Background: Polymyositis (PM) and dermatomyositis (DM) are autoimmune systemic diseases characterized by muscle weakness and inflammatory cell infiltration into skeletal muscle. Myocardial involvement is a common cause of death in PM/DM. It has been reported that myocardial involvement is observed in 9% to 72% of PM/DM [1], but it is still unclear. Electrocardiogram (ECG) and echocardiography did not detect any abnormalities indicating myocarditis [2]. However, in CMR, abnormalities indicating myocardial involvement were identified in 6 (3 patients with PM and 3 patients with DM) (Table 1). Myocardial involvement is a common cause of death in PM/DM [1], but it is still unclear. Electrocardiogram (ECG) and echocardiography are the most often used tests to evaluate cardiac abnormalities, but early detection of myocardial involvement in PM/DM is difficult. Cardiac magnetic resonance (CMR) is a noninvasive technique that has been efficiently evaluated to detect the presence of myocardial involvement in PM/DM by CMR still remains unclear and warrants investigation. In addition, CMR should be performed in cases of PM/DM with high myoglobin level, as it can be a predictor of myocardial involvement. The following items were extracted as possible items for the presence of myocardial involvement: being PM (p=0.003) and anti-ARS antibodies positive (p=0.001) (Figure 1). Conclusion: Our results propose that myocardial involvement is more likely to develop in PM/DM patients even if the finding of echocardiography is normal. In addition, CMR should be performed in cases of PM/DM with high myoglobin level, considering the possibility of myocardial involvement.

REFERENCES:

Acknowledgments: NIL

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POS1211

CHARACTERISTICS OF MYOCARDIAL INVOLVEMENT OF POLYMYOSITIS/DERMATOMYOSITIS EVALUATED BY CARDIAC MAGNETIC RESONANCE: A PILOT STUDY

Keywords: Biomarkers, Imaging, Myositis

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Background: Muscle weakness in inflammatory myopathies (IM) is due to muscle-edema, atrophy and fatty-infiltration among which edema is the predominant cause at baseline. Some IIM patients don’t achieve full muscle power even with immunosuppressive treatment which mainly targets edema. Serial changes occurring in skeletal muscles visualized on thigh MRI can help understand the failure of complete recovery. Role of Dual energy X-ray Absorptiometry (DXA) assessed skeletal muscle composition as outcome measure in IIM was not studied previously.

Objectives: To see the changes in skeletal muscle composition over 6 months in IIM patients using imaging and to assess the agreement of MRI and DXA scores with each other and with clinical outcome measures.

Methods: Patients satisfying 2017 ACR-EULAR classification criteria for IIM were prospectively enrolled. All patients underwent thigh MRI(t-MRI) STIR and T1 weighted sequences (axial and coronal) at baseline, 3 months and DXA scan at baseline and 6 months. Manual muscle testing-8(MMT-8), Functional index-3(FI-3), 2-minute walk distance (2MWD) were assessed at baseline, 3 months and 6 months. t-MRI was scored using a semi-quantitative score for muscle edema, atrophy and fatty infiltration. Friedman test was used to compare variables at baseline, 3 and 6 months and Spearman correlation was done for agreement of MRI and DXA scores with each other and with clinical outcome measures.

Results: 17 patients (12 females were enrolled and all of them completed 3 months follow-up while only 13 completed 6 months follow-up. Median (IQR) age was 38 (27-46) years, disease duration was 6 (2-24). The study group comprised of 10 dermatomyositis, 5 antisynthetase syndrome and 3 immune mediated necrotizing myopathy patients. MRI assessed muscle edema and fascial edema decreased significantly (p=0.01) and fatty infiltration increased significantly (p =0.001) from baseline to 3 months. Muscle atrophy did not change significantly from baseline to 3 months and 6 months. DXA assessed appendicular lean mass/ht2(p=0.007) and total lean mass/ht2(p=0.021) improved significantly from baseline to 6 months. Improvement in MMT-8 and 2MWD was significant only from baseline to 3 months(p=0.000) whereas FI-3 continued to improve till 6 months(p=0.000) (Table 1). At baseline MMT-8(R=0.631; p=0.01), FI-3(R=0.686; p=0.01) and 2MWD (R=0.485; p=0.05) negatively correlated with only muscle edema. At 3 months MMT-8 and 2MWD (R1, R2) negatively correlated with muscle edema, fascial edema, muscle atrophy and fatty infiltration. Friedman test was used to compare variables at baseline, 3 and 6 months and Spearman correlation was done for agreement of MRI and DXA scores with each other and with clinical outcome measures.

Conclusion: Myositis is a common cause of death in PM/DM patients who visited our service between January 2014 to September 2022 were enrolled in this retrospective study. All patients met the 2017 EULAR/ACR classification criteria for idiopathic inflammatory myopathies, and patients with several elevated cardiac markers were included. Patients were excluded if they were complicated with other connective tissue diseases and cardiovascular diseases at the diagnosis of PM/DM. All patients performed ECG, echocardiography and CMR. Clinical and findings of CMR information were collected and statistically analyzed. The findings of CMR, such as T1, T2, LGE and ECV, were also analyzed.

Objectives: This study aimed to investigate characteristics of myocardial involvement evaluated by CMR, and identify the clinical markers indicating the presence of cardiac complications in PM/DM.

Methods: PM/DM patients who visited our service between January 2014 to September 2022 were enrolled in this retrospective study. All patients met the 2017 EULAR/ACR classification criteria for idiopathic inflammatory myopathies, and patients with several elevated cardiac markers were included. Patients were excluded if they were complicated with other connective tissue diseases and cardiovascular diseases at the diagnosis of PM/DM. All patients performed ECG, echocardiography and CMR. Clinical and findings of CMR information were collected and statistically analyzed. The findings of CMR, such as T1, T2, LGE and ECV, were also analyzed.

Results: Twelve patients (3 patients with PM and 9 patients with DM) were enrolled in this study. ECG and echocardiography did not detect any abnormalities associated with PM/DM. However, in CMR, abnormalities indicating myocardial involvement were identified in 6 (3 patients with PM and 3 patients with DM) patients: 66.6% of patients had LGE, all patients had elevated ECV, and 33.3% of patients had elevated T2. Serum myoglobin levels were significantly elevated in patients with myocardial involvement (814.5±124.7 ng/mL vs 324.8±510.0 ng/mL, p=0.031). There were no significant differences in other cardiac markers, including serum CK, CK-MB and NT-pro-BNP, between with and without myocardial involvement. The following items were extracted as possible items for the presence of myocardial involvement: being PM (p=0.003) and anti-ARS antibodies positive (p=0.001) (Figure 1). Conclusion: Our results propose that myocardial involvement is more likely to develop in PM/DM patients even if the finding of echocardiography is normal. In addition, CMR should be performed in cases of PM/DM with high myoglobin level, considering the possibility of myocardial involvement.

REFERENCES:

Acknowledgments: NIL

Disclosure of Interests: None Declared.
DOI: 10.1136/annrheumdis-2023-eular.4232
Table 1: Serial change in t-MRI scores, DXA assessed lean mass and clinical outcome measures

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>3 months</th>
<th>6 months</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscle edema</td>
<td>17.03(7.4-32.4)</td>
<td>0.37(0.00-11.11)</td>
<td>0.000(0.00-5.37)</td>
<td>0.000</td>
</tr>
<tr>
<td>Fascial edema</td>
<td>46.66(15.0-67)</td>
<td>7.77(0.00-25.55)</td>
<td>4.44(0.00-23.88)</td>
<td>0.004</td>
</tr>
<tr>
<td>Muscle atrophy</td>
<td>0.00(0.00-167)</td>
<td>0.00(0.00-2.22)</td>
<td>0.00(0.00-2.22)</td>
<td>0.670</td>
</tr>
<tr>
<td>Fatty infiltration</td>
<td>6.66(0.00-15)</td>
<td>8.88(2.22-21.66)</td>
<td>8.88(2.22-23.33)</td>
<td>0.001</td>
</tr>
<tr>
<td>Appendicular lean mass/Ht^2</td>
<td>5.53(3.9-6.2)</td>
<td>*</td>
<td>5.6(4.8-7.3)</td>
<td>0.007</td>
</tr>
<tr>
<td>Lean body mass/Ht^2</td>
<td>12.6(10.7-14.4)</td>
<td>*</td>
<td>13.4(11.1-15.6)</td>
<td>0.021</td>
</tr>
<tr>
<td>Manual Muscle Testing-8</td>
<td>56.15(70.5)</td>
<td>*</td>
<td>78(71.5-80)</td>
<td>0.000</td>
</tr>
<tr>
<td>Functional Index-3</td>
<td>33.88(9.7-57.2)</td>
<td>*</td>
<td>76.88(29.4-77.2)</td>
<td>0.004</td>
</tr>
</tbody>
</table>

*indicates significant change between 2 time points

REFERENCES: NIL.
Acknowledgements: NIL.
Disclosure of Interests: None Declared.
DOI: 10.1136/annrheumdis-2023-eular.5775

**POS1213**

RISK OF ATHEROSCLEROSIS-RELATED DISEASES IN ADULTS WITH POLYMYOSITIS AND DERMATOMYOSITIS: A LARGE SCALE POPULATION-BASED STUDY

Keywords: Myositis

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Background: Select systemic autoimmune diseases show a predilection to Atherosclerotic and Cardiovascular Disease (ASCVD) largely attributed to proinflammatory cytokines supporting the role of the inflammatory hypothesis in endothelial dysfunction and subsequent clinical sequelae. Dermatomyositis (DM) and polymyositis (PM) are polygenic autoimmune disorders involving mainly skeletal muscles. The association between DM/PM and ASCVD has not been well addressed and explored.

Objectives: To investigate the association between DM/PM and ASCVD events by exploring incidence, mortality, and interaction with respect to disease-modifying agents, autoantibodies, and traditional CVD risk factors in a large, population-based sample.

Methods: A retrospective cohort study using the electronic database of Clalit Health Services (CHS), the largest health organization in Israel. All DM and PM patients diagnosed between 2000-2016 were included with age- and sex-matched controls in a 1:5 ratio. Follow-up continued until the first diagnosis of ASCVD or death. The incidence of ASCVD was compared between the groups using univariate and multivariate models adjusting for baseline cardiovascular risk factors.

Results: The study population included 1,567 DM/PM patients and 7,676 controls. The mean age at the diagnosis date was 32.5 years (SD±19 years), and the female proportion was 60.3%, similar for both groups. Traditional cardiovascular risk factors were similar between both groups. Median follow-up time was 8.4 (3.6-12.8) in the DM/PM group compared to 8.6 (3.7-12.9) in the control group. 47 (3.0%) PM/DM patients were diagnosed with IHD compared to 140 (1.8%) controls, yielding an Unadjusted HR of 1.26 (1.19 to 2.30). Unadjusted HR for CVA in the DM/PM group was (95% CI) 2.78 (1.86 to 4.11). Unadjusted HR for ASCVD (95% CI) was 1.88 (1.46 to 2.43). APLA-associated antibody predicted ASCVD among PM/DM groups as compared to non-ASCVD PM and DM patients (OR- 2.33, 95% CI - 1.41 to 3.86, p<0.0001).

Conclusion: Our study demonstrates that PM and DM are both associated with an increased risk of MI and ischemic stroke. Furthermore, PM and DM patients positive for APLA-associated antibodies were associated with excessive rates of ASCVD. Taken together, these findings support the increased need for awareness and surveillance of cardiovascular outcomes in the DM/PM cohort.

REFERENCES: NIL.
Acknowledgements: NIL.
Disclosure of Interests: None Declared.
DOI: 10.1136/annrheumdis-2023-eular.4934

**POS1214**

PATIENT REPORTED OUTCOME FOR PHYSICAL FUNCTION IN IDIOPATHIC INFLAMMATORY MYOPATHY

Keywords: Patient reported outcomes, Myositis

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Background: Patient-reported outcomes (PRO) measures provide direct and valuable information on treatment efficacy and quality of life. However, the commonly-used PRO measures in idiopathic inflammatory myopathies (IIM) have several psychometric limitations. The Patient-Reported Outcomes Measurement Information System (PROMIS) is an NIH initiative, with several PROs developed and validated in different medical conditions.

Objectives: To (1) investigate the psychometric properties of PROMIS physical function-20 (PF-20) in a large US-wide IIM population, and (2) evaluate the feasibility and compliance of PRO measures administered in a local clinic compared to remote US-wide patients.

Methods: “Myositis Patient Centered Tele-Research” (My PACER) is a multi-center prospective 6-month observational study of U.S. IIM subjects, competitively recruited through traditional in-person clinic visits (Center-Based Cohort [CBC]), and remotely using smartphone technology, wearable devices, and