



LUCCA 5.0, Lucerne

Dealing with the soft plaque: DCB vs. Stent

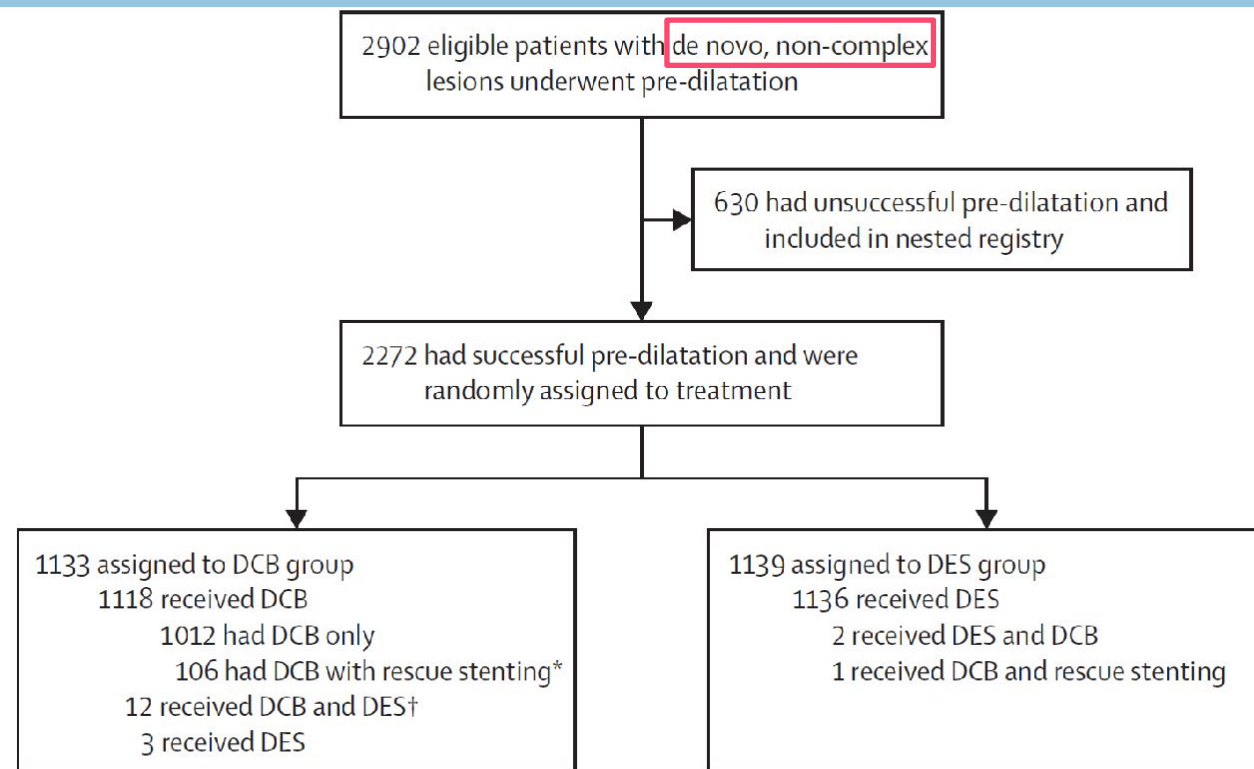
Adnan Kastrati

TUM Universitätsklinikum Deutsches Herzzentrum

Plaque characteristics, DCB and DES

- **Lessons from RCTs DCB vs. DES for de novo lesions**
- Identification of plaque type
- Specific RCT evidence and ongoing RCTs

Lessons from RCTs: REC-CAGEFREE trial

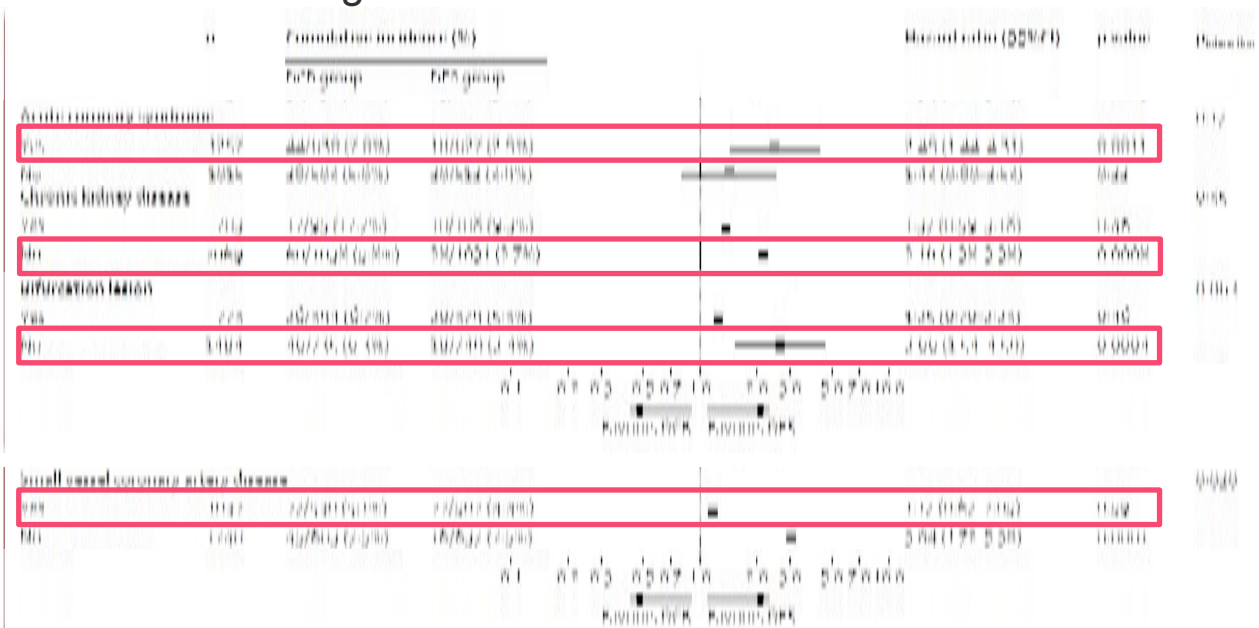


Clinical presentation

ST-elevation myocardial infarction	181 (16.0%)	185 (16.2%)
Non-ST-elevation myocardial infarction	214 (18.9%)	201 (17.6%)
Unstable angina	235 (20.7%)	241 (21.2%)
Chronic coronary syndrome	503 (44.4%)	512 (45.0%)

In the coronary arteries, **calcium** is less seen in:

- ACS
- Absence of CKD
- Non-bifurcations
- Small vessel segments

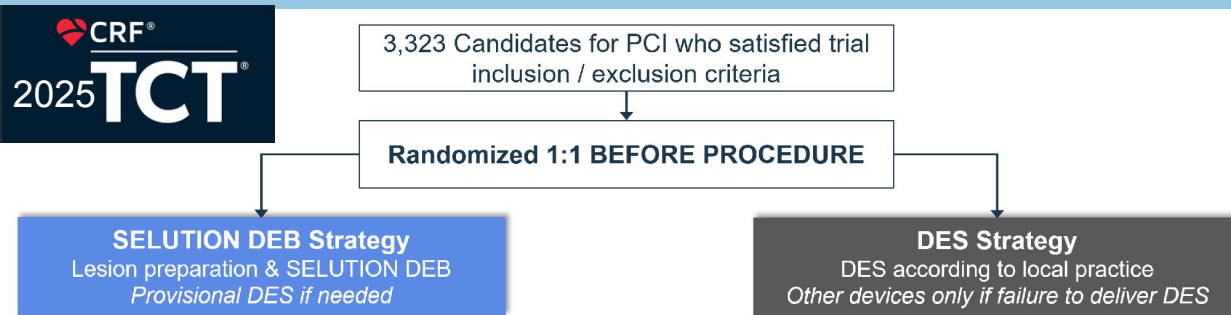


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EDITORIAL COMMENT

Stenting for Small Coronary Vessels: A Contestable Winner*

Lessons from RCTs: SELUTION DeNovo trial



In the coronary arteries, **calcium** is less seen in:

- Younger patients
- Non-bifurcations
- Short lesions
- Mild or no calcification

SUBGROUP		SELUTION DEB Strategy	DES Strategy	Absolute Risk Difference	AR (95% CI)
Age ≤ 70 yrs	No (N = 1,575)	5.4%	5.8%		1.55 (0.00, 3.10)
	Yes (N = 768)	0.0%	0.1%		1.10 (-4.33, 2.03)
Any bifurcation lesion	No (N = 2,068)	4.0%	3.8%		1.18 (0.03, 2.33)
	Yes (N = 1,245)	0.0%	0.3%		0.32 (-0.89, 2.09)
Any long lesion (> 25mm)	No (N = 2,642)	6.0%	5.0%		1.00 (0.07, 2.09)
	Yes (N = 759)	0.0%	0.0%		-0.02 (-1.47, 1.43)
Any severe or moderate calcification	No (N = 3,484)	7.5%	7.4%		0.44 (0.04, 0.84)
	Yes (N = 839)	0.0%	0.4%		-0.02 (-0.28, 0.24)

FAVORS SELUTION DEB FAVORS DES

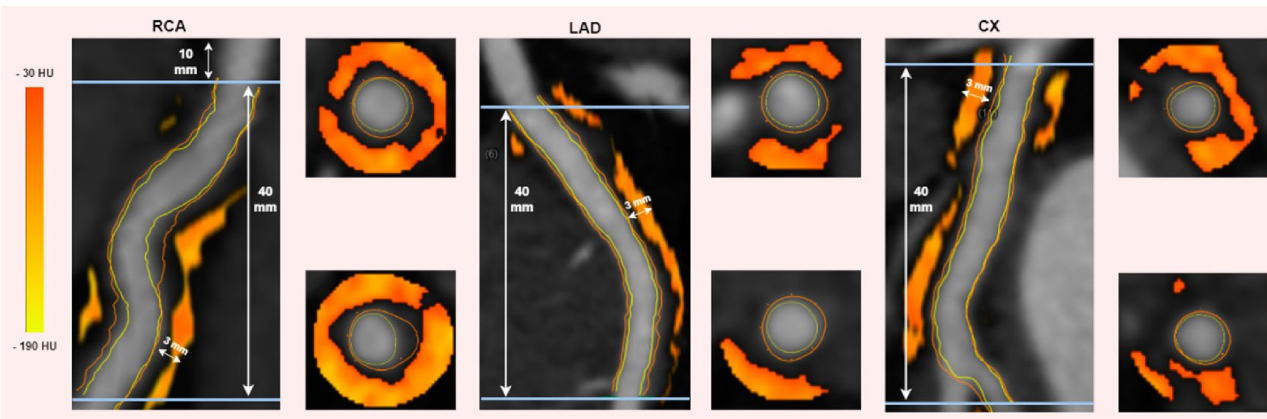
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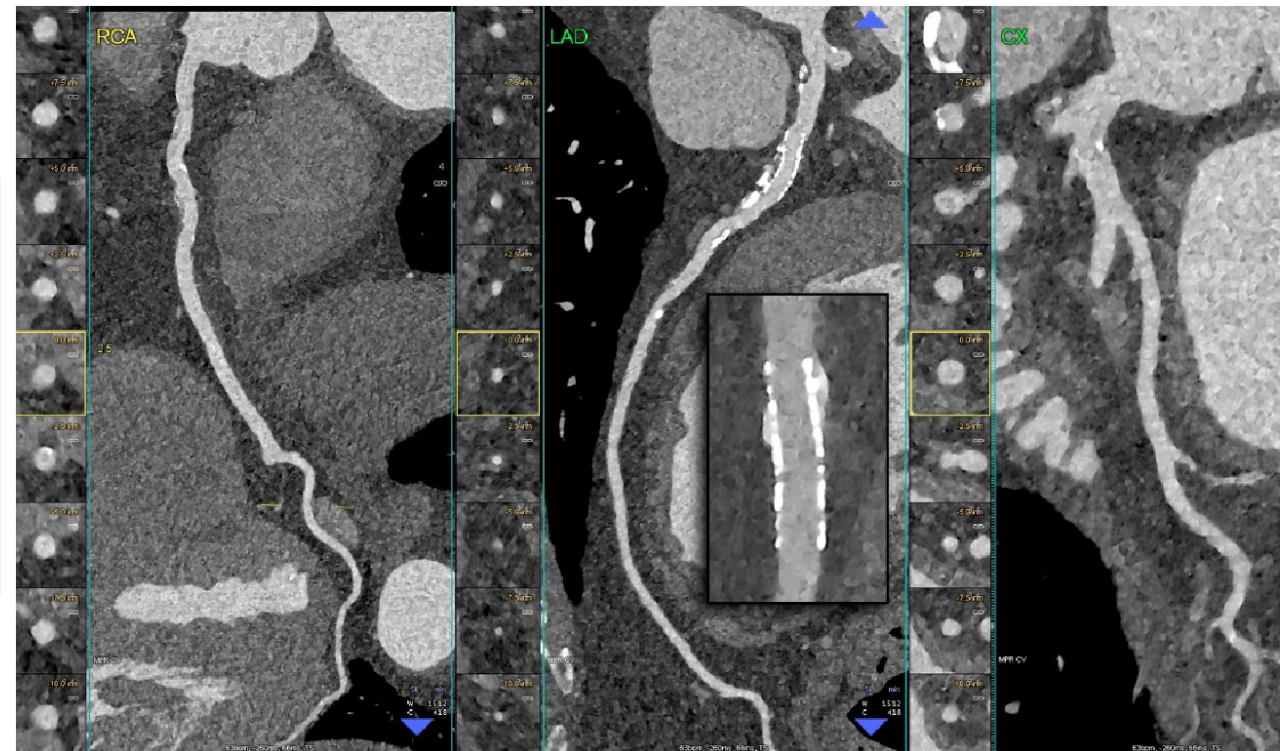
Identification of plaque type prior to cath lab

Coronary Computed Tomography Angiography (CCTA)

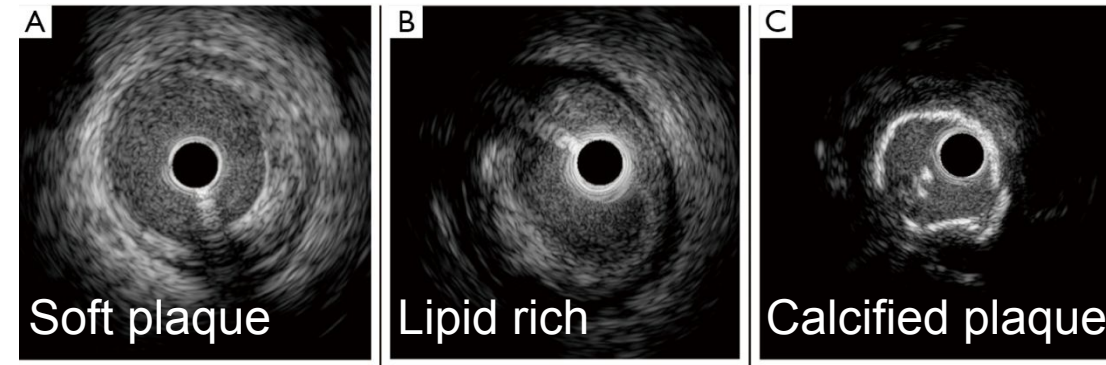
- Hounsfield units (HU, lower for soft plaques)
- Pericoronary adipose tissue attenuation (PCAT, stronger for soft plaques)



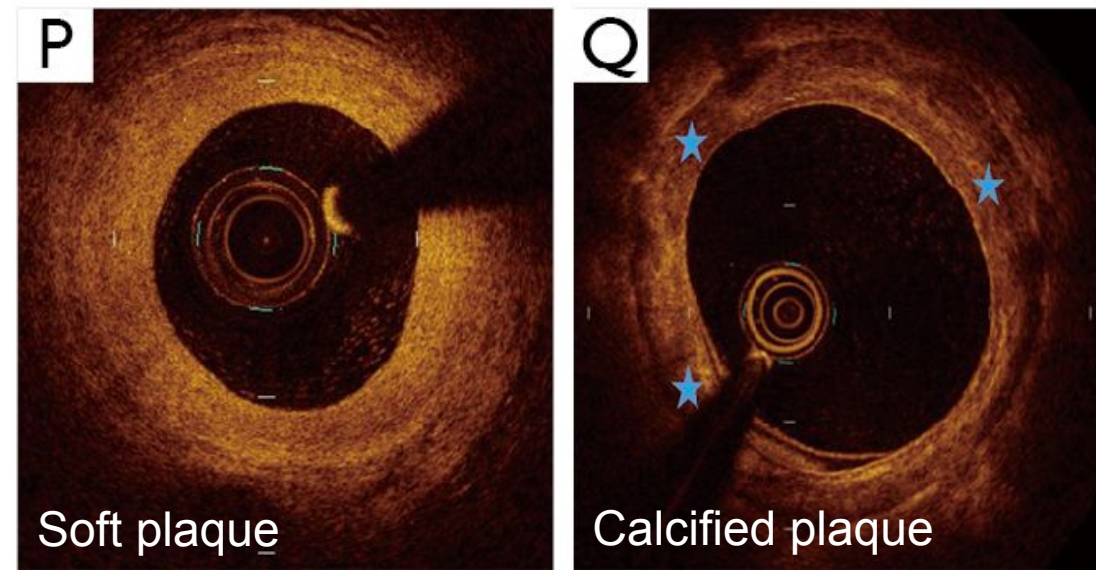
Photon-Counting Computed Tomography (PCCT)



Identification of plaque type in the cath lab (Coronary angiography is not an accurate option for this)

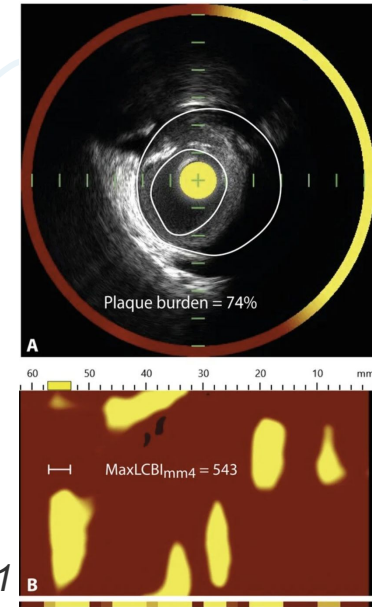


Cardiovasc Diagn Ther 2016;6(4):368-381

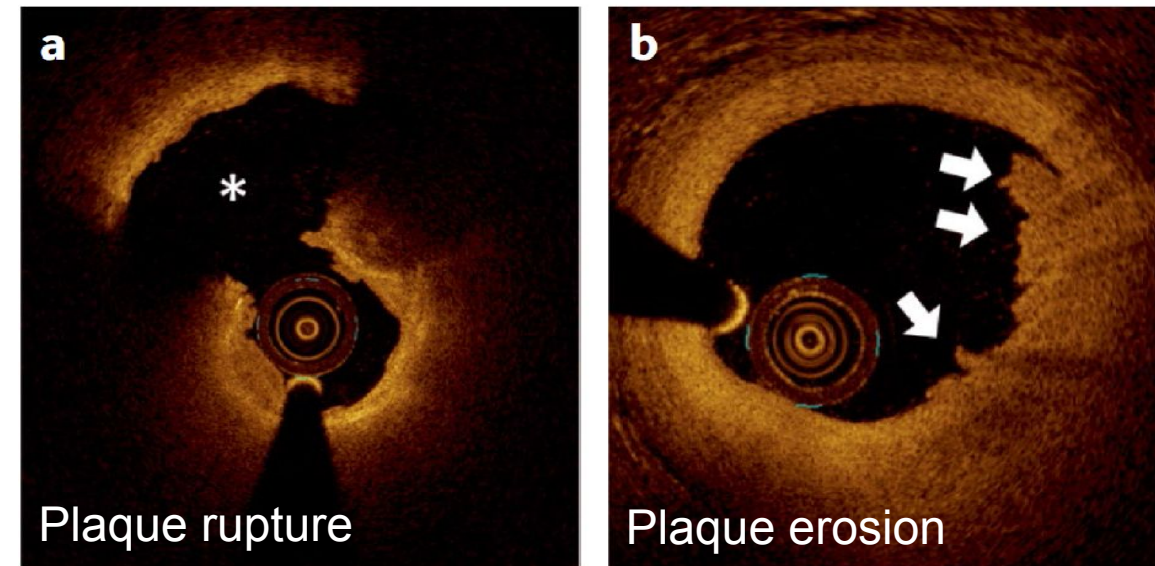


Cardiovasc Diagn Ther 2020;10(5):1389-14

Vulnerable plaque in NIRS-IVUS



Journal of Clinical Medicine 2022;11(5):1361



Nature Reviews Cardiology 2022; 684–703

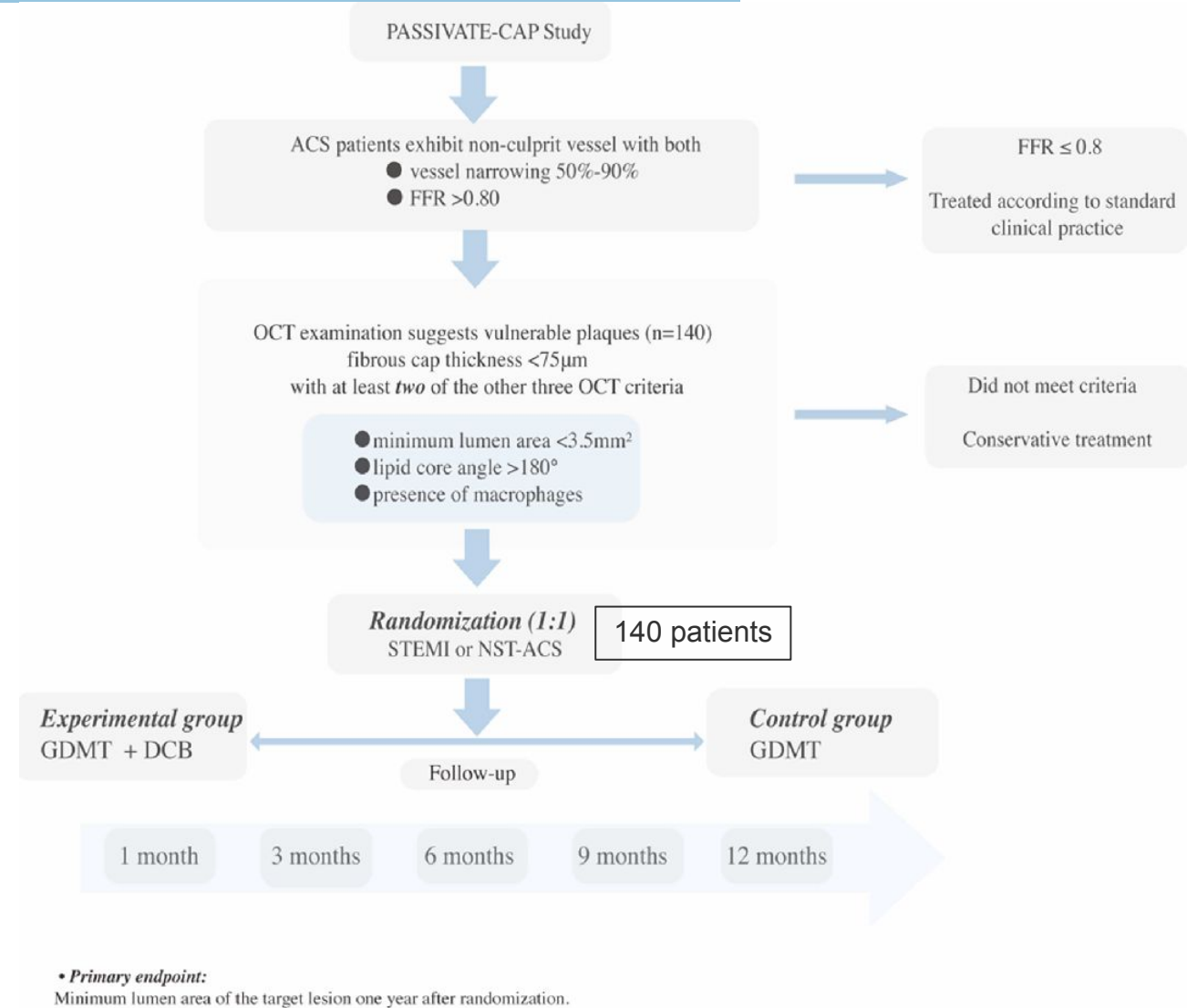
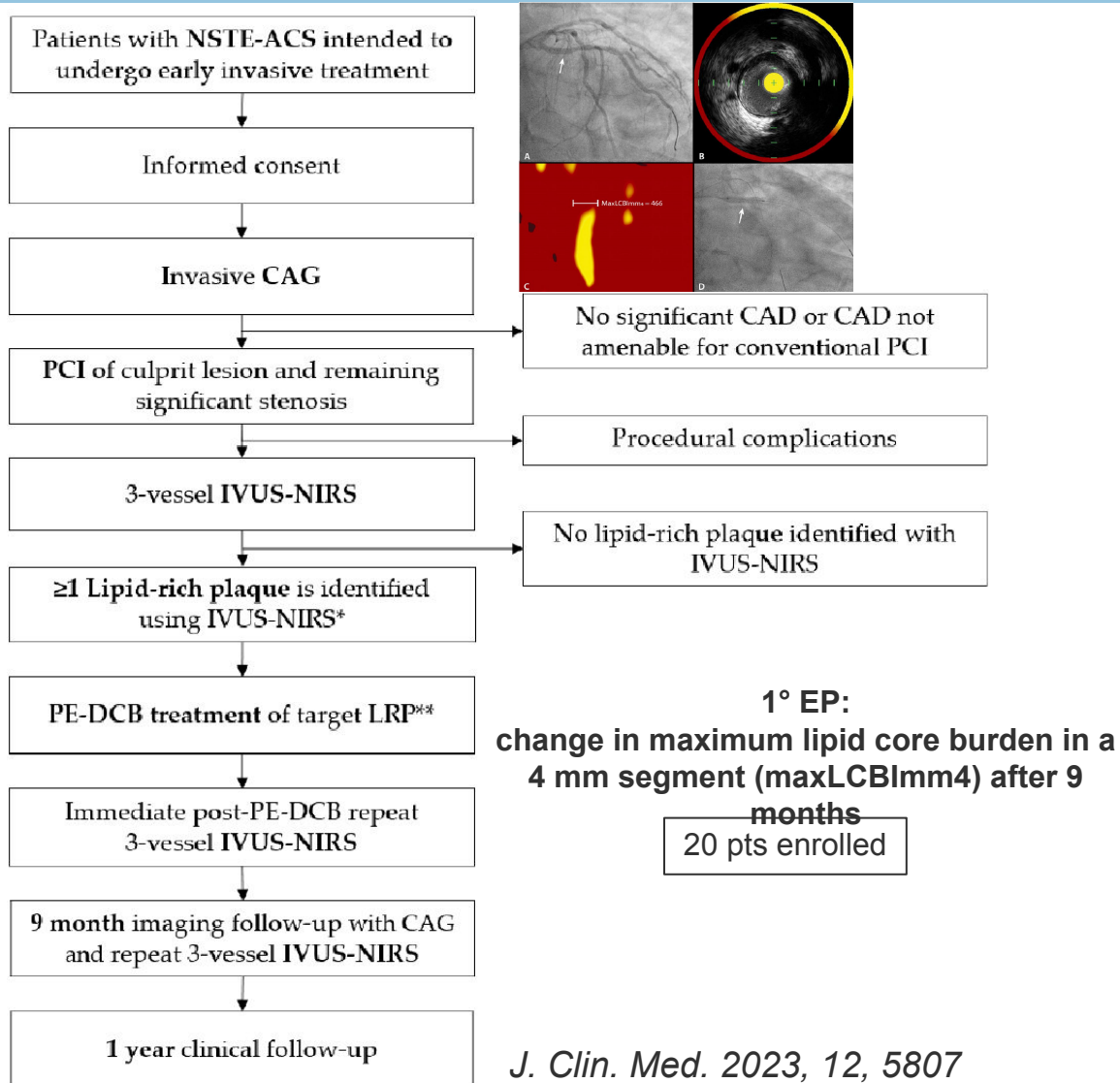
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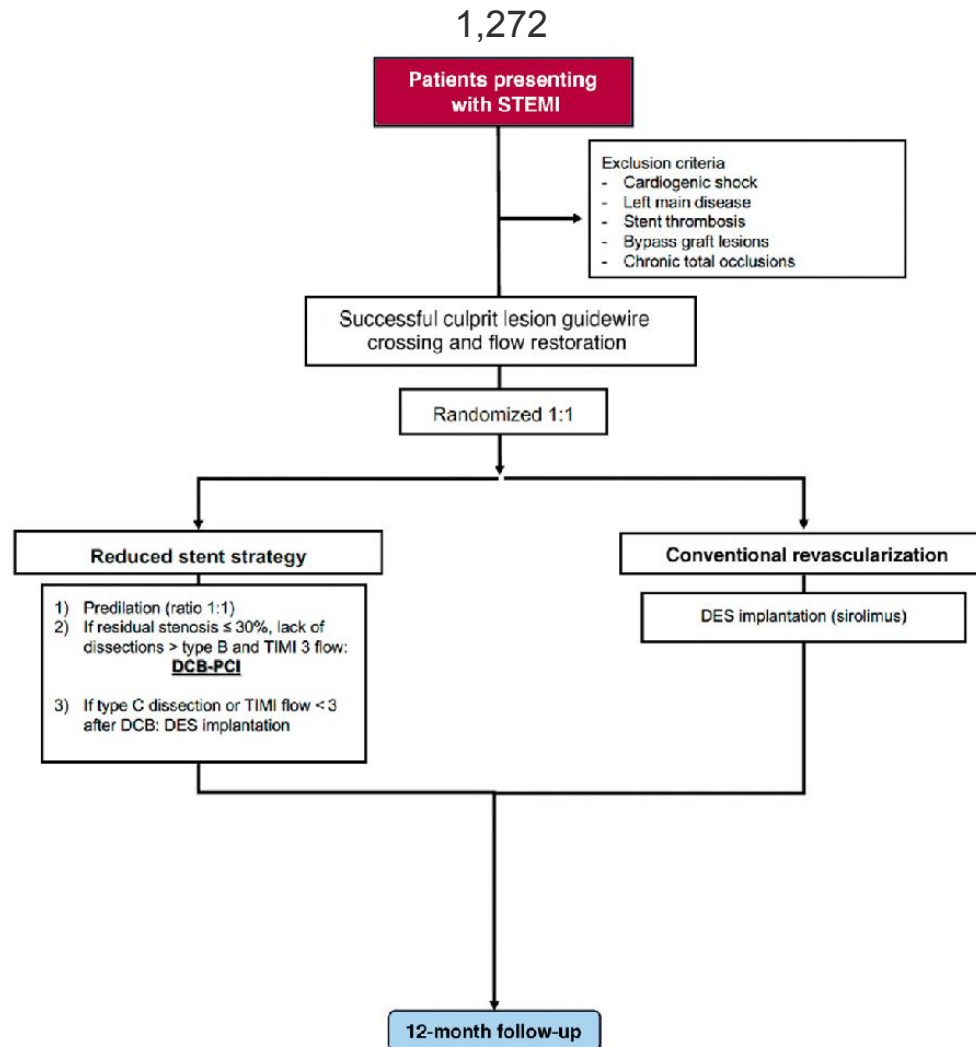
RCTs of DCB vs. DES in STEMI/NSTEMI

Trial	Pts No	1° Arm	2° Arm	3° Arm	1° Endpoint
DEB AMI (2012)	150	Dior + BMS	DES	BMS	Late lumen loss
Gobic et al. (2017)	75	SeQuent	DES	-	MACE
REVELATION (2019)	120	Pantera Lux	DES	-	FFR
Hao et al. (2021)	80	Yinyi PCB	DES	-	MACE
PEPCAD NSTEMI (2020)	210	SeQuent	DES	BMS	TLF

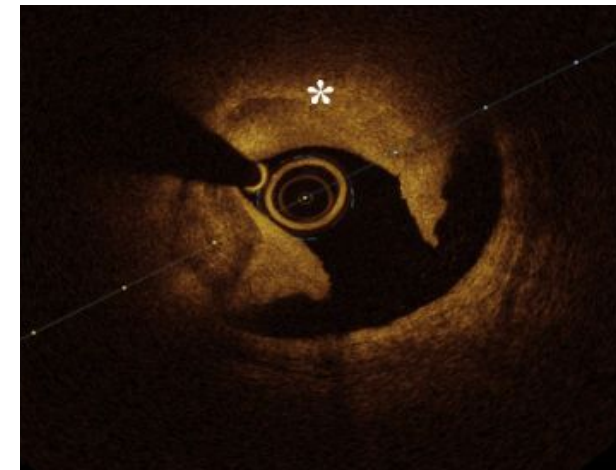
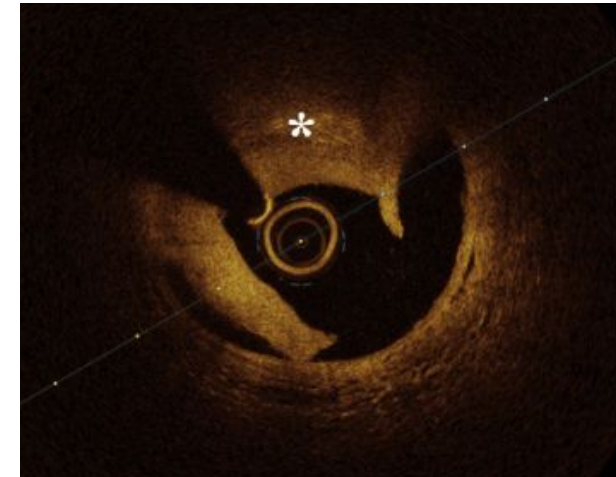
DEBuT-LRP Study: DCB for stabilization of vulnerable lipid-rich plaques



COPERNICAN trial



It will not be easy for the drug to find the way to the vessel wall



Fairness is required by future DCB vs. DES trials (avoid the example of SELUTION DeNovo)

Procedural Characteristics		
Characteristic	SELUTION DEB Strategy	DES Strategy
Number of procedures	1783	1776
Specialty balloons include scoring, cutting and high-pressure balloons	Yes	No

*Specialty balloons include scoring, cutting and high-pressure balloons
Antithrombotic regimen includes aspirin, clopidogrel, statins, and oral anticoagulation therapy
†Two circumflex and two posterior TAPs

Lesion preparation should be as accurate for DES as it is for DCB,
exactly as Florim Cuculi decided to do for the SPARX trial

Conclusion

If DCB has to choose between **soft** and **hard (calcified)** plaques,
I believe its choice will not be **soft** plaques.



