49 UTILITY OF DOBUTAMINE STRESS ECHO IN PREDICTING CARDIAC EVENTS; A RETROSPECTIVE AUDIT OF DSE'S AT THE MATER INFIRMORUM HOSPITAL, BELFAST

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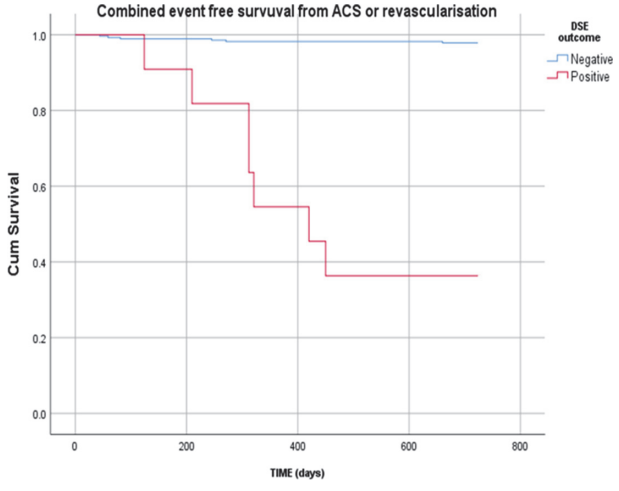
Current NICE guidance recommends CT coronary angiography (CTCA) as first line for investigation of new onset stable chest pain, however; CTCA is not yet readily available in all UK centres. DSE remains recommended in current ESC guidance and provides a readily available, low cost alternative (1). Indeed, a negative test has been demonstrated to have an excellent negative predictive value in the region of >98% (2).

Aim We sought to evaluate the rate of cardiac events within two years of a negative DSE.

Methods We performed a retrospective data interrogation of all DSE's performed in the Mater Hospital Cardiac Investigations Department between 2017 and 2019. MACE was evaluated at two years. Data were extracted using local electronic healthcare records. Statistical analysis performed using SPSS software.

Results 302 DSE's were performed during the study period. The mean age was 64.1±10.4years with 41.7% male. Of the population, 16.2% had a prior history of IHD with 19.2% being diabetic. All tests were requested by the Cardiology team on an outpatient. 15 patients had a positive test. At two years the negative predictive value of a negative DSE was 98.3%. A positive test had a sensitivity for predicting coronary artery disease of 86.7% with a false positive rate of approximately of 13.3%. The overall complication rate was low at 0.7%. Using a combined endpoint of time to ACS or revascularisation; there was a significant difference (p<0.001) in event free survival between groups (figure 1).



Abstract 49 Figure 1 Kaplan-Meier survival curve demonstrating freedom from combined endpoint of ACS or revascularisation. In patients with a negative test, mean event free survival was 719.3±9.3 days. In those with a positive test, mean event free survival was 460.8 ±128.9days. There was a significant difference in event free survival between groups (p<0.001). Data expressed as mean±95% CI. Variance between groups assessed using log rank Mantel Cox regression analysis

Conclusion DSE is a safe test with a high sensitivity for detecting coronary artery disease. Furthermore, compared to a positive test, a negative test has a strong negative predictive value for cardiac events at two years.

Conflict of Interest none

50 TROPONIN IS INDEPENDENTLY ASSOCIATED WITH INCREASED SHORT-TERM MORTALITY IN HOSPITALISED PATIENTS WITH COVID-19 INFECTION: A RETROSPECTIVE STUDY IN AN INNER CITY LONDON HOSPITAL

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Introduction Increased mortality is thought to be associated with an elevated troponin in addition to co-morbidities and age. International studies have demonstrated that troponin is an independent predictor of mortality in COVID-19 patients but to our knowledge this has not been assessed in a UK hospitalised population. We performed a single-centre retrospective observational study investigating the association between troponin positivity in patients hospitalised with COVID-19 and increased mortality in the short term.

Methods All adults admitted with swab-proven RT-PCR COVID-19 to Homerton University Hospital (HUH) from 04.02.20 to 30.04.20 were eligible for inclusion. We retrospectively analysed data collected from the physical and electronic patient records (EPR) including demographic and biochemical data (e.g. serum high sensitivity Troponin I). Data was analysed according to the primary outcome of death at 28 days during hospital admission. Troponin positivity was defined above the upper limit of normal according to our local laboratory assay (>15.5ng/l for females, >34 ng/l for males). Univariate and multivariate logistical regression analyses were performed to evaluate the link between troponin positivity and death.

Results The total number of adults with swab-proven RT-PCR COVID-19 to HUH from the date of the first positive swab to 30th April 2020 was 402. Mean length of stay for all patients was 9.1 days(SD 12.0). Table 1 shows selected demographics. This is a highly comorbid population with modest ethnic minority representation. Mean age was 65.3 years for men compared to 63.8 years for women. In those with a positive initial troponin, there was a high burden of mortality at 28 days post-admission. Mortality in troponin positive and negative patients is shown in table 2. A chi-squared test

Abstract 50 Table 1 Selected demographics

		Proportion(%)
Gender	Male	53
	Female	47
Ethnicity	Black/Asian	36
Co-morbidities	Hypertension	54
	Dyslipidaemia	26
	Diabetes mellitus	37
	Lung disease	24
	Chronic kidney disease	18

Abstract 50 Table 2 Troponin status and mortality

	Alive, n	Dead, n
Troponin positive	58	66
Troponin negative	220	58

showed that survival of COVID-19 patients was significantly higher in those with a negative troponin (p = 3.23 x10-10) compared to those with a positive troponin. A Mann Whitney U test showed that initial troponin was significantly higher in those who died (p = 2.24 x10-12) compared to those who were alive. Mean initial troponin was 89.8 (95% CI 43.1 – 136.5). In the multivariate logistical regression, lung disease, age, troponin positivity and CPAP were all significantly associated with death, with an AUC of 0.8872, sensitivity of 0.9004 and specificity of 0.6292 for the model. Within this model, troponin positivity was independently associated with short term mortality (OR 3.23 , 95% CI 1.53-7.16, p=0.00278).

Conclusions We demonstrated an independent association between troponin positivity and increased short-term mortality in COVID-19 in a London district general hospital. The mechanisms implicated in myocardial injury in COVID-19 are not fully understood but are likely multi-factorial.

Conflict of Interest Nil

51 HIGHLY SENSITIVE TROPONIN ASSAY AS A SINGLE SERUM TEST IN PATIENTS PRESENTING TO A RAPID ACCESS CHEST PAIN CLINIC IN NON-TEACHING HOSPITAL IN THE UK

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Background In the UK, rapid access chest pain clinics (RACPC) ensure that patients classified as stable angina in the community can be assessed by a specialist within the hospital system. We report, for the first time, the use of a 'highly sensitive' troponin assay in the assessment and diagnosis of patients with suspected stable angina, presenting to a RACPC in a non-teaching hospital,

Methods One hundred and seventy two patients admitted to the RACPC were assessed and followed up according to local hospital protocol. Serum cardiac troponin was measured by the 'highly sensitive' cardiac troponin I assay (uscTnI) which had a detection limit of 0.12 ng/L, upper reference limit of 8.15 ng/L and detected uscTnI in 96.8% of the population. Clinical assessment of patients was by specialist staff blinded to uscTnI results

Results The mean age of patients was 62.1 years (range 23-88 years) of which 51.1% were women. The proportion of patients, with recorded cardiovascular risk factors were:hypertension (51%), tobacco users (44%), dyslipidemia (48%), diabetes (27%), family history of coronary artery disease (CAD (68%); increased BMI (29%). Calculated QRISK3 ranged from 1-88%, mean 16%. Measured cardiac TnI ranged from 0.71-17 ng/L (non-cardiac chest pain); 0.97-9.7 ng/L (Exercise tolerance test(ETT) without ischemic changes); 1.9-2.6 ng/L(24 h ECG); 0.46-8.6 ng/L(echocardiogram(echo) without abnormalities); 2.46-17.0 ng/L (echo with mild abnormalities); 1.8-9.2 ng/L (diagnosed as angina and treated with medication); 1-70 ng/L (further review by cardiologist); 1.5-33.2 ng/L(previous cardiac disease); 0.98-3.9 ng/L (Stress echo (normal); 0.58-9.3 ng/L (computerized tomography coronary angiogram(CCTA), CAD negative); 1.1-8.7 ng/L (CCTA, CAD positive); 1.1-2.2 ng/L (angiogram CAD negative); 0.94-49 ng/L (angiogram CAD positive). Receiver operator characteristic curves(ROC) were used to examine diagnostic threshold at different uscTnI values, measured in patients who underwent functional testing (ETT, Echo), CCTA and coronary angiography. At low values of uscTnI >0.5 ng/L sensitivity was 100%, suggesting that uscTnI values <0.5 ng/L can be used to exclude CAD. At high values >11.6 ng/L specificity was 100%, suggesting patients with values >11.6 ng/L may require closer evaluation. In patients assigned to coronary angiogram higher concentrations of uscTnI was associated with more severe CAD. In 3/22 patients undergoing CCTA a QRISK3 score <10% and uscTnI <1 ng/L CCTA was normal, suggesting uscTnI can decrease patient numbers selected for CCTA. There was overlap in uscTnI values between patients with and without CAD in the range 0.5-11.6 ng/L, in this range uscTnI, on its own, may not have the same diagnostic potential.

Conclusions The study suggests that uscTnI is of diagnostic value in patients risk-assessed and allocated to CCTA or coronary angiography. ROC curves suggest that diagnostic cut-off values will depend on patient population and their presenting co-morbidity.

Conflict of Interest none

52 ROUTINE VERSUS CLINICALLY INDICATED USE OF CHEST X-RAYS IN PATIENTS PRESENTING WITH ST-ELEVATION MYOCARDIAL INFARCTION

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Background National Institute of Clinical Excellence (NICE) guidelines recommend consideration of Chest X-rays (CXRs) in patients presenting with chest pain to exclude non-cardiac causes of chest pains. However, patients with ST-segment elevation myocardial infarction (STEMI) have a clear diagnosis, rendering the rationale for routine CXRs in this cohort of patients unclear. However, this remains a common practice across the health service. This raises the question of whether CXRs should be conducted routinely or only when clinically indicated.

Methods We performed a retrospective study use of CXRs in consecutive patients admitted with STEMI undergoing primary percutaneous coronary intervention in a single UK tertiary cardiac center. We aimed to investigate if CXRs added clinical and diagnostic value by comparing routine vs. clinically indicated use.

Results A total of 122 patients (Mean Age 63±12, 87% Male) were admitted with STEMI during the study period and 114/122 (93.4%) patients received at least one CXR during their in-patient stay. All but 2/114 were portable thus resource-intensive. Of these, 75/114 (65.8%) were routine while 39/114 (34.2%) were clinically indicated. Although CXRs were performed in almost all the patients, only 56/114 (49.1%) of patients had the findings of CXRs documented in the clinical records. The diagnostic efficacy for CXR abnormalities was