

# **Τα καλύτερα της απεικόνισης 2019-2020**

Θ. Κρανίδης  
Νίκαια - Πειραιάς

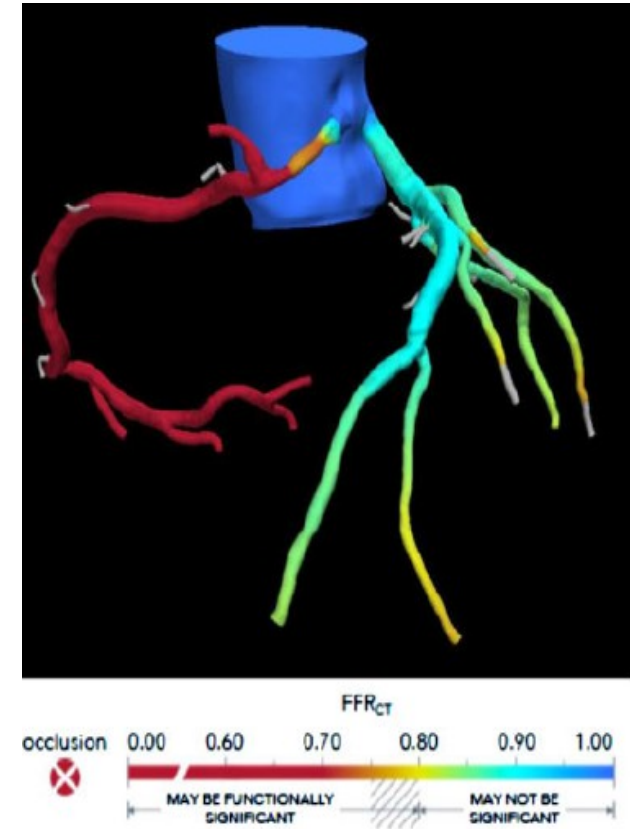
# CAD (1)

ESC guidelines 2019 on chronic coronary syndrome

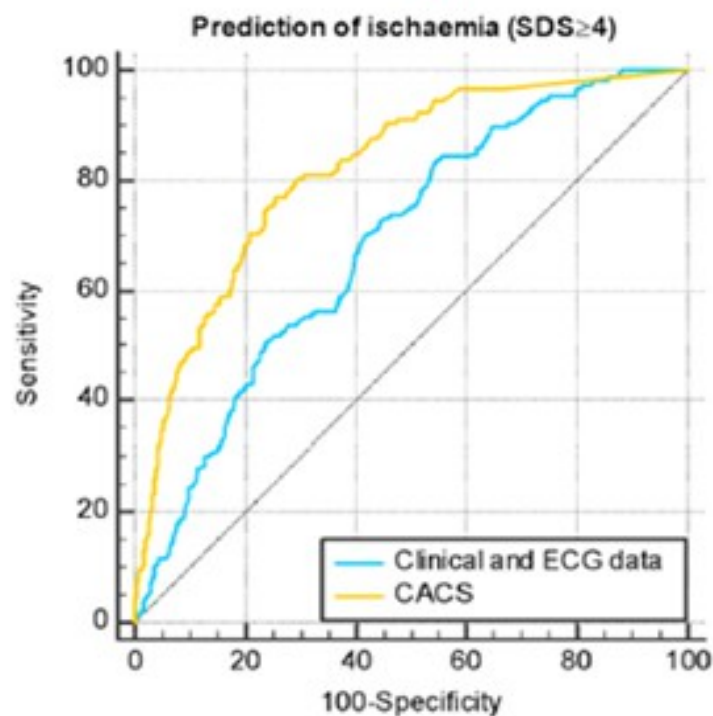
- **Either functional imaging or coronary CTA is recommended as the initial non-invasive tests for diagnosing CAD in symptomatic pts in whom**

# CAD (2) /CT

CT applications are expanding to the assessment of CT FFR<sub>ct</sub> obtained by of CT scans and by merging of CT with nuclear molecular imaging.



## Results – CACS : excellent predictor of myocardial ischaemia in PET



AUC : 0,82 vs. 0,69 ; P < 0,001

- **CACS < 100 AU :**

high sensitivity (82%) NPV (94%)

⇒ “green zone”

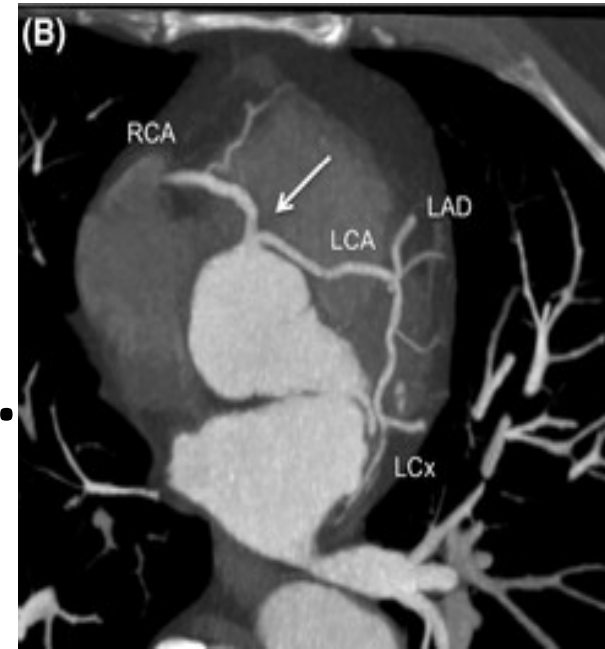
- **CACS > 1000 AU :**

high specificity (94%) PPV (60%)

⇒ “red zone”

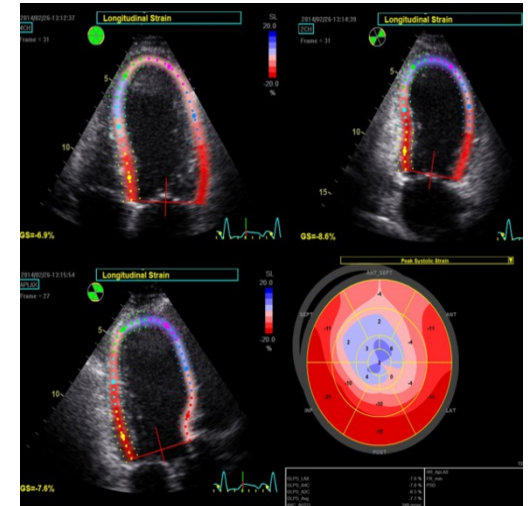
# CAD (4) / CT

- **Cardiac CT can detect/characterize the presence, extent of non-obstructive coronary atherosclerotic plaques.**
- **Estimate their haemodynamic impact on coronary blood flow and myocardial perfusion.**



# CAD (5) - ECHO

After PCI, GLS measured  
in the acute phase of STEMI  
predicted myocardial viability  
assessed by 3 months DE - CMR



# CAD (6)/Nuclear cardiac imaging

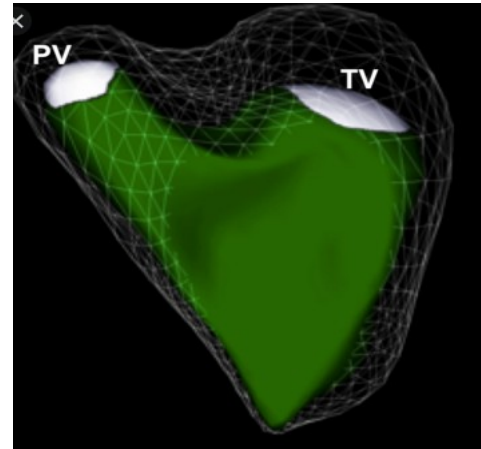
- **The IQ-SPECT technology** is a cardiac-centred imaging approach that can be implemented and offers to reduce acquisition times by 25–50% for cardiac SPECT



- Jimenez-Heffernan A et al. Eur Heart J Cardiovasc Imaging 2019;20(Suppl\_3).

# HEART FAILURE (1)

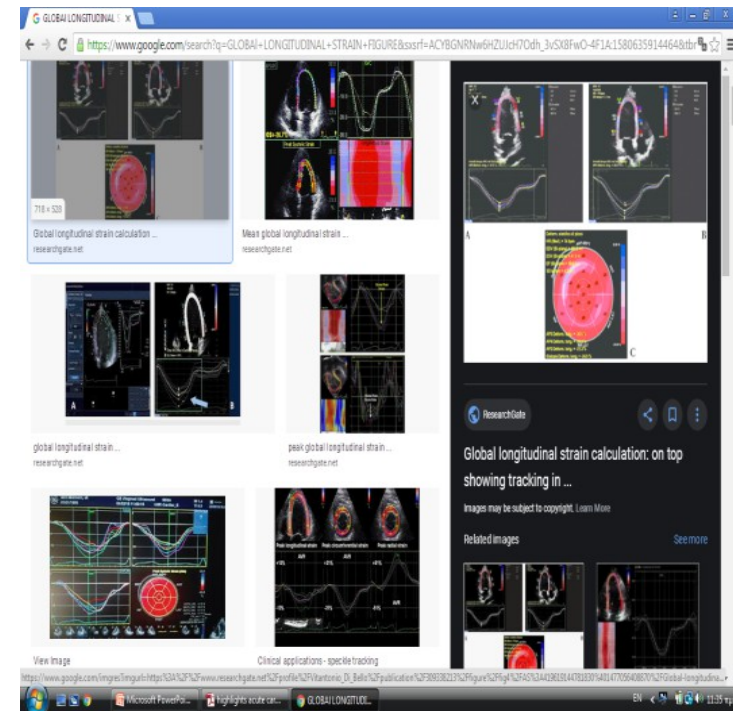
- **3 D ECHO /Mortality in patients with reduced RVEF and normal LVEF was significantly higher than in those with reduced LVEF and normal RVEF .**





# HEART FAILURE (2)

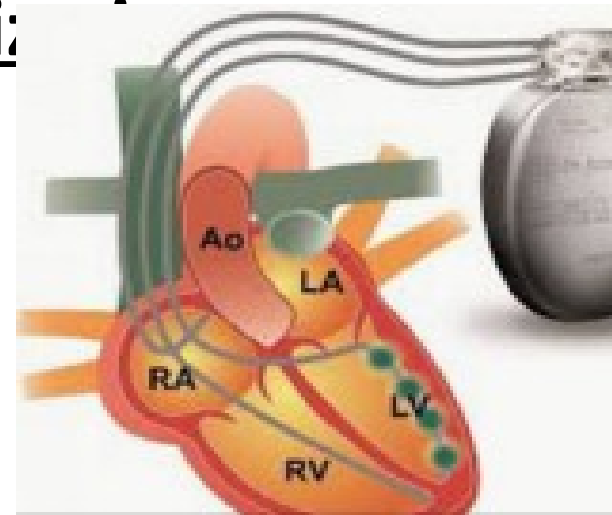
**GLS assessment of the left ventricle by speckle tracking echo is a useful in detecting ACR and could potentially reduce the frequent endomyocardial biopsies in transplant recipients**



# HEART FAILURE (3)

## CT Coronary venography –myocardial perfusion imaging in CRT

- **This fusion image techniques ( Tc-99m-tetrofosmin myocardial perfusion imaging - CT Coronary venography ) evaluation of myocardial viability and anatomy of coronary veins promise CRT optimization**



# CM (1)

**Prognostic benefit of CMR in  
non-ischaemic DC with LVEF < 50%.**

**Age and >3 segments with LGE  
were determinants of all-cause  
mortality**

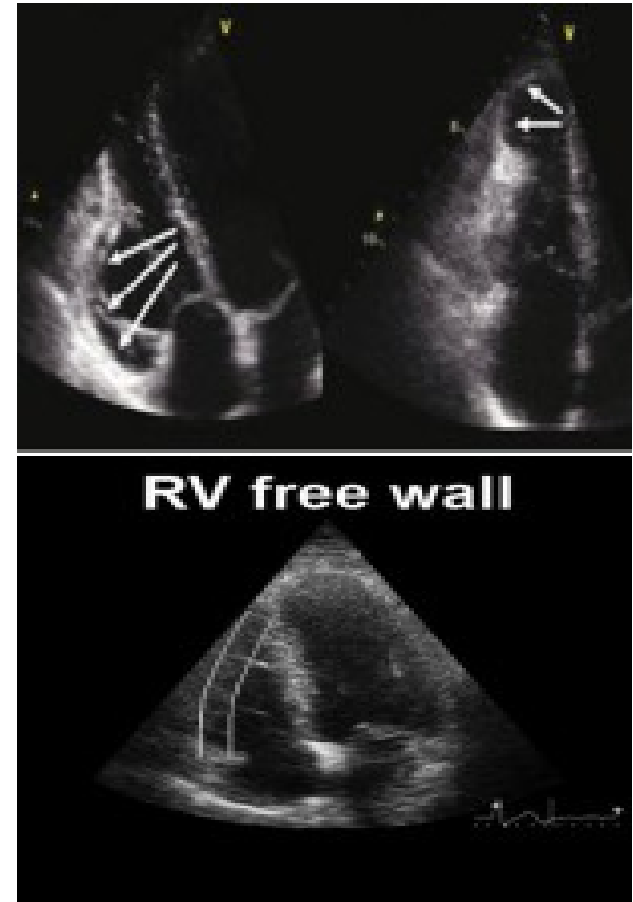
**DERIVATE study.**



# CM -ARVC

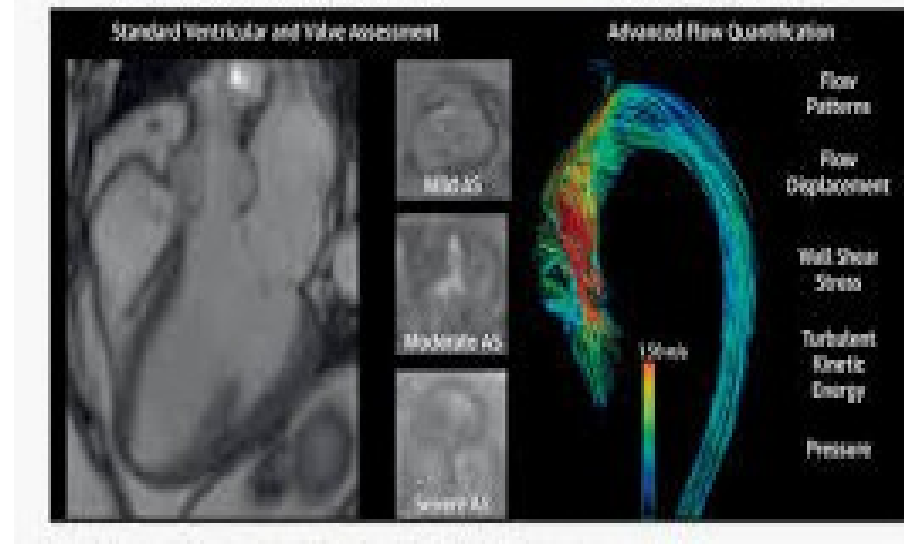
RV basal diameter,  
RV global longitudinal  
strain and RV free wall  
strain could asses in the  
Diagnosis of ARVC

Ederchy St Arch in cardiovascular disease 2020



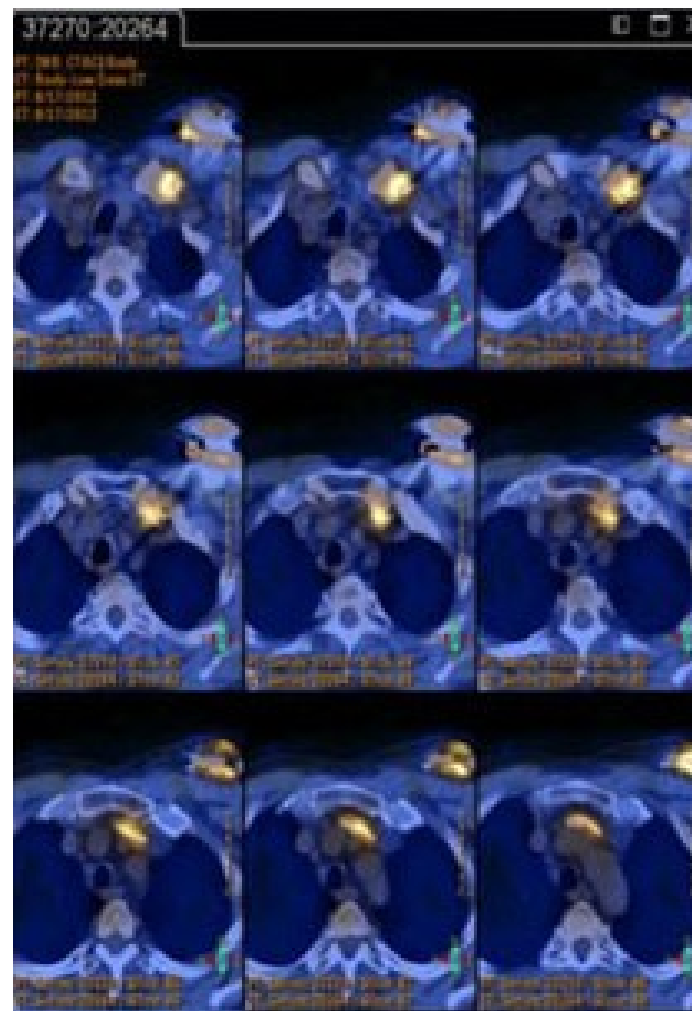
# Valvulopathy (1)

In patients with aortic stenosis was found that age, LGE, and right ventricular dysfunction constituted the main predictors of all-cause mortality at follow-up.



# Valvulopathy( 2) -Endocarditis

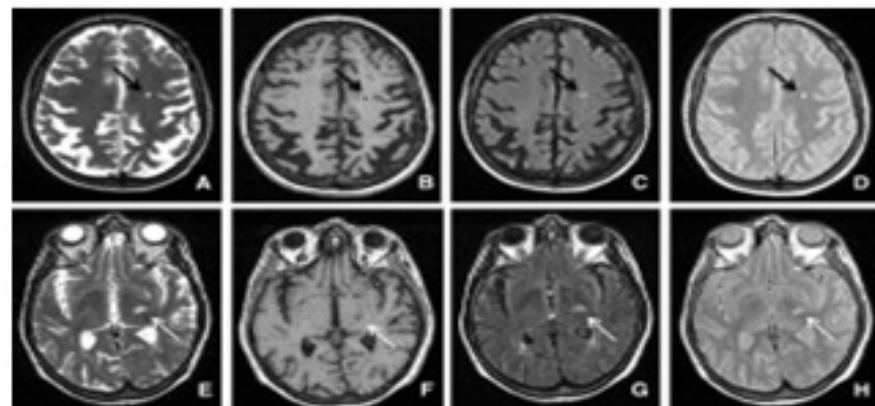
– Several studies have highlighted the incremental value of white blood cell SPECT /CT imaging for the detection of infective endocarditis in pts with cardiac implanted electronic devices.



# Prevention

## Association of age-related left atrial remodeling with ischemic stroke in patients with normal sinus rhythm: the ARIC-NCS Study

Among elderly with NSR and preserved EF, even subtle LA dysfunction (worse LA reservoir function and greater LA stiffness) may be a risk factor for subclinical cerebral infarcts and stroke. →  
implications for empiric anticoagulation.



# FUTURE Molecular imaging

- **Molecular imaging of the heart opens up new opportunities to identify and characterize more precisely cardiac lesions at an early stage paving the way for the development of individualized medicine.**

ΕΥΧΑΡΙΣΤΩ



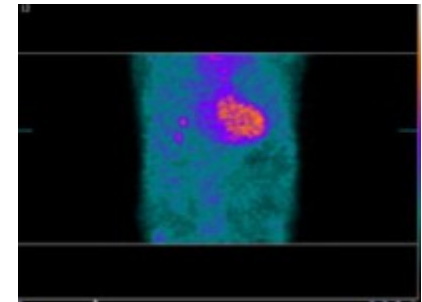
# CAD

- **The percentage of invasive coronary angiography (ICA) was lower in the hospital that performed sequential SPECT/CCTA (8.5%) than only standard SPECT imaging (12.0%).**

- Antti Saraste et al. Imaging in ESC clinical guidelines: chronic coronary syndromes *European Heart Journal - Cardiovascular Imaging* (2019) 20, 1187–1197

# HEART FAILURE (5)/ CM Amyloidosis

Scintigraphic techniques have emerged as a highly sensitive and specific option to non-invasively diagnose cardiac involvement in patients with transthyretin-amyloidosis (ATTR)




# Advanced critical care echocardiography



A-lines

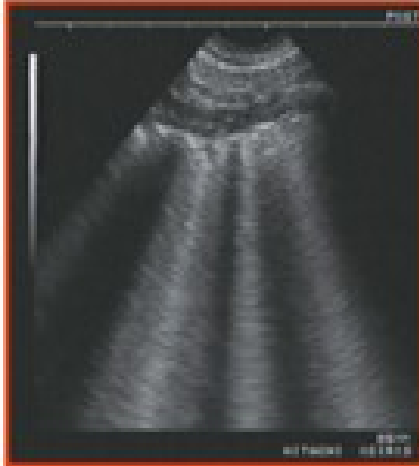


Regular pleur  
B-lines

Lung ultrasound for daily monitoring of ARDS patients on extracorporeal membrane oxygenation: preliminary experience 

Ultrasound assessment of antibiotic-induced pulmonary reaeration in ventilator-associated pneumonia\*

Large pleural effusion, lung consolidation



Irregular pleur  
B-lines