Hi there. I'm Dr Upul Wickramarachchi. I'm one of the consulting interventional cardiologists working in Norfolk and Norwich University Hospital in the United Kingdom.

What question does this study aim to address?

We want to compare the clinical outcomes at 12 months between drug coated balloon angioplasty treated patients and drug eluting stent treated patients for de novo coronary artery disease in all vessel sizes.

What was the design, patient cohort and endpoints?

So the design, it was a propensity score matched observational study. This is a single centre retrospective study the patient cohort is all patients. So we did not have any exclusion criterias in terms of patient or lesion characteristics. So every patient who had drug coated balloon angioplasty to a de novo lesion, as well as every patient who had drug eluting stent treatment to a de novo lesion were included in the study. There was a small number of lesions where both drug coated balloons and drug eluting stents were used, those lesions were excluded just because we wanted to find out the outcomes of a lesion with an implant and lesion without an implant. And also there were a few patients who've had drug eluting stents previously and had clinical events prior to having a drug coated balloon and those patients were also excluded from the drug-coated balloon arm. Yeah, but all other patients were included. That's the patient cohort. The endpoints sorry, the endpoints were MACE defined as a composite of all cause death, MI and target lesion revascularization. We also looked at the individual components of the MACE as well as target vessel revascularization and acute vessel closure and also definite target lesion thrombosis. Those were the endpoints.

What covariates were left out of the propensity score model and why?

So when we did the first comparison of covariates there was no significant difference between the cohorts in cardiogenic shock, previous coronary bypass, grafts, gender and also out of hospital cardiac arrest. So those four covariates were not included in the propensity score matching as there was no difference between the two cohorts. But all the other covariates were included in the propensity score matching.

What are the key findings?

So the key finding is that the MACE drug coated balloons met non-inferior criteria to that of a drug eluting stents at 12 months. And there was no difference between the individual components of MACE as well. So no difference in death, all cause death, myocardial infarction and target lesion revascularization or target vessel revascularization. We saw a trend towards less myocardial infarction and definite lesion thrombosis in the drug coated balloon. But the key findings was that the MACE drug coated and balloon angioplasty was non-inferior to that of second generation non-drug eluting stents.

What conclusions can be made?

I think this is a useful study because this includes patients from all settings in terms of indication and lesion or patient characteristics cause it's a real world setting and also as you know the evidence for drug coated balloon angioplasty in large vessel coronaries is fast. So this includes all the coronary vessels sizes and actually 61% of the drug coated balloons. Drug coated balloon arm patients were treated with three millimetre or more indicating that majority were large vessel patients. So, the key finding was that the drug coated balloon angioplasty could be used safely in all settings and in all coronary sizes with the findings that we have.

What are the next steps?

The next steps as you've seen in EuroPCR this year, there are at least two large scale randomisation trials that are planned and going to be implemented very soon comparing this technology the drug coated balloon angioplasty to the drug eluting stent treatment in all coronary sizes. So the next steps are randomised control trials and Norfolk and Norwich inner city hospital is going to be part of that under the supervision of Dr Simon Eccleshall at Norfolk and Norwich.

What are your take-home messages?

Take home message would be that drug coated balloon angioplasty could be a very useful tool and in this cohort, our findings show that the treatment is non-inferior to that of drug-eluting stents in terms of major adverse cardiac events and individual clinical outcomes at 12 months with the trend to less number of MI's and definite treated lesion thrombosis.