

Poster presentation

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## CMR indications, safety and image quality: single-centre experience in more than 5000 patients

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### Introduction

Cardiovascular magnetic resonance imaging (CMR) allows for accurate assessment of structure and function with high spatial resolution. Although the use of CMR has been well established in Europe, not much information is available for the extent of this emerging imaging modality in Canada.

### Purpose

This single-centre study sought to summarize indications, safety, imaging quality, extent of contrast use, and extent of stress tests performed.

### Methods

Retrospective analysis was performed on 5165 patients scanned from July 2005 - September 2009 at the CMR Centre.

### Results

The mean age of the patients was 50 +/- 17; range 9 to 100 years old. The most common clinical indications were myocarditis/cardiomyopathies (2004; 38.8%), coronary artery disease/ischemic heart disease (749; 14.5%), arrhythmogenic right-ventricular dysplasia and/or other right ventricular disease (560; 10.8%), and pulmonary vein anatomy (212; 4.1%). The indications for the remaining cases included: cardiac mass, pericardial disease, thrombus, congenital cases, and valvular disease. Gadolinium-based contrast agent was given to 97% of patients as part of their CMR protocol. Of the 10.1%

(494/5165) patients that underwent stress CMR, adenosine was administered in 94.3% of cases and dobutamine was administered in 5.7% of cases. 1/466 patients (0.21%) suffered ventricular tachycardia during adenosine stress and transient, asymptomatic AV block was occasionally observed. Moderate to severe complications after contrast agent administration occurred in 8/5001 (0.16%) contrast-enhanced studies, characterized by nausea and vomiting in six (0.11%) patients and by symptoms of acute systemic allergic reaction in 2 (0.04%) patients. Image quality was good in 82.8%, moderate in 16.3%, and non-diagnostic in 1.0% of cases.

### Conclusion

In the high-volume CMR centre, the main clinical indications were for myocarditis/cardiomyopathies, coronary artery disease/ischemic heart disease, and right-ventricular related queries. The safety of CMR was extremely high and diagnostic image quality was achieved in 99% of cases. In high-volume centres, CMR serves as a robust, safe and efficient modality.