CARDIAC MAGNETIC RESONANCE IN ANTI-SYNTHEThASE SYNDROME: THE ADDITIONAL VALUE OF T2 MAPPING TO DETECT MYOCARDITIS

Keywords: Heart, Imaging, Cardiovascular disease

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Background: Myocardial involvement is frequently asymptomatic at the early stages in systemic sclerosis (SSc) but accounts for one-third of SSc-related deaths [1]. First-line screening tools include cardiac enzymes, Holter ECG, and echocardiography [2,3], while the diagnosis relies largely on cardiac magnetic resonance [4], assessing myocardial inflammation and fibrosis [5]. The prevalence of SSc myocardiopathy and the associated factors are poorly defined [2].

Objectives: To evaluate the prevalence of myocardiopathy and the associated demographic, clinical, and instrumental features in a single-center cohort of 317 SSc patients, including 49 (15%) early SSc, 66 (21%) anti-Scl70+, 178 (56%) anti-centromere (ACA)+, 45 (14%) diffuse, 99 (31%) ILD, 37 (12%) with pulmonary hypertension.

Methods: Retrospective analysis; myocardiopathy in SSc was defined as increased myocardial tissue to skeletal muscle T2 ratio, T2 TIRM or delayed enhancement areas, or increased T1 or T2 mapping native time at cardiac magnetic resonance [6].

Results: Forty-two SSc patients underwent cardiac magnetic resonance after developing symptoms (dyspnea, atypical angor, palpitations; 43%), elevated cardiac enzymes (55%), or Holter ECG alterations (38%). Myocardiopathy was detected in 29/42 patients (69%; 29/317, 9.2%). Early disease was significantly more frequent in patients with myocardiopathy (17/29, 59%; OR 1.45-41.7; 71, 35% considering early SSc in the whole cohort). Among patients with myocardiopathy, anti-Scl70 was more frequently observed in early compared to longstanding disease (9/17, 53% vs. 2/12, 17%; p = 0.05); the opposite was for ACA (4/17, 24% vs. 7/12, 58%; p = 0.06) (Table 1). Clinical characteristics did not differ among patients with and without myocardiopathy, except digital ulcers (Table 1). Serum troponin I (Tnl) was higher in patients with myocardiopathy (median 6 vs. 1.6 ng/L; p = 0.04). Relevant alterations on Holter ECG, especially premature ventricular contractions (PVC) >30/day, were observed more frequently in patients with myocardiopathy (p = 0.04 for both Table 1).

Conclusion: We report a relevant overall prevalence of myocardiopathy in a cohort of SSc patients, similar pulmonary hypertension, affecting one third of patients with early SSc, especially with anti-Scl70. Conversely, a delayed onset of myocardiopathy was associated with ACA. Among other predictors, higher serum troponin and Holter ECG alterations, especially PVC, were significantly associated to myocardiopathy. As the early suspicion and diagnosis of myocardiopathy are crucial for promptly starting immunosuppressive treatment, we submit that the risk stratification should be performed in patients with SSc.

REFERENCES:

Table 1

<table>
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<tr>
<th>CM (29)</th>
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<tbody>
<tr>
<td>Serology</td>
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<tr>
<td>Scl-70 (%)</td>
<td>11 (38)</td>
<td>2 (15)</td>
</tr>
<tr>
<td>ACA (%)</td>
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<td>9 (69)</td>
</tr>
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<tr>
<td>dcSSc (%)</td>
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</tr>
<tr>
<td>mRSS</td>
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<td>2 (10)</td>
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<tr>
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<tr>
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<td>5 (39)</td>
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<td>Gout (%)</td>
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<tr>
<td>Holter Tnl</td>
<td>22/28 (79)</td>
<td>6/10 (46)</td>
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<tr>
<td>PVC &gt;127/225 (75)</td>
<td>7/21 (33)</td>
<td>6/43 (14)</td>
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<tr>
<td>PVR &gt;300 mm Hg (39)</td>
<td>11/28 (39)</td>
<td>1/10 (10)</td>
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<td>Tnl</td>
<td>6 (1.9-26)</td>
<td>1.6 (0-4.5)</td>
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</table>

Legends: dcSSc: diffuse SSc; mRSS: modified Rodman skin score; P(SVc): premature (supra)ventricular contractions; Holter Tnl: Tnl >300 ng/L. Continuous variables are reported as medians (interquartile range).