Krajská nemocnice Liberec, a.s.
Liberec Turnov Frýdlant

True lumen je stav mysli

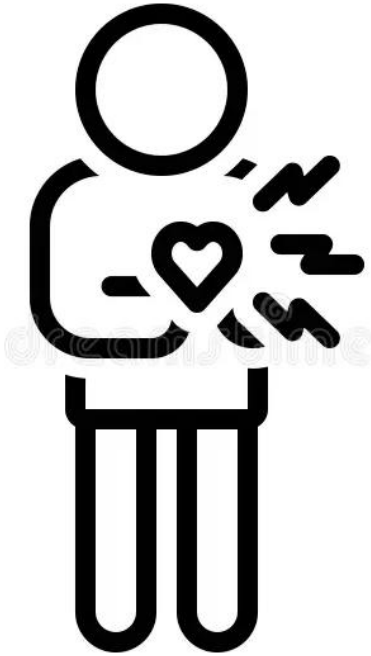
Pavol Tomašov

Symptomy

Techniky a strategie

Imaging

Symptomy



CTO

20 % pacientů podstupujících koronarografii

2 – 12 % pacientů podstupujících TAVI

5 – 45 % pacientů s CTO podstoupí PCI

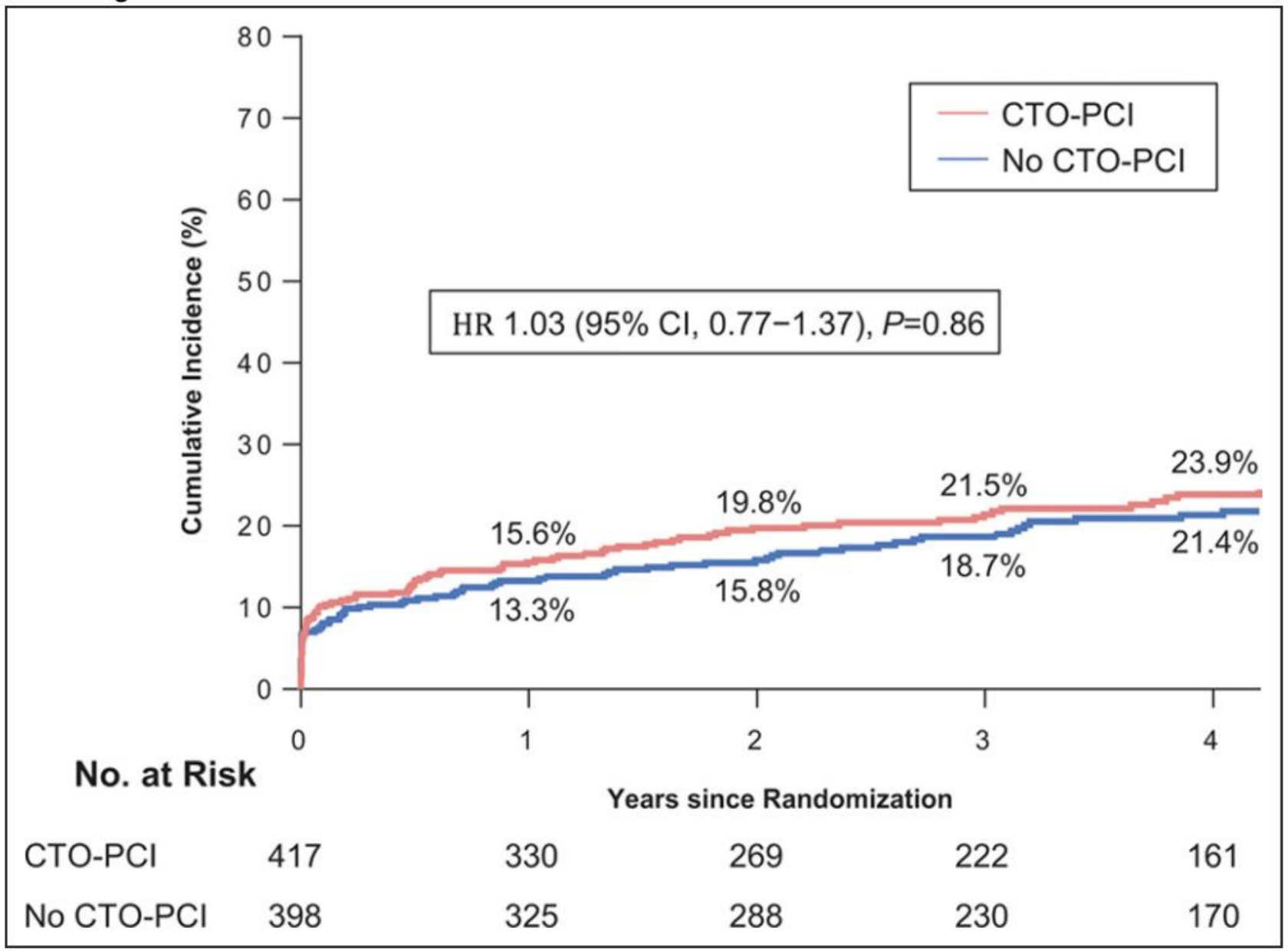
87 % pacientů podstupujících CTO PCI je symptomatických

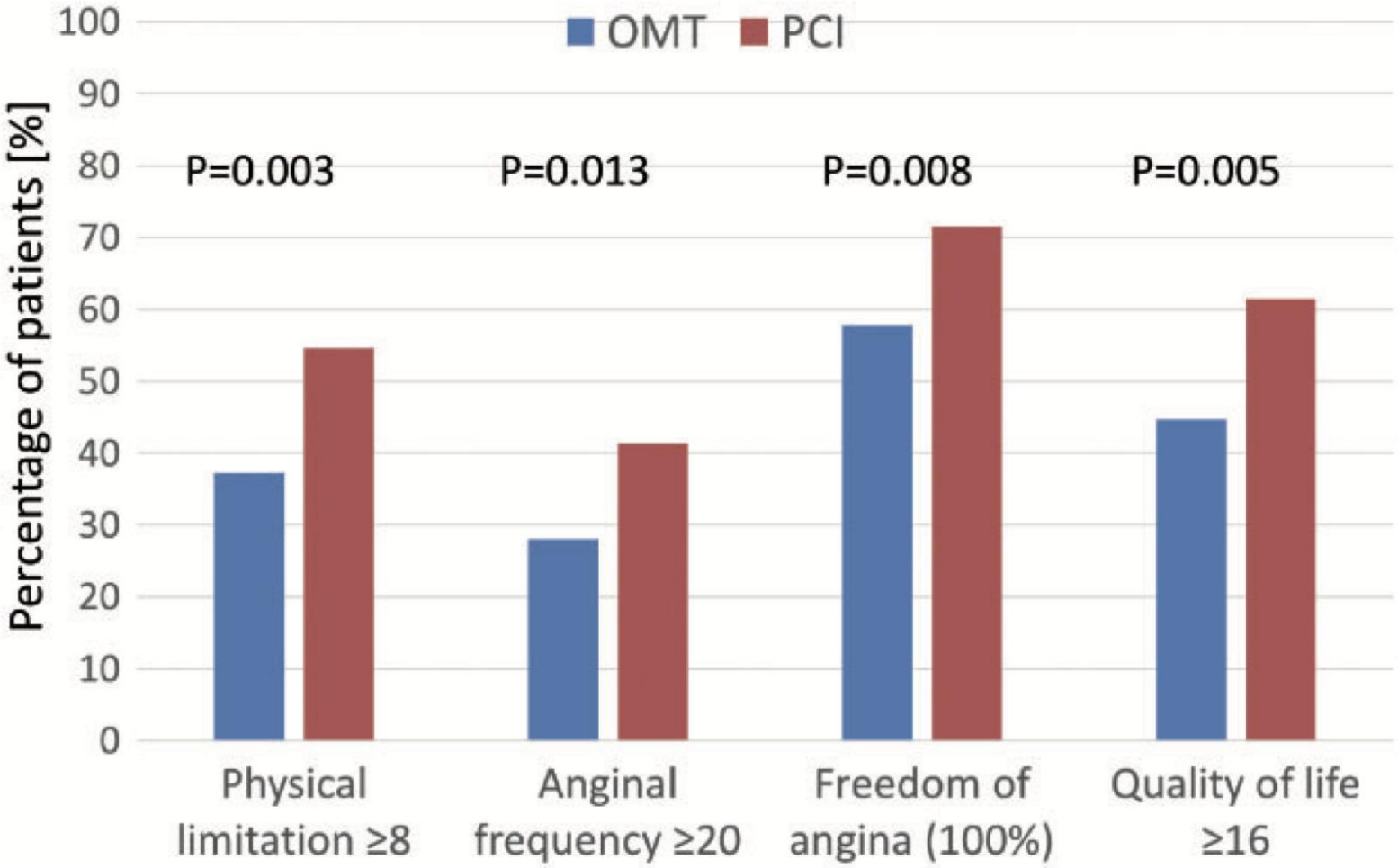
Circulation
Volume 139, Issue 14, 2 April 2019; Pages 1674-1683
https://doi.org/10.1161/CIRCULATIONAHA.118.031313

ORIGINAL RESEARCH ARTICLE

Randomized Trial Evaluating Percutaneous Coronary Intervention for the Treatment of Chronic Total Occlusion

The DECISION-CTO Trial



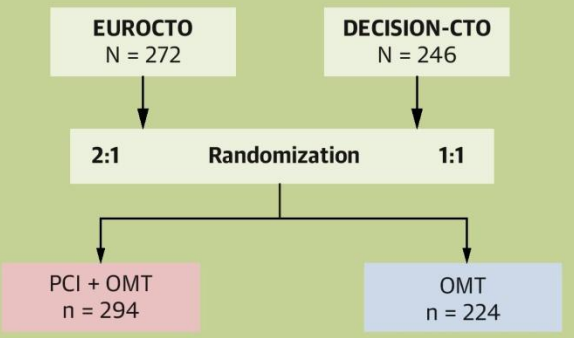


Werner et al European Heart Journal, 2018

CENTRAL ILLUSTRATION: Quality of Life After Percutaneous Coronary Intervention or Medical Therapy for Chronic Total Occlusions

The Study

518 patients with a single CTO and no significant non-CTO lesions were included from two randomized controlled trials

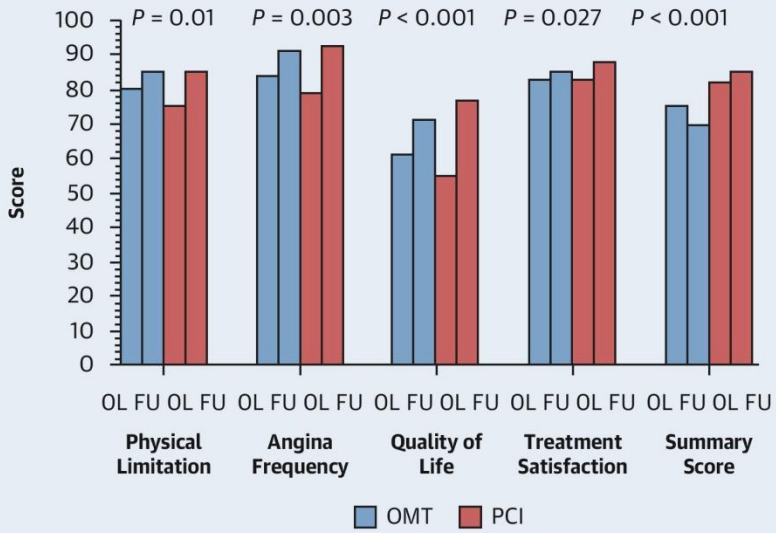


Efficacy: Health status @ 12 months
Safety: Cardiac death, non-fatal myocardial infarction @ 36 months

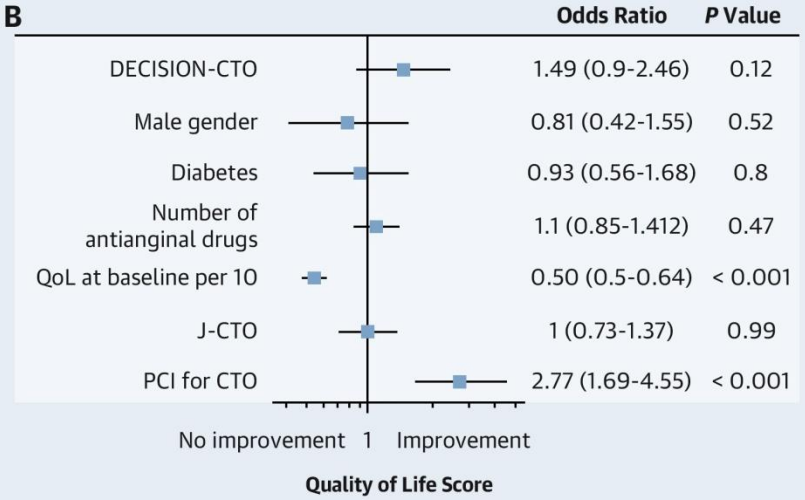
- Patients were included with a CTO causing symptoms of angina and/or dyspnea during exercise
- At baseline and at 12 months the symptomatic state was assessed by the Seattle Angina Questionnaire and EQ-5D
- Within the first 12 month 6.7% patients crossed over from OMT to PCI, 3.7% from PCI did not undergo an intervention

- Patients with PCI had significantly larger improvement of physical limitation, angina frequency and quality of life (Figure A) as compared to patients with OMT
- There was no significantly higher risk of cardiovascular death or non-fatal myocardial infarction between OMT and PCI
- Patients with the lowest baseline SAQ score had the highest likelihood of improvement with PCI treatment

A The Outcome



B



Werner GS, et al. JACC. 2026;10.1016/j.jacc.2026.02.5099

ORBITA CTO

TRIAL DESIGN

- Investigator-initiated
- Multicenter
- Double-blind
- Randomized 1:1 to CTO PCI or placebo procedure
- Blinded 24-week follow-up

POPULATION

50 patients with

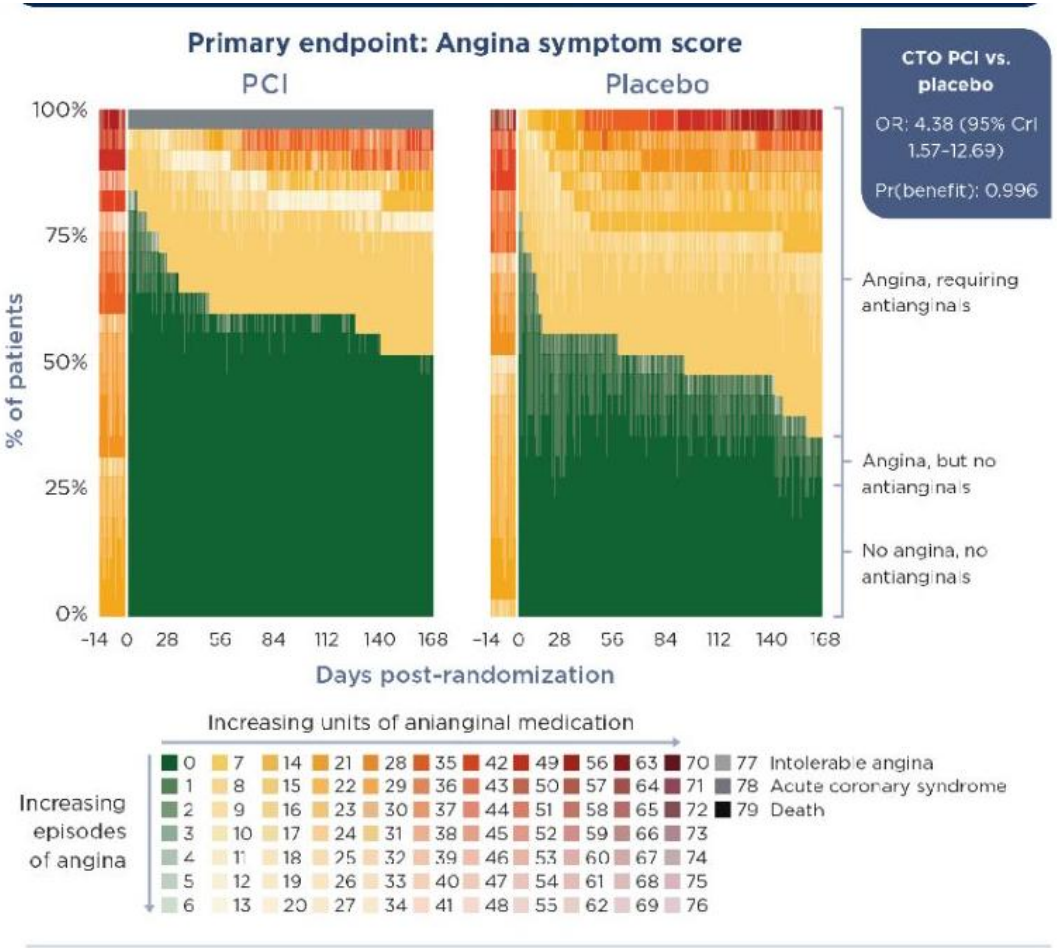
- symptomatic, single-vessel CTO (J-CTO ≤3)
- evidence of ischemia and viability
- no significant non-CTO coronary disease
- optimized anti-anginal therapy before randomization

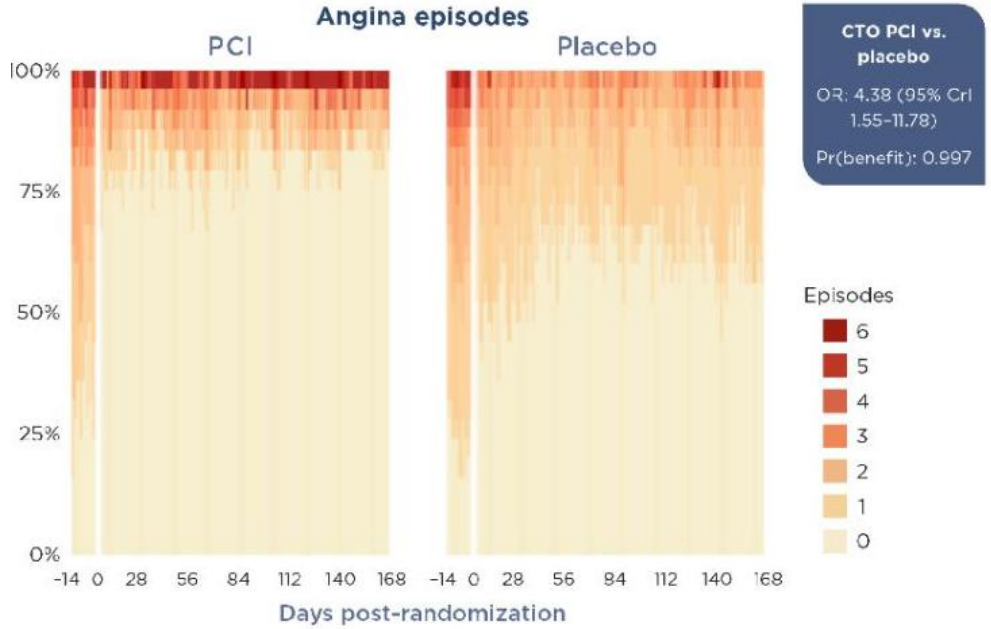
64
median age

74%
men

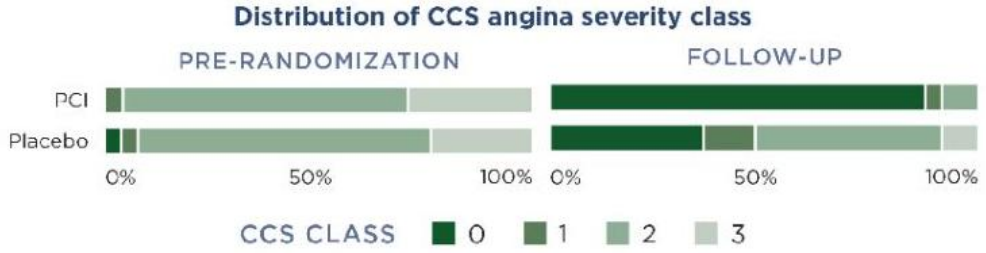
94%
CCS class II–III at baseline

CTO arteries

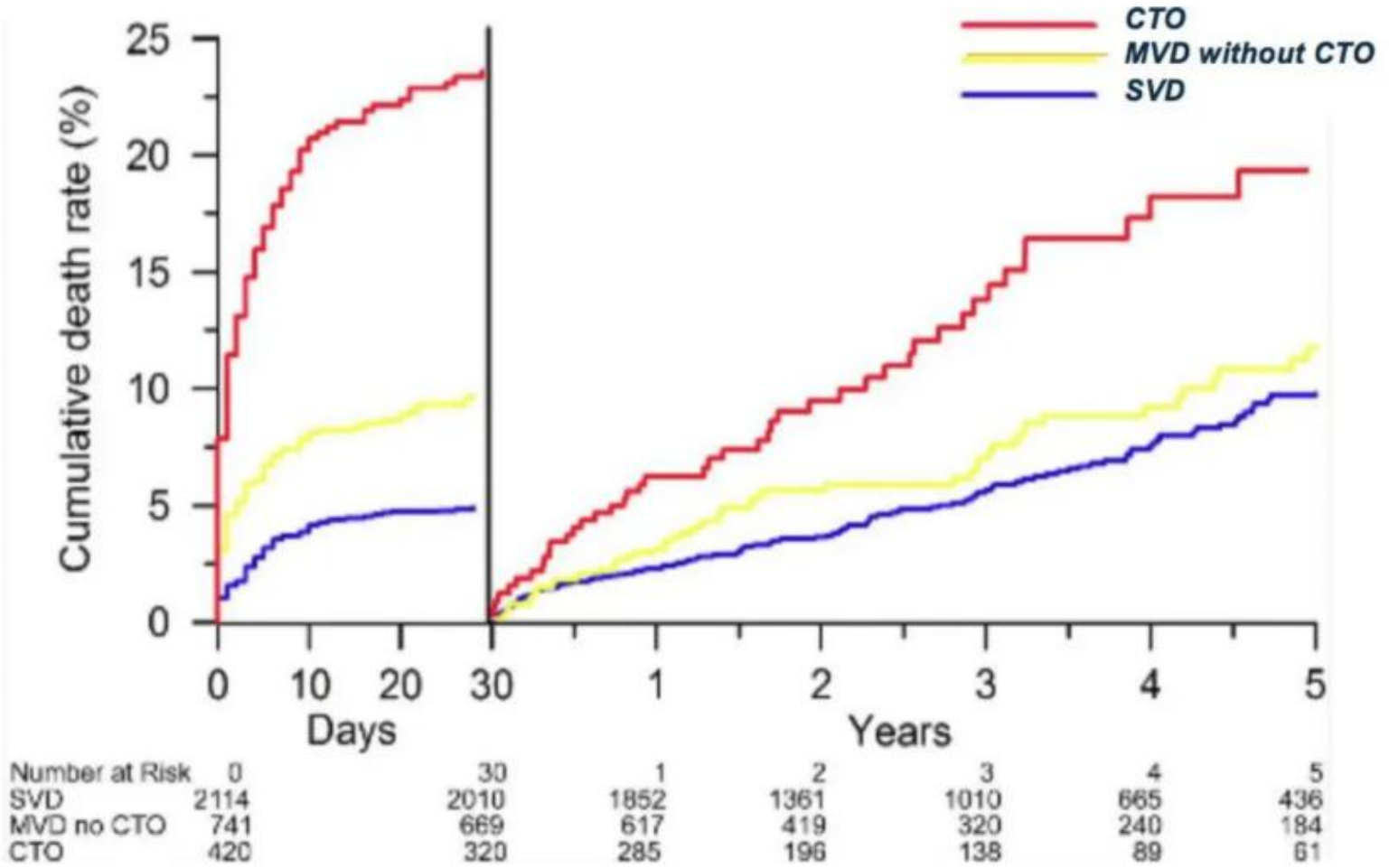




Over 6 months, patients undergoing CTO PCI experienced ~31 additional angina-free days compared with placebo.



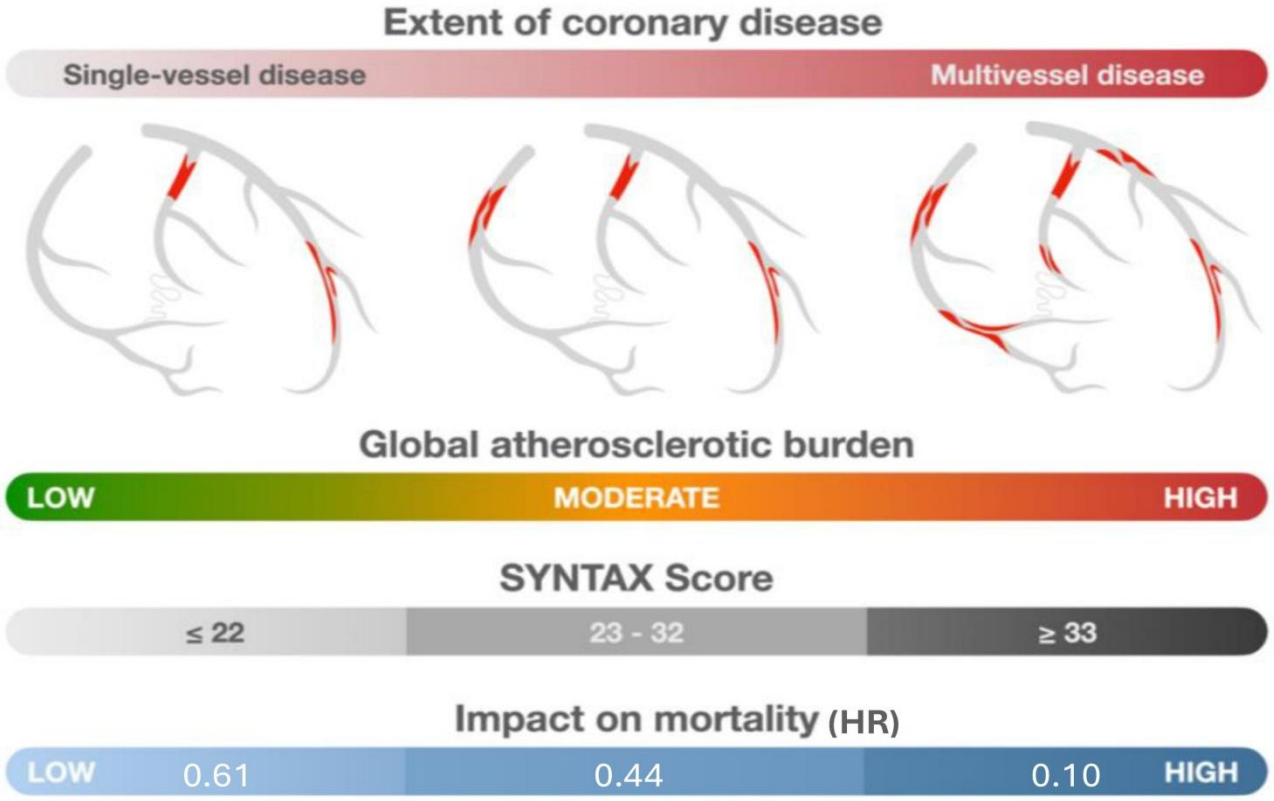
Prognóza pacientů s CTO



Claessen et al. JACC Intv 2009;2:1128-1134

The prognostic impact of CTO-PCI

Does Global burden of coronary atherosclerosis modify the prognostic impact of CTO-PCI?



Anatomical disease burden is a key criterion for patient selection in CTO-PCI.

The higher the overall coronary disease burden, the greater the risk of donor-vessel destabilization and then, potential protection derived from revascularization of the occluded artery

Absolute Risk Reduction of 1.5% every 10-point increase in SS

Eur Heart J Open, Volume 6, Issue 2, March 2026, oeag045, https://doi.org/10.1093/ehjopen/oeag045

Imaging

IVUS-Guided versus Angiography-Guided PCI in Unprotected Left Main Coronary Disease

OPTIMAL Trial

Review by Ali Nazmi Calik

Source: PCRonline.com

806

- Patients undergoing LM PCI
- Mean age: 71, Male: 78% , SYNTAX = ~ 30
- CCS: ~ 50% , Stents per patient: 2.4

2.9 y

Primary EP: **Death, any stroke, any MI, or any repeat revascularization**

IVUS-guided PCI = 401	Angio-guided PCI = 405
	
33.7%	30.9%

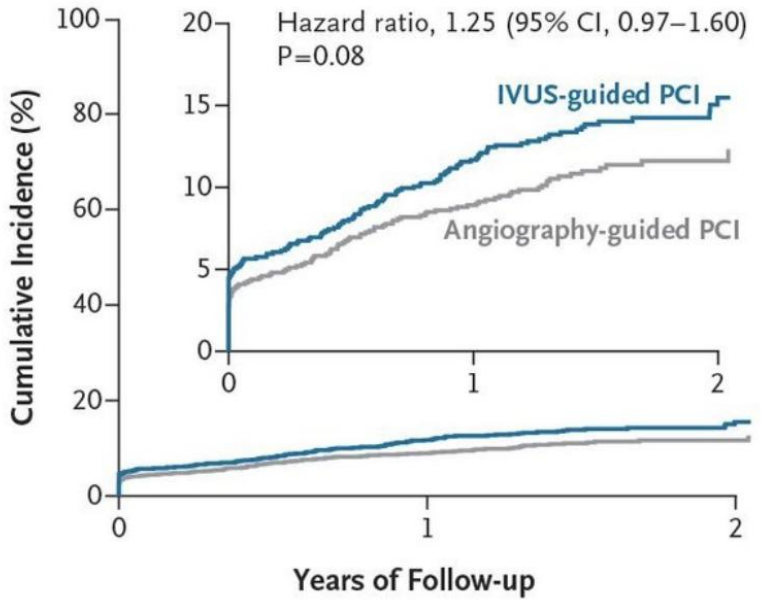
(HR, 1.11; 95% CI, 0.87 to 1.42; P = 0.40)

In patients with unprotected LMCA disease, routine IVUS-guided PCI did not reduce the risk of stroke, MI, repeat revascularization, or all-cause mortality compared with angiography-guided PCI.

Testa L, et al. NEJM. 2026 Mar 30.

ORIGINAL ARTICLE | MAR 30, 2026 | NEJM.ORG

Intravascular Ultrasound–Guided or Angiography-Guided Complex High-Risk PCI (IVUS-CHIP)

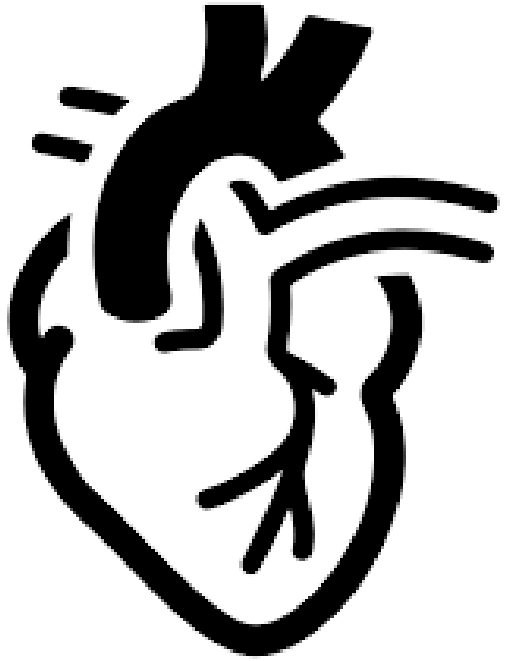


No. at Risk

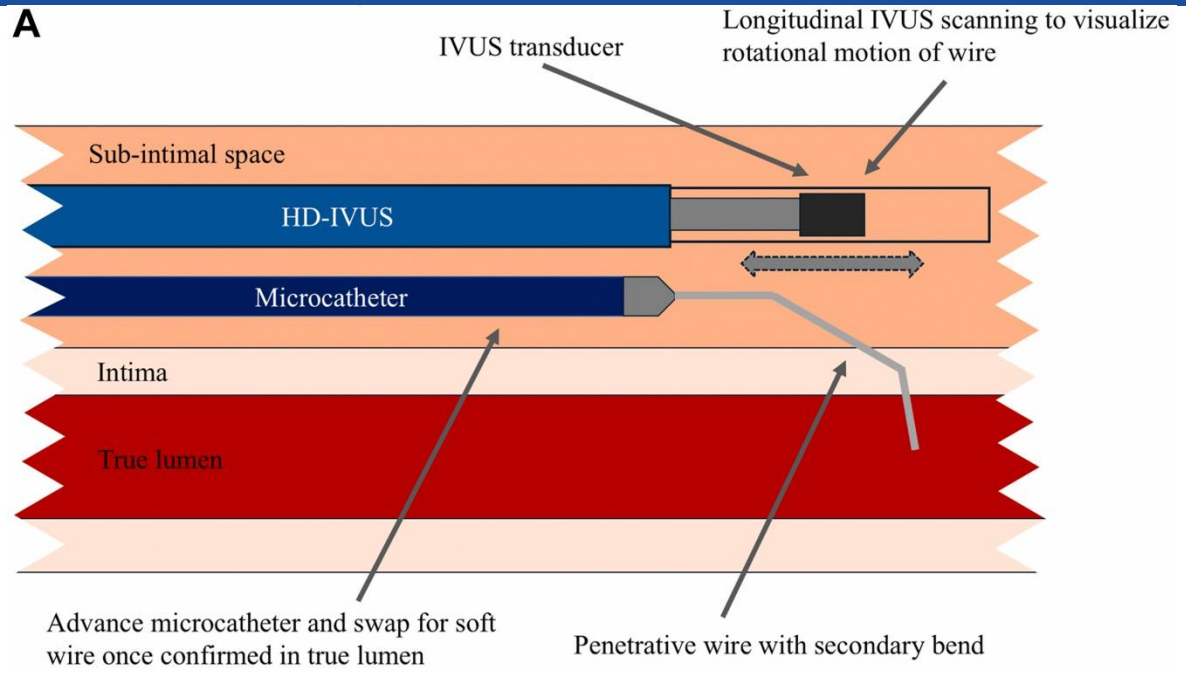
IVUS-guided PCI	1010	840	193
Angiography-guided PCI	1009	853	192

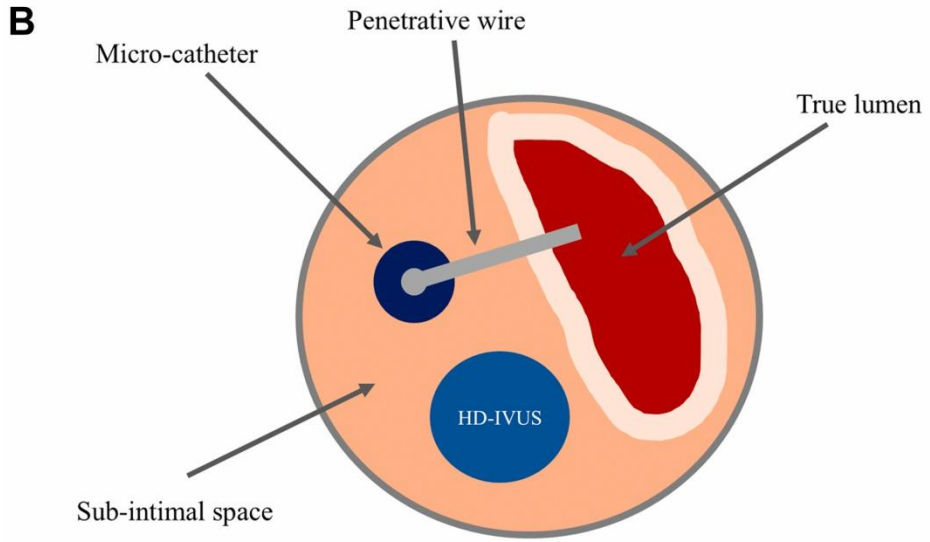
Figure 2A. Target-Vessel Failure (Composite Primary End Point).

Techniky a strategie



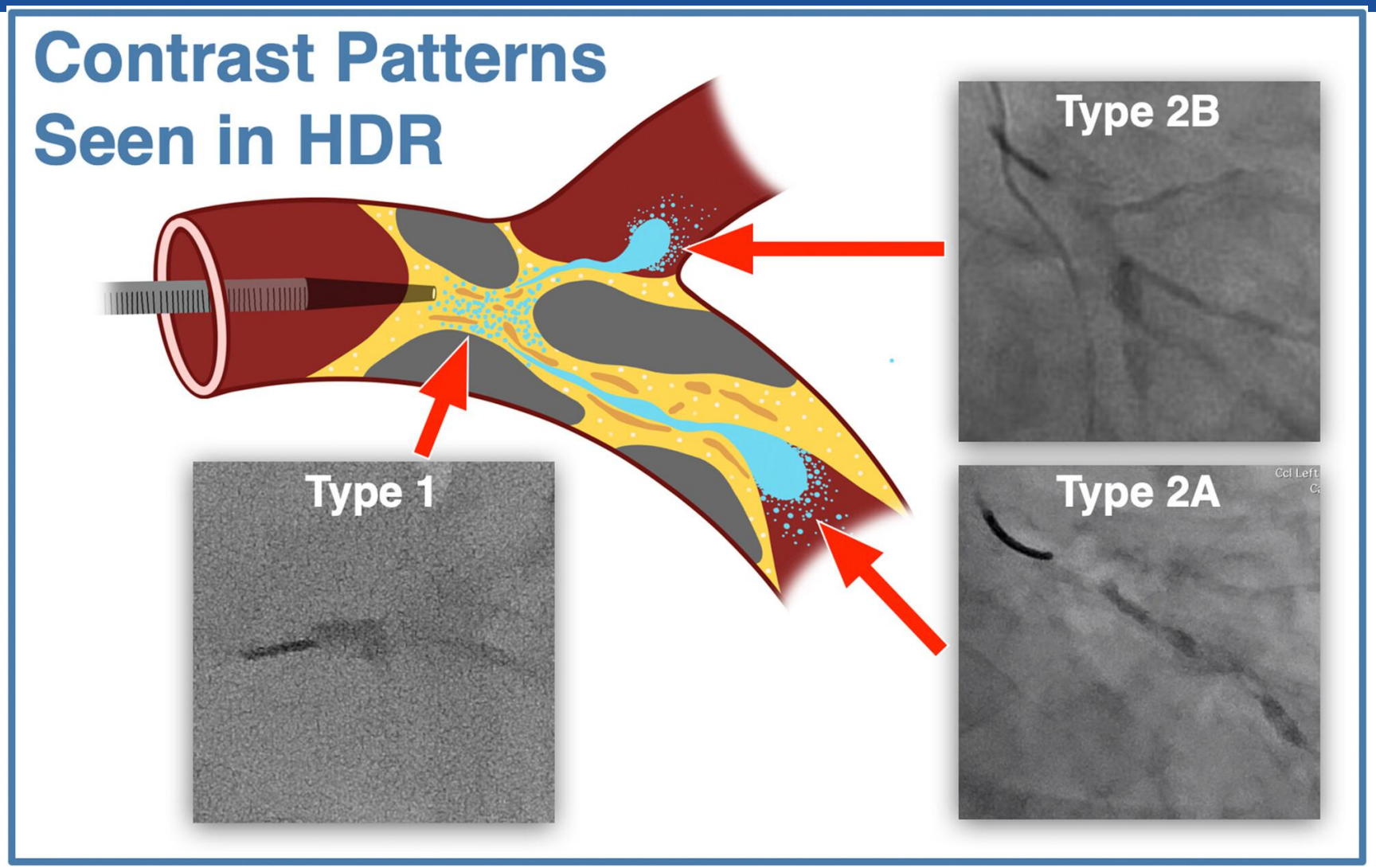
TD-ADR (tip detection – antegrade dissection and reentry)





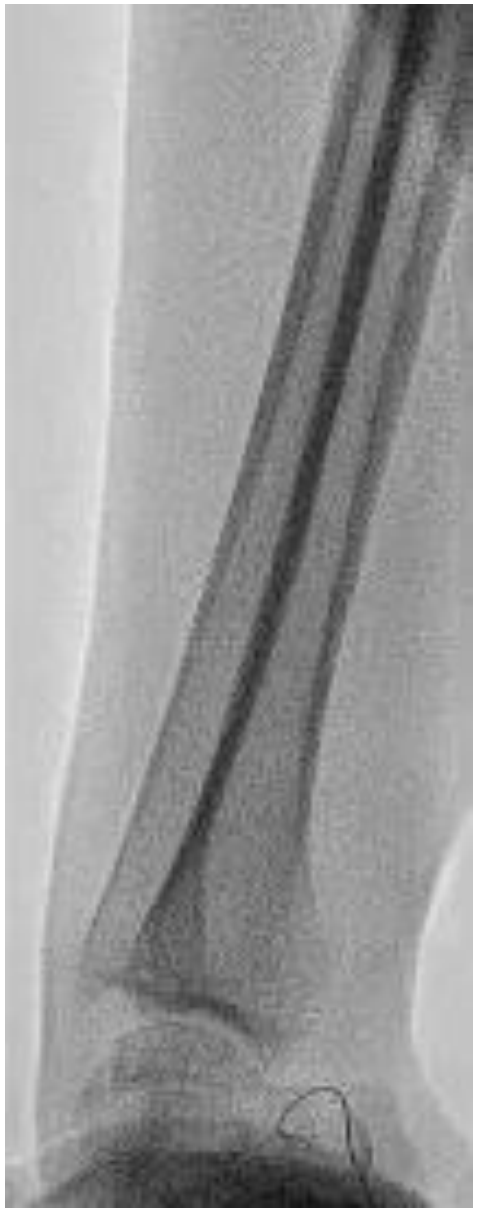
Li BH, Sharma N, Khatri J. HD-IVUS-Guided Tip Detection-Antegrade Dissection and Re-Entry (TD-ADR): First Experience in North America. JACC Case Rep. 2025 Mar 5;30(5):103179. doi: 10.1016/j.jaccas.2024.103179. Epub 2025 Feb 12. PMID: 40054947; PMCID: PMC11911884

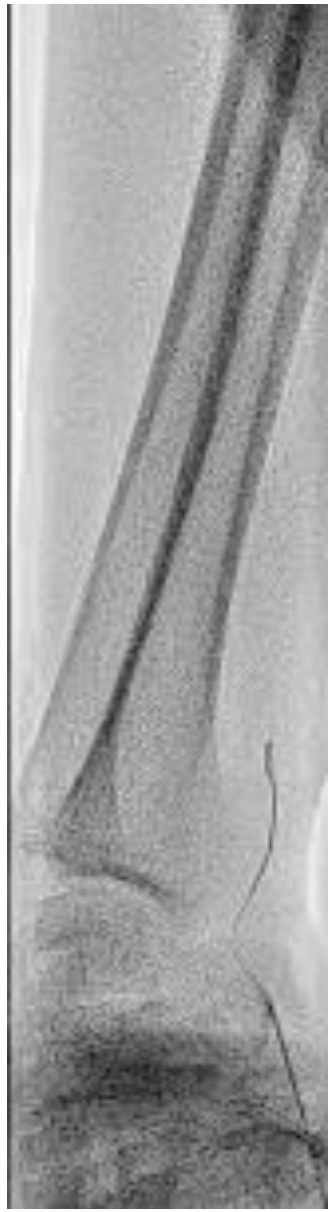
Hydrodynamic contrast recanalization



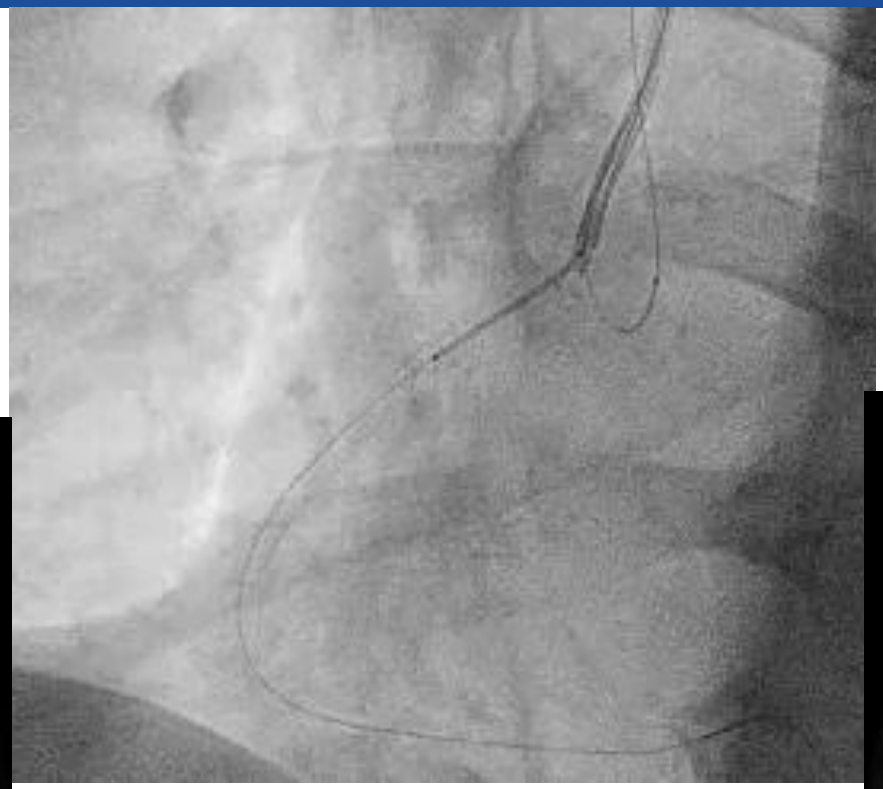
Carlino M, Nascimbene A, Brilakis ES, et al. HydroDynamic contrast Recanalization (HDR): Description of a new crossing technique for coronary chronic total occlusions. Catheter Cardiovasc Interv. 2024;104:918-927. doi:10.1002/ccd.31243

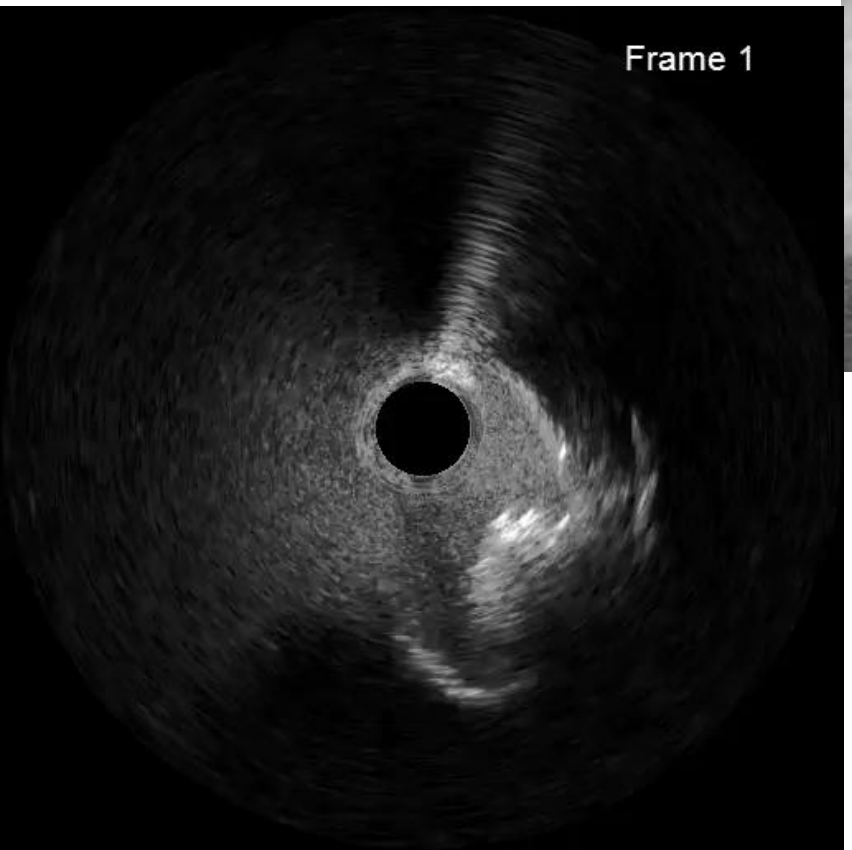
Rekanalizace radiálních tepen





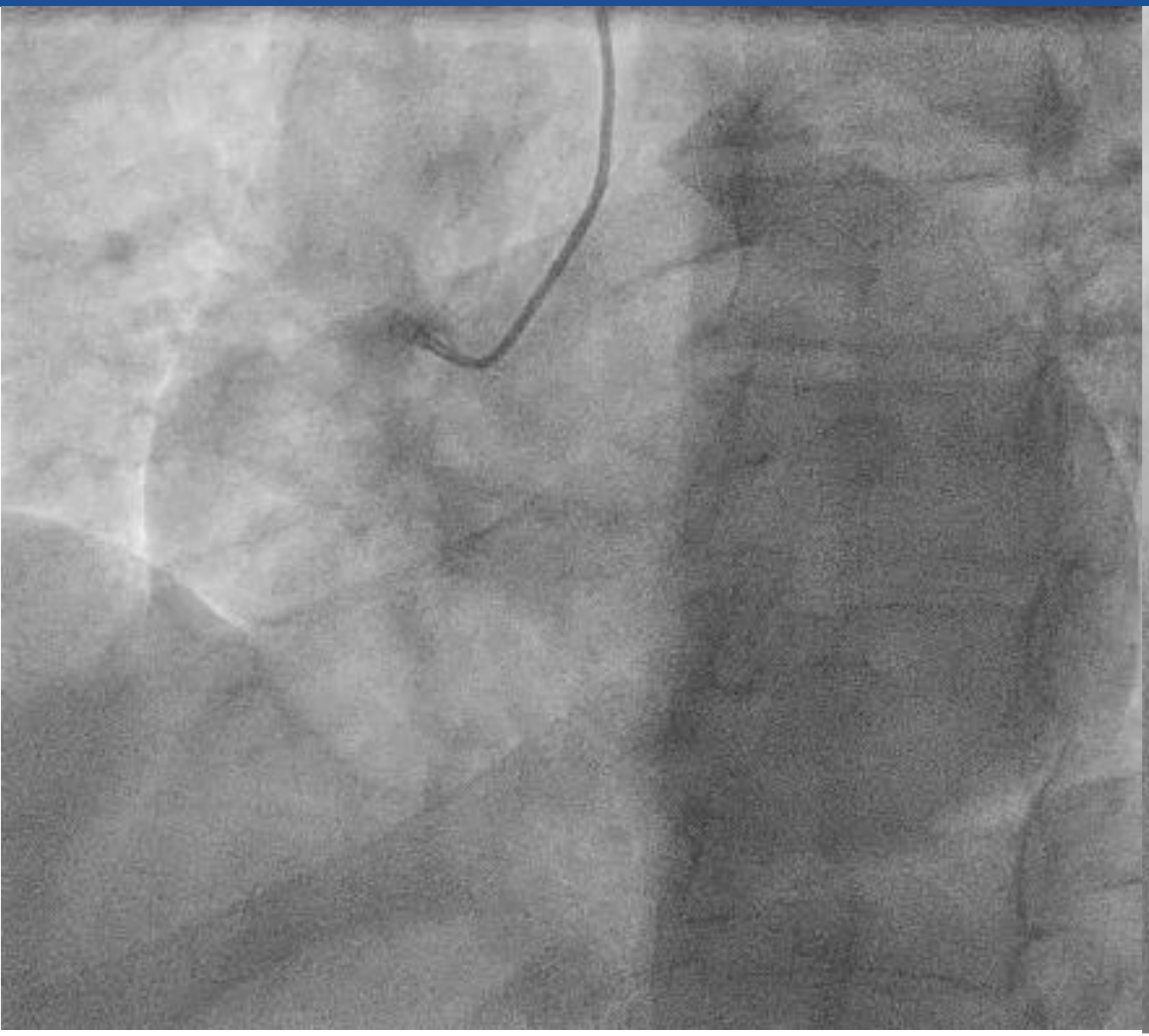
Colletti G et al. JACC Cardiovasc Interv. 2025 Sep 8;18(17):2140-215 doi: 10.1016/j.jcin.2025.07.003. PMI 40930602.

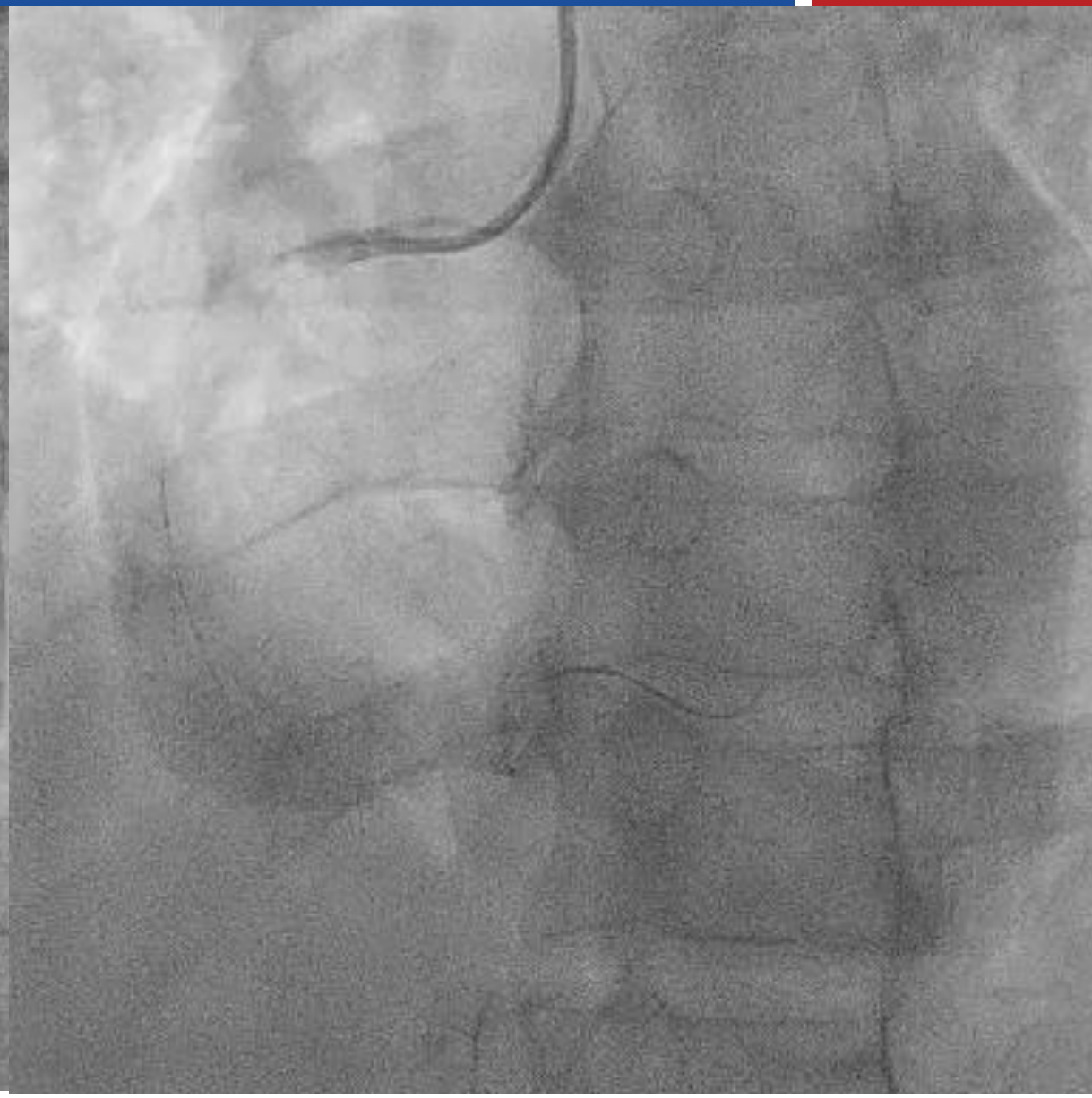




C.Ungureanu, et al. Clinical Case Reports13, no. 10 (2025):
e71328, https://doi.org/10.1002/ccr3.71328.

Komplikace





Komplikace