XIII CONGRESO INTERNACIONAL DE CARDIOLOGIA

CARDIOLOGIA INTERVENCIONISTA - LII JORNADA ACCI-SOLACI

DE LA

PREVENCIÓN

A LA **INTERVENCIÓN**

8, 9 y 10 de octubre

Lugar:

INTERCONTINENTAL
SAN JOSÉ, COSTA RICA

Organiza:

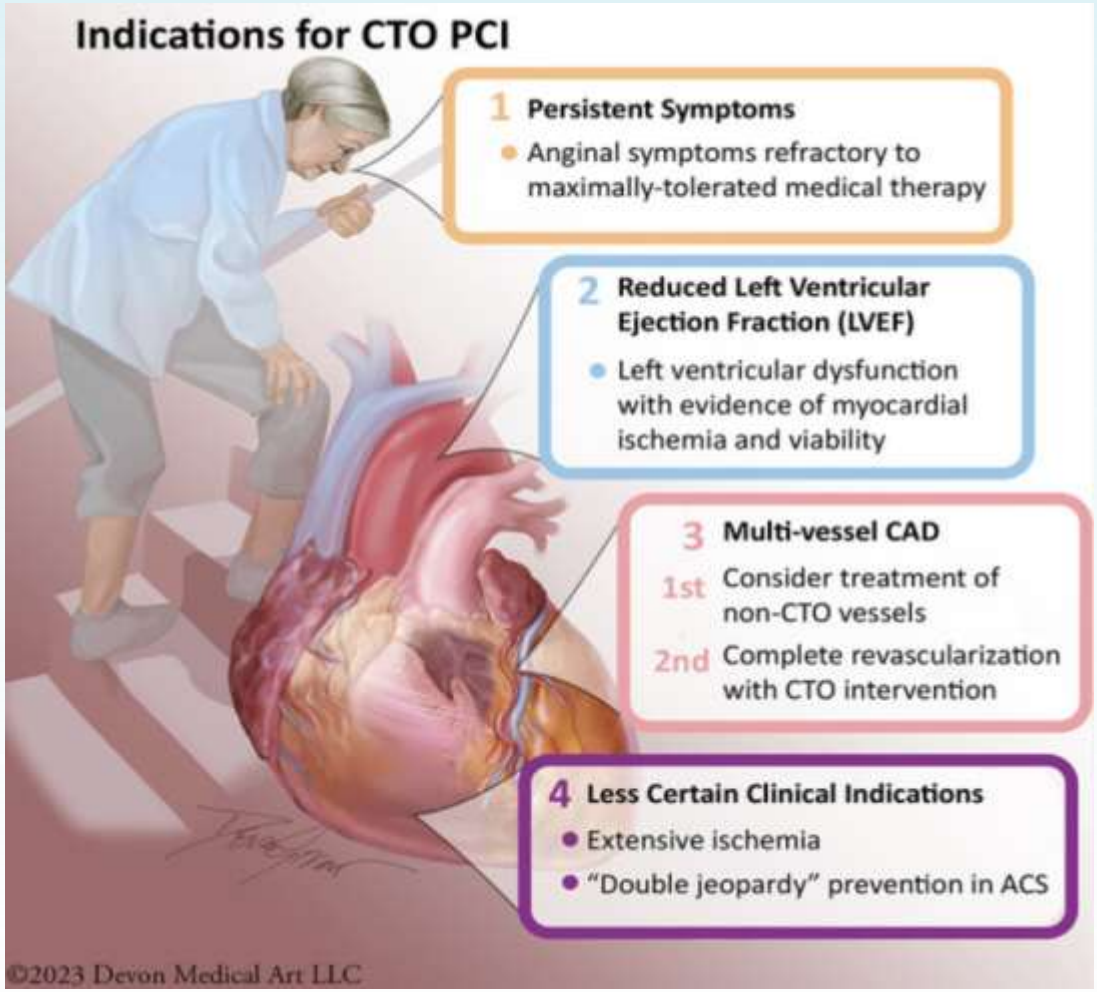
ASOCAR
Asociación Costarricense de Cardiología

ASOCAR
Capítulo de Enfermería

ACCI

JORNADAS SOLACI

¿Cual es la mejor estrategia en Oclusión Crónica Total (CTO)? Percutáneo (PCI) vs Cirugía (CABG) o Manejo Médico?



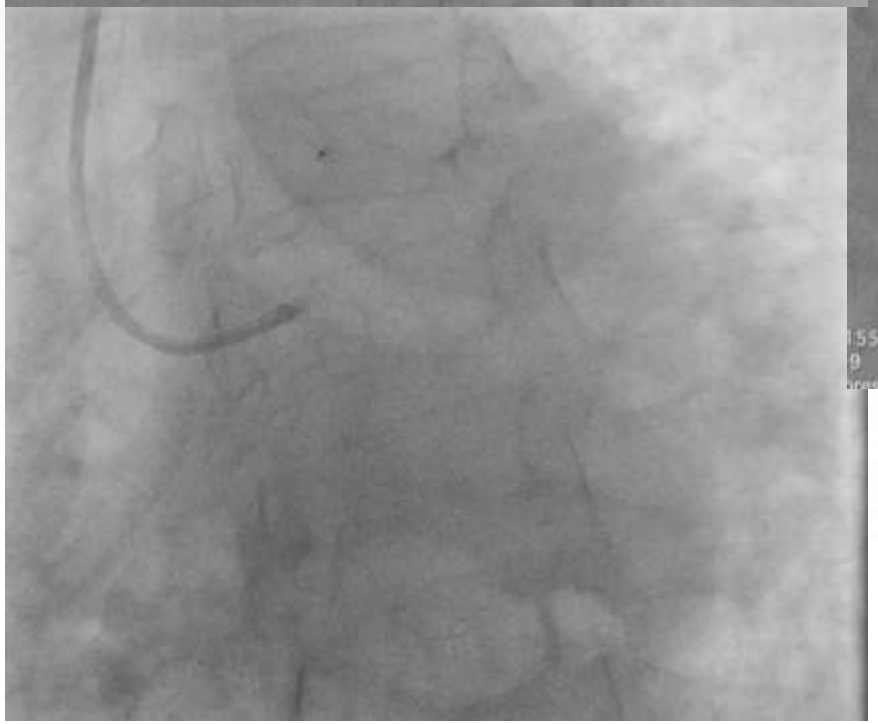
Dr. Erick Sánchez J.
Hospital San Rafael, Costa Rica.
ACCI (secretario).
Cardiolgía Intervencionista:
Clinica di San Carlo, Milano, Italia.
Tecnion Israel Institute of Technology – Hillel Yaffe Medical Center

ACCI
ASOCIACIÓN COSTARRICENSE DE CARDIOLOGÍA INTERVENCIONISTA

Masc. 74 años, IAMCEST anterior.

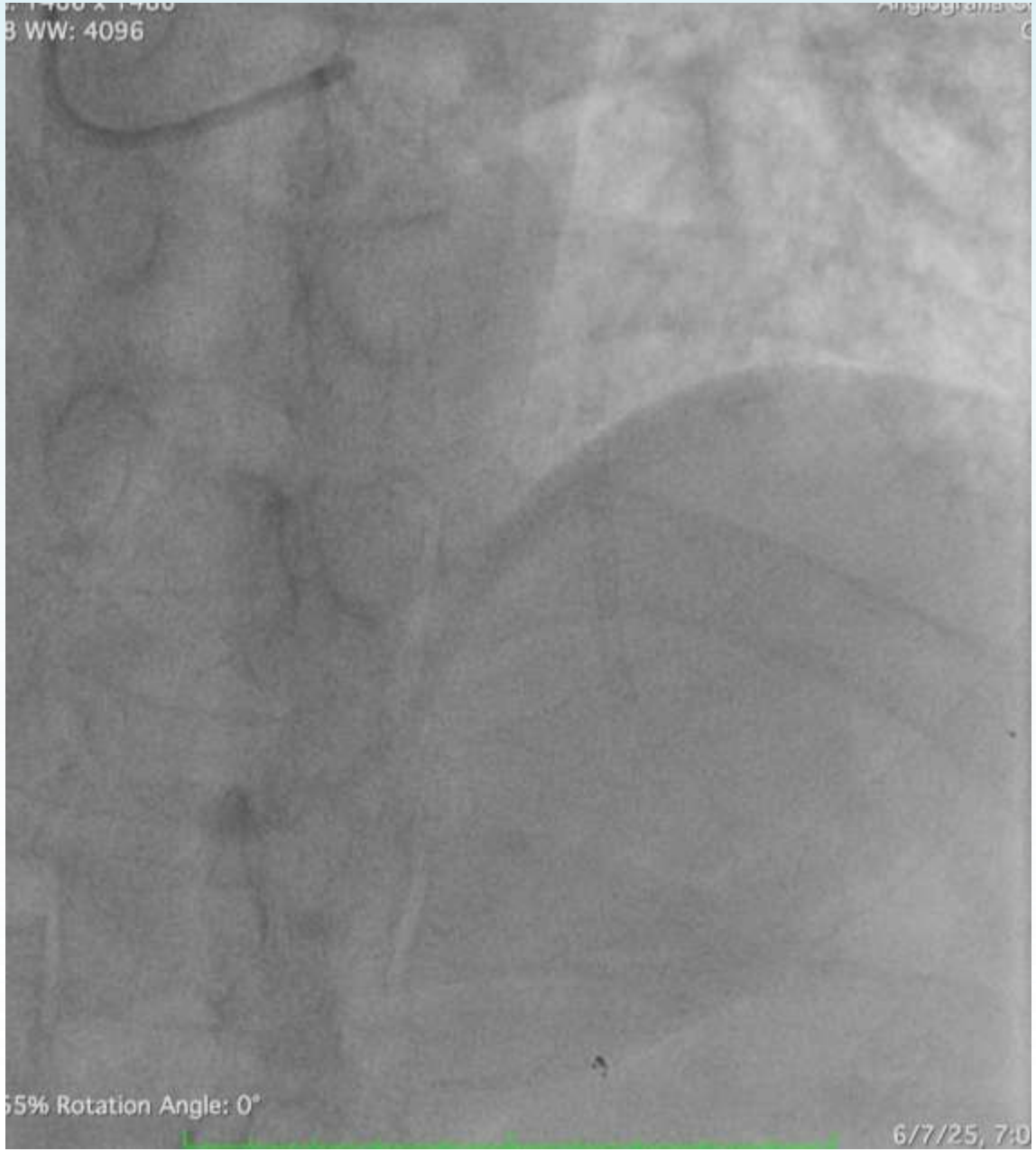
Tronco sin lesiones.
ADA ostial severa
(posible angioplastia de tronco).
ADA distal 100% aguda.
ACX no dominante sin lesiones.
ACD dominante 100% crónica.

Cirugía?
Apertura de ADA y Cirugía.
Percutaneo?



Masc. 74 años, IAMCEST anterior.

Se decide realizar Angioplastía Primaria de ADA.



Revasc. Completa vs Solo ADA + manejo medico de ACD?

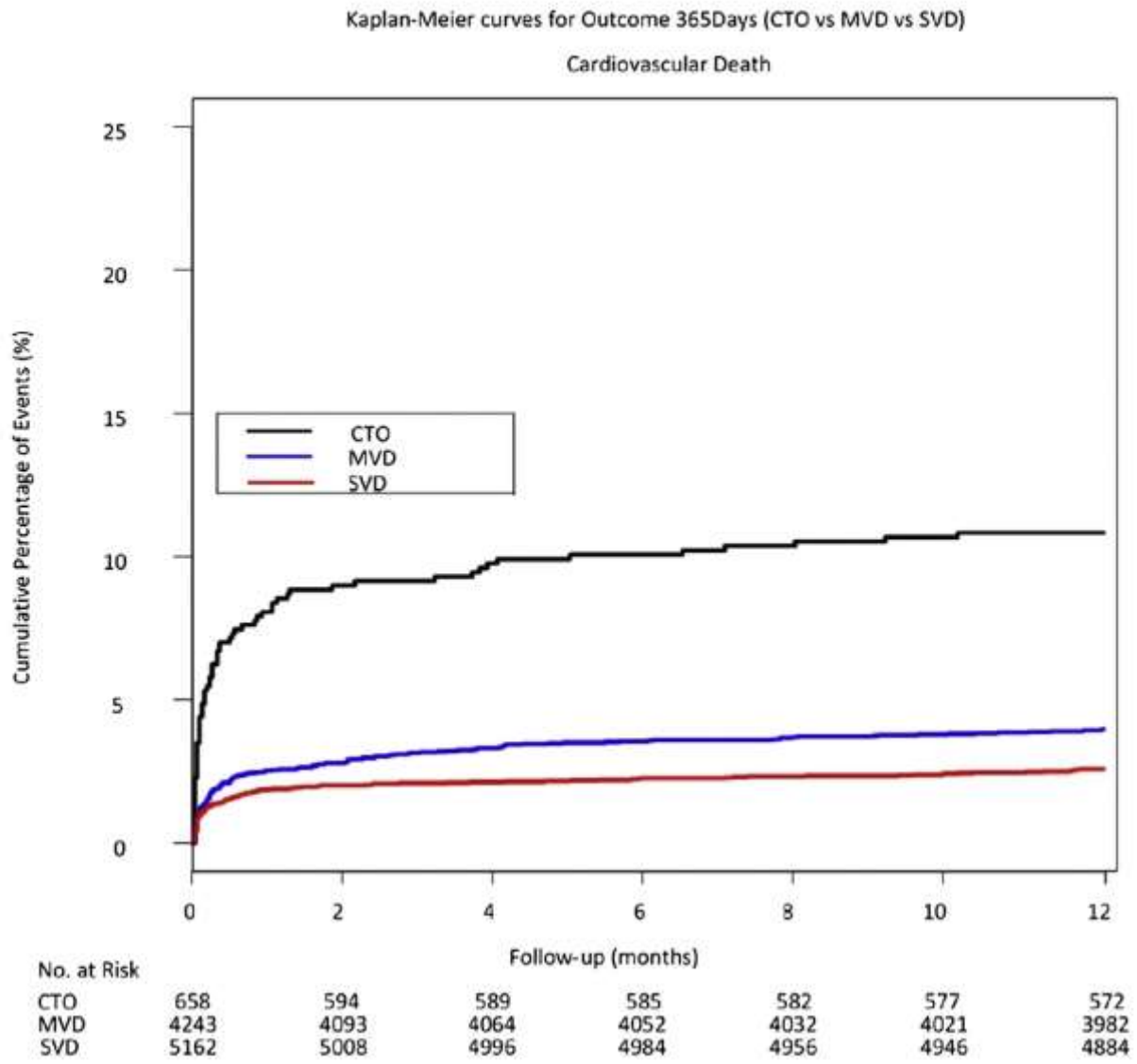
Cirugía (Hibrido)?.
Percutaneo?

Presencia de una Oclusión Crónica: Benigno?

IAMCEST

2% - 4% - 11%

FIGURE 1 Cardiovascular Mortality at 365 Days



Allahwala et al. JACC Interv 2018.

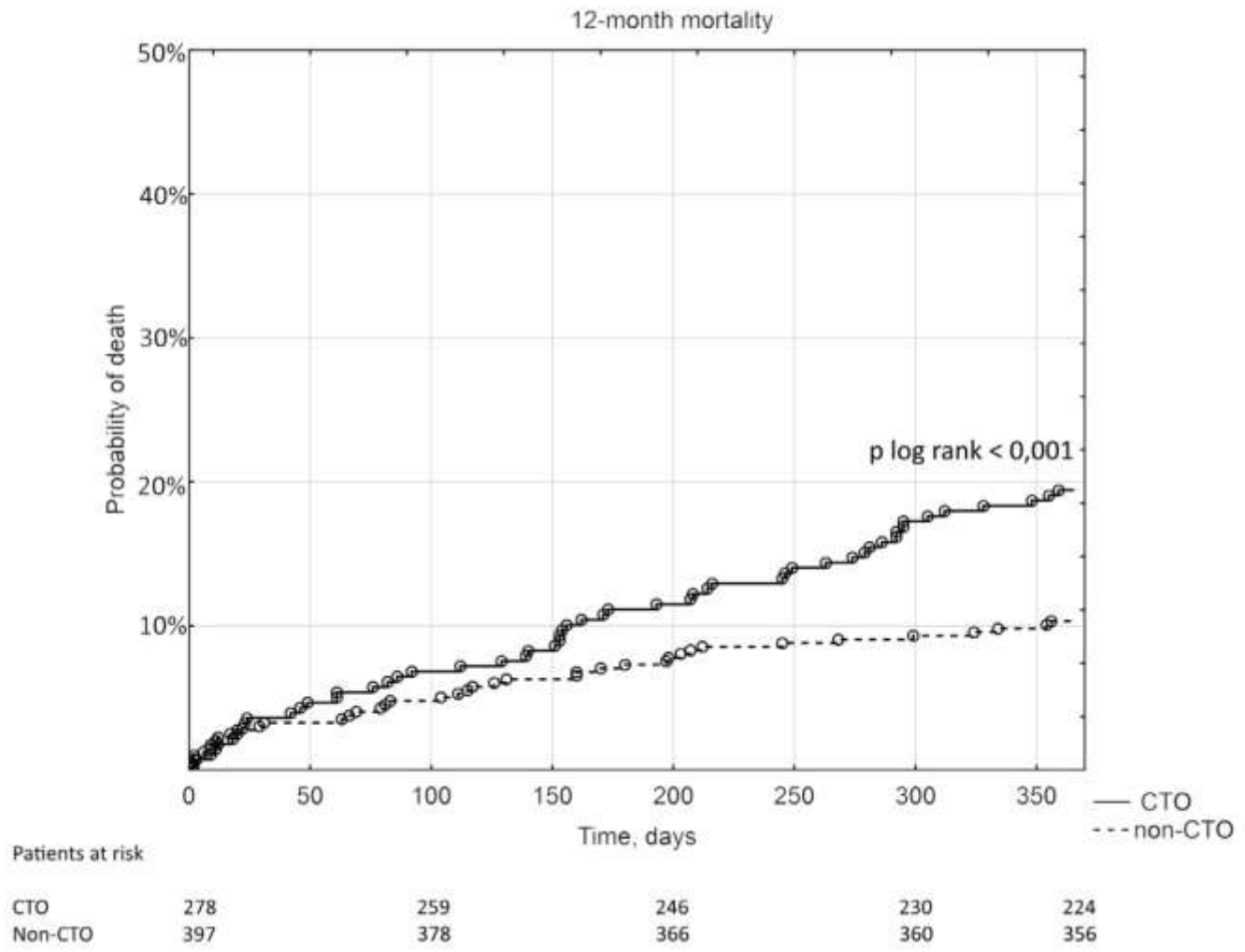
Presencia de una Oclusión Crónica: Benigno?

EAC multivaso estable + Falla cardiaca.

COMMIT-HF Registry

RR 2

FIGURE 2 12-Month Mortality of the Study Groups

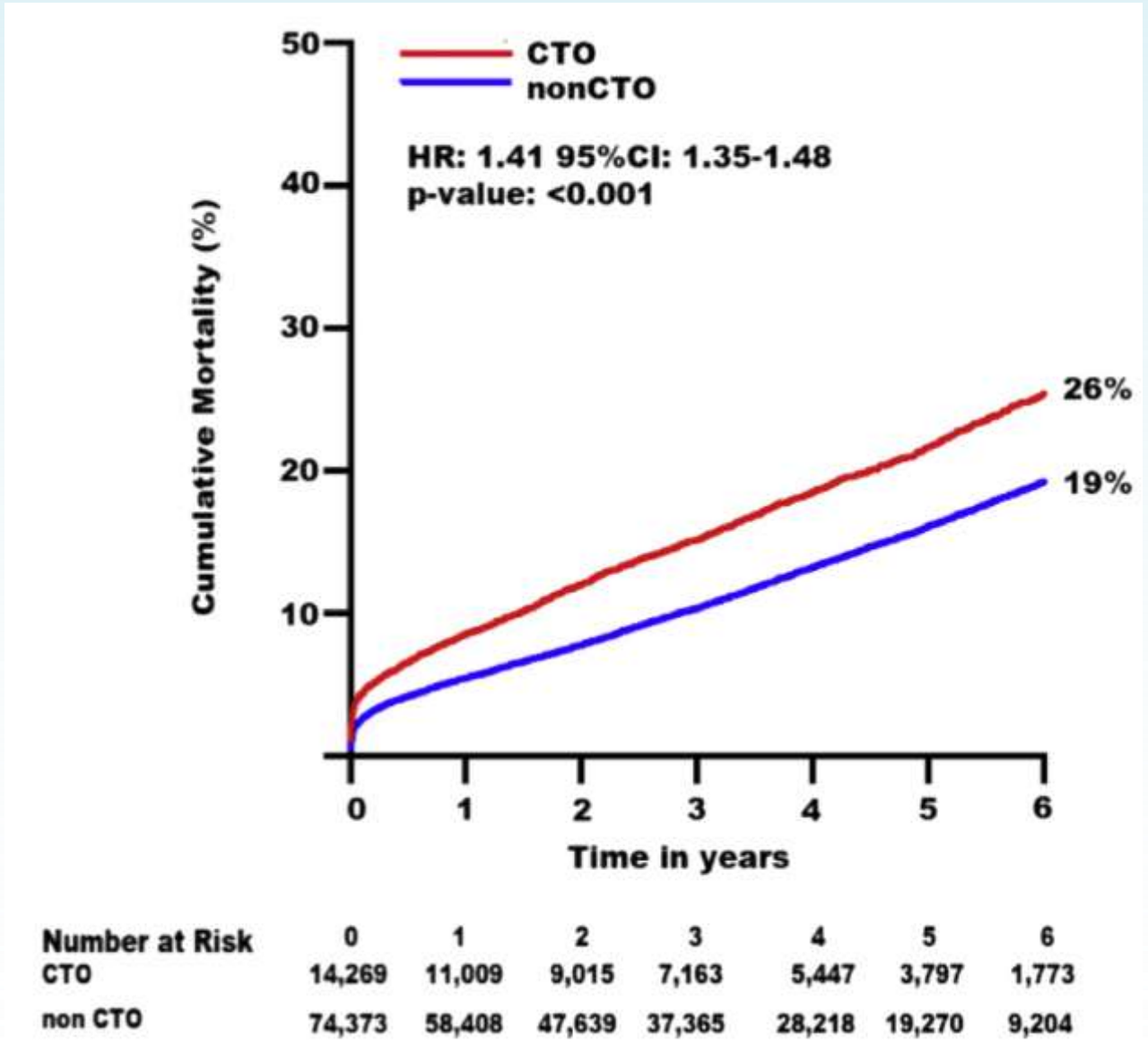


Tajstra et al. JACC Interv 2016.

Presencia de una Oclusión Crónica: Benigno?

EAC estable + IAMSEST.

SCAAR (Swedish Coronary Registry)



Ramunddal et al. JACC Interv 2016.

Se deben permeabilizar todas las CTOs? Manejo Médico

Presentación clínica:

Estable, SCC:

Síntomas
Isquemia >10%.

ESC European Society of Cardiology
European Heart Journal (2019) 40, 87–165
doi:10.1093/eurheartj/ehy394
ESC/EACTS GUIDELINES

2018 ESC/EACTS Guidelines on myocardial revascularization

The Task Force on myocardial revascularization of the European Society of Cardiology (ESC) and European Association Cardio-Thoracic Surgery (EACTS)

Recommendations on specific lesion subsets

Recommendations	Class[a]	Level
Stent implantation in the main vessel only, followed by provisional balloon angioplasty with or without stenting of the side branch, is recommended for PCI of bifurcation lesions.[654–658]	I	A
Percutaneous revascularization of CTOs should be considered in patients with angina resistant to medical therapy or with a large area of documented ischaemia in the territory of the occluded vessel.[629,659–663]	IIa	B
In true bifurcation lesions of the left main, the double-kissing crush technique may be preferred over provisional T-stenting.[620]	IIb	B

AHA/ACC/SCAI Guideline for Coronary Revascularization 2021

Recommendation for Treatment of CTO
Referenced studies that support the recommendation are summarized in Online Data Supplement 38.

- Post DECISION-CTO

COR	LOE	Recommendation
2b	B-R	1. In patients with suitable anatomy who have refractory angina on medical therapy, after treatment of non-CTO lesions, the benefit of PCI of a CTO to improve symptoms is uncertain.[1-4]

Circulation. 2022 Jan 18;145(3):e18-e114.

2b	B-R	6. In patients with SIHD, normal ejection fraction, significant stenosis in 3 major coronary arteries (with or without proximal LAD), and anatomy suitable for PCI, the usefulness of PCI to improve survival is uncertain.[14-24]

Se deben permeabilizar todas las CTOs? Manejo Médico

Revascularización incompleta (RI) esta asociado a mayor mortalidad.

RI asociado a complejidad anatómica y mayores co-morbilidades.

Predictor de RI en PCI es CTO.

Se reporta RI en 50% de PCI y 30% de Cx.

Trials muestran mejoría en síntomas y Calidad de vida, no reducción de mortalidad (4 estudios, 2018, 2019, 2022 y 2023- EuroCTO).

ESC European Society of Cardiology
European Heart Journal (2024) **45**, 3415–3537
https://doi.org/10.1093/eurheartj/ehae177
ESC GUIDELINES

2024 ESC Guidelines for the management of chronic coronary syndromes

Developed by the task force for the management of chronic coronary syndromes of the European Society of Cardiology (ESC)

Endorsed by the European Association for Cardio-Thoracic Surgery (EACTS)

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Three-year outcomes of A Randomized Multicentre Trial Comparing Revascularization and Optimal Medical Therapy for Chronic Total Coronary Occlusions (EuroCTO)

Gerald S. Werner[1]*, MD, PhD; David Hildick-Smith[2], MD, PhD; Victoria Martin Yuste[3], MD, PhD;
; Jose Ramon Rumoroso[7], MD;
ed[10], MD, PhD;
; Bernward Lauer[14], MD, PhD;
l investigators

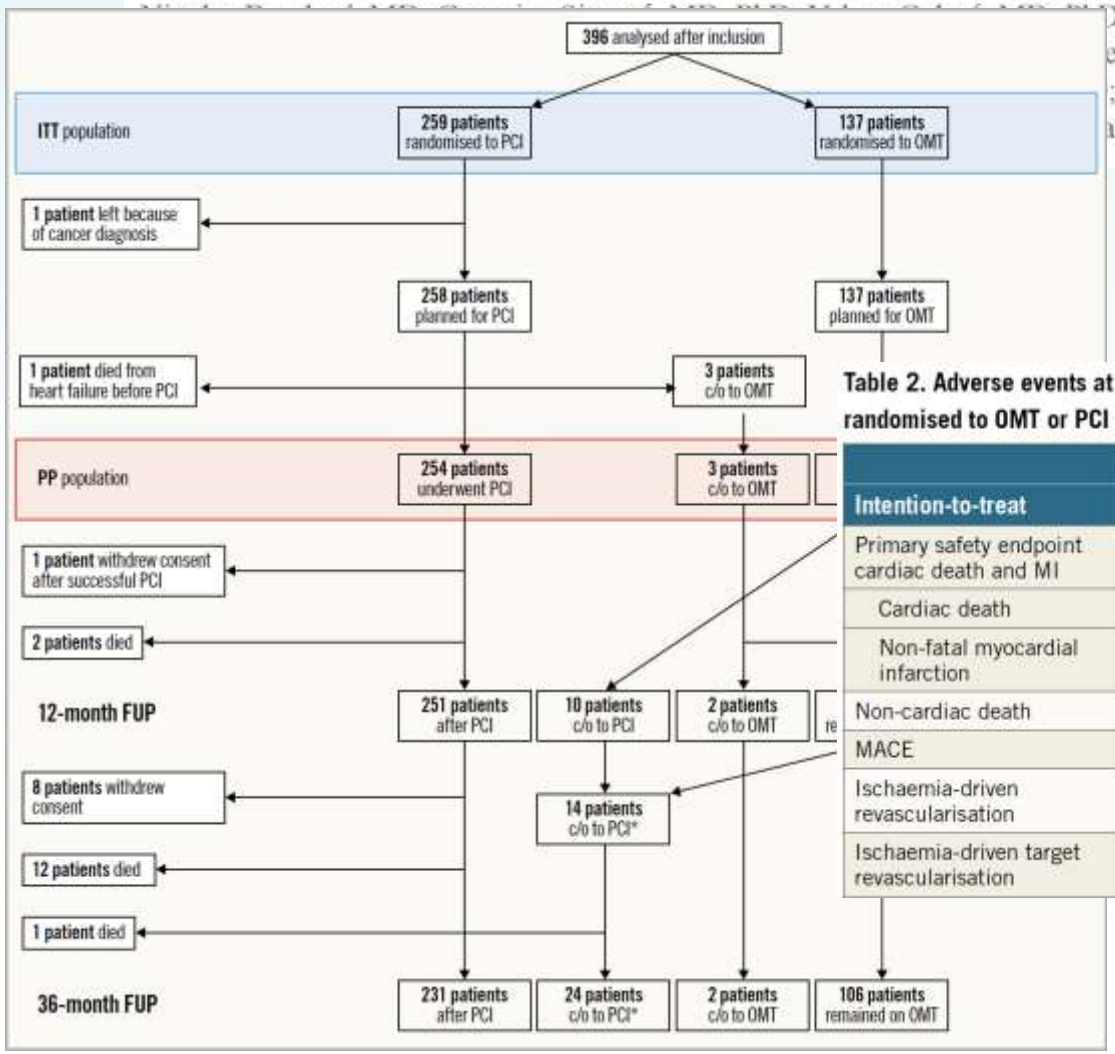


Table 2. Adverse events at follow-up in patients with a CTO randomised to OMT or PCI (intention-to-treat and per protocol)

Intention-to-treat	OMT (N=137)	PCI (N=259)	*p*-value
Primary safety endpoint cardiac death and MI	3.7	6.2	0.29
Cardiac death	2.2	3.1	0.75
Non-fatal myocardial infarction	1.5	3.1	0.33
Non-cardiac death	1.5	3.1	0.50
MACE	21.2	11.2	0.008
Ischaemia-driven revascularisation	17.5	7.3	0.002
Ischaemia-driven target revascularisation	16.8	3.5	<0.001

Se deben permeabilizar todas las CTOs?

Presentación clínica:

Estable

SCA

EuroIntervention
2024;20:e174-e184
published online e-edition February 2024
DOI: 10.4244/EIJ-D-23-00749

EXPERT CONSENSUS

Evaluation and management of patients with coronary chronic total occlusions considered for revascularisation. A clinical consensus statement of the European Association of Percutaneous Cardiovascular Interventions (EAPCI) of the ESC, the European Association of Cardiovascular Imaging (EACVI) of the ESC, and the ESC Working Group on Cardiovascular Surgery

Alfredo R. Galassi[1]*, MD; Giuseppe Vadalà[1], MD; Gerald S. Werner[2], MD, PhD; Bernard Cosyns[3], MD, PhD; Georgios Sianos[4], MD, PhD; Jonathan Hill[5], MD; Dariusz Dudek[6], MD, PhD; Eugenio Picano[7], MD, PhD; Giuseppina Novo[1], MD, PhD; Daniele Andreini[8], MD, PhD; Bernhard L.M. Gerber[9], MD, PhD; Ronny Buechel[10], MD; Kambis Mashayekhi[11], MD, PhD; Mathias Thielmann[12], MD; Margaret McEntegart[13], MD, PhD; Beatriz Vaquerizo[14], MD, PhD; Carlo Di Mario[15], MD, PhD; Sinisa Stojkovic[16], MD, PhD; Sigrid Sandner[17], MD, PhD; Nikolaos Bonaros[18], MD, PhD; Thomas F. Lüscher[5,19], MD, PhD

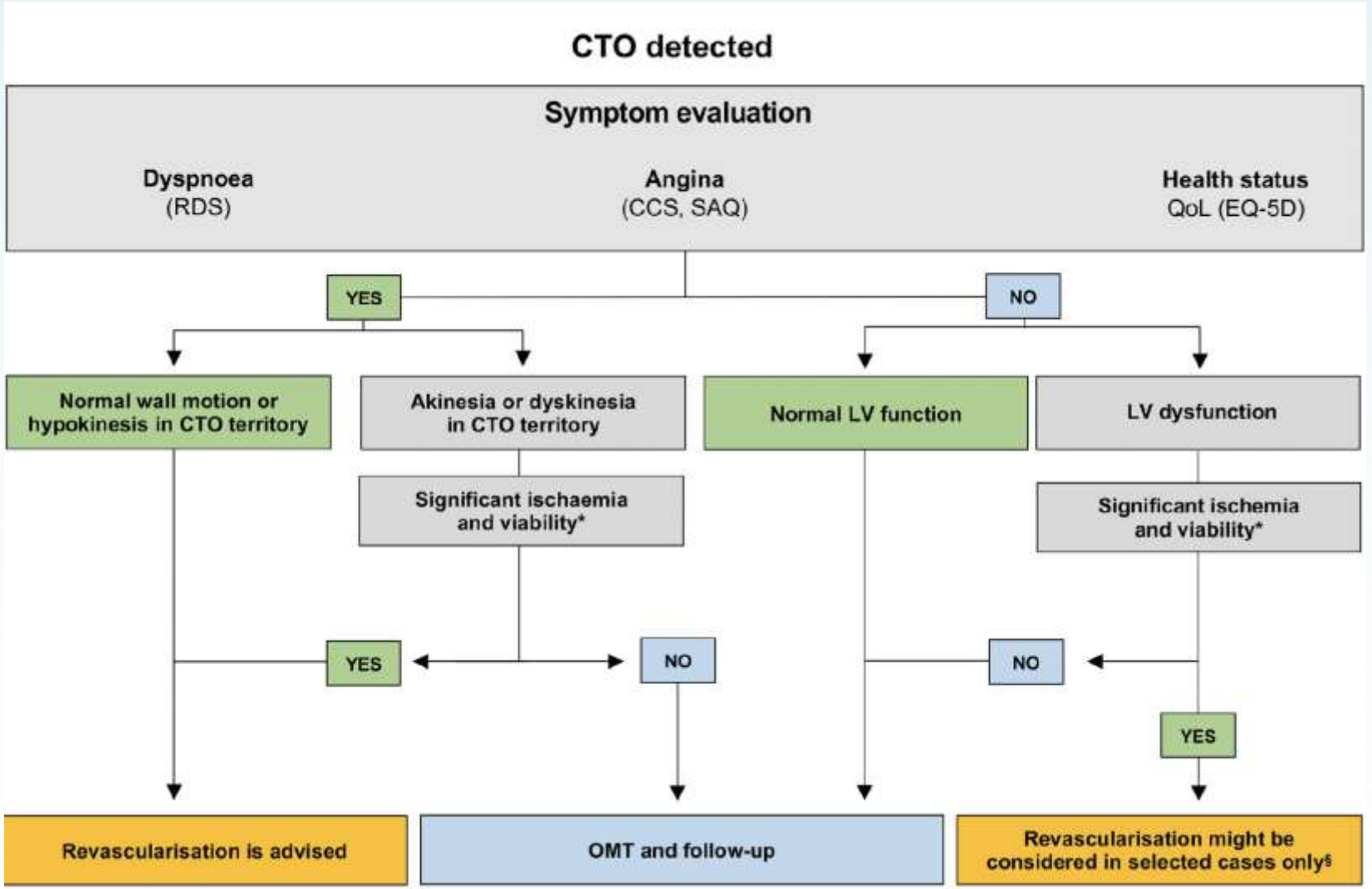
Galassi et al. Eurointervention 2024.

Se deben permeabilizar todas las CTOs?

Presentación clínica:

Estable:

Viabilidad ECO/RM



Galassi et al. Eurointervention 2024.

Se deben permeabilizar todas las CTOs?

Presentación clínica:

SCA

EuroIntervention
2024;20:e174-e184
published online e-edition February 2024
DOI: 10.4244/EIJ-D-23-00749

The NEW ENGLAND JOURNAL of MEDICINE
ESTABLISHED IN 1812 OCTOBER 10, 2019 VOL. 381 NO. 15

Complete Revascularization with Multivessel PCI for Myocardial Infarction

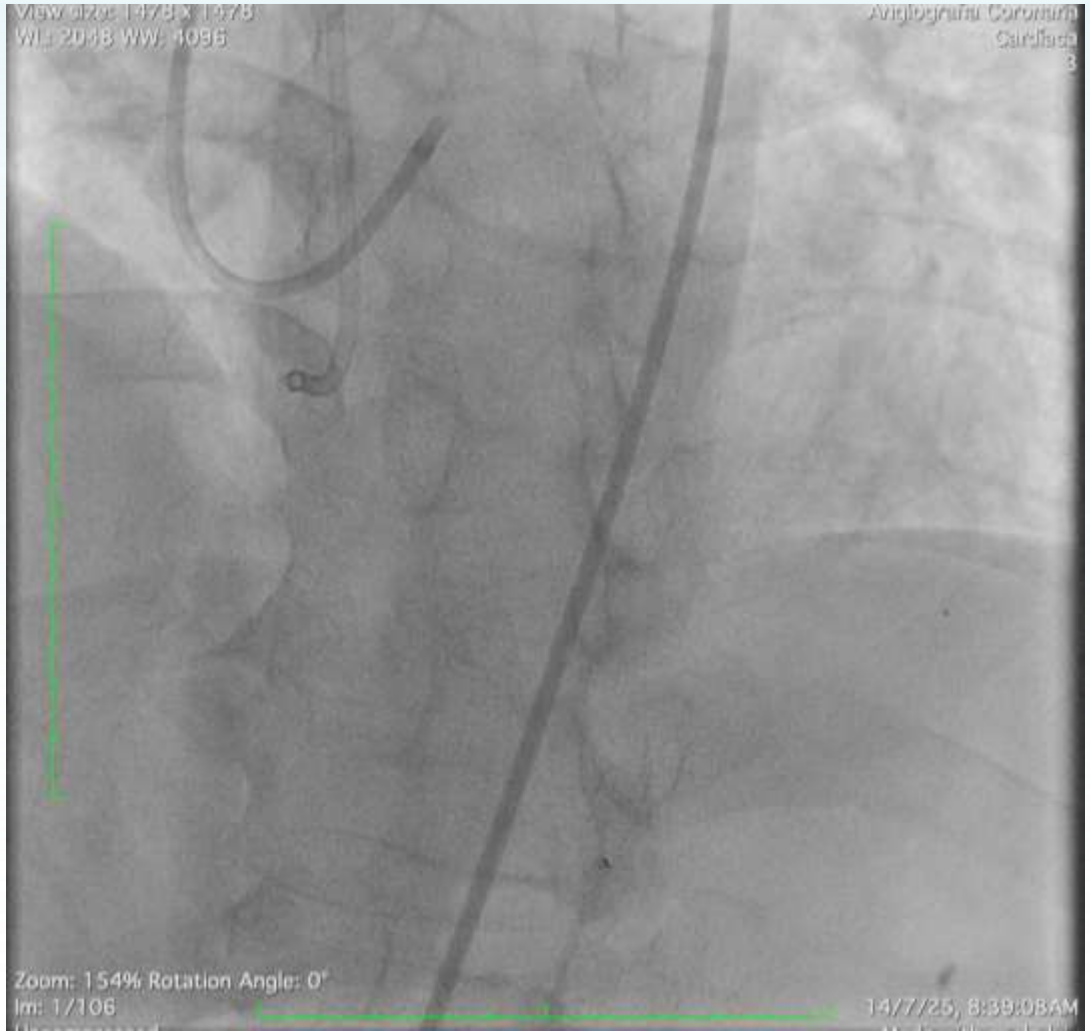
Shamir R. Mehta, M.D., David A. Wood, M.D., Robert F. Storey, M.D., Roxana Mehran, M.D.,

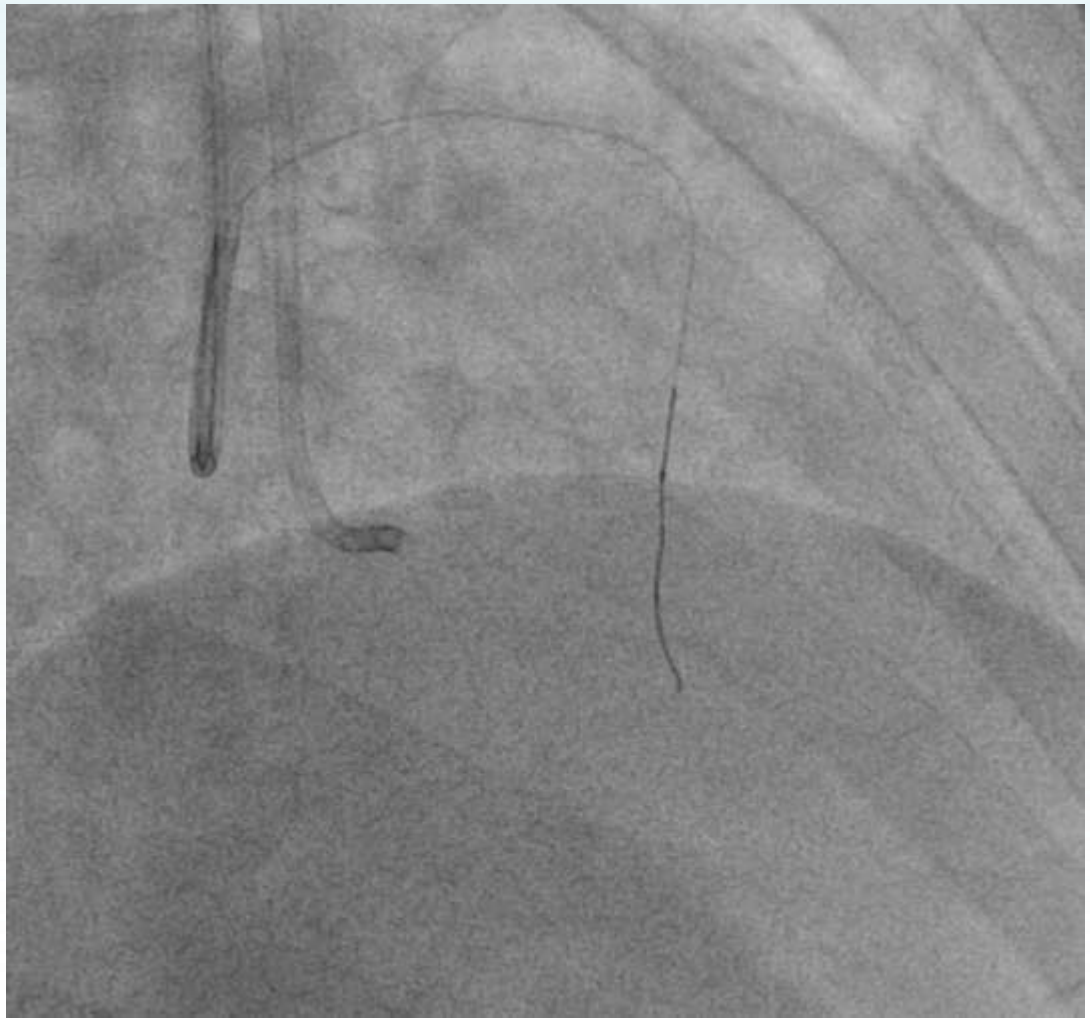
Table 1. Expert panel statements.

	Evidence available
The CTO recanalisation success rate has dramatically increased (85-90%), provided that expert operators are offered the full availability of dedicated interventional tools.	RCTs and registries: uncontroversial[2,3,5,6,25,26,29,48,49,54-56, 59,60]
Frequency and severity of complications is higher (1-3%) compared with most PCI procedures in CCS. This requires careful consideration of the benefit and risk balance before embarking upon CTO recanalisation or moving to recanalisation modalities (ADR, retrograde) that pose higher complication risks.	Registries and meta-analyses: uncontroversial[2,3,5,6,25,48,49]
A specific consent form listing the differences with other PCI procedures (duration, double access, lack of certainty of success, slightly higher risk of complications) should be submitted to patients and discussed with the main operator before the procedure.	Expert consensus
Ad hoc CTO PCI (i.e., during the same diagnostic angiogram) is discouraged. CTO PCI should be started	
Complete revascularisation appears beneficial in STEMI and, with less compelling evidence, in NSTEMI. CTO PCI during primary angioplasty should be discouraged.	Randomised trial[11]. Expert consensus on timing and modalities of CTO treatment
The complexity of CTO procedures can be graded, and the most complex (stumpless, ostial, very calcified, or long and tortuous, previously failed) should be reserved for dedicated operators or performed with proctorship.	Expert consensus
The presence of a CTO during ACS (especially STEMI) increases the risk that the patient develops cardiogenic shock, but attempts at recanalisation in the acute phase should be discouraged.	Randomised trials[9,10,11]
Complete revascularisation appears beneficial in STEMI and, with less compelling evidence, in NSTEMI. CTO PCI during primary angioplasty should be discouraged.	Randomised trial[11]. Expert consensus on timing and modalities of CTO treatment

Galassi et al. Eurointervention 2024.

M 74, IAMCEST anterior, CTO de ACD y lesión en ADA prox.





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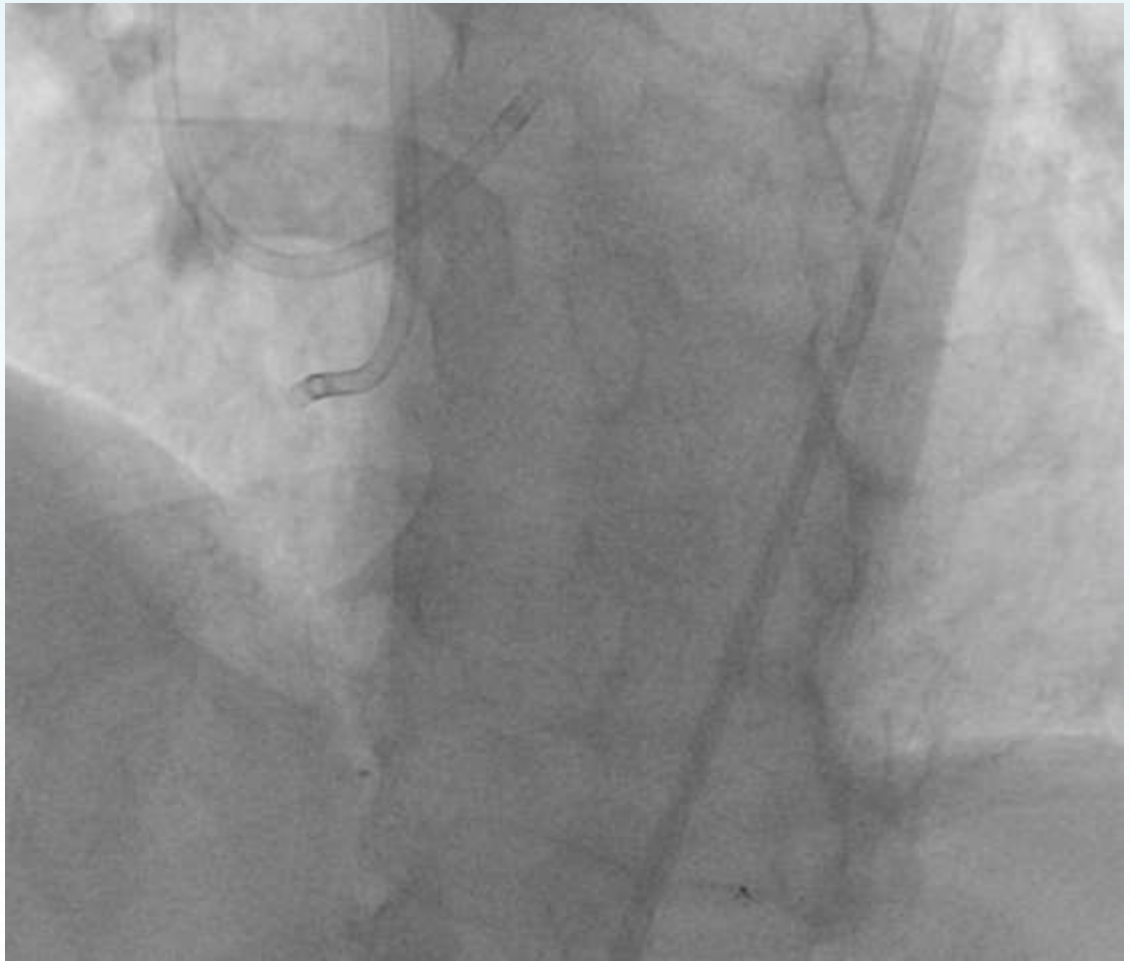

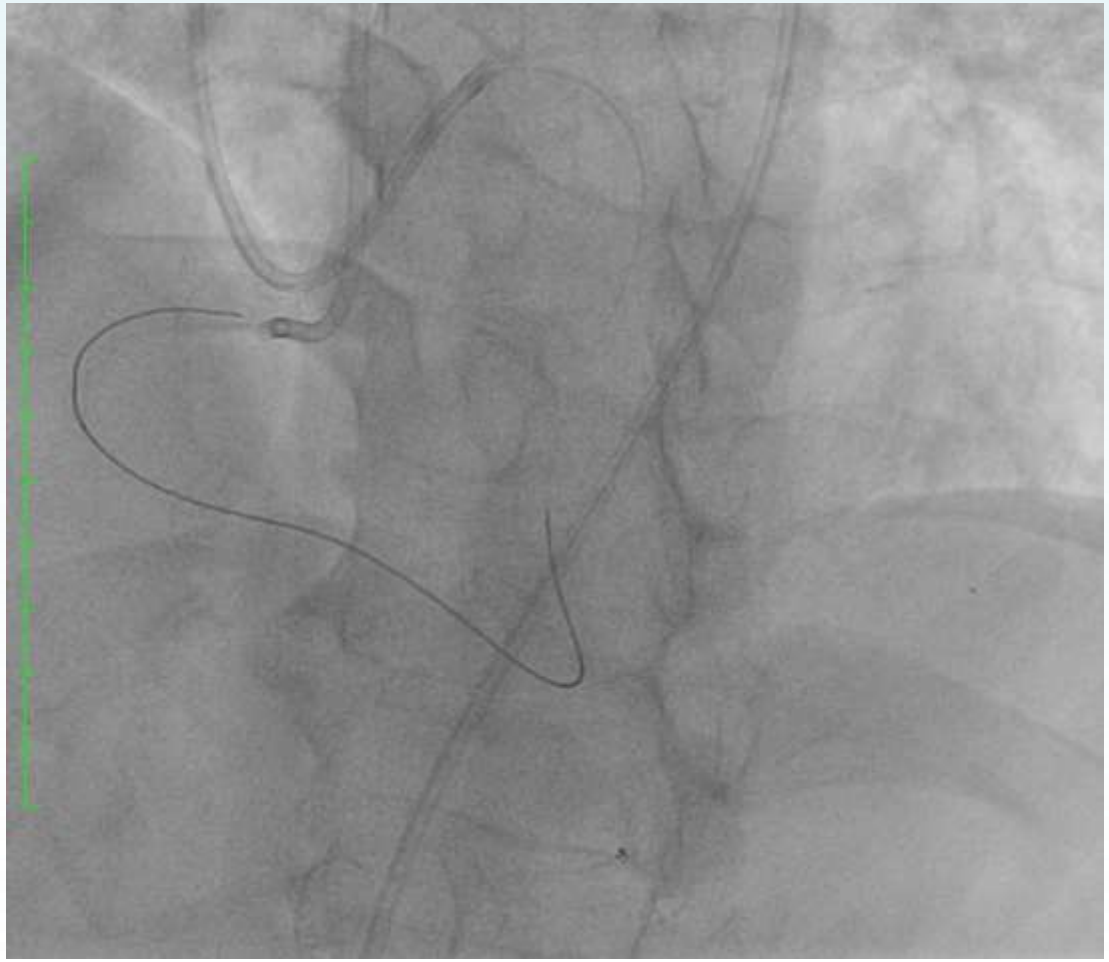

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Percutáneo vs Cirugía (EAC MV + CTO)

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Revascularization to improve outcomes		
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
Choice of revascularization modality		
It is recommended that physicians select the most appropriate revascularization modality based on patient profile, coronary anatomy, procedural factors, LVEF, patient preferences and outcome expectations.	I	C
In CCS patients with significant left main coronary stenosis of low complexity (SYNTAX score ≤22), in whom PCI can provide equivalent completeness of revascularization to that of CABG, PCI is recommended as an alternative to CABG, given its lower invasiveness and non-inferior survival.	I	A

En caso de PCI, primero intentar CTO?

Mejoría en las técnicas y la permeabilidad de las CTOs a lo largo del tiempo.

Circulation. 1992 Jan;85(1):106-15. doi: 10.1161/01.cir.85.1.106.

Percutaneous transluminal coronary angioplasty of chronic total occlusions. Primary success, restenosis, and long-term clinical follow-up

R J Ivanhoe [1], W S Weintraub, J S Douglas Jr, N J Lembo, M Furman, G Gershony, C L Cohen, S B King 3rd

Affiliations + expand

PMID: 1728439 DOI: 10.1161/01.cir.85.1.106

Abstract

50-66% - 1990-1995

Background: Angioplasty of chronically totally occluded vessels has been associated with a success rate well below and restenosis rate well above that for angioplasty of stenosed segments. However, long-term clinical outcome after successful revascularization of a chronically totally occluded vessel has not been reported in detail.

Methods and results: Accordingly, data for 480 patients undergoing angioplasty for chronic total occlusion at Emory University Hospital, Atlanta, Ga., from 1980 to 1988 were analyzed for predictors of in-hospital procedural and clinical (procedural success and absence of in-hospital complications) success, restenosis, and 4-year clinical follow-up. The study population was grouped by procedural and clinical success and failure. The groups were then compared for outcome, both in hospital and long term. The initial clinical success rate was 66% (317 of 480 patients). Independent correlates of failure were the number of vessels diseased (p less than 0.001), vessel location of the lesion (p = 0.016), and absence of any distal antegrade filling (p =

USO de Imagen IVUS/OCT

Cardiovascular Intervention and Therapeutics (2022) 37:116–127
https://doi.org/10.1007/s12928-021-00762-x

ORIGINAL ARTICLE

Japanese multicenter registry evaluating the antegrade dissection reentry with cardiac computerized tomography for chronic coronary total occlusion

Maoto Habara[1] · Etsuo Tsuchikane[1] · Kazuki Shimizu[2] · Yoshifumi Kashima[3] · Kenichiro Shimoji[4] · Shigeru Nakamura[5] · Takeshi Niizeki[6] · Takaki Tsutsumi[7] · Yoshiaki Ito[8] · Tomohiro Kawasaki[9] · for the Bridge point Club Japan

Received: 16 December 2020 / Accepted: 24 January 2021 / Published online: 7 February 2021

88-95% - 2022-2025

Abstract

Recently, antegrade dissection re-entry (ADR) with re-entry device for chronic total occlusion (CTO) percutaneous coronary intervention (PCI) has evolved to become one of the pillar techniques of the hybrid algorithm. Although the success rate of the device is high, it could be improved. We sought to evaluate the current trends and issues associated with ADR in Japan and evaluate the potential of cardiac computed tomography angiography (CCTA) for ADR procedure. A total 48 patients with CTO suitable for ADR evaluated by baseline conventional angiography and CCTA were enrolled. Procedural success and technical success were evaluated as the primary and secondary observations. Furthermore, all puncture points were analyzed by CCTA. CT score at each punctured site depended on the location of plaque deposition (none; +0, at isolated myocardial site; +1, at epicardial site; +2) and the presence of calcification (none; +0, presence; +1) was analyzed and calculated (score 0–3). Overall procedure success rate was 95.8%. Thirty-two cases were attempted with the ADR procedure and 25 cases of them were successful. The technical success rate was 78.1% and myocardial infarction or other major complications were not observed in any cases. CT score at 60 puncture sites in 32 cases were analyzed and the score at technical success points was significantly smaller compared to that at technical failure points (0.68 ± 1.09 vs 1.77 ± 1.09, $p < 0.0001$). CTO-PCI with Stingray device in Japan could achieve a high procedure success and technical success rate. Pre procedure cardiac CT evaluation might support ADR procedure for appropriate patient selection or puncture site selection.

PASADO → PRESENTE

Mejoría en las técnicas y la permeabilidad de las CTOs a lo largo del tiempo.

Manejo hibrido con Balón Medicado

Reviews in Cardiovascular Medicine

Rev. Cardiovasc. Med. **2022**; 23(2): 042
http://doi.org/10.31083/j.rcm2302042

Review

Drug-coated balloon for the management of coronary chronic total occlusions

Erick Sanchez-Jimenez[1], Rami El-Mokdad[2], Rima Chaddad[3], Bernardo Cortese[1,4,*]

[1]Cardiac department, Clinica Polispecialistica San Carlo, 20037 Milano, Italy

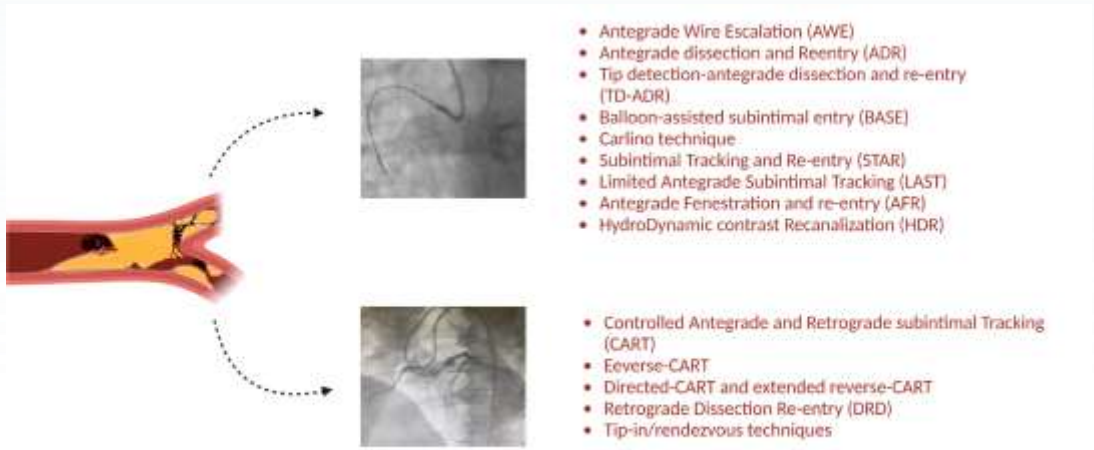
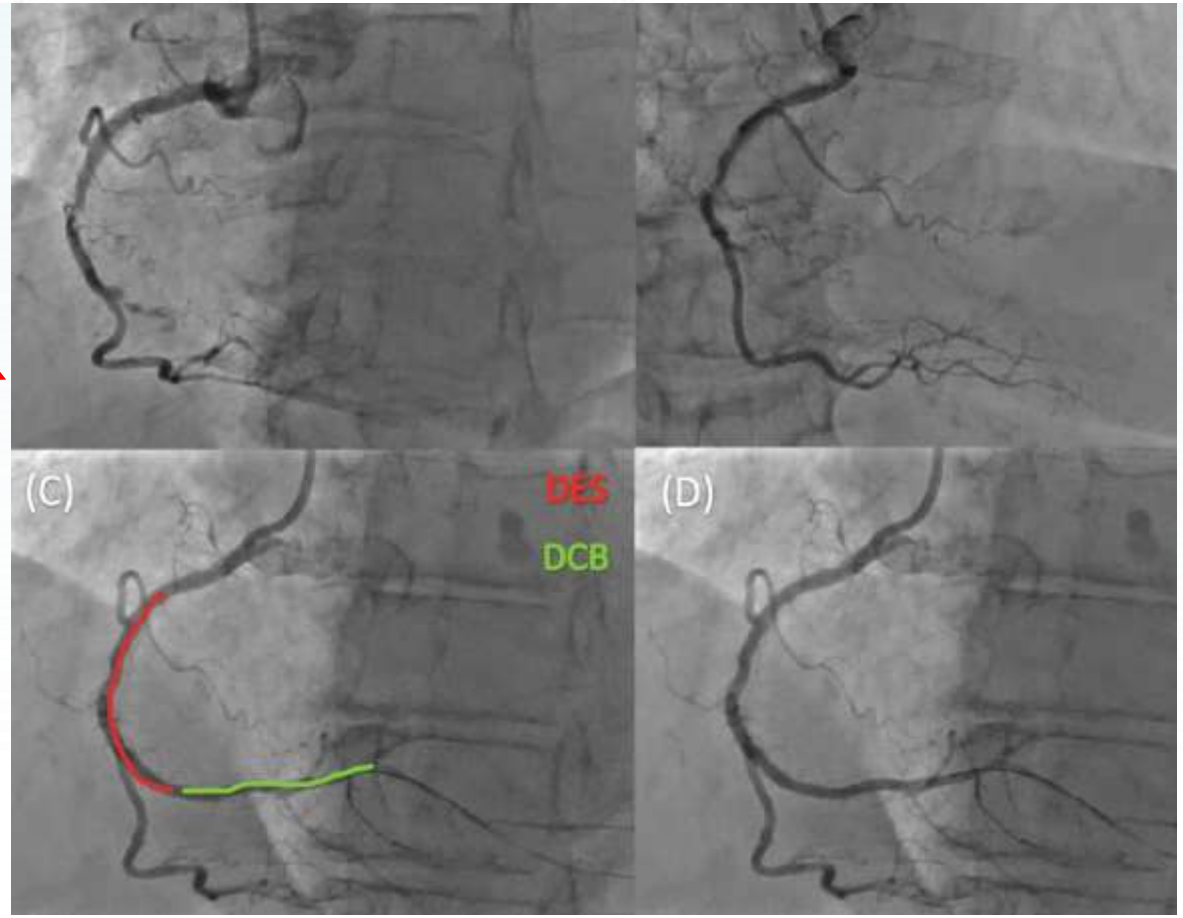


Figure 1. Graphical list of current antegrade and retrograde chronic total occlusion recanalization techniques.



Percutáneo vs Cirugía (EAC MV + CTO)

Israel, 477 pacientes (100%, 50% CTO).

a. **Revasc. Completa REAL 33%.**

b. Missed Grafts 57%.
- 1 missed graft 33%.
- 2 missed grafts 17%.
- 3 missed grafts 7%.

c. Extra grafts 10%.

Revascularización completa en Cirugía

TERRITORIO	%
ACD	34%
OM	30%
ADA	2%
RAMUS	7%
DIAG.	28%

TERRITORIO	%
ACD	23%
OM	32%
ADA	2%
RAMUS	14%
DIAG.	29%

Roguin et al. J Clin Med 2024.

Percutáneo vs Cirugía (EAC MV + CTO)

Revascularización completa en Cirugía

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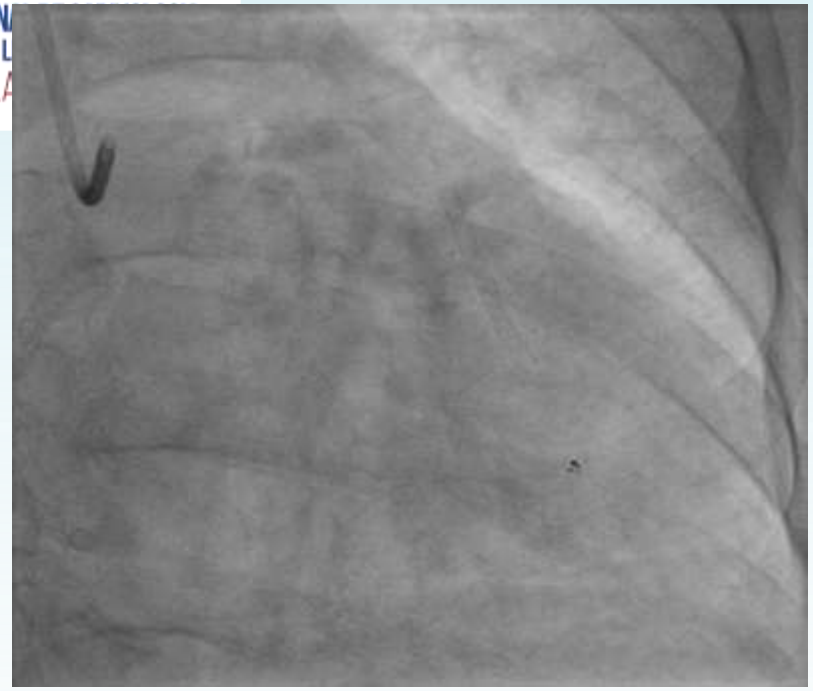
MORTALIDAD	%
PEVISTA	5.3%
REVASC COMPLETA	6.7%
MISSED GRAFTS	12.3%

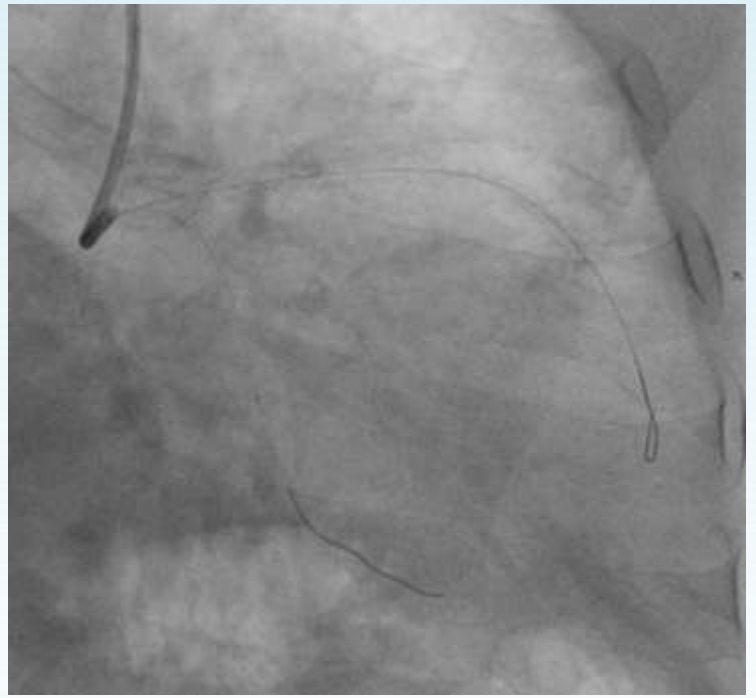
Roguin et al. J Clin Med 2024.

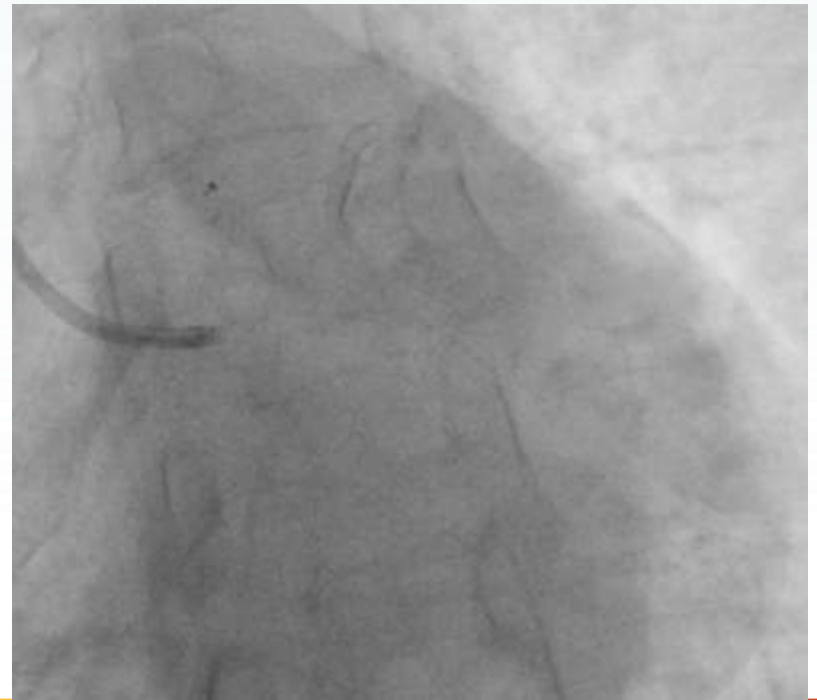
M 74, IAMCEST anterior, CTO de ACD y lesión en ADA prox.

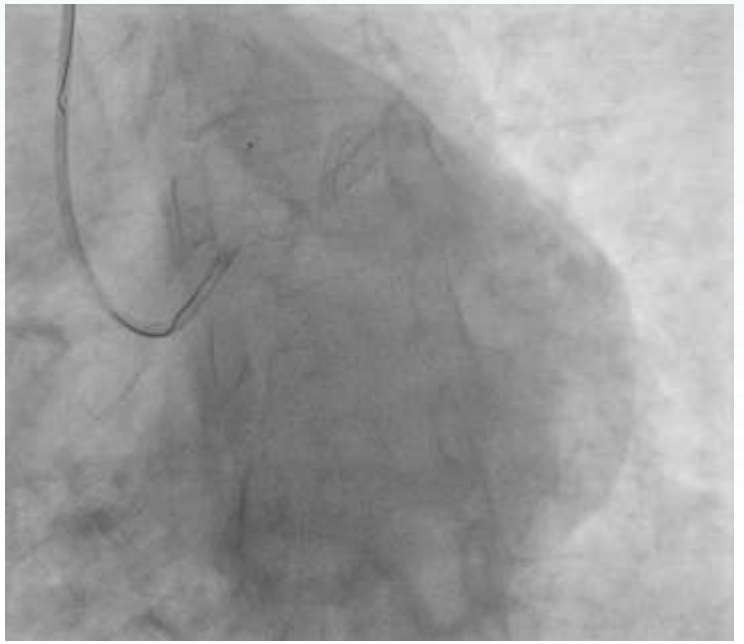
a. **Revasc. Completa**

c. 4 stents y 1 balón medicado.









¿Cual es la mejor estrategia en Oclusión Crónica Total (CTO)? Percutáneo (PCI) vs Cirugía (CABG) o Manejo Médico?

Conclusión y mensaje para casa

Manejo médico total del paciente va de la mano con: co-morbilidades
Manejo medico de alguna coronaria va depender de cicatriz, viabilidad, isquemia, etc.

Valorar cada caso con multidisciplinariamente, preferencia del paciente.

No es posible sistematizar todos los casos.

Valorar éxito de revascularización completa en cada centro y país, tanto PCI como Cirugía.

Éxito en apertura de oclusiones crónicas en centro de experiencia >90%.

En caso de Infarto, siempre buscar revascularización completa, incluida la CTO con datos de viabilidad.

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DE LA PREVENCIÓN A LA INTERVENCIÓN

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