

Poster presentation

## CMR features of peri-partum cardiomyopathy

Charles Cannan\*<sup>1</sup>, Sarah Weeks<sup>2</sup> and Matthias Friedrich<sup>2</sup>

Address: <sup>1</sup>The Vancouver Clinic, Vancouver, WA, USA and <sup>2</sup>University of Calgary, Calgary, AB, Canada

\* Corresponding author

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### Introduction

The Cardiac Magnetic Resonance (CMR) features of peri-partum cardiomyopathy (PPC) are not well defined. The addition of tissue characterization to structural assessment by CMR may allow more insight into this rare disease.

### Purpose

Describe the CMR features of newly diagnosed PPC with particular attention to tissue characterization.

### Methods

A retrospective review of the CMR database was performed to identify patients diagnosed with PPC. All patients were within 5 months of delivery with either signs or symptoms of heart failure or abnormal left ventricular function with no other cause for heart failure identified.

### Results

Out of a total of 6823 patients, 16 were initially diagnosed with PPC. Two of these were excluded (one patient had her scan one year following delivery and a second patient was found to have severe 3 vessel coronary artery disease). The remaining 14 patients were  $30 \pm 5.6$  years of age. CMR was performed  $15 \pm 16.7$  (range 3 to 54) days post partum. Mean systolic blood pressure was  $119 \pm 23$  mmHg and heart rate was  $80 \pm 21$  beats per minute. Pertinent measures of left ventricular function included an ejection fraction of  $36 \pm 12\%$  and cardiac index of  $3.4 \pm 0.8$  L/min/m<sup>2</sup>. 12/14 (86%) had an increased left ventricular end diastolic volume index (range 101-192; normal 55-103 ml/m). Left ventricular mass index was within normal limits in 11/14 (79%) patients. Left ventricular end systo-

lic wall stress index was abnormal in all but one patient ( $70 \pm 18.5 \times 10^3$  N/m<sup>2</sup>, normal  $<45 \times 10^3$  N/m<sup>2</sup>).

Pericardial effusion was seen in 7/14 (50%) and pleural effusion in 10/14 (71%) of patients.

T2 weighted images showed myocardial edema (either global or regional) in 11/14 (79%), with early contrast enhancement seen in 10/11 (91%) in whom this was assessed. Late contrast enhancement was seen in 6/12 (50%) with all having a non-ischemic pattern of distribution.

### Conclusion

Besides structural abnormalities, patients with PPC have a high incidence of acute inflammation as evidenced by myocardial edema and hyperemia. Furthermore, half have late myocardial enhancement present suggesting the presence of fibrosis or necrosis.