(4.6%), VT=1 (0.3%). ANS referrals resulted in greater trend towards change of management (38.2%) of patients compared with GC (32.7%) and EP (31.4%) ($p=0.593$ nurse vs. consultant). For those needing pacing, 24 were from ANS referrals compared to 25 for clinicians (23.5% vs 18.3% respectively, $p=0.012$). Median time to developing a pacing indication was 2.6 months for ANS and 4.1 months for clinicians; 25 had pacing indication within 3 months of ILR insertion. Overall, an ILR had a diagnostic yield of 34.1% ($n=104$) (table 1).

Conclusion The diagnostic yield of ILR insertion was 34%. ANS referrals trended towards greater diagnostic yield compared with clinicians and significantly more pacemaker indications. Our data suggest ANS patient selection for ILRs are at least comparable to clinicians.

Conflict of Interest None

Interventional Cardiology

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ISCHAEMIA AND NO OBSTRUCTIVE CORONARY ARTERY DISEASE (INOCA): PREVALENCE AND PREDICTORS OF CORONARY VASOMOTION DISORDERS

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Background Ischemia and no obstructive epicardial coronary artery disease (INOCA) is a common clinical syndrome with distinct underlying causes.

Objective To evaluate the prevalence and predictors of microvascular and/or vasospastic angina (MVA/VSA) in an unselected cohort of angina patients referred for invasive coronary angiography with suspected ischaemic heart disease in whom obstructive coronary artery disease (CAD) is excluded.

Methods Prospective cohort study at two regional centres between November 2016 and December 2017 including patients with symptoms and/or signs of ischaemia prior to undergoing invasive coronary angiography (NCT03193294). Baseline risk was assessed (ASSIGN score) and validated questionnaires were completed prior to the angiogram including Rose angina, quality of life (EuroQOL [EQ-5D-5L]) and angina severity according to the Seattle Angina Questionnaire (SAQ). Patients with definite or probable angina without CAD [diameter stenosis <50% and/or FFR > 0.80] proceeded directly to assessment for disorders of coronary vasomotion. This involved an ad hoc interventional diagnostic procedure (IDP) using reference invasive tests for microvascular angina (MVA), vasospastic angina (VSA), both conditions or none. MVA and VSA groups were compared before logistic regression was performed to assess predictors of MVA and VSA.

Results Three hundred and ninety-one patients with angina were recruited before undergoing invasive coronary angiography during the study period. Overall, 185 (47%) of subjects had INOCA and 151 of these underwent an IDP. INOCA patients reported similar angina burden with worse quality of life than CAD subjects (EQ5D-5L index 0.60 v 0.65 units;

Abstract 50 Figure 1 Prevalence of coronary vasomotion disorders as revealed by the IDP

The underlying abnormalities revealed by the IDP included: isolated microvascular angina (MVA) in 78 (51.7%), isolated vasospastic angina (VSA) in 25 (16.6%), mixed MVA/VSA in 31 (20.5%), and non-cardiac

Abstract 50 Figure 2 Differences in baseline characteristics (A) and quality of life (B) between MVA & VSA groups.

A - There were important key differences in baseline demographics notably a higher prevalence of dyslipidaemia (85% in MVA v 65% VSA) whereas smoking was more prevalent in the VSA group (36% VSA v 12% in MVA) MVA patients were more likely to have inducible ischaemia on ETT with a trend towards more typical exertional symptoms (Definite/typical defined by Rose Angina questionnaire). B - Angina severity and quality of life was worse in VSA compared to MVA subjects.

$P=0.041$). The mean age of patients who underwent the IDP was 60.9 years, 74% were female and their median predicted 10-year IHD risk was 18.6% (10.6, 31.4). 78 subjects (52%)

had isolated microvascular angina, 25 (17%) had isolated vasospastic angina, 31 (20%) had both (MVA & VSA) only 17 (11%) had non-cardiac chest pain. Myocardial bridging of coronary artery was found in 22 (15%). Multivariate predictors of MVA included typical angina, inducible ischaemia but traditional cardiovascular risk factors were not associated. Smoking and age were independent predictors of VSA.

Conclusion The majority of patients with symptoms and/or signs of ischemia and no obstructive disease have a diagnosis of microvascular and/or vasospastic angina. Traditional cardiovascular risk scores have limited discrimination for disorders of coronary vasomotion.

Conflict of Interest Nil

51 ANIMATION-SUPPORTED CONSENT IN PATIENTS UNDERGOING CORONARY ANGIOGRAPHY AND ANGIOPLASTY

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Introduction Patient understanding of angiography and angioplasty is often incomplete at the time of consent. Language barriers and time constraints are significant obstacles. New approaches are needed to support communication and decision making. To this end, we developed a multi-language animation describing the benefits, risks and alternatives of the procedures (please click to view www.explainmyprocedure.com). We introduced the animation into practice in a pilot quality improvement project and assessed patients' understanding of the procedure before and after its introduction.

Methods Forty consecutive patients were interviewed, twenty who had watched the animation prior to their procedure and twenty who had not, to determine whether they felt completely informed, understood the benefits, the risks and the alternative treatments. Responses to these four questions were analysed categorically and ratios calculated for the animation group compared with the non-animation group (with 95% confidence intervals). STATA V10 was used for all analyses.

Results Table 1 shows that patients in the animation group (mean age 64 years) and in the no animation group (mean age 68 years) were well matched. Figure 1 shows that understanding of the procedure was greater in the animation group across all four questions. In the animation group there was a statistically significant 3-fold greater understanding of the risks

Abstract 51 Figure 1 Patient understanding of the procedure in the animation and no animation groups

Abstract 51 Table 1 Clinical characteristics of the forty patients according to whether they were or were not shown the animation before their procedure

	Not shown Animation (n=20)	Shown Animation (n=20)
Male	17	13
Female	3	7
Angiogram	15	13
PCI	5	7
Elective	20	19
Previous Angiogram	7	8
English Speaker	11	14

p value not significant for any differences in variables between two groups

of the procedure (ratio 3.0 (95% CI 1.2 to 7.7), $p=0.023$) and a 2.5-fold increase in the proportion of patients who felt completely informed before giving consent (2.5 (1.2 to 5.1), $p=0.01$). There were directional, but non-significant, increases in understanding of the benefits and alternatives of the procedure; ratios 1.6 (0.8 to 3.2), $p=0.34$ and 2.0 (0.6 to 6.9), $p=0.45$, respectively.

Conclusion Viewing animations of angiography and angioplasty before consent was associated with a greater understanding of the procedures and the associated risks. Multi-language narration has the potential to further improve communication surrounding consent. The approach is not limited to cardiology and has the potential to be applied to all specialties in medicine.

Conflict of Interest No conflict of interest

52 OPTIMISATION OF A CELL-BASED MODEL FOR THE CHARACTERISATION OF NOVEL DRUG-FREE STENT COATINGS

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Current pharmacological approaches aimed at improving stent designs are limited by their inability to reduce endothelial damage following stent placement and improve healing. Here, we consider in vitro approaches that could be used to assess the effects of novel anti-oxidant stent coatings on damaged endothelial cells following stent placement. Oxidative stress is a physiological response to inflammation and can result in activation of intracellular signalling molecule, leading to pathological effects. One such molecule is calcium/calmodulin dependent protein kinase II δ (CaMKII δ). Hyper-activation of CaMKII is known to be directly linked to disease progression in the heart and it has been implicated in endothelial dysfunction. It is therefore of interest to examine how novel drug-free stent coatings might reduce or reverse oxidative damage following stent placement and whether CaMKII may be a potential target. Our initial experiments have used human umbilical vein endothelial cells (HUVECs), challenged with inflammatory and oxidative stress as a model for future investigations with novel stent coatings.

Novel stent-coatings were generated on 200 μ m stainless steel wires (316L medical grade), and their antioxidant activity assessed at 8h and 24h using a DPPH (2,2-diphenyl-1-picrylhydrazyl) colorimetric assay and expressed as a percentage of scavenged to total radicals. Antioxidant activity was observed