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**OUTCOME OF INTEGRATION OF NEW CENTAUR (SIEMEN'S) HIGH- SENSITIVITY TROPONIN I ASSAY WITH HEART SCORE CHEST PAIN PATHWAY TO MAXIMISE EARLY DISCHARGE FROM EMERGENCY DEPARTMENT (ED)**

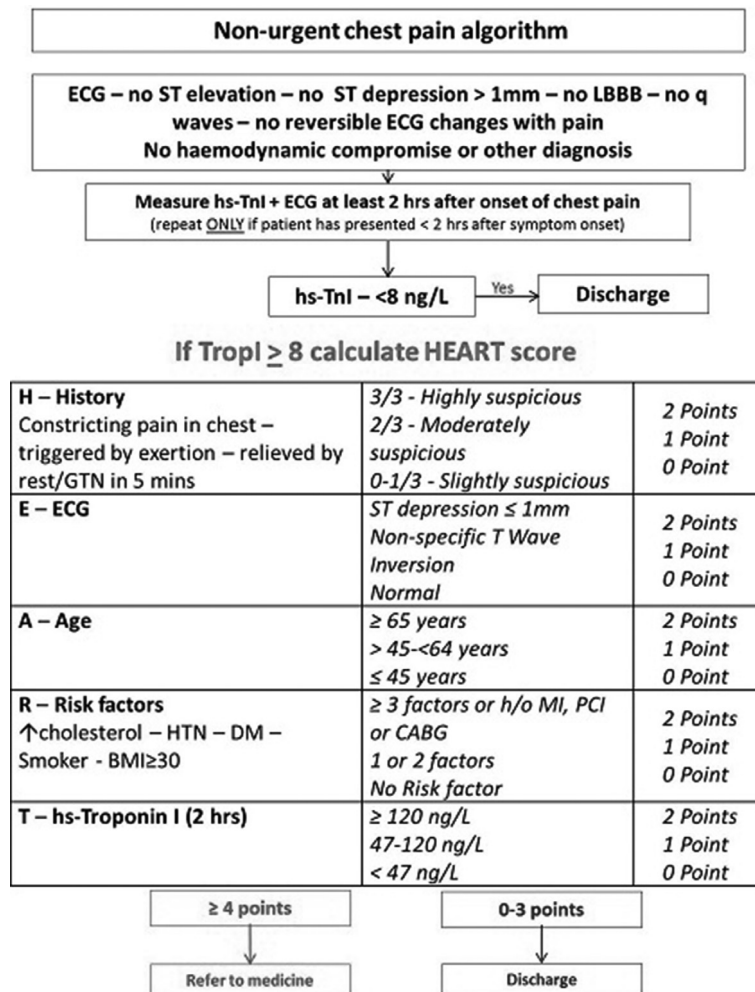
<sup>1</sup>Ei Mon Thet\*, <sup>2</sup>Jerry Murphy, <sup>1</sup>Jenifer Crilley. <sup>1</sup>County Durham and Darlington NHS Foundation Trust; <sup>2</sup>Durham and Darlington NHS Foundation Trust

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**Introduction** Chest pain is a common presentation to the ED. Differentiating those with an Acute Coronary Syndrome from the majority without, within 4 hours, is a priority. Introduction of high-sensitivity Troponin I (hsTnI) assays has the potential to allow early discharge from ED but at the expense of lower specificity. Given the pressure in ED to identify patients who can safely be discharged we developed an algorithm based on the HEART score. This combines the history, ECG, age, risk factors and hsTnI level and outperforms TIMI and GRACE scores in identifying low-risk patients. Patients with a score of 4 have an increased major adverse cardiac event (MACE) rate at 30 days; those with a score of <4 are suitable for early discharge. There are no studies utilising the CENTAUR assay combined with a clinical risk score.

**Methods** An initial algorithm based on the HEART score tool was developed incorporating estimated hsTnI boundaries for the CENTAUR assay to inform the “T” component of the tool. This was tested on a 2 month sample of patients presenting with chest pain to the ED. Following review a revised pathway was developed. Please see the figure. Patient outcome was recorded with both pathways including subsequent investigations and MACE at 30 days and compared with historical discharge rates for chest pain from the same ED. Sensitivity, specificity and NPV were calculated.

**Results** There were 478 presentations with chest pain and at least one hsTnI level. Age ranged from 13 to 98 years (median 56); 50% were male. There were 21 (4%) MACE within 30 days of the initial presentation (NSTEMI: 18, STEMI: 1, unstable angina requiring CABG: 1, acute pulmonary oedema: 1). A 2 hour hsTnI ≤8 identified a low-risk group with no MACE <30 days. 30% of patients using the initial pathway had a HEART score of 4 (100% sens, 73% spec). 70% were suitable for ED discharge; there were no MACE in this group (100% NPV). The revised pathway was derived incorporating previous cardiac history and modified hsTnI boundaries. Applying this to the original cohort would have increased the proportion suitable for ED discharge to 82%. Both pathways improved the proportion of patients who could be discharged directly from ED from a historical 64%. The revised pathway demonstrated improved specificity for



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the identification of MACE with no loss of sensitivity and excellent negative predictive value. (100% sens, 86% spec, 100% NPV).

**Conclusion** The CENTAUR hs-TnI assay and HEART score with modifications would facilitate the early discharge of patients with chest pain from ED within 4 hours without missing any MACE at 30 days.

**Conflict of Interest** This is part of the finding of my thesis for MSc which will need to be completed in September 2019.

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#### CHARACTERIZATION AND OUTCOMES OF SPONTANEOUS CORONARY ARTERY DISSECTION PATIENTS PRESENTING WITH AN ACUTE CORONARY SYNDROME: INSIGHTS FROM THE ACALM REGISTRY

<sup>1</sup>Rahul Potluri\*, <sup>2</sup>Paul Carter, <sup>3</sup>Amir Aziz, <sup>4</sup>Minh Vo, <sup>5</sup>Ranjit More, <sup>6</sup>Jaydeep Sarma, <sup>7</sup>Asif Ahmed, <sup>8</sup>David Adlam, <sup>4</sup>Robert Welsh, <sup>9</sup>Kevin Bainey. <sup>1</sup>Blackpool Teaching Hospitals; <sup>2</sup>ACALM Study Unit; <sup>3</sup>New Cross Hospital; <sup>4</sup>Mazankowski Alberta Heart Institute, University of Alberta, Edmonton, Canada; <sup>5</sup>Blackpool Teaching Hospital NHS Foundation Trust; <sup>6</sup>Manchester University Foundation Trust; <sup>7</sup>Aston Medical School, Aston University; <sup>8</sup>Department of Cardiovascular Sciences, Glenfield Hospital; <sup>9</sup>Mazankowski Alberta Heart Institute

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**Introduction** Spontaneous coronary artery dissection (SCAD) is recognised as an infrequent presentation of acute coronary syndromes (ACS). Using a large comprehensive UK ACS registry, we examined the incidence, demographic profile and long-term survival of ACS patients with SCAD.

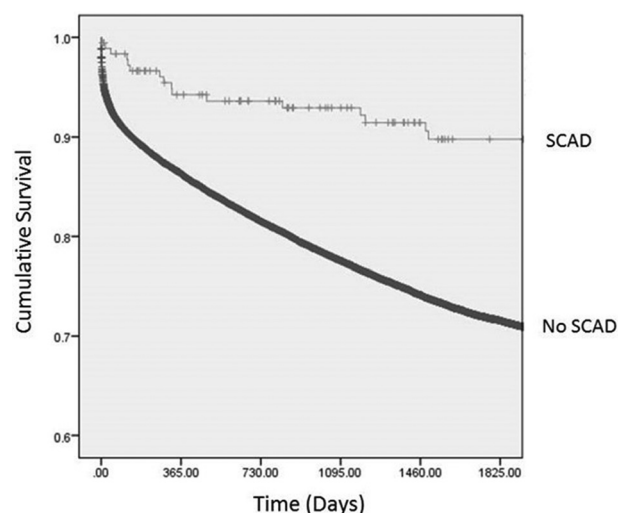
**Methods** We compared ACS patients with SCAD versus without SCAD admitted to hospitals in the UK (England) between 2000 and 2014 from the Algorithm for Co-morbidity, Associations, Length of stay and Mortality (ACALM) registry (n=33, 163). ACALM uses a big data approach collecting ICD-10 and OPCS-4 coding systems to identify patient data. Primary outcome was all-cause mortality over a 14-year time period. Adjustment was performed using a Cox-regression model.

**Results** In our cohort, 182 patients (0.54%) were diagnosed with SCAD as the cause for ACS. Compared to patients without SCAD, patients with SCAD were younger, more commonly female and less likely to have traditional risk factors for ACS or significant comorbid conditions (Table 1). Revascularization with percutaneous coronary intervention (PCI) or coronary artery bypass graft (CABG) surgery was uncommon with SCAD (11.0%, 2.7% respectively) compared to ACS patients without SCAD (50.7%, 10.6% respectively). All-cause mortality was significantly better in SCAD patients compared to non-SCAD ACS patients (10.4% vs. 32.1%, p=0.003). Kaplan-Meier curve comparing 5-year survival is shown below (figure 1). After adjusting for age, gender, ethnic group and the top causes of morbidity and mortality in the UK, patients with SCAD presenting as ACS demonstrate improved survival compared to ACS patients without SCAD (OR 1.89; 95% C.I 1.20–2.96).

**Conclusion** Accepting the potential of under reporting by clinicians in routine clinical practice, a minority of ACS patients in this large UK registry present with SCAD. These patients are commonly younger females without traditional risk factors for ACS. To our knowledge, this is the first study to demonstrate improved long-term survival over a 14-year period with SCAD. Additionally, our analysis suggests conservative therapy is safe in this patient population. Further studies are required

**Abstract 164 Table 1** Demographics, management and outcomes of ACS patients± SCAD

	No SCAD	SCAD	p value
N	32981	182	
Mean age +/- S.D, years	66.2 +/- 14.3	51.9 +/- 20.4	<0.01
Female Gender (%)	11546 (35.3)	125 (68.7)	<0.01
<b>Risk Factors and comorbid conditions %</b>			
Hypertension	47.6	38.5	0.04
Type 2 Diabetes Mellitus	20.7	11.5	0.02
Hyperlipidaemia	26.2	21.4	0.45
PVD	4.8	6.6	0.03
Ischaemic Stroke	4.5	0.5	0.03
Heart Failure	19.1	8.2	<0.01
Atrial Fibrillation	13.7	10.4	0.54
Chronic Kidney Disease	6.3	4.9	0.83
Anaemia	5.9	5.2	0.45
Cardiac Arrest	2.3	1.1	0.35
Obesity	2.0	2.2	0.44
Cardiogenic Shock	1.0	0.0	0.99
Cocaine abuse	0.1	0.5	0.03
<b>Management</b>			
Revascularisation %			
Percutaneous Coronary Intervention (PCI)	50.7	10.6	<0.01
Coronary artery bypass graft (CABG)	11.0	2.7	<0.01
<b>Outcomes</b>			
Mean follow-up length, days	2186	2208	0.77
Mortality over the follow-up period, %	32.1	10.4	<0.01
Mean readmissions to hospital	9.6	7.6	0.02
Subsequent heart failure, %	9.7	5.5	0.07
Subsequent ACS, %	67.4	15.6	<0.01
Mean length of hospital stay of index admission, days	6.5	7.2	0.03



**Abstract 164 Figure 1** Kaplan-Meier curve showing 5 year survival in ACS patients± SCAD

to explore non-traditional risk factors, predictors of SCAD and best treatment strategy for these patients.

**Conflict of Interest** Nil

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#### FRAIL OLDER PATIENTS HAVE A GREATER IMPROVEMENT IN PHYSICAL QUALITY OF LIFE FOLLOWING INVASIVE MANAGEMENT FOR NON-ST ELEVATION ACUTE CORONARY SYNDROME

<sup>1</sup>Zhaotao Sophie Gu\*, <sup>2</sup>Danny Chan, <sup>3</sup>Ben Beska, <sup>4</sup>Hannah Sinclair, <sup>5</sup>Weiliang Qiu, <sup>6</sup>Vijay Kunadian. <sup>1</sup>Newcastle University; <sup>2</sup>Freeman Hospital; <sup>3</sup>Harvard University

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**Introduction** Frailty, defined as a vulnerability to physiological stressors due to a decline in reserve with age, is common in older patients with non-ST elevation acute coronary syndrome