

Adverse Pregnancy Outcomes in Women Diagnosed with Coronary Microvascular Dysfunction A Case Series

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Introduction

- Coronary microvascular dysfunction (CMD) in women is associated with adverse cardiovascular outcomes.
- The frequency of adverse pregnancy outcomes in this population is unknown.
- Objective: To characterize frequency of symptoms, need for medical attention and adverse pregnancy outcomes in CMD



Methods

Women with suspected CMD enrolled in a prospective registry

Heart Disease of the Small Arteries in Women and Men

ClinicalTrials.gov: NCT00573027

Outcomes of interest

- Self-reported increase in chest pain (CP) frequency
- ER visits or hospitalization for CP
- MI or Death during pregnancy

- Gestational Hypertension
- Gestational Diabetes
- Preeclampsia/Eclampsia
- Preterm birth (<37 weeks)
- Small for Gestational Age (SGA) (<10th percentile)

Wei, J et al. JACC Cardiovasc Interv, 2012
Hypertension in Pregnancy, ACOG Guidelines, 2013

Results

281 patients undergoing CRT
enrolled in CMD registry
(NCT00573027)

53 women of childbearing age
(18 – 44 years)

5 women with 5 pregnancies
following enrollment
(9.4%)

7 lost to follow-up

Results

- Mean age at diagnosis was 32 (± 3.7) years
- All women had CMD (≥ 1 abnormal pathway)
 - Mean CFR 2.4 (± 0.6), Δ CBF 37.8% ($\pm 38.4\%$), Δ ACH 6.2% ($\pm 10.0\%$), Δ NTG 18.1% ($\pm 8.4\%$), LVEDP 12 mmHg (± 2.9)

Table: Clinical characteristics and Pregnancy details

Medical History	Obstetrical history	History of spontaneous miscarriage	Age at pregnancy	Aspirin use during pregnancy	GA	Birth Weight (g)
Lupus, RA	G5P3A1	yes	34	yes	37 4/7	2265
Lupus, Stroke	G4P2A1	yes	35	no	35 1/7	2665
Unremarkable	G4P2A1	yes	36	yes	40 5/7	3286
Unremarkable	G3P1A1	no	37	yes	39 5/7	3969
Unremarkable	G2P0A1	yes	29	no	40 0/7	3560

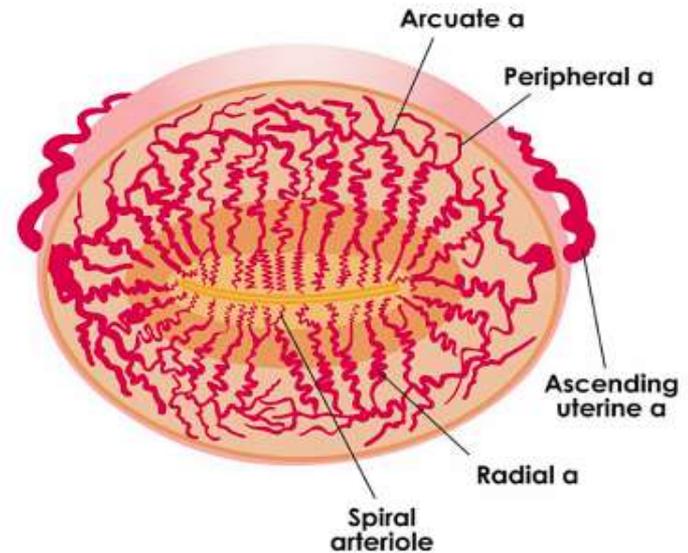
Results

- Adverse pregnancy outcomes:
 - 1 patient experienced preterm delivery 35 1/7 weeks
 - The neonate of another patient was SGA (2265 g at 37 4/7 weeks)
 - No patients were diagnosed with GHTN, GDM, Preeclampsia/eclampsia
 - 4/5 patients had a history of prior spontaneous miscarriage
- Adverse cardiac outcomes
 - One patient reported an increase in CP frequency, requiring anti-anginal therapy during pregnancy and an ER visit
 - No patients experienced hospitalizations for angina, MI or death



Conclusions

- Increasing CP and ER visits for CP during pregnancy were not commonly observed
 - Increase in circulating levels of estrogen and progesterone during pregnancy
- Two patients experienced adverse pregnancy outcomes and a majority of women had a history of spontaneous miscarriage
 - Abnormalities in coronary microcirculation may also exist in the uterine microcirculation affecting modulation of flow and oxygenation of the developing fetus
- Further studies are warranted to explore adverse pregnancy outcomes in this population



Thank you ! Questions?



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