

OCTOBER: OCT vs. Angiography for True Bifurcation Lesions

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On behalf of the **OCTOBER** trial investigators

Disclosures

- Institutional research grants from Abbott, Biosensors, Boston Scientific, Medis medical imaging, Reva medical
- Speaker fees from Abbott, Terumo and Cardirad

Bifurcation lesions

- PCI of coronary bifurcations is associated with worse clinical outcome compared with PCI of simpler lesions
 - SYNTAXES trial
 - 10-year mortality: 30.1% vs 19.8%¹
 - E-Ultimaster registry (35,839 patients)
 - MI, TLR and ST increased with bifurcation PCI²

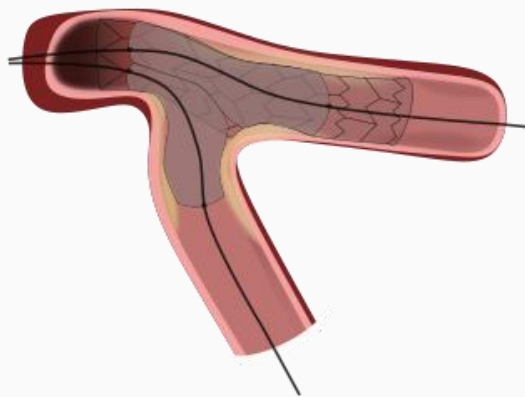


¹Ninomiya K et al. 10-years SYNTAX Trial. JACC Cardiovasc Interv 2022

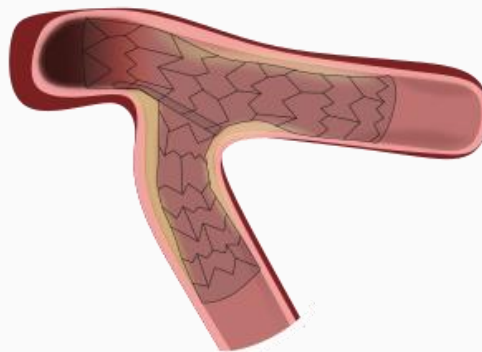
²Mohamed MO et al. One-year E-Ultimaster registry. EuroIntervention 2020

Complex PCI for true bifurcation lesions

- True bifurcation lesions may require treatment by complex stenting techniques^{6,7}



**One-stent strategy with
kissing balloon inflation**



Two-stent strategy

⁶Cheol Woong Yu et al. COBIS II. JACC Cardiovasc Interv. 2015

⁷Chen SL et al. DK-CRUSH II. J Am Coll Cardiol. 2011

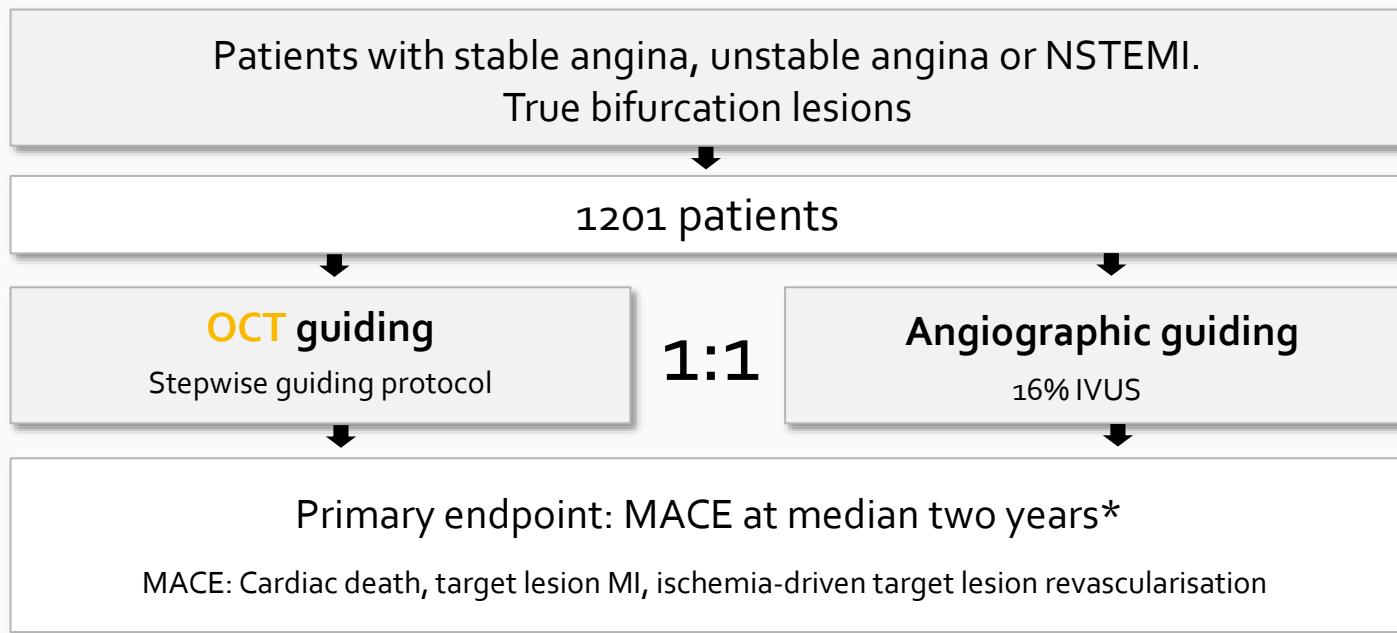
OCTOBER trial overview

- Investigator-initiated study
- Open label design
- 38 heart centers in Europe
- On-site training in OCT-guided PCI
- Feedback on OCT-guided cases

Funding: Abbott and Aarhus University

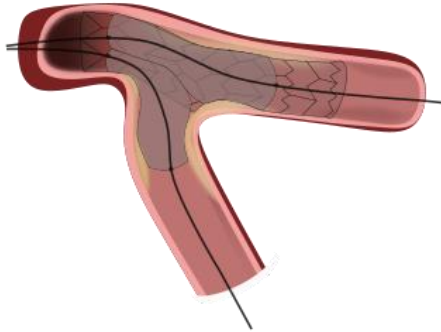


OCTOBER trial overview

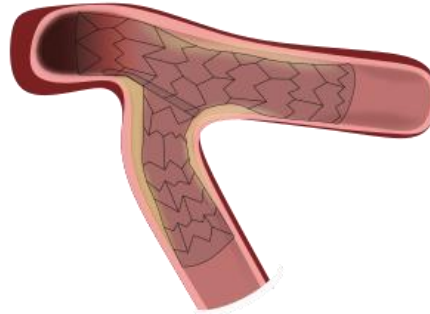


Stent techniques in OCTOBER

35% and 36% had one-stent with KBI



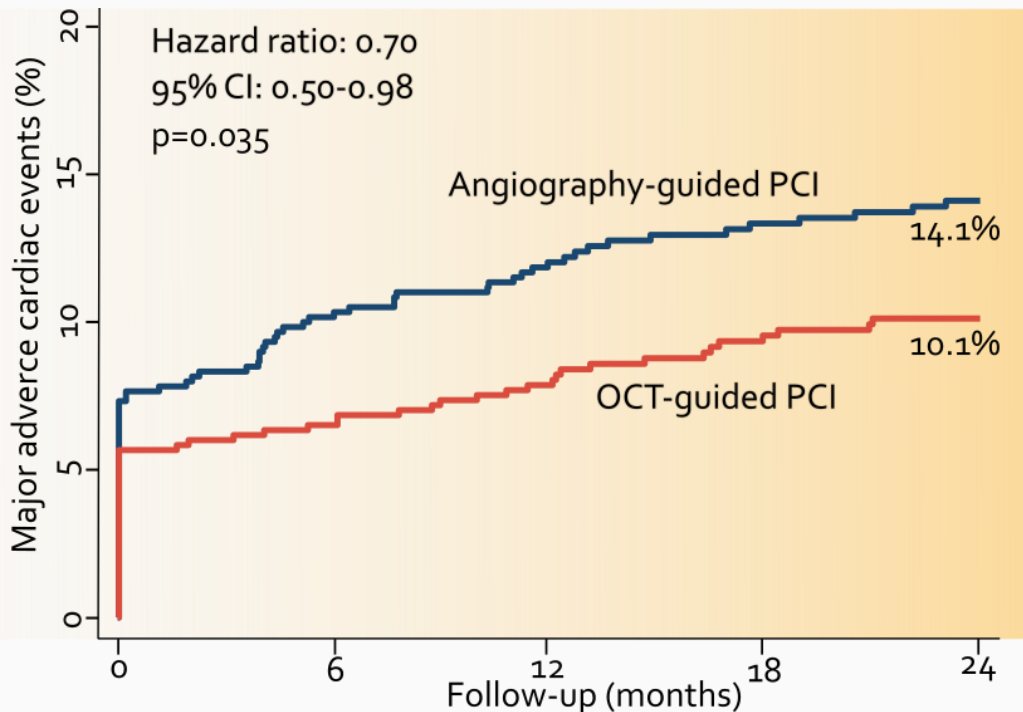
65% and 64% had a two-stent strategy



	OCT	Angio
▪ Culotte	43%	42%
▪ DK Crush	34%	38%
▪ TAP	13%	12%
▪ T-stent	9%	8%

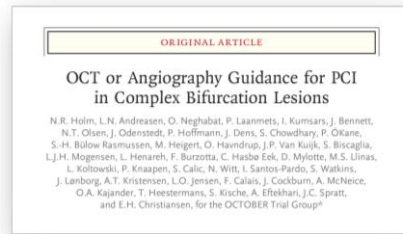
Holm et al NEJM 2023

Primary endpoint: 2-year MACE



30% RR reduction

The NEW ENGLAND
JOURNAL of MEDICINE



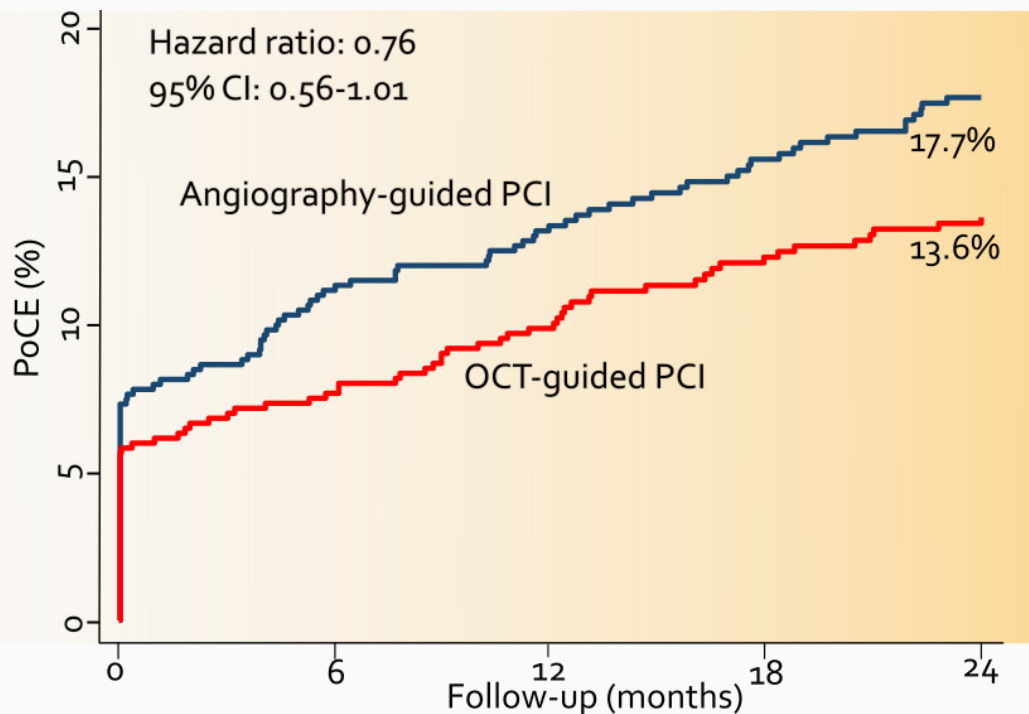
MACE: cardiac death, target lesion myocardial infarction, ischemia-driven target lesion revascularization

Kaplan Meier estimates
Comparison by unadjusted Cox analysis
Confirmed by adjusted Cox analysis

No. At Risk:

	0	6	12	18	24
OCT-guided PCI	600	553	537	472	439
Angiography-guided PCI	601	534	509	452	408

Patient-oriented Composite Endpoint (PoCE)



No. At Risk:

	0	6	12	18	24
OCT-guided PCI	600	547	527	460	427
Angiography-guided PCI	601	530	504	445	397

PoCE : All-cause mortality, Any myocardial infarction, any repeat revascularization

Kaplan Meier estimates
Secondary endpoint. Not powered

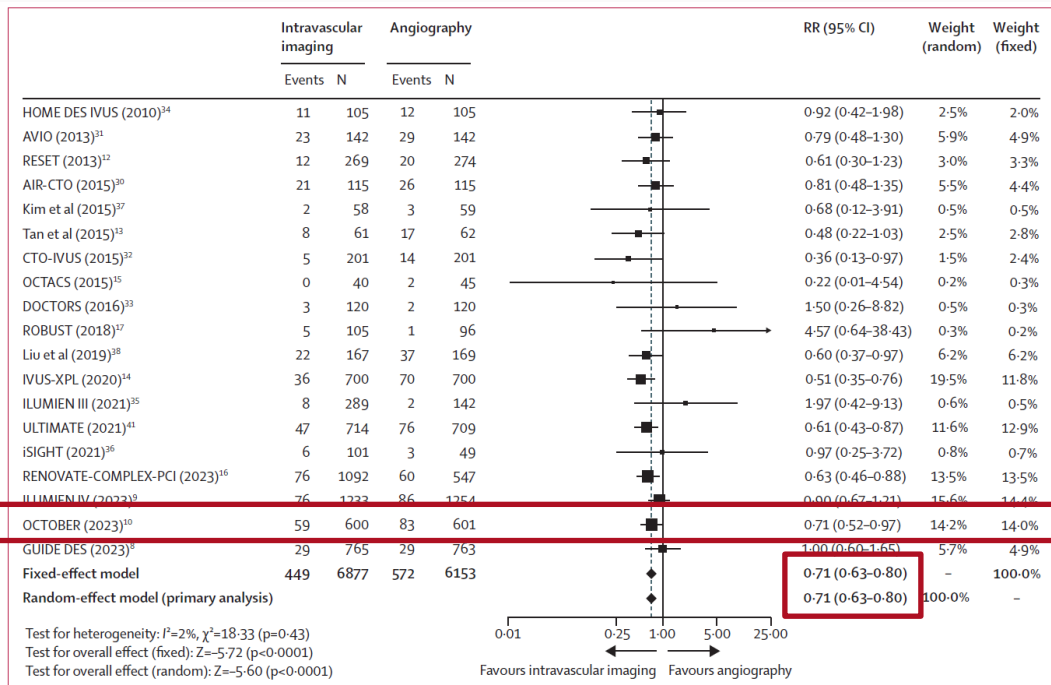
Holm et al NEJM 2023

The totality of data

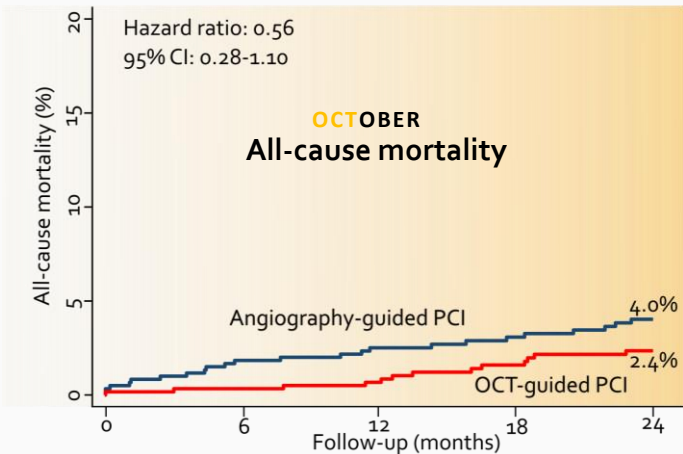
- 22 randomized trials
 - *IVUS vs angiography*
 - *OCT vs angiography*
 - *IVUS or OCT vs angiography*
 - *OCT vs IVUS*
 - All using DES
- 15.964 patients
- Mean FU: 24.7 months
- Primary endpoint: TLF

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

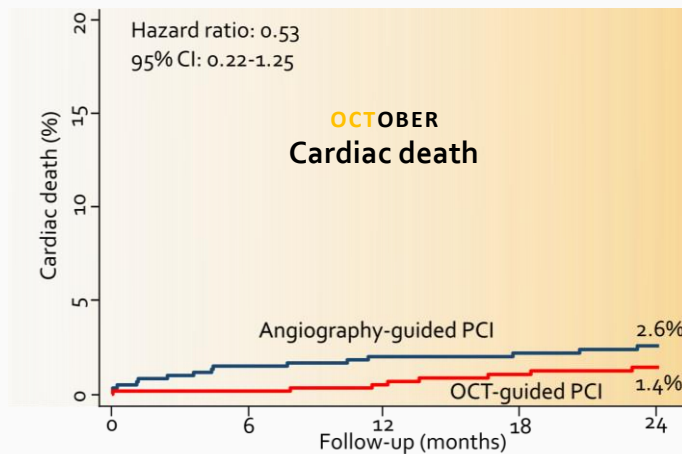
Gregg W Stone, Evald H Christiansen, Ziad A Ali, Lene N Andreasen, Akiko Maehara, Yousif Ahmad, Ulf Landmesser, Niels R Holm



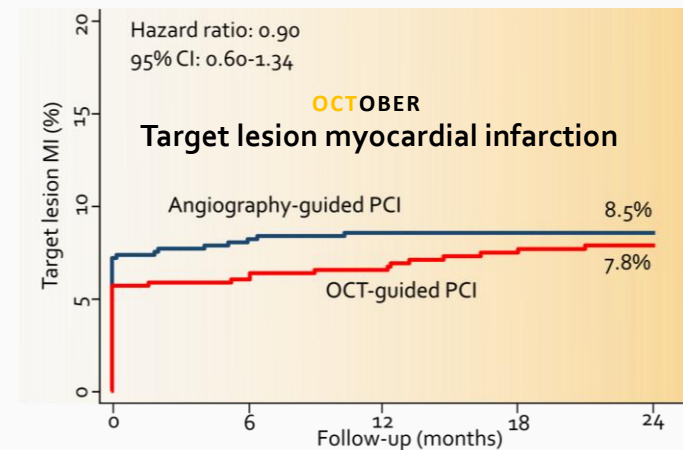
The Lancet 2024



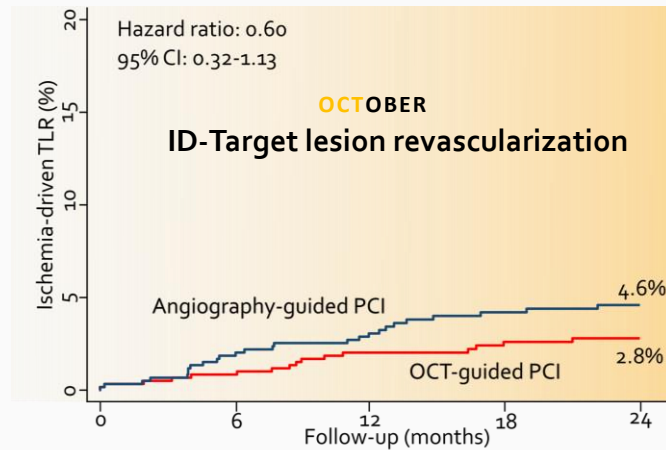
Metaanalysis
25%



Metaanalysis
45%



Metaanalysis
18%

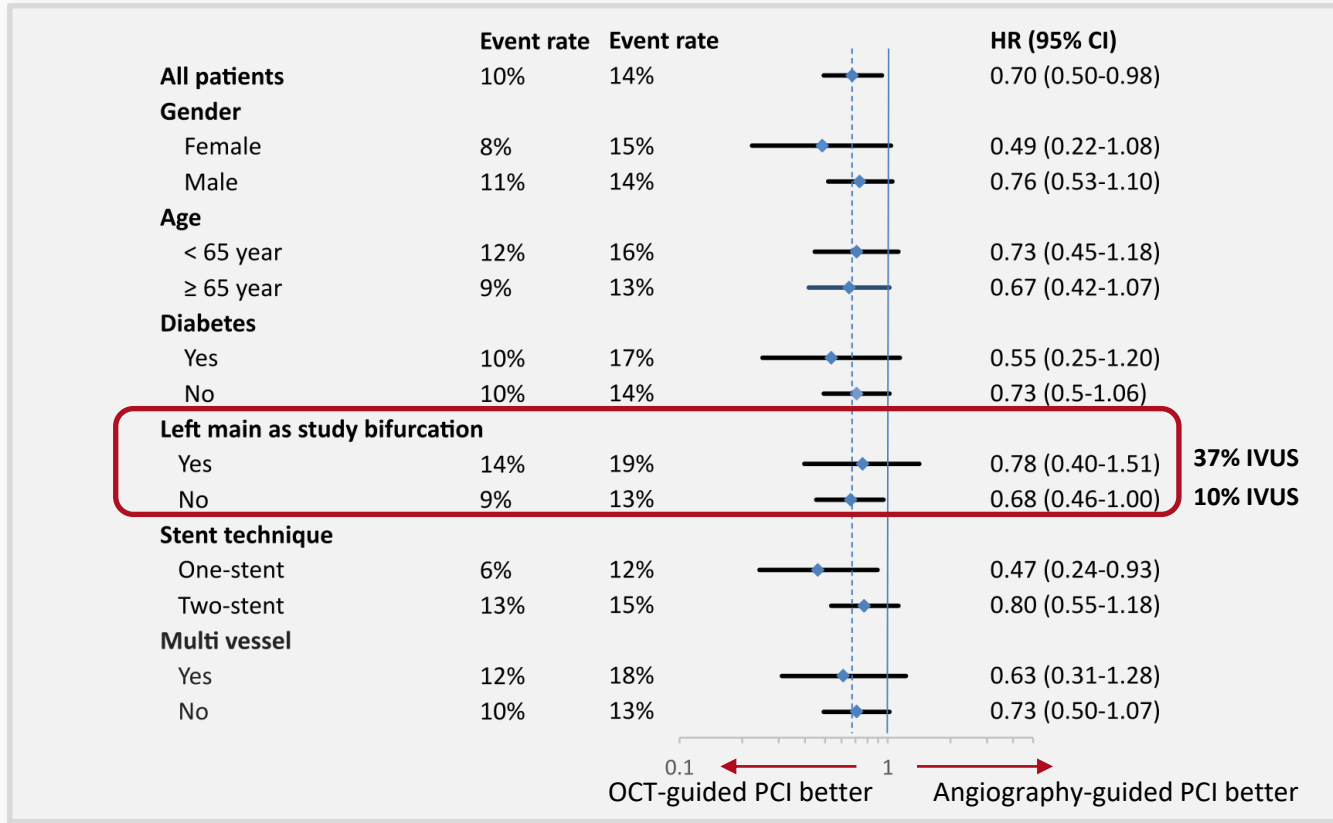


Metaanalysis
28%

Holm et al NEJM 2023
Stone et al. LANCET 2024

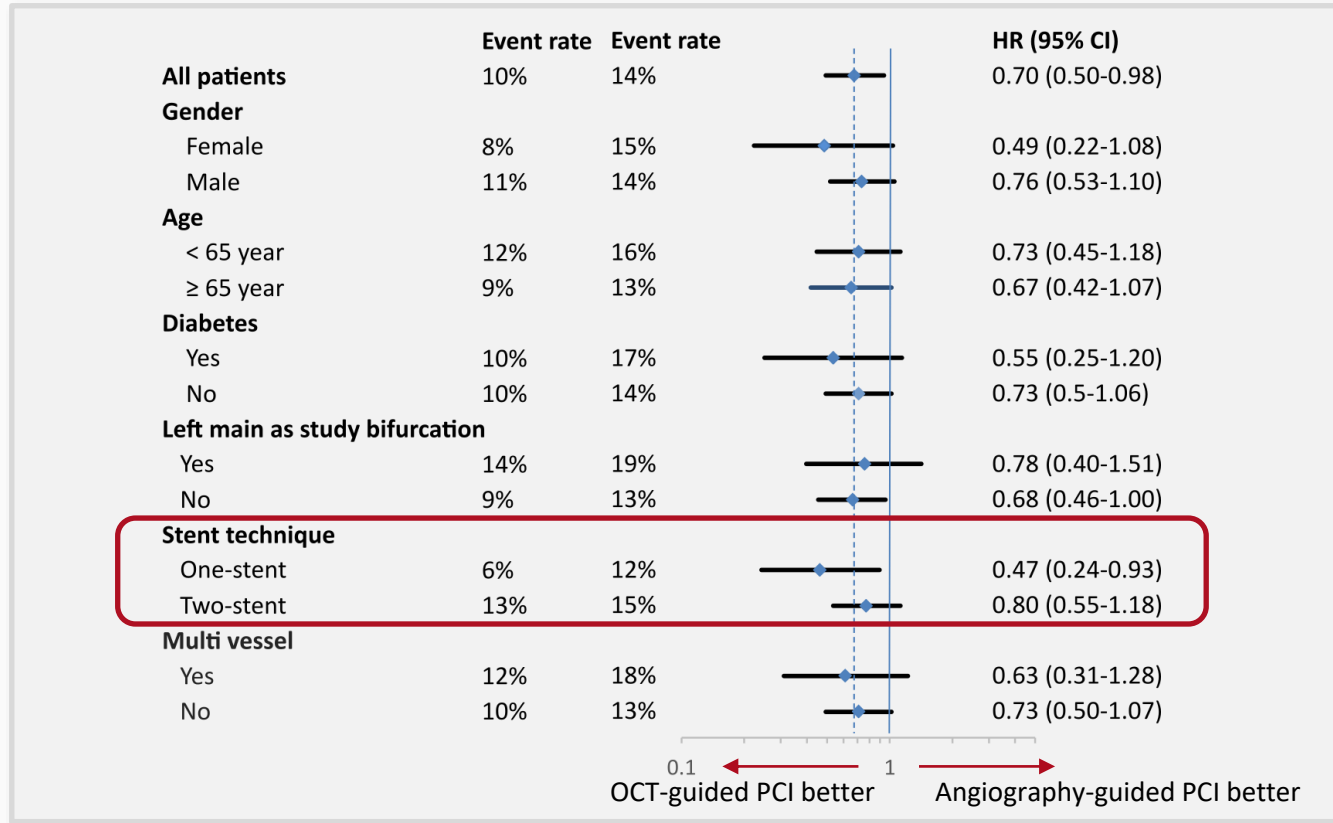
OCTOBER:
Kaplan Meier estimates
Secondary endpoint. Not powered

OCTOBER subgroup analyses 1/2



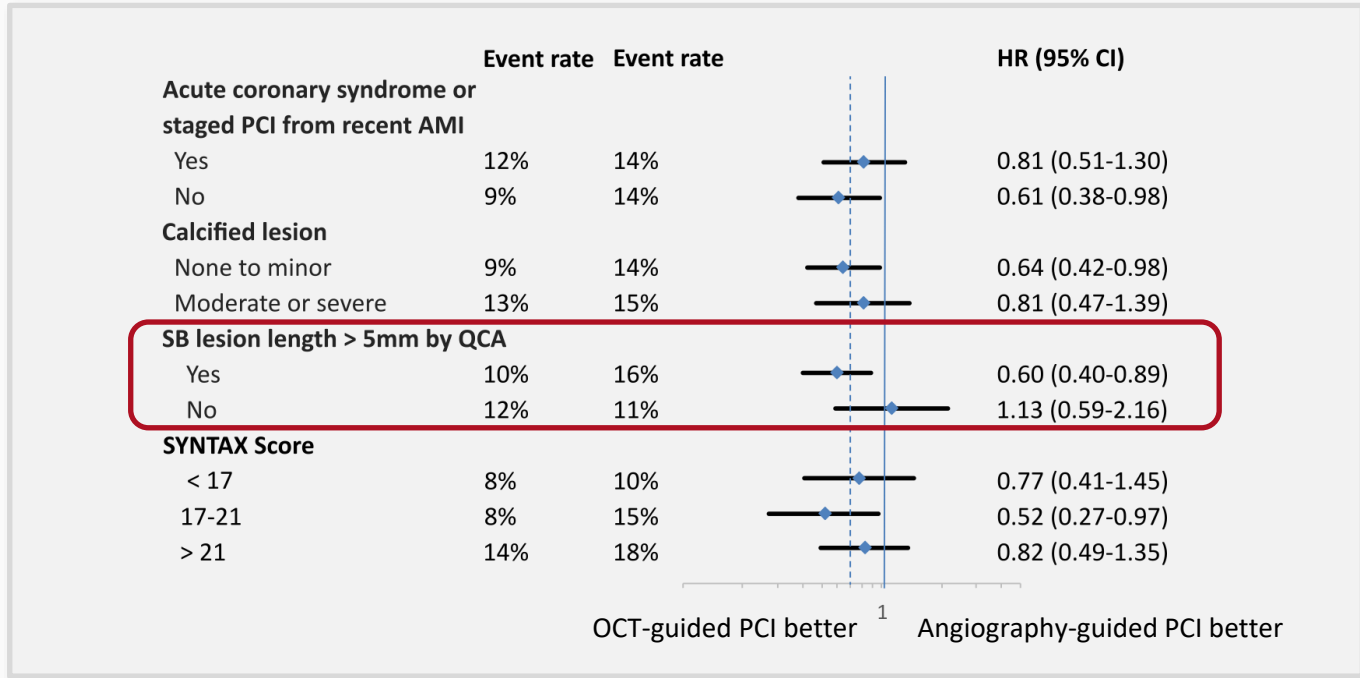
Holm et al NEJM 2023

OCTOBER subgroup analyses 1/2



Holm et al NEJM 2023

OCTOBER Subgroup analyses 2/2



Holm et al NEJM 2023

Conclusion

- OCT-guided PCI was associated with a lower incidence of the composite endpoint of two-year MACE than angiography-guided PCI in treatment of complex bifurcation lesions
- The totality of data show that routine use of IVI in PCI reduces mortality substantially
- The outcomes after OCT guided bifurcation PCI appears to be in line with or better than the overall metaanalysis results
- Implementing routine OCT guiding for PCI of complex bifurcation lesions may be justified in particular as the effect was shown with 16% ad hoc IVUS in the control arm and despite the Covid-19 pandemic affecting procedural quality and invasive follow-up

