Quand référer le coronarien stable?

Dr Jean-Christophe Carvalho
21 novembre 2019

Conflits d’intérêt

- Aucun

- Directeur des services professionnels du CISSS du Bas-Saint-Laurent

Objectifs

- Revoir la littérature la plus récente concernant les stratégies d'investigation des coronariens stables.
- Réviser les plus récentes lignes directrices en matière de revascularisation coronarienne chez le coronarien stable.
- Comprendre les avantages et les inconvénients de recourir à une coronarographie et à une angioplastie chez le coronarien stable.

MCAS stable

- Normalement diagnostiquée en présence d'angine typique avec facteurs de risque ou présence connue d'athérosclérose coronarienne et sans progression dans le temps.

- Angine typique:
  - Oppression thoracique
  - Reproductible à l'effort
  - Soulagée par le repos ou la nitroglycérine

MCAS stable

- Défi diagnostique souvent rencontré:
  - Angine atypique ou douleurs thoraciques d’allure non-coronariennes;
  - Dyspnée à l’effort;
  - Ischémie silencieuse;
  - Effets d’autres comorbidités:
    - MPOC, obésité, problèmes musculosquelettiques, autres conditions CV (valvulopathies, CMP, MVAS, etc).

MCAS stable

- Objectifs visés par l’évaluation et le traitement:
  - Diagnostic
  - Pronostic
  - Qualité de vie

MCAS stable

- Objectifs visés par l'évaluation et le traitement:
- Diagnostic
- Pronostic
- Qualité de vie

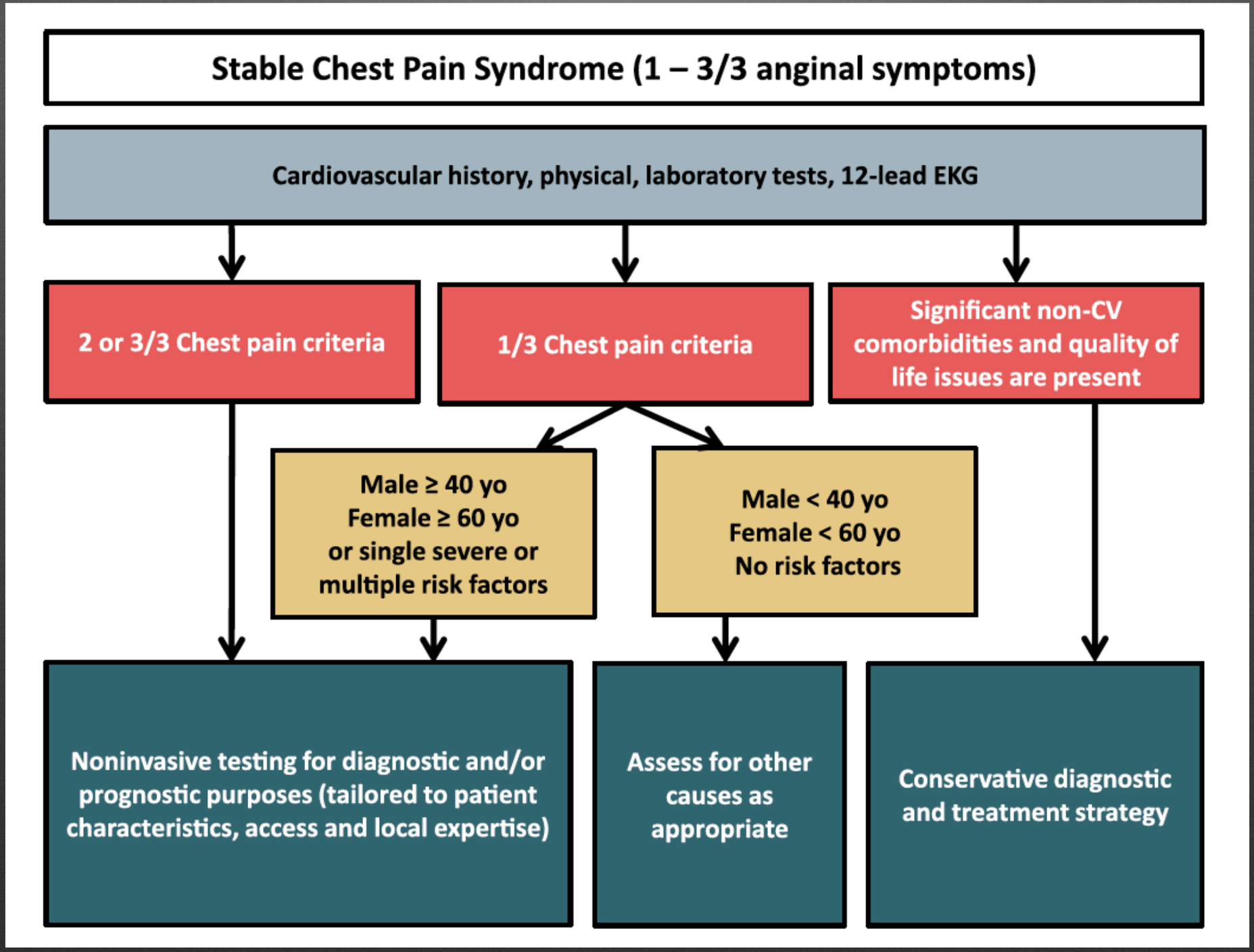
Canadian Journal of Cardiology 30 (2014) 837–849

Society Guidelines

Canadian Cardiovascular Society Guidelines for the Diagnosis and Management of Stable Ischemic Heart Disease

G.B. John Mancini, MD (Co-Chair),[a] Gilbert Gosselin, MD (Co-Chair),[b] Benjamin Chow, MD,[c] William Kostuk, MD,[d] James Stone, MD, PhD,[e] Kenneth J. Yvorchuk, MD, CM,[f] Beth L. Abramson, MD, MSc,[g] Raymond Cartier, MD,[b] Victor Huckell, MD,[a] Jean-Claude Tardif, MD,[b] Kim Connelly, MD,[g] John Ducas, MD,[h] Michael E. Farkouh, MD, MSc,[i] Milan Gupta, MD,[j] Martin Juneau, MD,[b] Blair O'Neill, MD,[k] Paolo Raggi, MD,[k] Koon Teo, MBBCh, PhD,[j] Subodh Verma, MD,[g] and Rodney Zimmermann, MD[l]

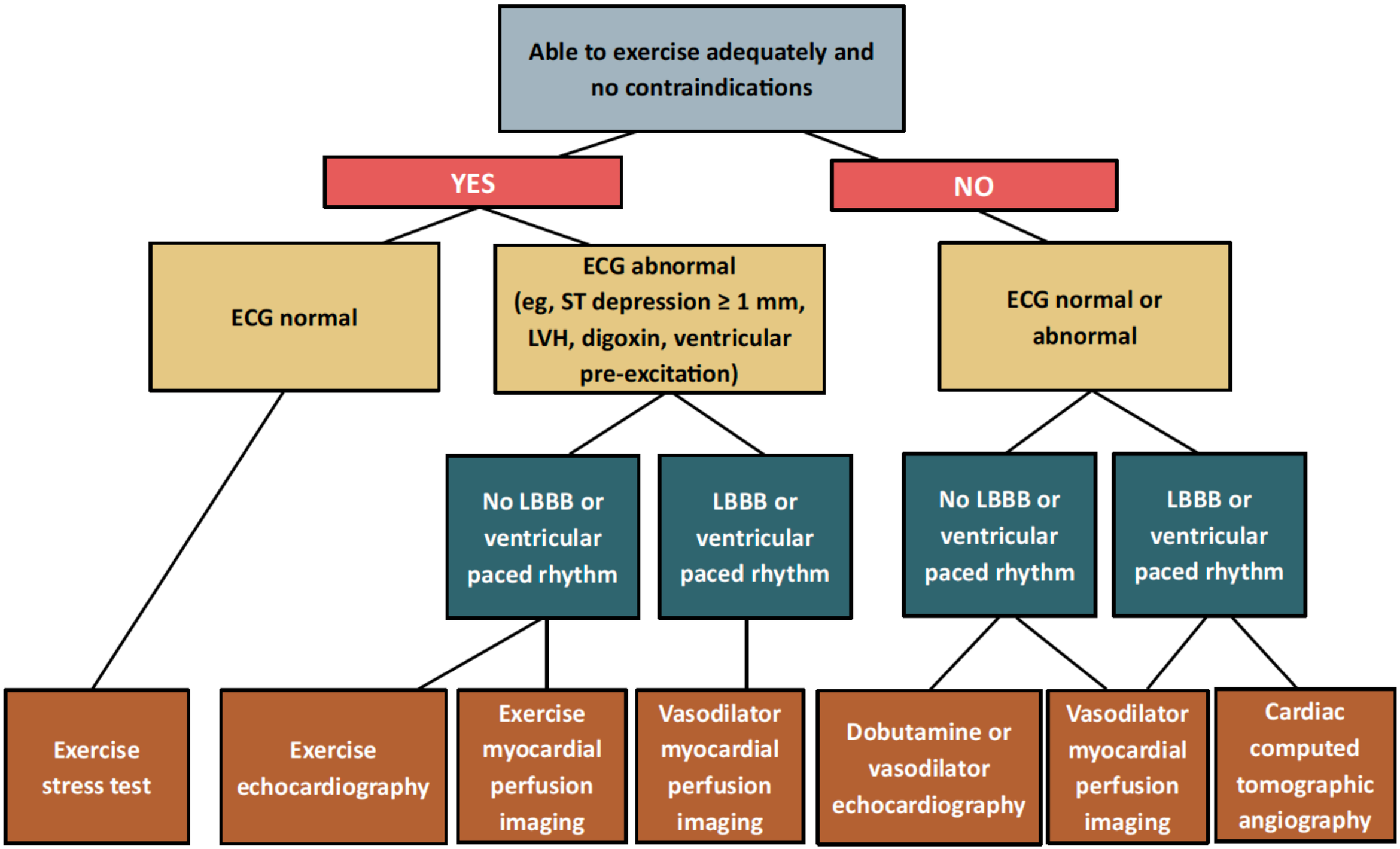
Diagnostic / pronostic



Diagnostic / pronostic

- Stratification non-effractive
  - Épreuve d’effort
  - Perfusion myocardique
  - Échocardiographie de stress
  - IRM de stress
- Imagerie cardiaque
  - Angio-TDM des coronaires
  - Échocardiographie (pronostique)
- Coronarographie

Diagnostic / pronostic



Ailleurs?

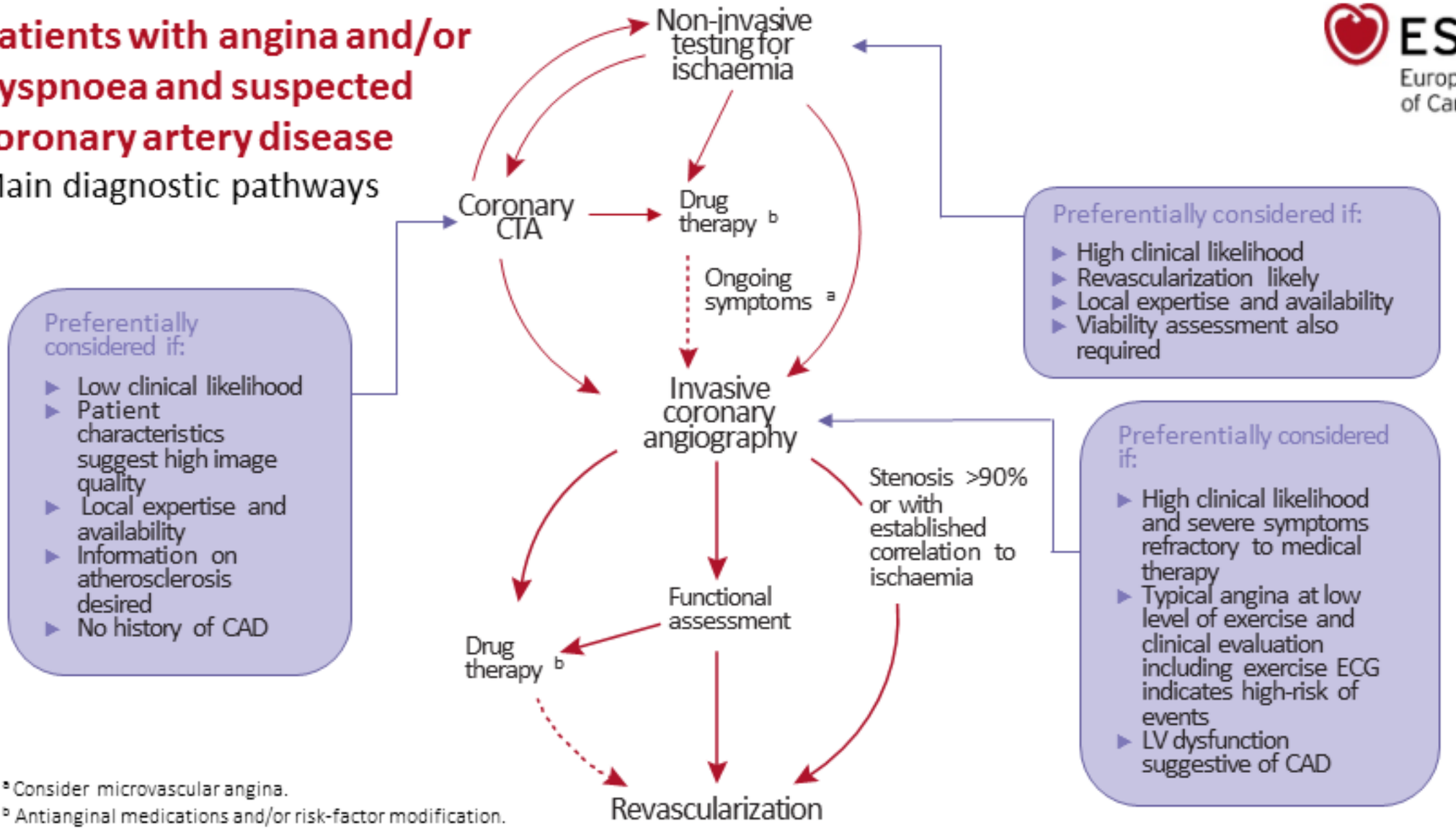
2019 ESC Guidelines on the diagnosis and management of chronic coronary syndromes

ESC
European Society
of Cardiology

Patients with angina and/or dyspnoea and suspected coronary artery disease

Main diagnostic pathways

ESC European Society of Cardiology



[a] Consider microvascular angina.

[b] Antianginal medications and/or risk-factor modification.

Table 5 **Pre-test probabilities of obstructive coronary artery disease in 15 815 symptomatic patients according to age, sex, and the nature of symptoms in a pooled analysis[64] of contemporary data[7,8,62]**

	Typical		Atypical		Non-anginal		Dyspnoea[a]	
Age	Men	Women	Men	Women	Men	Women	Men	Women
30–39	3%	5%	4%	3%	1%	1%	0%	3%
40–49	22%	10%	10%	6%	3%	2%	12%	3%
50–59	32%	13%	17%	6%	11%	3%	20%	9%
60–69	44%	16%	26%	11%	22%	6%	27%	14%
70+	52%	27%	34%	19%	24%	10%	32%	12%

CAD = coronary artery disease; PTP = pre-test probability.

[a]In addition to the classic Diamond and Forrester classes,[59] patients with dyspnoea only or dyspnoea as the primary symptom are included. The regions shaded dark green denote the groups in which non-invasive testing is most beneficial (PTP >15%). The regions shaded light green denote the groups with PTPs of CAD between 5–15%, in which testing for diagnosis may be considered after assessing the overall clinical likelihood based on the modifiers of PTPs presented in *Figure* 3.

Table 5 **Pre-test probabilities of obstructive coronary artery disease in 15 815 symptomatic patients according to age, sex, and the nature of symptoms in a pooled analysis[64] of contemporary data[7,8,62]**

	Typical		Atypical		Non-anginal		Dyspnoea[a]	
Age	Men	Women	Men	Women	Men	Women	Men	Women
30–39	3%	5%	4%	3%	1%	1%	0%	3%
40–49	22%	10%	10%	6%	3%	2%	12%	3%
50–59	32%	13%	17%	6%	11%	3%	20%	9%
60–69	44%	16%	26%	11%	22%	6%	27%	14%
70+	52%	27%	34%	19%	24%	10%	32%	12%

CAD = coronary artery disease; PTP =

[a]In addition to the classic Diamond an
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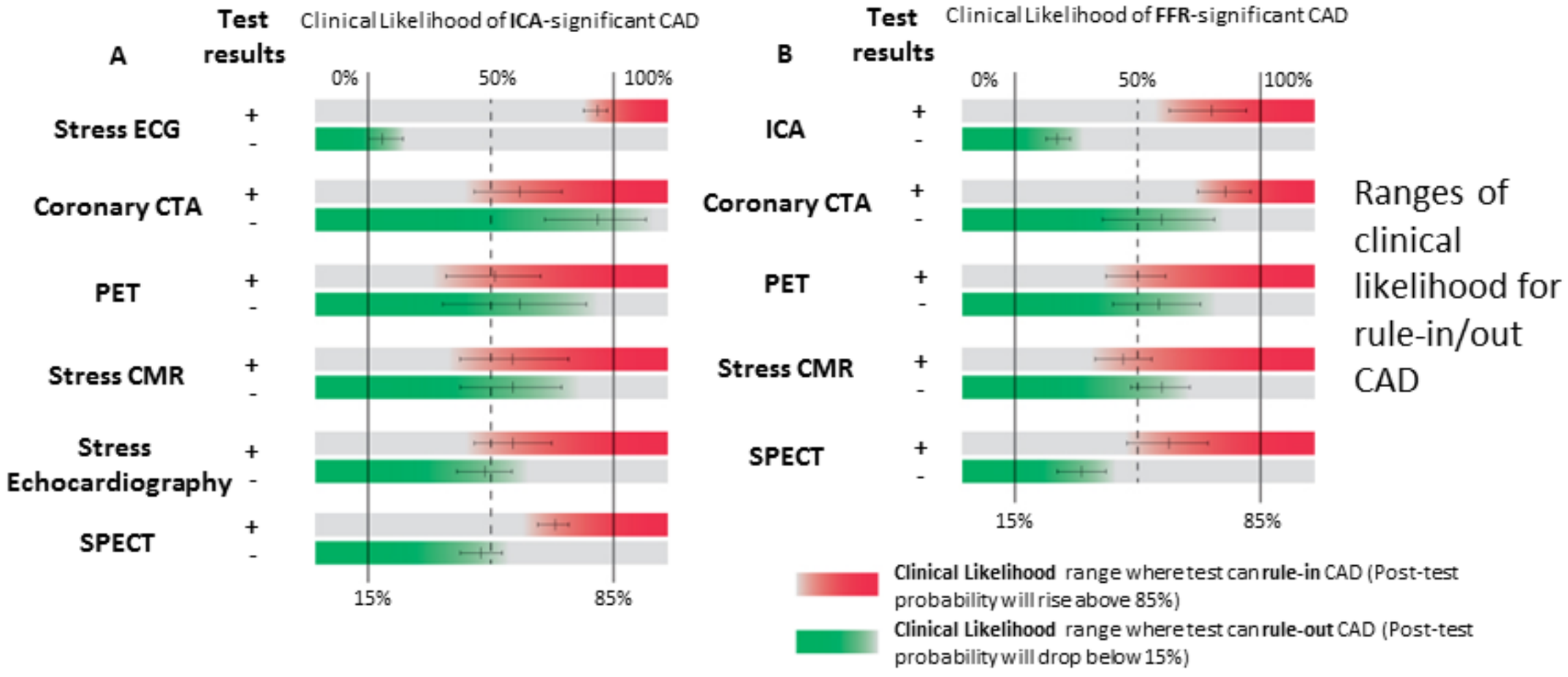
PTPs of CAD between 5–15%, in which
3.

Age, Years	Chest Pain Criteria 1. Substernal chest discomfort with characteristic quality and duration 2. Provoked by exertion or emotional stress 3. Relieved promptly by rest or nitroglycerin					
	Nonanginal Chest Pain 1 of 3 Criteria		Atypical Angina 2 of 3 Criteria		Typical Angina 3 of 3 Criteria	
	Male	Female	Male	Female	Male	Female
30 – 39	4%	2%	34%	12%	76%	26%
40 - 49	13%	3%	51%	22%	87%	55%
50 - 59	20%	7%	65%	33%	93%	73%
60 - 69	27%	14%	72%	51%	94%	86%

Patients with angina and/or dyspnoea and suspected coronary artery disease

ESC European Society of Cardiology



Patients with angina and/or dyspnoea and suspected coronary artery disease

ESC European Society of Cardiology

Resting echocardiography and CMR

Recommendations	Class	Level
A resting transthoracic echocardiogram is recommended in all patients for: 1. Exclusion of alternative causes of angina; 2. Identification of regional wall motion abnormalities suggestive of CAD; 3. Measurement of LVEF for risk stratification purpose; 4. Evaluation of diastolic function.	I	B
Ultrasound of the carotid arteries should be considered, and be performed by adequately trained clinicians, to detect plaque in patients with suspected CCS without known atherosclerotic disease.	IIa	C
CMR may be considered in patients with an inconclusive echocardiographic test.	IIb	C

Patients with angina and/or dyspnoea and suspected coronary artery disease

ESC European Society of Cardiology

Use of exercise electrocardiogram

Recommendations	Class	Level
Exercise ECG is recommended for the assessment of exercise tolerance, symptoms, arrhythmias, BP response, and event risk in selected patients.[a]	I	C
Exercise ECG may be considered as an alternative test to rule-in or rule-out CAD when non-invasive imaging is not available.	IIb	B
Exercise ECG may be considered in patients on treatment to evaluate control of symptoms and ischaemia.	IIb	C
Exercise ECG is not recommended for diagnostic purposes in patients with ≥0.1 mV ST-segment depression on resting ECG or who are being treated with digitalis.	III	C

[a] When this information will have an impact on diagnostic strategy or management.

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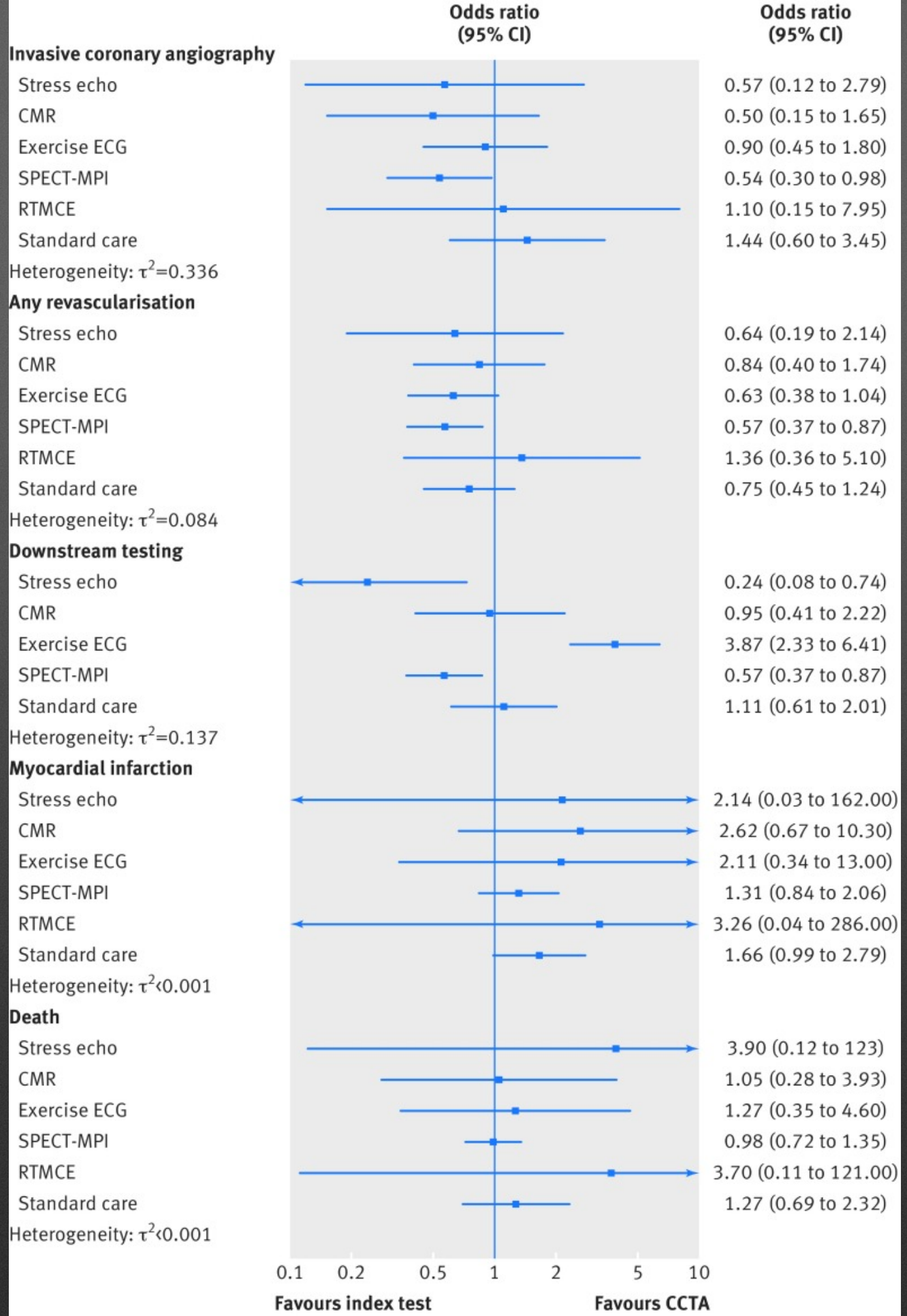
PMCID: PMC5820645
PMID: 29467161

Outcomes of non-invasive diagnostic modalities for the detection of coronary artery disease: network meta-analysis of diagnostic randomised controlled trials

Méta-analyse

- Vise à comparer l'angio-TDM des coronaires vs stratification non-effractive fonctionnelle.
- 12 études de coronariens stables
    - 22 062 patients


Odds ratio (95% CI)
Odds ratio (95% CI)
Invasive coronary angiography
Stress echo
0.57 (0.12 to 2.79)
CMR
0.50 (0.15 to 1.65)
Exercise ECG
0.90 (0.45 to 1.80)
SPECT-MPI
0.54 (0.30 to 0.98)
RTMCE
1.10 (0.15 to 7.95)
Standard care
1.44 (0.60 to 3.45)
Heterogeneity: τ²=0.336
Any revascularisation
Stress echo
0.64 (0.19 to 2.14)
CMR
0.84 (0.40 to 1.74)
Exercise ECG
0.63 (0.38 to 1.04)
SPECT-MPI
0.57 (0.37 to 0.87)
RTMCE
1.36 (0.36 to 5.10)
Standard care
0.75 (0.45 to 1.24)
Heterogeneity: τ²=0.084
Downstream testing
Stress echo
0.24 (0.08 to 0.74)
CMR
0.95 (0.41 to 2.22)
Exercise ECG
3.87 (2.33 to 6.41)
SPECT-MPI
0.57 (0.37 to 0.87)
Standard care
1.11 (0.61 to 2.01)
Heterogeneity: τ²=0.137
Myocardial infarction
Stress echo
2.14 (0.03 to 162.00)
CMR
2.62 (0.67 to 10.30)
Exercise ECG
2.11 (0.34 to 13.00)
SPECT-MPI
1.31 (0.84 to 2.06)
RTMCE
3.26 (0.04 to 286.00)
Standard care
1.66 (0.99 to 2.79)
Heterogeneity: τ²<0.001
Death
Stress echo
3.90 (0.12 to 123)
CMR
1.05 (0.28 to 3.93)
Exercise ECG
1.27 (0.35 to 4.60)
SPECT-MPI
0.98 (0.72 to 1.35)
RTMCE
3.70 (0.11 to 121.00)
Standard care
1.27 (0.69 to 2.32)
Heterogeneity: τ²<0.001
0.1
0.2
0.5
1
2
5
10
Favours index test
Favours CCTA

The European Journal of Health Economics
https://doi.org/10.1007/s10198-019-01096-5

ORIGINAL PAPER

Cost-effectiveness analysis of stand-alone or combined non-invasive imaging tests for the diagnosis of stable coronary artery disease: results from the EVINCI study

Valentina Lorenzoni[1] · Stefania Bellelli[1] · Chiara Caselli[2] · Juhani Knuuti[3] · Stephen Richard Underwood[4] · Danilo Neglia[2,5] · Giuseppe Turchetti[1] · For the EVINCI Investigators

Received: 31 January 2019 / Accepted: 31 July 2019

	Cost, €	Effectiveness, %	Δ Cost	Δ Effectiveness	ICER (95% CI)
CMR					
No-imaging	98,991	72	–	–	–
CTCA	51,205	73	−47,811	0.6	−79,685 (−153,074; 144,834)
CMR	84,388	80	−14,763	8.5	Extended dominated
CTCA-CMR	87,203	77	−11,985	4.9	Dominated
CMR-CTCA	87,209	84	−11,819	12.2	−969 (−2282; 7001)
ICA	165,111	100	66,151	28	2362 (1495; 3504)
ECHO					
No-imaging	98,991	72	–	–	–
ECHO	42,612	55	−56,414	−17	Extended dominated
CTCA	51,205	73	−47,811	0.6	Extended dominated
CTCA-ECHO	51,216	85	−47,886	12.7	−3776 (−6177; −2740)
ECHO-CTCA	58,781	80	−40,407	8	Dominated
ICA	165,111	100	66,151	28	2362 (1495; 3504)
PET					
No-imaging	98,991	72	–	–	–
CTCA	51,205	73	−47,811	0.6	−79,685 (−153,074; 144,834)
CTCA-PET	79,901	85	−19,073	12.8	−1490 (−3185; 1393)
PET	117,722	71	18,663	−0.8	Dominated
PET-CTCA	134,117	76	35,232	4.2	Dominated
ICA	165,111	100	66,151	28	2362 (1495; 3504)
SPECT					
No-imaging	98,991	72	–	–	–
CTCA	51,205	73	−47,811	0.6	−79,685 (−153,074; 144,834)
CTCA-SPECT	74,635	80	−24,425	7.9	−3092 (−7998; −504)
SPECT	90,125	68	−9035	−4.2	Dominated
SPECT-CTCA	103,446	77	4260	4.8	Dominated
ICA	165,111	100	66,151	28	2362 (1495; 3504)

Mean costs and effectiveness over 100 patients are reported together with delta costs, delta effectiveness and ICERs obtained via bootstrap replicates using "no imaging" strategy as reference. Strategies involving CTCA, each stress imaging modality and combinations or direct referral to ICA are compared and listed in order of increasing costs

cd correct diagnosis, *CMR* cardiac magnetic resonance, *CTCA* computed-tomography-coronary-angiography, *ECHO* stress-echocardiography, *ICA* invasive-coronary-angiography, *ICER* incremental-cost-effectiveness-ratio, *PET* positron-emission-tomography, *SPECT* single-photon-emission-computed-tomography

Éléments à considérer

- AngioTDM des coronaires:
  - Contraste iodé
  - Radiations
    - Dans les lignes directrices de l’ESC le mot « radiation » n’est mentionné que 2 fois en 71 pages.
  - Accès aux plateaux techniques
  - Effectifs médicaux

Messages à retenir

- L’algorithme des lignes directrices de la Société canadienne de cardiologie n’est pas en révision actuellement et répond généralement aux besoins initiaux en fonction de ce qui est localement accessible;

- Les évidences démontrent que la probabilité pré-test en 2019 est moindre que ce qui était historiquement considéré et il convient d’interpréter les résultats des investigations en conséquence;

- Lorsque l’épreuve d’effort initiale démontre un résultat à risque intermédiaire (Duke treadmill score), compléter avec une autre modalité d’imagerie non-effractive en premier lieu;

- Les modalités d’imagerie non-effractives moins accessibles (comme l’angioTDM des coronaires) peuvent être utilisées chez certaines clientèles cibles d’ici à ce que l’accès se démocratise davantage.

Quand référer en coronarographie?

Diagnostic

- Quand les stratifications non-effractives sont discordantes;
- En présence d’une cardiomyopathie en investigation chez qui l’on souhaite une haute certitude d’exclusion de maladie coronarienne.

Pronostic

- Quand les stratifications non-effractives ou d’autres investigations démontrent des facteurs de mauvais pronostic.

Pronostic

Table 5. High-risk features of noninvasive test results associated with > 3% annual rate of death or MI

Exercise treadmill
- ≥ 2 mm of ST-segment depression at low (< 5 metabolic equivalents) workload or persisting into recovery
- Exercise-induced ST segment elevation
- Exercise-induced VT/VF
- Failure to increase systolic blood pressure to > 120 mm Hg or sustained decrease > 10 mm Hg during exercise

Myocardial perfusion imaging
- Severe resting LV dysfunction (LVEF ≤ 35%) not readily explained by noncoronary causes
- Resting perfusion abnormalities ≥ 10% of the myocardium in patients without previous history or evidence of MI
- Severe stress-induced LV dysfunction (peak exercise LVEF < 45% or decrease in LVEF with stress ≥ 10%)
- Stress-induced perfusion abnormalities encumbering ≥ 10% myocardium or stress segmental scores indicating multiple vascular territories with abnormalities
- Stress-induced LV dilation
- Increased lung uptake

Stress echocardiography
- Inducible wall motion abnormality involving > 2 segments or 2 coronary beds
- Wall motion abnormality developing at low dose of dobutamine (≤ 10 μg/kg/min) or at a low heart rate (< 120 beats per minute)

Coronary computed tomographic angiography
- Multivessel obstructive CAD or left main stenosis on CCTA

CAD, coronary artery disease; CCTA, cardiac computed tomography angiography; LV, left ventricular; LVEF, left ventricular ejection fraction; MI, myocardial infarction; VF, ventricular fibrillation; VT, ventricular tachycardia.

Data from Fihn et al.[3]

Pronostic

Table 6 Definitions of high event risk for different test modalities in patients with established chronic coronary syndromes[a] [102–104]

Exercise ECG	Cardiovascular mortality >3% per year according to Duke Treadmill Score
SPECT or PET perfusion imaging	Area of ischaemia ≥10% of the left ventricle myocardium
Stress echocardiography	≥3 of 16 segments with stress-induced hypokinesia or akinesia
CMR	≥2 of 16 segments with stress perfusion defects or ≥3 dobutamine-induced dysfunctional segments
Coronary CTA or ICA	Three-vessel disease with proximal stenoses, LM disease, or proximal anterior descending disease
Invasive functional testing	FFR ≤0.8, iwFR ≤0.89

CTA = computed tomography angiography; CMR = cardiac magnetic resonance; ECG = electrocardiogram; FFR = fractional flow reserve; ICA = invasive coronary angiography; iwFR = instantaneous wave-free ration (instant flow reserve); LM = left main; PET = positron emission tomography; SPECT; single-photon emission computed tomography.
[a]For detailed explanations, refer to the Supplementary Data.

Pronostic

Invasive angiography is recommended as an alternative test to diagnose CAD in patients with a high clinical likelihood and severe symptoms refractory to medical therapy, or typical angina at a low level of exercise and clinical evaluation that indicates high event risk. Invasive functional assessment must be available and used to evaluate stenoses before revascularization, unless very high grade (>90% diameter stenosis).	I	B
In symptomatic patients with a high-risk clinical profile, ICA complemented by invasive physiological guidance (FFR) is recommended for cardiovascular risk stratification, particularly if the symptoms are inadequately responding to medical treatment and revascularization is considered for improvement of prognosis.	I	A
In patients with mild or no symptoms, ICA complemented by invasive physiological guidance (FFR/iwFR) is recommended for patients undergoing medical treatment in whom non-invasive risk stratification indicates a high event risk and revascularization is considered for the improvement of prognosis.	I	A
ICA is not recommended solely for risk stratification.	III	C
In patients with mild or no symptoms receiving medical treatment, in whom non-invasive risk stratification indicates a high risk, and for whom revascularization is considered for improvement of prognosis, ICA (with FFR when necessary) is recommended.	I	C
ICA (with FFR/iwFR when necessary) is recommended for risk stratification in patients with severe CAD, particularly if the symptoms are refractory to medical treatment or if they have a high-risk clinical profile.	I	C

Pronostic

- Échographie cardiaque au repos:
  - Était historiquement à faire si:
    - Atcd d’infarctus ou onde Q pathologique
    - Signes et symptômes d’IC
    - Souffle cardiaque
    - Arythmies ventriculaires

Pronostic

- Échographie cardiaque au repos:

Resting echocardiography and CMR in the initial diagnostic management of patients with suspected CAD		
A resting transthoracic echocardiogram is recommended in all patients for: • Exclusion of alternative causes of angina; • Identification of regional wall motion abnormalities suggestive of CAD; • Measurement of LVEF for risk-stratification purposes; • Evaluation of diastolic function.	I	B

Pronostic

- Échographie cardiaque au repos:

Resting echocardiography and CMR in the initial diagnostic management of patients with suspected CAD

A resting transthoracic echocardiogram is recommended in all patients for:

- Exclusion of alternative causes of angina;
- Identification of regional wall motion abnormalities suggestive of CAD;
- Measurement of LVEF for risk-stratification purposes;
- Evaluation of diastolic function.

Canadian Journal of Cardiology 30 (2014) 249–263

Society Guidelines

The 2013 Canadian Cardiovascular Society Heart Failure Management Guidelines Update: Focus on Rehabilitation and Exercise and Surgical Coronary Revascularization

Pronostic

RECOMMENDATION

1. We recommend that noninvasive imaging for patients with HF be considered to determine the presence or absence of coronary artery disease (CAD) (Strong Recommendation, Moderate-Quality Evidence).

Values and preferences. This recommendation places value on identification of CAD, which might identify the cause of HF, have prognostic implications, and require treatments aimed toward secondary vascular prevention.

2. We recommend that coronary angiography be:
   i. Performed in patients with HF with ischemic symptoms and who are likely to be good candidates for revascularization (Strong Recommendation, Moderate-Quality Evidence).
   ii. Considered in patients with systolic HF, LVEF $< 35\%$, at risk of CAD, irrespective of angina, who might be good candidates for revascularization (Strong Recommendation, Low-Quality Evidence).
   iii. Considered in patients with systolic HF and in whom noninvasive coronary perfusion testing yields features consistent with high risk (Strong Recommendation, Moderate-Quality Evidence).

Pronostic

Recommendations for valvular disease in chronic coronary syndromes[476]

Recommendations	Class[a]	Level[b]
ICA is recommended before valve surgery and for any of the following: history of CVD, suspected myocardial ischaemia, LV systolic dysfunction, in men >40 years of age and postmenopausal women, or one or more cardiovascular risk factors.	I	C
ICA is recommended in the evaluation of moderate-to-severe functional mitral regurgitation.	I	C
Coronary CTA should be considered as an alternative to coronary angiography before valve intervention in patients with severe valvular heart disease and low probability of CAD.	IIa	C
PCI should be considered in patients undergoing transcatheter aortic valve implantation and coronary artery diameter stenosis >70% in proximal segments.	IIa	C
In severe valvular heart disease, stress testing should not be routinely used to detect CAD because of the low diagnostic yield and potential risks.	III	C

CAD = coronary artery disease; CTA = computed tomography angiography; CVD = cardiovascular disease; ICA = invasive coronary angiography; LV = left ventricular; PCI = percutaneous coronary intervention.
[a]Class of recommendation.
[b]Level of evidence.

Revascularisation

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 APRIL 12, 2007 VOL. 356 NO. 15

Optimal Medical Therapy with or without PCI for Stable Coronary Disease

William E. Boden, M.D., Robert A. O'Rourke, M.D., Koon K. Teo, M.B., B.Ch., Ph.D., Pamela M. Hartigan, Ph.D., David J. Maron, M.D., William J. Kostuk, M.D., Merril Knudtson, M.D., Marcin Dada, M.D., Paul Casperson, Ph.D., Crystal L. Harris, Pharm.D., Bernard R. Chaitman, M.D., Leslee Shaw, Ph.D., Gilbert Gosselin, M.D., Shah Nawaz, M.D., Lawrence M. Title, M.D., Gerald Gau, M.D., Alvin S. Blaustein, M.D., David C. Booth, M.D., Eric R. Bates, M.D., John A. Spertus, M.D., M.P.H., Daniel S. Berman, M.D., G.B. John Mancini, M.D., and William S. Weintraub, M.D., for the COURAGE Trial Research Group*

CONCLUSIONS

As an initial management strategy in patients with stable coronary artery disease, PCI did not reduce the risk of death, myocardial infarction, or other major cardiovascular events when added to optimal medical therapy. (ClinicalTrials.gov number, NCT00007657.)

Présence de critiques quant à différents aspects des interventions coronariennes percutanées, notamment le fait que l'évaluation était visuelle sans corrélation physiologique durant l'intervention.

ORIGINAL ARTICLE

Five-Year Outcomes with PCI Guided by Fractional Flow Reserve

P. Xaplanteris, S. Fournier, N.H.J. Pijls, W.F. Fearon, E. Barbato, P.A.L. Tonino, T. Engstrøm, S. Kääb, J.-H. Dambrink, G. Rioufol, G.G. Toth, Z. Piroth, N. Witt, O. Fröbert, P. Kala, A. Linke, N. Jagic, M. Mates, K. Mavromatis, H. Samady, A. Irimpen, K. Oldroyd, G. Campo, M. Rothenbühler, P. Jüni, and B. De Bruyne, for the FAME 2 Investigators*

METHODS

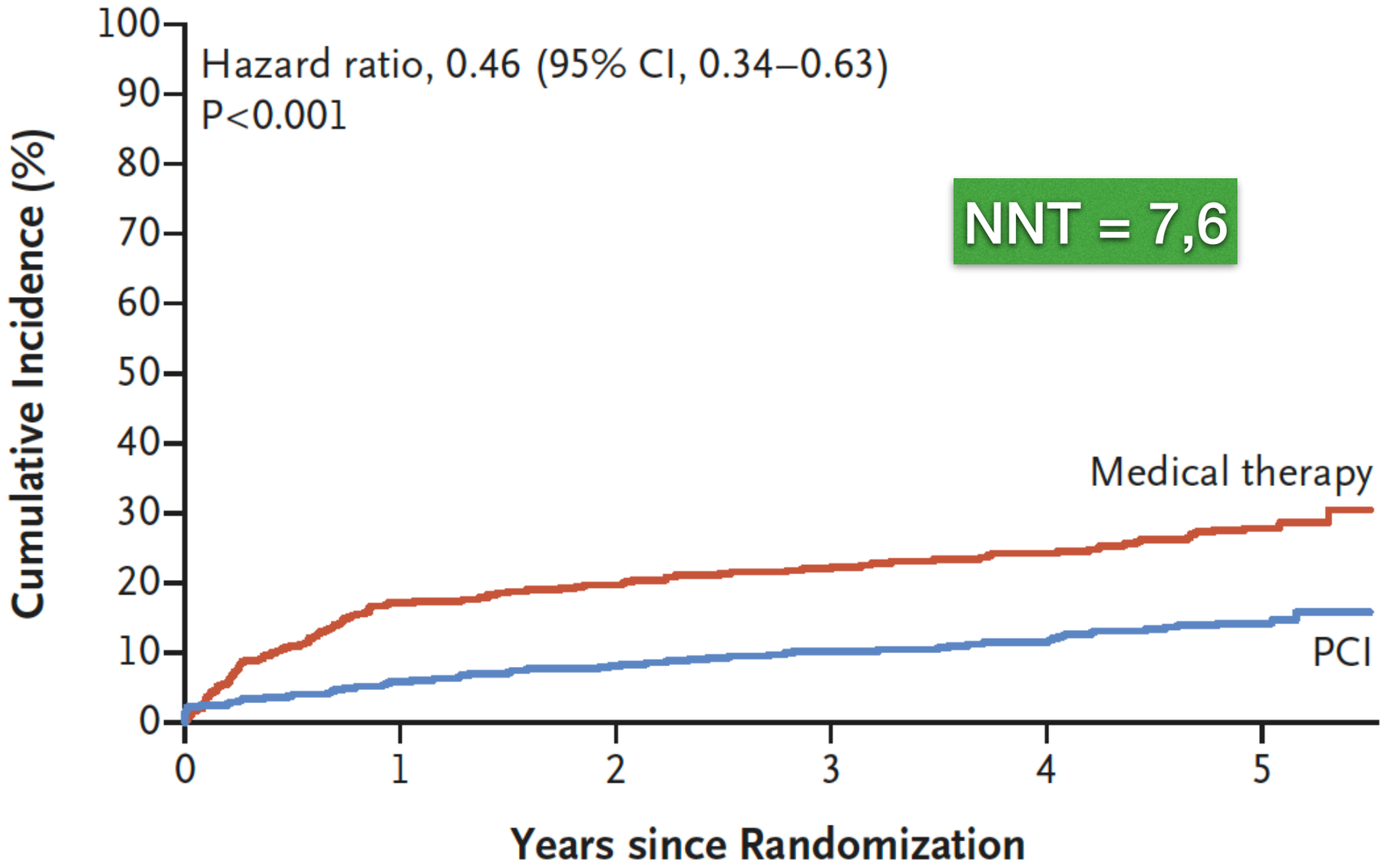
Among 1220 patients with angiographically significant stenoses, those in whom at least one stenosis was hemodynamically significant (FFR, ≤0.80) were randomly assigned to FFR-guided PCI plus medical therapy or to medical therapy alone. Patients in whom all stenoses had an FFR of more than 0.80 received medical therapy and were entered into a registry. The primary end point was a composite of death, myocardial infarction, or urgent revascularization.

Inclusion criteria:

1. Stable angina pectoris (Canadian Cardiovascular Society Class [CCS] 1, 2, 3); or angina pectoris CCS class 4 subsequently stabilized medically (minimum 7 days); or atypical or no chest pain but documented ischemia on noninvasive testing
2. At least one stenosis of at least 50% diameter reduction in at least one major native epicardial coronary artery with a diameter of at least 2.5 mm and supplying viable myocardium
3. Eligible for PCI
4. Signed written informed consent obtained

Table 2. Clinical End Points at 5-Year Follow-up.*

End Points	PCI Group (N=447)	Medical-Therapy Group (N=441)	Hazard Ratio (95% CI)	Registry Cohort (N=166)
	no. of patients (%)			*no. of patients (%)*
Primary composite end point	62 (13.9)	119 (27.0)	0.46 (0.34–0.63)	26 (15.7)
Components of primary end point				
Death from any cause	23 (5.1)	23 (5.2)	0.98 (0.55–1.75)	7 (4.2)
Myocardial infarction	36 (8.1)	53 (12.0)	0.66 (0.43–1.00)	14 (8.4)
Urgent revascularization	28 (6.3)	93 (21.1)	0.27 (0.18–0.41)	14 (8.4)
Death or myocardial infarction	53 (11.9)	71 (16.1)	0.72 (0.50–1.03)	20 (12.0)
Death from cardiac causes	11 (2.5)	7 (1.6)	1.54 (0.60–3.98)	3 (1.8)
Death from cardiac causes or myocardial infarction	43 (9.6)	59 (13.4)	0.70 (0.48–1.04)	16 (9.6)
Revascularization				
Any revascularization	60 (13.4)	225 (51.0)	0.19 (0.14–0.26)	29 (17.5)
Nonurgent revascularization	34 (7.6)	155 (35.1)	0.18 (0.12–0.26)	17 (10.2)
Stroke	12 (2.7)	7 (1.6)	1.69 (0.67–4.31)	1 (0.6)
Definite or probable stent thrombosis	7 (1.6)	2 (0.5)	3.46 (0.72–16.70)	1 (0.6)



No. at Risk

Medical therapy	441	360	349	337	271	258
PCI	447	416	403	391	334	321

Conclusion

- Les lignes directrices canadiennes demeurent d'actualité, mais une tendance à la combinaison d'examens anatomiques et fonctionnels non-effractifs est de plus en plus mise de l'avant.

- La référence en coronarographie peut se faire pour des raisons diagnostiques, pronostiques ou pour améliorer la qualité de vie.

- La revascularisation coronarienne chez le coronarien stable peut offrir des résultats cliniques positifs lorsque orientée sur la base d'un FFR.

- Le jugement clinique demeure fondamental et, au besoin, une consultation en 2e ligne peut contribuer à compléter l'évaluation clinique.

Merci!