



# **SÍNDROME CORONARIO CRÓNICO: MANEJO MÉDICO VS. INTERVENCIONISMO**

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# DECLARACIÓN DE CONFLICTOS DE INTERÉS

\* Sin conflictos de interés.





# ENFERMEDADES CARDIOVASCULARES Y MORTALIDAD

## DISCUSIÓN TRADICIONAL DE LOS PACIENTES CON ANGINA ESTABLE



# ¿REVASCULARIZAR O NO REVASCULARIZAR?

## Step 4 Treatment



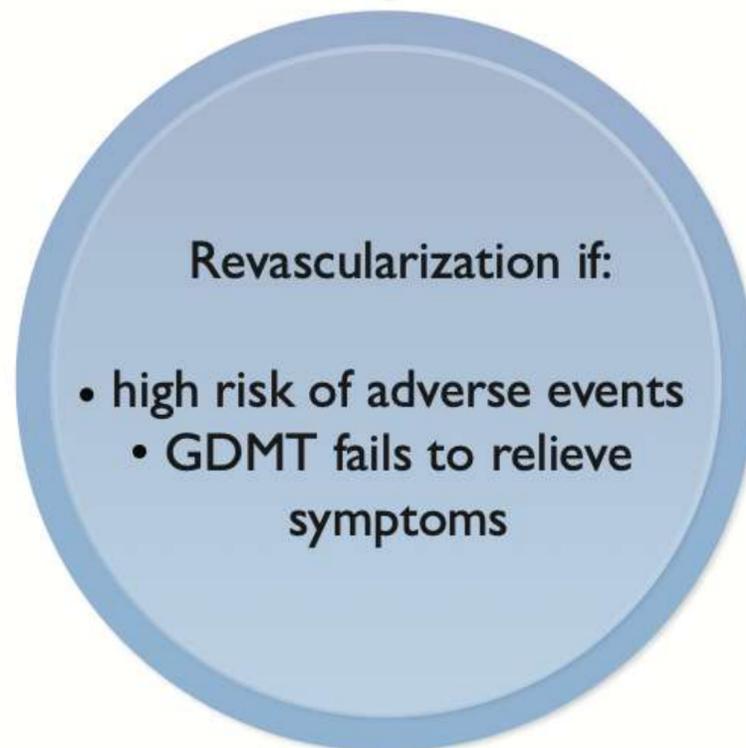
### Lifestyle and risk factor modification

- To improve prognosis



### Disease-modifying medical treatment

- To improve prognosis



### Revascularization

- To reduce symptoms
- To improve prognosis in patients with obstructive CAD who are at high risk of adverse events

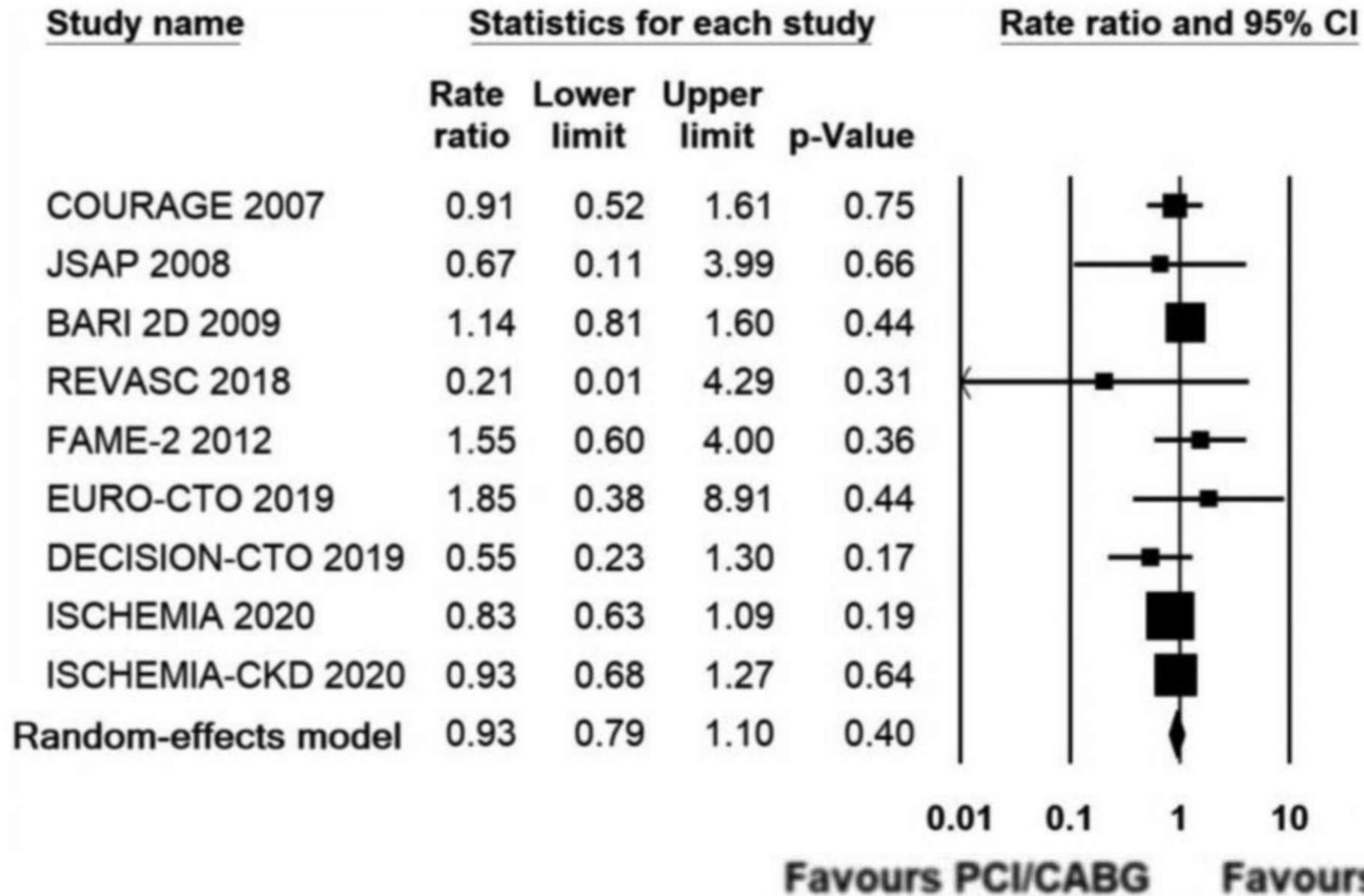


### Antianginal medical treatment

- To reduce symptoms

Fuente: 1. Eur Heart J. 2024 Sep 29;45(36):3415-3537. doi: 10.1093/eurheartj/ehae177.

# ¿REVASCULARIZAR O NO REVASCULARIZAR?

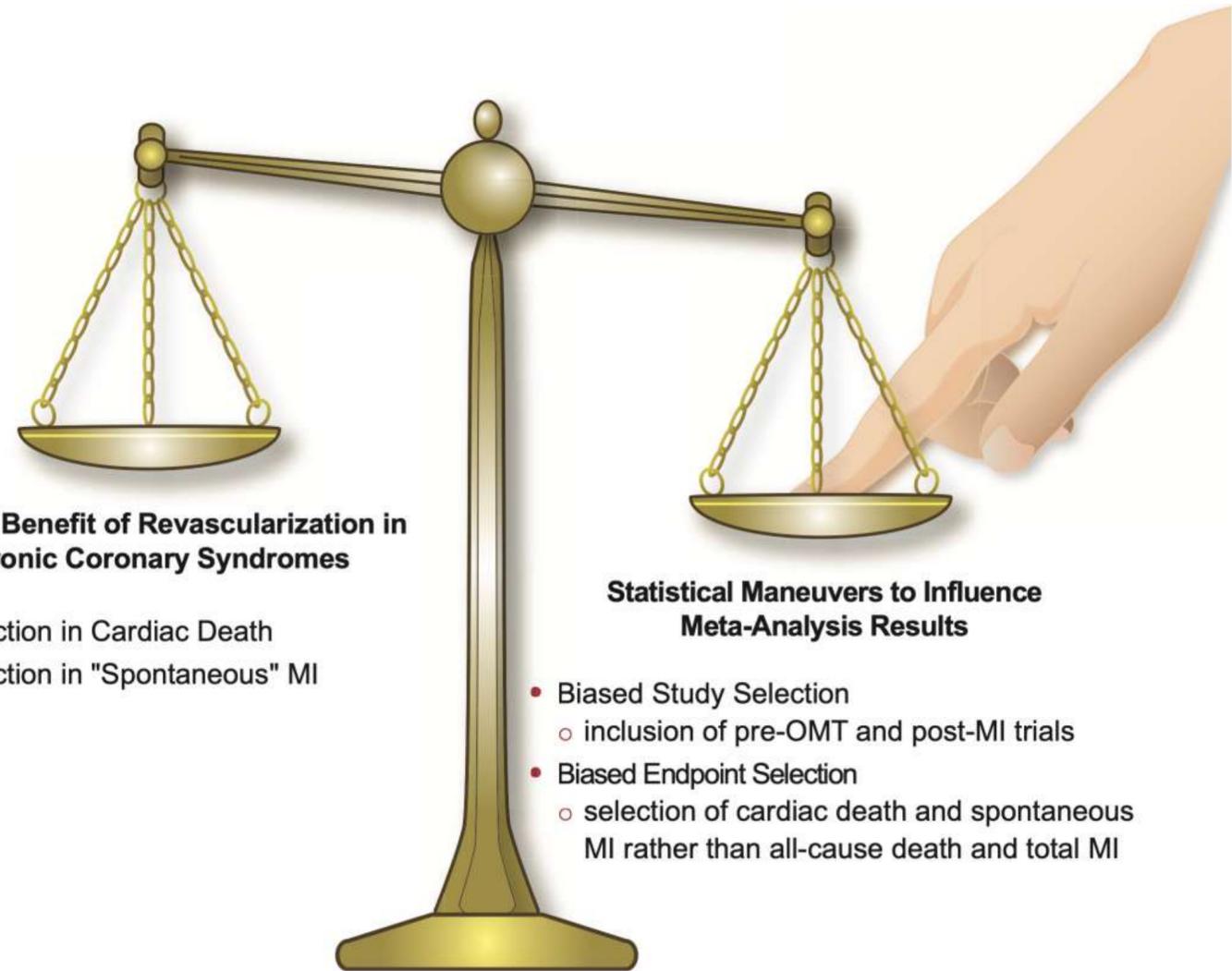


## Illusory Benefit of Revascularization in Chronic Coronary Syndromes

- Reduction in Cardiac Death
- Reduction in "Spontaneous" MI

## Statistical Maneuvers to Influence Meta-Analysis Results

- Biased Study Selection
  - inclusion of pre-OMT and post-MI trials
- Biased Endpoint Selection
  - selection of cardiac death and spontaneous MI rather than all-cause death and total MI



Fuente: 1. Eur Heart J. 2021 Dec 1;42(45):4652-4655. doi: 10.1093/eurheartj/ehab330.



# ¿REVASCULARIZAR O NO REVASCULARIZAR?

## Revascularization if:

- high risk of adverse events
- GDMT fails to relieve symptoms



## Revascularization

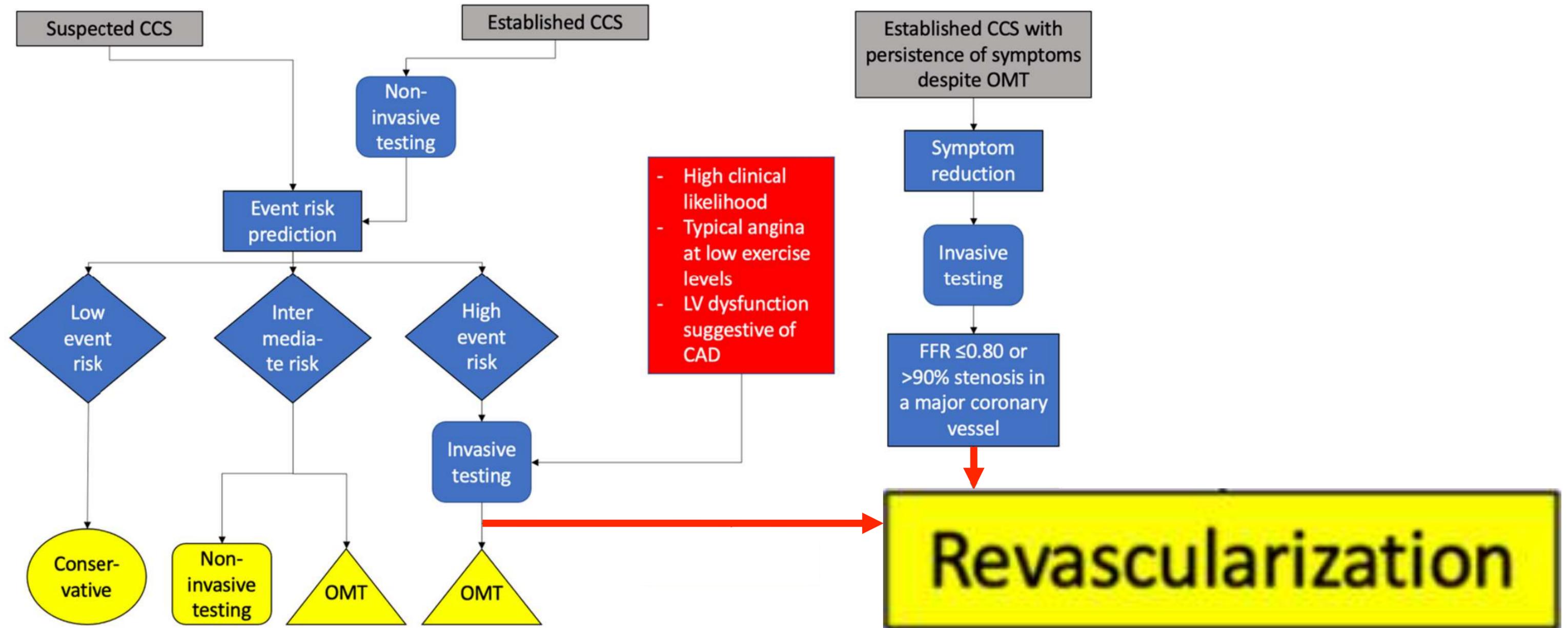
- To reduce symptoms
- To improve prognosis in patients with obstructive CAD who are at high risk of adverse events

## Antianginal medical treatment

- To reduce symptoms

Fuente: 1. Eur Heart J. 2024 Sep 29;45(36):3415-3537. doi: 10.1093/eurheartj/ehae177.

# ¿REVASCULARIZAR O NO REVASCULARIZAR?



Fuente: 1. Eur J Clin Invest. 2022 Aug;52(8):e13787. doi: 10.1111/eci.13787. Epub 2022 Apr 29.  
2. Eur Heart J. 2024 Sep 29;45(36):3415-3537. doi: 10.1093/eurheartj/ehae177.

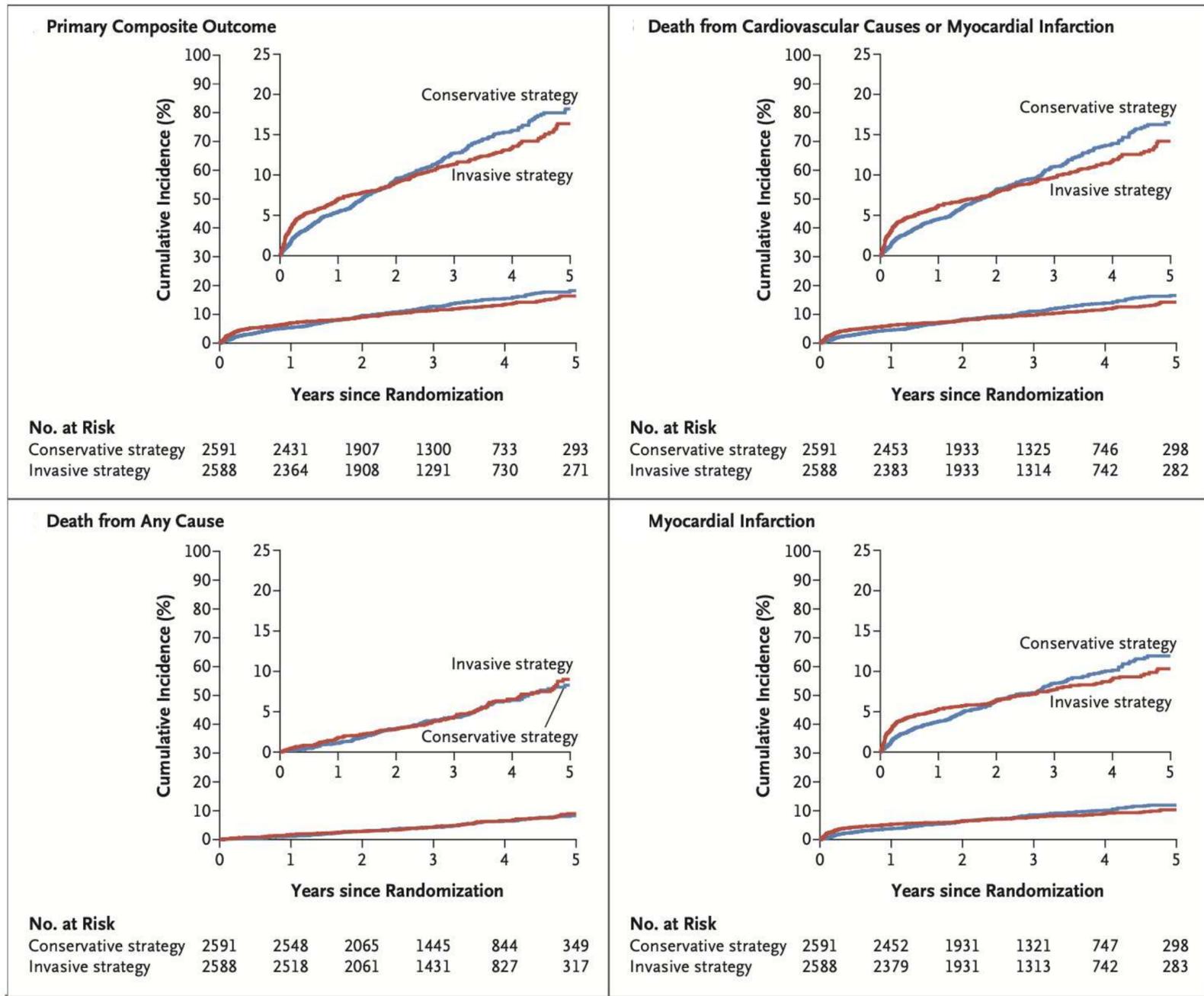


# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

- \* El tratamiento médico óptimo continúa siendo esencial para controlar los síntomas de estos pacientes.
- \* La revascularización miocárdica, continúa siendo un coadyuvante en el tratamiento de estos pacientes, sin sustituir la terapéutica farmacológica.
  - ☑ Alivio de los síntomas y reducción de fármacos antianginosos.
  - ☑ Mejora de la capacidad física y la calidad de vida.
  - ☑ Mejora del pronóstico.

Fuente: 1. Eur Heart J. 2020 Jan 14;41(3):407-477. doi: 10.1093/eurheartj/ehz425.





## Initial Invasive or Conservative Strategy for Stable Coronary Disease

D.J. Maron, J.S. Hochman, H.R. Reynolds, S. Bangalore, S.M. O'Brien, W.E. Boden, B.R. Chaitman, R. Senior, J. López-Sendón, K.P. Alexander, R.D. Lopes, L.J. Shaw, J.S. Berger, J.D. Newman, M.S. Sidhu, S.G. Goodman, W. Ruzyllo, G. Gosselin, A.P. Maggioni, H.D. White, B. Bhargava, J.K. Min, G.B.J. Mancini, D.S. Berman, M.H. Picard, R.Y. Kwong, Z.A. Ali, D.B. Mark, J.A. Spertus, M.N. Krishnan, A. Elghamaz, N. Moorthy, W.A. Hueb, M. Demkow, K. Mavromatis, O. Bockeria, J. Peteiro, T.D. Miller, H. Szwed, R. Doerr, M. Keltai, J.B. Selvanayagam, P.G. Steg, C. Held, S. Kohsaka, S. Mavromichalis, R. Kirby, N.O. Jeffries, F.E. Harrell, Jr., F.W. Rockhold, S. Broderick, T.B. Ferguson, Jr., D.O. Williams, R.A. Harrington, G.W. Stone, and Y. Rosenberg, for the ISCHEMIA Research Group\*

**CONCLUSIONS**

Among patients with stable coronary disease and moderate or severe ischemia, we did not find evidence that an initial invasive strategy, as compared with an initial conservative strategy, reduced the risk of ischemic cardiovascular events or death from any cause over a median of 3.2 years. The trial findings were sensitive to the definition of myocardial infarction that was used. (Funded by the National Heart, Lung, and Blood Institute and others; ISCHEMIA ClinicalTrials.gov number, NCT01471522.)

Fuente: 1. N Engl J Med. 2020 Apr 9;382(15):1395-1407. doi: 10.1056/NEJMoa1915922. Epub 2020 Mar 30.

# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

## MACEs at one year of follow-up.

	Overall	Medical group	Invasive group	<i>p</i> -Value
	<i>n</i> = 833	<i>n</i> = 495	<i>n</i> = 338	
Composite end-point, <i>n</i> (%) (all-cause death, MI, stroke, hosp for UA)	24 (2.9)	15 (3.0)	9 (2.7)	0.835
All-cause death, <i>n</i> (%)	2 (0.2)	2 (0.4)	0 (0)	0.517
Non-fatal myocardial infarction, <i>n</i> (%)	11 (1.3)	7 (1.4)	4 (1.2)	>0.99
Non-fatal stroke, <i>n</i> (%)	1 (0.1)	0 (0)	1 (0.3)	0.405
Hospitalization for unstable angina, <i>n</i> (%)	10 (1.2)	6 (1.2)	4 (1.2)	>0.99

Hosp: hospitalization. MACEs: major adverse cardiovascular events. MI: non-fatal myocardial infarction. UA: unstable angina.

**Conclusions:** The study confirms the efficacy and safety of a tailored approach to stable angina, as recommended by guidelines, with medical therapy first followed by selective revascularization when needed.

Clinical outcomes of newly diagnosed, stable angina patients managed according to current guidelines. The ARCA (Arca Registry for Chronic Angina) Registry: A prospective, observational, nationwide study

Enrico Orsini <sup>a,\*1</sup>, Mario Marzilli <sup>b,1</sup>, Giovanni Battista Zito <sup>c,1</sup>, Vincenzo Carbone <sup>d,2</sup>, Loredana Latina <sup>e,2</sup>, Ugo Oliviero <sup>f,2</sup>, Umberto Rizzo <sup>g,2</sup>, on behalf of the ARCA Registry Investigators

# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

Treatment of chronic total occlusion with percutaneous coronary intervention is associated with improved survival as compared to medical treatment alone: insights from a single-centre registry

Povilas Budrys<sup>1,2,\*</sup>, Vilhelmas Bajoras<sup>1,2</sup>, Michael Rees<sup>3</sup>, Ieva Marija Saule<sup>1,2</sup>, Giedrius Davidavicius<sup>1,2</sup>, Andrius Berukstis<sup>1,2</sup>, Arvydas Baranauskas<sup>1,2,\*</sup>

## Cardiovascular outcomes and parameters during follow-up.

Characteristics	PCI, n = 163	OMT, n = 215	p
Length of follow up, years ± SD	3.56 ± 0.93	3.55 ± 0.92	0.845
MI, no. (%)	11 (6.7%)	13 (6.0%)	0.782
CTO vessel MI, no. (%)	6 (3.7%)	11 (5.1%)	0.505
CTO vessel revascularization, no. (%)	2 (1.2%)	3 (1.4%)	0.887
Revascularization, no. (%)	15 (9.2%)	15 (7.0%)	0.428
Stroke, no. (%)	1 (0.6%)	2 (0.9%)	0.731
<b>All-cause mortality, no. (%)</b>	<b>17 (10.4%)</b>	<b>41 (19.1%)</b>	<b>0.021</b>

PCI, percutaneous coronary intervention; OMT, optimal medical treatment; SD, standard deviation; MI, myocardial infarction; CTO, chronic total occlusion.

## Odds ratios for all-cause mortality in multivariate logistic regression analysis.

Predictor	p	OR (95% CI)
Age ≤70 years	0.011	0.466 (0.259; 0.838)
Three-vessel CAD	0.057	1.806 (0.982; 3.324)
<b>Treatment option (PCI)</b>	<b>0.032</b>	<b>0.508 (0.274; 0.943)</b>

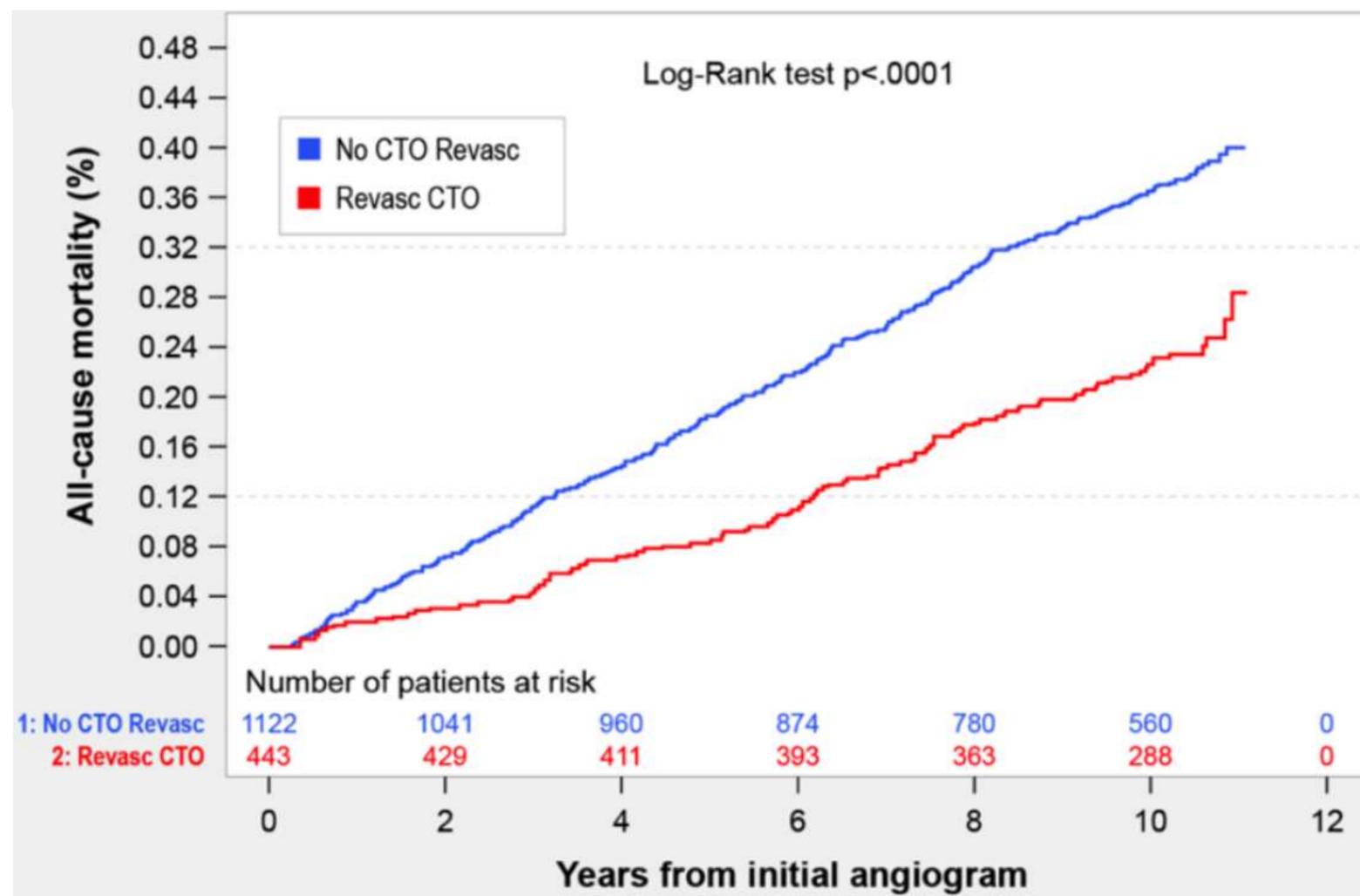
CAD, coronary artery disease; PCI, percutaneous coronary intervention; OR, odds ratio; CI, confidence interval.

## Conclusions

The data from our centre registry demonstrates that percutaneous coronary intervention of a chronic total occlusion is associated with reduced all-cause mortality as compared to medical treatment alone in a real-life setting.

Fuente: 1. Rev Cardiovasc Med. 2021 Dec 22;22(4):1629-1632. doi: 10.31083/j.rcm2204169.

# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

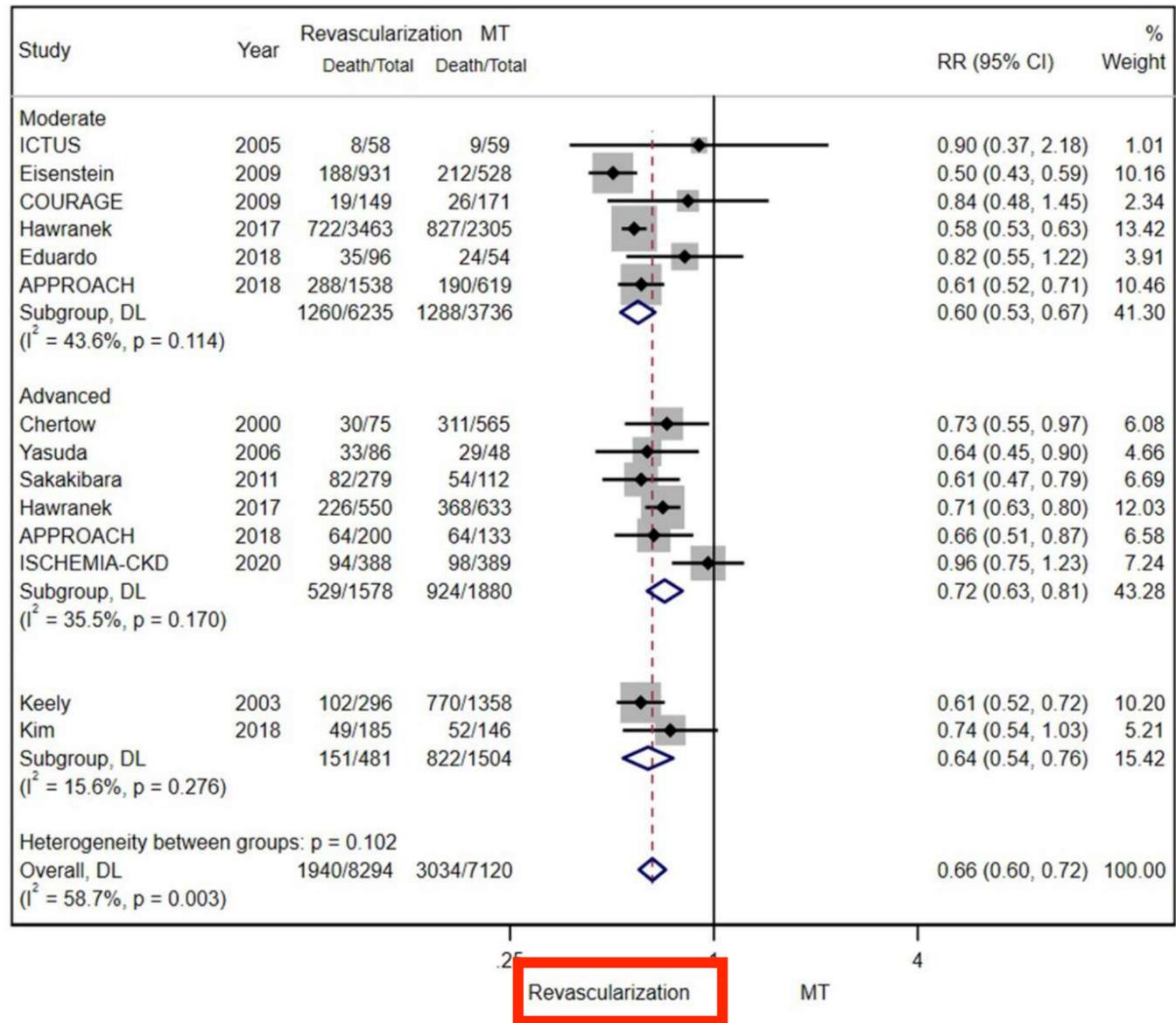


## Canadian Multicenter Chronic Total Occlusion Registry: Ten-Year Follow-Up Results of Chronic Total Occlusion Revascularization

Bradley H. Strauss<sup>1</sup>, MD, PhD; Merril L. Knudtson, MD; Asim N. Cheema, MD; P. Diane Galbraith, BN, MSc; Gabby Elbaz-Greener<sup>1</sup>, MD; Wael Abuzeid, MD; Kayley A. Henning, MPH; Feng Qiu, MSc; Harindra C. Wijeyesundera<sup>1</sup>, MD, PhD

**Conclusions:** Early CTO revascularization was associated with significantly lower all-cause mortality, revascularization rates, and hospitalization for acute coronary syndrome at 10 years, and mainly driven by outcomes in patients with CABG.

Fuente: 1. Circ Cardiovasc Interv. 2021 Dec;14(12):e010546. doi: 10.1161/CIRCINTERVENTIONS.121.010546. Epub 2021 Dec 21.



## Revascularization vs. Conservative Medical Treatment in Patients With Chronic Kidney Disease and Coronary Artery Disease: A Meta-Analysis

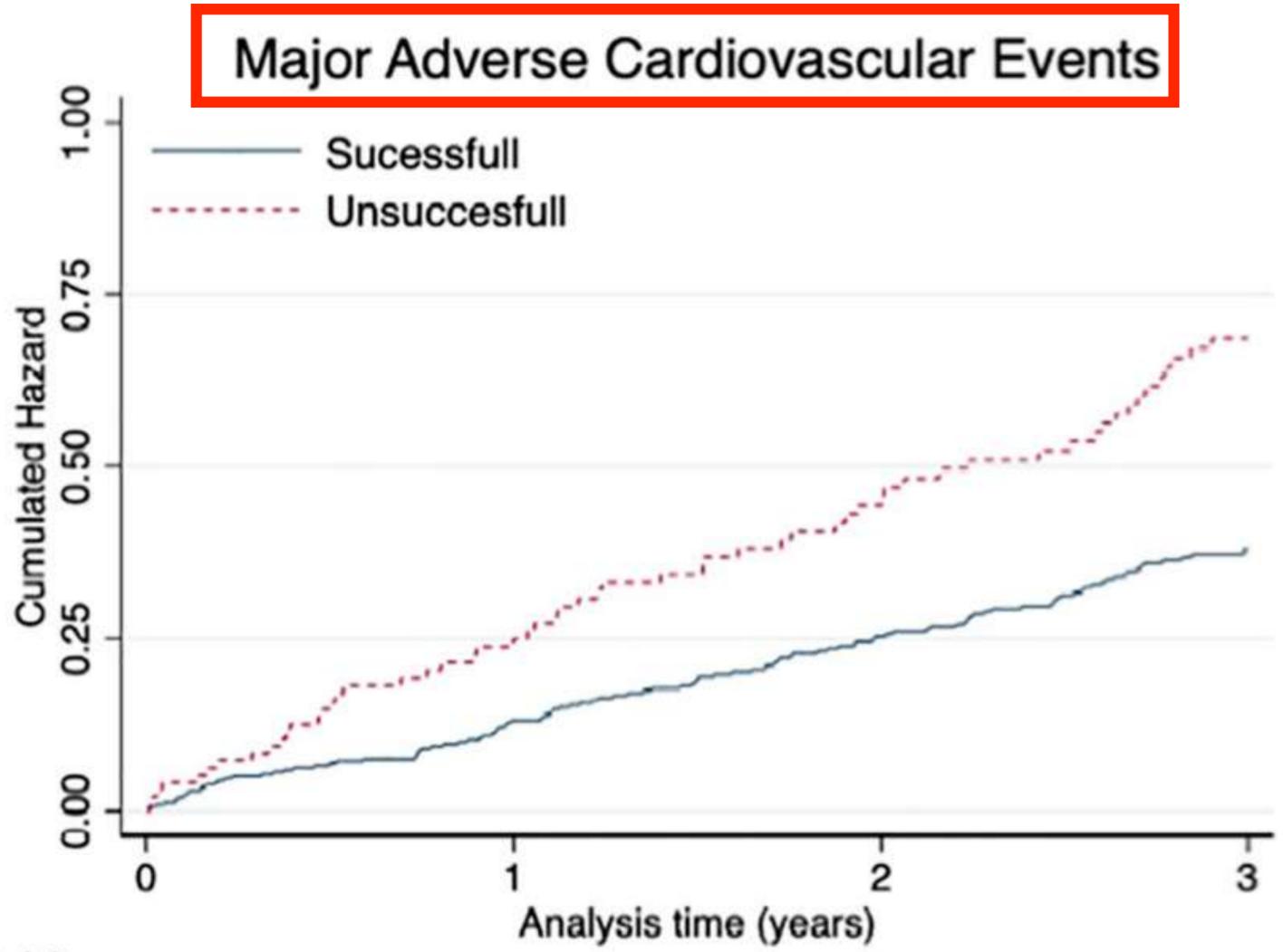
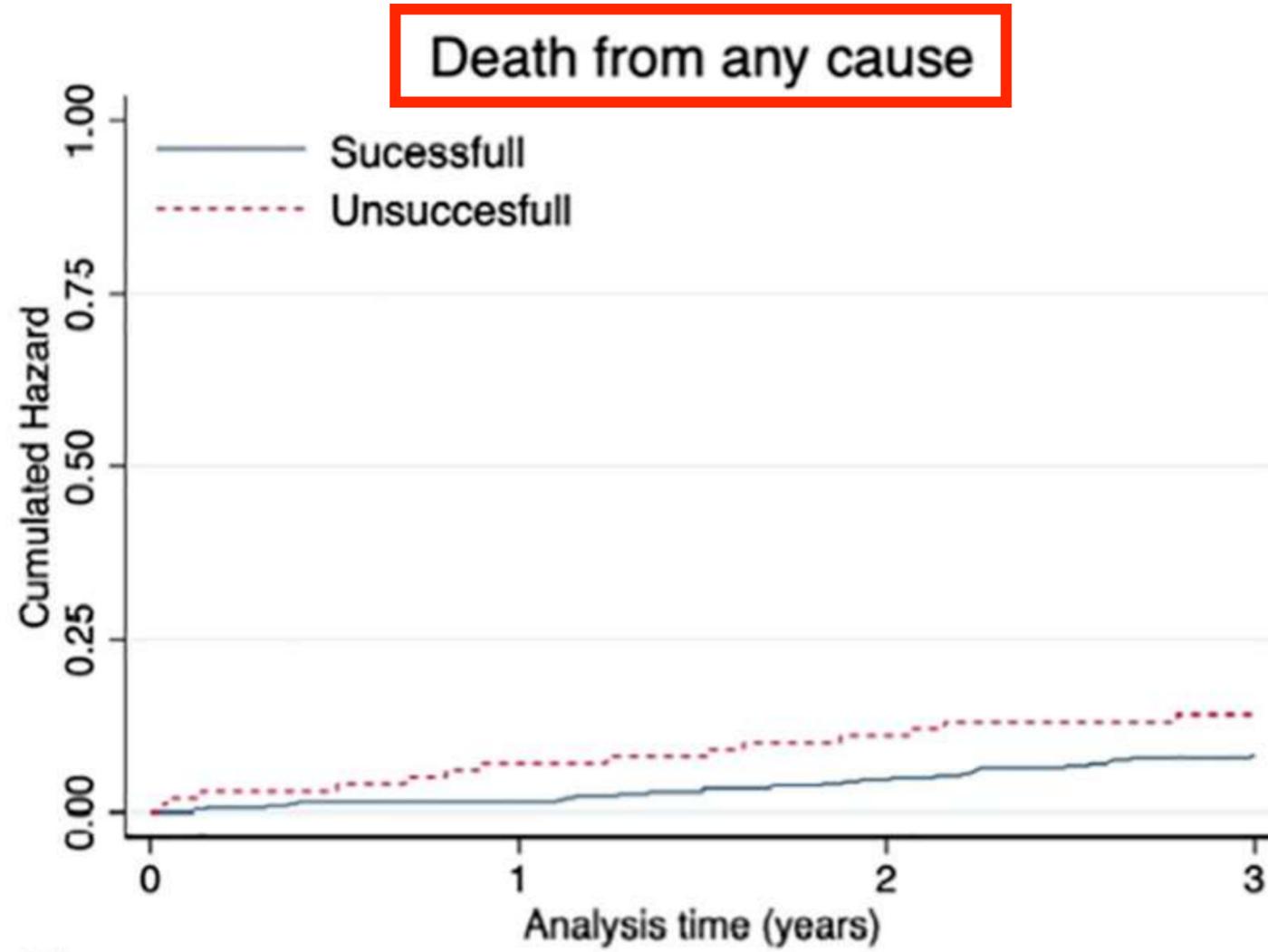
Guang-zhi Liao<sup>†</sup>, Yi-ming Li<sup>†</sup>, Lin Bai, Yu-yang Ye and Yong Peng<sup>\*</sup>

The pooled effect of revascularization and medical treatment (MT) alone on the long-term mortality of patients with coronary artery disease (CAD) and chronic kidney disease (CKD).

Fuente: 1. Front Cardiovasc Med. 2022 Feb 7;8:818958. doi: 10.3389/fcvm.2021.818958. eCollection 2021.

# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

## Cost-Effectiveness in Patients Undergoing Revascularization of Chronic Total Occluded Coronary Arteries—A Cohort Study



Fuente: 1. Front Cardiovasc Med. 2022 May 26;9:849942. doi: 10.3389/fcvm.2022.849942. eCollection 2022.



# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

Extensión de la enfermedad anatómica o funcional		Clase	Nivel de evidencia
Por pronóstico	Enfermedad de tronco $\geq 50\%$ <sup>#</sup>	I	A
	Estenosis de DA $\geq 70\%$ <sup>#</sup>	I	A
	Enfermedad 2-3 vasos con estenosis $\geq 50\%$ y con deterioro de la función VI (FEy $\leq 35\%$ ) <sup>#</sup>	I	A
	Área de isquemia $> 10\%$ o FFR alterado <sup>‡</sup>	I	B
	Solo una arteria $\geq 70\%$ <sup>#</sup>	I	C
Por síntomas	Estenosis significativa <sup>#</sup> , en presencia de angina limitante o equivalente con respuesta insuficiente al tratamiento médico óptimo <sup>†</sup>	I	A

<sup>#</sup>Con isquemia documentada o estenosis hemodinámicamente relevante definida por un FFR  $\leq 0,80$  o iFR  $\leq 0,89$  o estenosis  $>90\%$  en un vaso coronario importante.

<sup>‡</sup>Con base en un FFR  $<0,75$  que indica la importancia pronóstica de la lesión.

<sup>†</sup>Teniendo en cuenta la adherencia al tratamiento y el deseo del paciente sobre la intensidad del tratamiento antianginoso.

**Fuente:** 1. Revista Argentina de Cardiología Vol. 88 Supl. 5 Julio 2020 ISSN 0034-7000.



# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

## Revascularization to improve outcomes

In chronic coronary syndrome patients with left ventricular ejection fraction >35%

In CCS patients with LVEF >35%, myocardial revascularization is recommended, in addition to guideline-directed medical therapy, for patients with functionally significant left main stem stenosis to improve survival.

**I**

**A**

In CCS patients with LVEF >35%, myocardial revascularization is recommended, in addition to guideline-directed medical therapy, for patients with functionally significant three-vessel disease to improve long-term survival and to reduce long-term cardiovascular mortality and the risk of spontaneous myocardial infarction.

**I**

**A**

In CCS patients with LVEF >35%, myocardial revascularization is recommended, in addition to guideline-directed medical therapy, for patients with functionally significant single- or two-vessel disease involving the proximal LAD, to reduce long-term cardiovascular mortality and the risk of spontaneous myocardial infarction.

**I**

**B**

In chronic coronary syndrome patients with left ventricular ejection fraction ≤35%

In CCS patients with LVEF ≤35%, it is recommended to choose between revascularization or medical therapy alone, after careful evaluation, preferably by the Heart Team, of coronary anatomy, correlation between coronary artery disease and LV dysfunction, comorbidities, life expectancy, individual risk-to-benefit ratio, and patient perspectives.

**I**

**C**

In surgically eligible CCS patients with multivessel CAD and LVEF ≤35%, myocardial revascularization with CABG is recommended over medical therapy alone to improve long-term survival.

**I**

**B**

In selected CCS patients with functionally significant MVD and LVEF ≤35% who are at high surgical risk or not operable, PCI may be considered as an alternative to CABG.

**IIb**

**B**

**Fuente:**

1. Eur Heart J. 2024 Sep 29;45(36):3415-3537. doi: 10.1093/eurheartj/ehae177.
2. J Am Coll Cardiol. 2023 Aug 29;82(9):833-955. doi: 10.1016/j.jacc.2023.04.003. Epub 2023 Jul 20.
3. Eur J Prev Cardiol. 2022 Mar 11;29(2):404-406. doi: 10.1093/eurjpc/zwab182.



# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

## Revascularization to improve symptoms

In CCS patients with persistent angina or anginal equivalent, despite guideline-directed medical treatment, myocardial revascularization of functionally significant obstructive CAD is recommended to improve symptoms.

**I****A**

## Choice of revascularization modality

It is recommended that physicians select the most appropriate revascularization modality based on patient profile,<sup>c</sup> coronary anatomy,<sup>d</sup> procedural factors,<sup>e</sup> LVEF, preferences, and outcome expectations.

**I****C**

### Fuente:

1. Eur Heart J. 2024 Sep 29;45(36):3415-3537. doi: 10.1093/eurheartj/ehae177.
2. J Am Coll Cardiol. 2023 Aug 29;82(9):833-955. doi: 10.1016/j.jacc.2023.04.003. Epub 2023 Jul 20.
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# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

Extensión de la enfermedad <sup>#</sup>	Clase	CRM	Nivel de evidencia	Clase	ATC	Nivel de evidencia
<b>Enfermedad coronaria de 1 vaso</b>						
– Sin estenosis en DA proximal	<b>IIb</b>		<b>C</b>	<b>I</b>		<b>C</b>
– Con estenosis en DA proximal	<b>I</b>		<b>A</b>	<b>I</b>		<b>A</b>
<b>Enfermedad coronaria de 2 vasos</b>						
– Sin estenosis en DA proximal	<b>IIb</b>		<b>C</b>	<b>I</b>		<b>C</b>
– Con estenosis en DA proximal	<b>I</b>		<b>B</b>	<b>I</b>		<b>C</b>
<b>Enfermedad coronaria de tronco de coronaria izquierda</b>						
– Con puntuación de Syntax bajo (0-22)	<b>I</b>		<b>A</b>	<b>I</b>		<b>A</b>
– Con puntuación de Syntax intermedio (23-32)	<b>I</b>		<b>A</b>	<b>IIa</b>		<b>A</b>
– Con puntuación de Syntax alto $\geq 23^\ddagger$	<b>I</b>		<b>A</b>	<b>III</b>		<b>B</b>

<sup>#</sup>Ausencia de cirugía cardíaca previa, morbilidad grave, fragilidad o inmovilidad que impide una CRM

DA: Descendente anterior.

<sup>‡</sup>Se debe considerar la ATC si el heart team tiene dudas sobre el riesgo quirúrgico del paciente o si este rechaza el tratamiento con CRM después de recibir un asesoramiento adecuado.

**Fuente:** 1. Revista Argentina de Cardiología Vol. 88 Supl. 5 Julio 2020 ISSN 0034-7000.



# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

Extensión de la enfermedad <sup>#</sup>	CRM		ATC	
	Clase	Nivel de evidencia	Clase	Nivel de evidencia
<b>Enfermedad coronaria de 3 vasos sin diabetes</b>				
– Con puntuación de Syntax bajo (0-22)	I	A	I	A
– Con puntuación de Syntax intermedio/alto (≥22)	I	A	III	B
<b>Enfermedad coronaria de 3 vasos con diabetes</b>				
– Con puntuación de Syntax bajo (0-22)	I	A	IIb	A
– Con puntuación de Syntax intermedio/alto (≥22)	I	A	III	A

<sup>#</sup>Ausencia de cirugía cardíaca previa, morbilidad grave, fragilidad o inmovilidad que impide una CRM

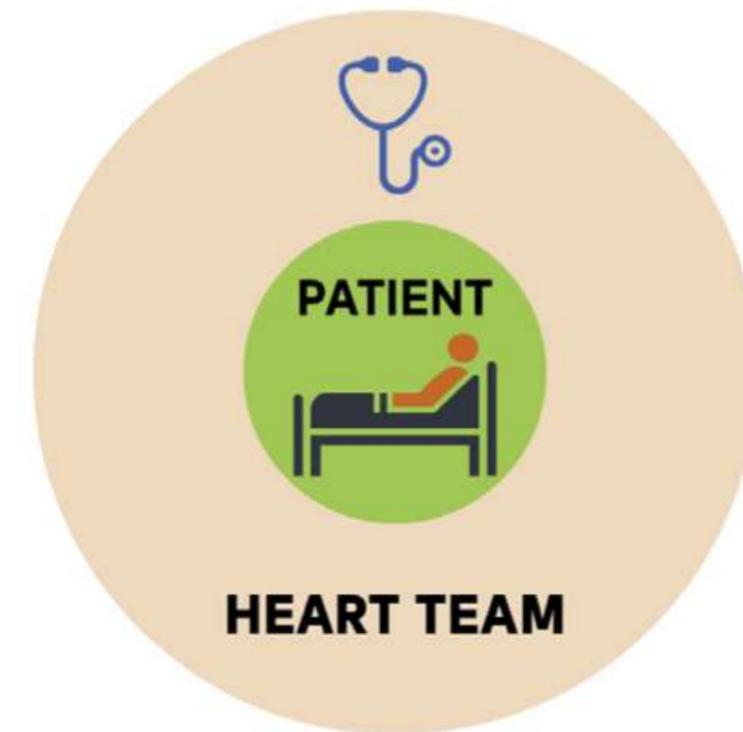
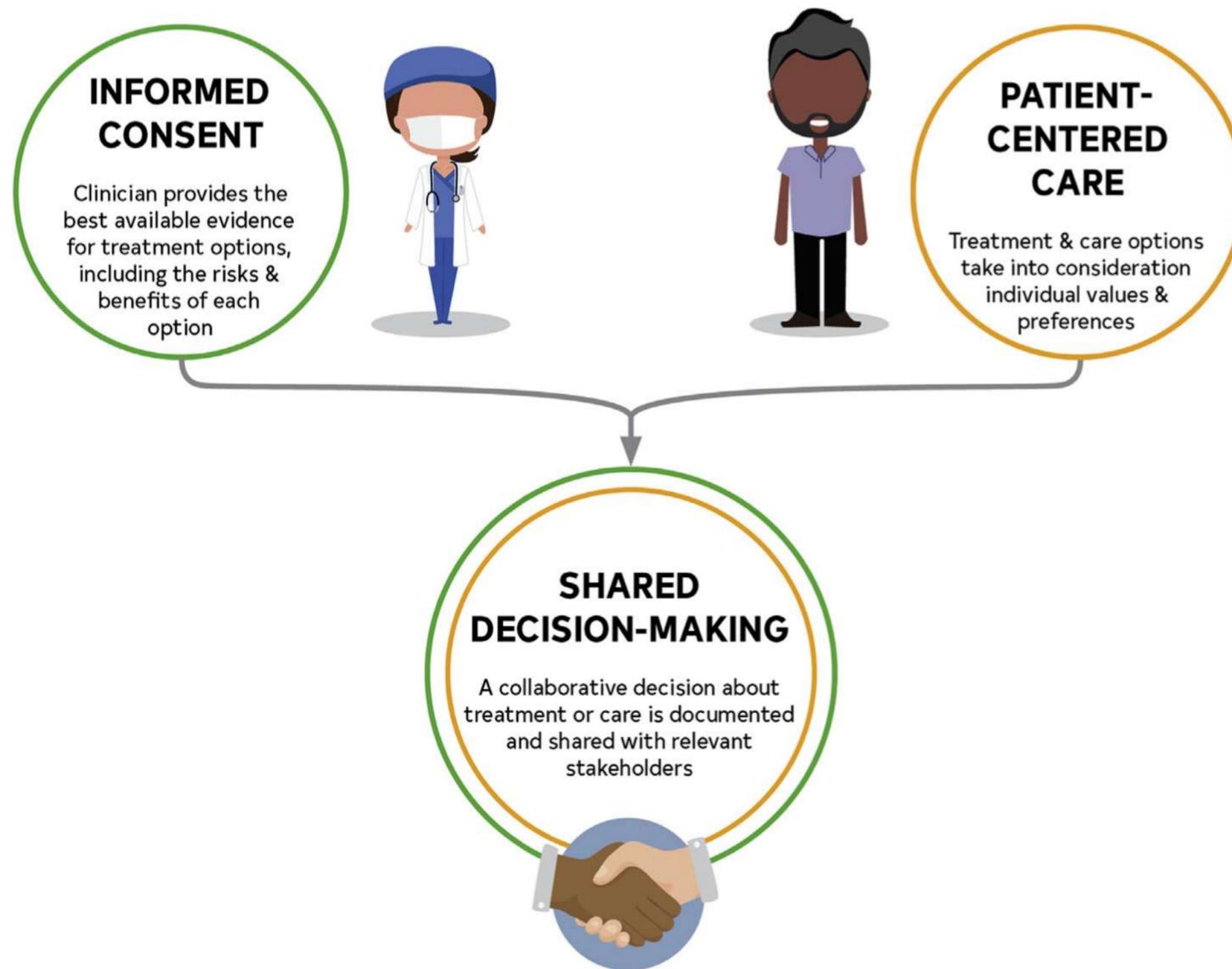
DA: Descendente anterior.

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**Fuente:** 1. Revista Argentina de Cardiología Vol. 88 Supl. 5 Julio 2020 ISSN 0034-7000.



# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO EL ROL DEL HEART TEAM



Fuente: 1. J Am Coll Cardiol. 2022 Jan 18;79(2):e21-e129. doi: 10.1016/j.jacc.2021.09.006. Epub 2021 Dec 9.

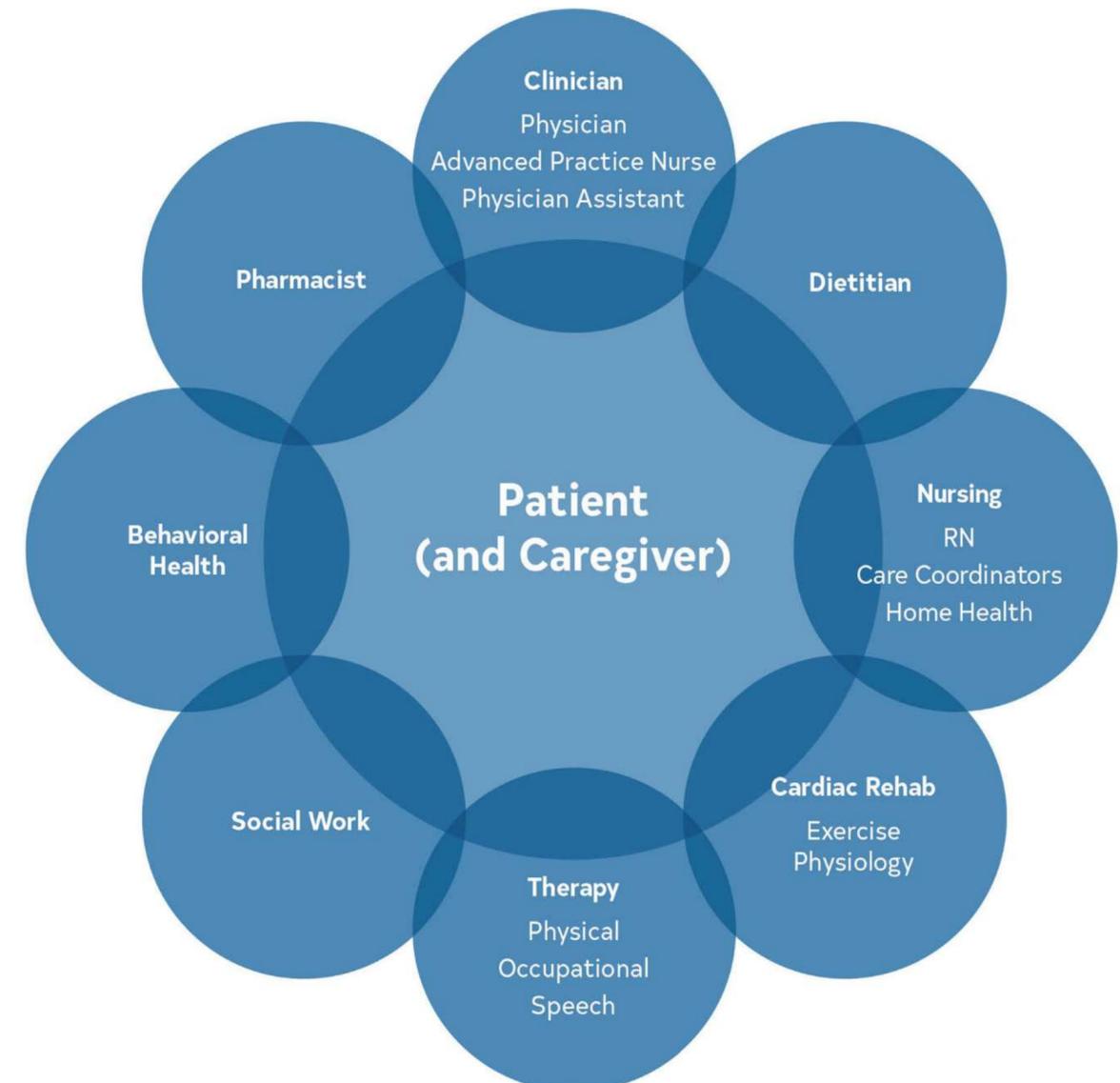
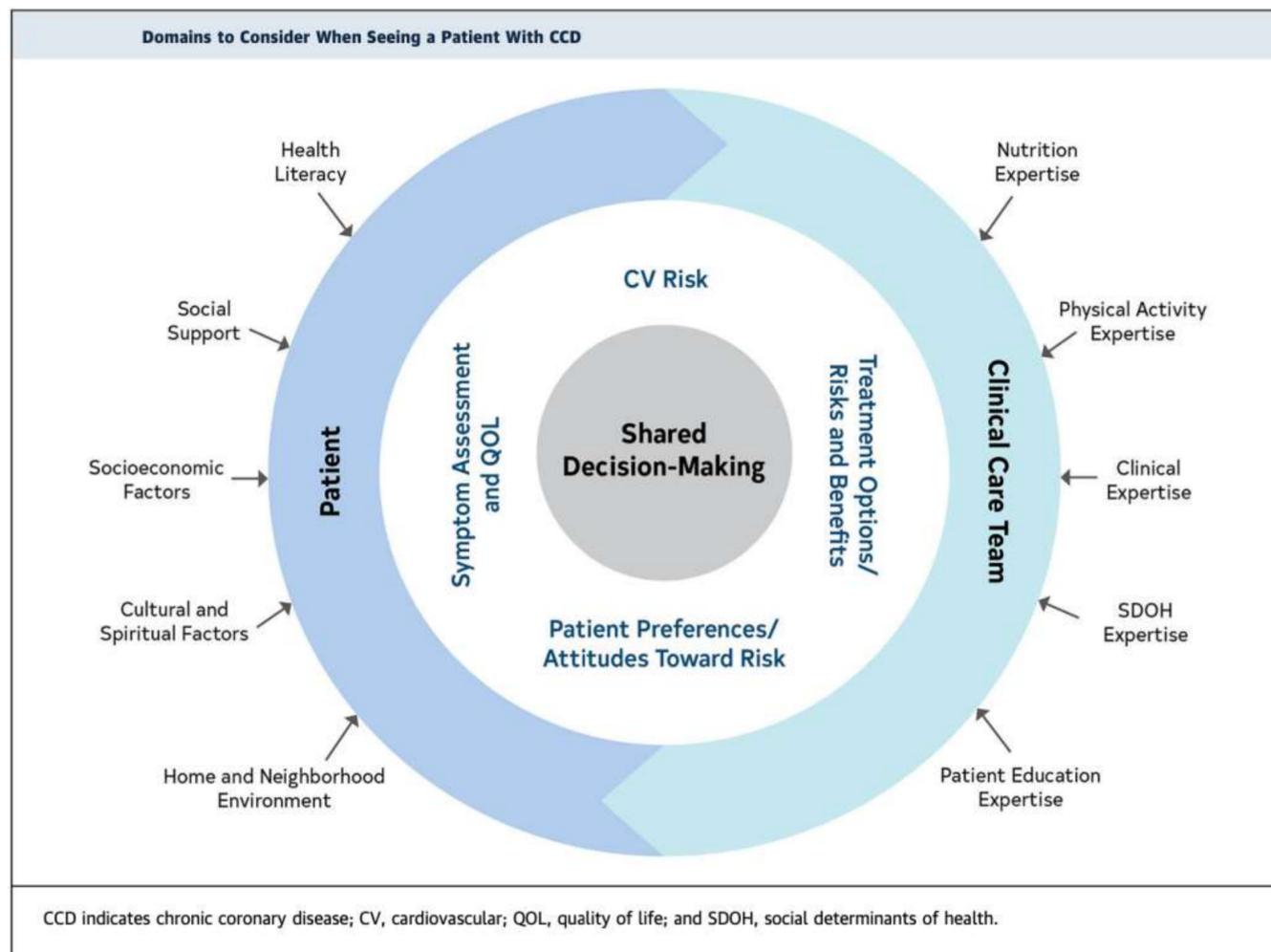
# REVASCULARIZACIÓN EN EL SÍNDROME CORONARIO CRÓNICO

## EL ROL DEL HEART TEAM

**COR**      **LOE**      **RECOMMENDATION**

**1**      **A**

1. In patients with CCD, a multidisciplinary team-based approach is recommended to improve health outcomes, facilitate modification of ASCVD risk factors, and improve health service utilization.



**Fuente:**

1. J Am Coll Cardiol. 2023 Aug 29;82(9):833-955. doi: 10.1016/j.jacc.2023.04.003. Epub 2023 Jul 20.
2. Eur J Prev Cardiol. 2022 Mar 11;29(2):404-406. doi: 10.1093/eurjpc/zwab182.



# CONCLUSIONES

- \* Actualmente la **revascularización** de los pacientes con SCC tiene por finalidad:
  - ☑ Coadyuvar al tratamiento farmacológico.
  - ☑ Mejorar y/o aliviar síntomas.
  - ☑ Mejorar calidad y pronóstico de vida.
- \* La **estratificación del riesgo** de los pacientes se convierte en un aliado fundamental para decidir la estrategia terapéutica.
- \* Se debe evaluar a cada paciente como individuo y no simplemente como parte de un dato de la base de una guía clínica —> **Medicina centrada en la persona**.
- \* La decisión de revascularización debe ser consensuado con el paciente, pero guiada por el **HEART TEAM**.

*gracias*

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