**Results** Mean age was 81±4 years, 60% were male and 88% received invasive treatment (percutaneous coronary intervention or coronary artery bypass grafting). At presentation, 39 (16.8%) patients were robust, 123 (53%) were pre-frail and 70 (30.2%) were frail. Increasing frailty was associated with decreased physical QoL at both baseline and 1 year ($p<0.001$ for both time points). Although all frailty groups saw an increase in mean PCS, this difference was only statistically significant in frail patients (robust: 42.4±11.4 to 44.3 ±12.4, p=0.372; pre-frail: 38.4±11.4 to 41.6±11.7, p=0.117; frail: 27.2±8.1 to 32.9±12.7, p=0.015). In addition, only frail patients who received invasive treatment saw this significant increase in PCS between baseline and 1 year, although numbers receiving medical therapy was low (Figure 1).

**Conclusion** Although frail older patients with NSTEACS have a poorer physical QoL overall, our data suggest frailty is associated with a similar or greater improvement from baseline QoL in those who receive invasive treatment.

## 55 HIGH SERUM PARATHYROID HORMONE LEVELS ARE NOT ASSOCIATED WITH ENDOTHELIAL FUNCTION, VASCULAR STIFFNESS OR EARLY ADVERSE OUTCOMES AFTER INVASIVE MANAGEMENT OF NON-ST ELEVATION MYOCARDIAL INFARCTION IN HIGH-RISK OLDER PATIENTS

[1]Benjamin Beska, [2]Dermot Neely, [3]Harish Datta, [1]Sophie Zhaotao Gu, [1]Jonathan Batty, [4]Hannah Sinclair, [5]Guy MacGowan, [6]Gary Ford, [7]Weiliang Qiu, [1]Vijay Kunadian*. *[1]Institute of Cellular Medicine, Faculty of Medical Sciences, Newcastle University; [2]Department of Biochemistry, Newcastle upon Tyne Hospitals NHS Foundation Trust; [3]Institute of Cellular Medicine, Newcastle University, and Department of Biochemistry, Newcastle upon Tyne Hospitals NHS Foundation Trust; [4]Institute of Cellular Medicine, Newcastle University, and Cardiothoracic Centre, Freeman Hospital; [5]Cardiothoracic Centre, Freeman Hospital, Newcastle upon Tyne Hospitals NHS Foundation Trust; [6]Divison of Medical Sciences, Oxford University; [7]Channing Division of Network Medicine, Department of Medicine, Brigham and Women's Hospital/Harvard Medical School*

10.1136/heartjnl-2017-311726.54

**Introduction** High serum parathyroid hormone (PTH) levels are associated with increased risk of cardiovascular events. Older patients have an increased risk of adverse events after non-ST elevation acute coronary syndrome (NSTEACS) and PTH may be a useful biomarker in these patients. The link between PTH, endothelial function, vascular stiffness and early outcomes after NSTEACS was evaluated.

**Methods** Older patients (65 years old) referred for invasive management of NSTEACS were recruited into the study (n=204). Serum PTH was measured by electrochemiluminescent immunoassay and split into tertiles for analysis. Vascular stiffness was evaluated with carotid-femoral pulse wave velocity (PWV). Endothelial function was assessed by peripheral arterial tonometry, reported as natural log reactive hyperaemia index. Major Adverse Cardiovascular Events (MACE) were defined as 30 day composite of all-cause mortality, acute coronary syndrome, unplanned repeat revascularisation, significant bleeding, stroke or transient ischaemic attack. Multiple linear and logistic regressions were performed to control for age, sex, hypertension, diabetes, glomerular filtration rate and smoking status.

**Results** Mean age was 80.7±4.0 years (64.7% male). Median PTH was 5.9 pmol/L [IQR 4.3–7.8 pmol/L] and 81 patients (39.7%) had levels above the normal range (1.1–6.4 pmol/L). There were 83 (40.7%) patients in the high (6.4 pmol/L), 62 (30.4%) in the middle (6.3–4.5 pmol/L) and 59 (28.9%) in the low tertile (4.4 pmol/L) of PTH. There was no difference in mean PWV (high 8.51±1.77 metres per second (m/s); middle 9.89±2.75 m/s; low 9.41±2.09 m/s; p=0.646) or mean natural log reactive hyperaemia index (high 0.64±0.34; middle 0.61±0.23; low 0.59±0.25; p=0.684) between PTH tertiles. There was no adjusted linear relationship between PTH and PWV (p=0.09) or natural log reactive hyperaemia index (p=0.919). MACE incidence did not vary between tertiles (high 2.4%; middle 1.6%; low 3.4%; p=0.819) and adjusting for covariates, PTH was not predictive of MACE (p=0.308).

**Conclusion** In this high-risk older cohort, high serum PTH levels are not linked with endothelial dysfunction or vascular stiffness and do not predict early adverse events after invasive management of NSTEACS.

## 56 HIGH SERUM PARATHYROID HORMONE LEVEL IS INDEPENDENTLY ASSOCIATED WITH CAROTID INTIMA-MEDIA THICKNESS IN OLDER PATIENTS UNDERGOING INVASIVE MANAGEMENT OF NON-ST ELEVATION MYOCARDIAL INFARCTION

[1]Benjamin Beska, [2]Dermot Neely, [3]Harish Datta, [1]Sophie Zhaotao Gu, [1]Jonathan Batty, [4]Hannah Sinclair, [5]Gary Ford, [6]Weiliang Qiu, [1]Vijay Kunadian*. *[1]Institute of Cellular Medicine, Faculty of Medical Sciences, Newcastle University; [2]Department of Biochemistry, Newcastle upon Tyne Hospitals NHS Foundation Trust; [3]Institute of Cellular Medicine, Newcastle University, and Department of Biochemistry, Newcastle upon Tyne Hospitals NHS Foundation Trust; [4]Institute of Cellular Medicine, Newcastle University, and Cardiothoracic Centre, Freeman Hospital; [5]Divison of Medical Sciences, Oxford University; [6]Channing Division of Network Medicine, Department of Medicine, Brigham and Women's Hospital/Harvard Medical School*

10.1136/heartjnl-2017-311726.55

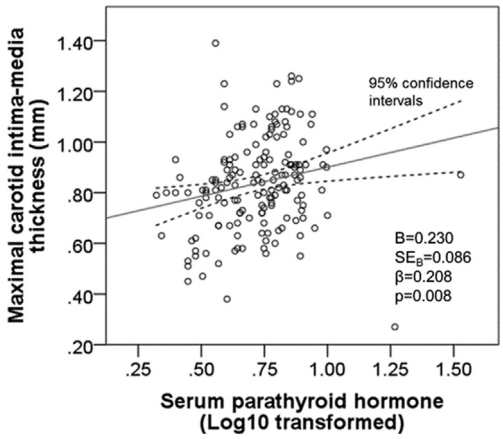
**Introduction** Serum parathyroid hormone (PTH) levels, which are intimately linked to vitamin D status, are associated with an increased risk of cardiovascular events and mortality and may directly influence atherogenesis. Elevated carotid intima-media thickness (CIMT) is a non-invasive marker of subclinical atherosclerosis and is associated with cardiovascular disease, providing predictive power above traditional risk factors. The association between PTH levels and CIMT was evaluated in older patients undergoing invasive management of non ST-elevation acute coronary syndrome (NSTEACS).

**Methods** High-risk older patients (n=160, aged 65 years) attending a tertiary centre for invasive management of NSTEACS had CIMT of the left and right posterior carotid artery measured using B-mode ultrasound (Vivid-I®, GE Healthcare). The largest CIMT measurement was used for analysis. Serum PTH was measured by electrochemiluminescent immunoassay. Statistical modelling was performed using multiple regression, controlled by the hierarchical addition of a priori selected potential confounders.

**Results** Mean age was 80.4±4.0 years (64.7% male). Median PTH level was 5.6 pmol/L [IQR 4.0–6.8 pmol/L]. A significant relationship existed between logarithmically transformed serum PTH and CIMT (regression coefficient (B)=0.230, standard error of B(SEB)=0.086, standardised regression coefficient ($\hat{I}^2$) =0.208, p=0.008) (Figure 1). The association was unchanged after adjustment for age, sex, glomerular filtration rate, body mass index, smoking status, hypertension and hypercholesterolemia (B=0.219, SEB=0.94, β=0.199, p=0.021). Addition of serum vitamin D resulted in a<10% change in the regression

coefficient of PTH (β=0.199 to β=0.213, 7.0%) and was not a significant predictor of CIMT (p=0.209), suggesting that the relationship was not mediated by vitamin D.

**Conclusion** In this high-risk older cohort, high serum PTH levels are associated with increased CIMT independent of traditional atherosclerotic risk factors.




**Abstract 56 Figure 1**

## 57 SERUM TOTAL VITAMIN D LEVELS ARE NOT ASSOCIATED WITH ENDOTHELIAL DYSFUNCTION, VASCULAR STIFFNESS OR EARLY ADVERSE OUTCOMES AFTER INVASIVE MANAGEMENT OF NON-ST ELEVATION ACUTE CORONARY SYNDROME IN OLDER PATIENTS

[1]Benjamin Beska, [2]Dermot Neely, [3]Harish Datta, [1]Sophie Zhaotao Gu, [1]Jonathan Batty, [4]Hannah Sinclair, [5]Guy MacGowan, [6]Gary Ford, [7]Weiliang Qiu, [1]Vijay Kunadian*. *[1]Institute of Cellular Medicine, Faculty of Medical Sciences, Newcastle University; [2]Department of Biochemistry, Newcastle upon Tyne Hospitals NHS Foundation Trust; [3]Institute of Cellular Medicine, Newcastle University, and Department of Biochemistry, Newcastle upon Tyne Hospitals NHS Foundation Trust; [4]Institute of Cellular Medicine, Newcastle University, and Cardiothoracic Centre, Freeman Hospital; [5]Cardiothoracic Centre, Freeman Hospital, Newcastle upon Tyne Hospitals NHS Foundation Trust; [6]Divison of Medical Sciences, Oxford University; [7]Channing Division of Network Medicine, Department of Medicine, Brigham and Women's Hospital/Harvard Medical School*

10.1136/heartjnl-2017-311726.56

**Introduction** Vitamin D may be an important biomarker of cardiovascular disease. Older patients are at particularly high risk of adverse outcomes following non-ST elevation acute coronary syndrome (NSTEACS). Low vitamin D has been previously linked to endothelial dysfunction and vascular stiffness. Therefore, the higher incidence of low vitamin D in older adults may play a plausible mechanistic role in predisposing this cohort to higher risk. The association between vitamin D, endothelial function, vascular stiffness and early outcomes after invasive management of NSTEACS in older patients was evaluated.

**Methods** We evaluated 294 consecutive older patients (aged 65 years) with NSTEACS managed by an invasive strategy. Serum total vitamin D was measured pre-procedure by electrochemiluminescent immunoassay. Endothelial function was determined using peripheral arterial tonometry and vascular stiffness with carotid-femoral pulse wave velocity (PWV), both within 24 hours post-procedure. Major Adverse Cardiovascular Events (MACE) were defined as 30 day composite of all-cause mortality, acute coronary syndrome, unplanned repeat revascularisation, significant bleeding, stroke or transient ischaemic attack. Multivariate linear and logistic regressions were performed controlling for age, sex, serum triglycerides, hypertension, diabetes and smoking status.

**Results** Mean age was 80.5±4.8 years (61.9% male). Median vitamin D level was 29.5 nmol/L [IQR 16.0–53.0 nmol/L] and was split into quartiles for analysis: Q1 (16.0 nmol/L, n=72), Q2 (17.0–29.5 nmol/L, n=75), Q3 (30.0–53.0 nmol/L, n=72) and Q4 (54.0 nmol/L, n=72). There was no difference in endothelial function (p=0.337) or PWV (p=0.633) between the vitamin D quartiles. There was no adjusted linear relationship between vitamin D and PWV (p=0.410) or endothelial function (p=0.490). MACE incidence did not differ between quartiles (Q1 2.7%; Q2 0%; Q3 5.3%; Q4 5.6%; p=0.210) and adjusted for confounders, did not significantly predict MACE (p=0.083).

**Conclusion** In this high-risk older cohort, pre-procedural serum total vitamin D level is not associated with endothelial dysfunction or vascular stiffness and is not predictive of short-term outcomes after invasive management of NSTEACS.

## 58 OPTIMAL RISK STRATIFICATION PATHWAYS FOR PATIENTS WITH SUSPECTED ACUTE CORONARY SYNDROME

[1]Andrew Chapman*, [2]Atul Anand, [2]Dennis Sandeman, [1]Amy Ferry, [2]Anoop Shah, [1]Philip Adamson, [1]Fiona Strachan, [1]Alasdair Gray, [1]David Newby, [1]Nick Mills. *[1]University of Edinburgh; [2]*

10.1136/heartjnl-2017-311726.57

**Background** Novel pathways utilise low concentrations of cardiac troponin and a normal ECG to risk stratify patients with suspected acute coronary syndrome. However, clinical risk scores incorporating additional cardiovascular risk factors or physiological parameters are commonly used in practice. Whether such clinical risk scores are safer than novel pathways is uncertain.

**Methods** Patients with suspected acute coronary syndrome (n=1,139) underwent high-sensitivity cardiac troponin I testing at presentation, 3 and 6 or 12 hours. We applied the High-STEACS pathway, which rules out myocardial infarction in those without ischaemia on the ECG if troponin concentrations are <5 ng/L at presentation and symptom duration is 2 hours. Early presenters and those 5 ng/L are ruled out if absolute change is <3 ng/L at 3 hours and they remain 99th centile. We compared the HighSTEACS pathway with the HEART score (low risk 3), or a TIMI score of 0 with a normal ECG. We compared the negative predictive value (NPV) and efficacy of each approach for a primary outcome of index type 1 myocardial infarction, or type 1 myocardial infarction or cardiac death at 30 days.

**Results** The primary outcome occurred in 15.5% (177/1,139). The HighSTEACS pathway ruled out 61.9% (705/1,139) of patients by three hours, with a NPV of 99.6% [95%CI 99.1%–99.9%]. The NPV of both the HEART and the TIMI score was similar ***(Figure 1A)***, however, they identified a significantly lower proportion of patients as eligible for discharge (HEART 18% (205/1,139), TIMI 26.3% (299/1,139); ***Figure 1B***).

**Conclusions** The HighSTEACS pathway identifies patients at very low risk of index myocardial infarction, or myocardial infarction or cardiac death at 30 days, and rules out acute coronary syndrome in over half of patients presenting to the Emergency Department. Whilst the HEART and the TIMI