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Abstract 17: Clinical impact of FFRct-guided care in the National Health Service District General Hospital setting



Benjamin J. Hudson (FRCR), Dan McKenzie (MRCP), Raveen Kandan (MRCP), Dan Augustine (MRCP), Rob Lowe (MRCP), Richard Mansfield (MRCP), Antony French (MRCP), Jacob Easaw (MRCP), Anu Garg (MRCP), Toby Hall (FRCR), Dominic Fay (FRCR), Kevin Carson (MRCP), Jonathan C.L. Rodrigues (FRCR)

Royal United Hospital Bath, Bath, United Kingdom

Introduction: Coronary computed tomography angiography (CCTA) with CCTA-derived fractional flow reserve (FFRct) real-world clinical impact has recently been described across multiple International tertiary centers but has not previously been described in the District General hospital setting in the National Health Service (NHS). Furthermore, the impact of FFRct-guided management of time to next investigation / definitive treatment has not been assessed either. We aim to re-address these issues in a prospective single-center observational study.

Methods: Consecutive patients undergoing routine clinical CCTA (09-11/2018) were included. CCTAs in patients with ≥ 1 stenosis $\geq 30\%$ were sent for FFRct analysis (Heartflow Inc) as part of the 2018-2019 NHS Innovation and Technology Payment programme. Clinical details and CCTA findings were reviewed in a cardiological-radiological multidisciplinary meeting, blinded to the FFRct results, and a consensus management plan was documented. The FFRct findings were then unblinded and the post-FFRct management plan was also recorded and compared to the pre-FFRct plan. Estimated waiting times were based on the mean waiting times for the respective investigations in the local institute during the study.

Results: 127 patients underwent CCTA during the study period. 61% (78/127) had no stenosis or stenosis $< 30\%$ on CCTA and were not sent for FFRct analysis. FFRct was not feasible in 6% (3/52). In 49 patients with ≥ 1 stenosis $\geq 30\%$ (51% men, 65 ± 11 years), there was a change in management in 67% (33/49; 95th confidence interval: 53-80%). FFRct-guided management led to cancellation of an invasive coronary angiogram proposed on CCTA-guided management in 18% (9/49) and cancellation of a subsequent functional imaging test in 18% (9/49). Proposed CCTA-guided invasive strategy was modified from a diagnostic angiogram to a focused invasive FFR and/or angioplasty in 24% (12/49) after reviewing FFRct results. FFRct-guided management was associated with reduced mean time to next investigation / definitive treatment compared to management based on CCTA alone (24 ± 5 vs 41 ± 6 days, $p=0.03$).

Conclusions: In the real-world NHS District General Hospital setting, FFRct alters multidisciplinary consensus management in 2/3 patients with ≥ 1 stenosis $\geq 30\%$ on CCTA, by both: 1) reducing downstream testing and 2) streamlining invasive strategies. This is associated with significant reduction in waiting time to next investigation / definitive treatment.

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