Azərbaycan
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AZERBAIJAN SOCIETY OF CARDIOLOGY

Ürək çatışmazlığı xəstələrində miokardial revaskulyarizasiya: görüntüləmə üsulların rolu

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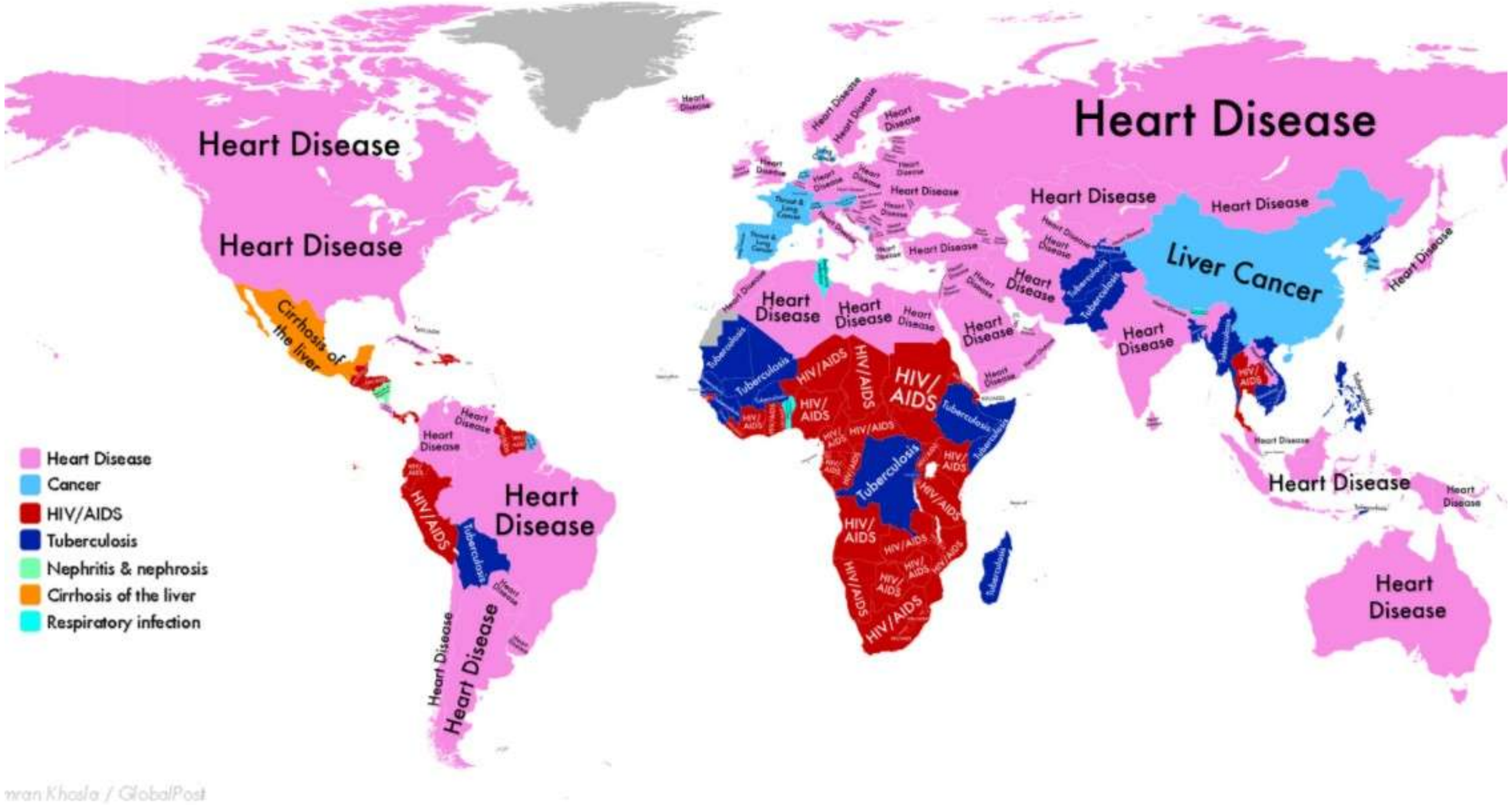
Baku, Convention Center

Heart failure – epidemiology



ESC Guidelines2018

Recommendations for non-invasive imaging in patients with coronary artery disease and heart failure with reduced ejection fraction

Recommendations	Class[a]	Level[b]
Non-invasive stress imaging (CMR, stress echocardiography, SPECT, or PET) may be considered for the assessment of myocardial ischaemia and viability in patients with HF and CAD (considered suitable for coronary revascularization) before the decision on revascularization.[9–11]	IIb	B

CAD = coronary artery disease; CMR = cardiac magnetic resonance; HF = heart failure; PET = positron emission tomography; SPECT = single-photon emission computed tomography.

[a]Class of recommendation.

[b]Level of evidence.

Əsas point

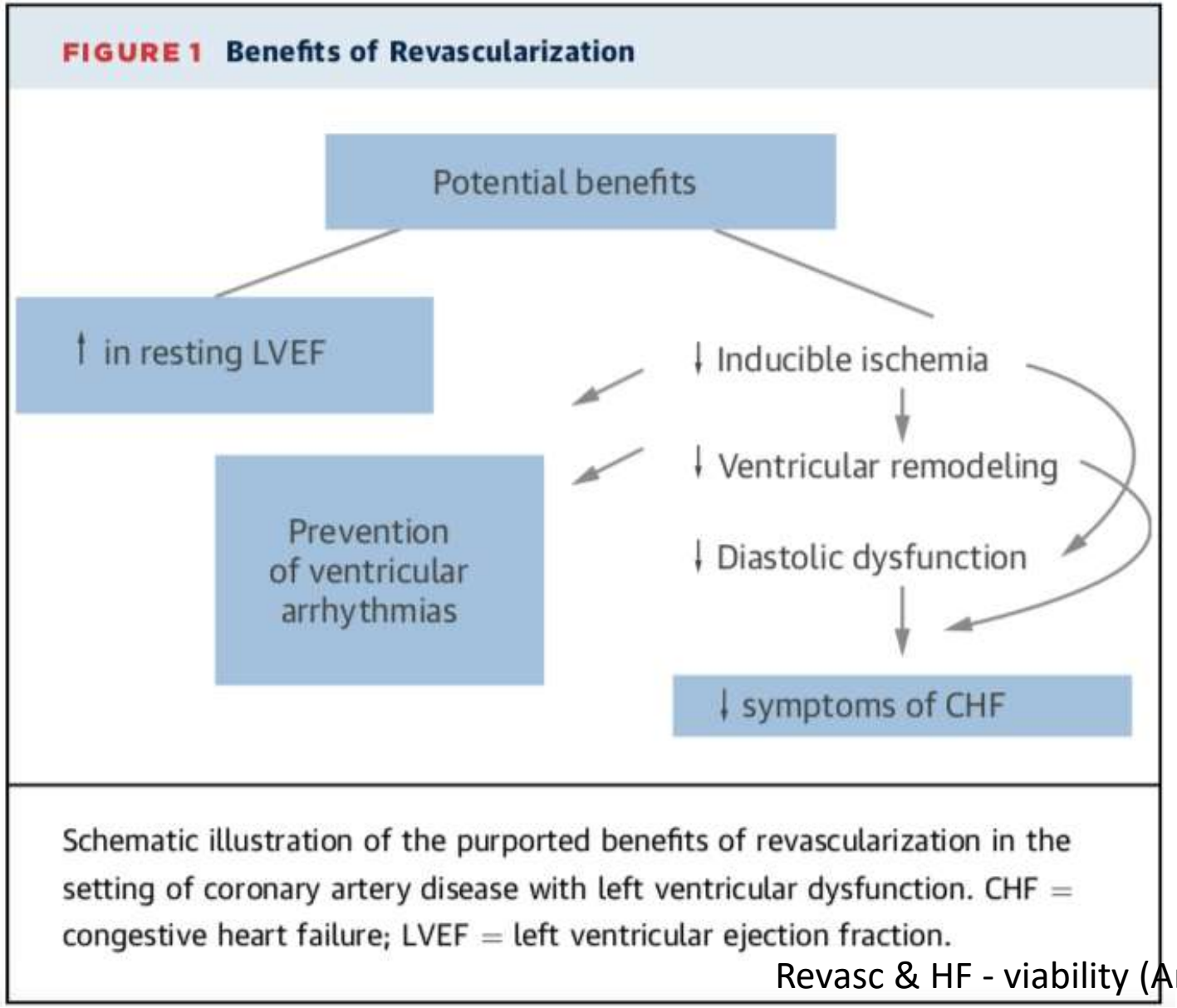
- Nəyə görə revaskulyarizasiya edilməli?
- Revaskulyarizasiyaya fizioloji hədəflər
- Canlılığı necə təyyin edək?
- Canlılıq proqnozu yaxşılaşdırırmı?

Nəyə görə revaskulyarizasiya edilməli?

- Simptomatik (angina pektoris, ÜÇ simptomları)

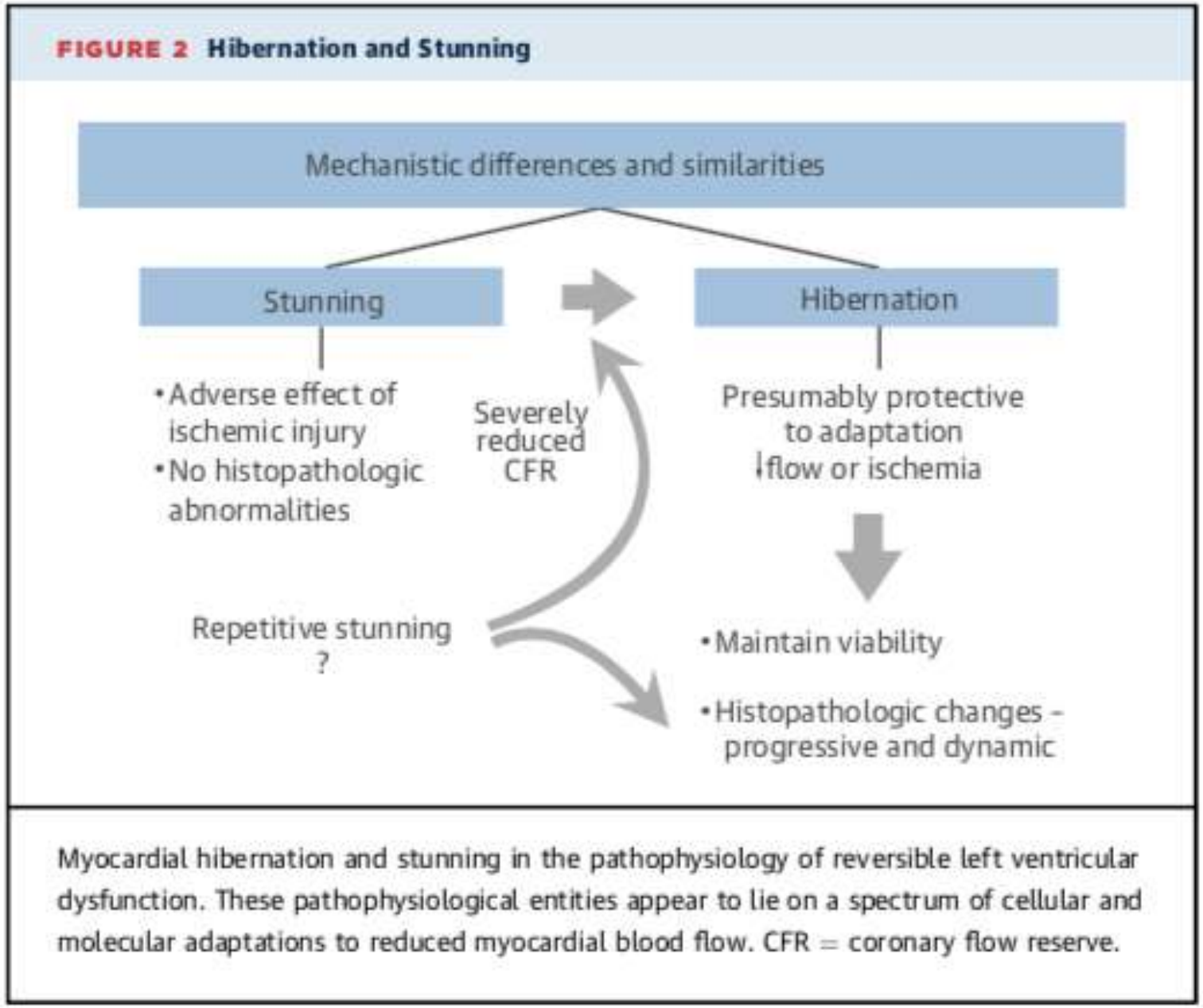
- Proqnostik (sağqalma, ÜÇ hospitalizasya)

Nəyə görə revaskulyarizasiya edilməli?



Revasc & HF - viability (Anavekar N, JACC 2016).pdf

FIGURE 2 Hibernation and Stunning



Myocardial hibernation and stunning in the pathophysiology of reversible left ventricular dysfunction. These pathophysiological entities appear to lie on a spectrum of cellular and molecular adaptations to reduced myocardial blood flow. CFR = coronary flow reserve.

Revasc & HF - viability (Anavekar N, JACC 2016).pdf

Physiological targets for revascularization

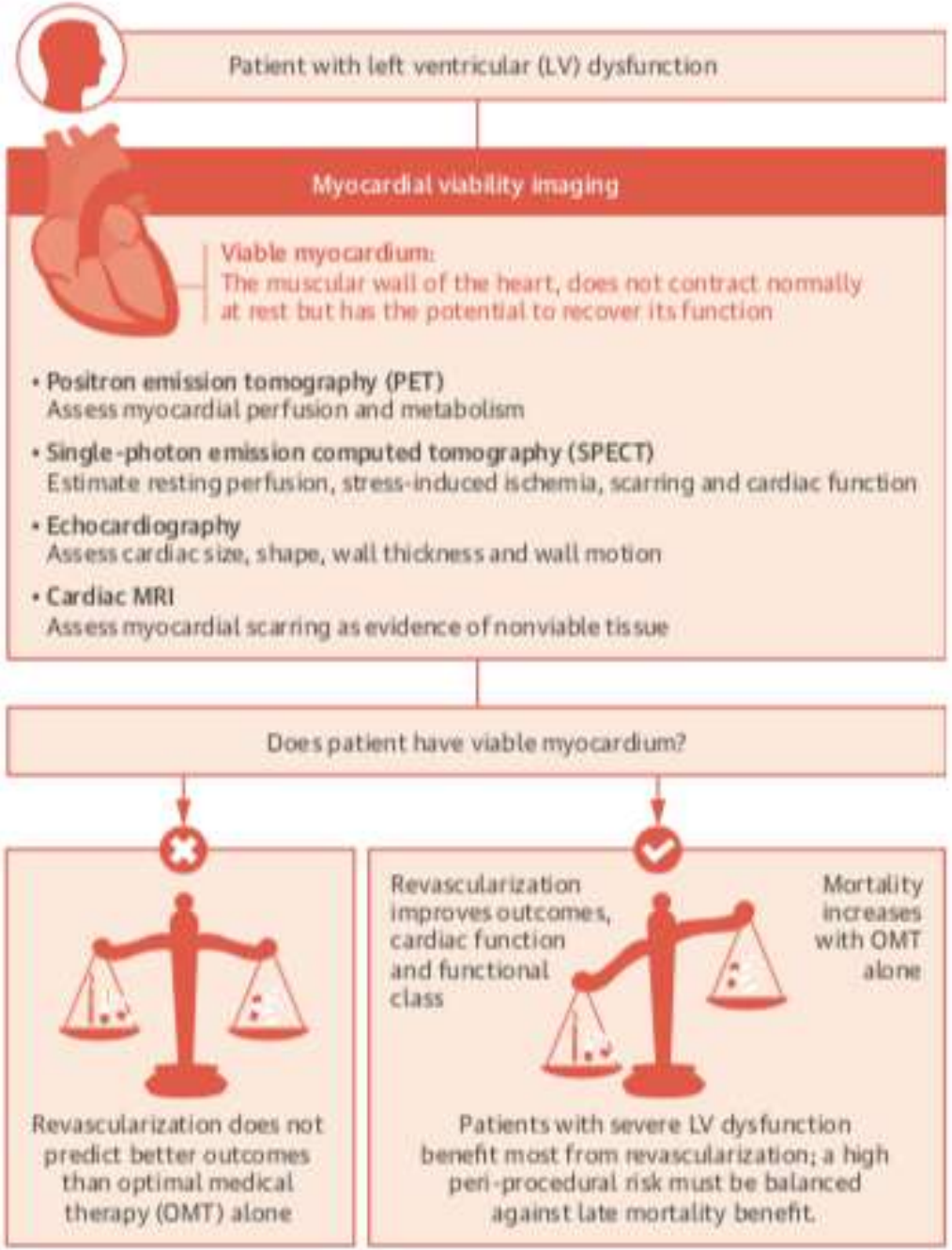
Viability and Prognosis in Patients with LV Dysfunction

Different Substrates

- Hibernation (resting ischemia)
- Repetitive stunning (inducible ischemia)
- Extent of scar
- Extent of remodeling
- Duration of hibernation

"How much is enough – not an all or none issue"

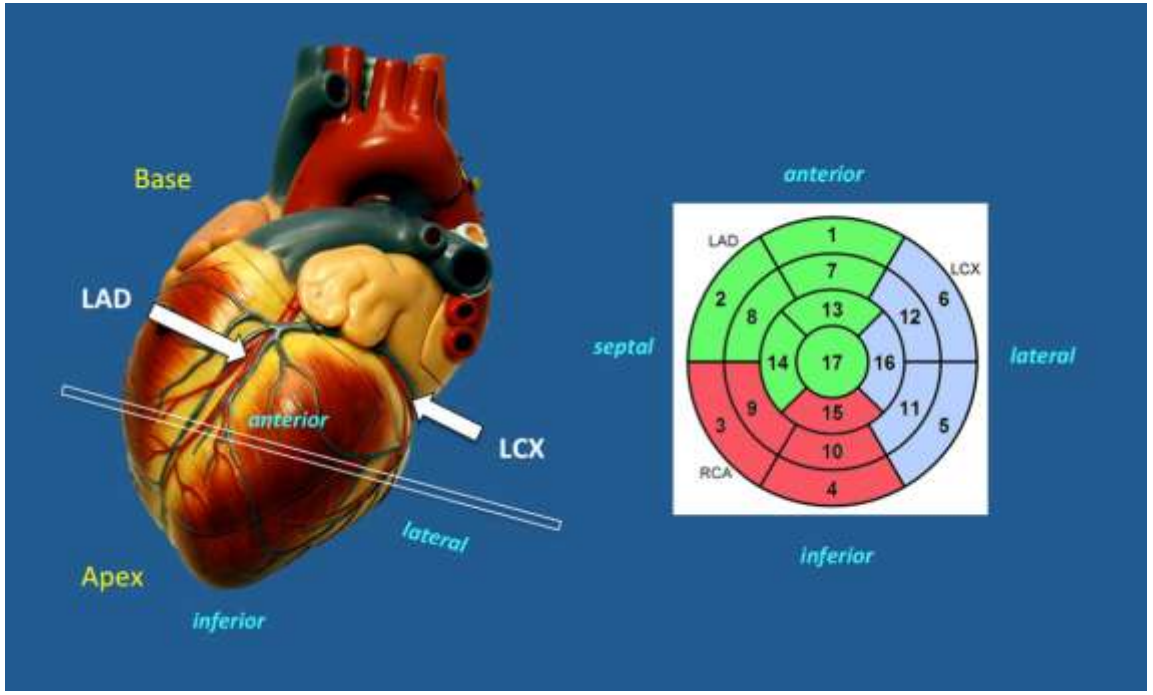
Need for combined imaging approaches to characterize substrates and reversibility

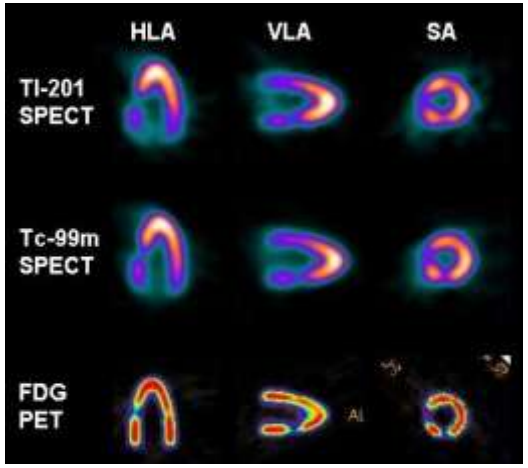


Revasc & HF - viability (Anavekar N, JACC 2016).pdf

Canlılıq necə təyyin edilə bilər?

- Dobutaminlə Stress-ExoKQ
- Nuklear metodlar
- Ürək MRT





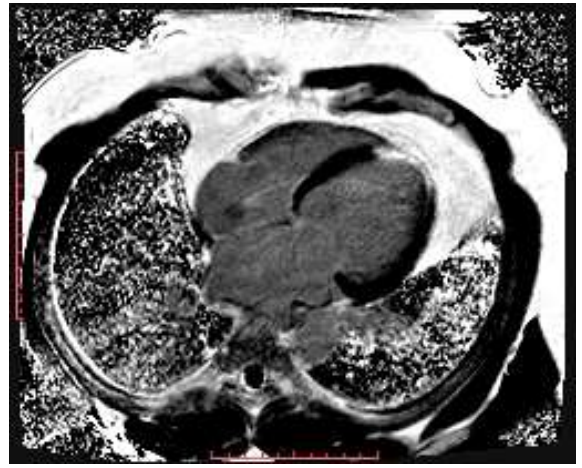
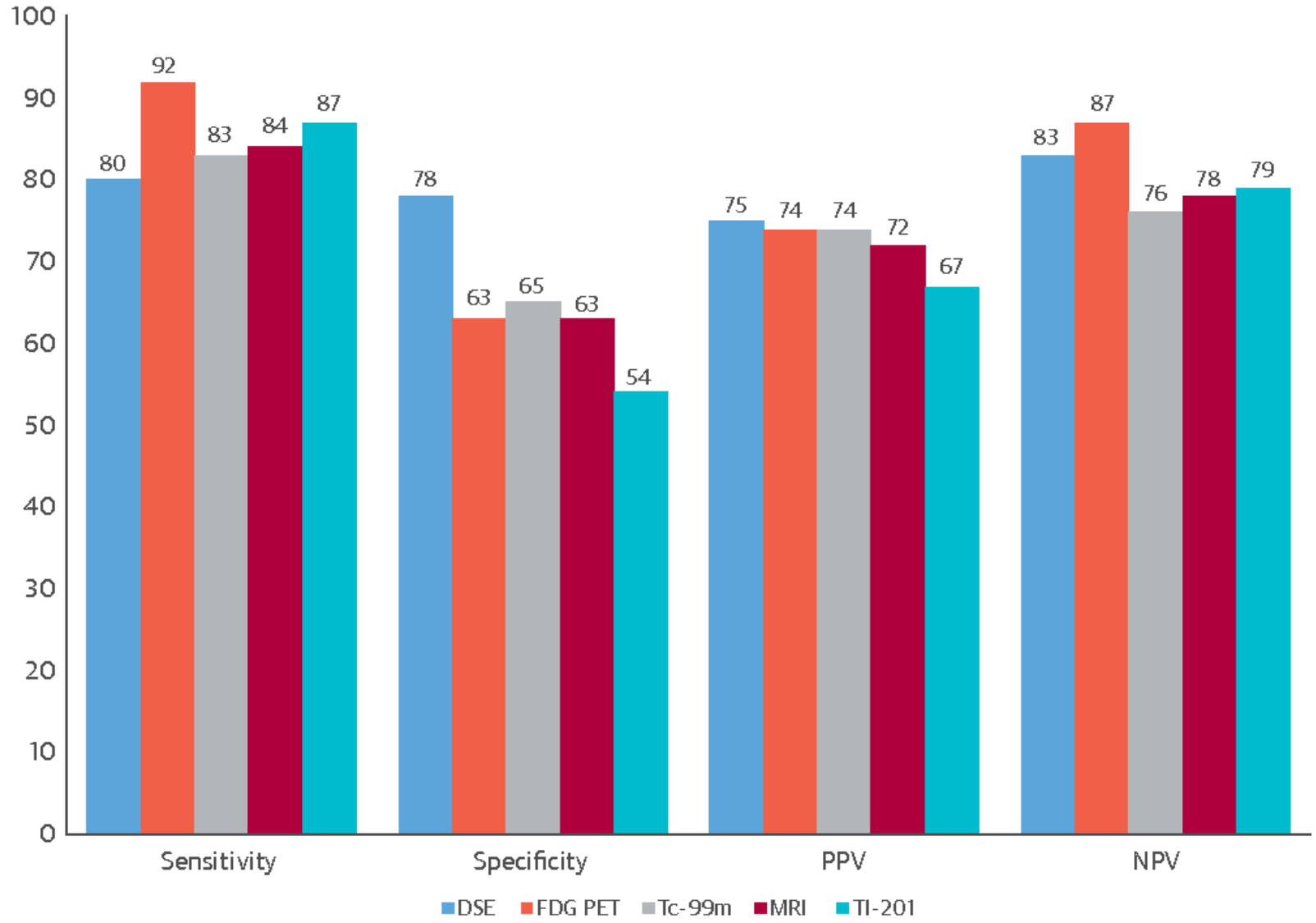


FIGURE 3 Range of Sensitivity, Specificity, PPV, and NPV of Currently Available Viability Testing Modalities



^{18}F-fluorodeoxyglucose positron emission tomography (FDG-PET) imaging offers the greatest sensitivity, with comparable specificity to other

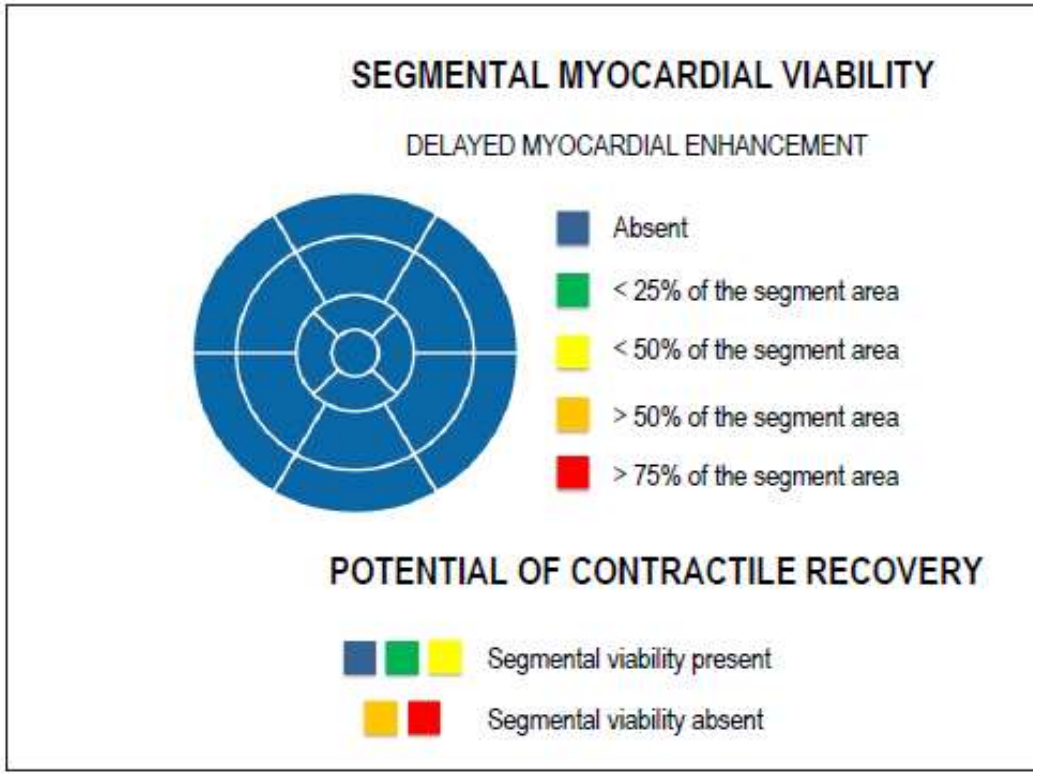
Is viability the way to improve prognosis ?

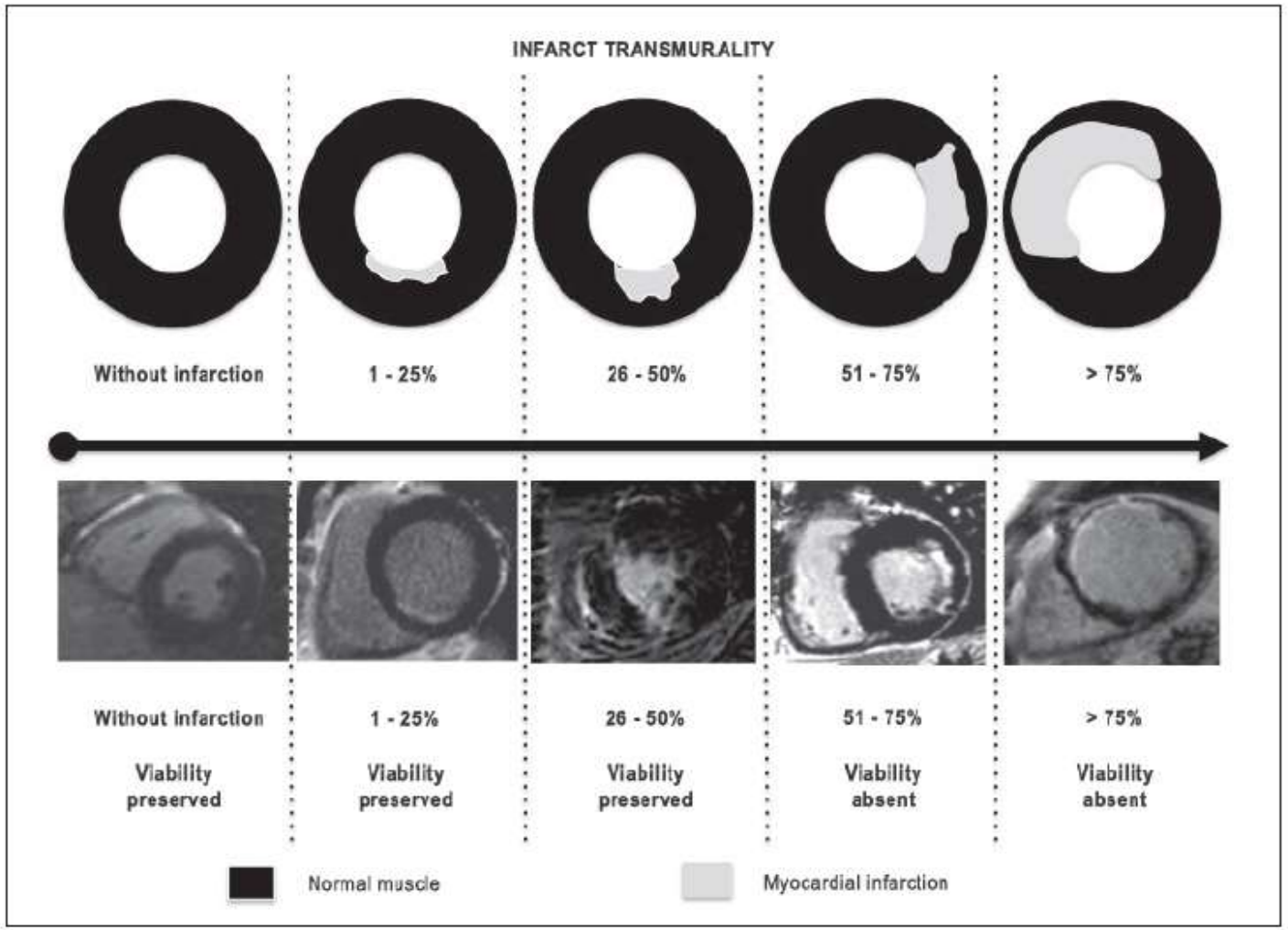
- STICH, STICH viability substudy

Myocardial Viability on Cardiac Magnetic Resonance

Ana Luiza Mansur Souto,[1] Rafael Mansur Souto,[2] Isabella Cristina Resende Teixeira,[3] Marcelo Souto Nacif[1,2,3]

Universidade Federal Fluminense;[1] Centro de Imagem Complexo Hospitalar de Niterói;[2] Niterói, RJ; Unidade de Radiologia Clínica - Hospital Vivalle – Rede D´Or - São Luiz,[3] São José dos Campo, SP – Brazil





Arq Bras Cardiol. 2017 May; 108(5): 458–469.

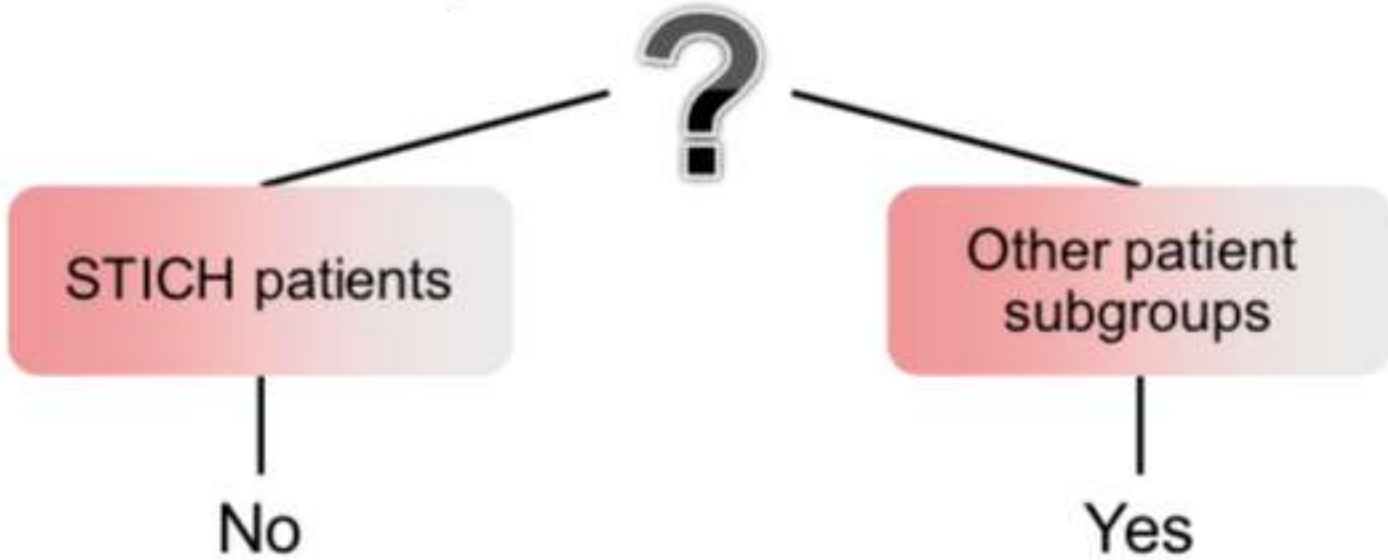
Is viability the way to improve prognosis ?

STICH Viability Study

Limitations

- Study is underpowered
- Non-randomized – viability performed at physician discretion and unblinded
- Baseline differences between pt with/without viability testing – ↓ comorbidities
- Generalizability to contemporary population
  - ICD – 50%
  - CRT – 20%
- 85% of patients in substudy – non-USA
- 3 VD only present in approximately one third
- Viability determined in a binary fashion – PET and CMRI – greater accuracy and provide additional information
- Does not distinguish between dysfunctioning potentially viable myocardium and reversibility

Is There a Role for Viability and Ischemia Testing? Is the Concept Still Valid and Rational?



- No effect of viability, inducible ischemia and angina on surgical outcomes
- ↑ remodeling with non-viability but no effect on surgical outcomes

Bonow: NEJM, 2011; Panza: JACC, 2012
Jolicouer: JACC, 2015; Bonow: JACC, 2015

? In patients with LV dysfunction and CAD, are the presence of viability, inducible ischemia and angina still therapeutic targets

YES

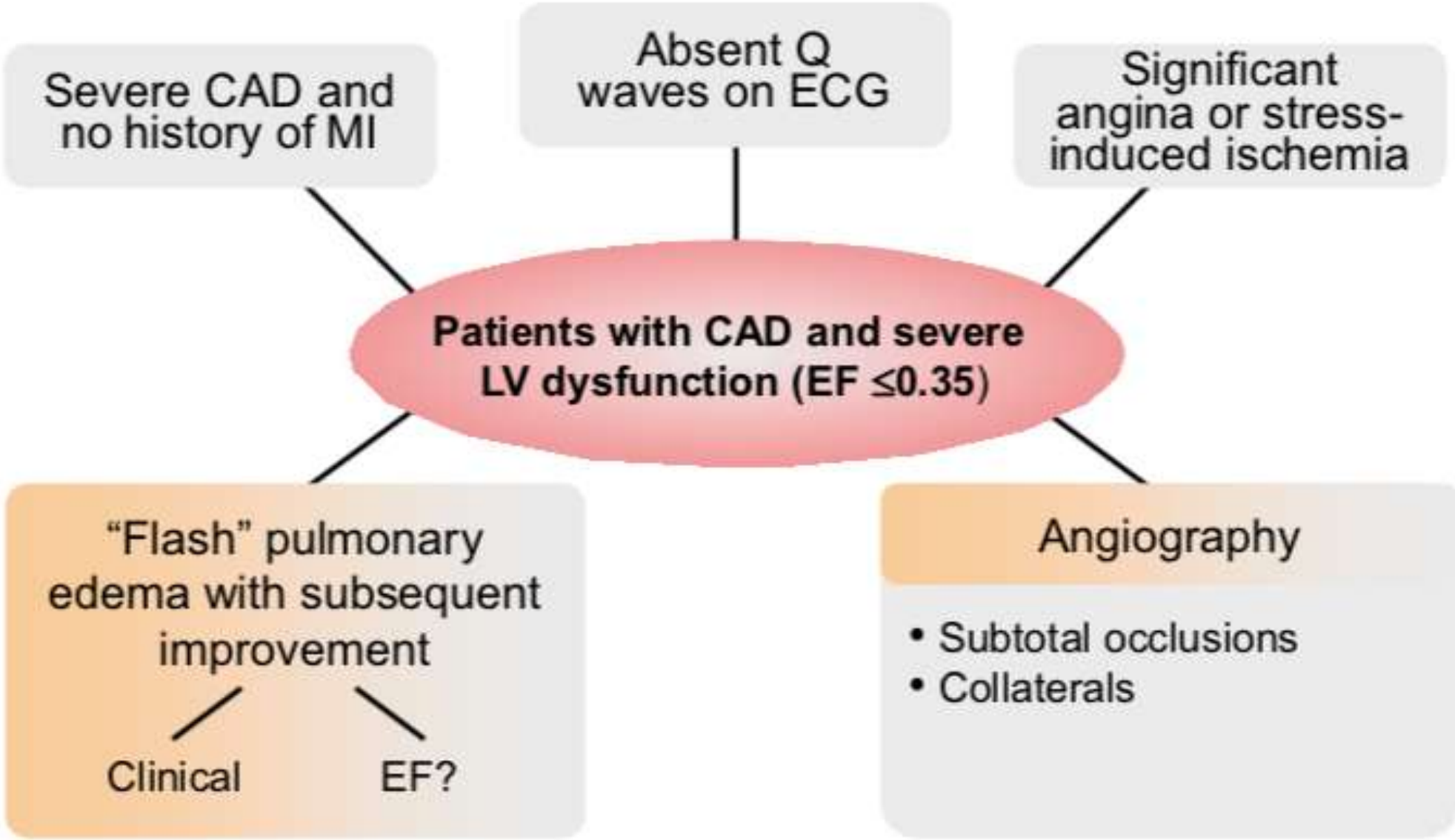
Considerations

Viability and Ischemia

Extent of scar and remodeling

What is the point of no return?

Clinical Scenarios Indicative of Viability

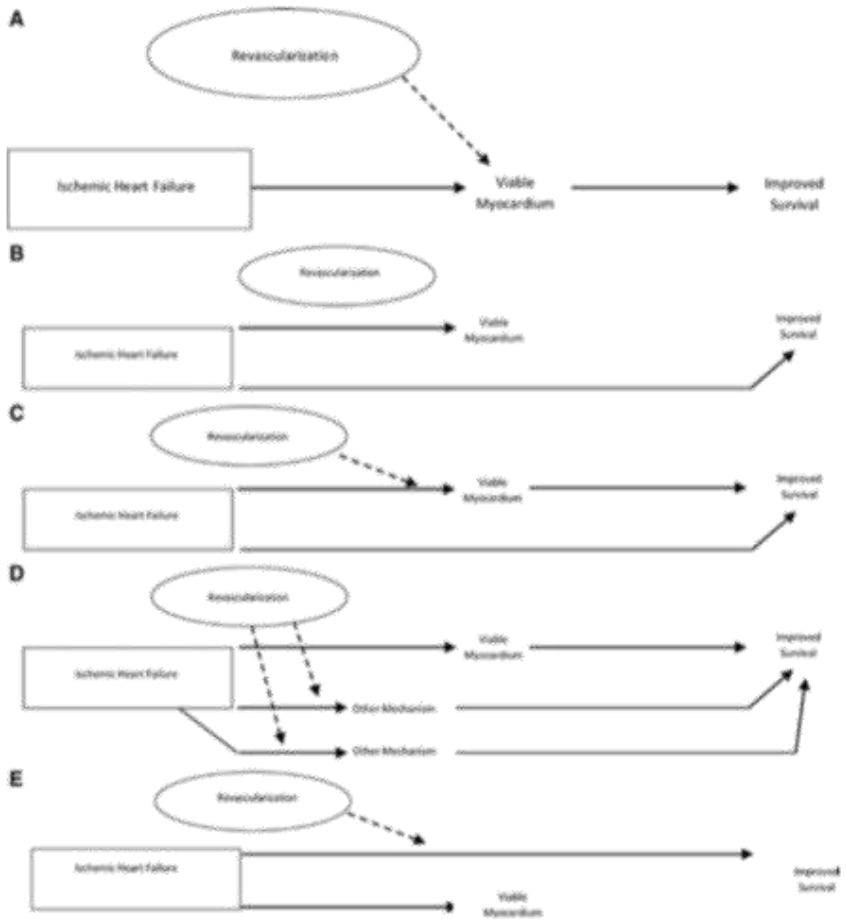


Role of Viability Testing in Clinical Decision Making in Patients With LV Dysfunction

Not Essential	Potentially Helpful
• Significant angina • Good distal vessels • ECG: No Q waves; Preserved voltage • Reasonable surgical risk	• Severe LV dysfunction • Extensive LV remodeling • Multiple comorbidities • Incomplete revascularization is likely • Angina – less severe

Role of Viability Testing
Conclusions

- May predict response to revascularization in ***selected*** pts with CAD and LV dysfunction
- Marker of prognosis
- May influence response to medical therapy
- Impact of viability and residual ischemia may be overwhelmed by extensive scar and remodeling.
- Should “not” be a routine determinant of decision to revascularize



CONTROVERSIES IN IMAGING

Does Imaging-Guided Selection of Patients with Ischemic Heart Failure for High Risk Revascularization Improve Identification of Those with the Highest Clinical Benefit?

Myocardial Imaging Should Not Exclude Patients With Ischemic Heart Failure From Coronary Revascularization

Eric J. Velazquez, MD

Pathway from viability to survival

Take home messages

I cannot teach anybody anything,
I can only make them think

Socrates

Thank you for your attention

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