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Abstract 37: Evaluation And Impact of FFR-CT Implementation in a UK Tertiary Cardiology Centre

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Introduction: The addition of the new technique of fractional flow reserve (Heartflow FFRct) to resting computed tomography coronary angiography (CTCA) is designed to determine if an intermediate stenosis of an epicardial coronary artery is of functional significance. The proposed benefits include a reduction in further testing (invasive catheter angiograms (ICA) ± pressure wire testing FFR or non-invasive stress imaging). Secondary potential benefits include earlier complete evaluation of coronary disease, a reduced number of clinical encounters, and a reduction in ICA procedures that do not lead to intervention. This study evaluates the initial introduction of FFRct to a busy UK tertiary cardiology centre and its impact on the patient treatment pathway.

Methods: We performed a retrospective analysis of the change to treatment pathways (discharge ± medical management, further stress testing, invasive catheter angiogram) before and after the introduction of FFRct for patients (without known coronary disease) presenting with possible coronary related chest pain. Ongoing treatment pathways of patients undergoing Pre-FFRct investigation for suspected coronary artery disease (n = 90), with intermediate stenosis of arteries graded by CADRADs severity 2-4b (n = 24, mean age = 57.2), was compared to the cohort of patients (n = 54) under investigation immediately after the introduction of FFR CT analysis with a lesion of intermediate stenosis severity (n = 20,mean age = 56.8). The percentage of patients proceeding to each of the treatment pathway options was analysed along with the results of their further investigations if indicated.

Results: The absolute benefit increase for patients undergoing FFRct of being discharged from the cardiology service without further testing was 20%. Absolute risk reduction of needing further stress testing was 11.7% (relative risk reduction 30%), and absolute risk reduction of needing invasive catheter angiogram was 12.5% (relative risk reduction 67%).

Conclusions: The initial introduction of FFRct has shown a decrease in the demand for ICA for this cohort of patients. In addition those patients who had ICA after FFRct underwent no purely diagnostic angiograms without angioplasty, and required fewer invasive pressure wire studies during procedures to guide artery opening. It is hoped that this preliminary data will help colleagues determine if FFRct is helpful to them and prepare for the necessary funding challenges to come.

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