of 0, 6, 12 were 0, 13.1% and 36.7% respectively. Pearsons correlation coefficient showed a strong correlation (r=0.82, 95% CI 0.70 to 0.89) between the Jeopardy Score and volume of hypoperfusion on CMR (p<0.0001) (Abstract 099 figure 1).

Conclusion There is a strong correlation between myocardium at risk by invasive indices and volume of inducible ischaemia by dynamic 3D CMR whole heart perfusion imaging. 3D CMR perfusion imaging offers a non-invasive alternative method of detecting ischaemic burden and myocardium at risk for the purpose of serial studies, guiding revascularisation and risk stratification.

100 DIAGNOSTIC ACCURACY OF HIGH DEFINITION COMPUTED TOMOGRAPHIC CORONARY ANGIOGRAPHY COMPARED TO INVASIVE CORONARY ANGIOGRAPHY IN THE ASSESSMENT OF PATIENTS WITH HIGH PRE-TEST PROBABILITY OF OR ESTABLISHED CORONARY ARTERY DISEASE

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Background 64-slice Computed Tomographic Coronary Angiography (CTCA) has high negative predictive value in assessment of patients with low-risk of coronary disease (CAD). However, it has a low specificity in assessment of patients with high pre-test probability of or established CAD, due to limited spatial resolution and blooming artefact from coronary artery calcium. Recently published NICE guidelines recommend the use of conventional CTCA for the assessment of patients with low pre-test probability of CAD, but not for patients with high pre-test probability of CAD or those with calcified coronary atheromatous disease (Agatston Calcium score >400). High-definition CT (HDCT) combined with the use of iterative reconstruction (ASIR), aims to address the shortcoming of conventional CT technology by improving spatial resolution and reducing calcium blooming artefact, without increasing ionising radiation exposure.

Methods Patients with high pre-test probability of and established CAD, were prospectively enrolled in our HD-CTCA accuracy trial. We present the interim results of our 50 consecutive patients who underwent HD-CTCA following invasive coronary angiography (ICA) for the assessment of coronary disease. HD-CTCA was conducted on all patients within 30 days of ICA. Anonymised ICA and HD-CTCA studies were evaluated separately and results compared with ICA as the reference standard.

Results All HD-CTCA studies were acquired using prospective gating, 100 kV tube voltage and optimum radiation dose reduction strategies and images were reconstructed using 50% ASIR. The male: female ratio was 37:13 and the median (IQR) age, BMI and Agatston Calcium Score of patients at the time of scanning were 67.5 (60–76.5) years, 26.5 (24.4–28.6) kg/m^2 and 708 (293–1615) respectively. The median (IQR) radiation dose was 151 (131–275) mGy.cm, representing effective doses of 4.2 (3.7–7.7) mSv using a cardiac specific conversion factor (0.028/cm). All coronary segments visualised on ICA were demonstrated on HD-CTCA. Of the 726 coronary segments evaluated on HD-CTCA, 96.4% were of excellent, 2.8% moderate and 0.8% poor diagnostic quality. Compared to ICA, HD-CTCA had sensitivity and specificity of 97% (95% CI 81% to 100%) and 95% (95% CI 72% to 99%) on a per-patient basis and sensitivity and specificity of 94% (95% CI 87% to 980%) and 98% (95% CI 97% to 99%) on a per-coronary segment basis respectively.

Conclusion Our interim results demonstrate that HD-CTCA has excellent accuracy compared to ICA in the assessment of patients with high pre-test probability of CAD or with established CAD and can be performed within acceptable radiation dose limits.

101 INCORPORATION OF STRESS ECHOCARDIOGRAPHY INTO AN ACUTE CHEST PAIN SERVICE PROVIDES EXCELLENT FEASIBILITY, EARLY TRIAGING AND ACCURATE RISK STRATIFICATION OF PATIENTS WITH SUSPECTED ACUTE CORONARY SYNDROME BUT NON-DIAGNOSTIC ECG AND NORMAL 12-H TROPONIN

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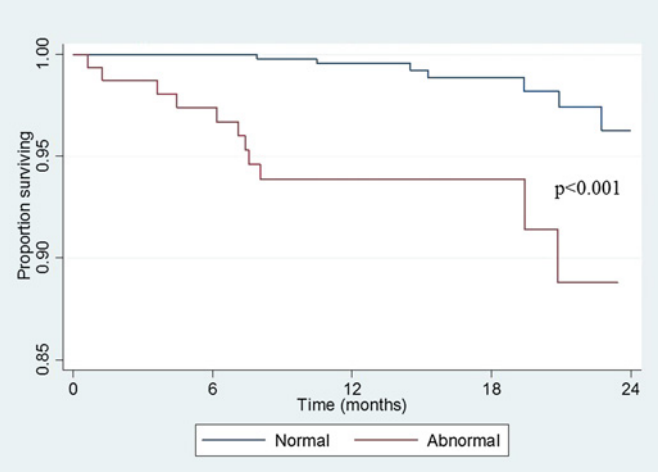
Background Acute chest pain accounts for a substantial proportion of patients attending the Emergency Department (ED). Initial investigations are frequently inconclusive and many patients thus require admission for further risk stratification. We have previously demonstrated the clinical benefits and cost savings of stress echocardiography (SE) compared to stress ECG for risk stratification of patients admitted with suspected acute coronary syndrome (ACS) but normal ECG and negative 12-h troponin. However, the feasibilty of SE in routine clinical practice and its ability to predict hard cardiac events in this patient population is unknown.

Methods Consecutive patients admitted via the ED with chest pain and who underwent SE within 24 h of admission via our acute chest pain service were assessed for feasibility of SE, time to test and were followed-up for hard cardiac events (cardiac death and acute myocardial infarction—AMI).

Results Of 719 consecutive patients, 674 (94.6%) had diagnostic images at SE and were followed-up over 26 months. The median time to test for all patients was 1 day and median in-hospital length of stay for those with normal SE was also 1 day. There were 17 hard events (14 cardiac deaths and 3 AMI). Annualised hard cardiac event rate in the normal SE group (n=517, 73.6%) was 0.58% compared with 3.5% in the abnormal SE group (p=0.002). Cox regression analysis revealed that among clinical, ECG and SE variables, only abnormal SE [p=0.001, HR 4.02, 95% CI 1.73 to 9.36] and advancing age (10-year increase) [p=0.005, HR 1.70, 95% CI 1.18 to 2.44] were independent predictors of hard events in the multivariate model. Similarly, abnormal SE was also the strongest predictor of cardiac death [p=0.001, HR 4.52, 95% CI 1.81 to 11.3]. At any stage during follow-up, an abnormal SE carried at least a fourfold increased risk of either cardiac death or any hard event over a normal SE result.

Conclusion This is the first study to show that the incorporation of SE into a clinical acute chest pain service has excellent feasibility, provides rapid assessment with early triaging and accurate risk stratification of patients with suspected ACS but non-diagnostic ECG and negative 12-h troponin.



Abstract 101 Figure 1 Kaplan–Meier survival estimate of time to death.