ACS and Chest Pain Updates

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Disclosures

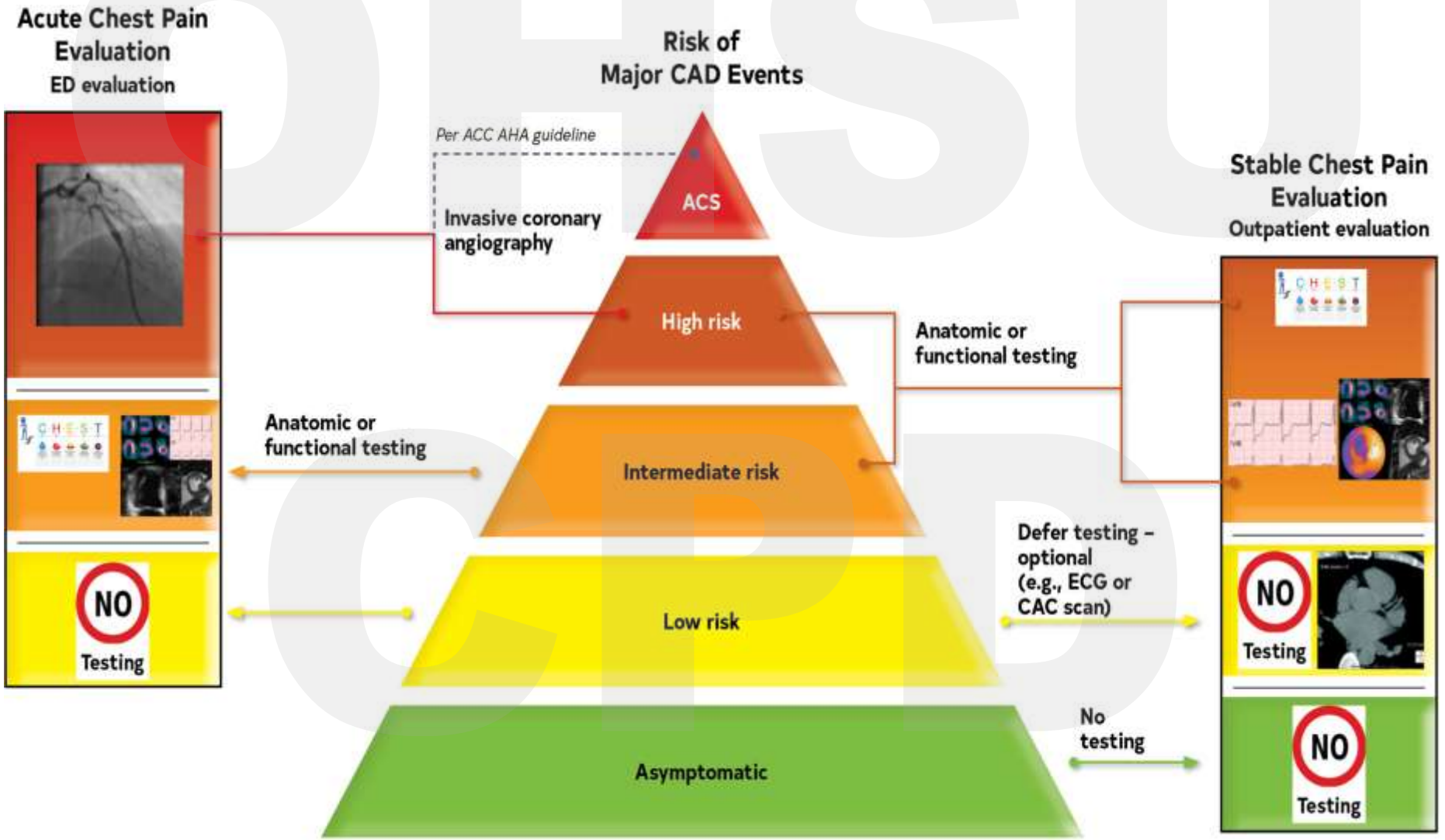
- None

Learning objectives

- Identify current guideline documents for management of CAD
- Review approach to evaluation of chest pain
- Understand the spectrum of CAD encountered in the inpatient setting
- Understand the role of coronary CT imaging in the evaluation of chest pain and CAD
- Identify modern evidence-based post-PCI antiplatelet and anticoagulant strategies
- Understand the role of secondary prevention medical management in plaque stabilization

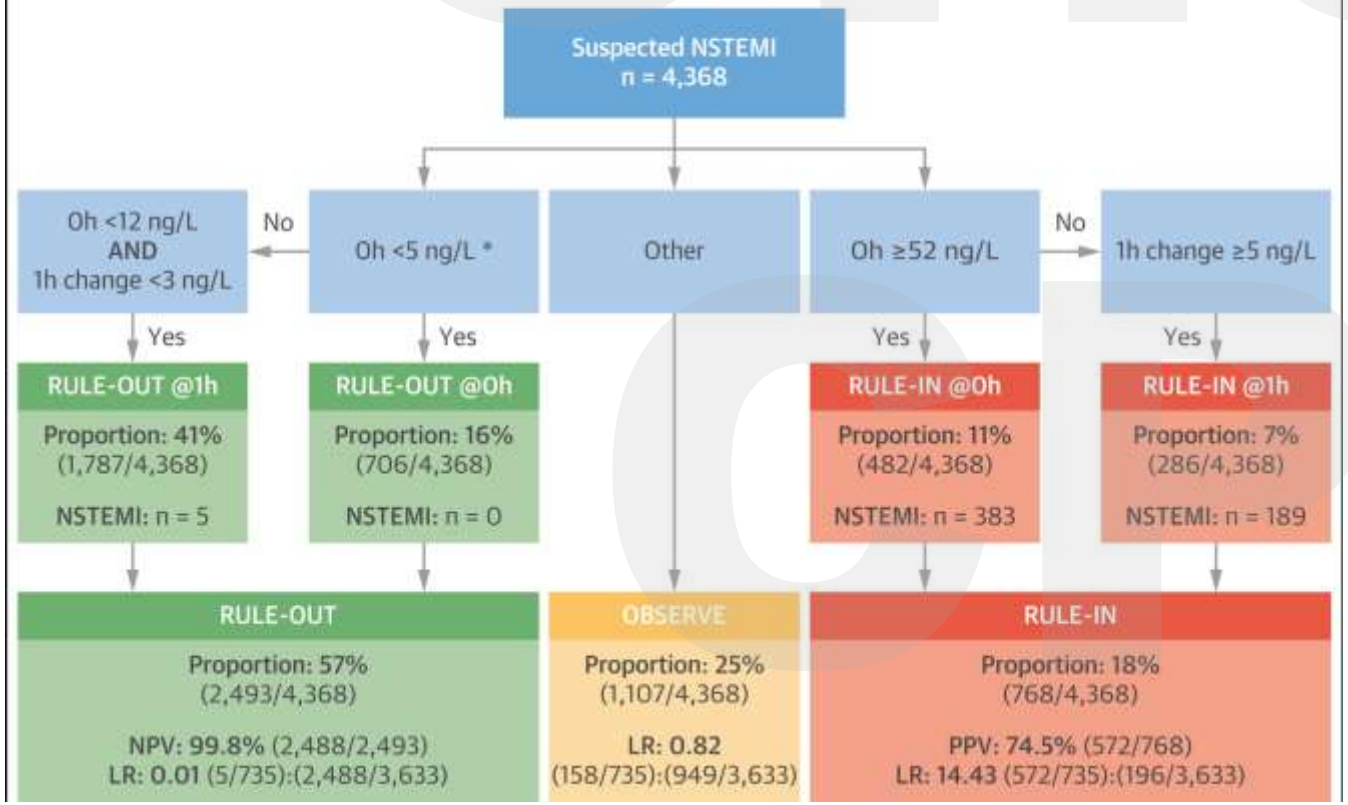
Recent CHD guidelines

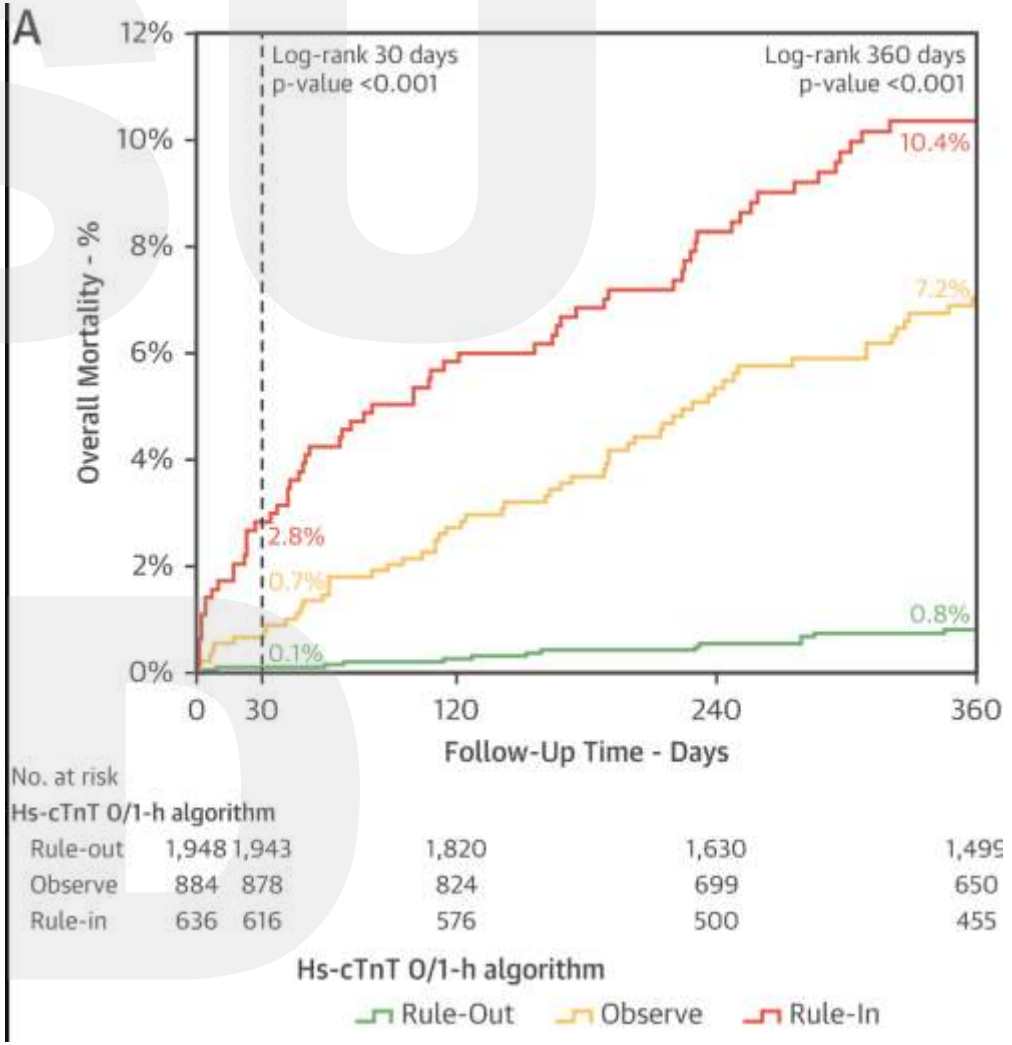
Hospital evaluation of chest pain



The hsTn evaluation- ESC 0/1 pathway

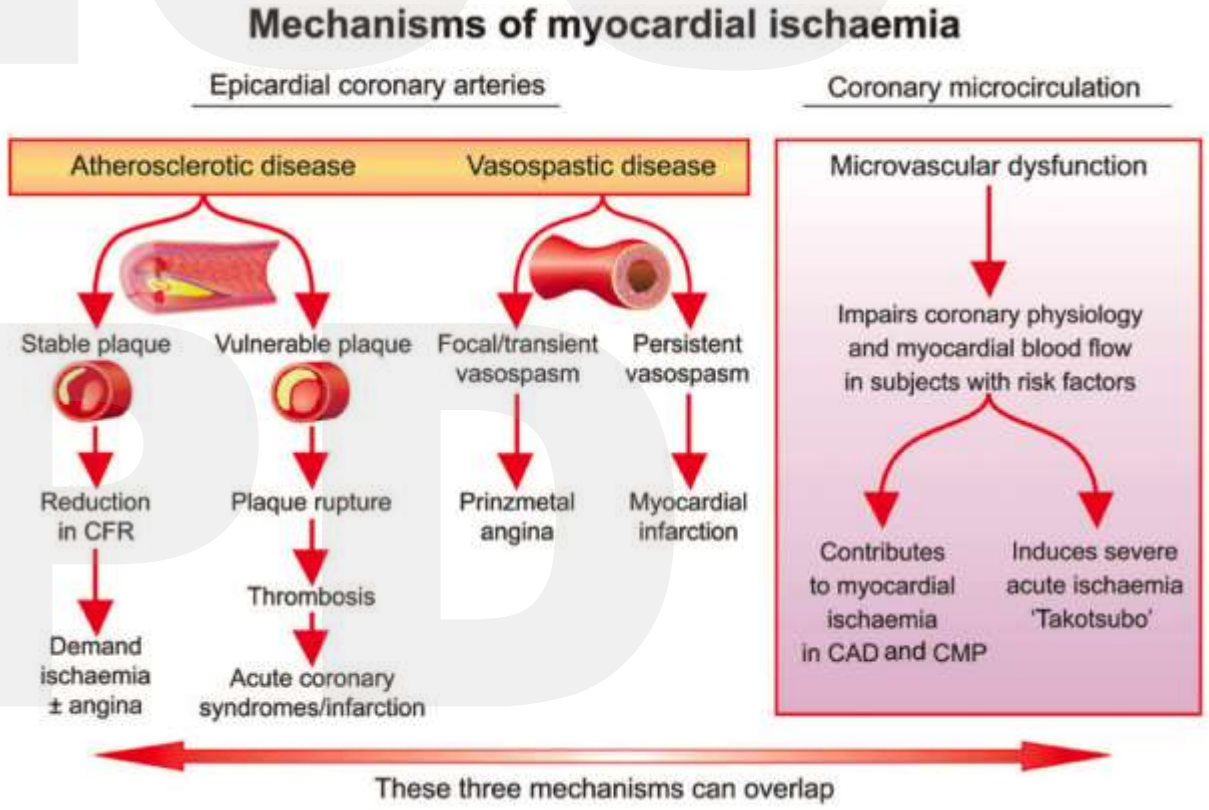
Disease \ Triage	RULE-OUT All	RULE-OUT (@0h)	OBSERVE All	RULE-IN All	RULE-IN (@0h)	Total
no NSTEMI	2,488	(706)	949	196	(99)	3,633
NSTEMI	5	(0)	158	572	(383)	735
Total	2,493	(706)	1,107	768	(482)	4,368





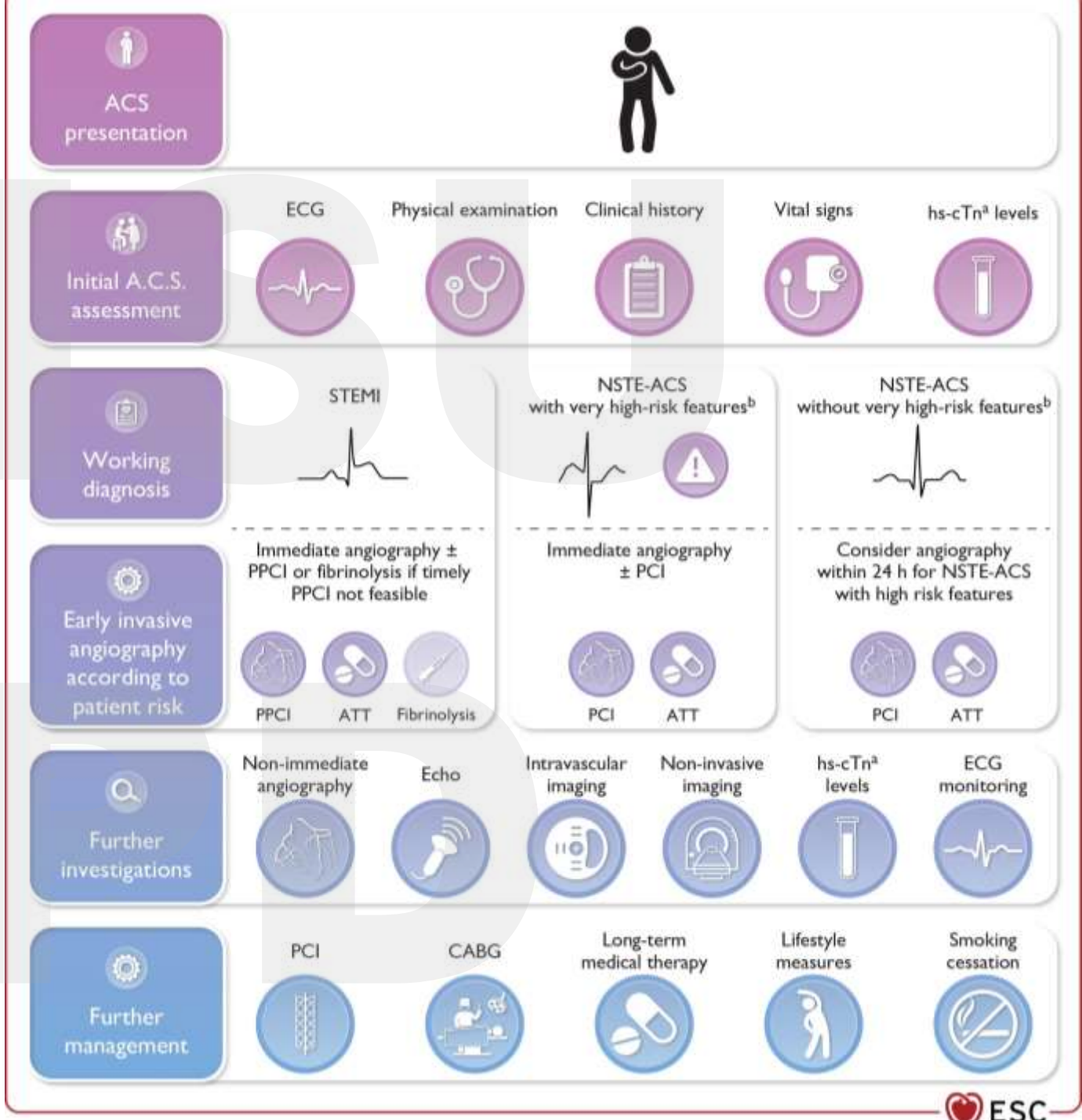
Spectrum of ischemic heart disease

- Atherosclerotic vs non-atherosclerotic
- Stable vs unstable
- Epicardial vs microvascular



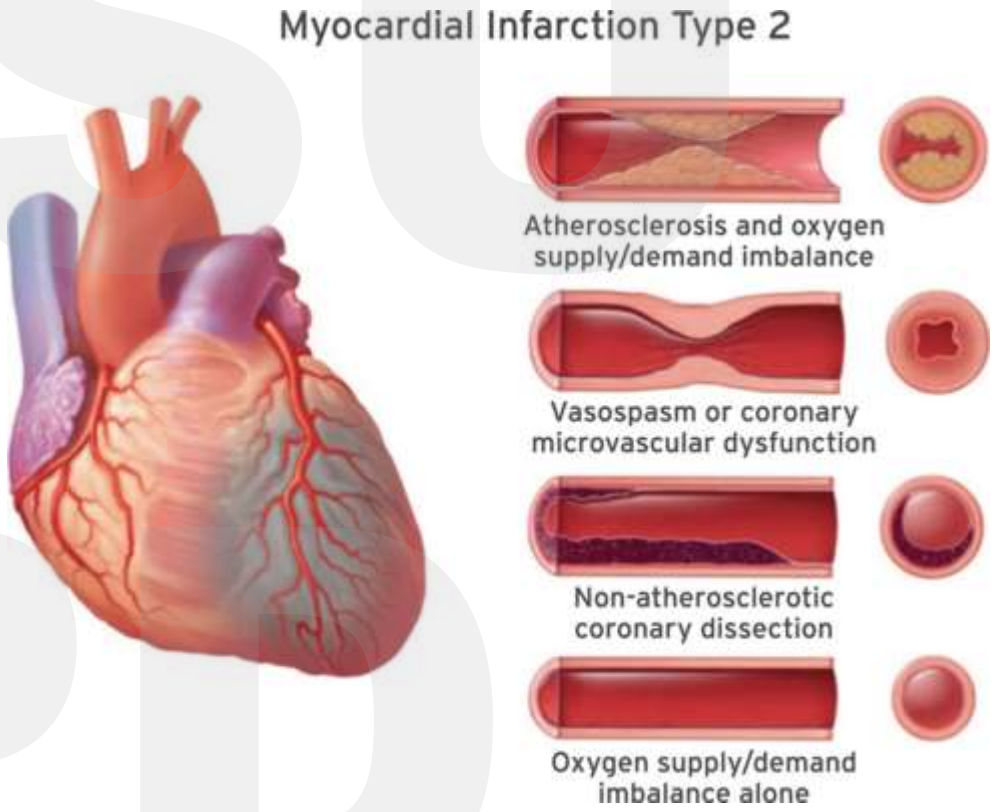
Acute coronary syndromes

- Atherosclerotic plaque rupture
- Minimal change in basic approach over the last 10-15 years

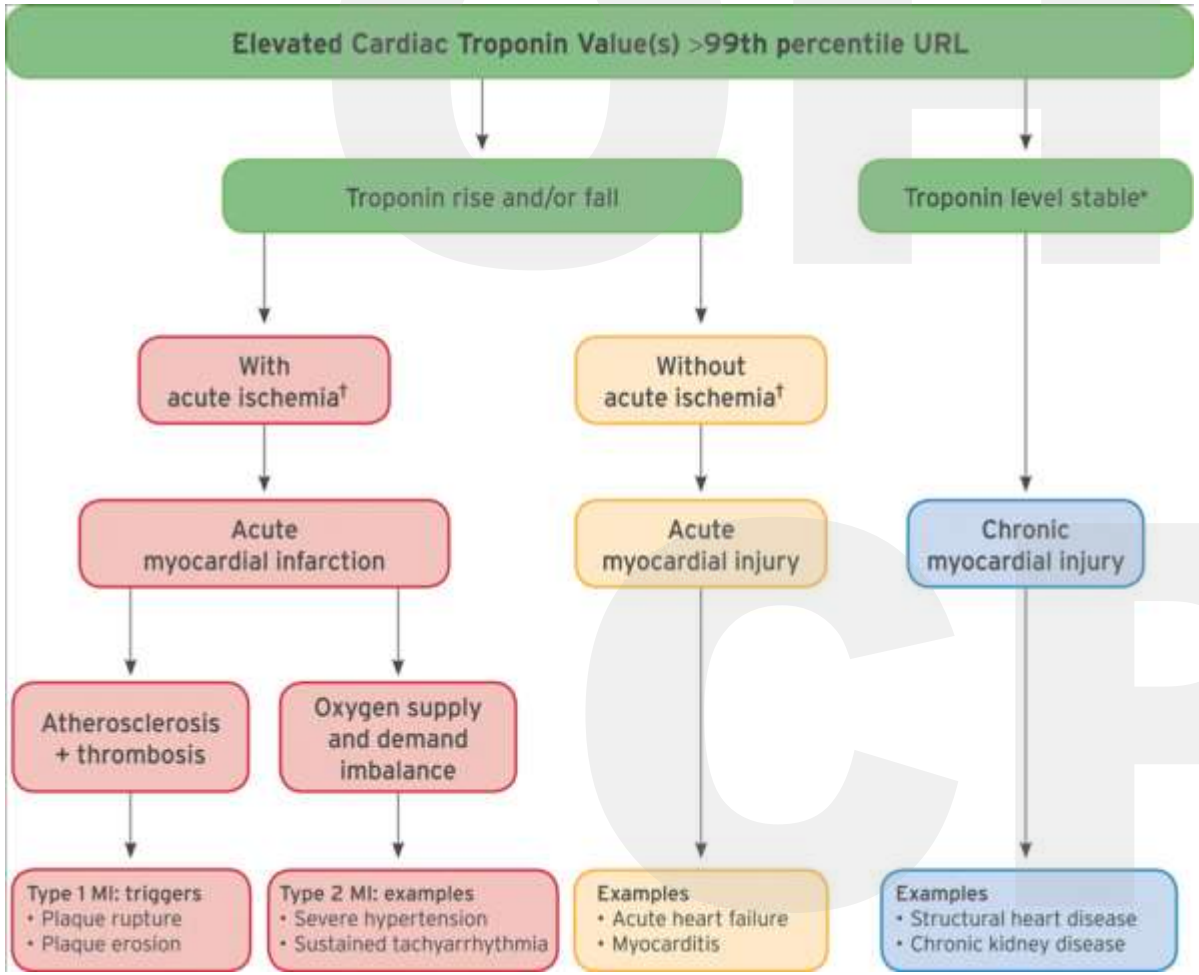


The Type II NSTEMI

- The bane of the hospitalist and cardiologist alike!
- Most think of this as “supply demand mismatch”
- Really just any non-plaque-rupture cause of ischemia

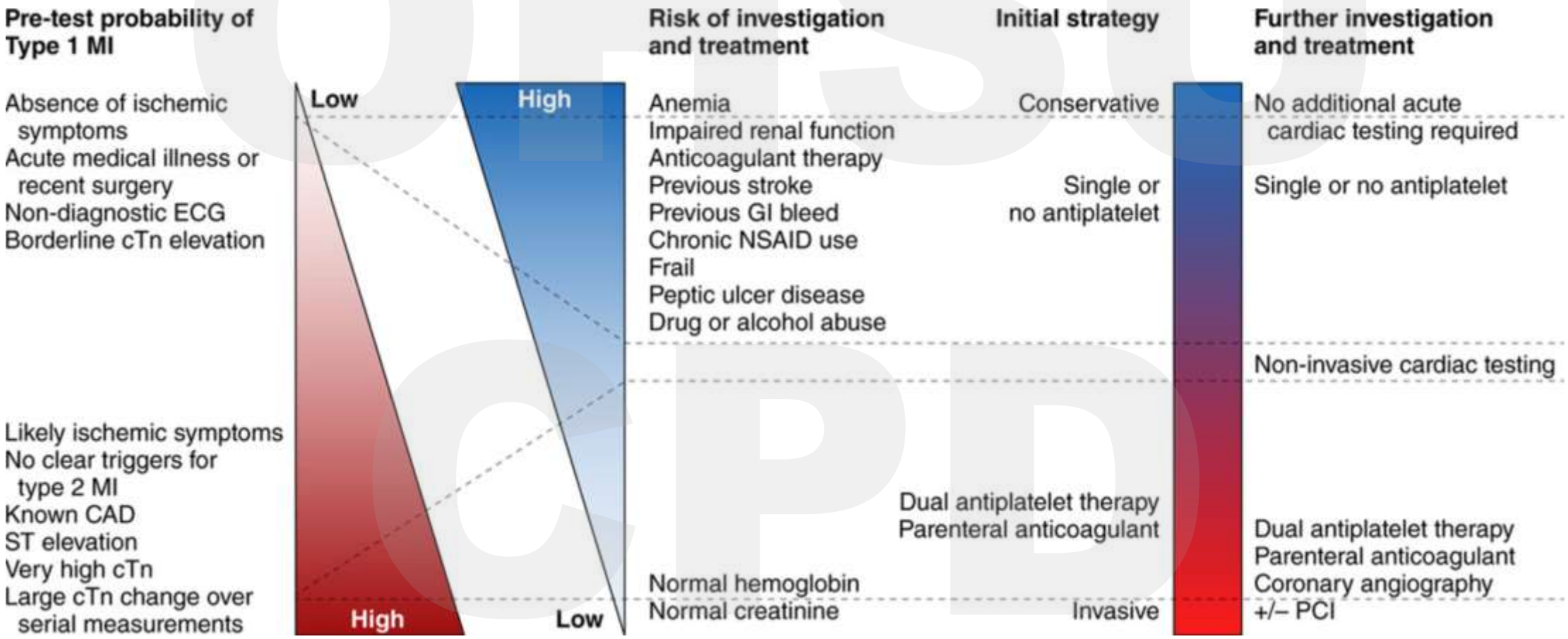


Myocardial Injury



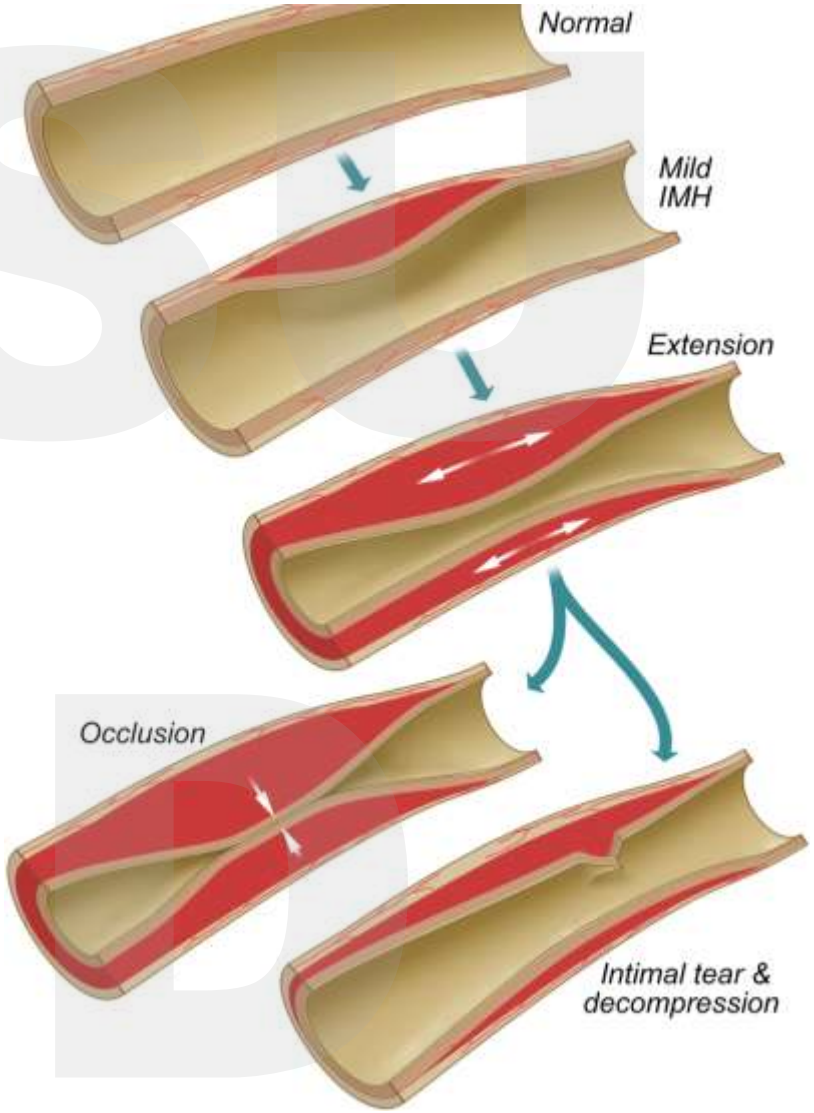
- Differentiation is challenging here!
- Imaging is often helpful
  - LVH
  - Low EF
  - Coronary or non-coronary distribution segmental dysfunction or thinning

The Type II NSTEMI



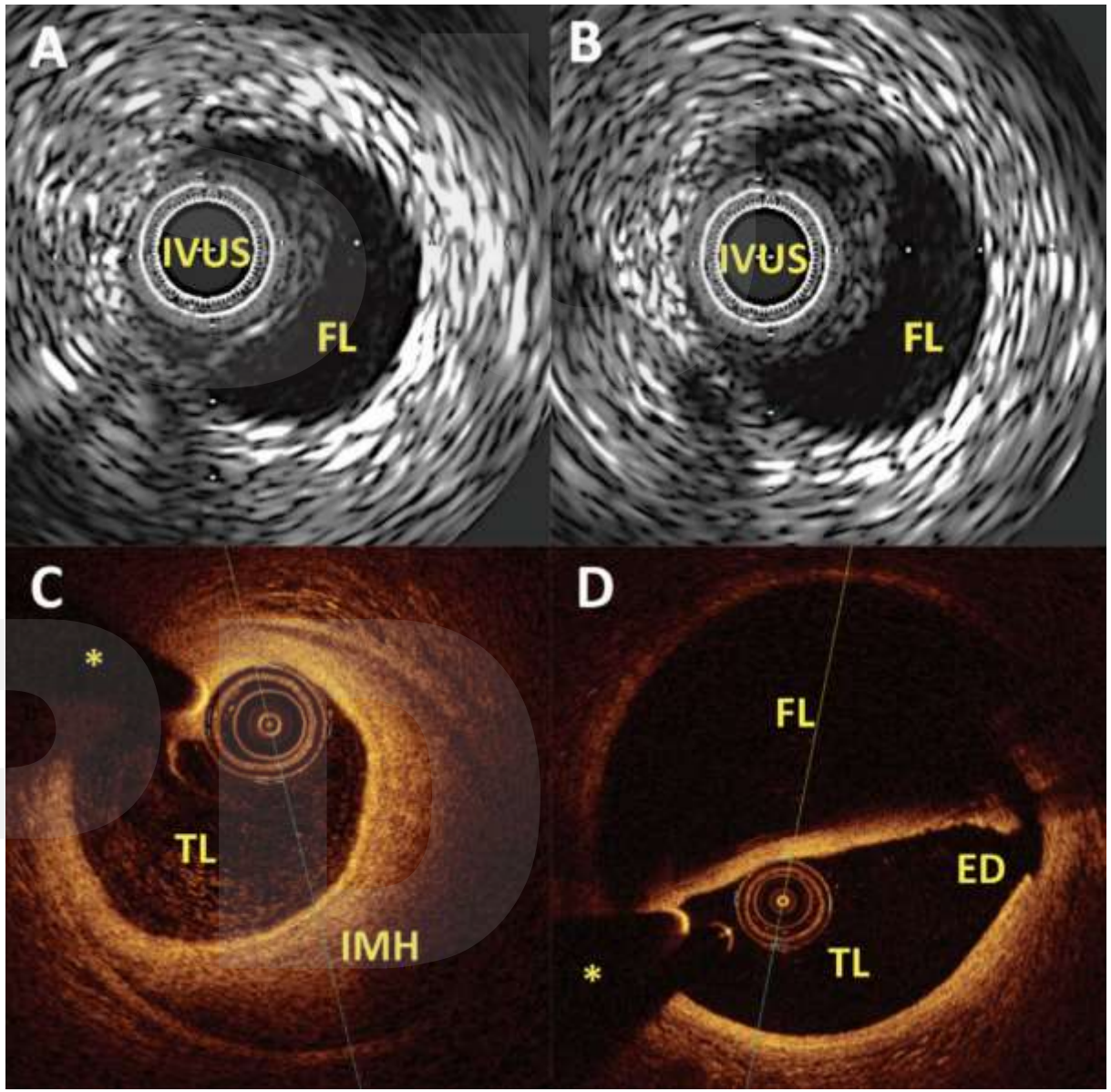
Spontaneous coronary artery dissection (SCAD)

- Technically a “Type II” MI
- Up to 4% of MI presentations
- 35% in women 50 or under



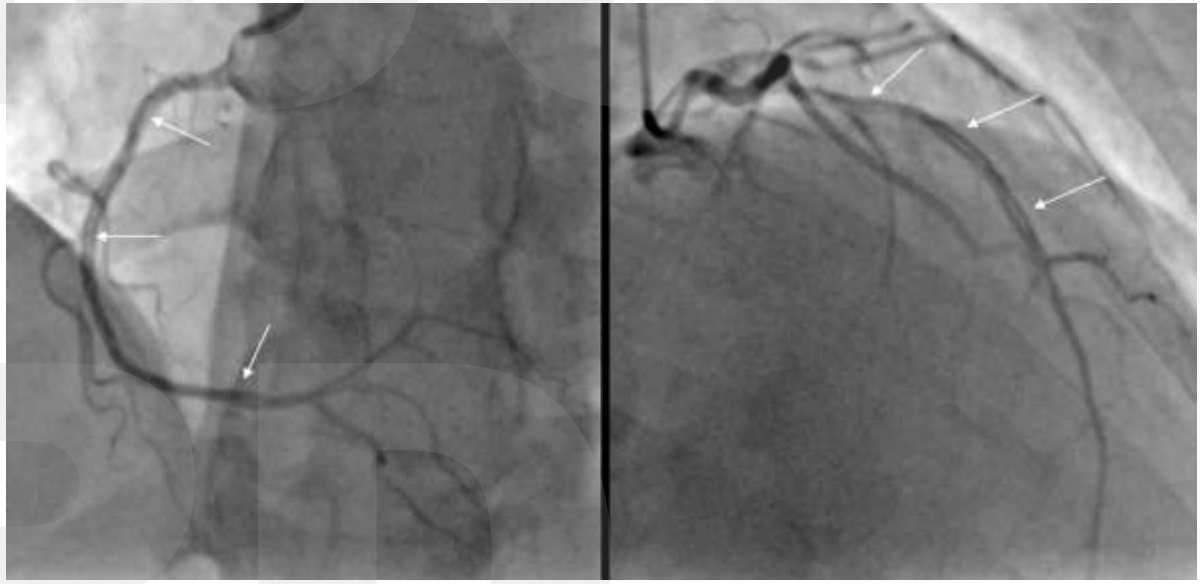
SCAD

- Demographics (pretest prob)
- Angiography (ICA vs CCTA)
- Intravascular imaging



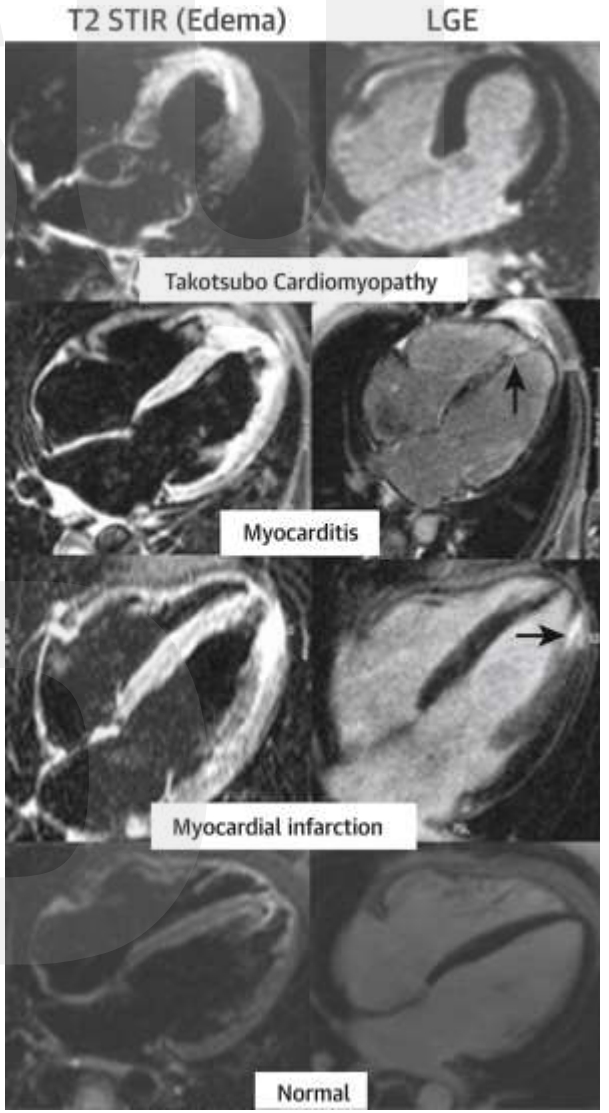
SCAD

- Management is a big challenge here
- Most spontaneously heal
- Frequent recurrent CP
  - Med management
  - CT imaging if available
- Association with FMD- image
- Post-SCAD counselling
  - Recurrence risk
  - Pregnancy

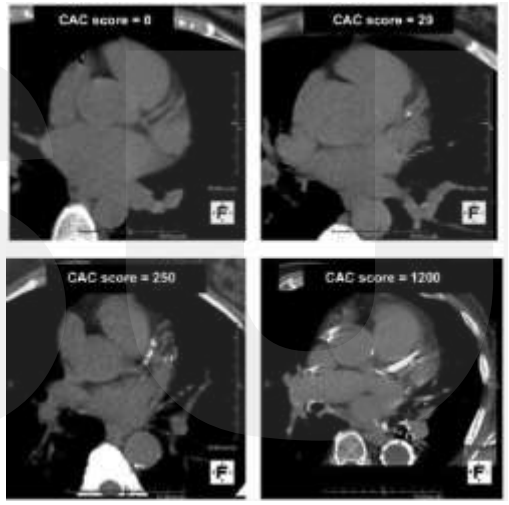


Myocardial infarction with nonobstructed coronary arteries (MINOCA)

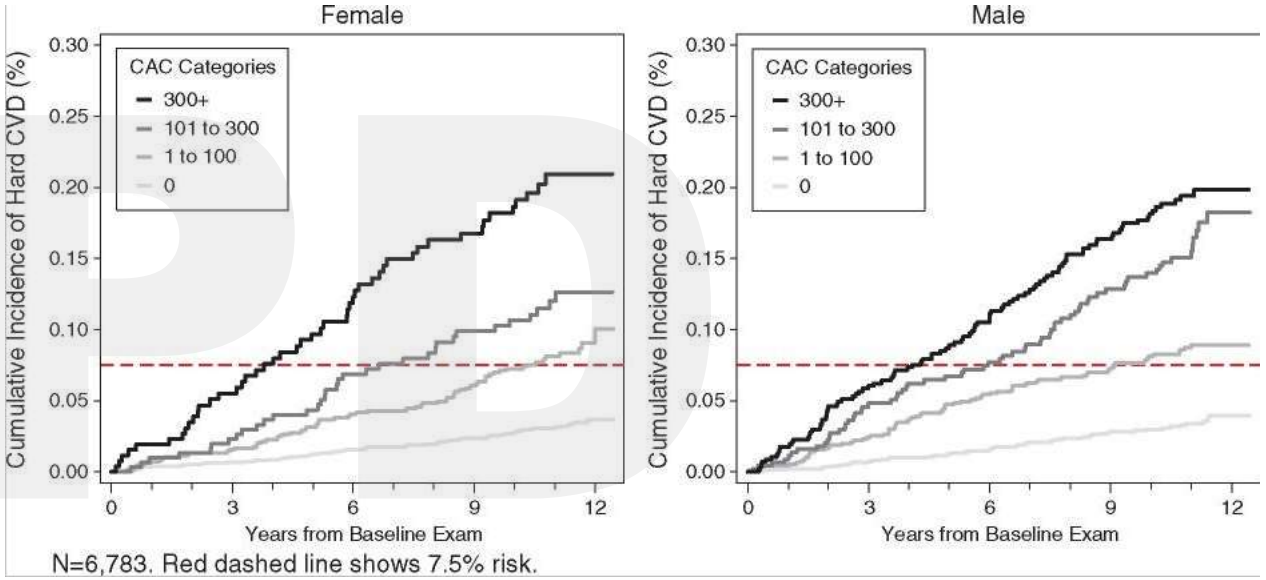
- Heterogenous mix of etiologies
  - MRI can make a dx in about 75%
    - ~ 25% MI missed by angiography
    - ~25% Cardiomyopathy- Takotsubo most common
    - ~25% Myocarditis
    - ~25% Unclear



Coronary CT imaging- CAC



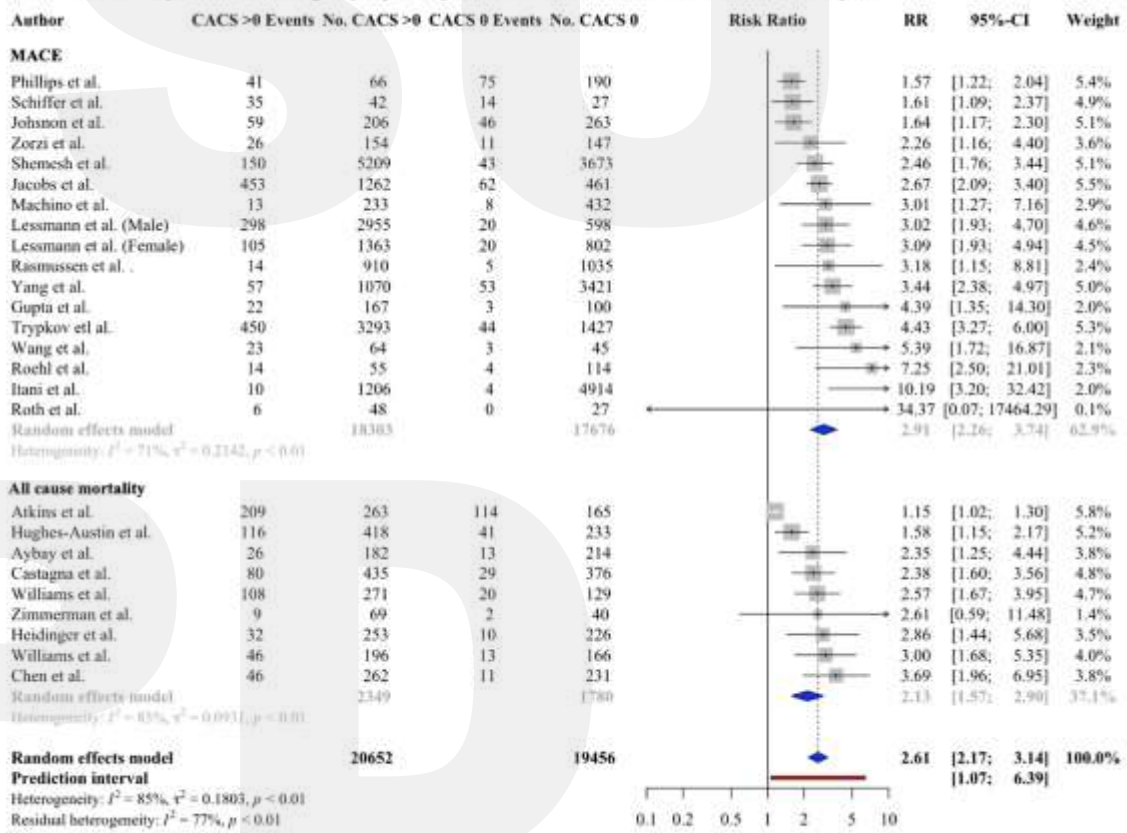
- Reflects calcified coronary plaque (late manifestation of atherosclerosis)
- A useful indicator of atherosclerosis to trigger prevention (statin)
- Calcification ≠ Stenosis



Coronary CT imaging- CAC

- Chest CT Impressions: “Incidentally identified severe coronary artery calcifications”
- Prognostically significant, but heterogeneously reported!
- Can drive pretest probability and approach to mgmt and prevention
- AI solutions are coming quickly here

From: Prevalence and clinical implications of coronary artery calcium scoring on non-gated thoracic computed tomography: a systematic review and meta-analysis



Forest plot showing the relative risk of major adverse cardiovascular events (MACEs), all-cause mortality, and all events for patients with CACS 0 and CACS > 0

CT Angiography

Coronary CT Angiography

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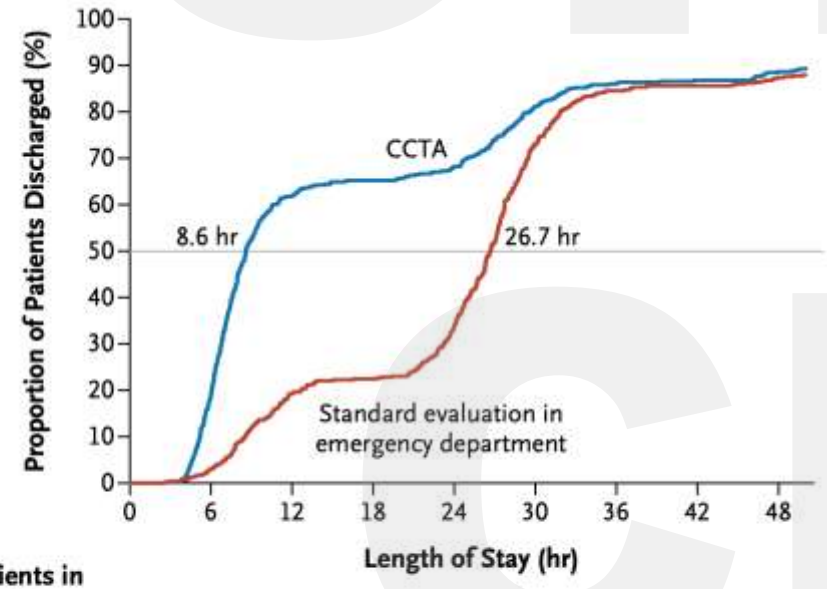
Coronary CT Angiography versus Standard Evaluation in Acute Chest Pain



No. of Patients in Emergency Department or Hospital									
CCTA	501	404	191	174	159	95	70	66	57
Standard evaluation	499	484	403	387	331	135	77	72	63

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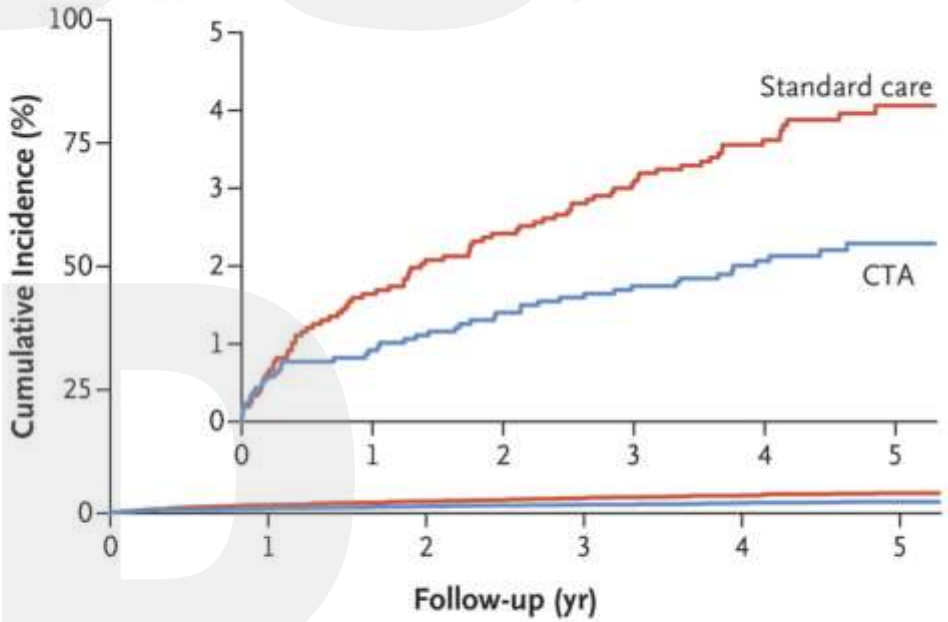
ORIGINAL ARTICLE

Coronary CT Angiography and 5-Year Risk of Myocardial Infarction

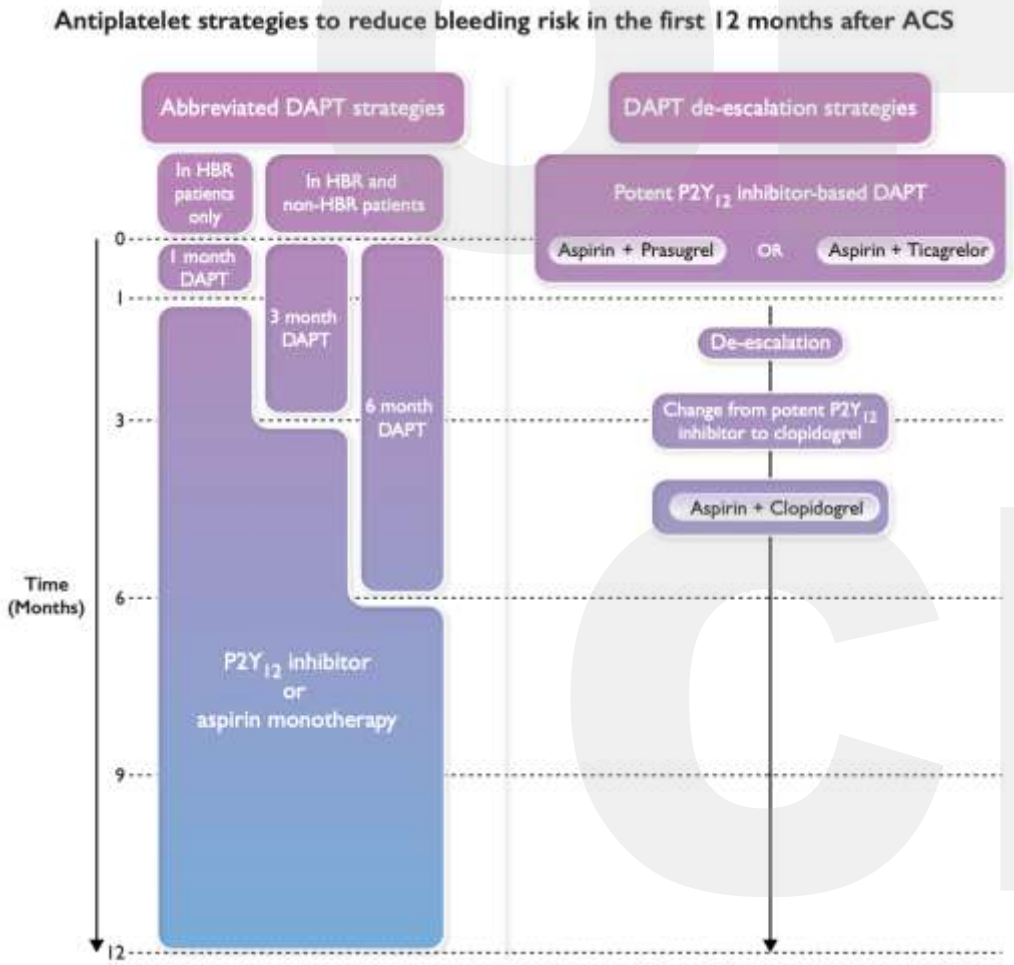
The SCOT-HEART Investigators*

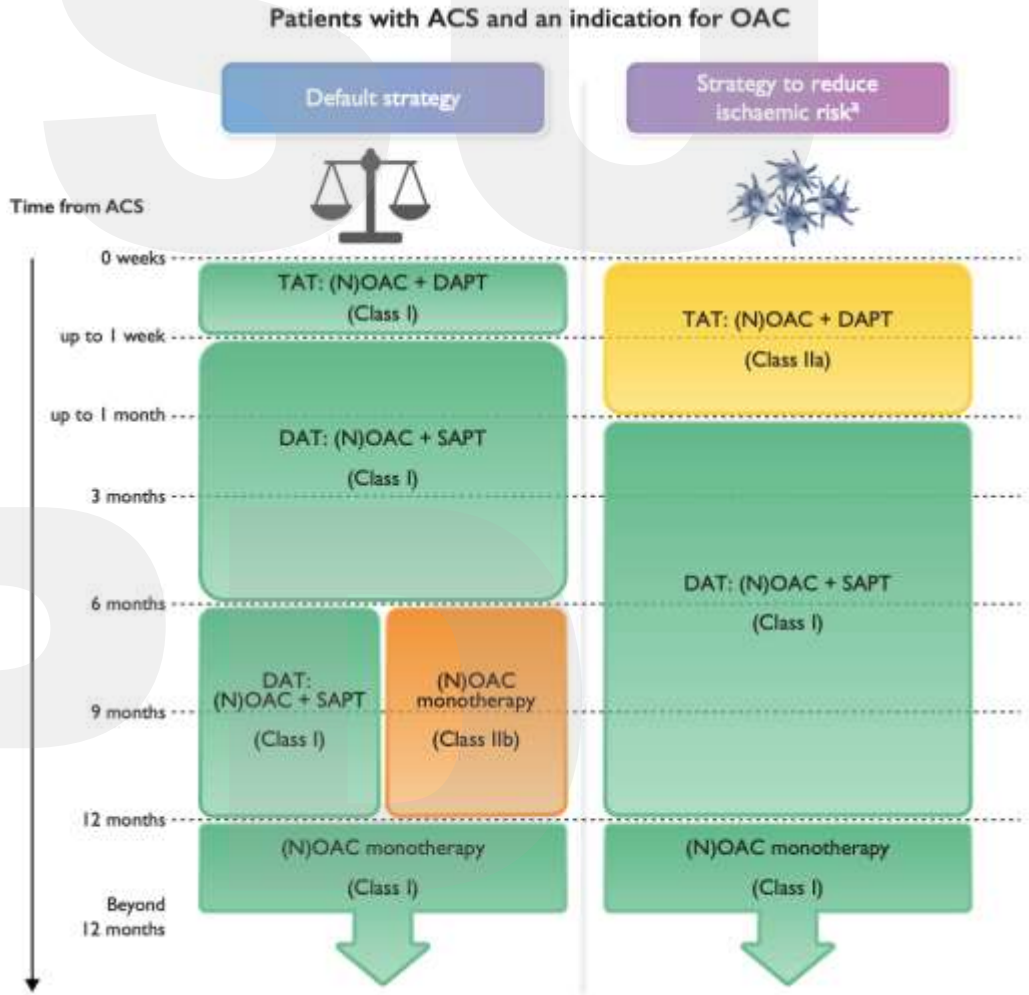
A Death from Coronary Heart Disease or Nonfatal Myocardial Infarction



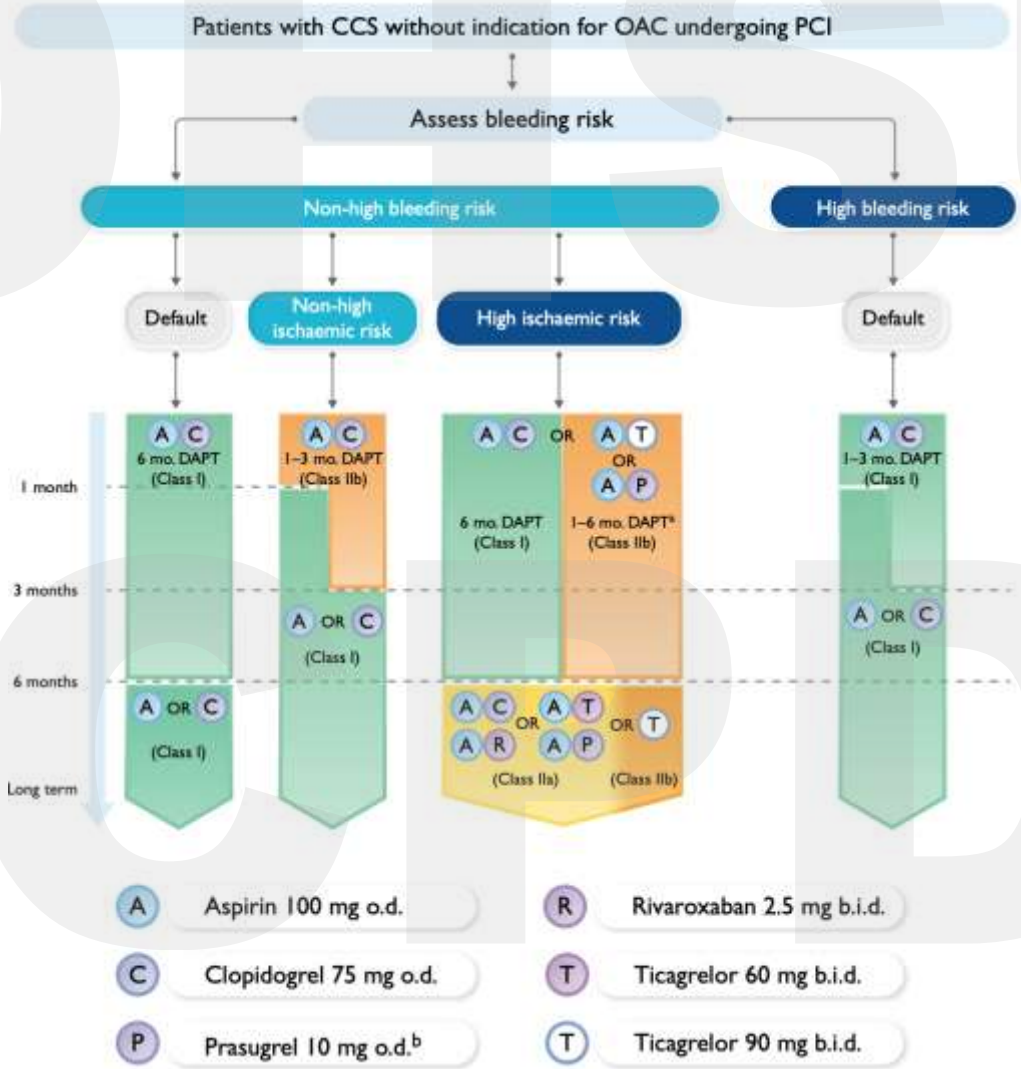
No. at Risk						
Standard care	2073	2033	2008	1994	1572	856
CTA	2073	2051	2029	2015	1588	872

Anticoagulation and antiplatelets after ACS

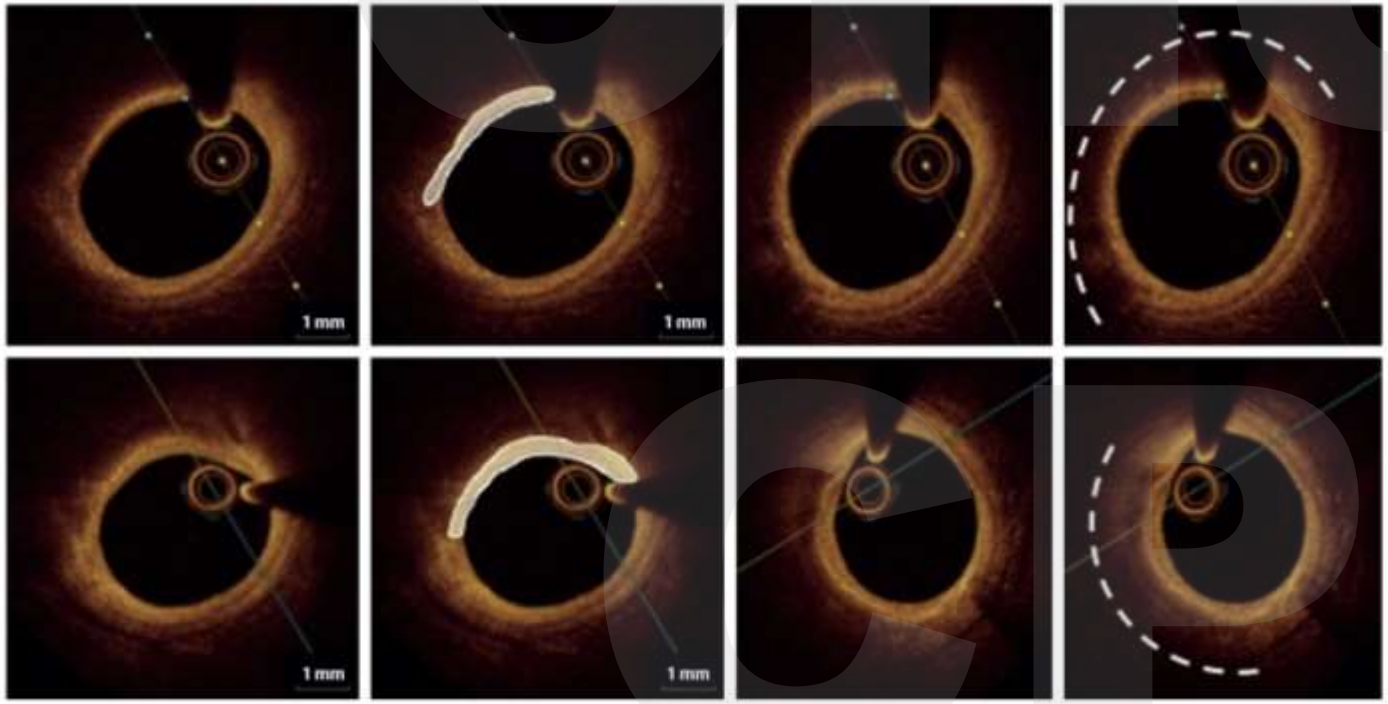


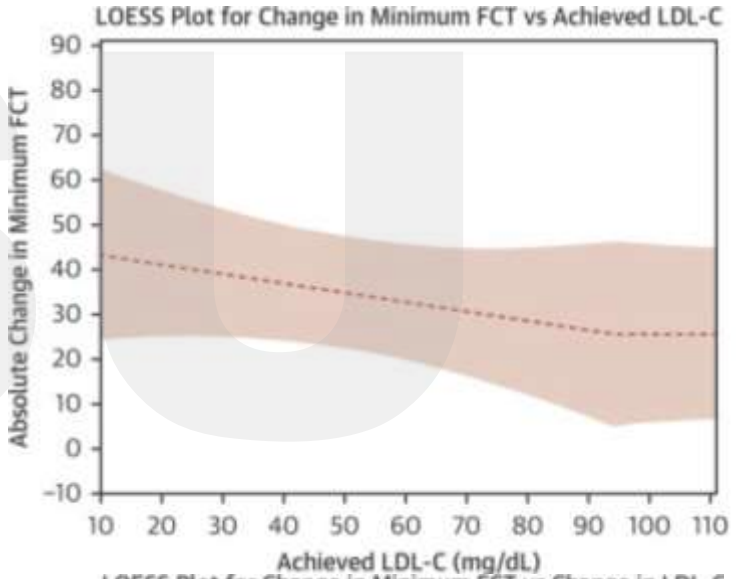


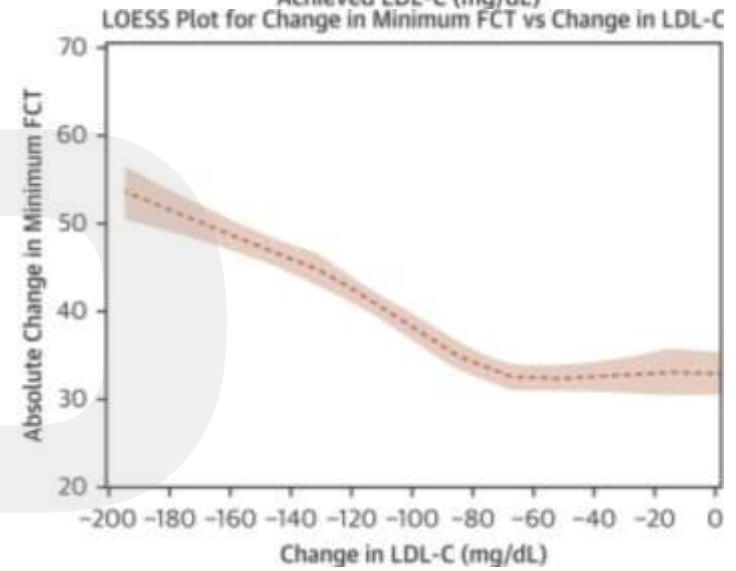
Antiplatelets after PCI (stable CAD)



Secondary prevention







Thank you

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