8. Low Prevalence of Myocardial Fibrosis by Cardiac Magnetic Resonance Imaging in 39 French Canadian Systemic Sclerosis Patients: Comparison of the CHUM Cohort with other World Cohorts.

Sandra Chartrand, [1]Lada Miller, [1]Martial Koenig, [1]Jean-Richard Goulet, [1]Eric Rich, [2]Anne S. Chin, [2]Yves Provost, [2]Carl Chartrand-Lefebvre, [1]Pauline Go, [1]Jean-Luc Senécal and [1]Tamara Grodzicky.
[1]Hôpital Notre-Dame du CHUM, Montréal, QC, [2]Hôtel-Dieu de Montréal du CHUM, Montréal, QC, Canada.

Background/Purpose: In systemic sclerosis (SSc), myocardial disease is an important cause of pulmonary hypertension (PH) and a major predictor of mortality. By cardiac magnetic resonance imaging (cMRI), myocardial fibrosis (MF) prevalence ranges from 20-63%. Intriguingly, we found few cases of MF by cMRI in the CHUM SSc cohort. Therefore, we compared this cohort with other world cohorts to study differential prevalences of MF as detected by cMRI.

Methods: We performed a retrospective analysis of our 432 French Canadian SSc patients followed between 1983 and 2010. PH was confirmed by right heart catheterization (RHC) in 26 patients (6%). Cardiac MRI was performed in 39 consecutive French Canadian SSc patients (18 PH patients including 11 with left-heart disease (LHD) associated PH and 21 non-PH patients). Pubmed and Medline reviews were performed using "systemic sclerosis", "scleroderma" and "cardiac magnetic resonance imaging" key words. Review of ACR and EULAR annual meetings abstracts was also performed. Clinical and cMRI data were compared with our cohort.

Results: In the CHUM SSc cohort, only two (5%) patients had MF on cMRI. Both patients had longstanding limited SSc (≥17 years) and PH due to LHD. Comparison with 13 published studies revealed that patient populations and cMRI techniques were heterogeneous and precluded statistical analysis. A descriptive analysis was performed. The number of patients in each study differed significantly (range 4-81 patients). Data considered essential in MF evaluation were not systematically reported. Major differences noted were: longer mean disease duration [CHUM cohort 14.7 years vs world cohorts 8.2 years], more frequent use of calcium channel blockers and immunosuppressant's, and ethnicity. Some variations in the cMRI protocol were observed, but this was unlikely to explain the varying results. However, significant differences in the description of the delayed-gadolinium enhancement (DGE) defects were observed. Finally, the significance of DGE defects reported is highly variable and depends on the associated clinical diagnosis (no PH, PAH, LHD-PH).

Conclusion: The prevalence of MF in SSc by cMRI is heterogeneous. In French Canadian SSc patients, the prevalence of MF by cMRI is low compared to the literature. Our cohort is the first French Canadian SSc population reported and is one of the largest to report cMRI evaluation. The data raise the question whether aggressive treatment with calcium channel blockers and immunosuppressants may delay MF. Finally, the significance of DGE defects reported on cMRI remains currently uncertain, and caution should be used in their interpretation.