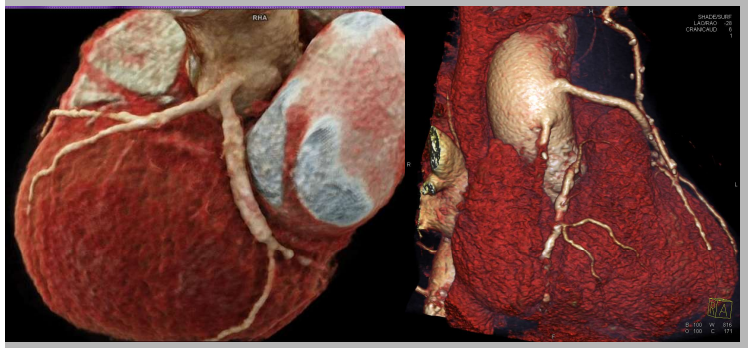
CT koronarografie a chronická ICHS



Jan Baxa

Klinika zobrazovacích metod, FN Plzeň a LF UK v Plzni

CT angiografie

ESC European Society of Cardiology

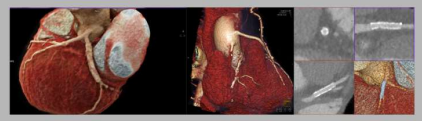
European Heart Journal (2024) **00**, 1–123
https://doi.org/10.1093/eurheartj/ehae177

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)

CT a chronická ICHS



Jan Baxa, Jiří Ferda

Klinika zobrazovacích metod, FN Plzeň a LF UK v Plzni

In CCS patients with symptoms refractory to medical treatment, and who have had previous coronary revascularization, CCTA should be considered to evaluate bypass graft or stent patency (for stents ≥3 mm).[1174–1176]	IIa	B

stenty a bypassy

jedno z prvních uplatnění CTA

větší rozměry

méně pohybových artefaktů

vysoká přesnost

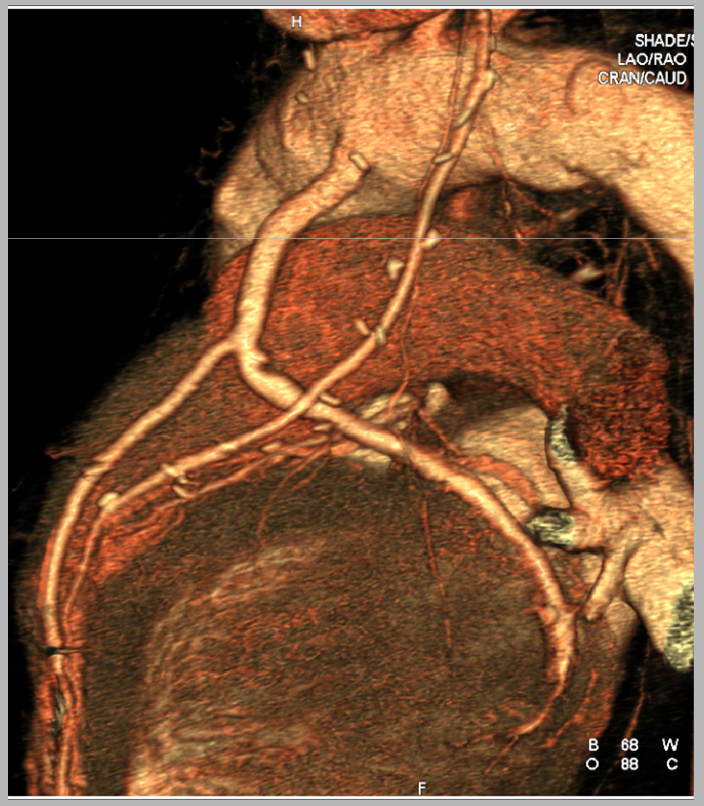
100% senzitivita při hodnocení průchodnosti

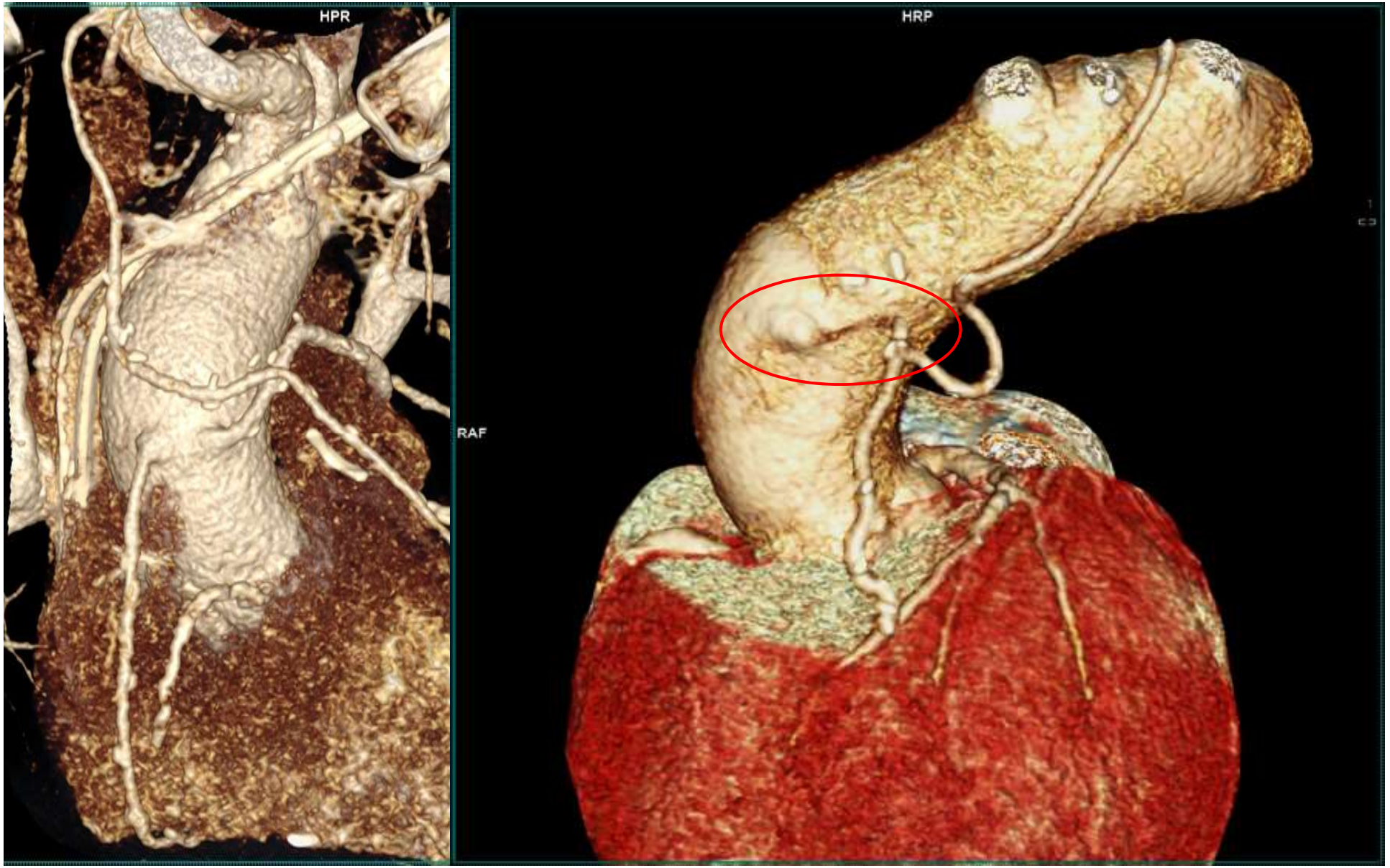
93 - 100% senzitivita pro hodnocení stenozy

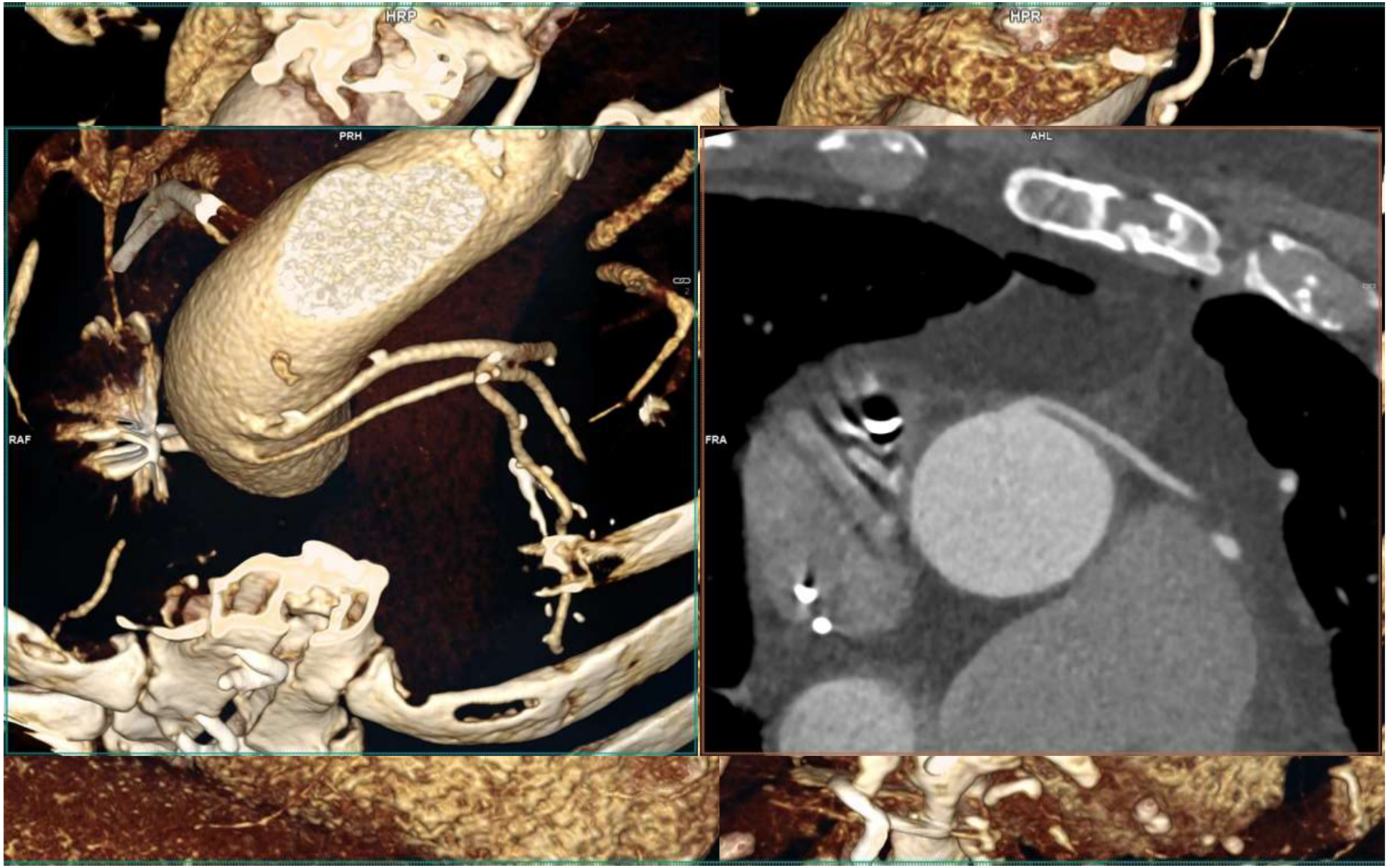
význam

po nekompletní SKG

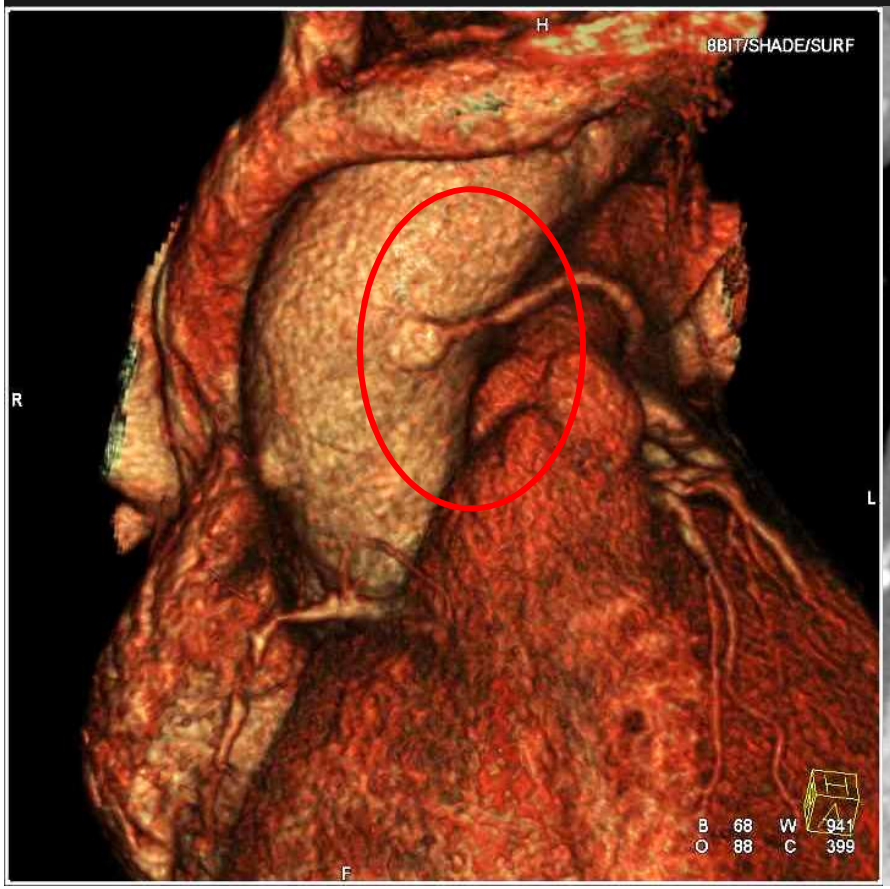
před SKG / alternativa



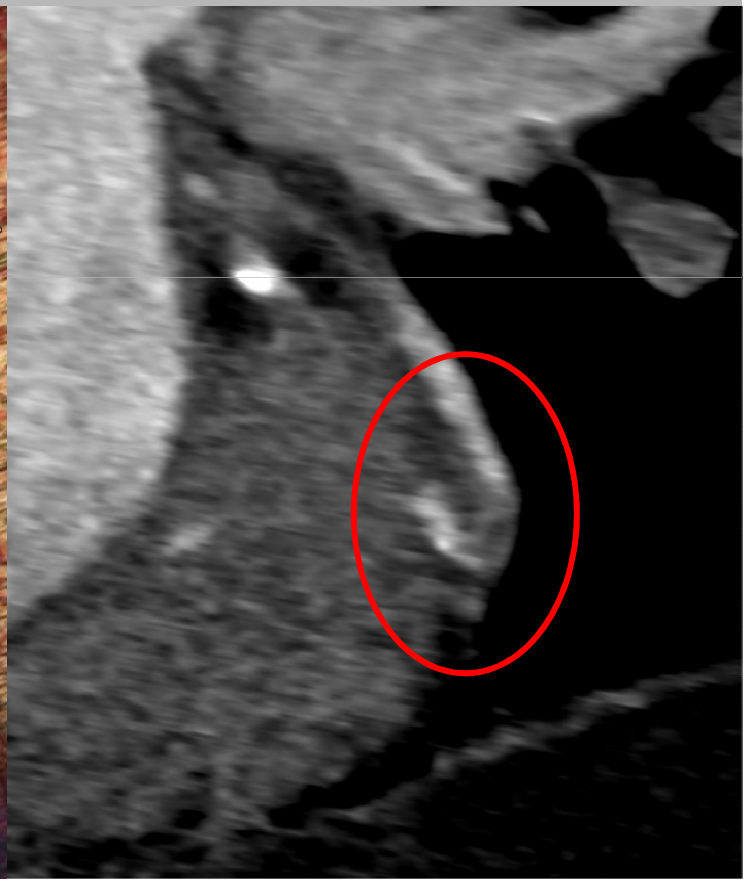

HPR
HRP
RAF


HRP
HPR
PRH
AHL
RAF
FRA

stenozy



distální anastomoza



Computed Tomography Cardiac Angiography Before Invasive Coronary Angiography in Patients With Previous Bypass Surgery: The BYPASS-CTCA Trial

Daniel A. Jones, Anne-Marie Beirne, Matthew Kelham, Krishnaraj S. Rathod, Mervyn Andiapen, Lucinda Wynne, Thomas Godec, Nasim Forooghi, Rohini Ramaseshan, James C. Moon, Ceri Davies, Christos V. Bourantas, Andreas Baumbach, Charlotte Manisty, Andrew Wragg, Amrita Ahluwalia, Francesca Pugliese, Anthony Mathur and for the BYPASS-CTCA Trial Committees and Investigators

Originally published 29 Sep 2023 | https://doi.org/10.1161/CIRCULATIONAHA.123.064465 | Circulation. 2023;148:1371–1380

Circulation

Volume 148, Issue 18, 31 October 2023; Pages 1371-1380
https://doi.org/10.1161/CIRCULATIONAHA.123.064465

randomizace

indikováni k SKG (600 subjektů)

preprocedurální CTA (1:1)

jedno centrum

jeden typ CT přístroje

bez selekce poruchy rytmu

outcome

délka SKG

spokojenost pacienta (skore)

kontrastní nefropatie

radiační zátěž, množství kontrastní látky, komplikace radiální přístupy, počet katetrů…

Computed Tomography Cardiac Angiography Before Invasive Coronary Angiography in Patients With Previous Bypass Surgery: The BYPASS-CTCA Trial

Daniel A. Jones, Anne-Marie Beirne, Matthew Kelham, Krishnaraj S. Rathod, Mervyn Andiapen, Lucinda Wynne, Thomas Godec, Nasim Forooghi, Rohini Ramaseshan, James C. Moon, Ceri Davies, Christos V. Bourantas, Andreas Baumbach, Charlotte Manisty, Andrew Wragg, Amrita Ahluwalia, Francesca Pugliese, Anthony Mathur and for the BYPASS-CTCA Trial Committees and Investigators

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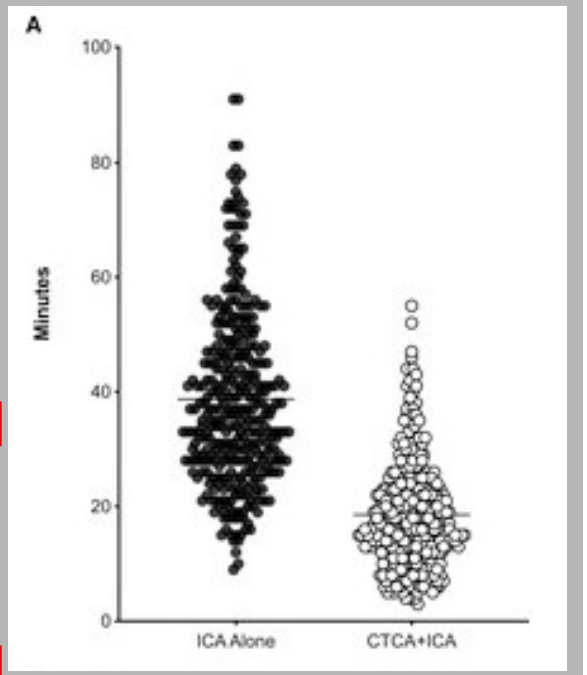
Table 2. Invasive Coronary Angiography Procedural Data (Table view)

Characteristics	CTCA+ICA (n=321)	ICA alone (n=342)	*P* value
Radial access	247 (76.9)	194 (56.7)	<0.001
Number of bypass grafts			
1	23 (7.1)	23 (6.7)	0.34
2	82 (25.5)	75 (21.9)	
3	143 (44.4)	177 (51.8)	
4	65 (20.2)	62 (18.1)	
5	9 (2.8)	5 (1.5)	
Mean±SD	2.9±0.9	2.9±0.8	
Procedure time, minutes	18.6 (9.5)	39.5 (16.9)	<0.001
Fluoroscopy time, minutes	8.1 (5.1)	14.9 (7.5)	<0.001
Radiation			
Air kerma, mGy	121.0 (85.0–188.0)	184.0 (124.8–301.0)	<0.001
DAP, uGym^2	770.0 (510.5–1136.0)	1177.0 (827.0–1760.0)	<0.001
Effective dose, mSV	1.6 (1.0–2.4)	2.6 (1.8–3.9)	<0.001
Contrast, mL	77.4 (49.1)	173.0 (68.0)	<0.001
Number of catheters during ICA	3 (2–4)	4 (3–5)	<0.001
Mehran score	7.2 (4.2)	11.0 (5.5)	<0.001



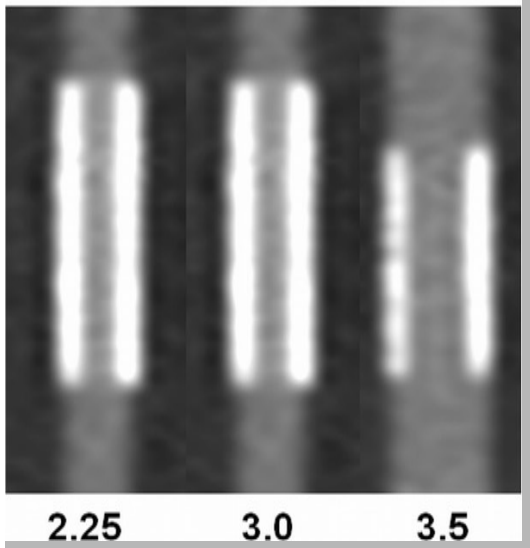
koronární stenty

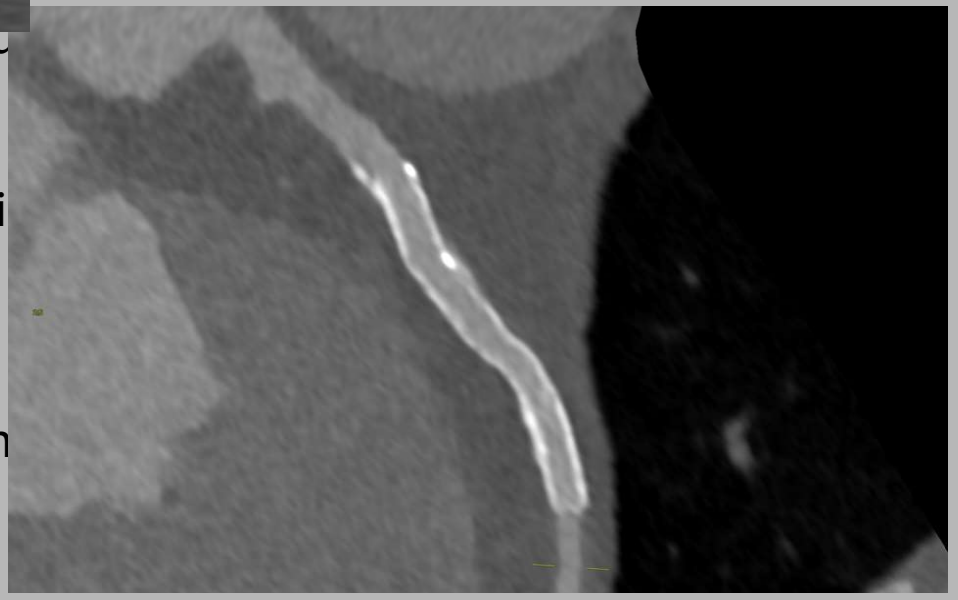
"blooming" artefakty

kalibr stentu

vývoj techni

poslední gen





Wan YL et al. Coronary in-stent restenosis: predisposing clinical and stent-related factors, diagnostic performance and analyses of inaccuracies in 320-row computed tomography angiography. Int J Cardiol. 2016


HRP
RPF
RCA
2,5
MPR CV
SL min
W 1906
C 405
52bpm, 63%, 66ms, ME_60keV

Schlattmann *et al. Insights into Imaging* (2024)15:208
https://doi.org/10.1186/s13244-024-01702-y

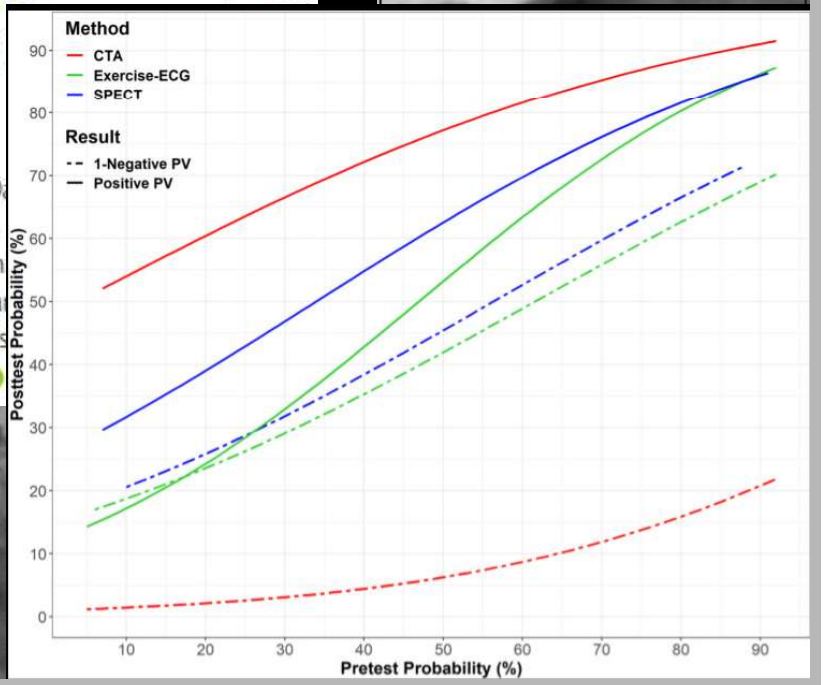
Insights into Imaging

tabilní AP

ORIGINAL ARTICLE Open Access

The effectiveness of coronary computed tomography angiography and functional testing for the diagnosis of obstructive coronary artery disease: results from the individual patient data Collaborative Meta-Analysis Cardiac CT (COME-CCT)

Peter Schlattmann[1], Viktoria Wieske[2], Keno K. Bressem[2], Theresa Götz[1], Georg M. Schuetz[2], D
Gianluca Pontone[3], Hatem Alkadhi[4], Jörg Hausleiter[5], Elke Zimmermann[2], Bernhard Gerber[6],
Abbas A. Shabestari[7], Matthijs F. L. Meijs[8], Akira Sato[9], Kristian A. Øvrehus[10], Shona M. M. Jen
Juhani Knuuti[12], Ashraf Hamdan[13], Bjørn A. Halvorsen[14], Vladimir Mendoza-Rodriguez[15], Johar
Yung-Liang Wan[17], Christoph Langer[18], Sebastian Leschka[19], Eugenio Martuscelli[20], Said Ghos
Jean-Claude Tardif[22], Alejandra Rodriguez Sánchez[2], Robert Haase[2] and Marc Dewey[2,23,24*]



ESC European Society of Cardiology
European Heart Journal (2024) **00**, 1–123
https://doi.org/10.1093/eurheartj/ehae177

ESC GUIDELINES

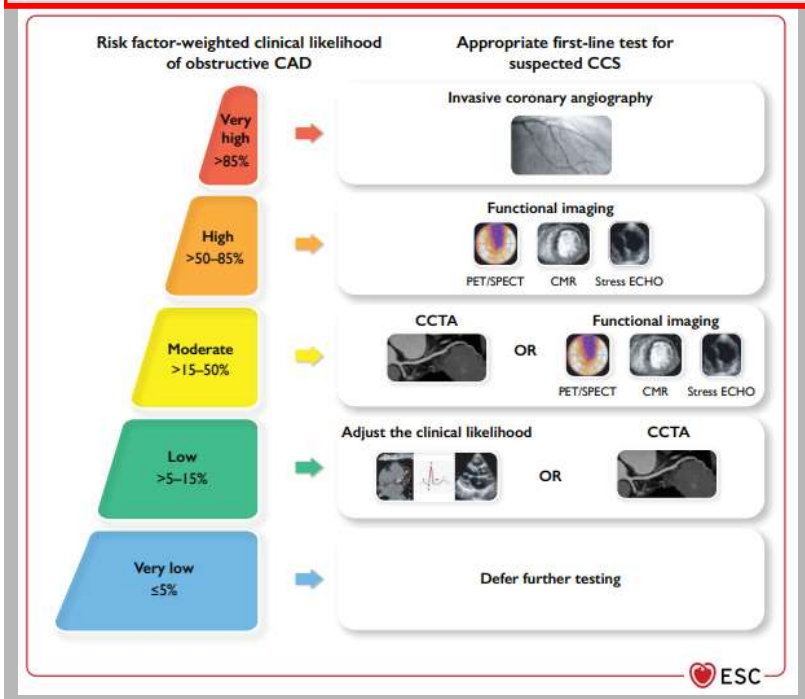
2024 ESC Guidelines for the management of chronic coronary syndromes

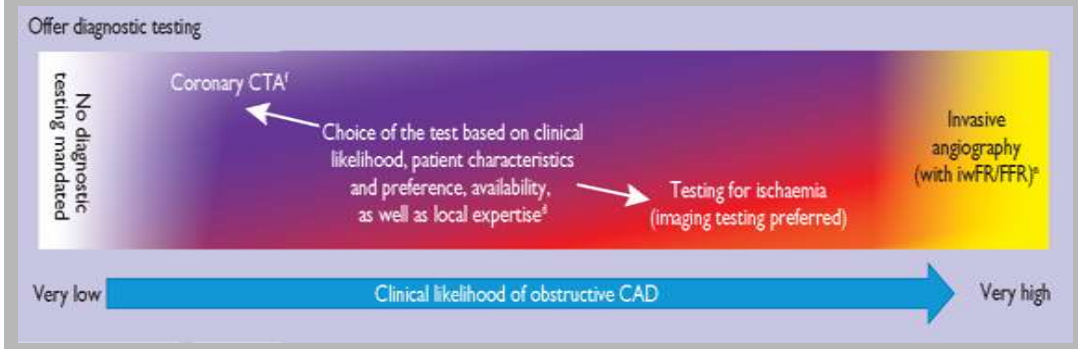
Recommendations for non-invasive anatomical imaging tests in the initial diagnostic management of individuals with suspected chronic coronary syndrome—coronary computed tomography angiography, if available, and supported by local expertise		
In individuals with suspected CCS and low or moderate (>5%–50%) pre-test likelihood of obstructive CAD, CCTA is recommended to diagnose obstructive CAD and to estimate the risk of MACE.	I	A
CCTA is recommended in individuals with low or moderate (>5%–50%) pre-test likelihood to refine diagnosis if another non-invasive test is non-diagnostic.	I	B

Recommendations for selection of initial diagnostic tests in individuals with suspected chronic coronary syndrome		
It is recommended to select the initial non-invasive diagnostic test based on pre-test likelihood of obstructive CAD, other patient characteristics that influence the performance of non-invasive tests, and local expertise and availability.	I	C
In symptomatic patients in whom the pre-test likelihood of obstructive CAD by clinical assessment is >5%, CCTA or non-invasive functional imaging for myocardial ischaemia is recommended as the initial diagnostic test.	I	B
To rule out obstructive CAD in individuals with low or moderate (>5%–50%) pre-test likelihood, CCTA is recommended as the preferred diagnostic modality.	I	B
CCTA is recommended in individuals with low or moderate (>5%–50%) pre-test likelihood if functional imaging for myocardial ischaemia is not diagnostic.	I	B

Recommendations for non-invasive anatomical imaging tests in the initial diagnostic management of individuals with suspected chronic coronary syndrome—coronary computed tomography angiography, if available, and supported by local expertise

In individuals with suspected CCS and low or moderate (>5%–50%) pre-test likelihood of obstructive CAD, CCTA is recommended to diagnose obstructive CAD and to estimate the risk of MACE.	I	A
CCTA is recommended in individuals with low or moderate (>5%–50%) pre-test likelihood to refine diagnosis if another non-invasive test is non-diagnostic.	I	B
CCTA is not recommended in patients with severe renal failure (eGFR <30 mL/min/1.73 m^2), decompensated heart failure, extensive coronary calcification, fast irregular heart rate, severe obesity, inability to cooperate with breath-hold commands, or any other conditions that can make obtaining good imaging quality unlikely.	III	C





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kalcifikace

arytmie

obezita

srdeční selhání

renální selhání

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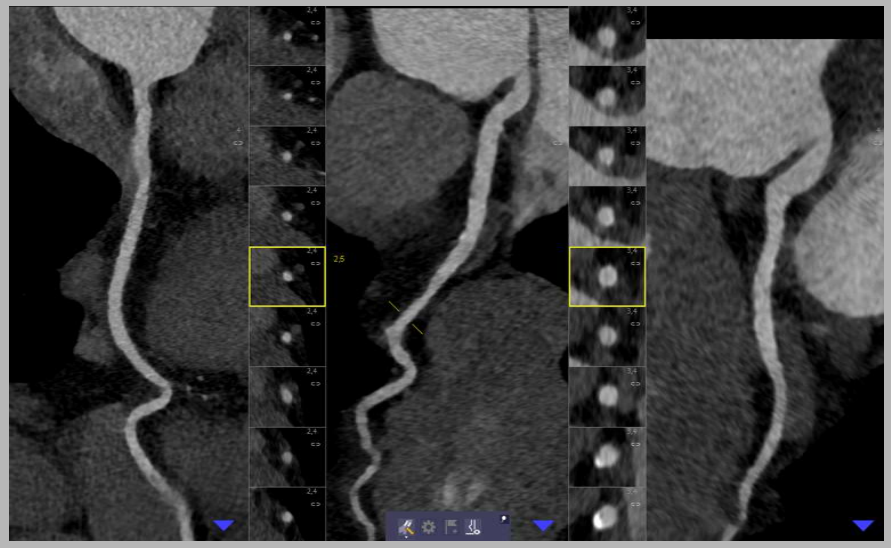

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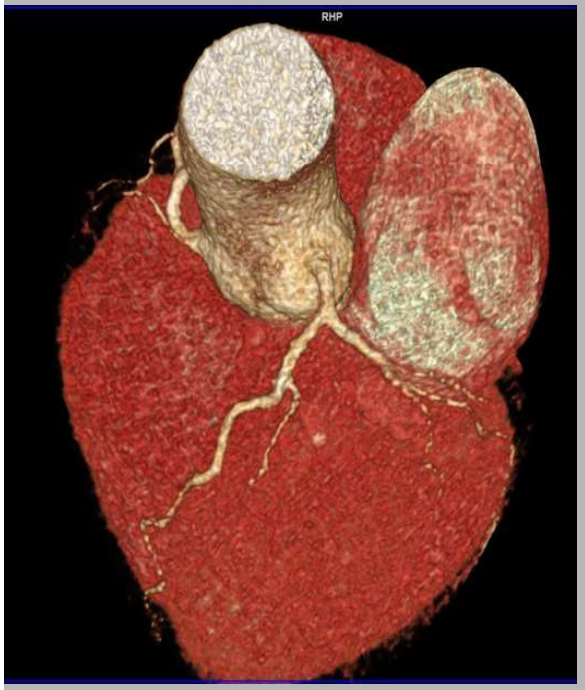
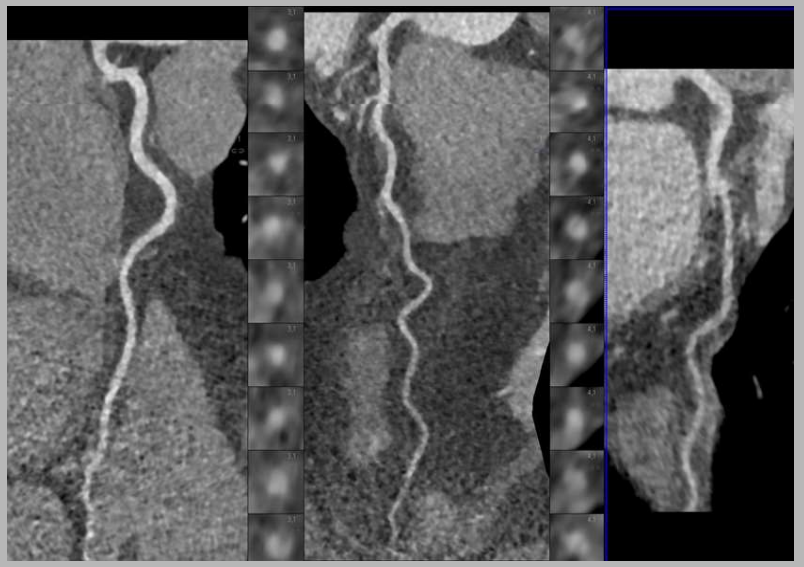




kalcifikace

arytmie

obezita

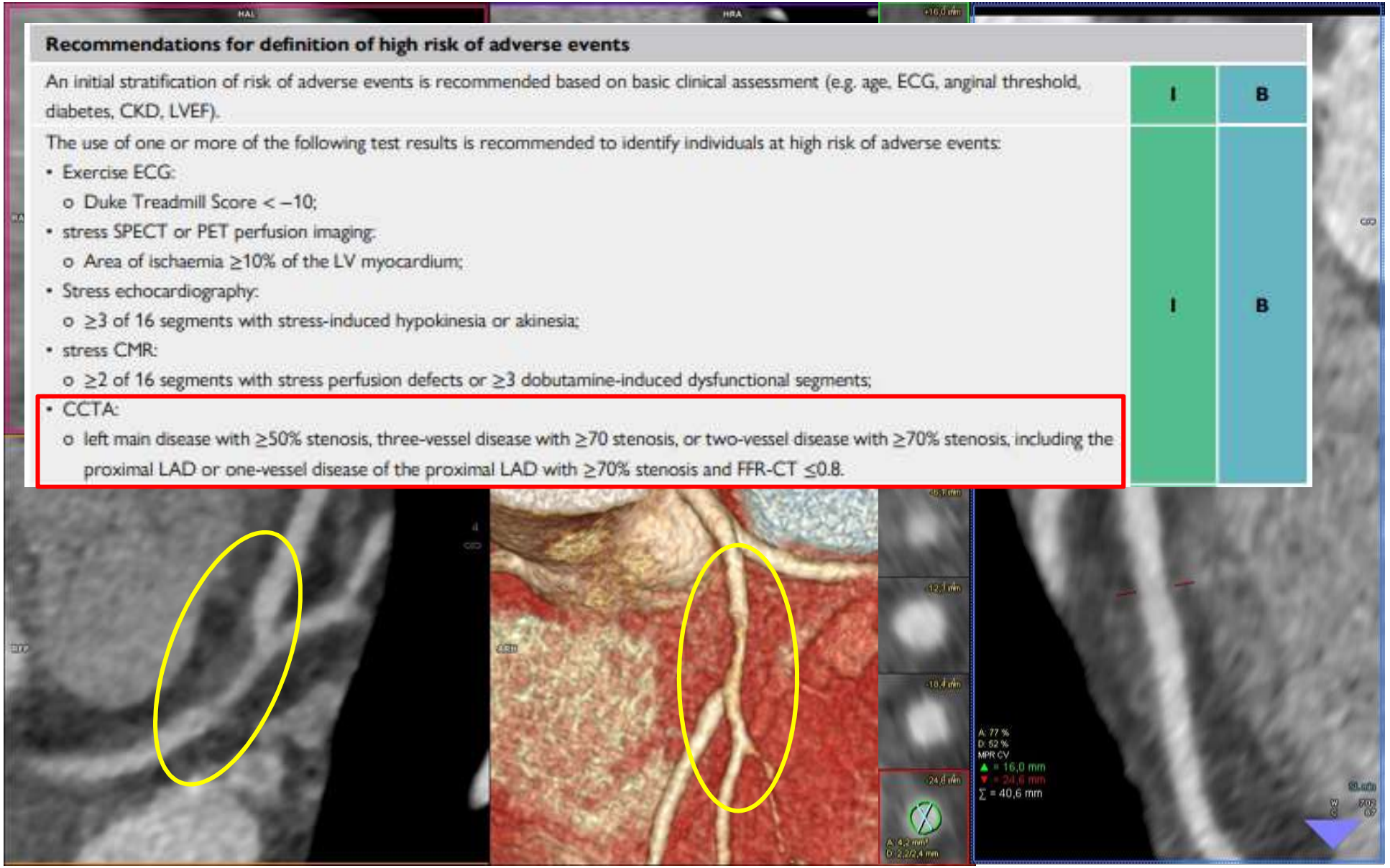
srdeční selhání

renální selhání

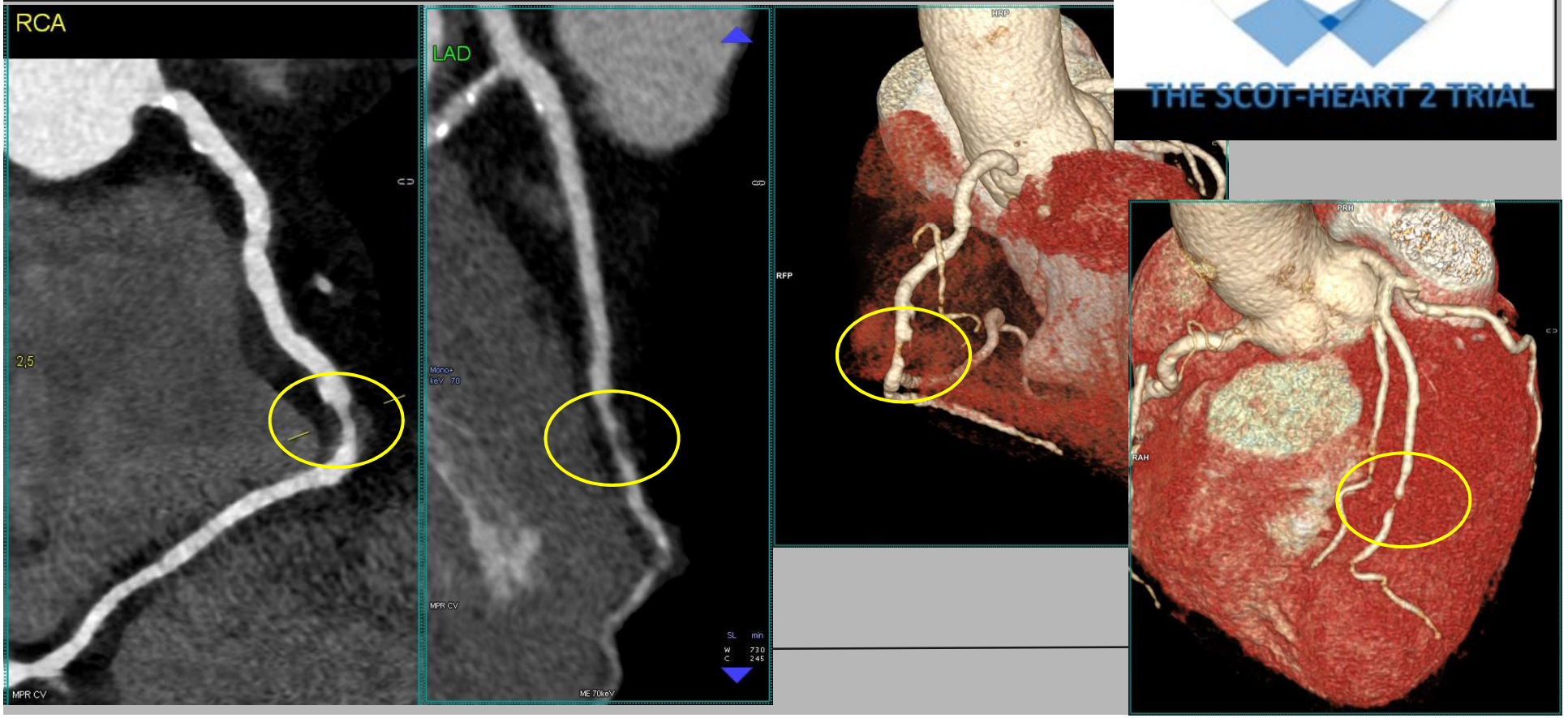
Recommendations for definition of high risk of adverse events

An initial stratification of risk of adverse events is recommended based on basic clinical assessment (e.g. age, ECG, anginal threshold, diabetes, CKD, LVEF).	I	B
The use of one or more of the following test results is recommended to identify individuals at high risk of adverse events:	I	B

- Exercise ECG:
  - Duke Treadmill Score < –10;
- stress SPECT or PET perfusion imaging:
  - Area of ischaemia ≥10% of the LV myocardium;
- Stress echocardiography:
  - ≥3 of 16 segments with stress-induced hypokinesia or akinesia;
- stress CMR:
  - ≥2 of 16 segments with stress perfusion defects or ≥3 dobutamine-induced dysfunctional segments;
- CCTA:
  - left main disease with ≥50% stenosis, three-vessel disease with ≥70 stenosis, or two-vessel disease with ≥70% stenosis, including the proximal LAD or one-vessel disease of the proximal LAD with ≥70% stenosis and FFR-CT ≤0.8.



“*gaps in evidence*” - subklinická AS

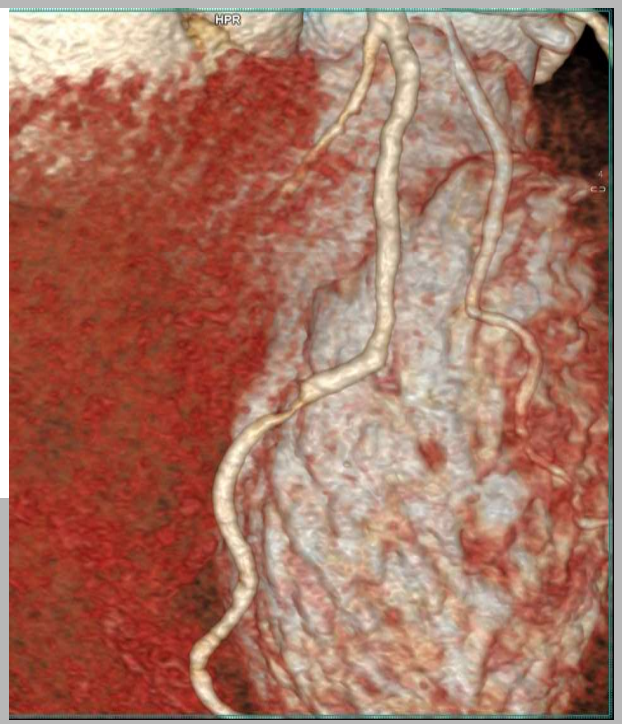


Researchers Unveil 10-Year Results Of Scottish CT Trial SCOT-HEART

Posted on September 2, 2024

After 10 years of follow-up, the research team found that coronary heart disease death or nonfatal myocardial infarction was lower in the CCTA group compared with the standard care group (n = 137, 6.6% vs. n = 171, 8.2%) and this was primarily driven by a reduction in myocardial infarction (n = 90, 4.3% vs. n = 124, 6%).

The team found no difference in all-cause mortality (n = 168, 8.1% vs. n = 166, 8%) or coronary revascularization between groups (n = 313, 15.1% vs. n = 317, 15.3%).



CCTA - “*first line*”?

technická stránka

rychlost/dostupnost

jednoduchost/bezpečnost

“kvalita”

NPV 92 % a více

hodnocení

kvantifikace stenozy

zpětná úprava dat

popis