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.

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

**Methods:** 90 patients with SSc-ILD verified by multispiral computed tomography were enrolled to the study and received RTM therapy for 12-42 months at cumulative dose 2.9±1.1 grams (disease duration 5.9±4.8 years, diffused/limited SSc 1.3/1, average age 47 ± 13.6 years, females 83%). All patients received low or moderate dose glucocorticoids. 45 patients received RTM in addition to immunosuppressive therapy (cyclophosphamide and mycophenolate mofetil) because of inadequate efficacy of immunosuppressants. After evaluation of FVC trends in the patients receiving RTM the overall study population was divided into two patient groups for the analysis: the group A (n=35) comprised the patients with ≥10% FVC increase (disease duration 6.1±5.8 years, diffused/limited SSc 1.3/1, average age 50±12 years, females 86%, cumulative RTM dose 3.2±12.4 grams), and group B (n=11) comprised the patients with <5% FVC decrease (disease duration 5.2±4 years, diffused/limited SSc 0.8/1, average age 43±16, females 72%, cumulative RTM dose 2.5±0.99 grams). Subsequently correlation analysis was made to clarify the association between delta FVC and a number of clinical (age, gender, duration and form of SSc, modified skin count, presence of gastroesophageal reflux, mPAP, SSc activity (EScSG, points), cumulative RTM dose, immunosuppressive therapy) and laboratory parameters (ESR, ANA-HEP-2, a-Scl-70, CRP, B cell count).

**Results:** In the overall patient population RTM therapy was associated with significant FVC increase from 77.0±19.9 % to 84.7±20.9% (p=0.000000), with median FVC increment 6.6% [0;14.1].

In group A FVC increased from 75.3±19.9 to 94.3±20.4 (p=0.000000), with median FVC increment 16.3 [12.6; 24.7].

In group B FVC decreased from 82.5 ±23.2 to 72.3±19.4 (p=0.0000176), with median FVC decrement 10.4% [-13.4; -6].

Correlation analysis in groups A and B showed significant association of between delta FVC and the patient age (R=0.36), cumulative RTM dose (R=0.34) and EScSG during the last examination (12±0 and 3.1±1.4 in groups A and B, respectively; R=-0.42).

No significant correlation between delta FVC and any other tested parameters was found.

**Conclusion:** Therefore, older patients who received the cumulative rituximab dose more than 3 grams with suppressed SSc activity achieved greater FVC increase at the background of therapy. These data allow to consider the above parameters as potential predictors of response to anti-B-cell therapy in the patients with SSc-ILD.

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**POSO859**

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

J. Q. Zhang1,2,3, S. X. Zhang1,2,3, R. Zhao1,2, J. Qiao1,2, M. T. Qiu1,2,3, S. Song1,2, M. J. Chang1,2,3, Y. Zhang1,2, G. Y. Liu3, P. F. He1, X. L. Li1,2,3. The Second Hospital of Shanxi Medical University, Department of Rheumatology, Taiyuan, China; 2Shanxi Li Xiaofeng Medical Groups, Department of Rheumatology, Taiyuan, China; 3Ministry of Education, Key Laboratory of Cellular Physiology (Shanxi Medical University) Medical Data Sciences, Taiyuan, China

**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 with heterogeneous clinical manifestation that raises 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. GSE1433233 (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.[1] The intersection of the global gene and ferroptosis genes was identified in G-Ferroptosis genes cohort which were also identified in validation datasets (Fig 1A, C, D). Metabolionen 1G (MT1G) was a characteristic gene of low-ferroptosis-score group. The characteristic genes of high-ferroptosis-score group were acyl-CoA synthases family member 2 (ACSF2) and aconitase 1 (ACO1) (Fig.1B). 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 ($P<0.05$, Fig.1E).

**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). Metabolionen 1G (MT1G) was a characteristic gene of low-ferroptosis-score group. The characteristic genes of high-ferroptosis-score group were acyl-CoA synthases family member 2 (ACSF2) and aconitase 1 (ACO1) (Fig.1B). 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 ($P<0.05$, Fig.1E).

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**POSO860**

**EFFICACY AND SAFETY OF TWO COURSES OF RITUXIMAB BIOSIMILAR ACELLBIA IN PATIENTS WITH INTERSTITIAL LUNG DISEASE ASSOCIATED WITH SYSTEMIC SCLEROSIS: A PROSPECTIVE OBSERVATIONAL STUDY**

L. P. Ananyeva1, L. Garzanova1, O. Desinova1, M. Starovoytova1, O. Koneva1, O. Osvyannikova1, R. Shayakhmetova1. 1VA Nasonov Research Institute of Rheumatology, Laboratory of Microcirculation and Inflammation, Moscow, Russian Federation

**Background:** DM is characterized by accumulation of excess ECM, which causes endorgan damage. Rituximab, an immunosuppressant, is the preferred treatment for patients with DM.

**Objectives:** Two courses of rituximab (RTM) were applied in the patients with DM associated with ILD.

**Methods:** 10 patients (4 males, 6 females; average age of 51 ± 11 years) were treated with two courses of rituximab 1,000 mg during a 6-month period. The first course was given at the beginning of the study, and the second course was given 10 months after the first course. Inclusion criteria were as follows: the patients aged more than 18 years; secondary SSc associated with ILD; serum anti-SSA/SSB antibodies positive; and patients with ILD with FVC ≤80% predicted.

**Results:** After the first course, significant FVC increase was found. No significant correlation between delta FVC and any other tested parameters was found.

**Conclusion:** Therefore, older patients who received the cumulative rituximab dose more than 3 grams with suppressed SSc activity achieved greater FVC increase at the background of therapy. These data allow to consider the above parameters as potential predictors of response to anti-B-cell therapy in the patients with SSc-ILD.

**Disclosure of Interests:** None declared

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