varying dose regimens, cumulative doses and observation periods, lack of data on potential predictors of RTM therapy response do not allow univocal conclusions on RTM efficacy or definitive recommendations on RTM use in the patients with SSc. 

**Methods:** The study of potential efficacy predictors of anti-B-cell therapy in the patients with SSc associated with ILD. 

**Objectives:** The study of potential efficacy predictors of anti-B-cell therapy in the patients with SSc associated with ILD.

**Results:** We selected 54 significant G-Ferroptosis genes for further analysis in training set. There were 2 distinct subtypes (high-ferroptosis-score groups and low-ferroptosis-score groups) identified in G-Ferroptosis genes cohort which were also identified in validation datasets (Fig1A, C, D). Metallonemin 1G (MT1G) was a characteristic gene of low-ferroptosis-score group. The characteristic genes of high-ferroptosis-score group were acyl-CoA synthetase family member 2 (ACSF2) and aconitate 1 (ACO1) (Fig1B). Patients in high-ferroptosis-score group had a lower level of Tregs compared with that of low-ferroptosis-score patients in both training and validation set (P < 0.05, Fig1E).

**Conclusion:** The biological process of ferroptosis is associated with the lever of Tregs, suggesting the process of ferroptosis may be involved in the disease progression of DM. Identifying ferroptosis-related features for DM might provide a new idea for clinical treatment.

**REFERENCES:**


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**DEEP PHENOTYPING OF DERMATOMYOSITIS BASED ON LIPID FERROPTOSIS-RELATED GENES BY MACHINE LEARNING**

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**Background:** Dermatomyositis (DM) is an idiopathic inflammatory myopathy with heterogeneous clinical manifestation that raise challenges regarding diagnosis and therapy. Ferroptosis is a newly discovered form of regulated cell death that is the nexus between metabolism, redox biology, and rheumatic immune diseases. However, how ferroptosis maintains the balance of lymphocyte T cells and affect disease activity in DM is unclear.

**Objectives:** To investigate an ferroptosis-related multiple gene expression signature for classification by assessing the global gene expression profile, and calculate the lymphocyte T cells status in the different subsets.

**Methods:** Gene expression profiles of skeletal muscle from DM samples were acquired from GEO database. GSE143323 (30 patients and 20 HCs) was selected as the training set. The GSE3307 contained 21 DM patients and was selected as the validation set. The 60 ferroptosis genes were obtained from previous literature. The intersection of the global gene and ferroptosis genes was considered the set of significant G-Ferroptosis genes for further analysis. The *NMF* (R-package) was applied as an unsupervised clustering method for sample classification by using G-Ferroptosis genes expression microarray data from the training datasets. An ferroptosis score model was constructed. The performance of the ferroptosis genes-based risk score model constructed by the DM training set was validated in the batch-2 DM datasets. Normalized ferroptosis genes training data was used to compare the ssGSEA scores of gene sets between the high risk and low risk group. The statistical software package R (version 4.0.3) was used for all analyses.

**Results:**

- We selected 54 significant G-Ferroptosis genes for further analysis in training set. There were 2 distinct subtypes (high-ferroptosis-score groups and low-ferroptosis-score groups) identified in G-Ferroptosis genes cohort which were also identified in validation datasets (Fig1A, C, D). Metallonemin 1G (MT1G) was a characteristic gene of low-ferroptosis-score group. The characteristic genes of high-ferroptosis-score group were acyl-CoA synthetase family member 2 (ACSF2) and aconitate 1 (ACO1) (Fig1B). Patients in high-ferroptosis-score group had a lower level of Tregs compared with that of low-ferroptosis-score patients in both training and validation set (P < 0.05, Fig1E).

- **Conclusion:** The biological process of ferroptosis is associated with the level of Tregs, suggesting the process of ferroptosis may be involved in the disease progression of DM. Identifying ferroptosis-related features for DM might provide a new idea for clinical treatment.

**References:**


**Disclosure of Interests:** None declared

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Background: Interstitial lung disease associated with systemic sclerosis (ILD-SSc) is a frequent manifestation of the disease, impairing the quality of life and the prognosis of the disease. The efficacy of rituximab (RTX) in patients (pts) with ILD-SSc has been assessed in two recent trials. The introduction of RTX might reduce the cost of therapy and increase pts accessibility to this treatment option. The RTX biosimilar Acielbia (ACB), *BIOCAD*, has received approval in Russian Federation in 2014 for all indications held by reference RTX.

Objectives: to investigate the efficacy and safety of ACB in naive to biological therapy pts with ILD-SSc during at least 12 month of follow-up.

Methods: Twenty pts were included in prospective observational study. The pts were aged 49.7 (s.d.14) years, 14 (70%) were females, mean disease duration was 3.5±2.7 years, with diffuse subset in 11 (55%), 13 (65%) were anti-topoisomerase positive, all pts has NSIP-pattern by HRCT. All pts were naive to ACB, received glucocorticoids in low doses, 10 (50%) pts were previously treated with immunosuppressants and 4(20%) of them continued to take mycophenolate mofetil as a concomitant therapy. Pts received two courses of ABC with the same scheme: 1 g repeated 1 week apart (4g ACB in total). An assessment of basic measurements was obtained at baseline (Point 0), before the second course (after 7.1±1.7 mo, Point 1) and at the end of follow-up (13.4±1.6 mo, Point 2).

The results are presented in the form of mean values and standard deviations.

Results: We observed a gradual improvement in the main parameters from Point 0 to Point 2 (table), Importantly, that at Point 1 there were no differences in most parameters, except for Rodnan skin score (mRSS) and the absolute number of B-lymphocytes (B-lymph), but at Point 2 there were significant differences between most basic outcome measures.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Point 0 (n=20)</th>
<th>Point 1 (n=18)</th>
<th>Point 2 (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>mRSS</td>
<td>12.75±11.1</td>
<td>8.25±7.72</td>
<td>6.16±5.65</td>
</tr>
<tr>
<td>FVC*, % pred</td>
<td>89.1±18.2</td>
<td>92.3±19.1</td>
<td>98.2±16.13</td>
</tr>
<tr>
<td>DLCO**, % pred</td>
<td>56.67±15.7</td>
<td>58.11±17.7</td>
<td>61.86±17.16</td>
</tr>
<tr>
<td>SHAQ</td>
<td>1.13±0.62</td>
<td>0.98±0.67</td>
<td>0.61±0.49</td>
</tr>
<tr>
<td>GG, g/l</td>
<td>12.61±3.23</td>
<td>11.5±1.61</td>
<td>10.19±2.18</td>
</tr>
<tr>
<td>a-Topo, U/ml</td>
<td>103.68±86.9</td>
<td>96.46±81.72</td>
<td>72.26±69.46</td>
</tr>
<tr>
<td>B-lymph, absolute count</td>
<td>0.329±0.34</td>
<td>0.016±0.003</td>
<td>0.0189±0.003</td>
</tr>
<tr>
<td>Glucocorticoids, mg/day</td>
<td>11.0±2.7</td>
<td>10.75±2.05</td>
<td>9.4±2.35</td>
</tr>
</tbody>
</table>

*FVC - forced vital capacity % predicted, **DLCO - diffusion capacity for carbon monoxide % predicted.

6 of the 20 patients who received the second course, 2 (10%) dropped out the follow-up due to pregnancy (1) and lung cancer (1).

The frequency and spectrum of adverse events (AE) corresponds to the known safety profile of ACB.

Conclusion: The data from this prospective pilot study showed the effectiveness of the ACB in ILD-SSc. The clinical effect of ACB arises gradually and the baseline outcome measures reliably improve by the end of the first year. Our study have demonstrated a well-tolerated safety profile. We believe that ACB can be prescribed at SSc-ILD as a first-line drug and/or in the form of monotherapy.

References:


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