ACTUALITES SUR LES SYNDROMES CORONARIENS CHRONIQUES

Hôpital Pitié-Salpêtrière AP-HP

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ACTION Group

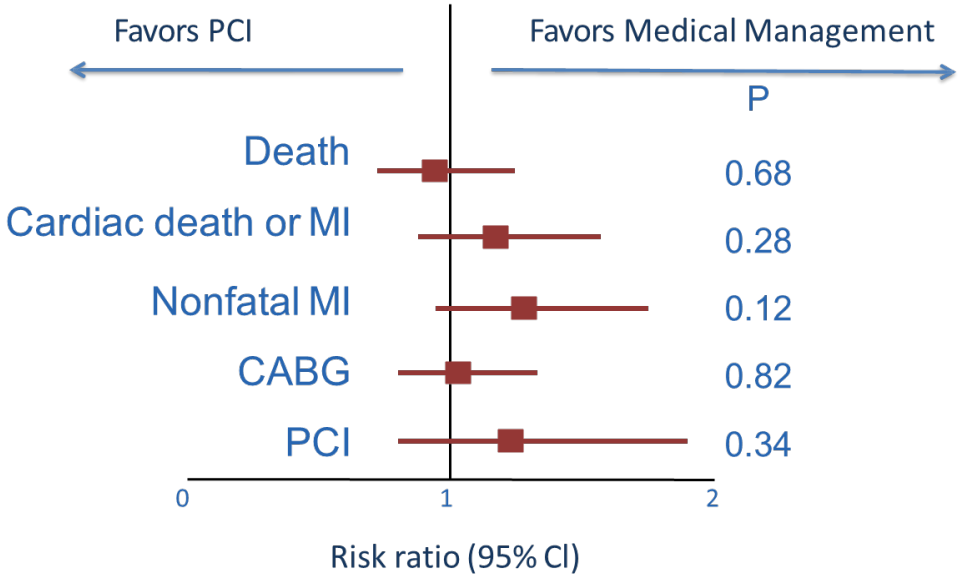
Paris, France

www.action-groupe.org

MALADIE CORONAIRE (2000-2020)

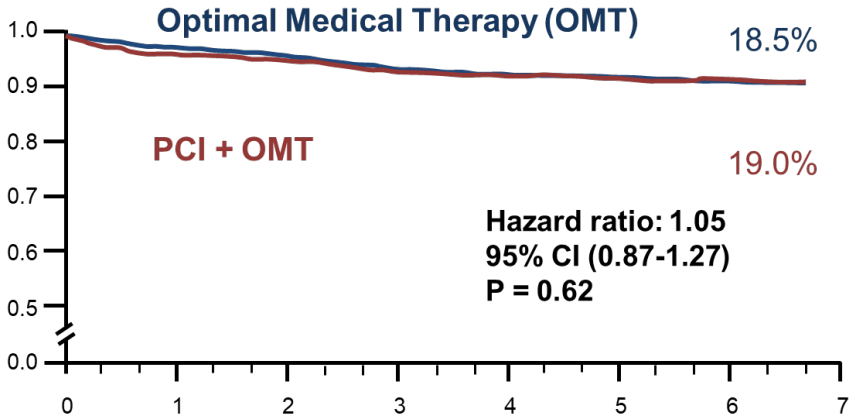
Early studies

METAANALYSIS 11 studies



Katritsis DG et al. ***Circulation***. 2005;111:2906-12

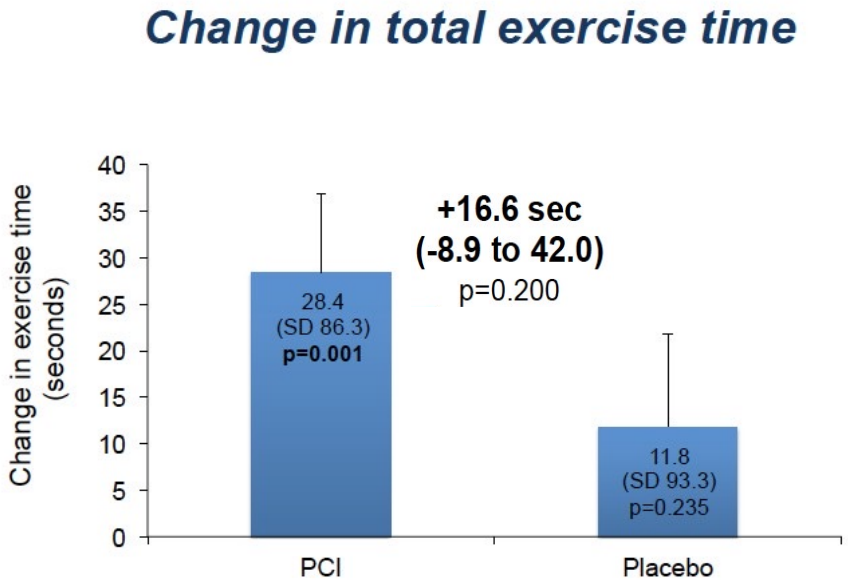
COURAGE



Boden et al. ***N Engl J Med*** 2007;35:1503-16

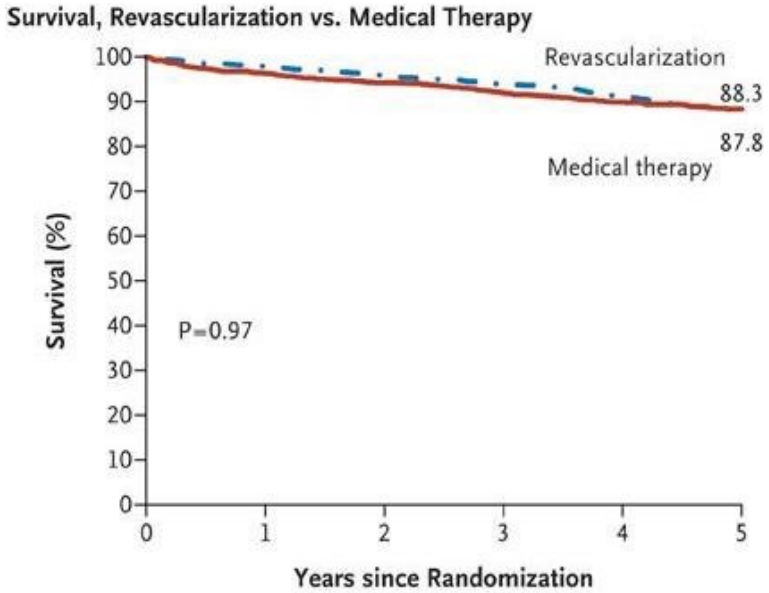
Later studies

ORBITA



R Al-Lame et al. ***Lancet*** 2018

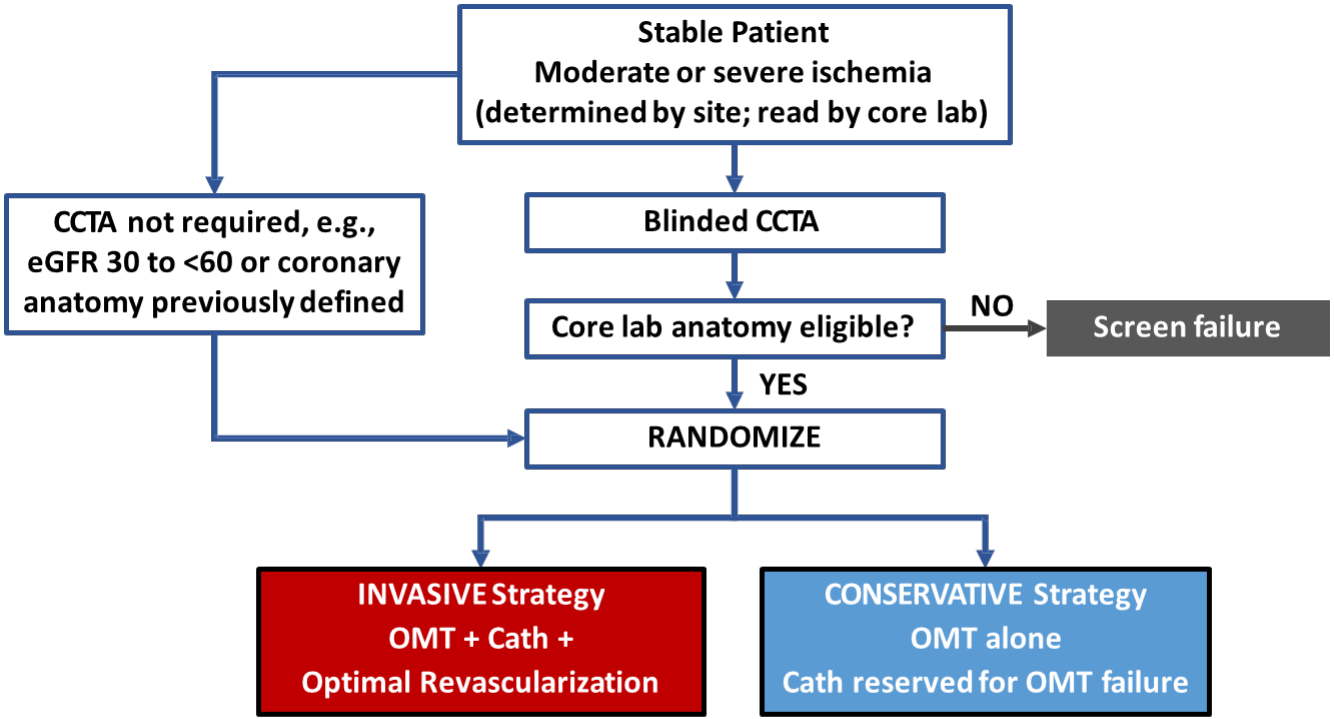
BARI 2D



BARI 2D Study Group. ***N Engl J Med*** 2009;360:2503-2515

ISCHEMIE (2020)

Design



Maron DJ, et al. American Heart Journal. 2018; 201;124-135.

Eligibility criteria

Clinical and Stress Test Eligibility Criteria

Inclusion Criteria

- Age ≥21 years
- Moderate or severe ischemia*
  - Nuclear ≥10% LV ischemia (summed difference score ≥7)
  - Echo ≥3 segments stress-induced moderate or severe hypokinesis, or akinesis
  - CMR
    - Perfusion: ≥12% myocardium ischemic, and/or
    - Wall motion: ≥3/16 segments with stress-induced severe hypokinesis or akinesis
  - Exercise Tolerance Testing (ETT) ≥1.5mm ST depression in ≥2 leads or ≥2mm ST depression in single lead at <7 METS, with angina

Major Exclusion Criteria

- NYHA Class III-IV HF
- Unacceptable angina despite medical therapy
- EF < 35%
- ACS within 2 months
- PCI or CABG within 1 year
- eGFR <30 mL/min or on dialysis

CCTA Eligibility Criteria

Inclusion Criteria

- ≥50% stenosis in a major epicardial vessel (stress imaging participants)
- ≥70% stenosis in a proximal or mid vessel (ETT participants)

Major Exclusion Criteria

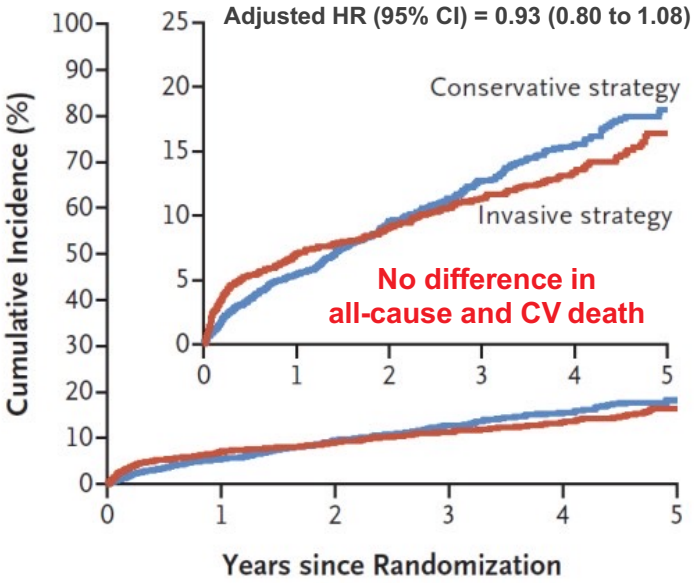
- ≥50% stenosis in unprotected left main

Physicians need to understand eligibility and exclusion criteria to determine high risk patients to whom the results of the trial cannot be applied.

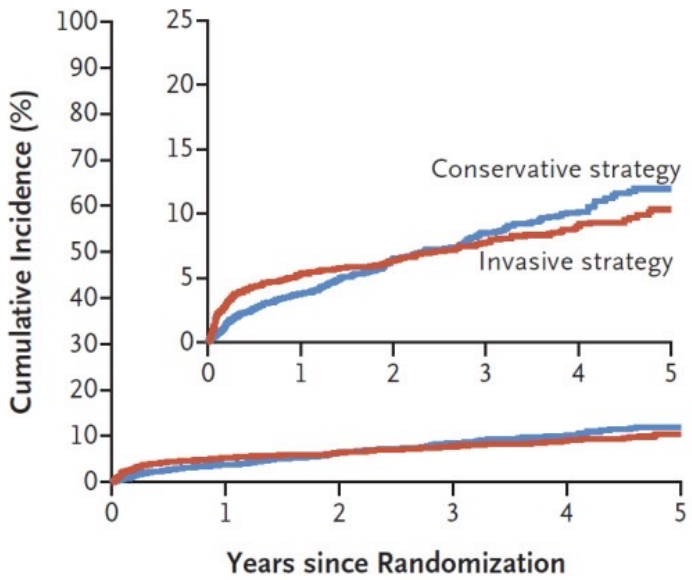
**Ischemia eligibility determined by sites. All stress tests interpreted at core labs.*

1°EP: CV death, MI, hospitalization for UA, HF or resuscitated cardiac arrest)

MI



No. at Risk						
Conservative strategy	2591	2431	1907	1300	733	293
Invasive strategy	2588	2364	1908	1291	730	271

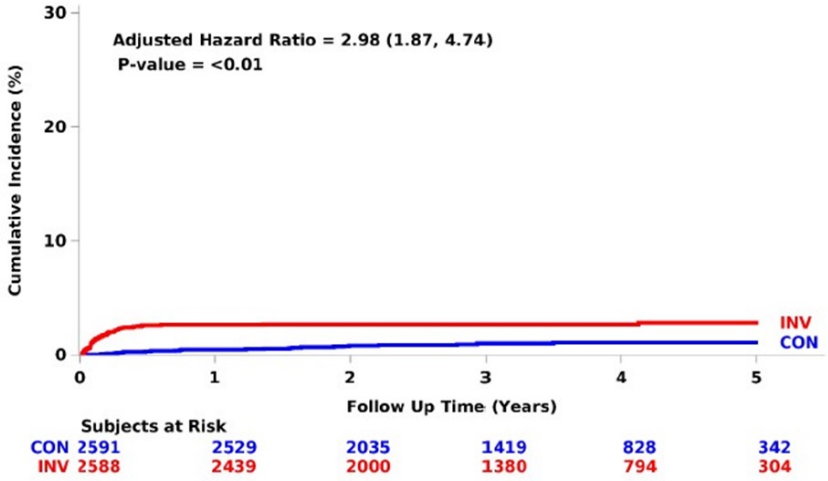


No. at Risk						
Conservative strategy	2591	2452	1931	1321	747	298
Invasive strategy	2588	2379	1931	1313	742	283

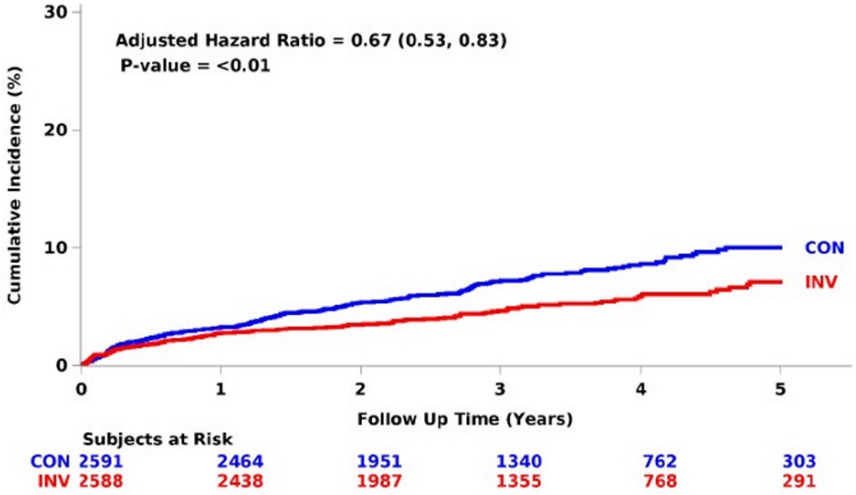
Maron DJ, et al. N Engl J Med 2020;382:1395-407.

Myocardial Infarction

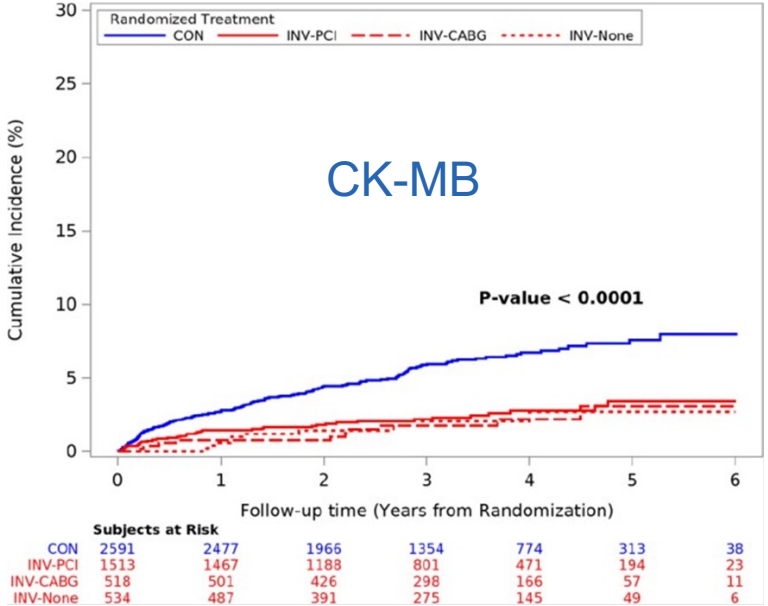
Procedural MI
Type 4a or 5 MI

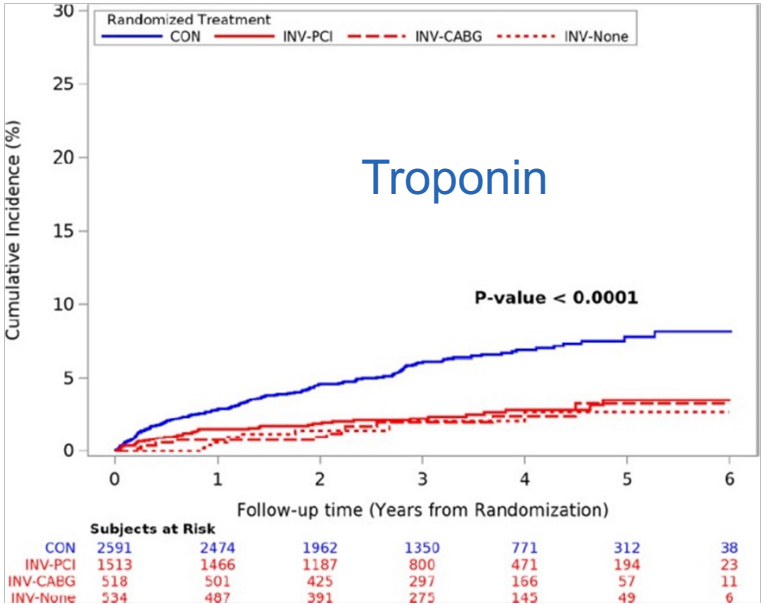


Spontaneous MI
Types 1, 2, 4b, or 4c MI



Various definitions of MI





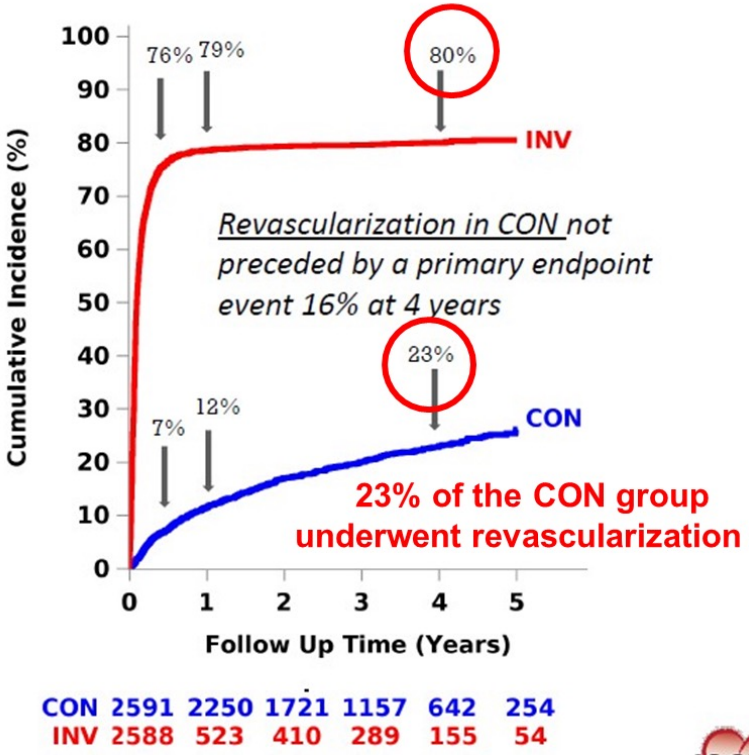
Adjusted risk of type 1 MI on CV death
HR (95% CI) = 3.38 (2.03, 5.61), P<0.001

Adjusted risk of type 1 MI on CV death
HR (95% CI) = 3.52 (2.11, 5.88), P<0.001

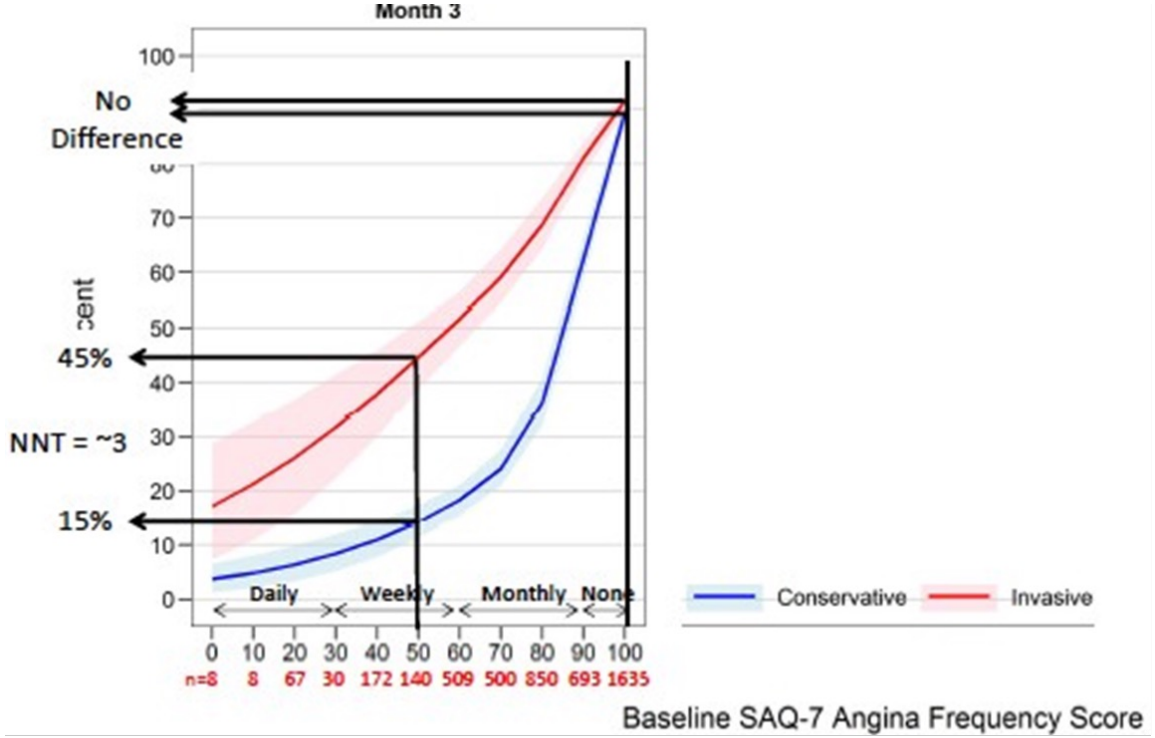
Type 1 MI events were associated with subsequent CV death.

Chaitman BR, et al. Circlation 2021;143:790-804.

Revascularization



Improvement in QoL is related to baseline symptoms



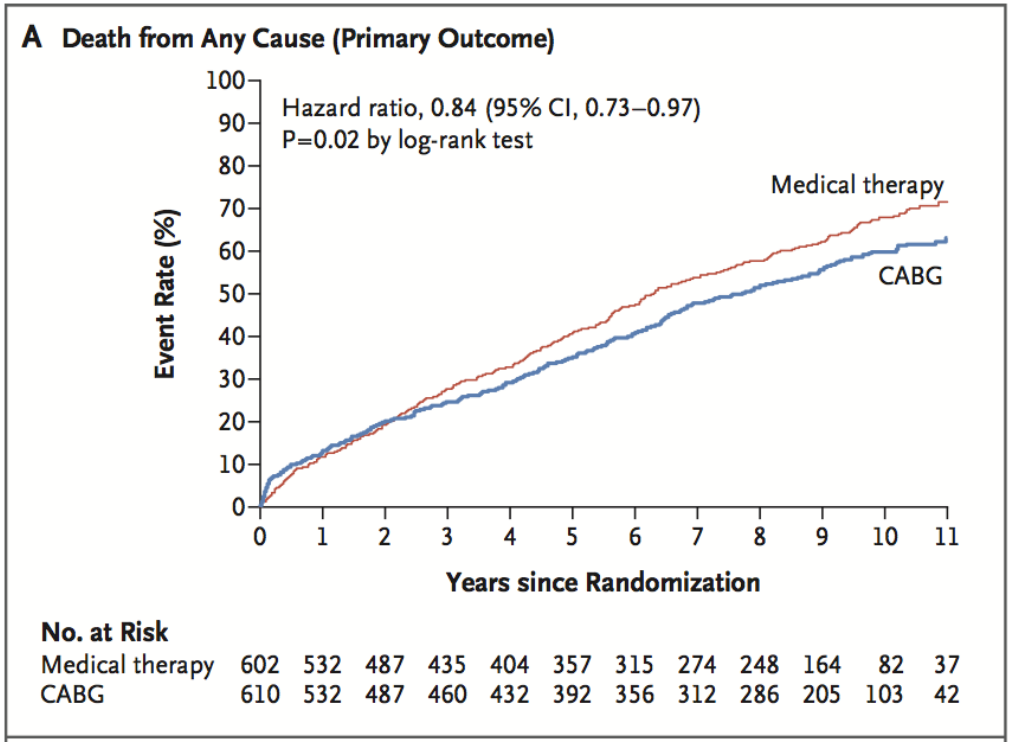
Spertus J et al ***NEJM*** 2020

Comments on ISCHEMIA

- ISCHEMIA enrolled stable, low risk, normal EF patients
- 4 different imaging modalities
- Selection bias
- Improvement in QOL in patients with significant symptoms
- Likely decline in future use of stress testing vs CTA/FFR
- Is Ischemia the right target? Or just one marker?

VIABILITY (2022)

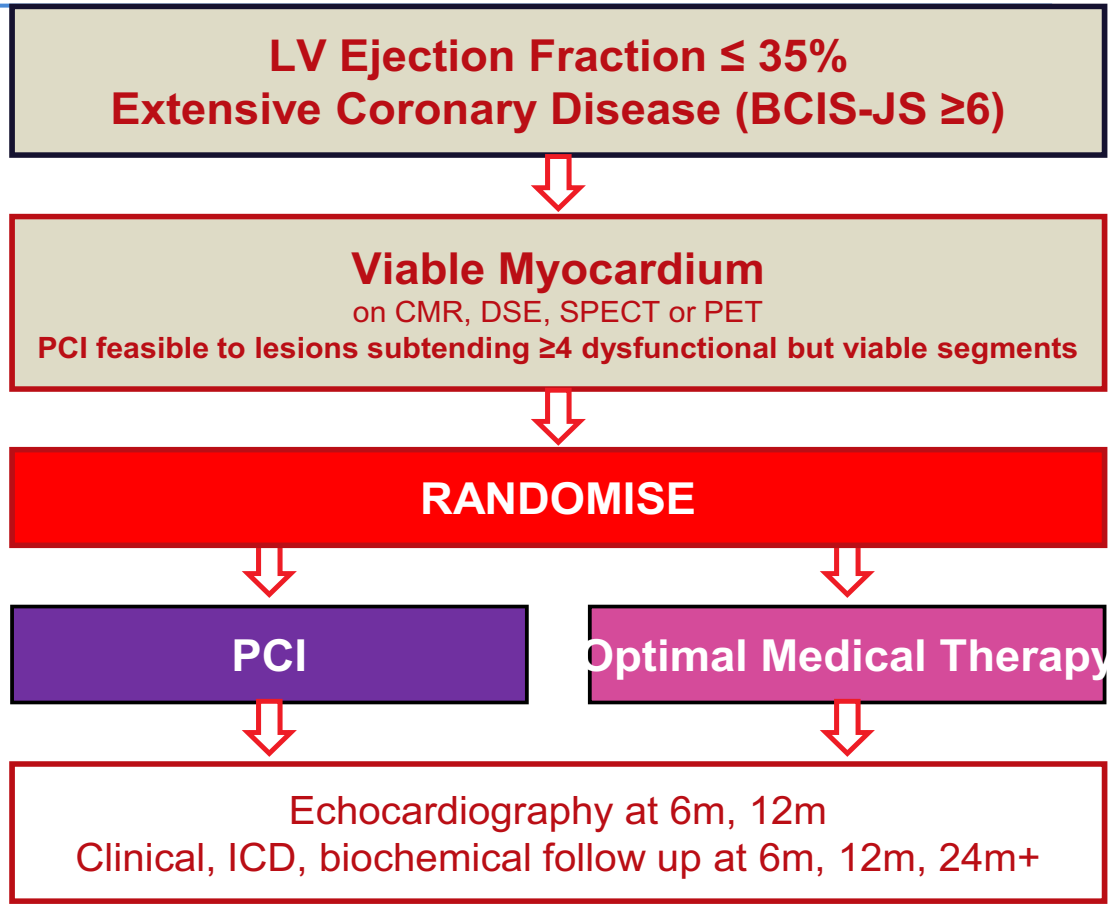
CABG for ischaemic cardiomyopathy



Velazquez EJ et al, NEJM 2016; 374:1511–20

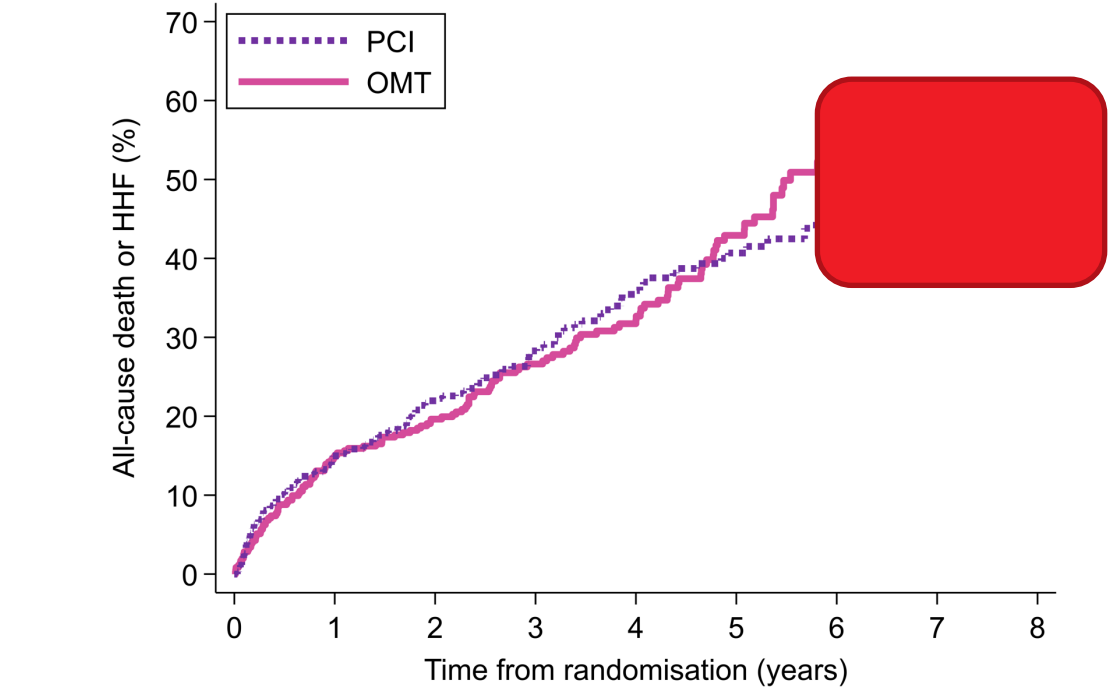
PCI for ischemic cardiomyopathy

REVIVED



Perera D et al, JACC HF 2018

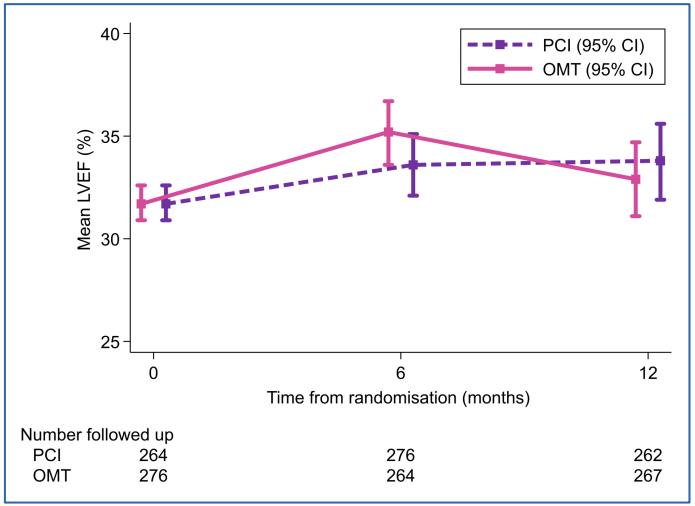
Death or Hosp. for HF (1°EP)



Number at risk

PCI	347	295	262	179	130	80	32	14	3
OMT	353	299	276	191	142	82	33	10	1

LVEF (2°EP)



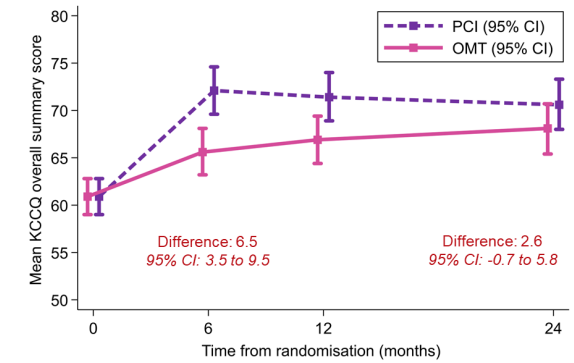
Number followed up

PCI	264	276	262
OMT	276	264	267

Perera D et al, NEJM 2022

3 differences (all expected!)

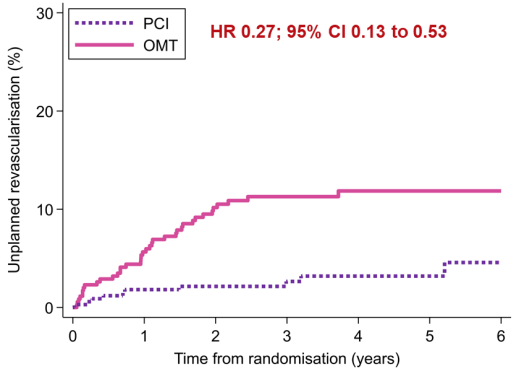
KCCQ



Number followed up

PCI	319	270	268	228
OMT	318	285	268	228

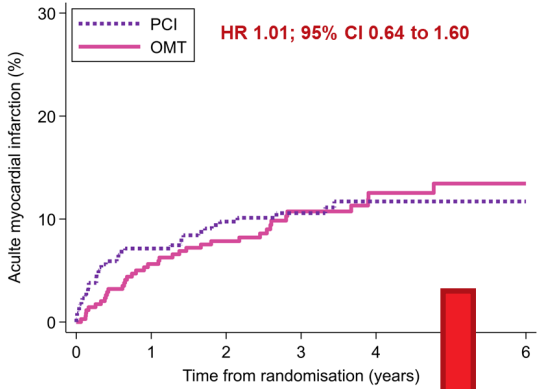
Unplanned revasc.



Number at risk

PCI	347	311	280	194	139	84	35
OMT	353	300	264	184	143	84	31

MI



Number at risk

PCI	347	297	260	179	130	34
OMT	353	302	276	190	142	31

Periprocedural MI	14 (38%)	0
Spontaneous MI	18 (49%)	33 (87%)

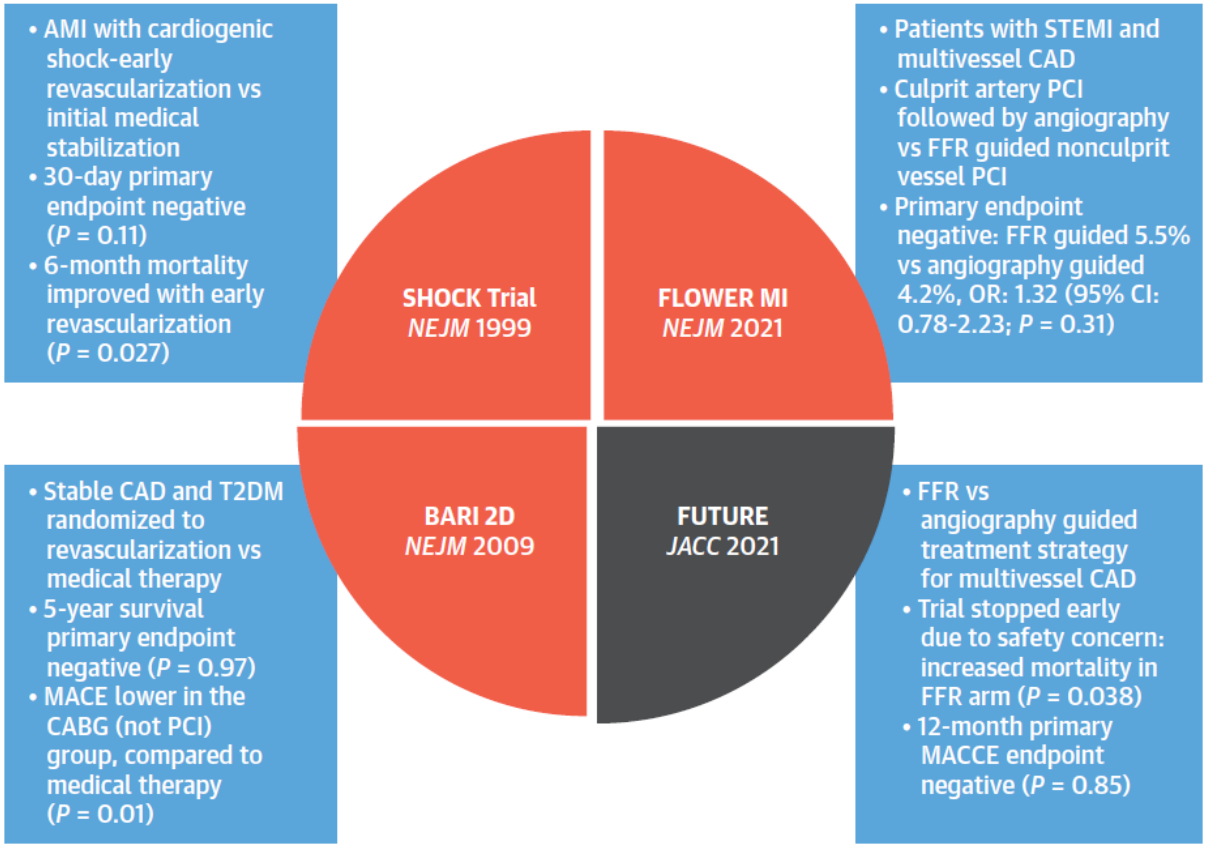
Comments on ~~ISCHEMIA~~ REVIVED

- ~~ISCHEMIA~~ REVIVED enrolled stable, low risk, ~~normal EF~~ patients
- 4 different imaging modalities
- Selection bias
- Improvement in QOL in patients with significant symptoms
- Likely decline in future use of ~~stress~~ imaging testing vs CTA/FFR
- Is ~~Ischemia~~ viability the right target? Or just one marker?

The Enduring Legacy of Failed Revascularization Trials*

Harold L. Dauerman, MD,[a] Jan G.P. Tijssen, PhD,[b] Gilles Montalescot, MD, PhD[c]

https://doi.org/10.1016/j.jacc.2021.08.059

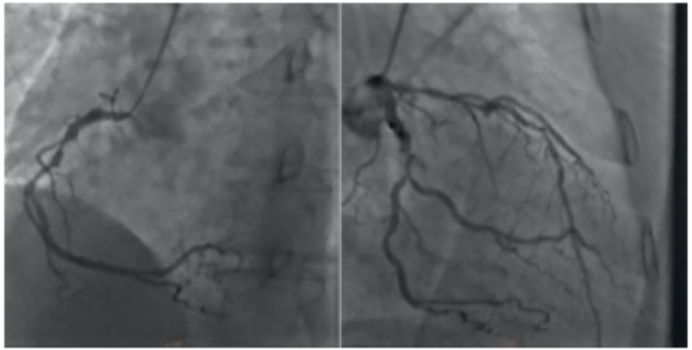


Beyond ischaemia: is there a place for physiologic and anatomic evaluations of coronary lesions?

Eurointervention 2021

Gilles Montalescot*, MD, PhD ; Michel Zeitouni, MD

Sorbonne Université, ACTION Study Group, Institut de Cardiologie, Hôpital Pitié-Salpêtrière (AP-HP), Paris, France



Eye of the cardiologist:
- COMPLETE trial
- PRAMI trial
- CULPRIT trial

Detailed anatomical evaluation:
- SYNTAX score
- Residual SYNTAX score after primary PCI

FFR before discharge:
- DANAMI-3–PRIMULTI
- FLOWER-MI (ongoing)

Non-hyperaemic pressure ratios (iFR, RFR...):
- More data needed

Functional measures (QFR)
- More data needed

Current guidelines

Extent of CAD (anatomical and/or functional)		Class	Level
For prognosis	Left main disease with stenosis >50%	I	A
	Proximal LAD stenosis >50%	I	A
	Two- or three-vessel disease with stenosis >50% with impaired LV function (LVEF ≤35%)	I	A
	Large area of ischaemia detected by functional testing (>10% LV) or abnormal invasive FFR	I	B
	Single remaining patent coronary artery with stenosis >50%	I	C
For symptoms	Haemodynamically significant coronary stenosis[c] in the presence of limiting angina or angina equiva lent, with insufficient response to optimized medical therapy	I	A

Neumann ESC/EACTS Guidelines, 2019

Suggestion

Extent of CAD (anatomical and/or functional)		Class	Level
For prognosis	Left main disease with stenosis >50%	I	A
	Proximal LAD stenosis >50%	I	A
	Two- or three-vessel disease with stenosis >50% with impaired LV function (LVEF ≤35%)	I	A
	Large area of ischemia detected by functional testing (>10% LV) or abnormal invasive FFR	I	B
	Single remaining patent coronary artery with stenosis >50%	I	C
For symptoms	Hemodynamically significant coronary stenosis[c] in the presence of limiting angina or angina equivalent, with insufficient response to optimized medical therapy	I	A

Ischemia alone or in combination with other high-risk features ?

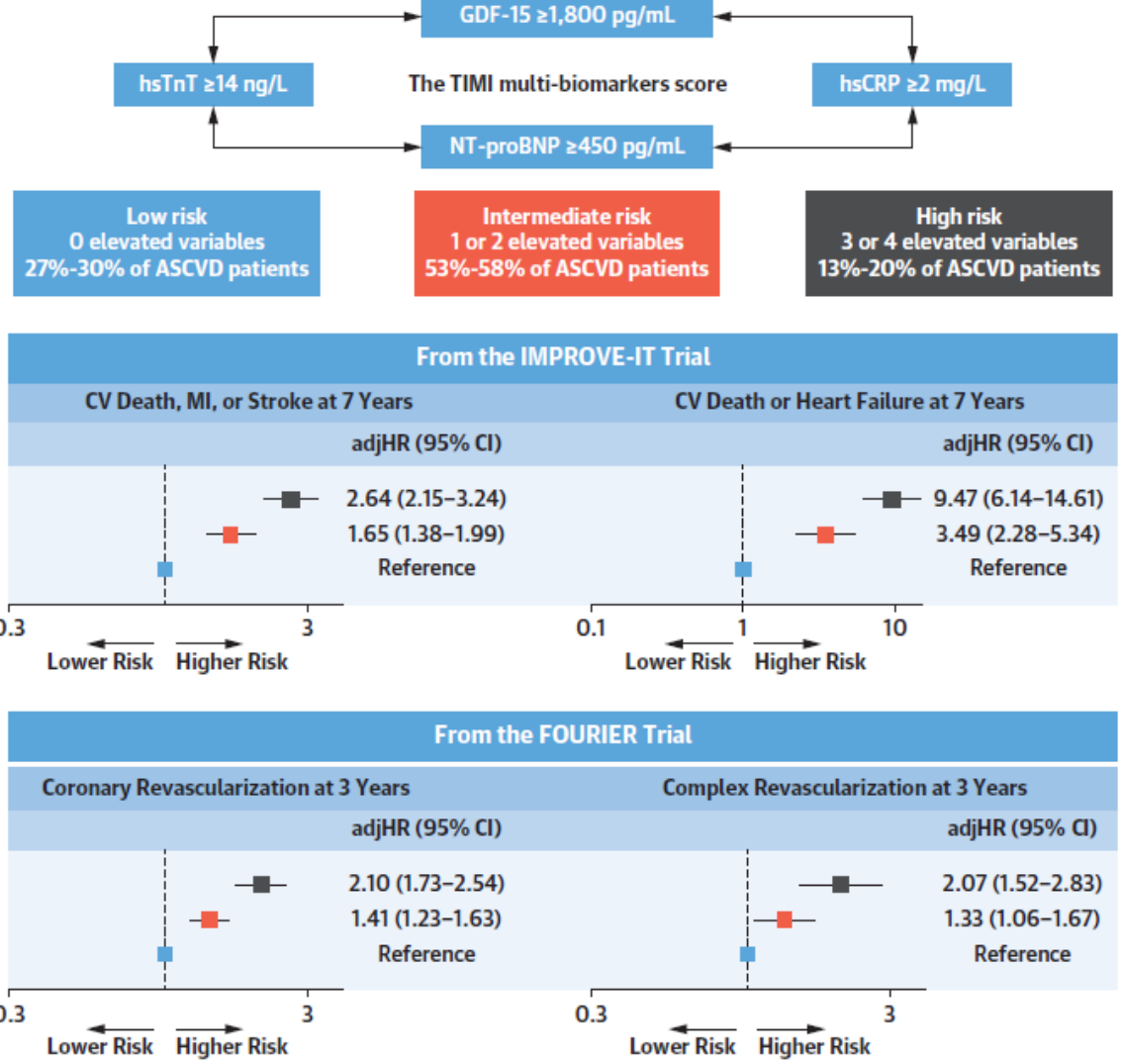
Neumann ESC/EACTS Guidelines, 2019

A Multi-Biomarker Score for a Global Approach of Risk

Time for a Change?*

Gilles Montalescot, MD, PhD,[a] Paul Guedeney, MD,[a] Jan Tijssen, MD, PhD[b]

https://doi.org/10.1016/j.jacc.2022.06.018



In practice?

Sum up

In ***angiographically selected*** pts with chronic stable angina and preserved LV function, there is ***no*** benefit from coronary revascularization upon ***death or MI***

Benefit noted in higher-risk pts

BARI 2D (Angiographically and clinically defined)	**FAME 2 (FFR <0.80)**	**ISCHEMIA REVIVED**
CABG → MI	**PCI** → new revasc	**PCI** → T1-MI and QOL

Conclusions / CCS management