

Conférence laurentienne de rhumatologie

Laurentian Conference of Rheumatology

Abstract #: 5

Karel Venne, Sabrina Hoa, Lada Miller, Martial Koenig, Jean-Richard Goulet, Eric Rich, Anne S. Chin, Carl Chartrand-Lefebvre, Pauline Gou, Jean-Luc Sénécal, Tamara Grodzicky, Sandra Chartrand.
Université de Montréal, Montréal, Qc, Canada.

Cardiac magnetic resonance imaging role in systemic sclerosis-associated pulmonary hypertension: Analysis of 78 patients.

Objective(s): Pulmonary hypertension (PH) in patients with systemic sclerosis (SSc) is one of the major causes of morbidity and mortality, despite current therapeutic interventions. Transthoracic echocardiography (TTE) as a screening tool has low sensitivity and is not well correlated to the severity of PH. Moreover, it is not specific as to the underlying cause of the disease. Few studies have used cardiac magnetic resonance imaging (MRI) for the investigation of PH in this population. In the hope of detecting this serious complication earlier, more data are needed to recommend cardiac MRI in the investigation of SSc-PH.

By comparing the cardiac MRI results of SSc patients with and without PH, we analyzed the differences between the two groups and determined whether cardiac MRI might help in screening for PH in a large SSc population.

Method(s): A retrospective analysis of our cohort of 432 SSc patients was performed. All patients routinely underwent screening for PH, and diagnosis of PH was proven by right heart catheterization (RHC) in all suspected cases. Data from clinical, cardiopulmonary and serological investigations were analyzed. All living patients diagnosed with PH (n=20) as well as a control group of 58 consecutive SSc patients without clinical suspicion of PH underwent cardiac MRI.

Result(s): A majority of SSc patients had PH secondary to left heart disease (LHD) (n=14 [58,3%]) compared to PH secondary to primary arterial hypertension (PAH) and from other causes (n=5 [20,8%] and n=5 [20,8%] respectively). Cardiac MRI showed statistically significant differences between SSc patients with and without PH, respectively, for the measurement of the diameter of the main pulmonary artery (PA) (median (25th percentile – 75th percentile): 30.5 (23.0-41.0) vs 25.2 (20.7-38.0) mm, p=0.0001), the right PA (22.7 (19.0-31.0) vs 18.8 (12.9-27.2) mm, p=0.00002), the left PA (23.0 (16.0-30.0) vs 20.0 (13.0-26.0) mm, p=0.003) and the ratio of the main PA to the ascending aorta (0.97 (0.80-1.15) vs 0.84 (0.64-1.12), p=0.0007). There was a trend toward significance for the measurement of left and right ventricles parameters. No difference was found for delayed gadolinium enhancement.

Conclusion(s): Cardiac MRI measurements of the diameter of the main PA, the right PA, the left PA as well as the ratio of the main PA to the ascending aorta were statistically significant for the detection of PH. Cardiac MRI in SSc patients may help suspect PH and is a simple, reliable and noninvasive screening tool. It could help determine patients in need of invasive procedure. Further research is needed to establish clear thresholds suggestive of a PH diagnosis as well as research to compare its sensitivity to TTE.
