

Imaging selektivně

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Deklarace konfliktu zájmů

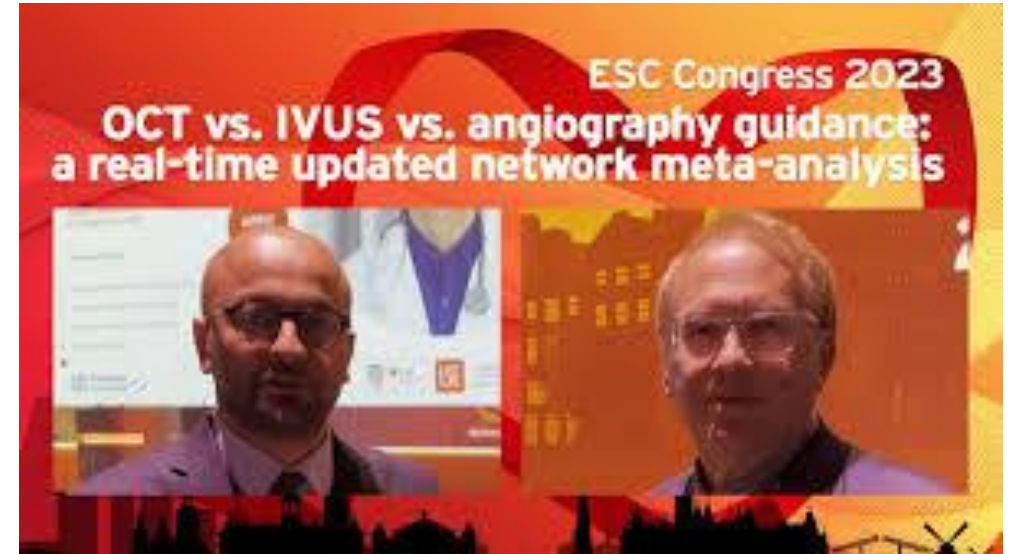
	Nemám konflikt zájmů	Mám konflikt zájmů	Specifikace konfliktu (vyjmenujte subjekty, firmy či instituce, se kterými Vaše spolupráce může vést ke konfliktu zájmů)
Zaměstnanecký poměr	X		
Vlastník / akcionář	X		
Konzultant	X		
Přednášková činnost	X		
Člen poradních sborů (advisory boards)	X		
Podpora výzkumu / granty	X		
Jiné honoráře (např. za klinické studie či registry)	X		

Intravascular Imaging Guidance for PCI: A “Real-Time” Updated Network Meta-analysis

Gregg W. Stone MD

on behalf of

Evald H. Christiansen, Ziad A. Ali, Lene N
Andreasen, Akiko Maehara, Yousif
Ahmad, Ulf Landmesser, Niels R. Holm



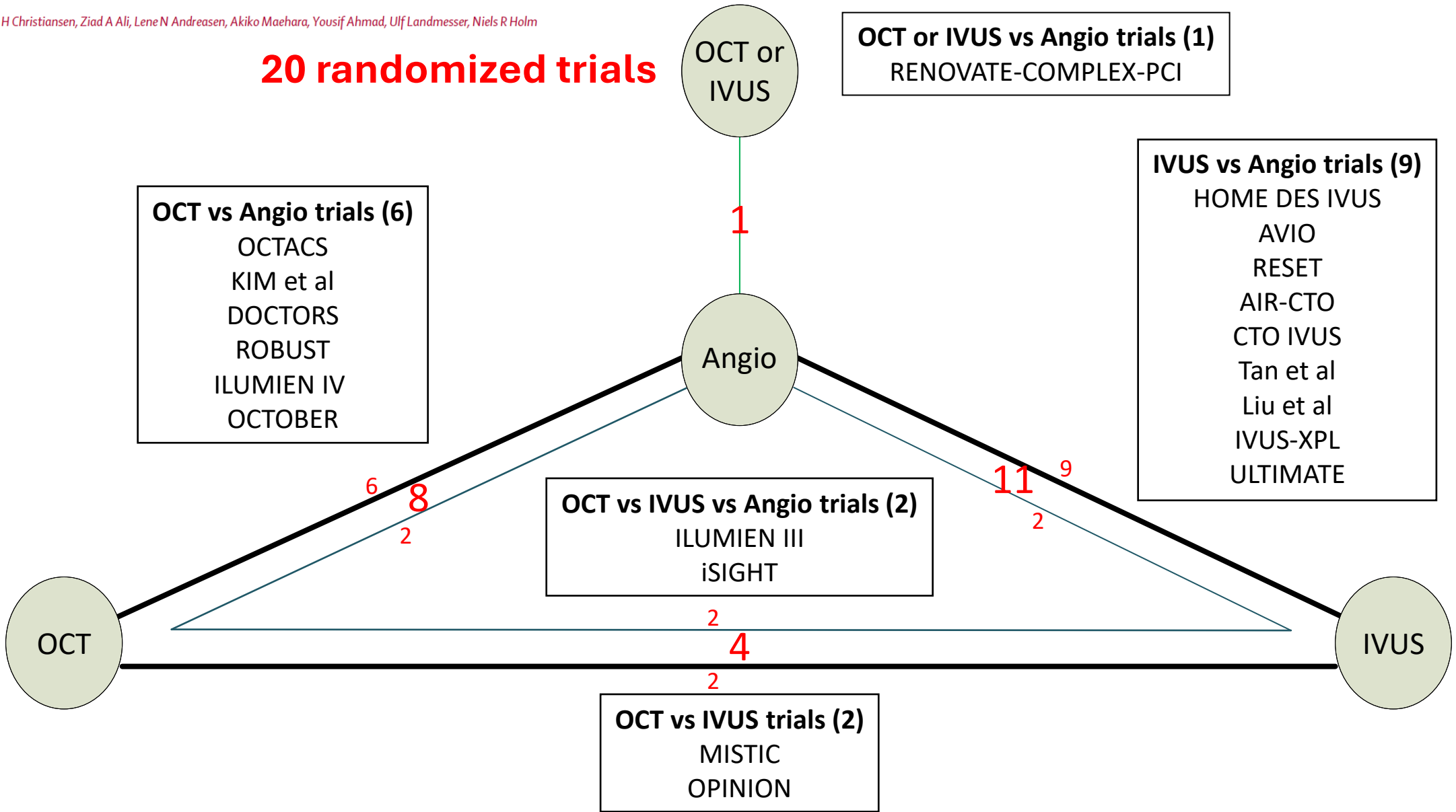
**Intravascular imaging-guided coronary drug-eluting stent
implantation: an updated network meta-analysis**

Gregg W Stone, Evald H Christiansen, Ziad A Ali, Lene N Andreasen, Akiko Maehara, Yousif Ahmad, Ulf Landmesser, Niels R Holm

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20 randomized trials



Network Evidence: All Outcomes

IVI-guided (OCT or IVUS) PCI vs Angiography-guided PCI

Outcome	N trials	N pts	N events	Direct estimate	% evidence	Indirect estimate	% evidence	Network estimate
TLF	18	11,502	963	0.69 [0.61, 0.78]	100	-	-	0.69 [0.61, 0.78]
- Cardiac death	17	11,385	174	0.54 [0.40, 0.74]	100	-	-	0.54 [0.40, 0.74]
- TV-MI	17	11,385	393	0.80 [0.66, 0.97]	100	-	-	0.80 [0.66, 0.97]
- TLR	17	11,417	497	0.71 [0.59, 0.85]	100	-	-	0.71 [0.59, 0.85]
Stent thrombosis	17	11,385	89	0.48 [0.31, 0.76]	100	-	-	0.48 [0.31, 0.76]
All-cause death	17	11,385	318	0.75 [0.60, 0.93]	100	-	-	0.75 [0.60, 0.93]
All MI	17	11,385	480	0.82 [0.69, 0.98]	100	-	-	0.82 [0.69, 0.98]
TVR	17	11,417	589	0.71 [0.61, 0.84]	100	-	-	0.71 [0.61, 0.84]

Conclusions

The present network meta-analysis from 20 RCTs in 12,428 pts with follow-up ranging from 6-60 months demonstrates that:

- Compared with angiography-guided PCI, IVI-guided PCI with OCT or IVUS reduces **TLF by 31%**, driven by **46%, 20%, and 29%** reductions in cardiac death, TV-MI, and TLR respectively
- IVI-guided PCI also reduces **stent thrombosis by 52%**, all MI by **18%**, and **all-cause death by 25%**

Limitations

- The limitations of all meta-analyses apply, acknowledging inter-study differences in study design, patient characteristics, geography, operators, technique, collected data, endpoint definitions, and follow-up duration
- *Ve studiích zahrnuty i 1. generace lékových stentů*

Role of the funding source

The present study was initiated and sponsored by the investigators and was done without funding other than for the statistical support provided by Abbott (Santa Clara, CA, USA) under the supervision of the investigators. Abbott otherwise had no input into the study design or data interpretation and did not participate

Intravascular imaging-guided coronary drug-eluting stent implantation: an updated network meta-analysis

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Implications for Patient Care and Future Research

- **The routine use of OCT or IVUS to guide most PCI procedures will substantially improve patient event-free survival, enhancing both the long-term safety and effectiveness of the procedure**
- Additional investigation is required to determine:
 - Which lesion types most benefit from IVI guidance

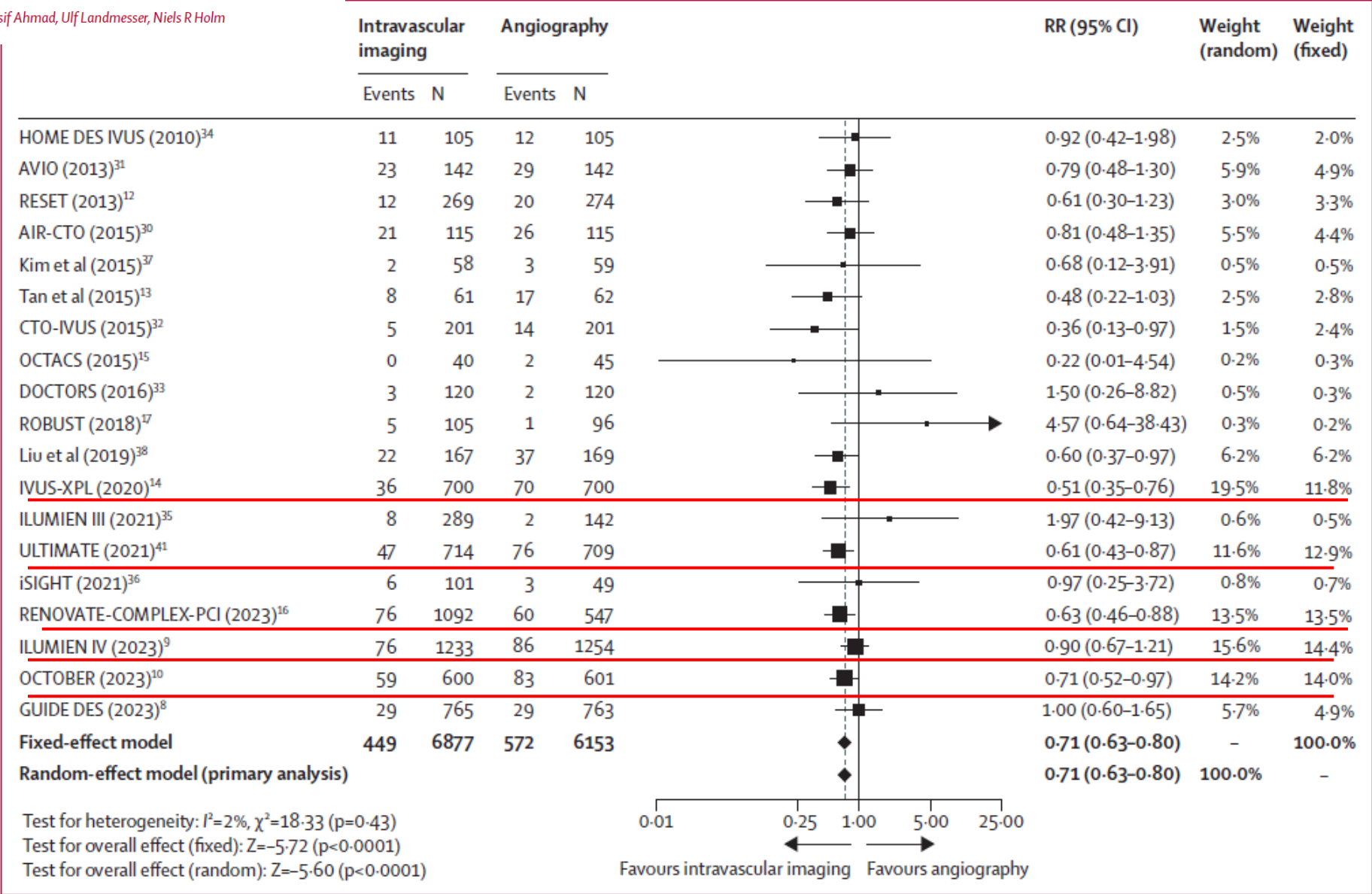


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5 studií mělo
74,4% váhu
na přímém
randomizačním
srovnání

IVI- guided PCI
vs.
Angio-guided PCI



Hlavních 5 studií z metaanalýzy Lancet 2024

Studie	Vstupní kritéria	Poznámka
IVUS-XPL (2015)	Délka implantovaného stentu více než 28mm	XIENCE, randomizováno 10%
RENOVATE-Complexe PCI (2023)	Pravé bifurkace, PCI nechráněného kmene, CTO, Délka stentu více než 38mm, PCI více tepen	Jižní Korea
OCTOBER (2023)	Pouze pravé bifurkační léze	XIENCE, 38 center, 5 let
ILUMIEN IV (2023)	Pacienti s DM, Bifurkace – 2 stenty, kalcifikované léze, CTO, stent nad 28mm, difuzní restenózy	Stejný klinický outcome
ULTIMATE (2018)	„All comers“	8 center v Číně (1448 pacientů 2014-2020) Průměrná délka stentů 66mm

Studie testují selektivní využití zobrazovacích metod při PCI

ESC Guidelines acute coronary syndromes 2023

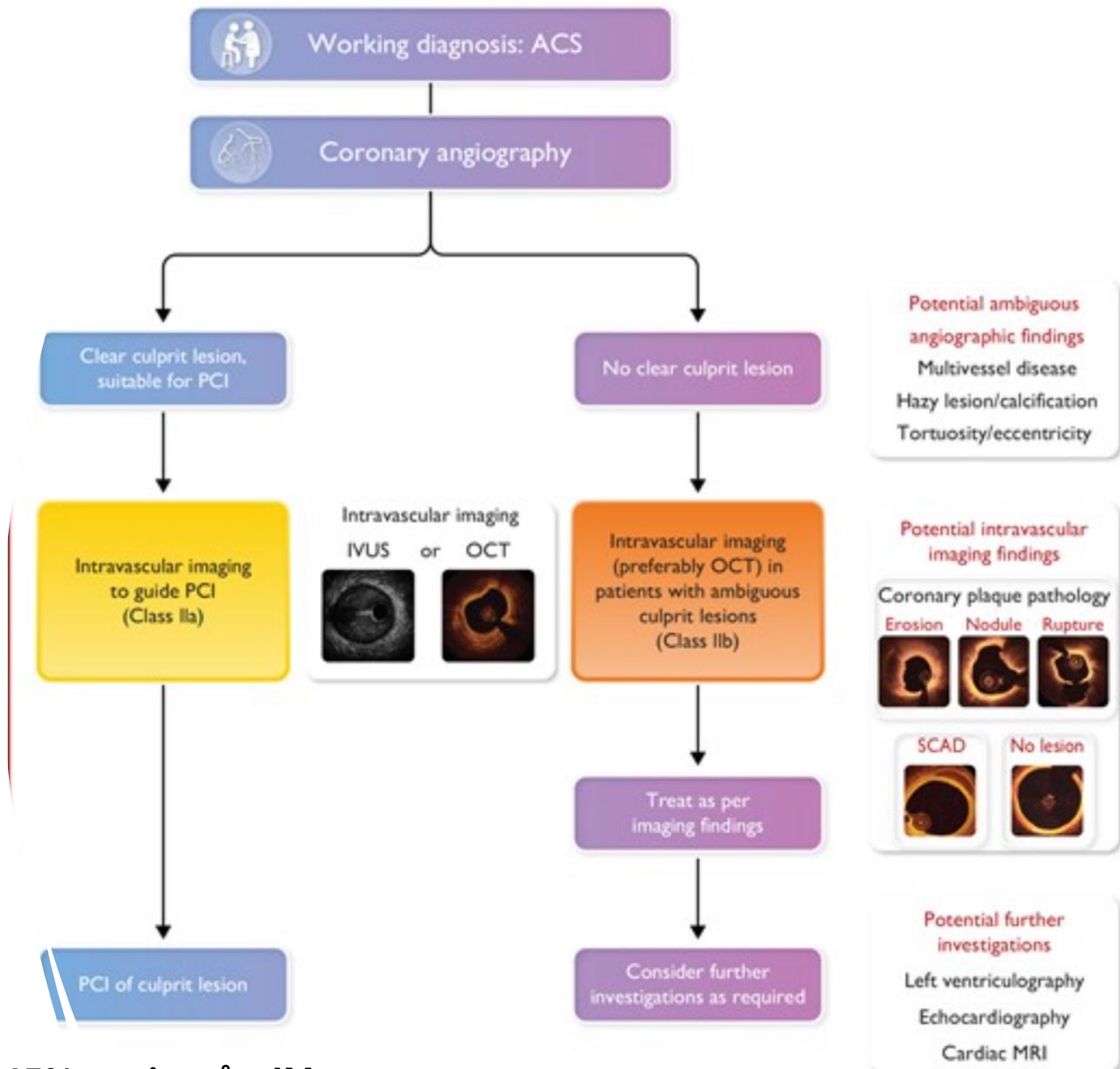
Recommendations for technical aspects of invasive strategies (1)



Recommendations	Class	Level
Radial access is recommended as the standard approach, unless there are overriding procedural considerations.	I	A
PCI with stent deployment in the IRA during the index procedure is recommended in patients undergoing PPCI.	I	A
Drug-eluting stents are recommended in preference to bare metal stents in all cases.	I	A
In patients with spontaneous coronary artery dissection, PCI is recommended only for patients with symptoms and signs of ongoing myocardial ischaemia, a large area of myocardium in jeopardy, and reduced antegrade flow.	I	C
Intravascular imaging should be considered to guide PCI.	IIa	A
Coronary artery bypass grafting should be considered in patients with an occluded IRA when PPCI is not feasible/unsuccessful and there is a large area of myocardium in jeopardy.	IIa	C

ESC Guidelines acute coronary syndromes 2023

- **Evidence** in support of intravascular ultrasound (IVUS) **guidance in ACS generally derives from subgroup analyses of all-comers trials.** Meta-analysis of available randomized trials confirms the superiority of IVUS guidance in the reduction of MACE, although a definitive, **large-scale, multinational trial is missing.**^{457–459} Smaller RCTs have evaluated the role of optical coherence tomography (OCT)



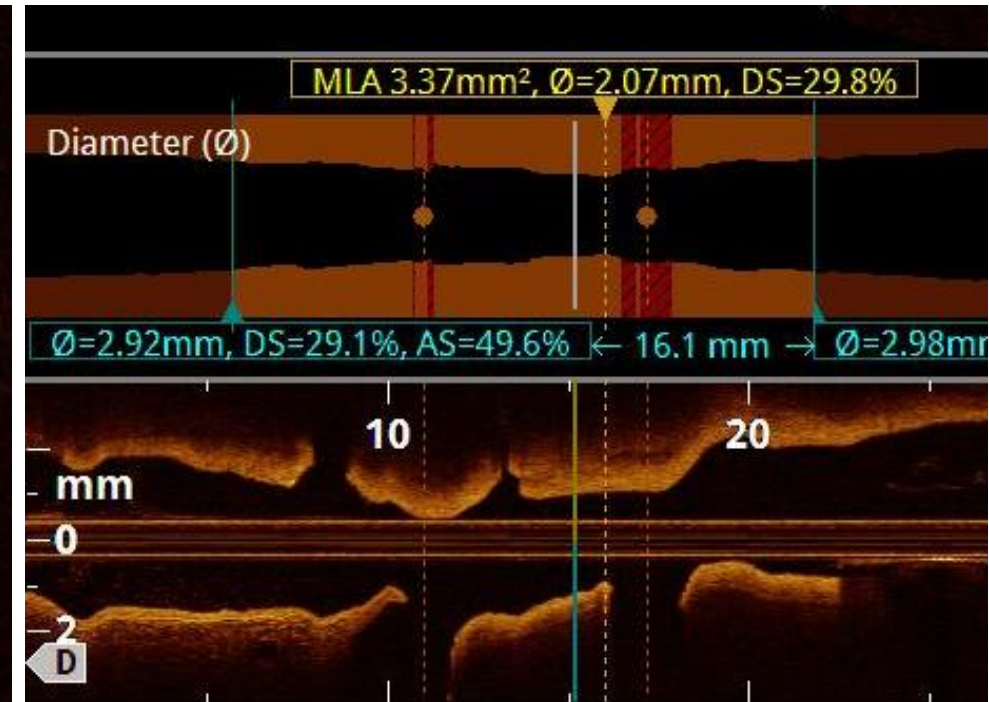
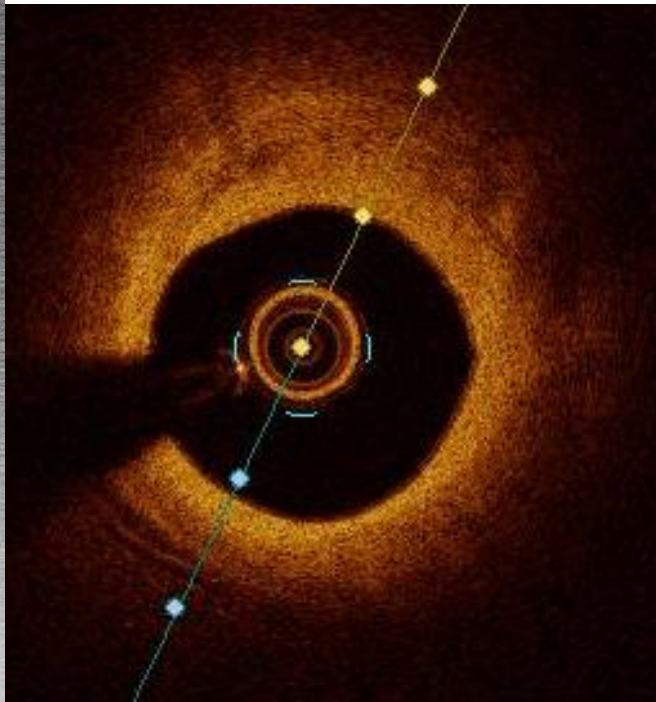
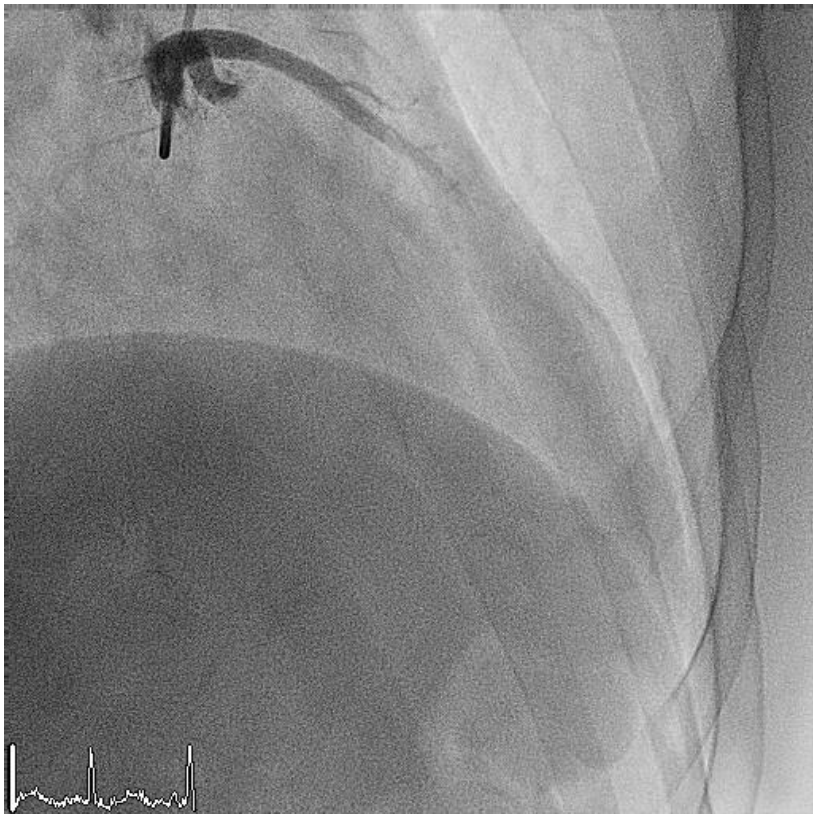
Studie ULTIMATE (2018) a IVUS-XPL (2015) pouze 15% pacientů s IM

Recommendations for revascularization in patients with chronic coronary syndrome (4)

Recommendations	Class	Level
<i>Revascularization to improve symptoms</i>		
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
<i>Assessment of procedural risks and post-procedural outcomes</i>		
In patients with complex CAD in whom revascularization is being considered, it is recommended to assess procedural risks and post-procedural outcomes to guide shared clinical decision-making.	I	C
Calculation of the STS score is recommended to estimate in-hospital morbidity and 30-day mortality after CABG.	I	B
In patients with multivessel obstructive CAD, calculation of the SYNTAX score is recommended to assess the anatomical complexity of disease.	I	B
Intracoronary imaging guidance by IVUS or OCT is recommended when performing PCI on anatomically complex lesions, in particular left main stem, true bifurcations, and long lesions.	I	A

MINOCA a imaging

- Žena 66 let, bolet na hrudi, hsTnT I 4000 ng/l, EKG – ST bez denivelací
TTE porucha kinetiky hrotu a přilehlých oblastí



Bioresorbable vascular scaffolds in acute ST-segment elevation myocardial infarction: a prospective multicentre study ‘Prague 19’

Viktor Kočka¹, Martin Malý², Petr Toušek¹, Tomas Buděšínský¹, Libor Lisa¹, Petko Prodanov¹, Jiri Jarkovský³, and Petr Widimský^{1*}

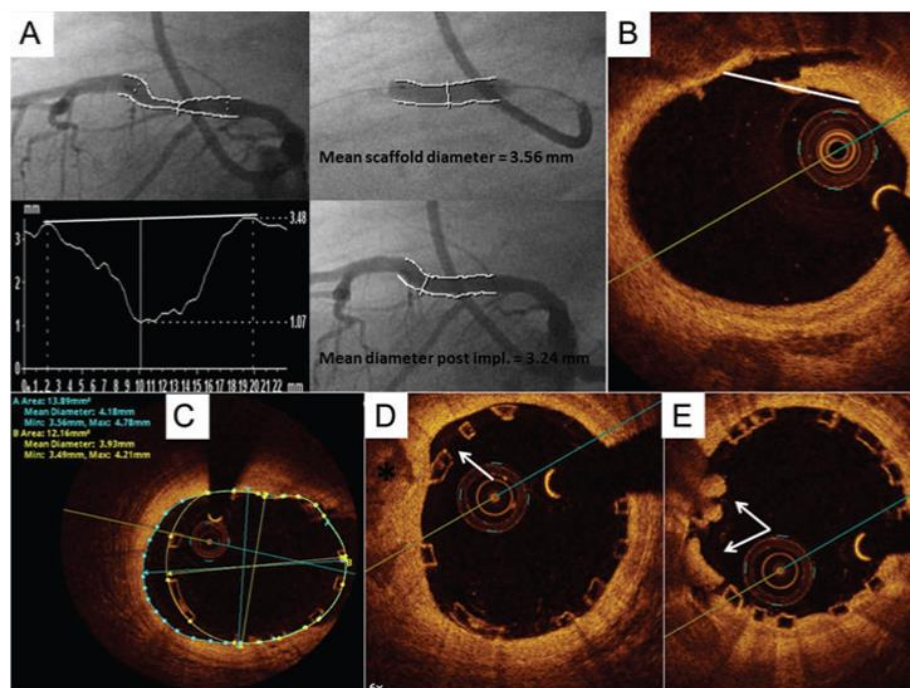
Cardiovascular Drugs and Therapy (2022) 36:1129–1136
<https://doi.org/10.1007/s10557-021-07258-z>

ORIGINAL ARTICLE

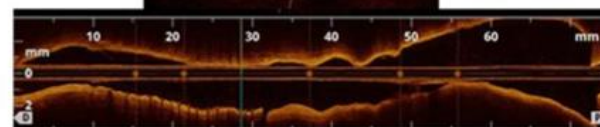
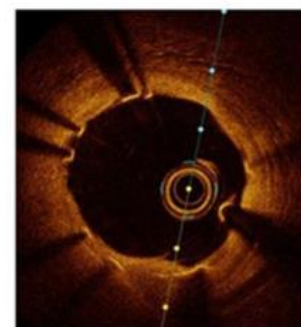


Comparison of a Bioresorbable, Magnesium-Based Sirolimus-Eluting Stent with a Permanent, Everolimus-Eluting Metallic Stent for Treating Patients with Acute Coronary Syndrome: the PRAGUE-22 Study

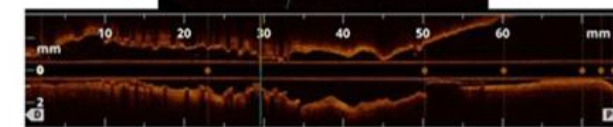
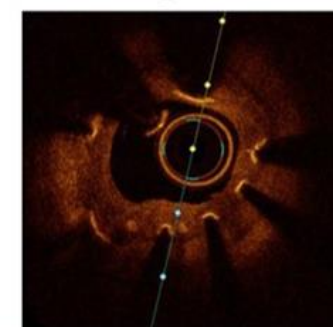
Petr Toušek¹ · Tomáš Lazarák² · Ivo Varvařovský² · Markéta Nováčková¹ · Marek Neuberg³ · Viktor Kočka¹



Baseline OCT



OCT during TLF at 7 weeks



Imaging a realita v ČR

- **2023**

52 000 SKG , 22 000 PCI

1410 IVUS, 420 OCT

(8% imaging vztaženo k intervencím)

Metanalýza ani dobrá úhrada
(zvýšení RV o 0,7) k dramatickému
zvýšení imagingu nevedla

- **2024**

59 000 SKG , 22 000 PCI

1930 IVUS, 490 OCT

(11% imaging vztaženo k intervencím)

Závěry

- Intravaskulární zobrazovací metody patří do katetrizačních laboratoří
- Měly by být používány selektivně u komplexních koronárních intervencí – pouze na to máme evidenci
- Využití nejen při intervencích, ale i u nejasných nálezů u AKS
- Rutinně využití při zavádění nových technologií – zkušenosti z BRS
- Při diskuzi PRO a PROTI u imagingu:

Není čas na kvalitní multicentrickou českou studii?? ☺