

**THE FEASIBILITY OF USING CT CORONARY ANGIOGRAPHY IN PATIENTS WITH STABLE CHEST PAIN AND MODERATE TO HIGH PRE-TEST PROBABILITY OF CORONARY ARTERY DISEASE**

A Cai, P Dobson, P Leung, K Marshall, M Albarjas, T Rogers, S Basu, K Alfakih  
*Lewisham Healthcare NHS Trust*

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**Introduction** The 2010 NICE guidelines on chest pain recommends the use of CT coronary angiography (CTCA) in patients with low pre-test probability (10–30%), functional testing in moderate risk (30–60%) and invasive coronary angiography in higher pre-test probability (>60%) patients. A previous local audit demonstrated relatively low incidence of coronary artery disease (CAD) in the high pre-test probability (>60%) patients and hence we investigated these patients non-invasively.

**Methods** We retrospectively reviewed 213 consecutive patients who were seen in the outpatient setting between August 2010 and April 2012 and were scored as moderate and high risk of CAD based on NICE CADscore. We recorded the test used to investigate them, the result and compared the performance of the tests. The results were analysed by SPSS software using anova tests for mean values across groups and the  $\chi^2$  tests for proportions across groups.

**Results** CT coronary angiography was performed in 107, DSE in 67 and MPS in 39 patients. 62% of patients were male and 38% were female. The average ages for CTCA, DSE and MPS were 53.3, 57.3 and 64.7 years old respectively, with patients undergoing MPS significantly older ( $p<0.01$ ). Risk factors for diabetes and smoking were equally distributed in the 3 groups ( $p=0.35$  and  $p=0.42$  respectively), however the incidence of hypercholesterolaemia and hypertension were significantly lower in the MPS group, ( $p<0.01$ ). The proportion of patients where CTCA ruled out significant CAD (<50%) was 82.2%. The proportion of patients found either to have severe CAD on CTCA or a clearly positive functional test, confirmed on invasive coronary angiography (ICA) in CTCA, MPS and DSE were 10.2%, 12.8%, and 1.5% respectively. The remaining 7.6% of CTCA patients had moderate stenosis only. The sensitivities to identify significant CAD requiring revascularisation were 90%, 80% and 100% respectively.

**Discussion** Our real-world data in a South London DGH demonstrates that CTCA can rule out significant CAD in a high proportion of patients (82.2%). Furthermore, CTCA correctly detected more CAD than functional tests. In addition patients with mild or moderate disease will benefit from secondary prevention, while those patients with severe stenosis on CTCA can be booked for ICA and 'query proceed' to PCI. In conclusion, patients with pre-test probability CADscores over 60% can be investigated effectively with CTCA in hospitals with limited access to MPS and DSE.