**Real world impact of added FFR-CT to coronary CT angiography on clinical decision-making and patient prognosis**

L. Becker¹, J. Peper¹, B. Verhappen¹, L.A. Swart², A. Dedic³, W.G. Van Dockum⁴, M. Van Der Ent⁴, C.J. Royaards⁵, A. Niezen⁵, J.H. Hensen⁵, J.P. Van Kuijk¹, F.A.A. Mohamed Hoesein⁶, T. Leiner⁷, T.A. Bruning⁴, M.J. Swaans¹

¹St Antonius Hospital, Cardiology, Nieuwegein, Netherlands (The)  
²Erasmus University Medical Centre, Cardiology, Rotterdam, Netherlands (The)  
³Northwest Clinics, Cardiology, Alkmaar, Netherlands (The)  
⁴Maasstad Hospital, Cardiology, Rotterdam, Netherlands (The)  
⁵Maasstad Hospital, Radiology, Rotterdam, Netherlands (The)  
⁶University Medical Center Utrecht, Radiology, Utrecht, Netherlands (The)  
⁷Mayo Clinic, Radiology, Rochester, United States of America

**Funding Acknowledgements:** None.

**Objectives:** The addition of CT-derived fractional flow reserve (FFR-CT) increases the diagnostic accuracy of Coronary CT Angiography (CCTA). We assessed the impact of FFR-CT in routine clinical practice on clinical decision-making and patient prognosis in patients suspected of stable coronary artery disease (CAD).

**Methods:** This retrospective, single-center study compared a cohort that received CCTA with FFR-CT to a historical cohort that received CCTA before FFR-CT was available. We assessed the clinical management decisions after FFR-CT and CCTA and the rate of major adverse cardiac events (MACE) during the one-year follow-up using chi-square tests for independence. Kaplan-Meier curves were used to visualize the occurrence of safety outcomes over time.

**Results:** 360 patients at low to intermediate risk of CAD were included, 224 in the CCTA only group and 136 in the FFR-CT group. During follow-up, 13 MACE occurred in 12 patients, 9 (4.0%) in the CCTA-group and three (2.2%) in the FFR-CT group. Clinical management decisions differed significantly between both groups. After CCTA, 60 patients (26.5%) received optimal medical therapy (OMT) only, 115 (51.3%) invasive coronary angiography (ICA) and 49 (21.9%) single positron emission CT (SPECT). After FFR-CT, 106 patients (77.9%) received OMT only, 27 (19.9%) ICA and three (2.2%) SPECT (p<0.001 for all three options). The revascularization rate after ICA was similar between groups (p=0.15). However, patients in the CCTA-group more often underwent revascularization (p=0.007).

**Conclusion:** Addition of FFR-CT to CCTA led to a reduction in (invasive) diagnostic testing and less revascularizations without observed difference in outcomes after one year.

Clinical decisions and follow up
Significant LAD lesion, negative FFRCT