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Abstract #: 6

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The Prevalence of Electrocardiographic Conduction Abnormalities in Systemic Sclerosis is very Similar to that found in Healthy Individuals: Data from the Canadian Scleroderma Research Group

Objective(s): Electrocardiograms (ECG) are one of the modalities used to identify evidence of cardiac disease in Systemic Sclerosis (SSc). Commonly reported ECG abnormalities attributed to SSc include conduction abnormalities such as left anterior fascicular block (LAFB) and first-degree atrio-ventricular block (AVB). These abnormalities, however, are not infrequent in the general population. Objective: To compare the prevalence of ECG conduction abnormalities in SSc and healthy controls.

Method(s): ECGs were routinely performed on subjects in the Canadian Scleroderma Research Group cohort at their baseline visit, and compared to ECGs from a random sample of age and sex-matched controls from the Moli-Sani project database. This database consists of 24 325 healthy individuals >35 years of age living in the Molise region in Italy between March 2005 and April 2010. Two cardiologists read all of the ECGs using a standardized approach. T-test, Chi-squared test and Fisher exact test were used to compare the two groups. P-values < 0.05 were considered significant.

Result(s): SSc subjects (n=833; 86% females, mean age 56.3 (+ 11.9) years, mean disease duration from first non-Raynaud's symptom 11.3 (+ 9.3) years, 39.4% with diffuse cutaneous SSc) and healthy controls (n=832; matched to sex and age) were included.

There were no statistically significant differences in recorded cardiovascular comorbidities between SSc patients and healthy controls.

The prevalence of conduction abnormalities was similar in the SSc and control groups: left bundle branch block 1.7% and 1.6% (p = 0.85); right bundle branch block 3% and 2.8% (p = 0.77); LAFB 3.1% and 3.9% (p = 0.42) and first-degree AVB 3.8% and 4% (p = 0.90), respectively.

Differences were found in the proportions of SSc subjects vs. controls with right atrial enlargement (5% vs. 0.1% (p<0.0001)) and right axis deviation (3.2% vs. 0.4% (p<0.0001)). Left atrial enlargement was also more common in SSc versus controls (9.2% versus 1.6%, respectively, (p<0.0001)).

Conclusion(s): Although ECGs are routinely used to identify conduction abnormalities in SSc which are then attributed to the disease, our findings suggest that these are not specific to SSc, as they are identified in similar proportions of healthy individuals. The increased prevalence of signs of right heart stress are most likely secondary to pulmonary hypertension, rather than a direct effect of SSc on cardiac tissue. The only abnormality that we found more frequently in SSc, and which may indicate intrinsic cardiac disease, is left atrial enlargement.
