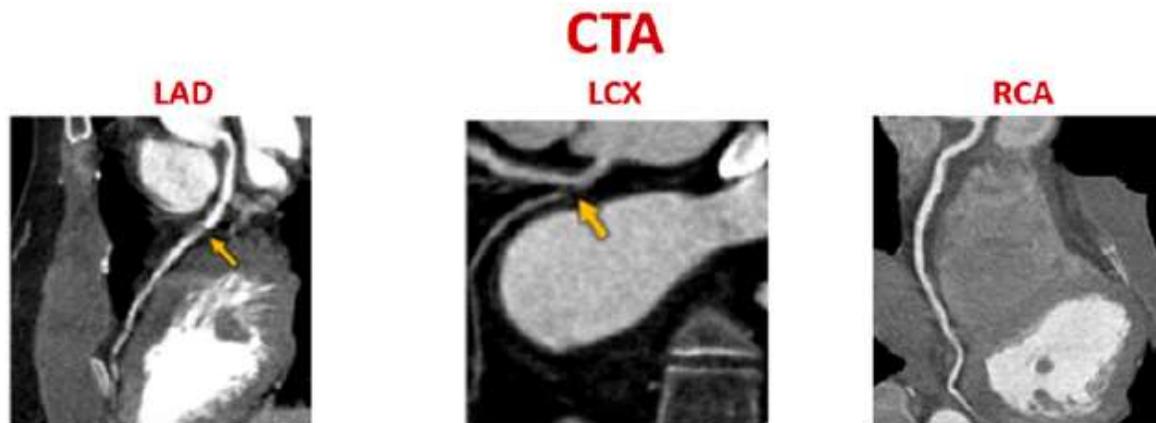
Last Update Posted ⓘ : March 11, 2021



L'IRM CARDIAQUE EN 2023

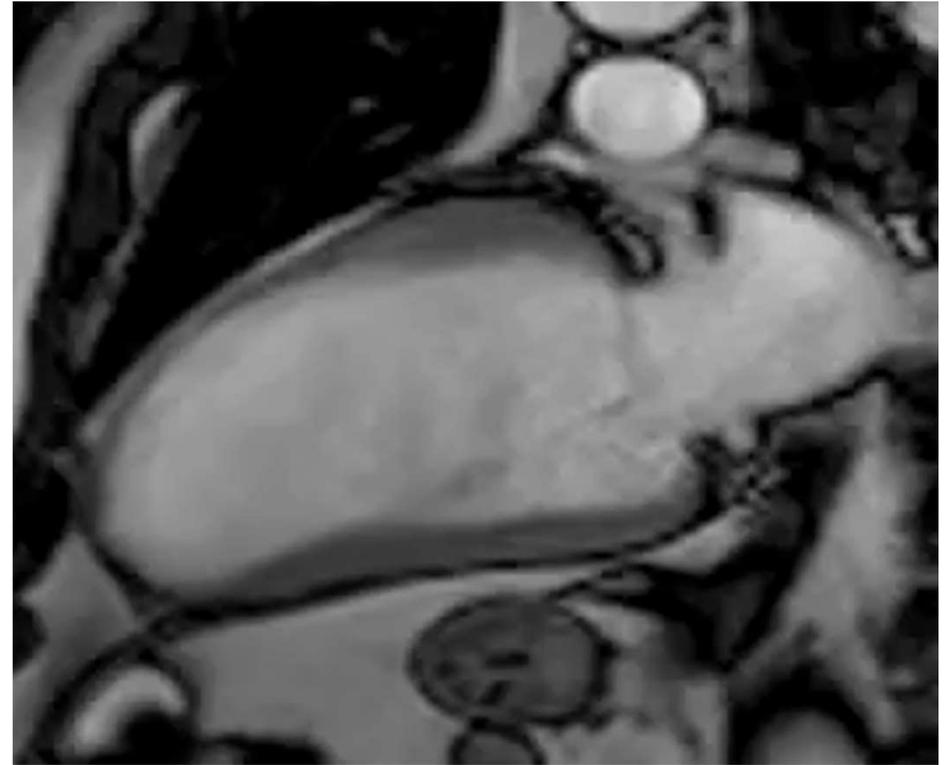
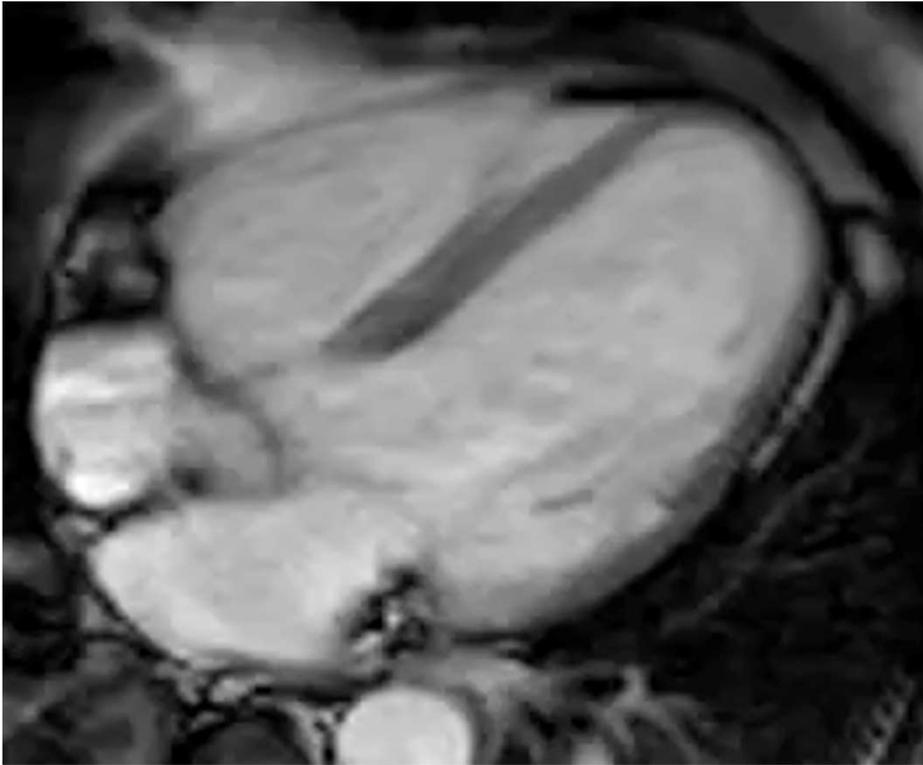


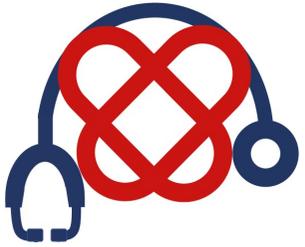
Non-invasive imaging in coronary syndromes: recommendations of the European Association of Cardiovascular Imaging and the American Society of Echocardiography, in collaboration with the American Society of Nuclear Cardiology, Society of Cardiovascular Computed Tomography, and Society for Cardiovascular Magnetic Resonance





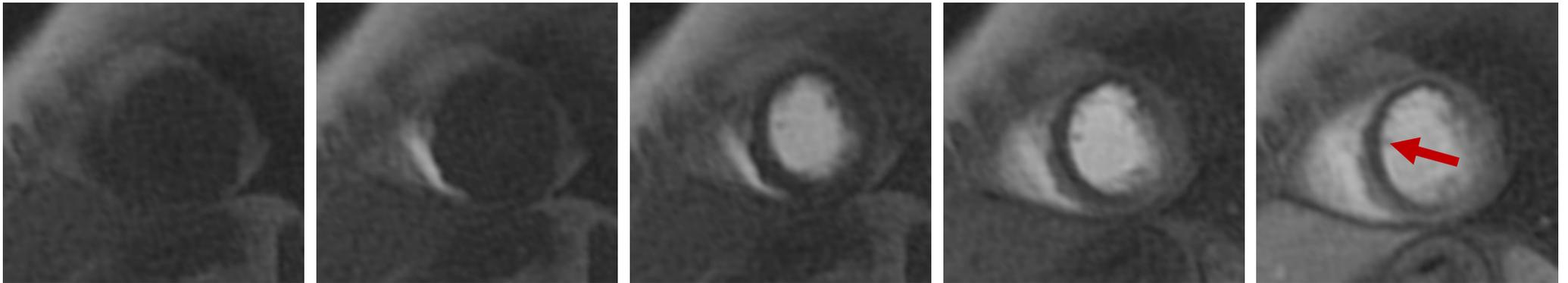
Non-invasive imaging in coronary syndromes





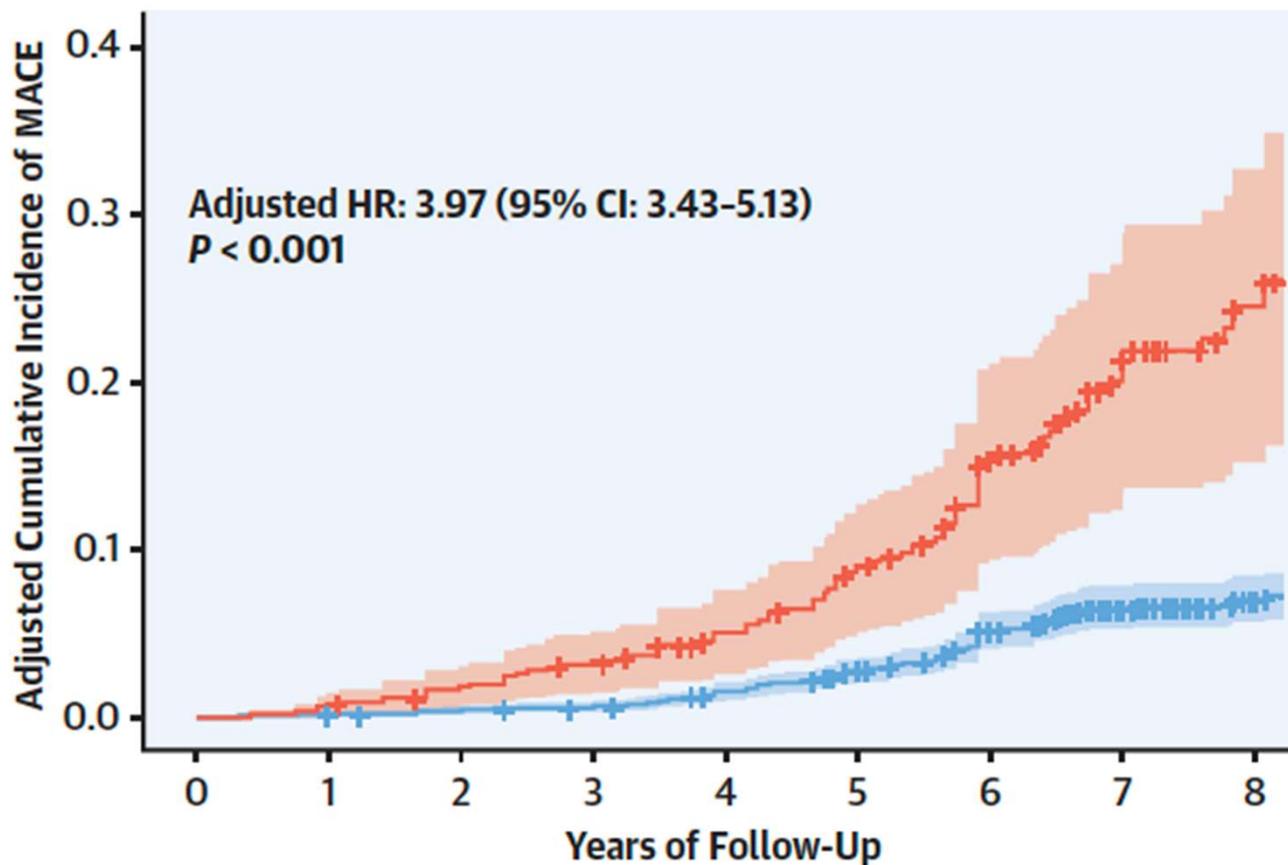
Non-invasive imaging in coronary syndromes

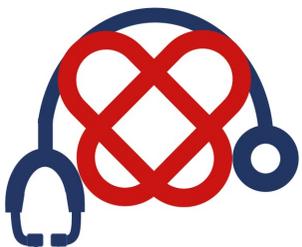
Perfusion



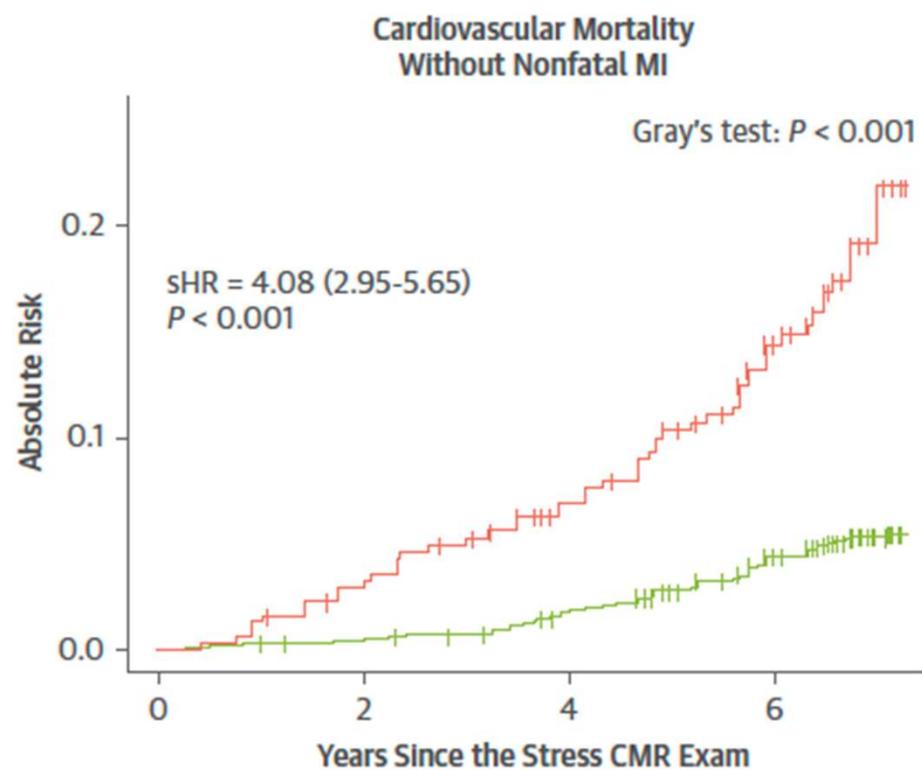
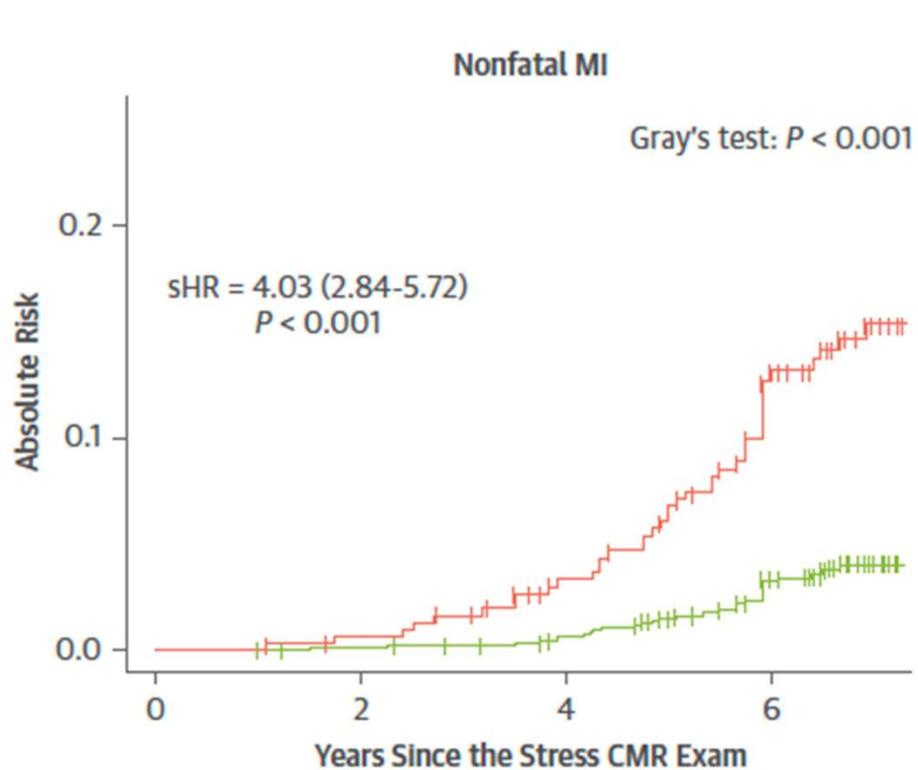


Prognostic Value of Stress CMR in Symptomatic Patients With Coronary Stenosis on CCTA

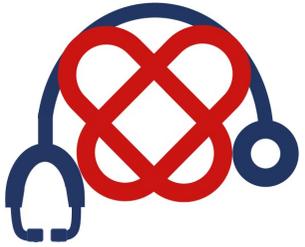




Prognostic Value of Stress CMR in Symptomatic Patients With Coronary Stenosis on CCTA

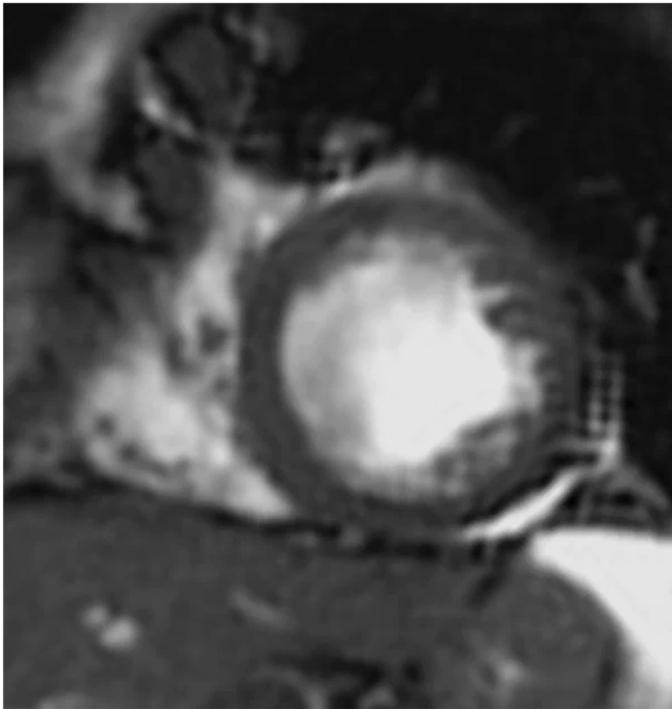


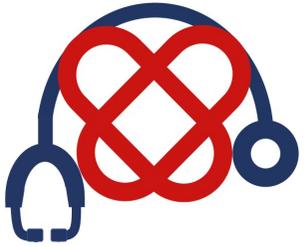
— Ischemia — No Ischemia



Non-invasive imaging in coronary syndromes

Rehaussement tardif





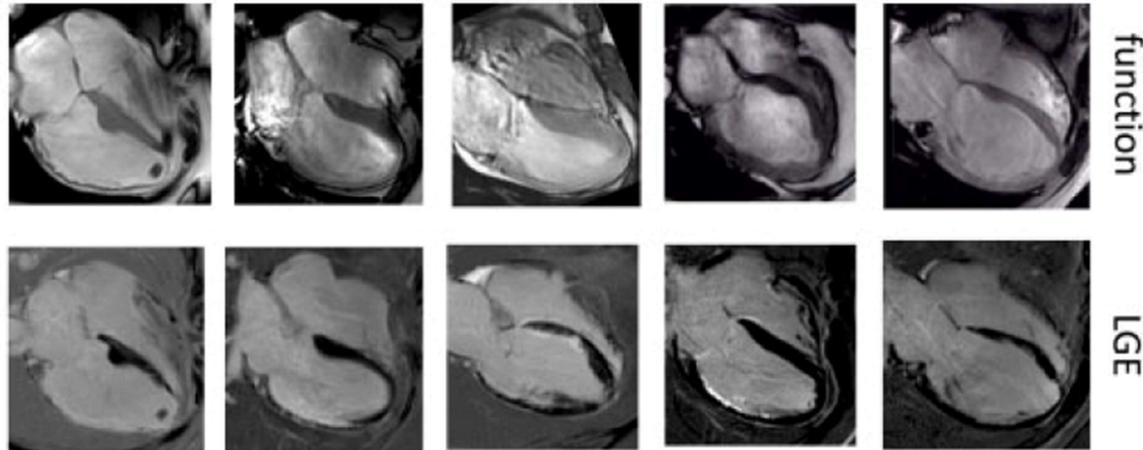
Non-invasive imaging in coronary syndromes

Viabilité

Transmural scar
Non-viable

Sub-endocardial Scar
Partially Viable

No Scar
Fully Viable

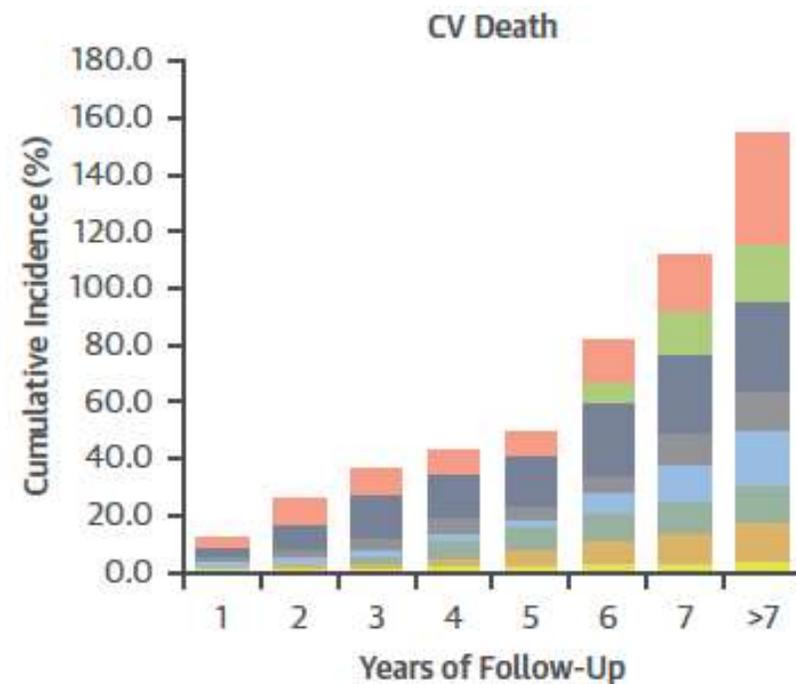
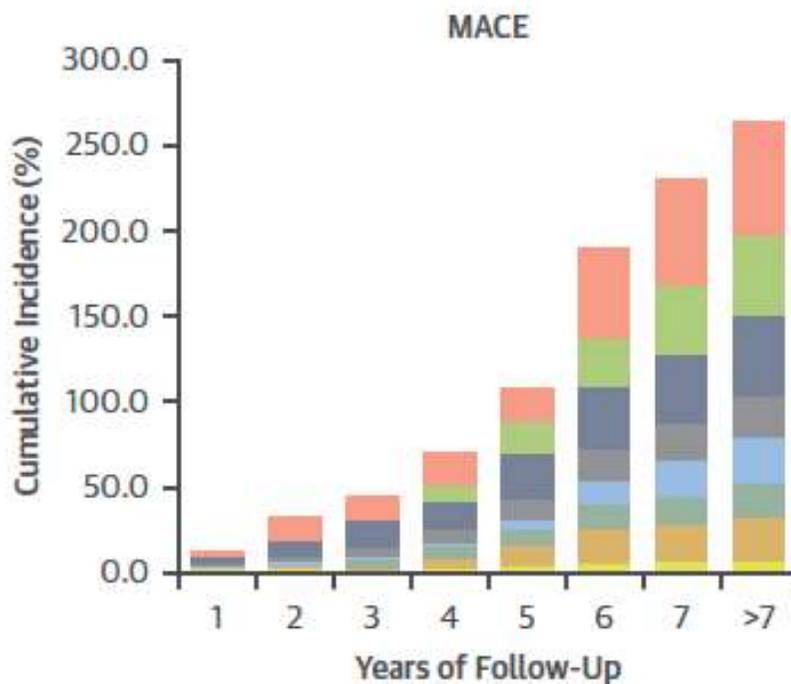


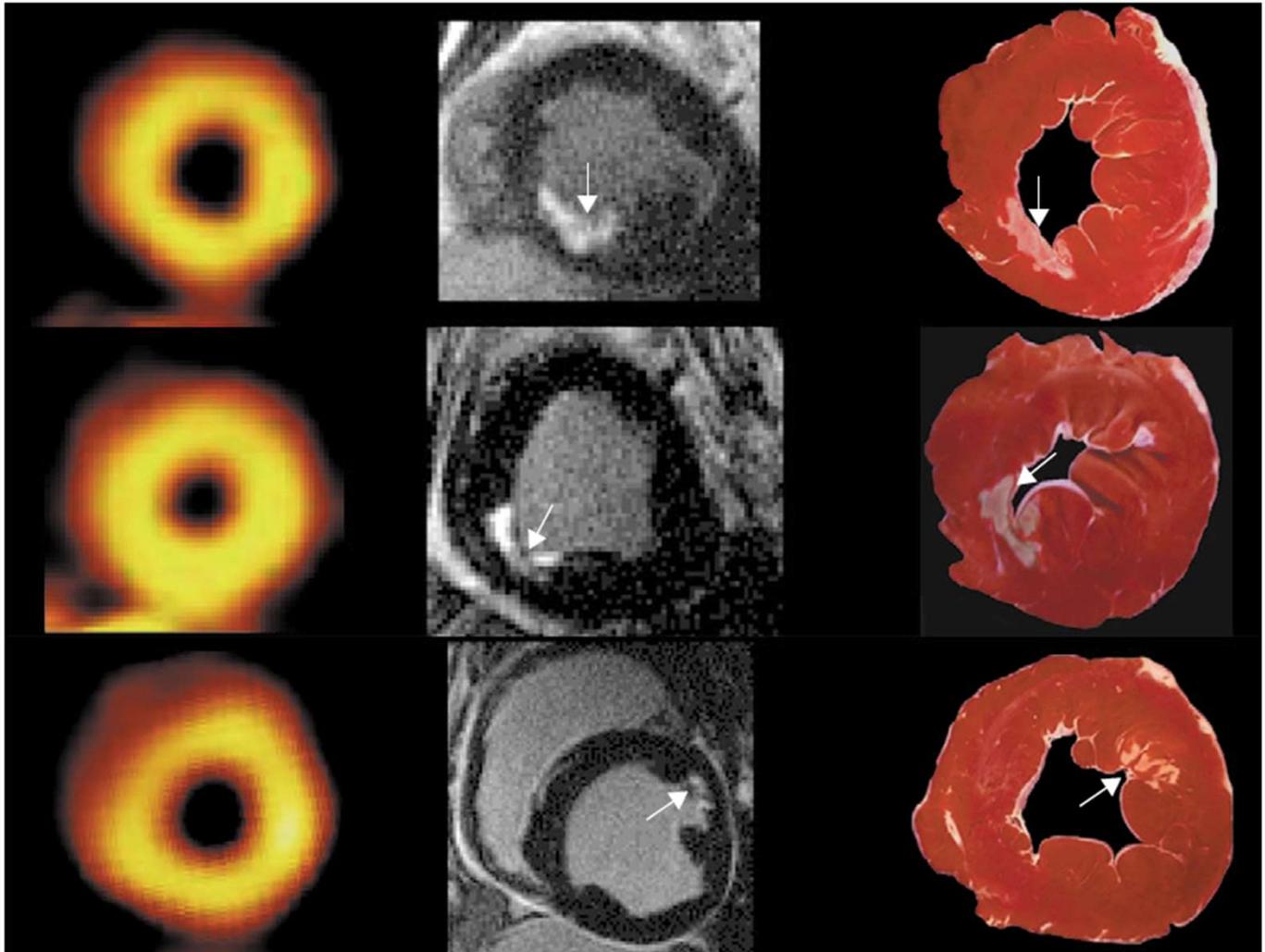
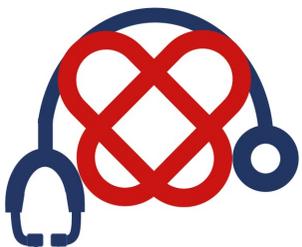


Prognostic Value of Stress CMR in Symptomatic Patients With Coronary Stenosis on CCTA

Legend

- I+/LGE+/LVEF <50 (n = 21)
- I+/LGE+/LVEF ≥50 (n = 63)
- I+/LGE-/LVEF <50 (n = 48)
- I+/LGE-/LVEF ≥50 (n = 173)
- I-/LGE+/LVEF <50 (n = 45)
- I-/LGE+/LVEF ≥50 (n = 100)
- I-/LGE-/LVEF <50 (n = 288)
- I-/LGE-/LVEF ≥50 (n = 1.300)

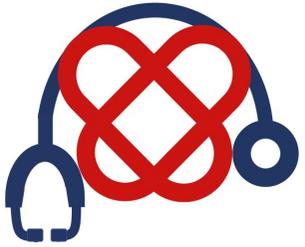




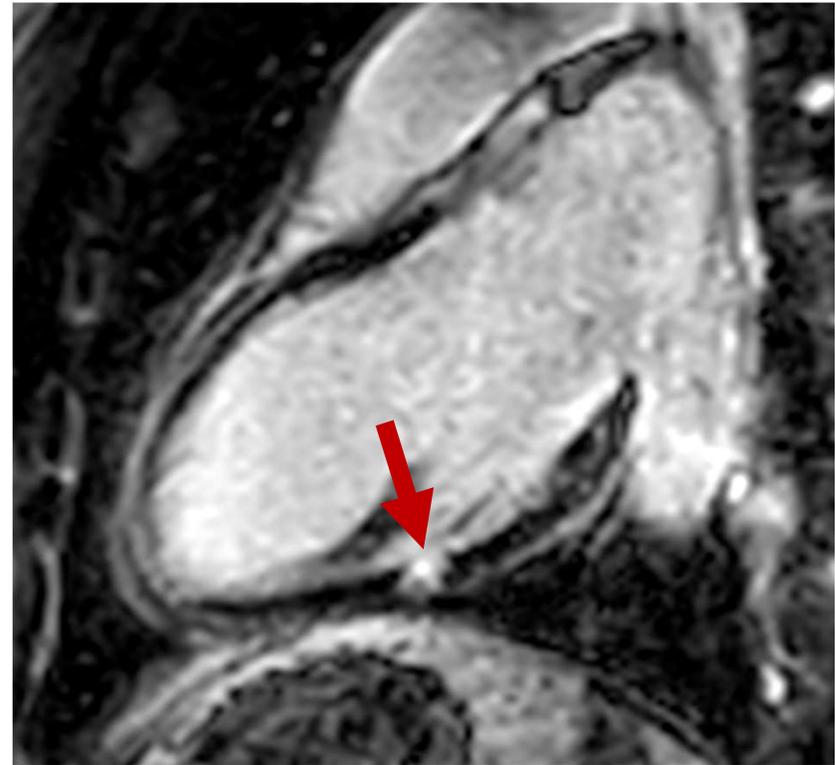
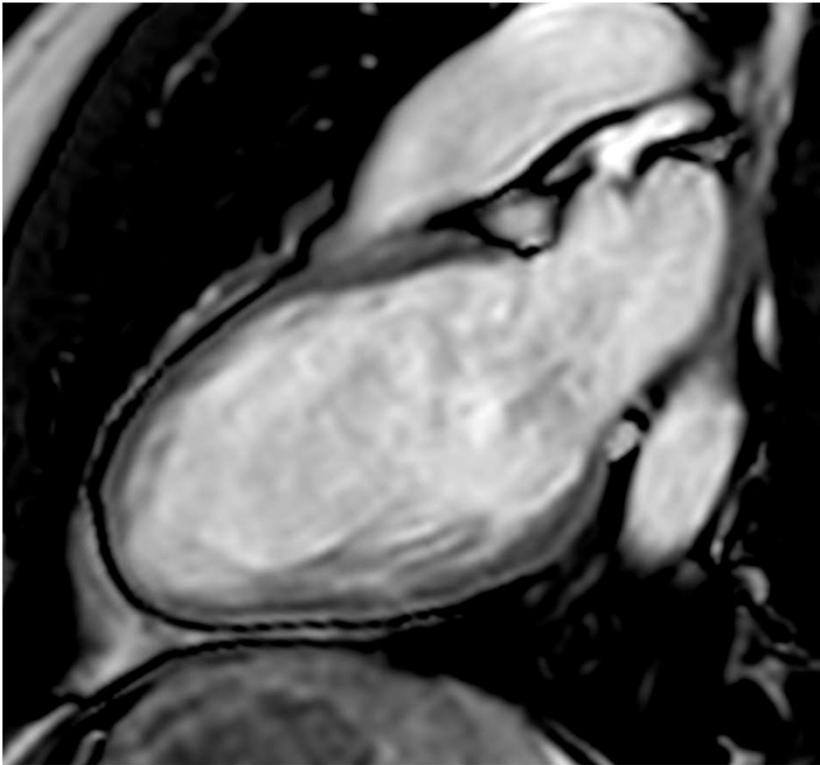
SPECT

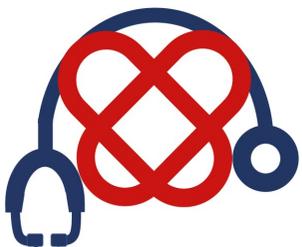
CMR

Histology



REHAUSSEMENT TARDIF



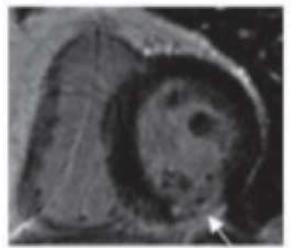


LE REHAUSSEMENT TARDIF

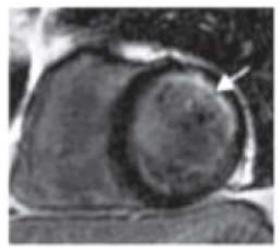
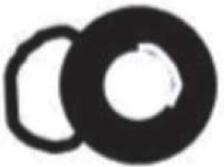
ISCHAEMIC

NON-ISCHAEMIC

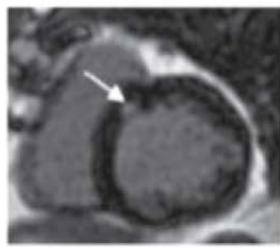
Transmural



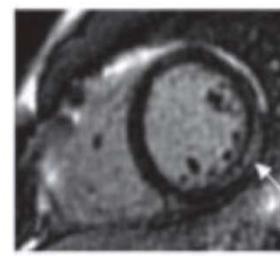
Subendocardial



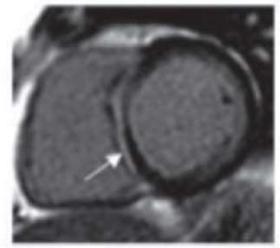
Focal Subendocardial



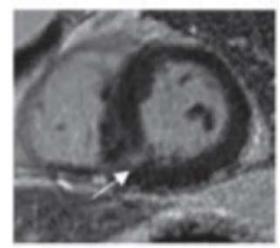
Subepicardial

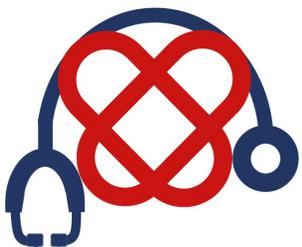


Mid-wall



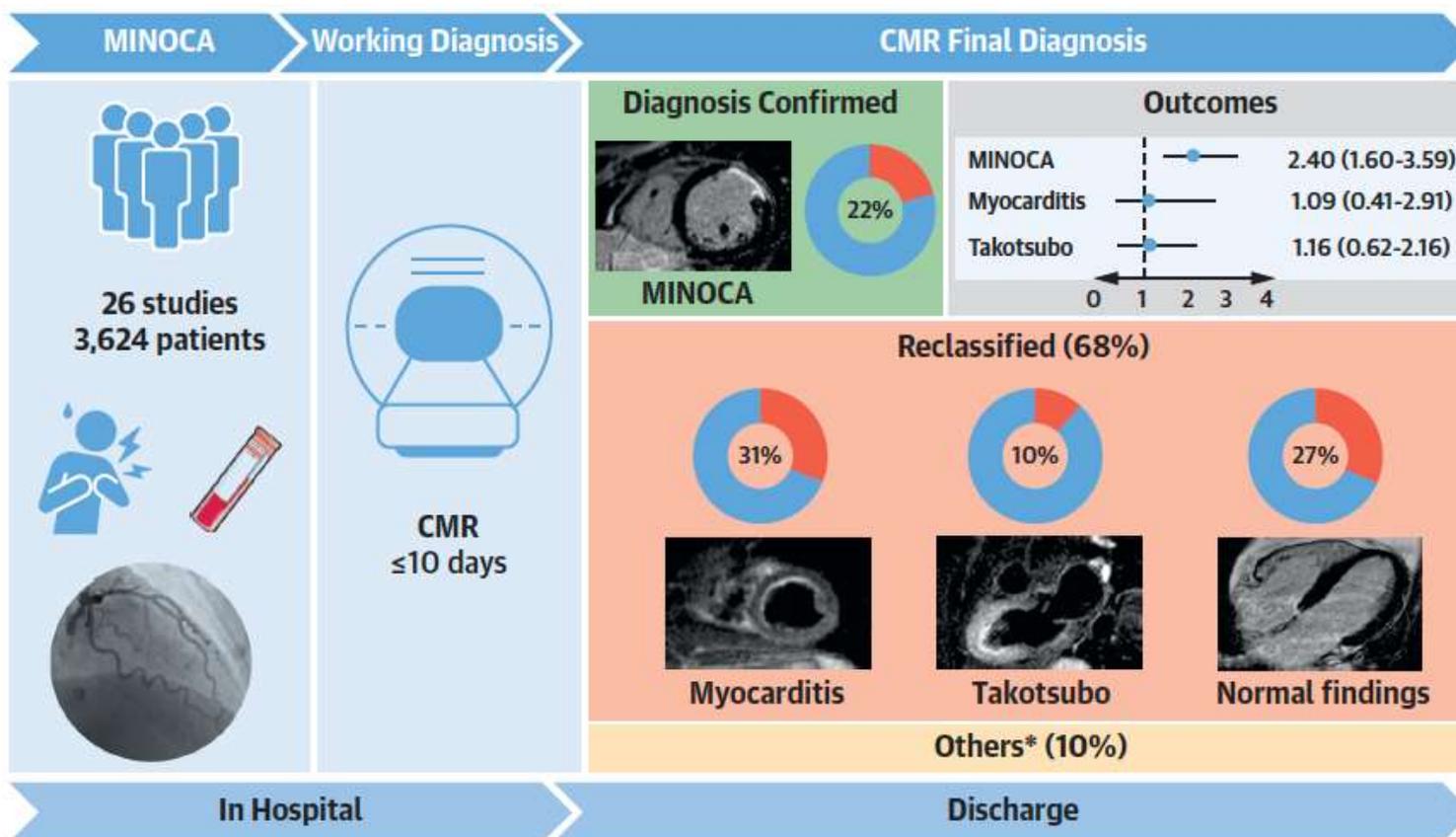
Insertion points





Diagnostic and Prognostic Role of Cardiac Magnetic Resonance in MINOCA

Systematic Review and Meta-Analysis

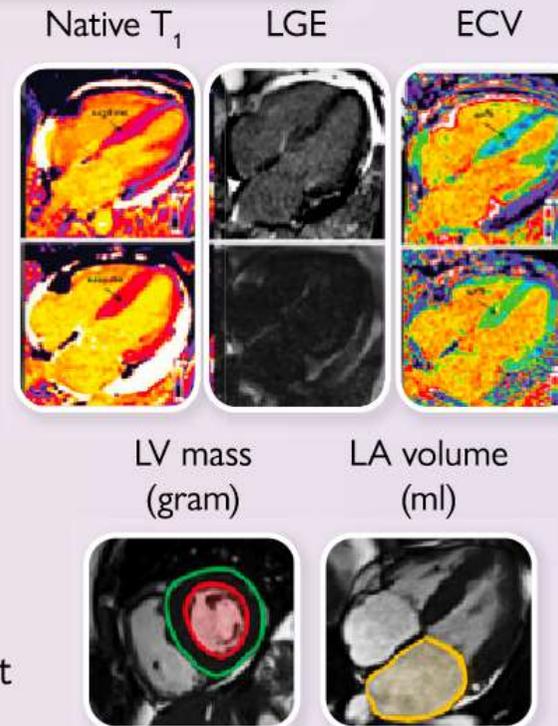




The year in cardiovascular medicine 2022: the top 10 papers in cardiovascular imaging

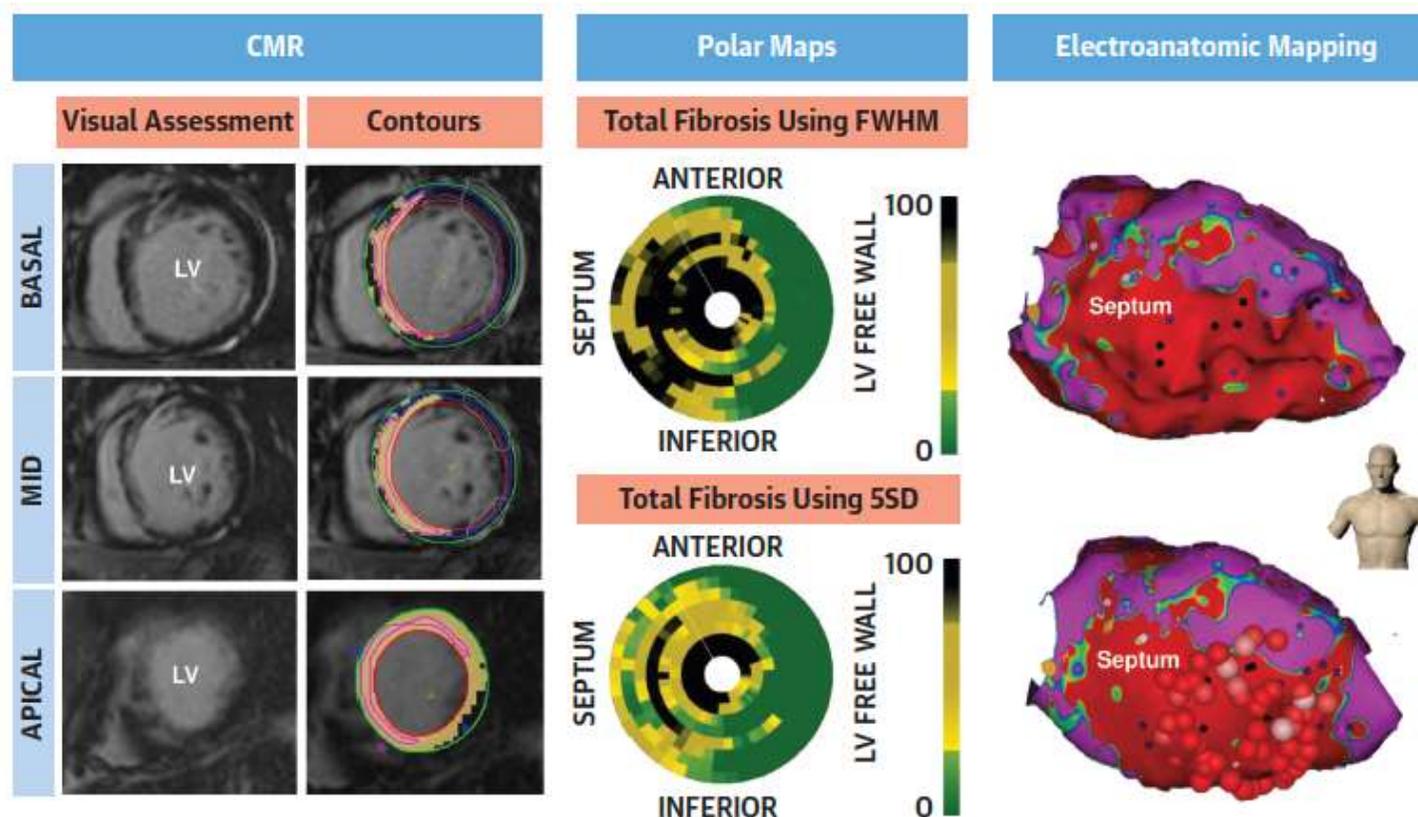
Cardiac Magnetic Resonance

- CMR-ECV as a tool to monitor response to chemotherapy in AL amyloidosis: CMR response at 6 months predicts death, even after adjusting for haematological response, NT-proBNP and GLS.
- CMR-derived invasive pulmonary capillary wedge pressure is associated with an increased risk of death.
- Extent of myocardial fibrosis assessed by CMR either visually or quantitatively (gray zone fibrosis) can predict malignant ventricular arrhythmias





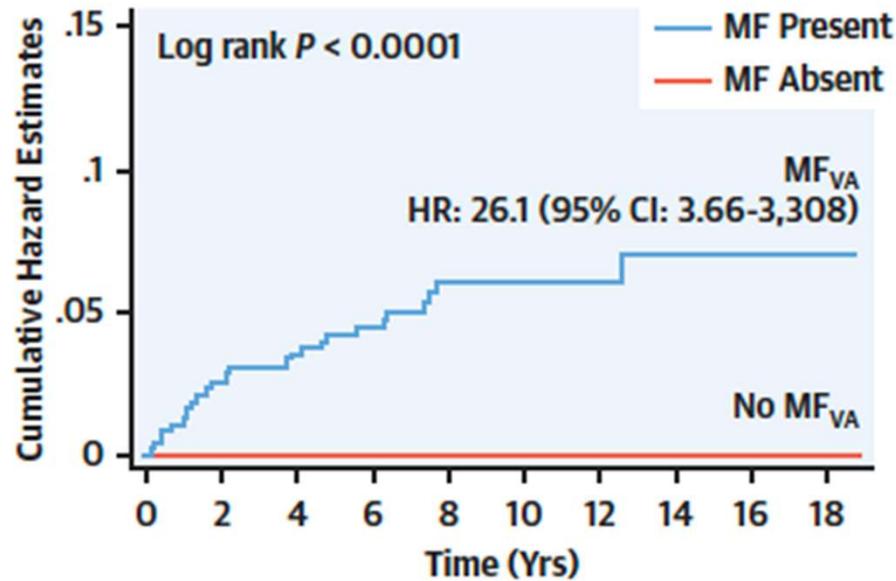
Myocardial Fibrosis Predicts Ventricular Arrhythmias and Sudden Death After Cardiac Electronic Device Implantation



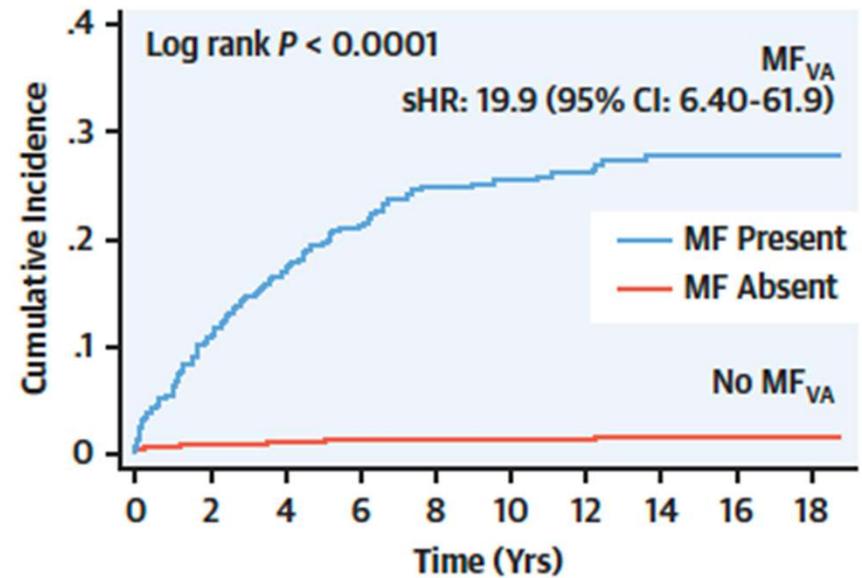


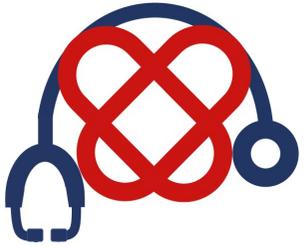
Myocardial Fibrosis Predicts Ventricular Arrhythmias and Sudden Death After Cardiac Electronic Device Implantation

Sudden Cardiac Death



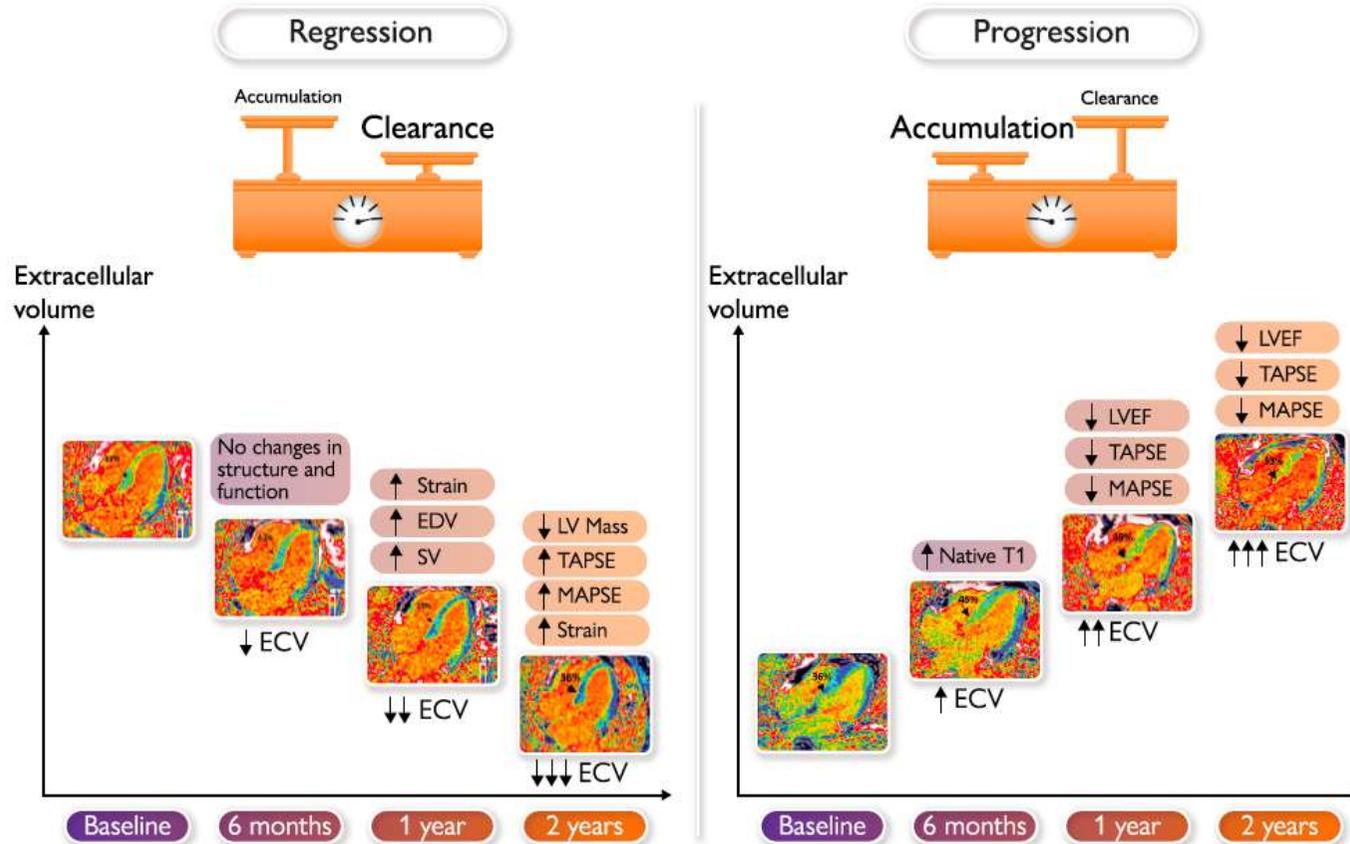
Arrhythmic Endpoint

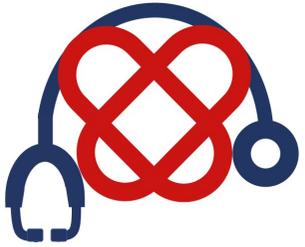




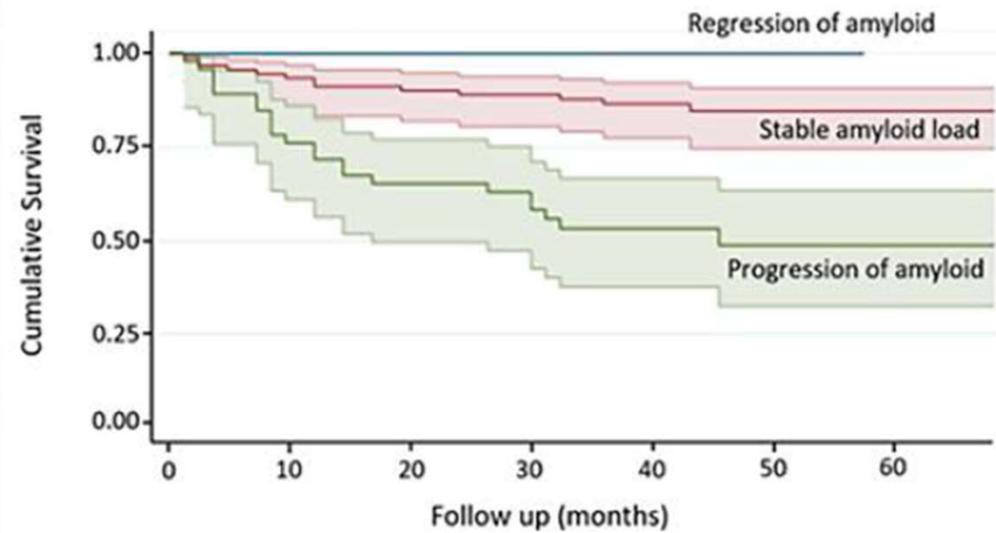
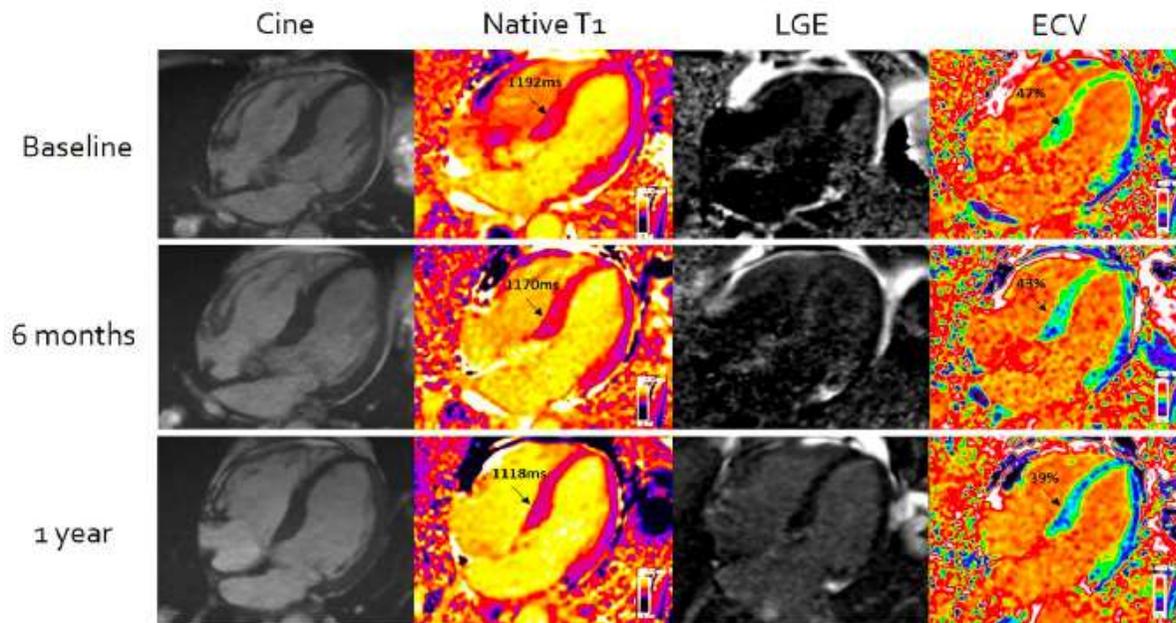
Cardiovascular magnetic resonance in light-chain amyloidosis to guide treatment

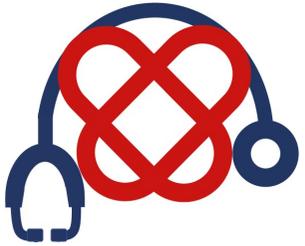
Hypothesized cardiac amyloid regression and progression across time after chemotherapy



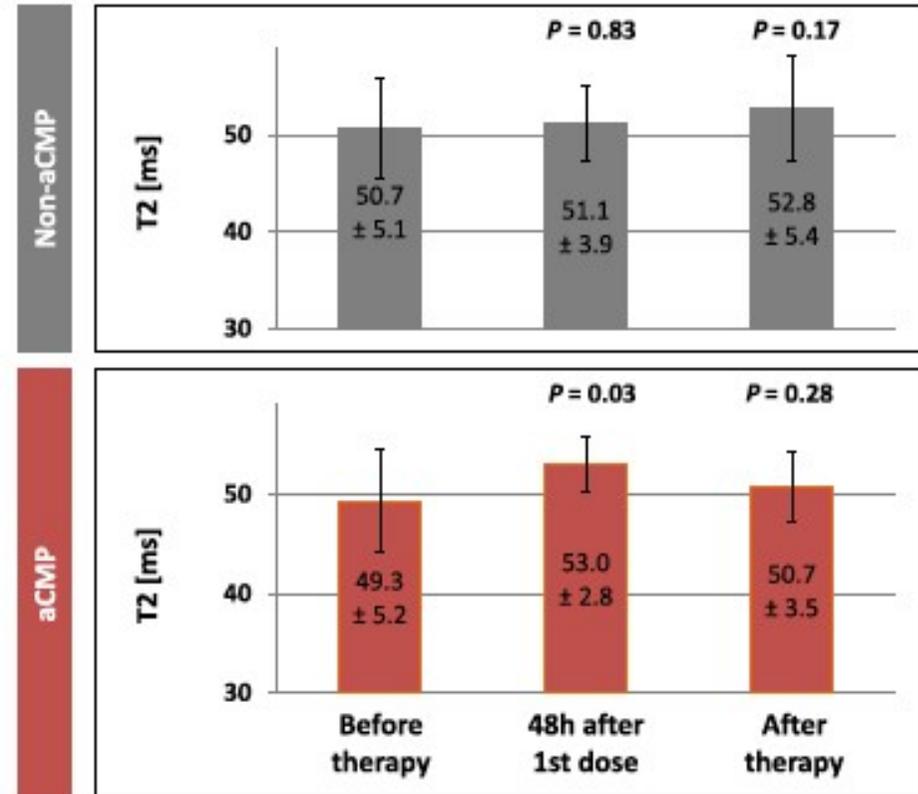
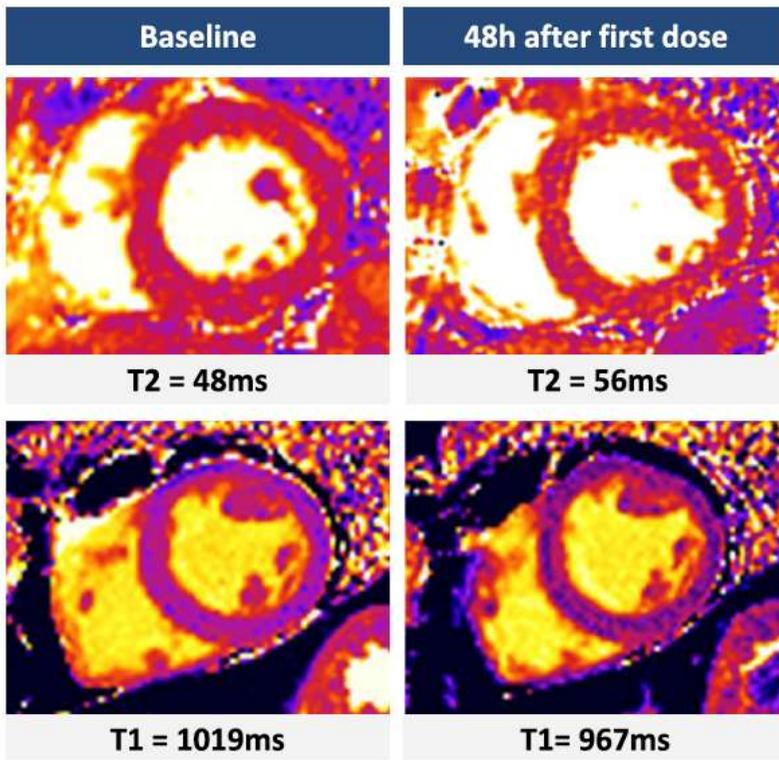


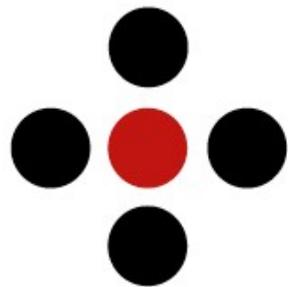
Cardiovascular magnetic resonance in light-chain amyloidosis to guide treatment



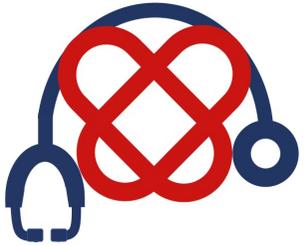


Early myocardial oedema can predict subsequent cardiomyopathy in high-dose anthracycline therapy

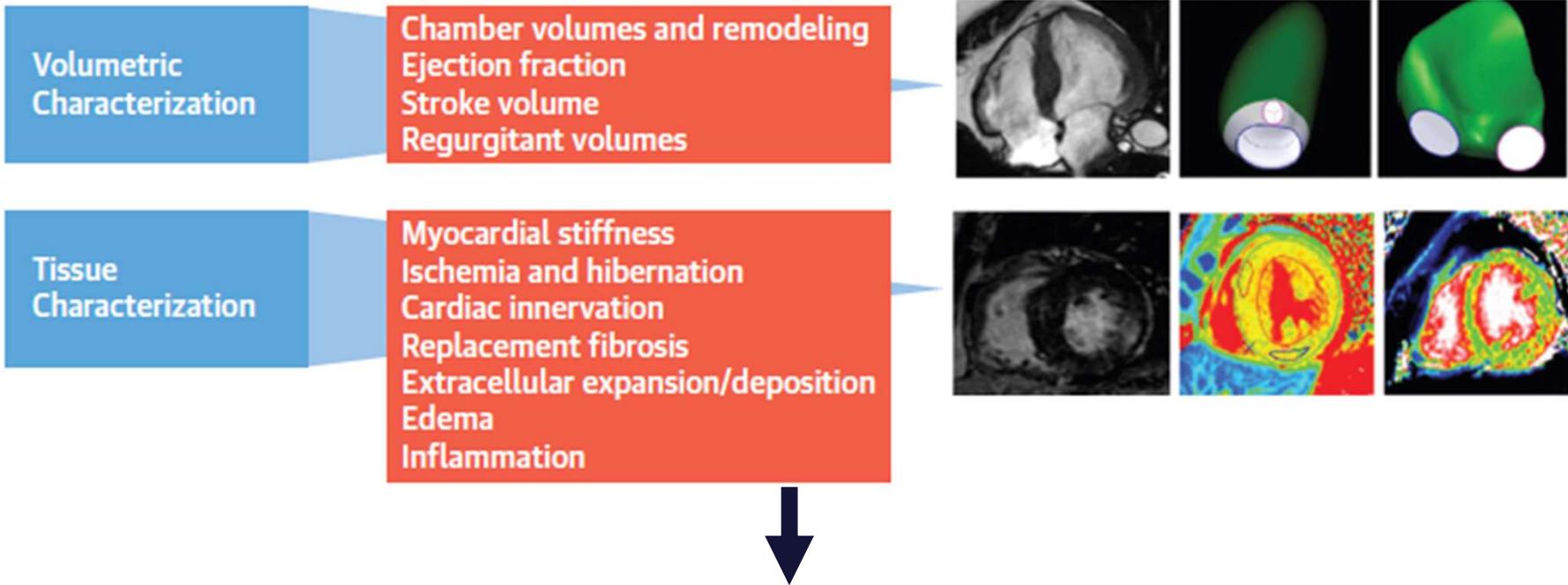




CONCLUSION



L'IRM AUJOURD'HUI



Diagnostic étiologique & pronostic



Heart failure in cardiomyopathies: a position paper from the Heart Failure Association of the European Society of Cardiology

