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: group A ($n=35$) comprised the patients with $\geq 10\%$ 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 ± 1.24 grams), and group B ($n=11$) comprised the patients with $\geq 5\%$ FVC decrease (disease duration 5.2 ± 4 , 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 $77.0 \pm 19.9\%$ to $84.7 \pm 20.9\%$ ($p=0.000000$), 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 ($p=0.000176$), 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 ($1.2 \pm .0$ 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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POS0859 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 therapy¹. Ferroptosis is a newly discovered form of regulated cell death that is the nexus between metabolism, redox biology, and rheumatic immune diseases². 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 literature³. 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-1 and batch-2 DM sets. 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. P value < 0.05 were considered statistically significant.

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 (Fig.1A, C, D). Metallothionein 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 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).

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.

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Figure : (A and B) Molecular typing of patients with DM based on ferroptosis-related gene expression profiles consensus clustering of GEO samples by NMF. Comparison of ferroptosis score levels between the two subgroups of the training set (C) and the validation set (D). (E) Comparison of the ssGSEA scores between different score groups. The scores of 22 immune cells are displayed in boxplots. ns $P > 0.05$; * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

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POS0860 EFFICACY AND SAFETY OF TWO COURSES OF RITUXIMAB BIOSIMILAR ACELLBIA IN PATIENTS WITH INTERSTITIAL LUNG DISEASE ASSOCIATED WITH SYSTEMIC SCLEROSIS: A PROSPECTIVE OBSERVATIONAL STUDY

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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 have been shown [1]. The "biosimilar" versions of RTX might reduce the cost of therapy and increase pts accessibility to this treatment option. The RTX biosimilar Acellbia (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: 1g repeated 1 week apart (4g ACB in total). An assessment of basic measurements was obtained at baseline (Point 0), before the second course (after 7,2±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 1. Follow-up data of ACB treatment in ILD-SSc pts

Parameters	Point 0 (n=20)	Point 1 (n=20)	Point 2 (n=18)#	P 1-2	P 1-3
mRSS	12,75±11,1	8,25±7,72	6,16±5,65	0,002	0,002
FVC*, % pred	89,1±18,2	92,31±19,21	98,26±16,13	NS	0,0002
DLCO**, % pred	56,67±15,7	58,11±17,71	61,86±17,16	NS	0,019
SHAQ	1,13±0,628	0,98±0,678	0,61±0,495	NS	0,00001
lgA, g/l	12,61±2,348	11,5±1,61	10,19±2,18	NS	0,002
a-Topo-1, unit/ml	109,68±86,92	96,46±81,72	72,46±69,46	NS	0,004
B-lymph, absolute count	0,329±0,34	0,0016±0,003	0,00189±0,003	0,0004	0,001
Glucocorticoids, mg/day	11,0±2,7	10,75±2,0	9,4±2,3	NS	0,03

*FVC - forced vital capacity % predicted, **DLCO - diffusion capacity for carbon monoxide % predicted. # 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 in the treatment of RTX, most AEs were classified as mild ones. There were 11 (55%) of AE in 9 (45 %) pts. Infections were observed in 7 (35%) pts: 4 cases of acute respiratory tract infections, 2 cases of positivity in interferon-gamma release assay and one case each of otitis, cystitis, cholecystitis (9 AE in total). One pts developed low limb vein thrombosis and one - lung cancer. There were no infusion-related reactions.

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.

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POS0861

EFFECTIVENESS AND SAFETY OF TOCILIZUMAB IN PATIENTS WITH SYSTEMIC SCLEROSIS: A PROPENSITY SCORE CONTROL MATCHED OBSERVATIONAL STUDY OF THE EUSTAR COHORT

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Background: Tocilizumab (TCZ) showed trends for improving skin fibrosis and prevented progression of lung fibrosis in patients with systemic sclerosis (SSc) in placebo-controlled randomised clinical trials (RCTs). However, safety and effectiveness of TCZ beyond these selected and enriched clinical trial populations in SSc is still unknown.

Objectives: To assess safety and effectiveness of TCZ treatment compared to standard of care in SSc patients from the large, multicentre, observational, real-life EUSTAR network/database using propensity score matching.

Methods: SSc patients from the EUSTAR network/database, who fulfilled the ACR/EULAR 2013 classification criteria, with a baseline and a follow-up visit at 12±3 months, receiving TCZ or standard of care (controls), were selected. The following variables were used for the propensity score matching (1:1): age at diagnosis, gender, disease subtype, baseline modified Rodnan skin score (mRSS), forced vital capacity (FVC), and diffusing capacity for carbon monoxide (DLCO), co-therapy with immunosuppressives, disease duration, and year of treatment. Primary endpoints were mRSS and FVC at 12±3 months follow-up compared between the groups, using paired t-tests. Secondary endpoints were the percentage of progressive/regressive patients for skin and lung at 12±3 months follow-up according to standard definitions (1,2). Sensitivity analyses assessed pre-processing decisions (selection of most recent vs. random observation for control patients with multiple suitable time intervals), as well as the matching method (optimal vs. exact matching). Missing values were addressed with 100-fold multiple imputation using chained equations. Safety data were analysed in all patients. The study including the statistical analysis plan was pre-registered at www.drks.de (DRKS-ID: DRKS00015537).

Results: We identified 93 SSc patients treated with TCZ and 2370 SSc patients with standard of care who fulfilled the inclusion criteria. Forty nine (57.7%) of the TCZ treated patients were diffuse, eight patients were not classified, disease duration was (mean±SD) 6.35±5.40 years, their baseline mRSS was 15.05±10.85, and 76 (81.7%) received immunosuppressive therapy in addition to TCZ. Through multiple imputation and propensity score matching, 100 imputed