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

Name (First, Last, Credentials):Jessie Fox, PharmD
Institutional Affiliation: Flow Therapy
Email Address:jfox@flowtherapy.com
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 ☐

Co-author Information

Name: Miyoki Kawamoto, BS Email: miyoki.kawamoto@cuanschutz.edu Affiliation: University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Name: Sophia Villa, BS Email: sophia.villa@cuanschutz.edu Affiliation: University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Name: Namrita D. Ashokprabhu, BS Email: namrita.ashokprabhu@thechristhospital.com Affiliation: The Christ Hospital Women's Heart Center
Name: Danielle Tapp, PhD Email: danielle.tapp@thechristhospital.com Affiliation: The Christ Hospital Women's Heart Center
Name: Odayme Quesada, MD Email: odayme.quesada@thechristhospital.com Affiliation: The Christ Hospital Women's Heart Center

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.
Enhanced External Counterpulsation for Treatment of Coronary Microvascular Dysfunction

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.
Coronary microvascular dysfunction (CMD) is an increasingly recognized mechanism in several cardiovascular diseases including angina with non-obstructive coronary arteries (ANOCA) and heart failure. CMD is associated with increased risk of major adverse cardiovascular events (MACE) and cardiovascular mortality. Enhanced External Counterpulsation (EECP) is a non-invasive treatment that leads to improved blood flow and provides hemodynamic benefits to the vascular system, including the coronary microvasculature. Prior work has demonstrated EECP efficacy in improving measures of angina symptoms and certain endotypes of CMD (endothelial independent). However, the effects of EECP on angina symptoms for other CMD endotypes (endothelial dependent and spasm) has not been established.

Methods: Briefly state the methods used.
Retrospective registry-based cohort study of patients having undergone coronary functional angiography (CFA) for CMD diagnosis and completed EECP treatment. EECP treatment is one hour per day, five days per week, for seven weeks, with patients undergoing thirty-five sessions during a typical course. Abnormal CFA findings included: Endothelial-independent CMD, endothelial-dependent CMD and microvascular or epicardial spasm. Patient scores for angina, functional capacity and quality of life were assessed via the Canadian Cardiovascular Society Class (CCS), 6-minute walk test (6MWT), and Seattle Angina Questionnaire (SAQ) were evaluated pre- and post- EECP treatment.

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

Primary results are outlined in Table 1. A total of 32 patients were included in the analyses (78% female; 57.3±11.8 years). Patients were on 4.1±1.6 cardiac medications pre-EEP and primary comorbidities included dyslipidemia (91%), hypertension (69%), diabetes (16%). Breakdown of abnormal CFA findings included 70% with endothelial-independent CMD (average CFR 2.1), 60% with endothelial-dependent CMD, and 41% with spasm. The average time from abnormal CFA diagnosis to EECP treatment start was 302 days. Post-EECP, average improvement in SAQ score was 16.2 points ($p<0.001$) and patients gained a median of 100 feet on 6MWT ($p=0.032$).
Click or tap here to enter text.

Conclusions: Concisely state the conclusions reached.
In patients with a variety of CMD phenotypes, including endothelial dependent and spasm CMD, EECP therapy reduced angina symptoms, improved SAQ score, and increased exercise tolerance. EECP should be considered as a management option in patients with CMD to reduce symptom burden and improve quality of life.

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

	Pre EECP	Post EECP	P-Value
Demographics			
Sex, n (% female)	25 (78)		
Age (Mean, SD)	57.3 ± 11.8		
BMI (Mean, SD)	31.0 ± 7.9		
Time from CFA dx to EECP (days) (Mean, SD)	302 ± 221		
Coronary Functional Angiography (CFA)*			
CFR, median (IQR)	2.1 (1.7, 2.6)		
Endothelial independent CMD, n (%)	21 (70)		
Endothelial dependent CMD, n (%)	18 (60)		
Spasm, n (%)	13 (41)		
PMH			
CAD, n (%)	6 (19)		
INOCA, n (%)	5 (16)		
ANOCA, n (%)	21 (66)		
Hypertension, n (%)	22 (69)		
Dyslipidemia, n (%)	29 (91)		
Diabetes, n (%)	5 (16)		

HFrEF, n (%)	2 (6)		
HFpEF, n (%)	9 (28)		
Outcomes**			
CCS Class, n (%) • 1 • 2 • 3 • 4	 4 (20) 5 (25) 8 (40) 3 (15)		
SAQ (Mean, SD)	21.8 ± 13.4	38.0 ± 19.8	<0.001
6MWT, median (IQR)	12 (10, 14)	13 (10.5, 14)	0.032

*CFA was performed using either the Doppler-tipped guidewire method or pressure guidewire with a temperature sensor (Thermodilution method).
** A paired Student's t-test, Wilcoxon signed-rank test and McNemars Test were utilized as appropriate.