

**Abstract 123 Figure 1B** Forest plot demonstrating effects of BITA grafting compared to SITA grafting on long-term all-cause mortality in obese patients

**Results** Eighteen observational studies and one RCT (subgroup analysis) were identified comparing BITA and SITA in 19,589 patients with diabetes. In contrast there were just two observational studies and one RCT (subgroup analysis) comparing BITA and SITA in 6972 obese patients. Pooled analysis demonstrated significant mortality benefit of BITA compared to SITA in diabetic patients (risk ratio [RR] 0.79; 95% confidence interval [CI] 0.70, 0.90; Z=3.62, p=0.0003; I<sup>2</sup>=88%) (Figure 1b). Pooled analysis in obese patients found no significant difference in mortality rates between BITA and SITA (RR 0.73, 95% CI 0.47, 1.12; Z=1.43, p=0.15; I<sup>2</sup>=78%), although the overall effect was for a beneficial trend for BITA (Figure 1a). A significantly higher rate of sternal wound complications following BITA was observed in diabetic (RR 1.53, 95% CI 1.23, 1.90; Z=3.86, p=0.0001; I<sup>2</sup>=4%) and obese patients (RR 2.24, 95% CI 1.63, 3.07; Z=5.00, p<0.00001; I<sup>2</sup>=0%).

**Conclusions** In a pooled analysis, BITA is associated with better long-term survival in diabetic patients, but most of the supportive data comes from observational studies. The effects of BITA grafting in patients who are obese is uncertain due to low numbers of patients available for analysis. BITA is associated with higher rates of sternal wound complications than SITA in both diabetic and obese patients. Further studies are needed to understand the benefits and risks of multiple arterial grafting in patients with diabetes and/or obesity.

**Conflict of Interest** None

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#### COULD ESC 2019 GUIDELINES RISK UNDER DIAGNOSIS OF CORONARY ARTERY DISEASE COMPARED WITH NICE GUIDELINES?

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**Introduction** The UK National Institute of Health and Care Excellence (NICE) updated chest pain guidelines in 2016 and recommended CT coronary angiography (CTCA) as the first line investigation for all patients presenting with new stable chest pain and removal of pre-test probability (PTP) risk score (RS) due to overestimation of coronary artery disease (CAD). This contrasts with European Society of Cardiology (ESC) guidelines, which recommend a PTPRS based

**Abstract 124 Table 1** Number of patients stratified by ESC PTP

Pre-test probability of CAD (%)	number of patients
>85	0
51-85	2
15-50	267
<15	379
Indeterminate	4

approach based on age, gender and typicality of chest pain, guiding choice of diagnostic modality. In patients with intermediate PTP 15-50%, CT coronary angiography (CTCA) is the recommended modality of investigation, and functional tests if PTP 50-85%. No investigation is recommended if PTP <15%. The PTPRS was further updated in 2019 to adjust for lower prevalence of CAD from contemporary studies. We implemented the NICE 2016 guideline at our centre, and retrospectively analysed how an ESC 2019 PTPRS may have guided diagnostic modality and subsequent management.

**Methods** A retrospective search of our local radiology database from January 2017 to June 2018 was undertaken of all CTCA undertaken. CTCA reported CAD degree of stenosis as normal/minimal stenosis, mild (30-50%), moderate (50-70%), or severe (>70%) and retrospectively calculated ESC PTP scores from 2019 guidelines.

**Results** In total 652 patients underwent CTCA (mean age 55 yrs; IQR 48-63; 330 male).

There were no patients with PTP >85%. 2 patients had PTP 50-85%; 1 patient had moderate stenosis and 1 mild stenosis on CTCA. There were 267 patients with PTP 15-50%; 23 (9%) had severe stenosis and 35 (13%) moderate stenosis by CTCA. Finally, 379 patients had PTP <15%; 11 (3%) had severe stenosis and 18 (5%) moderate CTCA stenosis.

**Conclusions** The updated ESC guideline risk score has shown patients presenting to our chest pain clinic have an overall low PTP of CAD, and is predictive of coronary artery disease in this patient cohort.

A PTP led approach would have meant more than half our cohort underwent no investigation due to low PTP of <15%, however this is at risk of under diagnosis of CAD given 29 patients (8%) had moderate or severe CTCA stenosis. A NICE guided CTCA approach, ensured diagnosis and initiation of medical therapy, which has been demonstrated in SCOT-Heart (1) to have mortality benefit.

## REFERENCE

1. Investigators S-H, Newby DE, Adamson PD, Berry C, Boon NA, Dweck MR, *et al.* Coronary CT angiography and 5-year risk of myocardial infarction. *N Engl J Med.* 2018;**379**(10):924-33.

Conflict of Interest None

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### CAPILLARY REMODELING AND BLOOD PRESSURE CHANGES OVER THE FIRST YEAR OF LIFE IN TERM AND PRE-TERM INFANTS BORN TO MOTHERS WITH A HYPERTENSIVE DISORDER OF PREGNANCY

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**Background** Hypertensive disorders of pregnancy (HDP) which include preeclampsia, gestational hypertension, chronic hypertension, and preeclampsia superimposed on chronic hypertension are associated not only with increased risk of hypertension and stroke in the mothers but also in their offspring. The pathophysiological mechanisms for this association are poorly understood. It has been postulated that microvascular alterations that precede cardiovascular events by decades could play a role. We have recently shown that low birth weight (LBW) infants born at term or pre-term to normotensive mothers have a significantly higher capillary density at birth and then undergo a process of accelerated capillary remodeling in the first 3 months life associated with an increase in systolic BP which may provide a strong evidence for the role of CR in the causation of hypertension.

**Methods** We studied 112 infants born to HDP mothers (90 were born at term (T-HDP) and 22 were born pre-term (PT-HDP) and compared them to 278 normal birth weight infants born at term (T-NTN) and 68 pre-term infants (PT-NTN) born to normotensive mothers. We used intravital capillary microscopy to measure basal i.e. functional (BCD) and maximal i.e. structural (MCD) capillary densities, and blood pressure (BP) using the Welch Allyn VSM 300TM monitor, at birth, 3 months, 6 months and 12 months.

**Results** At birth, PT-HDP and PT-NTN infants had a significantly higher BCD and MCD compared to term infants. Only PT-HDP had a lower capillary reserve than the other groups. T-HDP infants had a significantly higher BCD but not MCD compared to T-NTN infants. Pre-term infants exhibited accelerated capillary remodelling so much so that by 12 months there were no significant differences in BCD and MCD between the 4 cohorts. Infants born to HDP mothers had a significantly higher systolic BP at birth and at one year compared to NTN infants. The change in BCD and MCD predicted the change in systolic BP at 3 months, and there was a negative correlation between systolic BP and both BCD and MCD at 12 months.

**Conclusions** Pre-term infants of both hypertensive and normotensive mothers had a significantly higher basal and maximal capillary densities at birth compared to term infants. A process of accelerated capillary remodeling occurred mostly in the first 3 months life that corrected the higher capillary densities in these infants. Only pre-term infants of HDP exhibited reduced capillary reserve at birth. Further follow-up studies of these infants are required to investigate the crucial role of the microcirculatory abnormalities in the pathogenesis of hypertension.

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**Conflict of Interest** none

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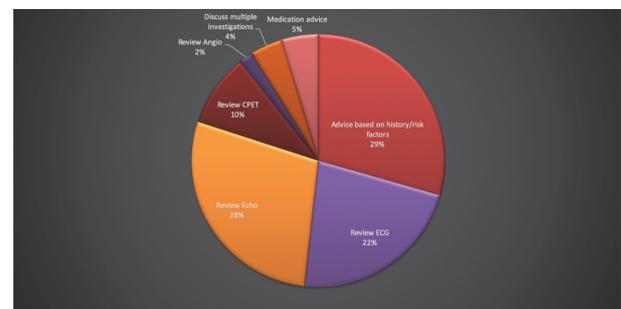
### SHOULD CONTEMPORARY PRE-OPERATIVE ASSESSMENT OF NON-CARDIAC SURGERY BE MORE COLLABORATIVE? A SINGLE CENTRE CARDIOLOGY-ANAESTHETIC MULTIDISCIPLINARY EXPERIENCE

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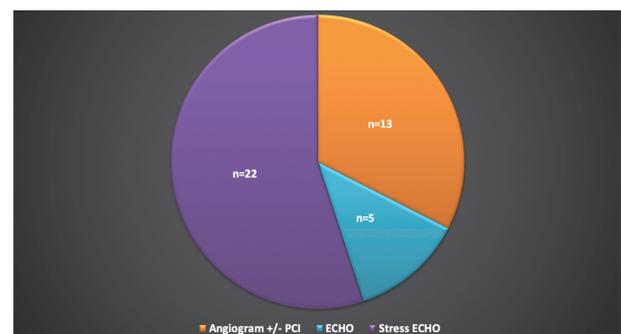
10.1136/heartjnl-2020-BCS.126

**Introduction** Perioperative management of patients undergoing non-cardiac surgery (NCS) is complex and challenging. Whilst overall mortality is low, approximately 40% of post-operative deaths are due to myocardial infarction. Historic management of such patients has been driven by anaesthetic-led care with limited systematic cardiology input. We have developed a unique cardiology-anaesthetic multi-disciplinary (CA-MDT) forum to discuss how to optimally manage high-risk cardiovascular patients undergoing general anaesthesia for NCS. We present a qualitative description, and present the data, for one-year from this service.

**Method** Data from all patients identified as having a high-risk cardiovascular profile via the anaesthetic led pre-operative assessment clinic (POAC), and discussed at the weekly CA-MDT during a one-year period (2019) are presented. Data collected in a consecutive cohort of patients awaiting NCS, include the proportion of cases discussed, nature of the



**Abstract 126 Figure 1** Nature of cardiology-Anaesthetic MDT Discussions



**Abstract 126 Figure 2** Number and type of cardiac investigations following CA-MDT