

Title: OCTOBER: OCT-Guided or Angiography-Guided PCI in Complex Bifurcation Lesions

Participants: Dr Niels Ramsing Holm

Date: 28th August 2023

Dr Niels Ramsing Holm

"My name is Niels Holm, I'm from Aarhus University Hospital, in Denmark and I'm the lead investigator of the October trial that was presented this morning here at ESC.

Reasoning Behind This Study

When we treat complex coronary bifurcation lesions, we use techniques that are quite advanced and the angiographic ambiguity is particularly high with this lesion subset. So the angiogram that we rely on in our everyday Practice is more difficult to use with these procedures. Then in 2016 we thought now we have sufficient evidence to say we can optimise the procedures with OCT guiding, but we don't know if that will actually improve the clinical outcome. Reasoning was that, okay, let's do a sufficiently powered clinical trial to show that OCT optimised revascularization of complex bifurcations, that that will actually improve clinical outcomes.

OCT-Guided PCI

When we use OCT to guide the procedure, we actually do a regular angiographic-guided procedure. But then at certain time points, we use OCT to evaluate to plan the procedure, evaluate the steps that we are doing, and then we evaluate a final result to check if it's sufficiently good, according to the goals we wanted to reach for.

Patient Population and Study Design

This procedure was a regular randomised trial. We enrolled patients with stable angina, unstable angina and NSTEMI. They all had to have a bifurcation lesion with disease both in the main vessel and in the side branch. And within this recent subset patients were randomised to either OCT guiding or angiographic guiding in a one-to-one fashion.

And patients, sorry, the power was that we had to enrol 1200 patients to show, be able to show a clinical significant difference between two groups.

Key Findings

So when we used OCT guiding we showed that with our primary endpoint of two-year MACE it's composite of cardiac death, myocardial infarction and ischemia-driven target lesion revascularization that there was a 30% risk reduction with OCT guided PCI, so patients had a better prognosis.

How These Findings Should Influence Clinical Practice

If we have guided the procedure with OCT, our data are so robust and are not challenged by other data out there, so using OCT guidance for complex bifurcations may be indicated. So we certainly advise our colleagues to consider using OCT as a more routine practice to improve the outcomes for these patients that has a higher risk in their regular simpler patients. We need to look at also the totality of the data and also today we had a presentation of the meta-analysis covering all the trials that have been published so far and starts to point to a more general effect.

Remaining Knowledge Gaps

We have looked at this specific lesion subset, but also if you look in general then intravascular emitting that will be IVUS and OCT really improves outcome across number of trials with a lot of different indications. And now for the first time it was shown in this meta-analysis that we can reduce all course mortality, cardiac death, myocardial infarction, repeat revascularization, stent thrombosis. So it's really a dramatic effect and we see across all these endpoint, hard endpoints so for sure complex bifurcation lesions. Yes, but we also need to look at many other lesion subsets, in particular the complex lesion subsets, for an increased use of intravascular imaging, as it may improve the outcomes for our patients.”

