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) (<10\textsuperscript{th} 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), ∆CBF 37.8% (± 38.4%), ∆ACH 6.2% (± 10.0%), ∆NTG 18.1% (± 8.4%), LVEDP 12 mmHg (± 2.9)

<table>
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<th>Medical History</th>
<th>Obstetrical history</th>
<th>History of spontaneous miscarriage</th>
<th>Age at pregnancy</th>
<th>Aspirin use during pregnancy</th>
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</table>
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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