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Abstract 44: Diagnostic Accuracy and Report Quality of Computed Tomography Coronary Angiography: Early Experience at our District General Hospital

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Introduction: CT coronary angiography (CTCA) is recommended by the National Institute for Health and Care Excellence (NICE) as the first line investigation for patients suspected of having stable coronary artery disease (CAD). CTCA was established at our general hospital in April 2017. The aim of this audit was to assess the diagnostic accuracy of CTCA and evaluate CTCA report quality.

Methods: Patients who underwent CTCA and subsequent invasive coronary angiography (ICA) over a 6 month period from the establishment of CTCA at our hospital in April 2017, were included. Stenosis of every coronary vessel on CTCA was compared to the ICA report. A severe degree of stenosis (70%) was used as the cut off to calculate sensitivity and specificity of CTCA. CTCA accuracy at our centre was compared to evidence (meta-analysis) outlined in the addendum to *NICE Clinical Guideline (CG95), Chest pain of recent onset.*CTCA reporting was evaluated by comparing a random sample of 15 CTCA reports to the Society of Cardiovascular Computed Tomography (SCCT) guidelines for the interpretation and reporting of CTCA.

Results: Of 308 patients referred for CTCA in the audit period, 10 patients underwent CTCA and subsequent ICA. The average age of this cohort was 69.1. Stenosis of the right coronary artery, left main stem, left anterior descending and circumflex artery on CTCA was compared to the ICA report for each patient, giving a total of 40 coronary arteries for comparison. Of 30 vessels with < 70% stenosis on CTCA, all demonstrated < 70% stenosis on ICA. Of 10 vessels with ≥ 70% stenosis on CTCA, 9 had ≥ 70% stenosis on ICA whilst one was shown to be < 70% stenosed on ICA. These results gave a sensitivity of 1 and a specificity of 0.97 with a positive predictive value of 0.9 and a negative predictive value of 0.97. On evaluating CTCA reporting, 93% had an indication for the test stated in the request whilst a clinical recommendation was provided in 40% of the reports. In response to the CTCA reporting results, intervention in the form of the Coronary Artery Disease - Reporting and Data System (CAD-RADS™) was implemented at our hospital, with the aim of standardising CTCA reports and ensuring that all reports included recommendations for further management. A teaching session on reporting using CAD-RADS™ was delivered to Cardiologists and Radiologists responsible for CTCA reporting, prior to implementation in April 2018. Re-audit of 15 CTCA reports in June 2018 found that CAD-RADS™ was used in 11 cases (73%).

Conclusions: Diagnostic accuracy of CTCA at our institution is comparable to sensitivity and specificity seen on meta-analysis, although a larger sample is required for a firm conclusion. Implementation of CAD-RADS™ was moderately successful at our hospital. Further education on how standardised reporting, using CAD-RADS™,will benefit education and communication between physicians, is necessary prior to re-audit.