

## Presenting Author Information

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**Disclosures:** Please list any relevant financial disclosures.

None

## Abstract Topic (must be gender- or sex-specific)

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| <input type="checkbox"/> Preventative cardiology       | <input type="checkbox"/> General cardiology     | <input checked="" type="checkbox"/> Interventional cardiology |
| <input type="checkbox"/> Heart failure                 | <input type="checkbox"/> Cardio-oncology        | <input type="checkbox"/> Cardio-obstetrics                    |
| <input type="checkbox"/> Electrophysiology             | <input type="checkbox"/> Cardiovascular Imaging | <input checked="" type="checkbox"/> Coronary Microvasculature |
| <input type="checkbox"/> Social Determinants of Health | <input type="checkbox"/> Mental Health          | <input type="checkbox"/> Precision Medicine                   |

**Title:** Include the full title as it will appear on the poster.

Evaluation of coronary microvascular dysfunction and vasospasm in patients with angina and non-obstructive coronary artery disease

**Background:** In an initial paragraph, provide relevant information regarding the background and purpose of the study, preferably in no more than two to three sentences.

Angina in the absence of obstructive coronary artery disease (CAD) is a growing cause of morbidity and mortality, exceeding the economic burden of CAD. Roughly 40% of patients undergoing invasive angiography for anginal symptoms have non-obstructive CAD. Within this category, there are distinct sub-populations including patients with angina without evidence of ischemia on prior stress testing (ANOCA), evidence of ischemia on stress testing (INOCA), or history of obstructive CAD with prior revascularization (ANOCA-HxCAD). Coronary microvascular dysfunction (CMD) and/or epicardial vasospasm are common causes of angina in the absence of epicardial CAD despite optimal medical therapy. Differences between these groups, in terms of risk factors and diagnoses remain relatively unknown.

**Methods:** Briefly state the methods used.

In a prospective registry-based cohort study of 306 patients without current obstructive CAD (<50% stenosis in epicardial artery) undergoing coronary functional angiography (CFA), we assessed differences in clinical characteristics, symptoms, and CFA diagnoses: (1) endothelial-independent CMD (coronary flow reserve [CFR] <2.5 to adenosine testing), (2) endothelial-dependent CMD (coronary blood flow [CBF]<50% or no change in vessel diameter to 54 mcg intracoronary acetylcholine [ACH]), (3) epicardial vasospasm to 108 mcg intracoronary ACH in 3 groups of patients (ANOCA, INOCA, and ANOCA-HxCAD).

**Results:** Summarize the results in sufficient detail to support the conclusions.

Among the 306 patients undergoing CFA, 89% were female with a median age of 58 years (49, 67). Patients with ANOCA-HxCAD had a significantly higher prevalence of hypertension, diabetes, heart failure with preserved ejection fraction, and experienced worse dyspnea on exertion as measured by validated questionnaires in comparison to ANOCA or INOCA patients. However, there were no differences between the groups in terms of anginal severity, functional capacity, or quality of life. In terms of CFA diagnoses, vasospasm was more prevalent in ANOCA-HxCAD ( $p < 0.001$ ) and CMD was more prevalent in ANOCA and INOCA patients ( $p = 0.034$ ) (Table 1).

**Conclusions:** Concisely state the conclusions reached.

Despite differences in clinical characteristics, patients without obstructive CAD have similar anginal severity, functional capacity, and quality of life regardless of evidence of ischemia on prior stress imaging or history of revascularization. There are differences in CFA diagnoses with higher prevalence of CMD in ANOCA and INOCA patients and higher prevalence of vasospasm in ANOCA-HxCAD patients. Determining the underlying diagnoses changes clinical management; therefore, CFA should be considered in all patients without obstructive CAD.

**Tables/Figures/Graphics:** Include images that are part of your submission here. Images should be high resolution and have a file type of “gif”, “jpg”, or “jpeg”.

**Table 1: Demographics and Clinical Characteristic in ANOCA patients undergoing CFA**

	Overall (N=306)	INOCA (N=84)	ANOCA (N=158)	ANOCA-HxCAD (N=64)	p-value
<b>Demographics</b>					
Age*, years (median, IQR)	58 (49, 67)	59 (47, 67.5)	56 (48, 65)	61 (52, 70)	0.086
Female (%)	272 (89)	81 (96)	143 (91)	48 (76)	<b>&lt;0.001</b>
<b>Clinical Characteristics</b>					
Hypertension (%)	214 (70)	58 (69)	98 (62)	58 (91)	<b>&lt;0.001</b>
Hyperlipidemia (%)	285 (93)	81 (96)	143 (91)	61 (95)	0.209
Diabetes (%)	64 (21)	6 (7)	28 (18)	30 (47)	<b>&lt;0.001</b>
HFrEF (%)	14 (5)	3 (4)	6 (4)	5 (8)	0.377
HFpEF (%)	56 (18)	13 (15)	21 (13)	22 (34)	<b>0.001</b>
Afib (%)	25 (8)	6 (7)	12 (8)	7 (11)	0.657
OSA (%)	105 (34)	26 (31)	53 (34)	26 (41)	0.451
<b>Validated Questionnaire Scores</b>					
SAQ-7 <sup>1</sup> * (0-100), (median, IQR)	33.3 (16.9, 50.0)	33.6 (19.4, 52.8)	36.3 (18.6, 49.6)	26.4 (7.5, 47.5)	0.110
DASI <sup>1</sup> (0-58.2), (mean ± SD)	32.5 ± 13.5	34.3 ± 14.4	33.0 ± 12.8	28.6 ± 13.3	0.064
UCSD SOB <sup>2</sup> * (0-120), (median, IQR)	40 (22, 60)	32 (18, 50)	41 (22, 63)	47 (28, 72)	<b>0.013</b>
<b>CFA Conclusions</b>					
LAD CFR*, (median, IQR)	2.2 (1.8, 2.7)	2.2 (1.7, 2.7)	2.2 (1.8, 2.8)	2.2 (1.7, 2.5)	0.487
Endothelial-Independent CMD	195 (64)	58 (69)	105 (66)	32 (50)	<b>0.034</b>
Endothelial Dependent CMD	158 (76)	47 (78)	91 (76)	20 (74)	0.893
Vasospasm	77 (26)	21 (26)	27 (18)	29 (45)	<b>&lt;0.001</b>

Afib: Atrial Fibrillation; CFR: Coronary Flow Reserve; CMD: Coronary Microvascular Dysfunction; DASI: Duke Activity Status Index; HFpEF: Heart Failure with Preserved Ejection Fraction; HFrEF: Heart Failure with Reserved Ejection Fraction; OSA: Obstructive Sleep Apnea; UCSD: University of San Diego Shortness of Breath; SAQ-7: Seattle Angina Questionnaire; IQR: interquartile range; SD: standard deviation; \*Wilcoxon Rank Sum analysis d/t non-normally distributed data.

1. Greater scores= better quality of life and functionality
2. Greater scores= poor quality of life and functionality

