- Hi, my name is Simone Biscaglia from Ferrara University Hospital, in Italy. And today I will talk to you about the AQVA Trial, that is a randomised clinical trial, comparing virtual PCI based on QFR versus Angio-guided PCI.

Reasoning for This Study

So, the reasoning behind our study is pretty simple, because we know that Post-PCI physiology is related to outcome, but, it's not measured during clinical practice. And especially, it's not known what to do after a Suboptimal physiological PCI results. On the other hand, the quantitative flow ratio. So, an Angio-Based Fractional Flow Reserve estimation could be easily managed to perform a virtual PCI plan beforehand and not after PCI in order to improve the Post-PCI physiological value. And this was actually what we tested in the AQVA Trial.

Study Design and Patient Population

As for the study design, we conducted a randomised clinical trial on 300 patient and 356 vessels in two different centres. And as for the study population, the major inclusion criteria for the, was the indication for PCI, for either ACS or CCS. And obviously we had some exclusion criteria meaning features limiting QFR computation, culprit lesion on ACS and the impossibility to acquire good projections for QFR.

Outcomes

So, the primary outcome of the study was actually the superiority of the virtual PCI plan based on QFR if compared to the Angio-based PCI, in terms of the rate of suboptimal Post-PCI physiology, that was measured with the Post-PCI blended QFR at the core lab. So basically what we, what we showed is that in the virtual PCI plan, we had just less than 5% of patient with suboptimal Post-PCI physiology. Whereas in the Angio-guided arm, we have around 15%. So, this was a significant reduction of the primary endpoint As for the main secondary endpoint, We did not show any important and significant differences among the two arms as for length of the procedure, number of stent implanted, stent length, albeit we showed a little bit higher Delta QFR so improvement in the QFR value between pre and post PCI in the virtual PCI arm and a slightly longer procedure in the virtual PCI arm of just a couple, a couple of minutes.

Impact on Clinical Practice

So, I think that the translation in clinical practice is quite simple because we know that Angiography is not enough and the results of our procedure, are procedures that are angiographically good for us that they are actually not good for the patient. So, we have to try to use these new techniques which are helpful just to achieve the best, the best possible results in each patient. And I think that this is the take home message of the AQVA trial.

Further Study Required

I think that the next step should be to test whether this strategy is able to improve the outcome and not only the Post-PCI physiological results if compared to Angiography-guided PCI. Because in this case, I think that our practice should really change in all patients undergoing PCI.