Abstract Submission Form

The Women's Heart Center Program Committee is accepting abstract submission forms through **August 16, 2024**. Completed forms should be emailed to WHC@TheChristHospital.com.

Abstract submissions should be gender- and sex-specific research pertaining to one of the program topics outlined below.

The Program Committee wishes to encourage young scientific investigators and will reward up to 4 abstracts/posters submitted by presenters considered early career (definition provided below). First place will receive $1000, second place will receive $500, and two honorable mentions will each receive $250.

The presenting author will be sent an email with the status of the submission by **August 30, 2024**. If your abstract is accepted, your notification will contain complete presentation information. However, please note the following:

- All human subject research must conform to the principles of the Declaration of Helsinki of the World Medical Association.
- The presenting author should be able to provide documentation of IRB approval if requested.
- The Program Committee is unable to reimburse presenters for travel, hotel, or per diem expenses.
- Submission of an abstract constitutes a commitment by the presenting author (or designee) to present in-person at the symposium on October 11, 2024, during the following times:
    - Registration & Networking: 7:00 – 8:00 am
    - Networking Lunch: 12:00 – 1:00 pm
    - Poster Session Award Announcement: 3:40 – 4:00 pm
- All accepted abstract presenters must register for the symposium via Eventbrite and pay the applicable registration fees (trainees and invited speakers will have the registration fee waived).
- If an author wishes to withdraw an abstract, please email WHC@TheChristHospital.com.

Presenting Author Information

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Early Career (Defined as physicians, scientists, medical students, and other healthcare providers currently in residency or fellowship programs or within three years of training)? Yes ☐ No ☒

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Disclosures: Please list any relevant financial disclosures.
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Abstract Topic (must be gender- or sex-specific)

☐ Preventative cardiology	☐ General cardiology	☐ Interventional cardiology
☐ Heart failure	☐ Cardio-oncology	☐ Cardio-obstetrics
☐ Electrophysiology	☐ Cardiovascular Imaging	☒ Coronary Microvasculature
☐ Social Determinants of Health	☐ Mental Health	☐ Precision Medicine

Title: Include the full title as it will appear on the poster.
Age Affects Coronary Microvascular Dysfunction and Vasomotor Disorders Presentation in Patients with Angina with Non-Obstructive Coronary Arteries (ANOCA)

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.
Patients with Angina and No Obstructive Coronary Artery Disease (ANOCA) have poor outcomes and increased mortality. Coronary Microvascular Dysfunction and Vasomotor Disorders (CMVD) are often the underlying causes of ANOCA. The CMVD endotypes that can be accessed via Coronary Functional Angiography (CFA) include Endothelial Independent CMD, Endothelial Dependent CMD, and Epicardial Spasm. The are limited studies on the influence of age on CMVD endotypes in ANOCA patients.

Methods: Briefly state the methods used.
This is a prospective registry-based cohort study of ANOCA patients (<50% stenosis in coronary arteries) that underwent CFA. ANOCA patients were divided into three age groups: less than 45 (<45), between 45 and 55 (45-55), and over 55 (55<). Differences in clinical characteristics, validated questionnaire scores, and CMVD diagnoses based on CFA were compared between the three age groups.

Results: Summarize the results in sufficient detail to support the conclusions.
Among 301 ANOCA patients, 54 were <45, 82 were between 45-55, and 165 were >55. Patients <45 had significantly lower prevalence of hypertension (p=0.008) and diabetes (p=0.032) compared to older age groups. Patients <45 had significantly lower Seattle Angina Questionnaire (SAQ-7) scores, indicating worse anginal severity (p=0.033). Functional capacity measured

by Duke Activity Status Index (DASI) decreased with age (p<0.01). Vasospastic angina, defined as at rest chest pain, was more prevalent in patients <45 and 45-55 compared to >55 (p=0.013). Diagnosis of Endothelial Independent CMD increased across all age groups, with its highest prevalence in >55 (p=0.046). CFR decreased with age and was the lowest in the >55 group (p=<0.01). Prevalence of Endothelial Dependent CMD was significantly higher in the 45-55 group (p=0.016). There was no difference between groups in the proportion of Epicardial Spasm. The proportion of abnormal CFA findings was higher in patients 45-55 and >55 compared to patients <45 (p=0.025).

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Conclusions: Concisely state the conclusions reached.

The youngest cohort of ANOCA patients (<45) had more severe angina, but the greatest functional capacity compared to older age groups. Endothelial Independent CMD was more prevalent in older (>55) ANOCA patients. Prevalence of Endothelial Independent/Dependent CMD was higher in the 45-55 and >55 cohorts compared to <45, with no differences between age groups for Epicardial Spasm. CFA should be considered in ANOCA patients across various age groups. These results highlight the potential for age as a risk factor for CMVD endotypes in ANOCA patients.

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. Results	<45 Years (N=54)	45-55 Years (N=82)	55+ Years (N=165)	P-value (Main Effect)
Demographics				
Age (Mean, SD)	37.2 ± 5.2*,**	50.5 ± 3.3*,**	65.6 ± 6.3*,**	**<0.001**
Sex (N, %) M F	 5 (9) 48 (91)	 5 (6) 77 (94)	 12 (7) 151 (93)	0.769
Hypertension (N, %)	27 (50)	50 (61)*	119 (72)*	**0.008**
Diabetes (N, %)	2 (4)*	16 (20)*	25 (15)	**0.032**
Validated Questionnaires				
CCS Class (N, %) 1 2 3 4	 10 (34) 4 (14) 11 (38) 4 (14)	 15 (28) 9 (17) 22 (41) 8 (15)	 41 (41) 23 (23) 23 (23) 13 (13)	0.290
SAQ7 [1] (Median, IQR)	29.2 (18.8, 40.1)	33.3 (16.1, 45.8)*	37.1 (23.3, 54.2)*	**0.033**
DASI [2] (N, Mean, SD)	41.0 ± 13.2*	37.4 ± 12.6*	29.0 ± 12.4*,**	**<0.001**
UCSD SOB (Median, IQR)	37 (22, 50)	35 (23, 53)	34.5 (15, 57)	0.924
Vasospastic Angina (N, %)	48 (89)*	73 (89)*	125 (76) **	**0.013**
Microvascular Angina (N, %)	42 (78)	70 (85)	144 (87)	0.235
CFA Results				
Endothelial Dependent CMD (N, %)	25 (45)*	55 (71)**	93 (59)*	**0.016**
Endothelial Independent CMD (N, %)	25 (51)	46 (59)*	106 (69)*	**0.046**
Coronary Flow Reserve (Median, IQR)	2.5 (2.0, 2.9) N=37	2.35 (1.8, 2.8)* N=64	2.1 (1.7, 2.6)* N=119	**0.007**
% Change CBF (Median, IQR)	0.83 (0.36, 1.03)** N=23	0.11 (-0.16, 0.65)** N=40	0.20 (0.08, 0.69)** N=66	**<0.001**
% Change in Vessel Diameter (Median, IQR)	4.4 (-5.5, 14.1)**	-7.2 (-12.6, -2.8)**	-1.8 (-7.6, 3.3)**	**<0.001**
Spasm (N, %)	14 (26)	24 (29)	44 (27)	0.885
Any Abnormal CFA Finding (N, %)	40 (74)*	73 (89)**	145 (88)*	**0.025**

CFA: Coronary Functionality Angiography; CMD: Coronary Microvascular Disease; CCS Class: Canadian Cardiovascular Society; DASI: Duke Activity Status Index; UCSD: University of San Diego Shortness of Breath; SAQ-7: Seattle Angina Questionnaire; IQR: Interquartile Range; SD: Standard Deviation. Comparisons were made via chi-square for proportion data (N, %). P-values presented for the main effect of age, compared via one way ANOVA (mean, SD) or one way ANOVA on ranks for non-normally distributed date (median, IQR). Post-hoc comparisons (Tukey's) were ran for significant effects. * denotes a significant difference (p<0.05) between <45 and 45-55, * denotes a significant difference (p<0.05) between <45 and 55+, * denotes a significant difference (p<0.05) between 45-55 and 55+.