PD001 / #195

E-POSTER DISCUSSION 01: SYSTEMIC SCLEROSIS
03-06-2025 3:10 PM - 3:40 PM

THE IMPACT OF THE SEVERITY OF SKIN THICKENING IN SYSTEMIC SCLEROSIS ON THE EFFECT OF ANTI-B-CELL THERAPY

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Background and Aims: To compare clinical parameters in systemic sclerosis (SSc) patients (pts) depending on the initial values of the modified Rodnan skin score (mRss) during rituximab (RTX) therapy.

Methods: This study included 109pts with SSc. The mean follow-up period was 13±2.3 months. The mean age was 47.6±13years, female-92pts(84%), the diffuse cutaneous subset of the disease had 59pts(54%). The mean disease duration was 6±5.4years. All pts had ILD. All patients received prednisolone at a dose of 11,5±4,5 mg/day, immunosuppressants at inclusion received 51 (47%) of them. Pts received RTX due to the ineffectiveness of previous therapy for ILD. The cumulative mean dose of RTX was 1,7±0,6grams. Patients were divided into groups depending on the mean modified Rodnan skin score (mRss) at baseline: group 1 – with mRss more than 14 (36 pts), group 2 – with mRss less than 14 (73 pts).

Results: During RTX therapy there was an improvement of all outcome petameters, but they differed between groups. At baseline in the group 1 there was a significantly shorter disease duration, higher values of FVC, DLCO, disease activity index compared to the group 2 (table 1). There was a significantly greater increase in FVC and decrease of activity score

in group 1 during RTX therapy.

Table 1. Changes of main outcome parameters depending on the initial values of the mRss on anti-B-cell therapy.

Parameters	Group 1 (n=36)	Group 2 (n=73)	p
Disease duration, years, M±σ	4.1±3.3	7.5±6.3	0,001
mRss at baseline, M±σ	21.8±8.9	5.3±3.6	0.00001
ΔmRss, Me [25th; 75th quartile]	10 [4.5; 12]	0 [0; 2]	0.0001
FVC* at baseline, %, M±σ	81.7±22.4	76.6±21.6	0.001
ΔFVC, %, Me [25th; 75th quartile]	6 [-0.8; 11.3]	2,4 [-2.2; 9.7]	0.002
DLCO** at baseline, %, M±σ	53.4±19.5	44.6±19.5	0.005
ΔDLCO, %, Me [25th; 75th quartile]	1.4 [-2.7; 7.1]	0 [-4.8; 3.2]	0.07
Anti-topoisomerase positive, n (%)	34 (67%)	57 (57%)	0.03
Activity score (EScSG-AI) at baseline, M±σ	4.2±2	2.6±1.5	0.001
ΔActivity score (EScSG-AI), Me [25th; 75th quartile]	1.5 [1; 4.5]	1.5 [0; 2.3]	0.01
Cumulative mean dose of RTX, mg, M±σ	1.7±0.7	1.4±0.6	0.2

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

Conclusions: In our study, patients with SSc and initially high mRss showed more pronounced positive changes in lung function on RTX therapy.

Keywords: Rituximab, systemic sclerosis, modified Rodnan skin score

PD002 / #219

E-POSTER DISCUSSION 01: SYSTEMIC SCLEROSIS
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EFFICACY OF RITUXIMAB IN PATIENTS WITH SYSTEMIC SCLEROSIS DEPENDING ON THE PRESENCE OF MUSCLE WEAKNESS

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Background and Aims: To compare the effect of rituximab(RTX) in patients with systemic sclerosis(SSc) depending on the presence of muscle weakness.

Methods: There were 151 patients with SSc included in this study. The mean age was 48±13years, female-83% patients. 81% of patient had interstitial lung disease. The mean follow-up was 13±2.3month. Muscle weakness was initially detected in 15% of patients. Patients were divided into groups depending on the presence of muscle weakness: group 1–with muscle weakness (n=22) and group 2–without muscle weakness (n=129). The results are presenting in form of mean values, delta(Δ), median, upper and lower quartile.

Results: Patients with muscle weakness had a significantly shorter disease duration and higher skin score (table 1). The baseline FVC values did not differ between the groups, but in group 1 DLCO was higher. Group 1 had significantly higher values of CRP, creatine phosphokinase(CPK) and disease activity index (table 1). These patients received a higher dose of prednisolone, but the mean cumulative dose of RTX did not differ between the groups. On RTX therapy in group 1 there was a significantly higher increase of FVC, decrease of CRP, CPK, disease activity index and the dose of prednisolone (table 2). There was a significant correlation between muscle weakness and ΔDLCO (r=-0.656; p=0.002).

Table 1. Characteristics of main parameters at baseline depending on the presence of muscle weakness.

Parameters	Group 1	Group 2	p
Disease duration, years, M±σ	3.8±3.1	6.8±5.9	0.003
Disease onset, n (%): - limited - diffuse - overlap	 8 (36) 11 (50) 3 (22)	 48 (37) 68 (53) 13 (10)	NS
Modified Rodnan skin score, M±σ	12.8±11.5	10.5±9.5	0.004
FVC*, %, M±σ	77.8±18.5	78.4±22.5	NS
DLCO**, %, M±σ	55.7±16.4	46.1±20.1	0.0001
CRP, mg/l, Me [25th; 75th quartile]	9.3 [3.8; 20.6]	5.2 [1.7; 11.5]	0.04
CPK***, U/l, Me [25th; 75th quartile]	457.9 [240; 639]	243 [225; 261]	0.0001
Disease activity index, M±σ	3.9±1.7	3.1±1.8	0.03
Prednisolone, mg/day, M±σ	14.9±5.3	11.1±4.5	0.0001

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

Table 2. Changes of main parameters on RTX therapy depending on the presence of muscle weakness.

Parameters	Group 1	Group 2	p
Δ Modified Rodnan skin score, Me [25th; 75th quartile]	1 [0,1; 10]	1 [3; 16]	NS
ΔFVC*, %, Me [25th; 75th quartile]	4,3 [0.1; 12.2]	2.4 [-1.8; 9.4]	0.04
ΔDLCO**, %, Me [25th; 75th quartile]	-1.4 [-9.4; 0.4]	1,3 [-2.4; 5.5]	0.02
Δ CRP, mg/l, Me [25th; 75th quartile]	3.8 [0.1; 8.9]	0,9 [-1; 4.2]	0.01
ΔCPK***, U/l, Me [25th; 75th quartile]	461 [353; 604.7]	181 [123; 200]	0.0001
ΔDisease activity index, M±σ	2.2±1.6	1.6±1.5	0.02
ΔPrednisolone, mg/day, Me [25th; 75th quartile]	1.3 [0; 5]	0 [0; 2.5]	0.005
Cumulative mean dose of RTX, g, M±σ	1.5±0.6	1.5±0.6	NS

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

Conclusions: In our study there are more pronounced positive changes on RTX therapy in the group of patients with muscle weakness. The revealed correlation may indicate that muscle weakness makes a significant contribution to the decline of lung function.

Keywords: Rituximab, systemic sclerosis, myopathy

PD003 / #393

E-POSTER DISCUSSION 01: SYSTEMIC SCLEROSIS
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RISK OF MAJOR CARDIOVASCULAR EVENTS IN PATIENTS WITH SYSTEMIC SCLEROSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background and Aims: Systemic sclerosis (SSc) is associated with an increased cardiovascular (CV) risk, but conflicting data exist due to study heterogeneity, often leading to insufficient preventive measures in clinical practice. This meta-analysis aims to consolidate evidence on the association between SSc and major cardiovascular events (MACE).

Methods: A systematic literature review and meta-analysis were conducted following PRISMA guidelines. Online databases (PubMed, Cochrane Library, Google Scholar) were searched for cohort studies evaluating the association between SSc and MACE, including non-fatal stroke (nfS), non-fatal myocardial infarction (nfMI), and CV mortality. Studies were included if they reported association estimates with 95% confidence intervals (CI) or provided data for calculation. Study quality was assessed by three independent reviewers using NOQAS. Adjusted association estimates were extracted where available. Studies with the same patient cohorts were excluded to reduce publication bias, favoring those with larger sample sizes and longer follow-up. Statistical analysis was performed using RStudio's Metafor package, applying a random-effects model. The weighted hazard ratio (HR) for MACE risk between SSc patients and controls was calculated, alongside separate HRs for nfS and nfMI.

Results: Seven studies (2013-2023) involving 72,086 participants from the USA, Canada, Taiwan, and Europe were included. The pooled HR for MACE risk in SSc patients was 1.8 (95% CI 1.3-2.5). HRs for nfS and nfMI were 1.5 (95% CI 1.2-1.8) and 2.0 (95% CI 1.5-2.8), respectively.

Conclusions: This meta-analysis highlights an increased MACE risk in SSc patients, underlining the need for enhanced CV risk prevention strategies in clinical practice.

Keywords: systemic sclerosis, Cardiovascular risk, meta-analysis

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E-POSTER DISCUSSION 01: SYSTEMIC SCLEROSIS
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THE ROLE OF CORONARY COMPUTED TOMOGRAPHY ANGIOGRAPHY IN THE EARLY DETECTION OF CARDIAC DAMAGE IN SYSTEMIC SCLEROSIS

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Background and Aims: Primary heart involvement (pSHI) in Systemic Sclerosis (SSc) is caused by both fibrosis and vasculopathy, SSc-pathognomic characteristics. The study aimed at exploring the role of coronary computed tomography angiography (CCTA) in early detection of subclinical cardiac involvement in SSc patients.

Methods: A prospective cohort study (March 2023-May 2024) enrolled patients with SSc diagnosis according to 2013 ACR/EULAR classification criteria and no history of cardiovascular disease. Patients underwent nailfold video capillaroscopy (NVC), a color doppler trans-thoracic echocardiogram, and CCTA. The CT protocol involves a baseline scan to assess pulmonary interstitium, a cardio-synchronized scan for coronary arteries and a post-contrast media scan to identify fibrotic myocardium.

Results: The cohort included 19 patients (94.7% women) with a mean age of 65.8±9.8 y.o. Demographic and clinical data were reported in Table 1. In accordance with CCTA findings, 2 (10.5%) patients presented no coronary stenosis, 12 patients minimal-mild coronary stenosis (63.2%, group 1) and 5 patients moderate-severe stenosis (26.3%, group 2). Traditional cardiovascular risk factors were equally distributed between two groups. dcSSc and concomitant interstitial lung disease (ILD) were slightly prevalent in group 2. Patients from group 2 showed active-late NVC pattern in a higher percentage than group 1

(p=0.01).

	Group 1 N=12	Group 2 N=5	P value
Diffuse cutaneous, N (%)	3 (25)	3 (60)	/
Age (years), mean ± SD	65.7±10.1	68.5±8.3	/
Smoking habits, N (%)	6 (50)	2 (40)	/
Body mass index (kg/m^2), mean ± SD	24.1±4.5	24.4±4.5	/
Cholesterol HDL (mg/dl), mean ± SD	61.8±15.8	60.2±15.5	/
Cholesterol total (mg/dl), mean ± SD	199.6±39.7	202.4±44.6	/
Hypertriglyceridemia (mg/dl), mean ± SD	111.2±35.1	109.7±42.3	
Diabetes, N (%)	2 (16.7)	2 (40)	/
Hypertension, N (%)	6 (50)	4 (80)	/
Brain natriuretic peptide (pg/ml), mean ± SD	92.3±110.0	86.1±123.8	/
Disease duration (years), mean ± SD	21.7±12.8	23.9±14.5	/
Raynaud phenomenon, N (%)	12(100)	5 (100)	/
Anti-Scl70, N (%)	2 (16.7)	3 (60)	
ACA, N (%)	8 (66.7)	0	
Interstitial lung disease, N (%)	3 (25)	3 (60)	/
NSIP, N (%)	1 (8.3)	2 (40)	/
UIP, N (%)	2 (16.7)	1 (20)	/
Pulmonary arterial hypertension, N (%)	3 (25)	1 (20)	/
Diastolic dysfunction, N (%)	9 (75)	3 (60)	
Myocardial fibrosis, N (%)	0	0	
NVC pattern, N (%)			
Active-late, N (%)	2 (16.7)	4 (80)	0.01
Early, N (%)	10 (83.3)	1 (20)	0.01

Table 1. Demographic, clinical, and laboratory data from patients with systemic sclerosis (SSc) with minimal coronary stenosis (group 1) and luminal moderate to severe stenosis (group 2) detected by using coronary computed tomography angiography. SD standard deviation, ACA: anticentromere antibodies; NSIP: nonspecific interstitial pneumonia; UIP: usual interstitial pneumonia; NVC: nailfold video capillaroscopy.

Conclusions:

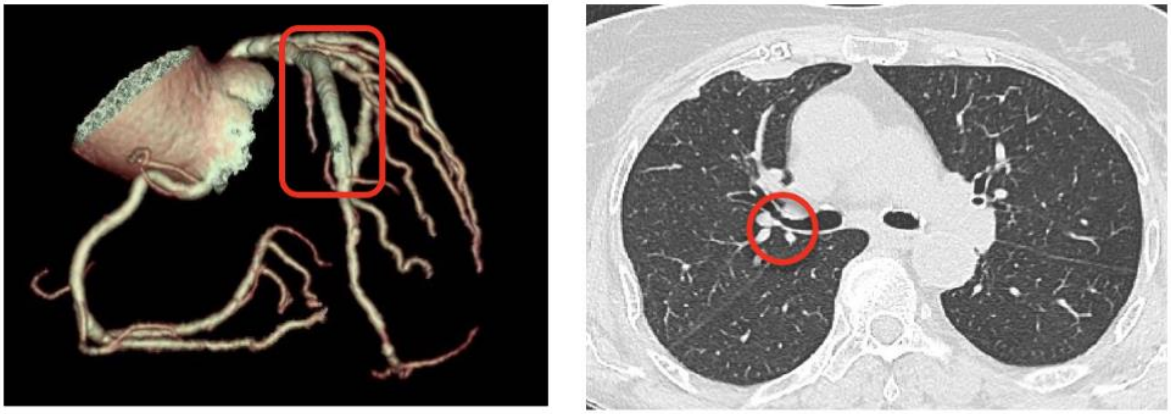

Figure 1. Representative CCTA from a SSc patient showing a significant stenotic plaque in the proximal segment of the left anterior descending artery.

Our pilot study provides evidence of coronary stenosis in asymptomatic SSc patients. Microvascular abnormalities, such as active-late NVC pattern, are prevalent in asymptomatic patients with moderate-severe coronary stenosis. CCTA detecting subclinical coronary damage and simultaneously evaluating pulmonary interstitium and myocardium is a useful tool for optimizing instrumental monitoring of chronic damage in SSc.

Keywords: systemicsclerosis, primaryheartinvolvement, coronary computed tomography angiography

PD005 / #211

E-POSTER DISCUSSION 02: SYSTEMIC SCLEROSIS, IDIOPATHIC INFLAMMATORY MYOPATHIES, SJöGREN SYNDROME
03-06-2025 3:10 PM - 3:40 PM

THE NEW BIOMARKERS FOR THE EARLY DIAGNOSIS OF SYSTEMIC SCLEROSIS: THE CENTRAL ROLE OF LABORATORY

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Background and Aims: In addiction to classical, new circulating antinuclear antibody (ANA) are emerging as early markers of diagnosis, prognosis and monitoring of systemic sclerosis (SSc)

Methods: We recruited 188 patients by the Rheumatology Unit, University of Modena, Italy (approval Ethical Committee) during 2021-2022 years. We divided them in 2 groups based on positivity of ACA and anti-Scl70 antibodies. We performed Hep 2000 ANA IIF pattern, Elia CTD screen and single specificity antibodies. We searched within these 2 groups the presence of other new antibodies testing for 3 PMAT: panel 1 CTD Essential, panel 2 CTD Comprehensive, panel 3 Myopathy RUO, by Aptiva Inova Diagnostics, San Diego, USA

Results: We detected the simultaneous presence of multiple antibodies. Group 1 (ACA): 23 patients with BICD2, 22 Ro52, 8 Ro60, 5 RNP, 3 PM-Scl, 2 SSB, 2 MDA5, 1 NXP-2, 1 Rpp25, 1 Rpp38, 1 Ku, 1 RNApol3. Group 2 (anti-Scl70): 22 patients with Ro60, 8 RNP, 5 SSB, 4 BICD2, 4 Rpp38, 4 Ro52, 4 Ku, 3 PM-scl, 3 Fibrillarin, 2 RibP, 1 HMGCR, 1 SRP54, 1Rpp25, 1 RNApol3.We further analysed antibody associations and clinical aspects and distinct prognosis of patients.

Conclusions: Beyond availability of validated immunoassays for classical markers, the search for new autoantibodies is important to reduce serological gap for early and very early diagnosis of SSc and better stratify overlap condition. The autoimmunity laboratory plays a crucial role: through the union of different technologies and the harmonization of results, it creates specific diagnostic algorithms useful for patient management.

Keyword: Systemic sclerosis, autoantibody, new biomarkers, autoimmunity laboratory

PD006 / #315

E-POSTER DISCUSSION 02: SYSTEMIC SCLEROSIS, IDIOPATHIC INFLAMMATORY MYOPATHIES, SJöGREN SYNDROME
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HIGHER MODIFIED RODNAN SKIN SCORE AND INFECTIONS PREDICT MORTALITY IN SYSTEMIC SCLEROSIS: A SINGLE CENTRE STUDY

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Background and Aims: Systemic sclerosis (SSc) is characterised by high morbidity and mortality due to disease-related or treatment-related complications.

Methods: We retrospectively analysed deaths in our cohort of 557 patients with SSc fulfilling 2013 ACR-EULAR classification criteria from January 2009- December 2020. Baseline characteristics of patients who died were compared with living controls, matched for age, sex and duration of follow-up, in a case-control design. Kaplan-Meier method, Chi-square test, student's t-test and Mann-Whitney U-test were applied appropriately. Odds of mortality (univariate analysis) were calculated by Mantel-Haenszel test. Multivariate analysis was done using logistic regression.

Results: A total of 90 deaths were recorded; Interstitial lung disease (ILD) (n=32), gastrointestinal tract (n=7), malignancies (n=6), scleroderma renal crisis (SRC) (n=5), and pulmonary arterial hypertension (PAH) (n=3). Infection was the cause of death in 19 out of 32, (59.4%) ILD patients; 5 had pulmonary tuberculosis. Twenty-four patients died in non-hospital setting. Mean age at death was 38 years, and median duration of follow-up was 338 days (95% CI 27-1619). Male- female ratio was 1:10. On univariable analysis, patients who died had greater number of hospital admissions, higher modified Rodnan skin score (mRSS), higher frequency of ILD, PAH, cardiac involvement, SRC, arthritis, and history of infections (Table

Table 1: Baseline Characteristics and univariate analysis

Characteristic	Death (n=90)	Survival (n=90)	p-value	OR (95% CI)
Age*	38 (1.24)	37.99 (1.21)	0.99	
Proportion of females	82/90	83/90	0.78	0.86 (0.29-2.50)
Total admissions^	1 (0-3)	0 (0-0)	<0.001	
Disease admissions^	1 (0-2.5)	0 (0-0)	<0.001	
Follow up duration (days)^	338 (27-1619)	418 (29-1338.5)	0.96	
Symptom duration (months)^	36 (12-60)	48 (24-72)	0.06	
Modified Rodnan skin score*	21.25 (1.47)	15.74 (1.23)	<0.01	
Raynaud's phenomenon	81	86	0.15	0.42 (0.12-1.42)
Digital Ulcers	43	52	0.18	0.66 (0.36-1.20)
Digital pitting scars	35	32	0.64	1.15 (0.62-2.11)
Joint contractures	13	14	0.83	0.91 (0.40-2.08)
Calcinosis	3	4	0.70	0.74 (0.16-3.43)
Gangrene	9	10	0.80	0.88 (0.34-2.30)
GERD	66	54	0.058	1.83 (0.96-3.46)
Arthritis	30	18	0.04	2.00 (1.00-3.97)
Myositis	10	9	0.80	1.12 (0.43-2.92)
Sicca	4	5	0.73	0.79 (0.20-3.05)
Interstitial lung disease	62	47	0.04	1.84 (0.99-3.42)
Pulmonary arterial hypertension	26	12	<0.01	2.77 (1.27-6.04)
Cardiac involvement	11	2	<0.01	6.28 (1.30-30.29)
Scleroderma renal crisis	11	2	<0.01	6.36 (1.32-30.72)
Scl-70	33 (of 63)	48 (of 74)	0.14	0.59 (0.29-1.18)
Infection ever	36	5	<0.01	11.33 (3.79-33.87)
Mean no of infections (Total)	0.59 (50) S.E.-0.099	0.055 (5) S.E.-0.02	0.024	
Immunosuppressive medications				
Low dose Prednisolone (<=7.5 mg/day)	56	52	0.542	
Cyclophosphamide, ever	17	16	0.847	
Cyclophosphamide, current	7	7	1	
Mycophenolate	1	1	1	

OR – Odds ratio; 95% CI – 95% confidence intervals

*- parametric data, ^- non-parametric data, S.E.- standard error

1). Using multivariate analysis, mRSS, number of admissions and infections were significantly higher

in the mortality group as compared to live controls.(Table

Table 2: Multivariable-adjusted odds ratios for risk of mortality in scleroderma

Characteristic	Odds ratio	95% CI	p-value
Total admissions	1.670	1.194-2.337	0.003*
Modified Rodnan Skin Score	1.062	1.023-1.103	0.002*
Raynaud's phenomenon	0.568	0.095-3.396	0.535
Digital Ulcers	0.620	0.232-1.656	0.341
Digital pitting scars	0.801	0.308-2.083	0.649
Joint contractures	0.429	0.109-1.681	0.225
Calcinosis	0.239	0.026-2.151	0.202
Gangrene	0.627	0.148-2.654	0.526
Gastroesophageal reflux disease	1.515	0.594-3.865	0.385
Arthritis	1.302	0.469-3.605	0.612
Myositis	0.447	0.084-2.381	0.346
Sicca	0.995	0.137-6.651	0.963
Interstitial lung disease	1.188	0.478-2.955	0.710
Pulmonary artery hypertension	1.257	0.395-3.996	0.698
Cardiac involvement	9.589	0.710-129.528	0.089
Scleroderma renal crisis	5.064	0.681-37.632	0.113
Number of infections	6.092	1.023-21.344	0.005*
*- statistically significant assuming an alpha of 0.05			

2).

Conclusions: ILD related LRTI was the commonest cause of mortality in SSc. Higher modified Rodnan skin score, infections and number of hospital admissions were identified as predictors of mortality.

Keywords: interstitial lung disease, sepsis, hospital admissions

PD007 / #489

E-POSTER DISCUSSION 02: SYSTEMIC SCLEROSIS, IDIOPATHIC INFLAMMATORY MYOPATHIES, SJöGREN SYNDROME
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THE ROLE OF NAILFOLD CAPILLAROSCOPY IN THE ASSESSMENT OF ORGAN INVOLVEMENT IN CHILDREN WITH RHEUMATIC DISEASES

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Background and Aims: Nailfold videocapillaroscopy (NVC) is a non-invasive tool for assessing microvascular abnormalities and may serve as a biomarker of disease severity in adult's rheumatic diseases. However, pediatric data on NVC findings are limited. We aimed to evaluate NVC patterns and their possible associations with clinical features in juvenile rheumatic diseases.

Methods: Paediatric patients with juvenile rheumatic diseases followed up at our centre were retrospectively enrolled. Microvascular alterations were classified as non-specific or scleroderma patterns and individually evaluated. The relation between NVC patterns and morphologic alterations with peripheral/visceral involvement was assessed using Fisher's exact test. Spearman's correlation was employed to evaluate associations between capillaroscopic findings and skin score.

Results: 688 NVC images from 43 subjects (24 females; mean age 16.96±4.4 years) were assessed. Comparing the distribution of patterns (non-specific vs. scleroderma) across the three main diagnosis (primary Raynaud's phenomenon –PRP, juvenile systemic sclerosis –jSSc, juvenile dermatomyositis –jDM), significant differences were observed in jSSc vs. jDM ($p=0.003$) and PRP vs. jSSc ($p<0.001$). Regarding capillaroscopic alterations, differences were observed only in PRP vs. jSSc for capillary density ($p<0.001$) and giants ($p=0.01$). Among jSSc, no significant differences in organ involvement were retrieved across early and active-late patterns. A weak positive association ($\rho=0.32$) was found between NVC patterns and skin score.

Conclusions: Our preliminary report confirms that NVC may help differentiate primary from secondary RP in paediatric connective tissue diseases. However, no significant association was found between NVC patterns and organ involvement. Larger disease-

specific cohorts' studies may provide further insights into the clinical associations of NVC abnormalities in children.

Keywords: organ involvement, Children, capillaroscopy

PD008 / #486

E-POSTER DISCUSSION 02: SYSTEMIC SCLEROSIS, IDIOPATHIC INFLAMMATORY MYOPATHIES, SJöGREN SYNDROME
03-06-2025 3:10 PM - 3:40 PM

CANCER INCIDENCE IN INFLAMMATORY MYOPATHY: A RETROSPECTIVE STUDY OF PATIENT OUTCOMES

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Background and Aims: This retrospective study aimed to evaluate the incidence of cancer in patients with inflammatory myopathy (IIM) and assess associated risk factors.

Methods: A cohort of 45 patients (29 women, 15 men; mean age 53 ± 15 years) with IIM was analyzed. The cohort included 17 with dermatomyositis (DMM), 13 with antisynthetase syndrome (SAS), and 8 with overlap syndrome. Data on cancer diagnoses, demographic factors, and autoantibody profiles were collected. Odds ratios (OR) with 95% confidence intervals (CI) were calculated to evaluate cancer risk.

Results: Nine cancers (20%) were associated with myositis, including breast, esophageal, and thyroid cancers, among others. Six cancers were synchronous with IIM, while two were diagnosed 15 and 31 months post-IIM diagnosis (both SAS). Cancer risk was higher in DMM patients (OR 2.66, 95% CI 0.58-12) and SAS (OR 1.07, 95% CI 0.23-4.9), while overlap syndrome appeared protective (OR 0.73, 95% CI 0.6-0.89). Anti-Jo1 (OR 7, 95% CI 0.9-50) and anti-TIF1 gamma (OR 4.4, 95% CI 0.7-26) were associated with cancer, whereas anti-PL7 was protective (OR 0.74, 95% CI 0.62-0.9). Age was significantly associated with cancer (62 ± 10 vs. 51.17 ± 15, p = 0.022).

Conclusions: This study confirms an increased cancer risk, particularly in patients with dermatomyositis and anti TIF1 antibodies and surprisingly in our series, also Jo1 antibodies. Routine cancer screening, especially for older patients and those with high-risk autoantibodies, may be warranted.

Keywords: Myositis, cancer

PD009 / #421

E-POSTER DISCUSSION 02: SYSTEMIC SCLEROSIS, IDIOPATHIC INFLAMMATORY MYOPATHIES, SJöGREN SYNDROME
03-06-2025 3:10 PM - 3:40 PM

THE ROLE OF C-REACTIVE PROTEIN IN SJÖGREN'S DISEASE.

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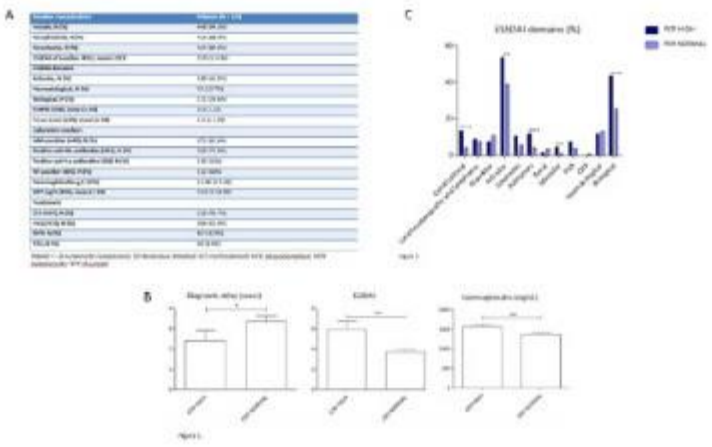
Background and Aims: Sjögren's disease (SD) is a systemic autoimmune disorder that affects the exocrine glands, and its clinical presentation can range from simple dry syndrome to systemic involvement. Data on the role of inflammatory markers, such as C-reactive protein (CRP), are limited. The aim of our study is to analyze CRP levels in a cohort of SD patients to evaluate their clinical and biological characteristics.

Methods: A multicenter, cross-sectional, observational study was conducted on patients with SD according to the ACR/EULAR 2016 criteria. We stratified patients based on baseline CRP levels and identified two groups: elevated-CRP and normal-CRP. Differences between the two groups were analyzed using non-parametric tests or chi-square test. Linear regression was performed to assess the association between CRP levels and disease activity.



Results:

The characteristics of the population are in Table 1. Sixty-seven patients had elevated CRP. In the elevated CRP group, the mean values of ESSDAI (p=0.001), immunoglobulins (p=0.002), and RF (p=0.001) were higher than in the normal CRP-group (Fig1). The constitutional, articular, pulmonary, muscular, and biological domains of ESSDAI were

significantly more affected in the elevated CRP-group compared to the normal CRP (Fig.1). Finally, baseline CRP values were inversely proportional to changes in disease activity after one year (B= -0.056, R^2 = 0.042, p = 0.00167).

Conclusions: This study demonstrates that patients with elevated CRP levels generally have higher disease activity at diagnosis and less diagnostic delay. Furthermore, higher baseline CRP appears to be associated with a decrease in disease activity at 12 months of follow-up.

Keywords: inflammation, Sjogren's disease, CRP

PD010 / #374

E-POSTER DISCUSSION 02: SYSTEMIC SCLEROSIS, IDIOPATHIC INFLAMMATORY MYOPATHIES, SJöGREN SYNDROME
03-06-2025 3:10 PM - 3:40 PM

ANTI-SALIVARY GLAND PROTEIN 1, ANTI-CARBONIC ANHYDRASE 6, ANTI-PAROTID SECRETORY PROTEIN ANTIBODIES IN SJOGREN'S DISEASE

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Background and Aims: In Sjogren's disease(SD) autoantibodies(Abs) production (mainly against ribonucleoproteins) and predilection for exocrine glands are characteristic. Other Abs directed to enzymes and antigens of salivary glands are studied as potential biomarkers. The aims of this study were assessment of the frequency of anti-salivary gland protein1(SP1), anti-carbonic anhydrase6(CA6), and anti-parotid secretory protein(PSP) Abs.

Methods: 76 adult SD patients sera (aged 51±13; 85% females) were tested. Anti-SP1, -CA6, and -PSP Abs were assessed by ELISA (cut off > 20 [EU/ml]). Anti-Ro, anti-LaAbs, ANA titer, rheumatoid factor(RF), C3, C4 components of complement and ophthalmological assessment (Schirmer's test, ocular staining score), histopathological examination of minor salivary glands biopsies(focus score(FS) positivity ≥1), were performed. Independent samples t-test and chi-square were used with significance set at $p < 0.05$.

Results: 92% of pts had anti-Ro Abs,72% (n=55) anti-La Abs, 85.5% had FS>1. Anti-CA6Abs: IgA 0%, IgG 13%, IgM 3%; anti-PSPAbs 4%, 8%, 4% (respectively); anti-SP1Abs: 1%, 4%, 20 % (respectively). Were 42% pts with new antibodies, 9 (12%) with at least two different Ab. The most frequent occurrence (20%) was IgMSP1Ab compared to others. No correlation was found between anti-SP1Abs and ANA, anti-Ro Ab, C3, C4 components of complement, ocular tests, FS.There were no significant differences between groups depending on anti-SP1Abs.

Conclusions: Anti-SP1,-CA6,-PSPAbs (IgA, IgG, and IgM) can't be considered as SD universal biomarkers. Compared to previous studies, they collectively occur in approx.42% of pts (in other studies 38,8%). These Abs in different subtypes of SD with a predominance of specific lesions in the exocrine glands can be considered.

Keyword: Sjogren's disease, anti-SP1, anti-CA6, anti-PSP antibodies

PD011 / #124

E-POSTER DISCUSSION 03: INTERSTITIAL LUNG DISEASE AND COVID VACCINE
03-06-2025 3:10 PM - 3:40 PM

NAIL FOLD VIDEO CAPILLAROSCOPY IN INTERSTITIAL LUNG DISEASE. A COMPARISON OF ILD-CTD, IPAF AND IDIOPATHIC PULMONARY FIBROSIS

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Background and Aims: The primary aim of this study was to examine whether measures from nail fold video capillaroscopy (NVC) can distinguish idiopathic pulmonary fibrosis (IPF) patients from either patients with interstitial lung disease that may be secondary to a connective tissue disease (CTD-ILD), or patients with idiopathic interstitial pneumonia with autoimmune features (IPAF)

Methods: A total of 83 consecutive patients who were seen for either CTD-ILD (N=41), IPAF (N=17), or IPF (N=25) between January 2023 and February 2024 were included.. Information was collected regarding baseline characteristics, serology and pulmonary information. Semiquantitative NVC scores were recorded for the three groups; a comparison of abnormal NVC between the groups was reported.

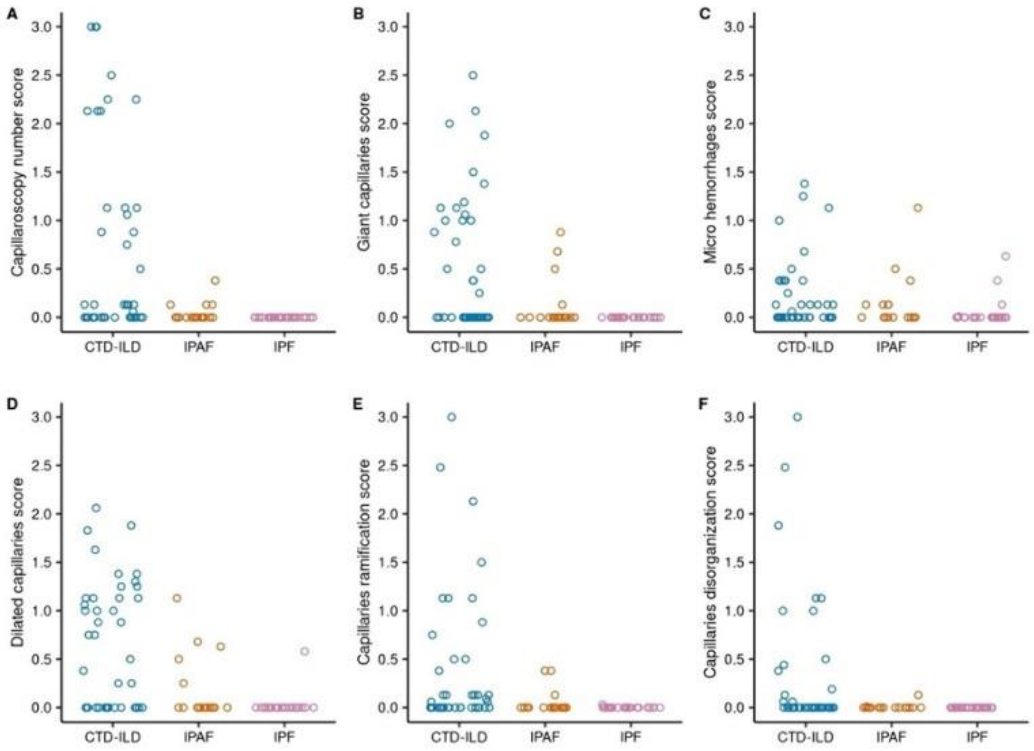
Results: Comparisons of occurrence of an abnormal NVC and presence of NVC scores > 0 between IPF patients and the separate groups of CTD-ILD and IPAF patients are provided in Table 1 and Figure 1 Compared to IPF patients, an abnormal NVC was significantly more common in both CTD-ILD patients (75.6% vs. 20.0%, OR: 12.40, P<0.0001) and IPAF patients (52.9% vs.20.0%, OR: 4.50, P=0.031) in unadjusted analysis, and this was consistent when adjusting for age and sex (CTD-ILD, OR: 12.96, P<0.0001; IPAF, OR: 4.65, P=0.038). Though abnormal NVC was observed less frequently in IPAF patients (52.9%) than in CTD-ILD patients (75.6%), this difference was not statistically significant in unadjusted analysis (OR: 0.36, P=0.095) or when adjusting for age and sex (OR: 0.36, P=0.12)

Table 1: Comparison of abnormal NVC and presence of NVC scores > 0 between IPF patients and the separate groups of CTD-ILD and IPAF patients

			Unadjusted analysis			Adjusting for age and sex	
Outcome/Group	N	No. (%) with an abnormal NVC or a score >0	OR (95% CI)	P-value	AUC (95% CI)	OR (95% CI)	P-value
Abnormal NVC							
IPF	25	5 (20.0%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
CTD-ILD	41	31 (75.6%)	12.40 (3.69, 41.66)	<0.0001	N/A	12.96 (2.78, 60.46)	0.0011
IPAF	17	9 (52.9%)	4.50 (1.15, 17.65)	0.031	N/A	4.65 (1.09, 19.88)	0.038
CTD-ILD	41	31 (75.6%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
IPAF	17	9 (52.9%)	0.36 (0.11, 1.19)	0.095	N/A	0.36 (0.10, 1.29)	0.12
Capillaroscopy number score > 0							
IPF	25	0 (0.0%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
CTD-ILD	41	24 (58.5%)	N/A[1]	<0.0001	0.79 (0.72, 0.87)	N/A[1]	N/A
IPAF	17	4 (23.5%)	N/A[1]	0.021	0.62 (0.51, 0.72)	N/A[1]	N/A
CTD-ILD	41	24 (58.5%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
IPAF	17	4 (23.5%)	0.22 (0.06, 0.78)	0.020	0.68 (0.55, 0.80)	0.32 (0.08, 1.26)	0.10
Giant capillaries score > 0							
IPF	25	0 (0.0%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
CTD-ILD	41	20 (48.8%)	N/A[1]	<0.0001	0.74 (0.67, 0.82)	N/A[1]	N/A
IPAF	17	4 (23.5%)	N/A[1]	0.021	0.62 (0.51, 0.72)	N/A[1]	N/A
CTD-ILD	41	20 (48.8%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
IPAF	17	4 (23.5%)	0.32 (0.09, 1.16)	0.083	0.63 (0.50, 0.76)	0.50 (0.12, 2.01)	0.33
Micro hemorrhages score > 0							
IPF	25	4 (16.0%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
CTD-ILD	41	19 (46.3%)	4.53 (1.32, 15.56)	0.016	0.65 (0.55, 0.76)	4.96 (1.11, 22.11)	0.035
IPAF	17	7 (41.2%)	3.67 (0.87, 15.52)	0.077	0.63 (0.48, 0.77)	3.83 (0.85, 17.25)	0.081
CTD-ILD	41	19 (46.3%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
IPAF	17	7 (41.2%)	0.81 (0.26, 2.55)	0.72	0.53 (0.38, 0.67)	0.78 (0.23, 2.68)	0.70
Dilated capillaries score > 0							
IPF	25	1 (4.0%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
CTD-ILD	41	25 (61.0%)	37.50 (4.61, 305.16)	0.0007	0.78 (0.70, 0.87)	14.85 (1.55, 142.44)	0.019
IPAF	17	5 (29.4%)	10.00 (1.05, 95.46)	0.046	0.63 (0.51, 0.75)	6.01 (0.59, 61.12)	0.13
CTD-ILD	41	25 (61.0%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
IPAF	17	5 (29.4%)	0.27 (0.08, 0.90)	0.033	0.66 (0.52, 0.79)	0.40 (0.11, 1.46)	0.16
Capillaries ramification score > 0							
IPF	25	1 (4.0%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
CTD-ILD	41	21 (51.2%)	25.20 (3.11, 204.15)	0.0025	0.74 (0.65, 0.82)	19.16 (1.98, 185.50)	0.011
IPAF	17	3 (17.6%)	5.14 (0.49, 54.32)	0.17	0.57 (0.47, 0.67)	4.30 (0.39, 47.90)	0.24
CTD-ILD	41	21 (51.2%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
IPAF	17	3 (17.6%)	0.20 (0.05, 0.82)	0.025	0.67 (0.55, 0.79)	0.22 (0.05, 0.96)	0.044
Capillaries disorganization score > 0							
IPF	25	0 (0.0%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
CTD-ILD	41	14 (34.1%)	N/A[1]	0.0005	0.67 (0.60, 0.74)	N/A[1]	N/A
IPAF	17	2 (11.8%)	N/A[1]	0.16	0.56 (0.48, 0.64)	N/A[1]	N/A
CTD-ILD	41	14 (34.1%)	1.00 (reference)	N/A	N/A	1.00 (reference)	N/A
IPAF	17	2 (11.8%)	0.26 (0.05, 1.29)	0.098	0.61 (0.50, 0.72)	0.34 (0.06, 1.85)	0.21

OR=odds ratio, CI=confidence interval. AUC=area under the ROC curve. ORs, 95% CIs, and p-values result from binary logistic regression models. AUCs were estimated using the actual NPV scores, rather than the dichotomized versions that were utilized in logistic regression analysis. [1] Logistic regression analysis was not possible due to the lack of any IPF patients with a score > 0; the p-value results from Fisher's exact test in comparison to the IPF group.

Figure 1: The six different NVC scores ([A] capillaroscopy number score, [B] giant capillaries score, [C] micro hemorrhages score, [D] dilated capillaries score, [E] capillaries ramification score, [F] capillaries disorganization score) in CTD-ILD, IPAF, and IPF patients



Conclusions: NVC may help differentiate patients with IPF versus CTD/ILD and IPAF and may help with IPAF diagnosis in unclear cases.

Keyword: ILD-CTD, IPAF, IPF, NVC

PD012 / #136

E-POSTER DISCUSSION 03: INTERSTITIAL LUNG DISEASE AND COVID VACCINE
03-06-2025 3:10 PM - 3:40 PM

LUNG TRANSPLANTATION OUTCOMES FOR PULMONARY SARCOIDOSIS COMPARED TO IDIOPATHIC PULMONARY FIBROSIS: THE MAYO CLINIC EXPERIENCE

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Background and Aims: Pulmonary disease is present in most sarcoidosis cases with up to 10% of patients progressing to advanced lung disease and accounted for 2.5% of lung transplants in 2015. Idiopathic pulmonary fibrosis (IPF) is a much more common indication for lung transplantation. Post-transplant outcomes for both indications are presumed to be comparable. The current study evaluates the Mayo Clinic experience and outcomes.

Methods: All lung transplants occuring at any Mayo Clinic site between July 2017 and March 2023 were reviewed and descriptive statistics were performed and compared between pulmonary sarcoidosis and IPF indications via Kruskal-Wallis and Fischer's Exact tests. Survival and pulmonary function test results were compared between groups. Kaplan-Meier curves and hazard ratios were used for survival comparison.

Results: Lung transplantation for 13 cases of sarcoidosis were compared to 26 age- and gender-matched IPF cases. The most common computed tomography pattern was usual interstitial pneumonia (61.5%) in the IPF group compared to undefined pattern (38.5%) in the sarcoidosis group. Baseline characteristics were otherwise comparable (Table 1). A higher proportion of sarcoidosis patients had improved post-transplant forced vital capacity compared to IPF patients although not statistically significant (Figure 1). Survival plateaued at 75% in both groups after 5 years with hazard ratio 0.56 (p=0.49) (Figure 2).

Table 1. Baseline (pre-transplant) demographics of idophathic pulmonary fibrosis and sarcoidosis groups. Statistically significant differences are designated by an asterisk (*).

	Idiopathic pulmonary fibrosis (n=26)	Sarcoidosis (n=13)	p-value
Age, years	65 (51-87)	65 (51-80)	0.66
Male sex	23 (88.5%)	11 (84.6%)	1.00
Smoking history	10 (38.5%)	6 (50.0%)	0.72
Pre-transplant radiographic pattern			
Usual interstitial pneumonia	16 (61.5%)	2 (15.4%)	0.008*
Nonspecific interstitial pneumonia	5 (19.2%)	2 (15.4%)	1.00
Hypersensitivity pneumonitis	1 (3.8%)	1 (7.7%)	1.00
Undefined interstitial disease	2 (7.7%)	5 (38.5%)	0.030*

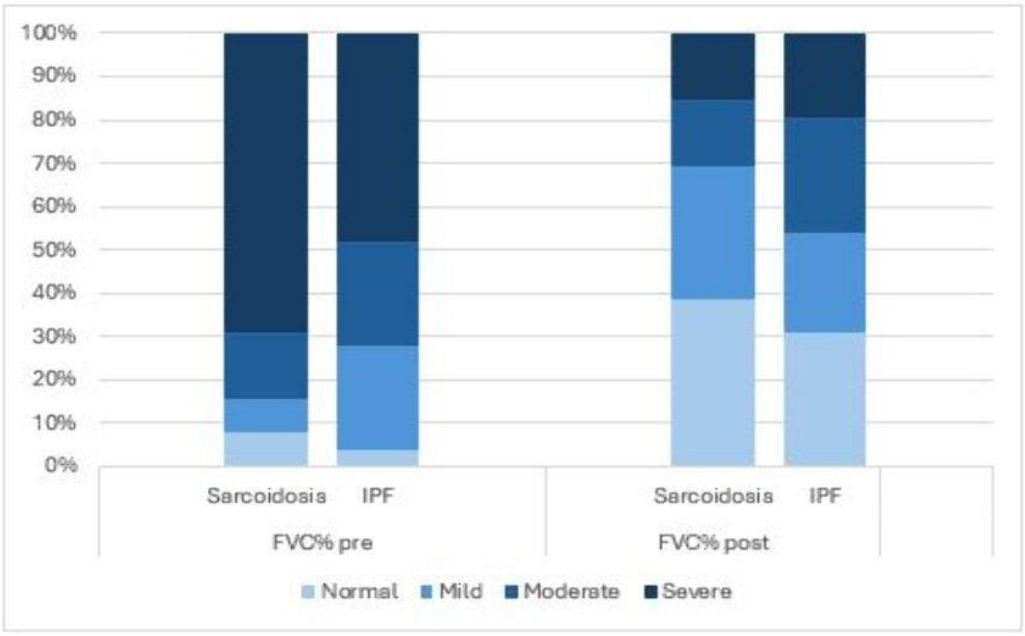

Figure 1. Forced vital capacity (FVC) pre- and post-trasplant compared between sarcoidosis and idopathic pulmonary fibrosis (IPF) groups. FVC scores were categorized as normal (>80%), mildly reduced (60-80%), moderately reduced (50-60%), and severely reduced (<50%). Missing data points were excluded from proportion calculations. Differences were not statistically significant.

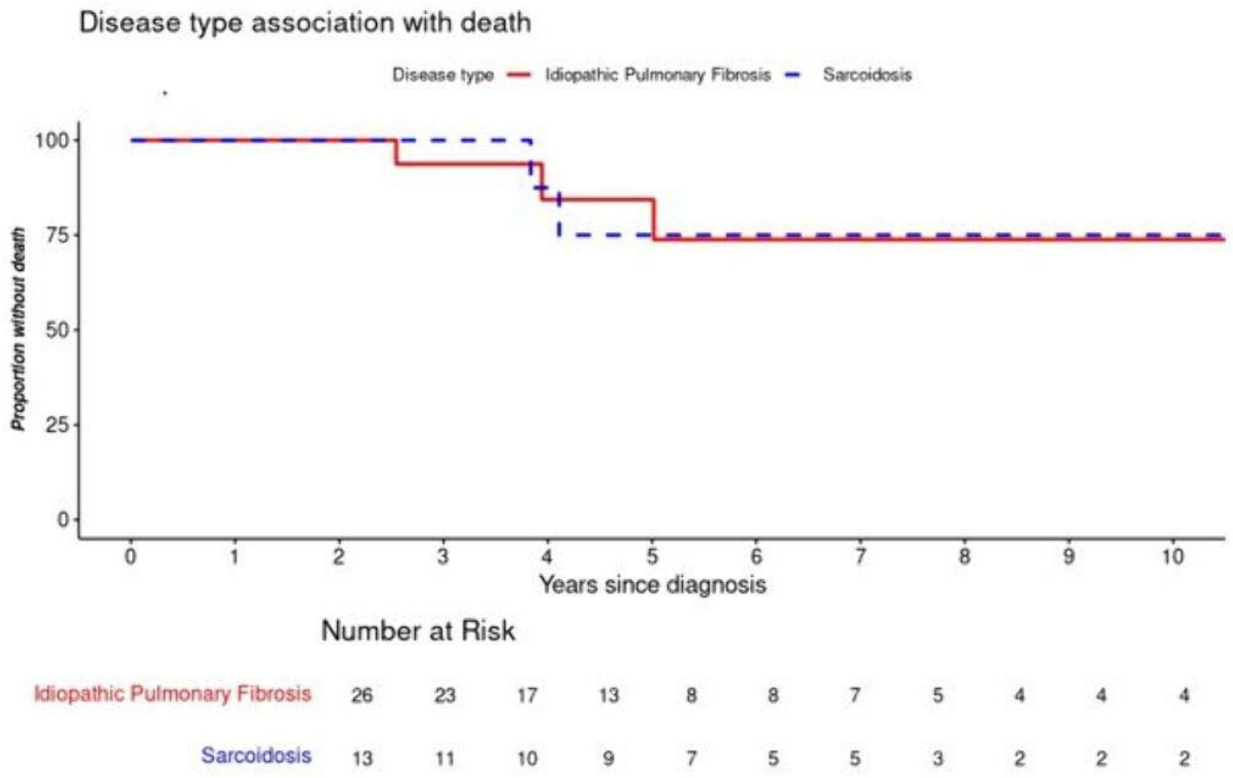

Figure 2. Kaplan-Meier survival curve demonstrating comparable post-transplant survival between idiopathic pulmonary fibrosis (red) and sarcoidosis (blue) groups.

Conclusions: Lung transplantation is a feasible treatment strategy for pulmonary sarcoidosis and demonstrates comparable outcomes to IPF.

Keywords: Sarcoidosis, interstitial lung disease, lung transplantation

PD013 / #298

E-POSTER DISCUSSION 03: INTERSTITIAL LUNG DISEASE AND COVID VACCINE
03-06-2025 3:10 PM - 3:40 PM

RELATIONSHIPS OF LUNG FIBROSIS IN PATIENTS WITH SYSTEMIC SCLEROSIS WITH ENDOTHELIN-1

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Background and Aims: To assess the potential contribution and relationships of ET-1 with lung fibrosis.

Methods: Serum level of endothelin-1(ET-1) was examined by ELISA, was measured at two points(mean age of pts at the time of inclusion in the study was 49.5±13.1, fem-49(79%), with diffuse form-64,5%, the average follow-up duration-18.7±14 months). All of the pts underwent HRCT.The pts underwent spirometry and measurement of DLCO, Doppler echocardiography.

Results: We found negative correlation of mean level of ET-1 and DLco (R=-0.397 ($p<0.05$)) at first point and mean level ET-1 at both points with mean dates of DLco at second point (R=-0.395 and R=-0.372($p<0.05$) accordingly). Also we found negative correlation between mean dates of DLco and mPAP at both points($p<0.05$) and direct correlation between mPAP and ET-1(R=0.428 ($p<0.05$))at first point. It's worth noting that mean dates of DLco at first point negative correlated with GGO at both points (R=-0.29 and R=-0.35($p<0.05$)accordingly) while ET-1 at the second point directly correlated with GGO also at two points (R=0.484 and R=0.521 ($p<0.05$)). We found correlation ET-1 with mean date of ESR (R=0.45, ($p<0.05$)), but didn't find any correlation with CRP. ET-1 had negative correlation with cumulative mean dose of rituximab(R=-0.46 and R=-0.414($p<0.05$)) at both points accordingly.

Conclusions: The levels of ET-1 negative correlated with DLco, directly with mPAP, ESR and with pattern of ground-glass opacity. This may indirectly confirmed, that scleroderma

patients present with high level of ET-1 seem to correlate with the severity of the disease and lung damage. Thus, a decrease in ET-1 during rituximab therapy, may indicate a positive response to therapy.

Keyword: autoimmune, Endothelin-1, systemic sclerosis

PD014 / #254

E-POSTER DISCUSSION 03: INTERSTITIAL LUNG DISEASE AND COVID VACCINE
03-06-2025 3:10 PM - 3:40 PM

EFFICACY OF COVID-19 VACCINE IN IDIOPATHIC PULMONARY FIBROSIS PATIENTS

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Background and Aims: Idiopathic pulmonary fibrosis (IPF) is a primary, progressive, and fatal disease characterized by repetitive epithelial damage leading to persistent inflammation, impaired wound repair, tissue remodeling and ultimately fibrosis. Currently, the only available pharmacological treatments for IPF are the antifibrotic agents pirfenidone and nintedanib. The immune system plays a crucial role in the development and progression of IPF, exhibiting altered activity with both innate and adaptive responses contributing to fibrosis.

Methods: The study's objective was to explore alterations in the response to the BNT162b2 mRNA COVID-19 vaccine in IPF patients compared to healthy volunteers. To verify previous COVID-19 infection, levels of IgG anti-nucleocapsid (N) were measured. Subsequently, the concentration of neutralizing SARS-CoV-2 anti-spike (S) IgG antibodies was analyzed. To investigate mucosal immunity, quantitative measurements of SARS-CoV-2 anti-S1 receptor-binding domain (RBD) IgA antibodies were performed. Additionally, interferon-gamma (IFN-γ) release upon SARS-CoV-2 spike protein stimulation in cells isolated from subjects was evaluated before and after vaccination to determine cellular responses. Further, cytokine concentrations in blood serum samples were quantified. Extensive phenotypic analyses of B, T, and NK cell populations were conducted using flow cytometry to assess the activity and proportions of these cell populations in IPF patients.

Results: The results of our analyses suggest an altered immune response in patients following vaccination.

Conclusions: This comprehensive evaluation aims to explain the immunological alterations in IPF patients, improving our understanding of their immune response and advising the development of potential therapeutic strategies. This work was supported by Medical Research Agency grant no 2020/ABM/01/00110 awarded to Piotr Trzonkowski.

Keywords: COVID-19, idiopathic pulmonary fibrosis, flow cytometry

PD015 / #493

E-POSTER DISCUSSION 03: INTERSTITIAL LUNG DISEASE AND COVID VACCINE
03-06-2025 3:10 PM - 3:40 PM

COVID-19 VACCINE AND THE RISK OF FLARES IN INFLAMMATORY ARTHRITIS: A SYSTEMATIC LITERATURE REVIEW AND META-ANALYSIS

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Background and Aims: Background. Coronavirus disease 2019 (COVID-19) vaccines aroused concerns about the risk of flares and adverse events in inflammatory arthritis (IA) since the vaccine clinical trials did not specifically investigate this subset of patients.

Methods: Methods. A systematic literature review and meta-analysis to summarize the data on joint disease flare and adverse events following immunization (AEFI). Two researchers independently evaluated the literature on Pubmed, Scopus, and EMBASE databases from March 2020 to September 2023. A random-effects model was used to pool odds ratios (OR) (with 95% CI) for the risk of joint disease flares and adverse events. Subgroup analyses were performed to evaluate the risk of disease flare between different IA and adverse events.

Results: Results. A total of 9874 IA patients from 8 studies were included in the analysis. The overall rate of flares was higher in RA vs. SpA (9.1% vs. 5.3%). However, the pooled estimated analysis showed no increased risk of joint disease flare following COVID-19 vaccination in patients affected by RA vs. SpA [OR 0.88, 95% CI: 0.77-1.00]. Furthermore, a subgroup analysis showed an increased risk of joint flares in Psoriatic arthritis (PsA) patients vs. RA [OR 0.79, 95% CI: 0.68-0.93, p=0.004]. The pooled estimated analysis revealed no increased risk of AEFI in patients with RA vs. SpA [1.02, 95% CI: 0.63-1.65].

Conclusions: Conclusions. Our meta-analysis summarized the current evidence on joint disease flares and COVID-19 vaccine-associated AEFI in IA patients. Pooled analysis showed an increased risk of disease flares in PsA vs. RA patients.

Keyword: inflammatory arthritis, COVID-19 vaccination, rheumatoid arthritis, spondyloarthritis, SARS-CoV-2 va

PD016 / #396

E-POSTER DISCUSSION 04: SYSTEMIC LUPUS ERYTHEMATOSUS
03-06-2025 3:10 PM - 3:40 PM

LUPUS NEXUS: DEVELOPING A LUPUS REGISTRY, BIOREPOSITORY AND DATA EXCHANGE PLATFORM TO ACCELERATE PRECISION MEDICINE IN LUPUS

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Background and Aims: Systemic lupus erythematosus remains a disease of high unmet medical need. Protean manifestations and the lack of clear understanding of etiology, pathogenesis, and disease subgroups hinder the development and application of targeted therapeutic approaches. Community-wide access to a longitudinal, highly curated, centralized patient dataset with linked biospecimens and molecular data is critical to enable advances in this area. To address this unmet need, the Lupus Research Alliance launched Lupus Nexus (LNx) a lupus registry, biorepository and data exchange platform.

Methods: The LNx was developed with guidance from over 100 partners representing scientists from academia and industry, funders, and lupus patients. The LNx includes a prospective, longitudinal observational study, the Lupus Landmark Study, which will enroll up to 3,500 patients into 4 cohorts—new onset, extra-renal flare, active lupus nephritis, prevalent—and will follow them over 5 years. The registry includes a rich data set while the biorepository offers a variety of samples, the raw data from the analyses of which will be deposited in the LNx amassing a deep and comprehensive dataset over time.

Results: As of October 2024, there are 151 enrolled participants: 11% new onset, 17% active lupus nephritis, 26% extra-renal flare, and 46% prevalent. Gender, ethnicity and race reflect the distribution in the population. Over 9,000 samples have been collected and plans are underway for specific analyses to stimulate broader community utilization.

Conclusions: LNx is a unique resource for researchers and patients—allowing study participants to view their data, connect with other patients—to accelerate precision medicine for lupus. www.lupusnexus.org

Keywords: SLE, registry, biorepository

PD017 / #208

E-POSTER DISCUSSION 04: SYSTEMIC LUPUS ERYTHEMATOSUS
03-06-2025 3:10 PM - 3:40 PM

SKIN LESIONS IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background and Aims: Skin manifestations are observed in 70-85% of patients with SLE. The aim is to determinate predictors of the preservation of active skin lesions in SLE.

Methods: The study included 200 patients (169 women/31 men), skin symptoms were observed in 100 patients. After 6 months, 106 out of 200 patients were examined, while 23 out of 106 patients noted active skin symptoms. A predictive model was developed using the binary logistic regression method. The studied factors included R-CLASI and CLASI AI, positivity for anti-Ro/SS-A, anti-La/SS-B, a-dsDNA, Sm, combined positivity for anti-dsDNA and anti-Sm, decrease C3 and C4 complement levels, age of patients, age of SLE onset, SLEDAI-2k, PGA, SLE-DAS, mucocutaneous domain of Easy-BILAG, presence of APS, kidney and skin damage, serositis and hematological disorders.

Results: The observed dependence is described by the equation (fig. 1). The resulting regression model is statistically significant
($p<0.0001$).

Figure 1. Prognostic significance of skin and mucosal lesions in patients with systemic lupus erythematosus

$$P = \frac{1}{1 + e^{-z}} 100\%;$$

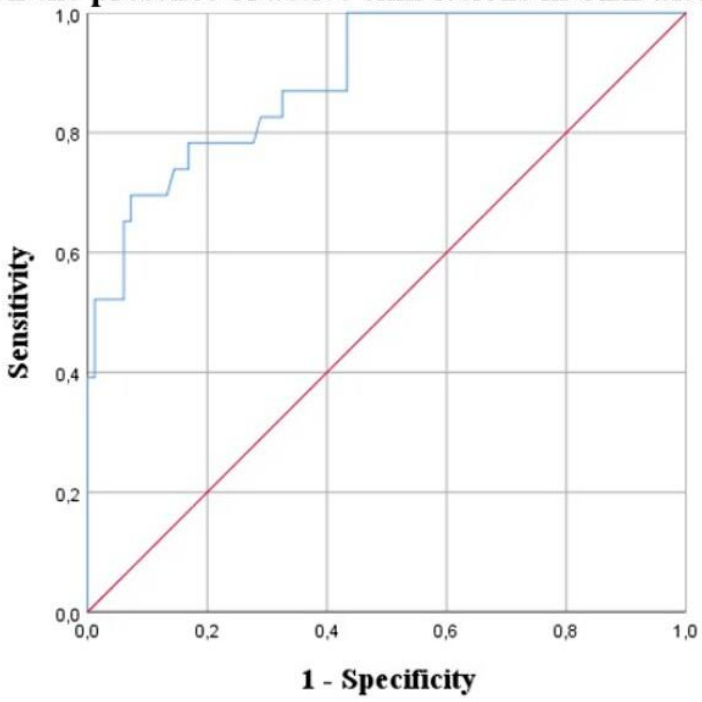
z= -3,158+(-0,152 × SLEDAI-2k) + 2,45 × the presence of active skin lesions at the baseline + 0,113 × X3 R-CLASI AI + 1,539 × positivity by anti-Ro/SS-A + (-1,742 × BILAG C skin domain) + 1,918 × combined positivity by a-dsDNA and anti-Sm.

where
P – the probability of maintaining an active skin lesion in SLE;
z = a + b1×X1 + b2×X2;
X1…Xn – values of independent variables;
b1…bn – coefficients, the calculation of which is the task of binary logistic regression;
a – a certain constant;
X1 –SLEDAI-2k activity index (0 – 105);
X2 – the presence of active skin lesions at the baseline (yes – 1, no – 0);
X3 – R-CLASI activity index (0 – 144);
X4 – positivity by anti-Ro/SS-A (yes – 1, no – 0);
X5 – C scores in the Easy-BILAG mucocutaneous domain (yes – 1, no – 0);
X6 – combined positivity by a-dsDNA and anti-Sm (yes – 1, no – 0).

Based on the values of the Nigelker regression coefficients, the model explains 52.2% of the observed outcome variance. The prognostic ability of the regression model was analyzed using the ROC curve depending on the presence of active skin lesions after 6 months of follow-up (fig. 2), AUC was 0.891 [0.820-0.962], p<0.0001; sensitivity-78%, specificity-83%, the cut-off point was

0.25.

Figure 2. ROC curve for evaluating the predictive ability of the regression model depending on the presence of active skin lesions in SLE after 6 months



Conclusions: An association was found between the SLEDAI-2k, the presence of active skin lesions, R-CLASI AI, positivity by anti-Ro/SS-A, combined positivity by a-dsDNA and anti-Sm, C scores in the Easy-BILAG skin domain with the probability of maintaining an active skin lesion in SLE.

Keywords: systemic lupus erythematosus, skin lesion, cutaneous lupus

PD018 / #574

E-POSTER DISCUSSION 04: SYSTEMIC LUPUS ERYTHEMATOSUS
03-06-2025 3:10 PM - 3:40 PM

EFFICACY AND SAFETY DATA OF ANIFROLUMAB FOR SYSTEMIC LUPUS ERYTHEMATOSUS IN A MONOCENTRIC LUPUS COHORT

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Background and Aims: Anifrolumab (ANI), an anti interferon alpha receptor antibody, was recently approved for SLE treatment. Our aim is assessing efficacy of ANI in active non-renal SLE.

Methods: We prospectively collected data of SLE patients (pts) (ACR, SLICC or EULAR/ACR classification criteria) treated with ANI. SLEDAI-2K, SLE Disease Activity Score (SLEDAS), swollen/tender joint count (SJT/TJC), and CLASI were assessed every 3 months from baseline. We collected platelet count (PC), lymphocyte count (LC), complement levels, anti-dsDNA titers, and prednisone dose with the same frequency. SLICC/ACR Damage Index (SDI) was collected at baseline and at 6 months. T-test and Wilcoxon test for paired data were used across timepoints.

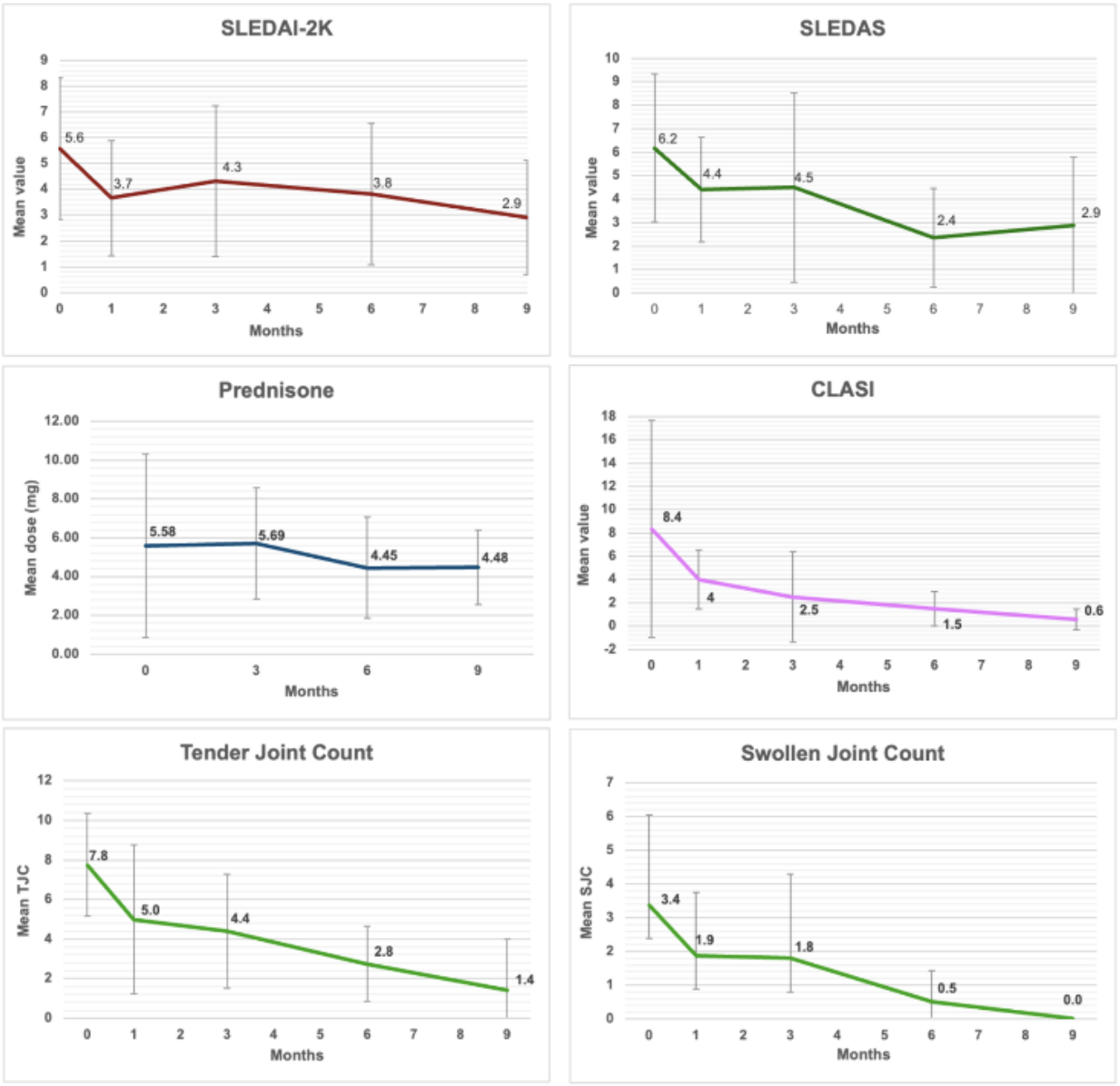
Results: Since September 2023, 22 SLE pts were treated with ANI for cutaneous (11/22, 50%), articular (10/22, 45%), hematological(4/22, 18%), and serosal involvement (2/22, 9%). In 8/22 pts (36%), ANI was administered prior to conventional immunosuppressants (IS). Improvement of mean SLEDAI-2K ($p=0.016$), SLEDAS ($p<0.001$), CLASI ($p=0.008$), TCJ ($p=0.009$), SJC ($p=0.023$), and LC ($p=0.021$) were found at 6 and 9 months (Figure 1-2) and no changes in PC, rates of hypocomplementemia, high anti-dsDNA antibodies and SDI (at 6 months). A trend towards reduced prednisone use was observed. Treatment was discontinued in 3 pts (2 for inefficacy and 1 for sepsis).

IMAGE 1

	Baseline	6 months		9 months	
	Mean value (SD)	**Mean value (SD)**	**p value**	**Mean value (SD)**	**p value**
SLEDAI-2K	5.59 (2.74)	3.81 (2.74)	**0.016**	2.91 (2.21)	**0.007**
SLEDAS*	6.18 (3.16)	2.36 (2.09)	**<0.001**	2.88 (2.90)	0.059
Swollen Joint Count	3.37 (2.67)	0.5 (0.93)	**0.023**	0 (0)	0.161
Tender Joint Count	7.75 (2.60)	2.75 (1.91)	**0.009**	1.4 (2.61)	**0.033**
CLASI	8.36 (9.32)	1.5 (1.51)	**0.008**	0.6 (0.89)	**0.043**
prednisone equivalent (mg/day)	5.58 (4.72)	4.45 (2.61)	0.283	4.48 (1.93)	0.432
Platelet (n°x10^3/mmc)	221.29 (110.55)	225.37 (100.47)	0.744	238 (119)	0.156
Lymphocites (n°x10^3/mmc)	1.14 (0.56)	1.42 (0.43)	**0.021**	1.59 (0.34)	**0.007**
Neutrophils (n°x10^3/mmc)	3.93 (1.88)	//		//	
	Median (Max. min)	**Median (Max. min)**			
SLICC	0 (2. 0)	0 (2. 0)	ns	//	//

*Statistically significant reduction in SLEDAS was seen also at 1 month (p= 0.022)

IMAGE 2



Conclusions: ANI reduced disease activity. Our data support its efficacy on cutaneous and joint manifestations, while additional data are needed to evaluate other domains.

Keywords: lupus, anifrolumab, treatment

PD019 / #579

E-POSTER DISCUSSION 04: SYSTEMIC LUPUS ERYTHEMATOSUS
03-06-2025 3:10 PM - 3:40 PM

THE LONG-TERM OUTCOME OF MEMBRANOUS LUPUS NEPHRITIS: COMPARISON OF PURE FORMS (CLASS V) VS MIXED FORMS (CLASS III OR IV + V).

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Background and Aims: It is generally reported that pure class V Lupus Nephritis (LN) has a better prognosis than class III and IV.

Methods: Patients with pure or mixed class V lupus nephritis followed in 3 Nephrologic Italian Units and one Rheumatologic Unit entered the study. . Outcomes: impaired kidney function(IKF) or death, and kidney failure (KF) or death.

Results: 195 patients with membranous LN (96 PV and 99 MP forms) were included. At presentation, PV in comparison to MV patients had lower activity (0 vs 6, P=<0.001) and chronicity indexes (1 vs 2,P=<0.001), positive anti-DNA (66.7% vs84.8%,P=0.008), and a lower number of erythrocytes in urinary sediment (5v15,P=0.001). MV had lower C3 (66 vs 73,2, =0.039) and C4 (10vs13.05,,P=0.002) and more frequent presentation with acute nephritic syndrome (14%vs1%,P=<0.001) than PV. As induction therapy, PV received less frequently methylprednisolone pulses (65.6% vs 82.8% P=0.008) and immunosuppressants (77.1%vs92.9%,P=0.002). After a follow-up of 10.5 years, CKD, KF and deaths occurred in 18.9%, 6.2%, and 10.4% in PV vs 9.4% (P=0.064), 1% (P=0.061), 2% (P=0.017) of MV. The survival free of CKD or death at 10 and at 20 years were respectively 90.3% and 76% in PV and 92.6% and 92.6% in MV (P=0.08). The survival free of KF or death at 10 and 20 years were respectively 97.4% and 85% in PV and 96% and 96% in MV (P=0.024).

Conclusions: Despite less active SLE at diagnosis, pure class V LN had long-term kidney and patients' survival significantly worse than that of mixed forms LN.

Keywords: systemic lupus erythematosus, Lupus nephritis, membranous lupus nephritis

PD020 / #297

E-POSTER DISCUSSION 05: SLE, MCTD, MACHINE LEARNING
03-07-2025 4:15 PM - 4:45 PM

TESTING OF IFN TYPE I - STIMULATED GENES EXPRESSION IN SSC AND SLE PATIENTS SUGGESTS A NEW STRATIFICATION AND THERAPEUTIC OPTIONS

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Background and Aims: To elaborate the express RT-PCR test of determining the expression of interferon- stimulated genes (ISGs) in SLE and SSC patients for mAB therapy personalisation and prognosis.

Methods: - Patients: SSc (n=32), SLE(n=48) - Clinical assessment according national and EULAR standards - White cells extraction: ficoll gradient - RT-PCR methods: TaqMan Probe, 2-ΔΔCt, reference genes - B2m, HPRT, TBP - Statistics: Mann-Whitney, Cruskal-Wallis

Results: Results of clinical assessment - see in tab.1. **Results of genes expression assessment** (tab. 2): - Demonstrated performance of primers for RT-PCR, conditions for genes expresion assessment are optimized - Increased expression of **IFIT3, IFI44, ISG15, XAF1, IFIT27** and no difference in MX1, EPSTI1, IRF5, IRAK1, STAT4, PTPN22, IFI27, OAS1 genes in SSc group VS control - Increased expression of **IFIT3, IFI44, ISG15, XAF1, IFIT27**, IFIT1, IFI44L, RSAD2 and no difference of RSAD2, MX1, OAS1, NOS2, MMP12, CCL13, SFRP genes expression in SLE group VS control - No correlation between SSc severity and genes expression - Blood samples are easier to operate and provide more stable result and higher results of expression vs skin samples for SSc

Table 1. Clinical examination results

SSc patients (N=27)	
Parameter	**Values, n/N (%)**
Gender	Women 23/27 (85.19%), Men 4/27 (14.81%)
Age, years	<25-1/27 (3.7%), 25-45- 3/28 (11.11%), >45 23/27 (85.19%)
Disease duration, years	<5 2/27 (7.41%), 5-15 14/27 (51.85%), >15 11/27(40.74%)
Activity	Active diseases 18/27 (66.67%), EScSG ≥ 3 10/27 (37.04%)
Clinical SSc manifestations:	Form: Diffuse SS 12/27 (44.44%) Limited SS 15/27 (55.56%); Lung 19/27 (70.37%), Heart 8/27 (29.63%), Primary pulmonary arterial hypertension 5/27 (18.52%), Telangiectasias 23/27 (85.19%), Esophageal lesion 22/27 (81.48%), Intestinal involvement 5/27 (18.52%), Muscle involvement 5/27 (18.52%), Artritis 19/27 (70.37%), Skin involment 25/27 (92.59%), Raynaud's syndrome 27/27 (100%), Digital ulcers 7/27 (25.93%), Kidney 1/27 (3.7%)
Antibody:	Scl-70 antibody 9/27 (33.33%), CENT-B antibody 13/27 (48.15%), RNP 70 antibody 1/27 (3.7%), PM-Scl antibody 1/27 (3.7%)
Nailfold capillaroscopy:	late pattern 18/27 (66.67%), active pattern 6/27 (22.22%), early pattern1/27 (3.7%), scleroderma-like pattern 2/27 (7.41%)
Ongoing therapy:	Mycophenolate mofetil (MMF) 10/27 (37.04%) (monotherapy 1/27 (3.7%)), Rituximab (RTX) 8/27(29.63%) (monotherapy 1/27 (3.7%)) Nintedanib 3/27 (11.11%), Low doses of glucocorticoids (GK) 15/27 (55.56%) (monotherapy 3/27 (11.11%)), D-penicylamine (DP) 1/27 (3.7%), Methotrexate (MT) 1/27 (3.7%), Hydroxychloroquine (HH) 8/27 29.63% (monotherapy 4/27 (14.81%)) Therapy groups: Minimal therapy (HH AND/OR low dose GK) 10/27 (37.04%), High dose therapy (MMF AND/OR RTX AND/OR MT AND/OR DP) 13/27 (48.15%), Nothing 4/27 (14.81%)
SLE patients (N=48)	
Parameter	**Values, n/N (%)**
Gender	Women - 46/96%, Men - 2/4%
Age, years	<25 (18/38%), 25-45 (25/52%), > 45 (5/10%)
Disease duration	< 5 years (15/31%), 5-15 (22/46%), > 15 (11/23%)
Clinical SLE manifestations :	Arthritis/arthralgia - 44/92%, Myalgia - 15/31%, Rash/photosensitivity - 38/79%, Oral ulcers 10/21%; Alopecia - 23/48%; Fever - 8/17%; pleurisy - 13/27%; Pericarditis - 17/35%, Endocarditis - 2/4%; Neurological disorder - 5/10%; Lupus nephritis - (32/67%): class II -1/3% , class III - 3/6%, class IV - 14/44%, classes III+V - 3/6%; ESRD - 2/6%; no biopsy - 11/23%
SELENA activity *	class 0 (remission) - 5/10%, class I (<5) - 19/40%, class II (6-10) - 11/23%, class III (11-19) - 9/19%, class IV (> 20) - 4/8%. *Groups for comparison of ISGs expression: Severe (SELENA >14) - (14/29%); Intermediate (SELENA <14): (34/ 71%)
Concomitant APS	3/6%
Exacerbation frequency	<3 - (38/79%), >3 - (10/21%)
THERAPY at the time of inclusion	GC- 40/83%, MMF- 13/27%, Aza-7/15%, MTX - 4/8%, GCS <15 mg - 34/71%, GCS >15 mg - 14/29%, PTX- 7/15%, Belimumab -14/29%
History of CF or RTH therapy	22/46% or 3/6%
LAB. DATA	Leukopenia - 6/13%, Thrombocytopenia -3/6.25%, Anemia -15/31%, High Creatinine - 13/27%, High CRB - 13/27%, Erythrocyturia - 9/19%, Proteinuria -17/55%, Positive ANF - 33/69%, Positive anti-ds-DNA -26/54%, AFS antibodies - 10/24%, Hypocomplementemia - 25/52%

patients

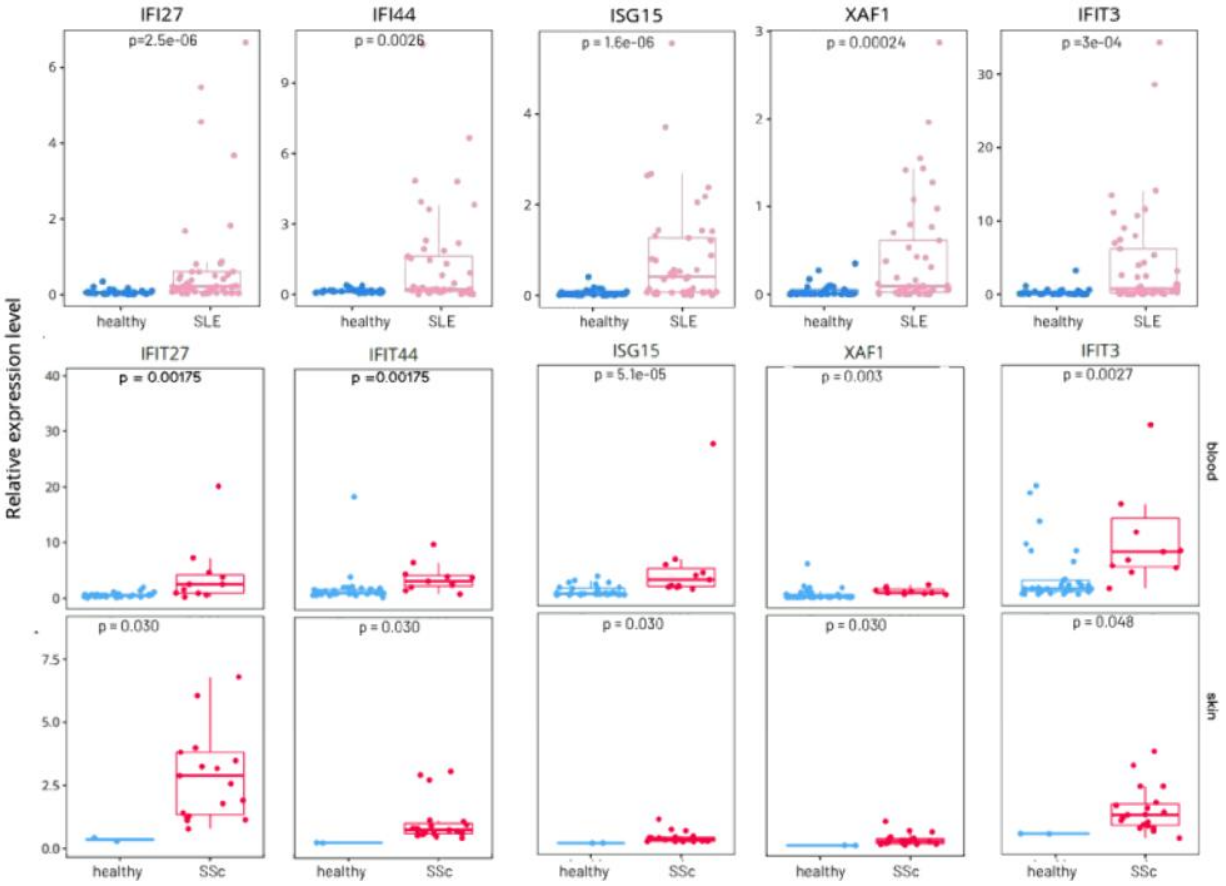
Table 2. Difference in gene expression between groups

	SLE Study			SSc study
	SLE (Selena <14, n=34) VS SLE (Selena≥14, n= 11) VS VS healthy donors (n=31) (Cruskal Wallis, p - value).	SLE (all patients) VS healthy donors, (Mann - Whitney test, p - value)	SLE (Selena <14, n=34) VS SLE (Selena≥14, n=11) (Mann - Whitney, p - value)	SSc patients (n=10) VS healthy donors (n=31), (Mann - Whitney, p - value)
IFIT1	0,003	9,00E-06	0,9921 (not significant)	-
IFIT3	0,00079	3,00E-04	0,35474 (not significant)	0,00107
IFI44	0,0094	0,0026	-	0,0005
IFI44L	6,10E-05	7,60E-06	0,90154 (not significant)	-
PTPN	0,1688 (not significant)	excluded	-	-
EPST	0,3817 (not significant)	excluded	-	-
IRF5	0,3105 (not significant)	excluded	-	-
ISG15	1,40E-05	1,60E-06	0,8586 (not significant)	0,00005
MX1	0,14 (not significant)	0,63	-	-
OAS1	0,24 (not significant)	0,31	-	-
RSAD2	0,0013	0,00035	-	-
XAF1	0,0014	0,00024	0,44011 (not significant)	0,00137
IFIT27	-	2,50E-06	0.83148 (not significant)	0,00047
IRAK1	Not significant expression, as it has same pathway as IRF5			-
NOS2, CCL13				Not significant (low)

Conclusions: - Significant values of IFN genes in some SSc patients discovers a new and promising option in SSc therapy. - Increased expression of (IFIT3, IFIT 27, IFIT44, ISG15, XAF1) in both groups of SSc and SLE patients provided opportunity to select these genes into unified IFN1 test (see fig.1) - Developed RT-PCR test will be applied to stratify patients and predict response of using anti - IFN Type 1 receptors

therapy

FIG.1. Difference in selected genes expression in groups of SLE and SSc VS healthy donors, (Mann-Whitney p-value)



Keywords: SSc, SLE, IFN-stimulated genes

PD021 / #394

E-POSTER DISCUSSION 05: SLE, MCTD, MACHINE LEARNING
03-07-2025 4:15 PM - 4:45 PM

THE RELATIONSHIP BETWEEN SLEEP, CYTOKINES LEVELS, AND DEPRESSION IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS

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Background and Aims: Sleep disruptions have been associated with high levels of pro-inflammatory cytokines in patients with or without autoimmune disorders. The main objective of the present work was to examine the sleep quality, daytime sleepiness, and the levels of interleukins (IL)-6, IL-10 and IL-17A in patients with systemic lupus erythematosus (SLE) with or without depression and anxiety.

Methods: We performed a prospective observational study including adult patients with SLE. We excluded patients with overlap syndromes, neoplasia, infections, and obstructive sleep apnea. Sleep quality was assessed using the Pittsburg Sleep Quality Index (PSQI) and daytime sleepiness was evaluated using the Epworth Sleepiness Scale (ESS). The serum concentrations of IL were assessed by ELISA.

Results: The study group included 106 patients with SLE. Sleep disruptions (PSQI > 5) were found in 53% of patients, while 15% exhibited daytime sleepiness (ESS≥11) and 9.4% had comorbid depression. Male individuals exhibited sleep disturbances more often than females (66.7% versus 53.2%). In patients with sleep disturbances, the mean serum IL-6 level was higher compared to the rest of the group. Daytime sleepiness was significantly correlated with IL-17A in the subgroup with SLEDAI <4 (p=0.015). In good sleepers, IL-6 was correlated with IL-10 (p=0.005). The mean IL-17A concentration was higher in patients with comorbid depression (p=0.043), while IL-6 was notably lower (p=0.036) (figure 1). We did not find significant links between PSQI or ESS and depression or SLEDAI in our

cohort.

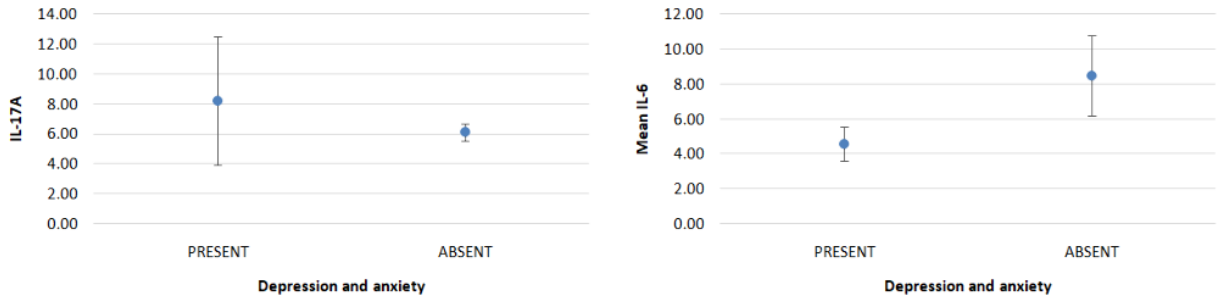

Figure 1. Mean IL-17A and IL-6 levels according to the presence of the depression and anxiety

Conclusions: Our study found significant associations between sleep disturbances, proinflammatory cytokines, and comorbid depression in SLE patients.

Keywords: systemic lupus erythematosus, interleukins, quality of sleep

PD022 / #186

E-POSTER DISCUSSION 05: SLE, MCTD, MACHINE LEARNING
03-07-2025 4:15 PM - 4:45 PM

MACHINE LEARNING MODEL FOR PREDICTING STEROID RESISTANCE IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS

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Background and Aims: Systemic lupus erythematosus (SLE) is a complex autoimmune disease, for which glucocorticoids are a cornerstone of treatment [1]. However, approximately 30% of patients exhibit resistance to this therapy [2–4]. Our goal was to develop a model to identify patients with potential steroid resistance, enabling to choose the most effective treatment from the start.

Methods: A cohort of 148 SLE patients from the Rheumatology Hospital of St. Petersburg, with 92.5% female prevalence, a mean age of 33.5 ± 8.7 years, and a disease duration of 5.9 ± 6 years, was used to train (n=103) and test (n=45) a logistic regression model. The model included SLEDAI-2K index, age at diagnosis, anti-dsDNA, and ANF as parameters to predict the probability of steroid resistance. If the predicted probability is greater than 60%, the model indicates a high likelihood of steroid resistance and recommends considering alternative therapies.

Results: The trained model predicted the absence of steroid resistance in 14 out of 17 patients from our test cohort, resulting in a specificity of 82%. Additionally, it identified steroid resistance in 26 out of 28 patients, yielding a sensitivity of 92%. The overall accuracy of the model was 40 out of 45 patients, equating to 88%. These results demonstrate strong performance, indicating that the model is well-suited for clinical applications by physicians.

Conclusions: Developped machine learning model shows promise as a valuable approach for guiding clinicians in the early identification of SLE patients likely to exhibit steroid resistance, allowing for more personalized and effective treatment strategies.

Keywords: SLE, Machine learning, Artificial Intelligence

PD023 / #339

E-POSTER DISCUSSION 05: SLE, MCTD, MACHINE LEARNING
03-07-2025 4:15 PM - 4:45 PM

METHYL-RICH DIET SUPPRESSES THE DEVELOPMENT OF LUPUS-LIKE SYMOTOMS IN HUMANIZED MOUSE MODEL OF THE DISEASE

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Background and Aims: SLE is a chronic autoimmune disease with complex organ and system involvement. Although genetic predisposition is necessary for SLE to appear, epigenetic factors also played central role in this process. Particular methyl-rich micronutrients take part in the mechanisms of DNA methylation. In the present study we report that the methyl-supplemented diet ameliorates the development of SLE in NSG/Rag2-γc-mice humanized with lupus patients' PBMCs.

Methods: Two groups of female NSG/Rag2-γc- mice were engrafted with PBMCs from SLE patients. One group was put on a normal rodent diet, the other – on methyl-supplemented diet. Two groups of control non-humanized mice were also put on either of the diets. The animals were monitored for 8 weeks with blood and urine samples being collected once a week. At the end of the dietary course the mice were sacrificed, and kidneys were examined for glomerular pathology.

Results: The results showed a decrease in anti-dsDNA antibody and proteinuria levels in the mice put on the supplemented diet, compared to the mice put on normal diet. In addition, histopathological changes in the structure of the glomeruli were observed in the kidney of mice fed with the normal diet but not the supplemented group.

Conclusions: The observed beneficial effect of the methyl-rich diet may be related to the potential modulation of DNA methylation levels and subsequent changes in gene expression. These results point to the importance of DNA methylation as one of the major epigenetic factors responsible for the progression of SLE.

Keyword: SLE, humanized NSG/Rag2-γc- mice, epigenetics

PD024 / #275

E-POSTER DISCUSSION 05: SLE, MCTD, MACHINE LEARNING
03-07-2025 4:15 PM - 4:45 PM

CORRELATION OF SUBCLINICAL RETINAL CHANGES WITH MICROVASCULAR DAMAGE AND INTERSTITIAL LUNG DISEASE IN MCTD PATIENTS: INSIGHTS FROM OCT-A SCANS, NVC PATTERNS AND HRCT FINDINGS.

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Background and Aims: Mixed connective tissue disease (MCTD) is a rare disease with features of different CTDs in patients with smRNP antibodies. In MCTD, the microangiopathy occurs affecting multiple organs, thus potentially including eyes. No evidence has been described on the retinal vessels in MCTD. To investigate retinal microvascular damage and potential association with concurrent lung involvement, and nail-fold capillaroscopic (NVC) patterns in MCTD patients.

Methods: We conducted a case-control study involving patients with MCTD. Recorded data encompassed clinical, laboratory findings, NVC patterns, chest CT images and PAP values. Quantitative analysis of vessel density (VD) was conducted using optical coherence tomography angiography (OCT-A) in both the superficial and capillary plexi (SCP, DCP). Statistical analysis was conducted T student ANOVA- and Chi-square tests. P-values<.05 were considered statistically significant.

Results:

	MCTD COHORT (N=31)
Women, N (%)	27
Age (yrs, Mean±SD)	60.3 ± 12.3
BMI (Mean±SD)	20.2 ± 1.8
Smokers, N (%)	7
Age at symptoms onset, (yrs, Mean±SD)	46.3±15,3
Age at MCTD Diagnosis (yrs, Mean±SD)	50.8 ± 15.2
Disease Duration (yrs, Mean±SD)	9.5 ± 8.5
Diagnostic Deelay, months (Mean±SD)	53.9 ± 81.8
MCTD SUBTYPE	
SLE predominantly, N (%)	12
SSc predominantly, N (%)	12
IIM predominantly, N (%)	7
ILD SUBTYPE	
NSIP N (%)	8
UIP N (%)	5
CLINICAL FEATURES	
Raynaud's Phenomenon, N (%)	31 (100)
Telangiectasias, N (%)	11
Digital Ulcers, N (%)	11
Pitting Scars, N (%)	4
Puffy Hands, N (%)	15
Arthritis, N (%)	22
Muscle weakness, N (%)	8
Serositis, N (%)	9
Trigeminal neuropathy, N (%)	1
Sicca Syndrome, N (%)	24
Dyspnoea, N (%)	14
PAH, N (%)	9
Nail-fold Videocapillaroscopy, N (%)	
Specific pattern	12
Aspecific Pattern	19
RoSSA (52+/60+), N (%)	10

Table 1. MCTD PATIENTS' DISEASE CHARACTERISTICS.

(N= Number; %= Percentage; SD= Standard Deviation; BMI= Body Mass Index; MCTD= Mixed Connective Tissue Disease; SLE= Systemic Lupus Erythematosus; SSc: Systemic Sclerosis; IIM= Idiopathic Inflammatory Myositis; ILD= Interstitial Lung Disease; NSIP=Non-specific Interstitial Pneumonia; UIP= Usual Interstitial Pneumonia; NVC= Nail-fold Videocapillaroscopy; PAH= Pulmonary Arterial Hypertension.)

GROUND GLASS			
OCT-A Findings	**YES (N=4)**	**NO (N=6)**	p value
SWD (Mean±DS)	**48.2 ± 9.1**	**52.1 ± 3.7**	**0.0002**
SFD (Mean±DS)	**18.8 ± 2.4**	**34.2 ± 5.4**	**0.0005**
SPFD (Mean±DS)	**48.4 ± 12.2**	**50.8 ± 4.7**	**0.005**
DWD (Mean±DS)	48.9 ± 5.2	53.6 ± 4.6	-
DFD (Mean±DS)	35.5 ± 15.8	35.2 ± 8.6	-
DPFD (Mean±DS)	50.9 ± 7.0	54.4 ± 4-2	-
BRONCHIECTASIS			
OCT-A Findings	**YES**	**NO**	p value
Superficial Plexi			
SWD (Mean±DS)	**44.1 ± 5.3**	**49.0 ± 4.1**	**0.0376**
SFD (Mean±DS)	21.8 ± 10.2	18.1 ± 6.0	0.1783
SPFD (Mean±DS)	45.3 ± 10.2	48.8 ± 1.2	0.0839
Deep Plexi			
DWD (Mean±DS)	**43.1 ± 15.7**	**53.2 ± 1.8**	**0.0247**
DFD (Mean±DS)	35.8 ± 17.0	35.7 ± 11.5	0.4826
DPFD (Mean±DS)	40.0 ± 14.6	56.5 ± 3.1	0.0755
BRONCHIAL WALL THICKENING			
OCT-A Findings	**YES**	**NO**	p value
Superficial Plexi			
SWD (Mean±DS)	**45.9 ± 9.1**	**49.7 ± 0.8**	**0.0474**
SFD (Mean±DS)	19.4 ± 2.4	18.4 ± 5.4	-
SPFD (Mean±DS)	44.8 ± 12.2	50.8 ± 4.7	-
Deep Plexi			
DWD (Mean±DS)	46.4 ± 5.2	54.4 ± 4.6	0.0071
DFD (Mean±DS)	35.5 ± 15.8	35.7 ± 8.6	-
DPFD (Mean±DS)	**47.0 ± 7.0**	**57.3 ± 4.2**	**0.0415**

Table 3. **OCT-A deep and superficial Plexi density concerning major HRCT findings.** (SWD=Superficial Whole Density; SFD= Superficial Foveal Density; SPFD=Superficial Parafoveal Density; DWD= Deep Whole Density; DFD=Deep Foveal Density; DPFD=Deep Parafoveal Density; SD=Standard Deviation; - = Not Significant).

	MCTD	CONTROLS	
EYES, N	**29**	**25**	
Superficial Whole Density, (Mean±SD)	48.2 ± 4.03	52.2 ± 3.4	0,0004
Superficial Foveal Density, (Mean±SD)	18.8 ± 6.5	34.3 ± 5.3	0,00001
Superficial Para Foveal Density (Mean±SD)	48.4 ± 6.9	55.1 ± 3.6	0,0011
Deep Whole Density, (Mean±SD)	51.2 ± 7.1	58.8 ± 2.5	0,0007
Deep Foveal Density, (Mean±SD)	35.8 ± 6.9	33.7 ± 5.1	0,0929
Deep Parafoveal Density, (Mean±SD)	53.4 ± 10.9	61.7 ± 2.7	0,0006

Table 2. OCT-A scan findings between MCTD patients and controls

The study cohort comprised 31 patients with MCTD. Disease characteristics of the cohort are presented in Table 1. Due to retinopathy, only 16 MCTD patients underwent OCT-A, resulting in 29 eyes from MCTD patients and 25 from HC. The case-control study revealed a significant reduction in vessel density in both the superficial and deep plexi ($p<0.01$, Table 1). Graphic 1 reported the prevalence of major chest CT findings. The superficial and deep retinal capillary density was reduced in patients with pulmonary involvement. Furthermore, a notable discrepancy in superficial whole density was observed related to NVC patterns ($p=0.003$).

Conclusions: In patients with MCTD, subclinical retinal changes detected by OCT-A are correlated with specific microvascular damage observed through NVC and the presence of ILD.

Keywords: MCTD, rare disease, eye involvement, vascular damage, Lung diseases, MCTD, RARE DISEASES

PD025 / #120

E-POSTER DISCUSSION 06: AUTOINFLAMMATORY DISEASES, IGG4-RELATED DISEASE, VASCULITIS
03-07-2025 4:15 PM - 4:45 PM

IS CYTOLOGICAL EVALUATION USEFUL FOR SUPPORTING THE DIAGNOSIS OF VEXAS PATIENTS?

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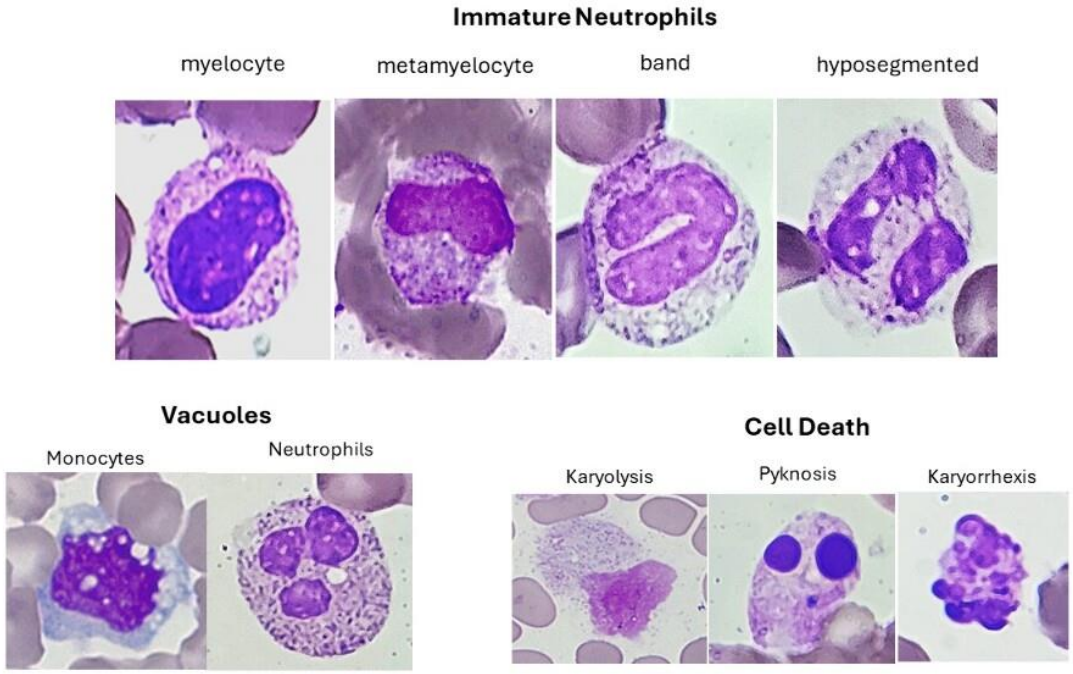
Background and Aims: VEXAS is a “haemato-autoinflammatory” condition resulting from somatic mutations in the UBA-1 gene. Peripheral blood cell analysis has been scarcely considered in the diagnostic process of VEXAS patients. We aim to include this feasible and rapid tool in the workup of VEXAS patients.

Methods: We recruited fourteen males (median age 74.5, IQR 8.5) with suspected VEXAS syndrome and sixteen healthy donors (HDs). Whole blood was collected to detect UBA-1 mutations. In parallel, peripheral blood cells were examined. May-Grünwald Giemsa staining was used to investigate cellular morphology, cytoplasm, granules, and vacuoles. Plasma levels of IL-1β, TNFα, IL-1α, IL-18, and IL-8 were measured with ELISA kits.

Results:



Twelve patients (86%) had UBA-1 mutations at Next-Generation Sequencing (NGS). The cytological analysis (Figure 1) revealed several cellular abnormalities in VEXAS compared to HDs such as: 1) increased hyposegmented and immature neutrophils ($p<0.0001$); 2) the presence of vacuoles in both monocytes and neutrophils ($p<0.0001$); 3) a higher cell death rate ($p<0.001$). Moreover, IL-18, IL-1α, TNFα, and IL-8 levels were significantly higher in VEXAS than HDs. The percentage of cell death correlated with IL-1β ($r=0.840$, $p=0.001$) and IL-8 ($r=0.758$, $p=0.006$). IL-8 levels correlated with vacuoles ($r=0.732$, $p=0.009$) and micronuclei rates ($r=0.777$, $p=0.005$).

Conclusions: The cytological evaluation is important for detecting abnormalities consistent with the suspected diagnosis; genetic confirmation is required for VEXAS diagnosis, however, the study of cytology derived from peripheral blood smear may represent a rapid and valid alternative to bone marrow biopsy, particularly in patients presenting with an "inflammatory phenotype" rather than haematological features.

Keywords: VEXAS, cytology, UBA-1

PD026 / #412

E-POSTER DISCUSSION 06: AUTOINFLAMMATORY DISEASES, IGG4-RELATED DISEASE, VASCULITIS
03-07-2025 4:15 PM - 4:45 PM

VEXAS SYNDROME AND INFECTIONS: ANALYSIS OF A MULTICENTRIC COHORT AND BRIEF LITERATURE REVIEW

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Background and Aims: VEXAS syndrome is a monogenic "hemato-autoinflammatory" disease provoked by mutations in the UBA-1 gene. Infections are one of the most serious complications. This study described the infectious manifestations of a group of patients affected by VEXAS as well as the associated outcomes.

Methods: Fourteen patients (mean age 74 years±7.2) referred to two Rheumatology Units (Padua and Verona), were included. The following mutations on UBA-1 were revealed: p.Met41Thr (7 patients), p.Met41Leu (2), p.Met41Val (3), c.118-1G>C (1) and c.118-2A>G (1). Therapeutic management at the time of infection included glucocorticoids (9 patients, mean dose 15 mg/day), JAK inhibitors (4) and methotrexate (1). A review of the literature was conducted, following the 2020 "Preferred Reporting Items for Systematic Reviews and Meta-Analyses" (PRISMA 2020) guidelines [1] using MEDLINE/PubMed via OVID. A total of 4 papers were rated as suitable. The sites and type of infection are described in Table 1.

Results: Eleven out of fourteen patients (78%) of our cohort had at least one episode of serious infection. Five patients (50%) developed SARS-CoV2 infection; three (30%) pneumonia; 1 patient (10%) bacterial endocarditis; one patient (10%) had recurrent oral candidiasis and tracheobronchitis, and one (10%) had peri-prosthetic hip osteomyelitis caused by *L. monocytogenes* and *P.*

mirabilis.

Author, year	UBA1 mutation detected	Type/site of infection
Shimizu T et al., 2022 (2)	p.Met41Thr;	Brain abscess caused by Nocardia; endocarditis caused by E. coli (1 patient)
de Valence B et al., 2024 (4)	p.Met41Thr; p.Met41Leu; p.Met41Val; Splice acceptor mutations;	Bronchopulmonary infections (78 patients) Skin infections (13 patients) Urinary tract infections (12 patients) Bloodstream infections (12 patients)
Czech M et al., 2024 (3)	p.Met41Thr; p.Met41Leu; p.Met41Val; Splice acceptor mutations;	Bloodstream infections (4 patients) Nontuberculous Mycobacterial Tenosynovitis (3 patients) Skin and soft tissue infections (4 patients) VZV reactivation (9 patients) HSV reactivation (5 patients) Pneumocystis jirovecii Pneumonia (6 patients)
Kim M et al., 2024 (5)	Not reported	Vancomycin-resistant Enterococcus faecium meningitis (1 patient)

Legend: HSV: Herpes simplex virus; VZV: Varicella-zoster virus;

Conclusions: Patients with VEXAS syndrome have a higher risk of developing severe infections. The main risk factors for severe infections are advanced age at VEXAS onset, therapy with JAK inhibitors and prolonged use of glucocorticoids [4]. Given the disease's complexity, it is necessary to provide prophylaxis coverage in patients most at risk.

Keywords: complications, Infections, VEXAS syndrome

PD027 / #395

E-POSTER DISCUSSION 06: AUTOINFLAMMATORY DISEASES, IGG4-RELATED DISEASE, VASCULITIS
03-07-2025 4:15 PM - 4:45 PM

SUCCESSFUL TREATMENT OF THREE PATIENTS WITH IGG4-RELATED DISEASE USING INTERLEUKIN-6 INHIBITION

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Background and Aims: IgG4-related disease (IgG4-RD) is multisystemic fibroinflammatory disorder that is difficult to diagnose and difficult to treat. B-cell-targeted therapies rituximab (RTX) and inebilizumab have demonstrated benefit. The effectiveness of IL-6 receptor inhibitor (tocilizumab,TCZ) is also discussed. Aim: To present the results of treating patients with IgG4-RD using TCZ or IL-6 inhibitor olokizumab (OKZ).

Methods: IgG4-RD was diagnosed in three patients using 18F-FDG-PET/CT and biopsy.

Characteristic	Patient-1	Patient-2	Patient-3
Gender;age	F;74	M;60	M;71
Retroperitoneum	+	+	+
Aorta	+	+	+
Perirenal	+		+
Mediastinum			+
Pleura	+		+
Pericardium	+		+
Kidneys	+		+
Fever			+

IgG4;g/L	0.93	0.79	0.38
CRP;mg/L	66	11	185
IL6;pg/mL	14.8	8.7	
Biopsy	Fibrosis, lymphoplasmocytic infiltrate	Fibrosis, lymphoplasmocytic infiltrate	Fibrosis, lymphoplasmocytic infiltrate
Immunohistochemistry	CD138+,IgG4+/IgG+<30 %	CD138+,IgG4+/IgG+ <10%, BRAFV600E mutation not detected	CD138+,IgG4+ not found, BRAFV600E mutation not detected
Treatment before IL6-inhibitors	GC, RTX 3.5g, 17 months		GC, 3 months
IL6-inhibitors	TCZ 9 months	TCZ 9 months, OKZ 2 months	TCZ 10 months, OKZ 24 months

Results: TCZ and OKZ was effective, without adverse events or relapse during the observation period (11,12,36 months). Patient-1 received RTX+glucocorticoid (GC), achieving remission, GC complications. After 17 months, relapse with polyserositis developed and TCZ was prescribed, remission achieved. Comorbid Patient-2 received TCZ monotherapy (then OKZ) with improvement in 18F-FDG-PET/CT. Patient-3 developed adverse events after 3 months of GC monotherapy. TCZ (then OKZ) was effective, as confirmed by 8F-FDG-PET/CT, prednisolone dose reduced to 5 mg.

Conclusions: IL6-inhibitors TCZ and OKZ improves treatment outcomes in IgG4-RD patients, including those who refractory to RTX, or have GC contraindications.

Keywords: IgG4-related disease, Tocilizumab, olokizumab

PD028 / #348

E-POSTER DISCUSSION 06: AUTOINFLAMMATORY DISEASES, IGG4-RELATED DISEASE, VASCULITIS
03-07-2025 4:15 PM - 4:45 PM

RHEUMATOID FACTOR POSITIVITY IN PATIENTS WITH EOSINOPHILIC GRANULOMATOSIS WITH POLYANGIITIS (EGPA): AN INNOCENT BYSTANDER?

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Background and Aims: Eosinophilic granulomatosis with polyangiitis (EGPA) is a rare form of systemic necrotizing vasculitis associated with anti-neutrophil cytoplasmic antibodies (ANCA). Rheumatoid factor (RF) is an autoantibody directed against the Fc portion of immunoglobulin G (IgG), originally identified as a biomarker for rheumatoid arthritis. However, RF positivity has been reported in 35-45% of patients with EGPA. The aim of this study is to investigate RF positivity at the time of diagnosis and assess its impact on vasculitic relapses as a prognostic factor in EGPA.

Methods: We reviewed consecutive patients newly diagnosed with EGPA from January 1992 to September 2023 who were referred to our vasculitis center. We included only those patients who had their rheumatoid factor (RF) assessed at the time of diagnosis and had completed a minimum of 12 months of follow-up.

Results: A total of 83 patients were included, 38 were RF+ and 45 were RF- at the time of diagnosis. At baseline, the two groups differed significantly in blood eosinophil count ($p=0.001$), CRP level ($p<0.001$), and the presence of mononeuritis multiplex ($p<0.001$). The RF+ group exhibited a significantly higher number of relapses compared to the RF- group (15 relapsing patients vs. 1 relapsing patient, $p<0.001$). In univariate analysis, RF positivity and the presence of mononeuritis multiplex were all significantly associated with relapses ($p<0.001$, $p=0.003$,

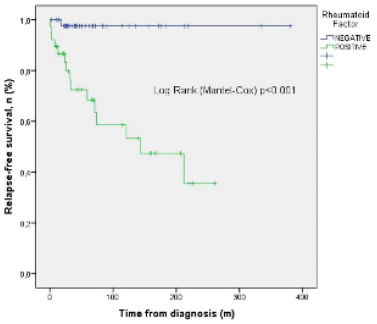
respectively).

Relapse: univariate analysis

	RELAPSE (n = 16)	NO RELAPSE (n = 67)	p
Female Sex, n %	8 (50.0)	41 (61.2)	0.413
Age at diagnosis, y, m, IQR	56.5 [47.7-62.0]	58 [51.5-63.0]	0.579
Follow-up, m IQR	99.5 [32.7-115.0]	51 [26-130]	0.353
Smoke, n %	1 (6.2)	7 [10.3]	0.636
Allergy, n %	9 (56.2)	33 (46.3)	0.519
BVAS/v3, m IQR	19 [12-23]	14 [10-17]	0.063
Eosinophils /mmc, m IQR	5660 [2442-8842]	3995 [1675-7981]	0.318
CRP mg/L, m IQR	60.2 [16.0-85.7]	20.0 [2.9-43.7]	**0.038**
ANCA MPO, n %	12 75)	29 (43.3)	**0.023**
ANCA PR3, n %	0 (0)	2 (3)	0.484
Elevated IgG, n %	6 (37.5)	10 (16.9)	**0.046**
Elevated IgG4, n %	2 (12.5)	13 (19.4)	0.809
Elevated IgE, n %	11 (68.7)	38 (56.7)	**0.028**
RF, n %	15 [93.7]	23 [34.3]	**<0.001**
Asthma, n %	15 [93.7]	62 (92.5)	0.866
Pulmonary infiltrates, n %	9 (56.2)	34 (50.7)	0.692
Sinusitis, n %	16 (100)	61 [91.04]	0.214
Nasal Polyps, n %	10 [62.5]	46 (68.7)	0.735
Biopsy rich in eosinophils, n %	8/12 (66.7)	17/59 (28.8)	**0.012**
Mononeuritis multiplex, n %	10 [62.5]	16 (23.9)	**0.003**
Other peripheral neuropathy, n %	2 (12.5)	22 (32.8)	0.107
Cardiac involvment, n %	4 (25)	9 [13.4]	0.253
Renal involvment, n %	2 (12.5)	5 (7.5)	0.515
Cutaneous involvment, n %	7 (43.7)	17 (25.4)	0.145
FFS ≥ 1, n %	7 (43.7)	20 (29.8)	0.286
Treatment			
MPN pulses, n %	7 (43.7)	16 (23.9)	0.111
csDMARD (MTX, AZA, MMF), n %	4 (25)	19 (28.4)	0.787
Cyclophosphamide or Rituximab, n %	9 (56.2)	18 (26.9)	**0.024**
No immunosoppressive treatment, n %	3 (18.7)	30 44.8]	0.056

Characteristics according to RF

	RF + (n = 38)	RF - (n = 45)	p
Female Sex, n %	20 [52.6)	29 (64.4%)	0.276
Age at diagnosis, y, m IQR	58 [48.7-62.0]	57 [51-63]	0.942
Months of follow-up, m IQR	80 [23.5-151]	47 [27-90]	0.448
Smoke, n %	3 [7.9)	5 [11.1)	0.648
Allergy, n %	19 (50)	24 (53.3)	0.601
BVAS/v3, m IQR	16 [11-21]	14 [10-16]	0.079
Eosinophils, m IQR	6970 [3076-9000]	2200 [1535-6630]	**0.006**
CRP, m IQR	49.1 [18.8-95]	11.0 [2.9-25.2]	**<0.001**
ANCA MPO, n %	22 [57.9)	19 (42.2)	0.153
ANCA PR3, n %	0 (0)	2 (4.4)	0.188
Elevated IgG, n %	10 [26.3)	6 [13.3)	0.082
Elevated IgG4, n %	6 [15.8)	9 [20)	0.411
Elevated IgE, n %	24 [63.2)	23 51.1)	0.124
Asthma, n %	36 [94.7)	41 (91.1)	0.525
Pulmonary infiltrates, n %	17 [44.7)	26 57.8)	0.236
Sinusitis, n %	36 [94.7)	41 (91.1)	0.525
Nasal Polyps, n %	26 [68.4)	30 (66.7)	0.769
Mononeuritis multiplex, n %	20 [52.6)	6 [13.3)	**<0.001**
Other peripheral neuropathy, n %	10 [26.3)	14 (31.1)	0.631
Cardiac involvment, n %	6 [15.8)	7 [15.6)	0.977
Renal involvment, n %	5 [13.2)	2 (4.4)	0.155
Cutaneous involvment, n %	14 [36.8)	10 22.2)	0.143
FFS ≥ 1, n %	16 [42.1)	11 (24.4)	0.087
Treatment			
MPN pulses, n %	14 [36.8)	9 [20)	0.088
csDMARD (MTX, AZA, MMF), n %	10 [26.3)	13 (28.9)	0.794
Cyclophosphamide or Rituximab, n %	16 [42.1)	11 (24.4)	0.087
No immunosoppressive treatment, n %	12 [31.6)	21 (46.7)	0.162
Relapse	**15 (39.5)**	**1 (2.22)**	**<0.001**



Conclusions: Preliminary analyses of this monocentric EGPA cohort indicate that RF and mononeuritis multiplex were significantly associated with the risk of relapses.

Keywords: EGPA, rheumatoid factor, relapse

PD029 / #422

E-POSTER DISCUSSION 06: AUTOINFLAMMATORY DISEASES, IGG4-RELATED DISEASE, VASCULITIS
03-07-2025 4:15 PM - 4:45 PM

THE ASSOCIATION OF HEMATURIA WITH DISEASE ACTIVITY AND OUTCOMES IN TAKAYASU ARTERITIS: INSIGHTS FOR CLINICAL MANAGEMENT

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Background and Aims: Takayasu Arteritis (TAK) is a rare large-vessel vasculitis primarily affecting the aorta and its branches. Hematuria, a common sign of renal injury in other systemic diseases, has not been widely investigated in TAK. While markers like CRP and erythrocyte sedimentation rate (ESR) are routinely used to assess inflammation, the potential utility of simple urine tests, in TAK monitoring remains unclear.

Methods: We included 151 patients diagnosed with TAK between 2005 and 2023 at Oslo University Hospital. Urine hematuria, biochemical markers, and inflammatory parameters were collected. Among these, 69 patients had longitudinal urine sampling at two time points.

Results: The cohort consists of 26(17%) male, and 125(83%) female. Hematuria was detected in 52 patients (34%), with the same male-to-female distribution.In the longitudinal subset, concordance between pairs was high for hematuria (p=0.004), with 13 patients (19%) testing positive and 34 patients (49%) testing negative across both tests. No significant association was found between hematuria and creatinine or CRP levels. However, disease activity index was higher in the hematuria-positive group (4/13, 31%) compared to the negative group (6/36, 17%). The median ESR (mm/h) was higher in the hematuria-positive group at 19(6–45) versus 12(6–26) in the negative group. Mortality was also higher in the hematuria-positive group (23%, 3/13), with no deaths in the hematuria-negative group.

Conclusions: Hematuria is associated with increased inflammation, and elevated disease activity.This study suggests incorporating routine urine testing into the follow-up protocol for patients with TAK,as it may improve disease management.Future studies with larger cohorts are needed to confirm these findings.

Keywords: Takayasu Arteritis, disease activity, Hematuria

PD030 / #463

E-POSTER DISCUSSION 07: RHEUMATOID ARTHRITIS
03-08-2025 10:00 AM - 10:30 AM

TWO YEAR REAL-WORLD EXPERIENCE WITH FILGOTINIB FOR THE TREATMENT OF RHEUMATOID ARTHRITIS: EFFICACY, SAFETY AND PERSISTENCE IN A PROSPECTIVE STUDY.

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Background and Aims: Our aim was to assess efficacy, safety and persistence of filgotinib in a real-world setting.

Methods: In this prospective multicenter study, we included all patients with RA (ACR/EULAR 2010 criteria) regularly followed-up (every 2-6 months), undergoing therapy with filgotinib (reimbursed in north-east Italy since September 2021). Data were captured in the Regional Biologic Registries (Veneto and Alto-Adige) between 09/2021 and 09/2024. Disease activity was measured by DAS28-CRP, CDAI, and SDAI; concomitant cDMARDs and glucocorticoid therapy, and all adverse events (AE) experienced during filgotinib treatment were recorded

Results: We enrolled 98 RA patients, median age 59 (52-66) years, mean±SD disease duration 17±10 years, 13 (13.2%) b/tsDMARD naïve, 59 (59.7%) monotherapy, mean±SD observation/follow-up 18.6±5.6 months(Table 1). Mean±SD DAS28-CRP, CDAI, and SDAI significantly decreased from baseline (Table 1). Patients with failure to >2 classes of bDMARDs (40) or those failing a JAK-i (26) prior to filgotinib initiation showed a response similar to that observed in other patients. A reduction in prednisone dose was also observed (Table 2). Overall, we collected 79 AE, of whom 2 (2.5%) were SAE (1 ILD progression, 1 death). Through 2 years of observation, 42/98 patients discontinued Filgotinib after a mean time of 16.9±5.2 months, 27 due to primary/secondary inefficacy (27.5%), 7 for AE/SAE (7.2%), 4 (4%) for intollerance and 4 (4%) for patient's concerne after PRAC (Figure
1).

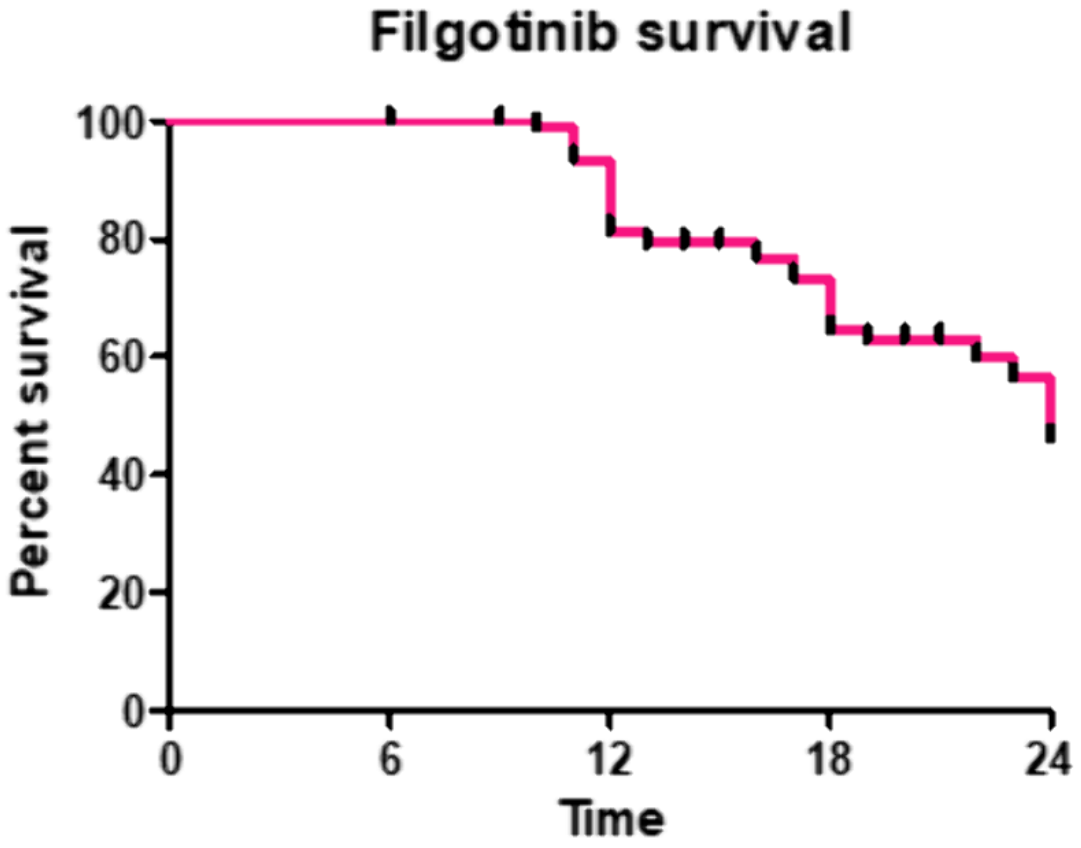
Table 1.

Total=98 patients	
Age, median (IQR)	59 (52-66)
Sex, females, n(%)	89 (90)
BMI, mean±SD	24.5± 4.3
Disease duration, mean±SD	17±10
Erosions, n(%)	70 (71.4)
RF+/ACPA+, n(%)	87 (89)
Extra-articular disease, n(%)	29 (29.5)
Naive to b/tsDMARDs, n(%)	13 (13.2)
Multi-failure, n(%)	40 (40.9)
Previous JAK-i, n(%)	26 (26.5)
Monotherapy, n(%)	59 (59.7)
Follow-up, mean±SD	18.6±5.6

Table 2.

	Baseline	6 months	12 months	24 months	p
Tender joint count, mean±SD	8.26 ± 6.33	3.72 ± 4.94	3.10 ± 4.19	3.17 ± 4.80	0.015
Swollen joint coiunt, mean±SD	5.07 ± 4.87	1.72 ± 3.08	1.30 ± 2.66	1.74 ± 2.91	0.015
PGA, mean±SD	6.33 ± 2.26	4.06 ± 2.26	4.10 ± 2.36	3.49 ± 2.45	<0.001
DAS28-CRP, mean±SD	3.75 ± 1.27	2.59 ± 1.20	2.46 ± 0.99	2.54 ± 1.22	0.02
Multifailure	3.89 ± 1.26	2.74 ± 1.21	2.60 ± 1.12	2.40 ± 1.13	0.02
CDAI, mean±SD	24.75 ± 10.99	12.45 ± 9.96	10.91 ± 9.56	10.97 ± 10.55	<0.001
SDAI, mean±SD	25.78 ± 11.01	13.73 ± 11.25	12.26 ± 10.16	12.94 ± 11.89	<0.001
Prednisone, mg/day, mean±SD	6.31 ± 5.69	5.72 ± 6.37	4.84 ± 3.68	3.38 ± 1.70	0.05

Figure 1.



Conclusions: Real-world treatment with filgotinib was associated with clinical improvement and low AE rate. Multi-failure RA patients and those failing a previous JAK-i benefited from Filgotinib therapy.

Keywords: Rheumatoid Arthritis, real life, filgotinib

PD031 / #427

E-POSTER DISCUSSION 07: RHEUMATOID ARTHRITIS
03-08-2025 10:00 AM - 10:30 AM

CARDIOVASCULAR INVOLVEMENT: RESULTS FROM THREE ITALIAN MACRO-AREAS

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Background and Aims: Geographic origins can significantly impact people's health, particularly in Italy, where regional health disparities are among the most pronounced. The aim of this study was to compare the prevalence of CV risk factors and the CV risk score values among groups of RA patients from different macro-areas in Italy.

Methods: This study is a cross-sectional analysis of a longitudinal cohort of 1,421 adult RA patients (357 from the North, 228 from the Center, and 836 from the South of Italy). Demographics, clinical assessments, traditional risk factors and the CUORE, ERS-RA, and Framingham risk scores were also evaluated.

Results: When comparing RA patients among the three macro-areas, hypertension was significantly more prevalent in the South (53.8%, p=0.001) and dyslipidemia was less prevalent in the Center (56.5%, p=0.006), while statin use was less common in the North (14.1%, p=0.010). Although obesity prevalence did not differ among the three macro-areas, BMI values were significantly lower in the North. Regarding health habits, smokers were significantly more prevalent in the Central regions (39.2%, p<0.001). The ERS-RA and Framingham risk scores, but not the CUORE risk score, significantly differed across Italian regions Table 1. **Table 1. CV risk scores values according to Italian nation's macroareas***

	Overall n=1,421	North n
CUORE risk score	0.050±0.05	0.048±0
ERS-RA risk score	0.089±0.08	0.080±0
Framingham's risk score	0.039±0.03	0.036±0

Conclusions: This study suggests that geographical differences in Italy may influence the CV risk profile in RA patients.

Keyword: cardiovascular involvement, risk factors, risk scores, rheumatoid arthritis, macro-areas

PD032 / #420

E-POSTER DISCUSSION 07: RHEUMATOID ARTHRITIS
03-08-2025 10:00 AM - 10:30 AM

ULTRASOUND-GUIDED SYNOVIAL BIOPSY FOR THE MANAGEMENT OF UNDIFFERENTIATED ARTHRITIS.

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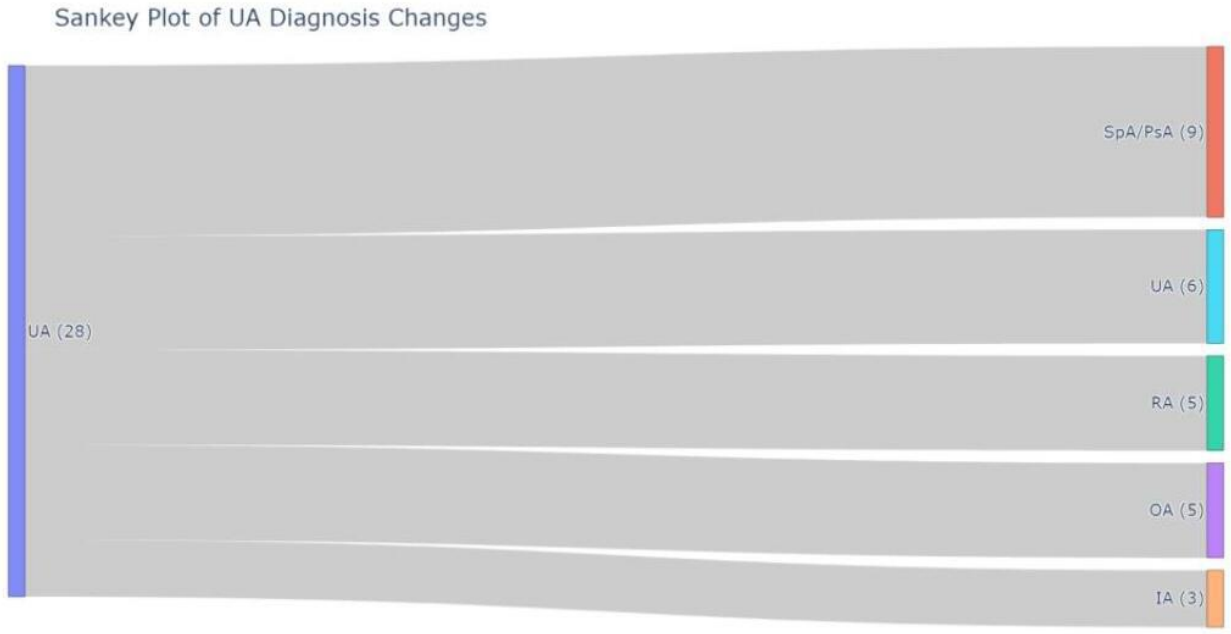
Background and Aims: Undifferentiated arthritis (UA) is a clinical challenge for rheumatologists, resulting in diagnostic and treatment delays. As a result, UA management frequently produces poor and frustrating results.

Methods: We performed ultrasound-guided synovial biopsy in patients with UA with moderate/severe disease activity. Inclusion criteria were not meeting rheumatoid arthritis (RA), psoriatic arthritis (PsA), or spondyloarthritis (SpA) classification criteria, and the absence of RF, ACPA, and HLA B27. Patients were evaluated by an independent assessor at baseline and 3 months.

Results: Between 01/03/2023 and 01/03/2024, 28 patients with UA had a synovial biopsy, with a mean (SD) arthritis duration of 6.4 (7.7) years. 57% had failed at least one csDMARD, and 8% had failed one or more b/tsDMARDs. Median Krenn Synovitis Score (KSS) was 4 (1 to 7), revealing high grade synovitis (KSS≥5) in 48%, and a median of 5 (1 to 6) lymphoid aggregates. Diffuse-myeloid patothype was found in 48%, lymphomyeloid in 22%, and pauci-immune in 30%. Following biopsy, the diagnosis was changed in 22/28 (79%) patients to SpA/PsA (n=9), RA (n=5), osteoarthritis (n=5), and infectious arthritis (n=3) (**Figure**). Change in DMARD therapy occurred in 15/28 (54%) patients. Excluding cases of infectious arthritis and osteoarthritis, the main reasons for the diagnosis change were a high grade synovitis or a lymphomyeloid pathotype ($p<0.05$). After 3 months, disease activity significantly improved in 15/20 (75%) patients ($p<0.05$), alongside improvements in

PROMs.



Conclusions: Patients with UA can benefit from an ultrasound-guided synovial biopsy, which yielded a change in diagnosis and treatment.

Keywords: Rheumatoid Arthritis, undifferentiated arthritis, synovial biopsy

PD033 / #468

E-POSTER DISCUSSION 07: RHEUMATOID ARTHRITIS
03-08-2025 10:00 AM - 10:30 AM

CORRELATION OF TNFAIP3, TNFA, TNFAIP3, CTLA-4, BAFF, KCNS1 AND STAT4 GENE POLYMORPHISMS WITH RESPONSE IN RHEUMATOID ARTHRITIS PATIENTS SWITCHING BDMARDS AND JAKI

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Background and Aims: The aim of this study was to determine the association between polymorphisms of TNFAIP3(rs10499194), TNFA(rs1800629), CTLA-4(rs231775), BAFF(rs9514828), KCNS1(rs734784) and STAT4(rs7574865) genes and poor response when switching to another bDMARDs/JAKi in RA patients who had failed prior bDMARDs/JAKi.

Methods: The study group consisted of 94 RA-patients (85.1%-female, 47.2±13.8 years) with moderate/high activity (DAS28-CRP 5.38±0.90) despite bDMARD/JAKi. All patients were switched to bDMARDs/JAKi with different MOA, including 12(12.8%) TNFi, 27(28.7%) iIL-6, 46(48.9%) rituximab and 9(9.6%) JAKi. After 6 months, RA activity was assessed by DAS28-CRP, SDAI and CDAI indices. Two groups were identified: responders (remission/low activity DAS28-CRP<3,2,SDAI<11,CDAI<10) and non-responders (moderate/high activity). PCR genotyping for SNPs of the above genes was performed in all patients.

Results: There were 47 (50%) patients in each of the bDMARD/JAKi responder and non-responder groups. The variant T (TT+CT) allele of the TNFAIP3(rs10499194) and the T (GT+TT) allele of STAT4(rs7574865) independently increased the risk of non-response to bDMARDs/JAKi (TT+CT vs. CC: OR=2.84 [95%CI: 1.23-6.56]; p=0.013; OR=3.18 [95%CI:1.36-7.46]; p=0.007, respectively). The presence of T minor alleles of the BAFF gene SNP (rs9514828) and the G (AG+GG) KCNS1(rs734784) were independently associated with a reduced risk of treatment failure (CC vs. CT+TT: OR=0.25 [95%CI: 0.10-0.66]; p=0.004; OR=0.29 [95%CI: 0.12-0.74]; p=0.008, respectively). For the TNFA gene SNP (rs1800629), the multiplicative model (G vs A) was statistically significant (OR=3.12 [95%CI:1.1-9.03] p=0.037), for the CTLA-4(rs231775) - superdominant model (AA+GG vs AG: OR=2.6 [95%CI:1.14-6.25] p=0.022).

Conclusions: The genes TNFAIP3 (rs10499194), BAFF (rs9514828), KCNS1 (rs734784) and STAT4 (rs7574865) were identified as four genetic predictors of treatment inefficiency in bDMARDs/JAKi switching.

Keywords: inefficiency, SNPs, bDMARDs, JAKi, switching, gene, TNFAIP3 (rs10499194), TNFA (rs1800629), BAFF (rs9514828), KCNS1 (rs734784), STAT4 (rs7574865

PD034 / #285

E-POSTER DISCUSSION 07: RHEUMATOID ARTHRITIS
03-08-2025 10:00 AM - 10:30 AM

ULTRASOUND FINDINGS OF NEW-ONSET INFLAMMATORY MUSCULOSKELETAL DISORDERS IN CANCER PATIENTS RECEIVING IMMUNE CHECKPOINT INHIBITORS COMPARED WITH PATIENTS RECEIVING OTHER ANTICANCER DRUGS

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Background and Aims: The aim of the study was to compare ultrasound findings in affected joints in patients with new-onset inflammatory musculoskeletal disorders in patients receiving immune checkpoint inhibitors (ICI) and other anticancer drugs.

Methods: 18 patients receiving ICI (mean age 55±11; M/F – 33% / 67%) and 26 patients receiving other anticancer drugs (mean age 59±14; M/F – 12% / 88%) were examined using ultrasound of the hands (n=28), the feet (n=9), the knee (n=21), the shoulder (n=11), the hip (n=11) and the elbow (n=1) joints according to the OMERACT criteria (joint effusion with/without synovial hypertrophy (gray scale, power Doppler [PD]), bone erosions, tenosynovitis).

Results: Synovitis was detected in 18 (100%) patients receiving ICI and in 25 (96%) patients receiving other anticancer drugs, tenosynovitis - in 15 (83%) patients receiving ICI and in 25 (96%) patients receiving other anticancer drugs, bone erosions - in 4 (22%) patients receiving ICI and in 3 (12%) patients receiving others drug ($p>0.05$). The frequency of detection of PD + in synovium of joints (OR: 3.54, 95% CI: 1.01-12.49, $p=0.045$) and tendons (OR: 7.64, 95% CI: 1.36-42.9, $p=0.021$) was higher in patients receiving ICI (n=11 (61%) for joints n=15 (83%) for tendons) compared with patients receiving others drug (n=8 (31%) for joints, n=2 (8%) for tendons).

Conclusions: The new-onset musculoskeletal disorders in patients receiving ICI and other antitumor drugs were accompanied by ultrasound signs of synovitis, tenosynovitis, and joint destruction. Patients receiving ICI more often have increased vascularization in the synovial tissue of joints and tendons compared with other patients.

Keywords: immune-related adverse events, Musculoskeletal disorders, Ultrasound

PD035 / #404

E-POSTER DISCUSSION 08: SPONDYLOARTHRITIS, HASHIMOTO THYROIDITIS
03-08-2025 10:00 AM - 10:30 AM

SELECTIVE SUPPRESSION OF PATHOGENIC B LYMPHOCYTES FROM HASHIMOTO'S THYROIDITIS PATIENTS BY CHIMERIC PROTEIN MOLECULES

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Background and Aims: Hashimoto's thyroiditis is one of the most common endocrine disorders affecting up to 20% of the adult population. No treatment or prevention exists except hormonal substitution of hypothyroidism. We hypothesize that it may be possible to suppress selectively anti-thyroglobulin (Tg) IgG antibody producing B lymphocytes from HT patients by a chimeric protein molecule containing a monoclonal antibody specific for the human inhibitory receptor CR1, coupled to peptide epitopes derived from Tg protein. We expect that this treatment will down-regulate B cell auto-reactivity by delivering a strong inhibitory signal.

Methods: Three peptides – two epitope-predicted ones derived from Tg and another irrelevant peptide – were synthesized and then coupled with monoclonal anti-human CR1 antibody to construct three chimeric molecules. The binding to CD35 on human B cells and the effects of the chimeric constructs on PBMC and TMC from patients with HT were tested using flow cytometry, ELISpot assay and ELISA methods.

Results: We found that after the chemical conjugation all chimeras retained their receptor-binding capacity and the Tg epitopes could be recognized by anti-Tg autoantibodies in the patients' sera. This treatment down-regulated B cell autoreactivity and cell proliferation, inhibited Tg-specific B cell differentiation to plasmacytes and promoted apoptosis to the targeted cells.

Conclusions: The treatment of PBMCs from HT patients with Tg epitope-carrying chimeric molecules affects the activity of Tg-specific autoreactive B lymphocytes delivering to them a strong suppressive signal.

Keyword: Autoimmunity, Thyroid autoimmunity

PD036 / #134

E-POSTER DISCUSSION 08: SPONDYLOARTHRITIS, HASHIMOTO THYROIDITIS
03-08-2025 10:00 AM - 10:30 AM

THE IMPACT OF TESTOSTERONE DEFICIENCY IN MEN ON THE CLINICAL FEATURES OF ANKYLOSING SPONDYLITIS

Taras Panevin[1,2], Shandor Erdes[1], Tatiana Korotaeva[1], Evgeniy Zotkin[3], Roman Rozhivanov[3]
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Background and Aims: It is suggested that the presence of chronic IHRD may be a factor increasing the likelihood of developing hypogonadism syndrome, and vice versa. **Aim.** To study the incidence of hypogonadism in men with ankylosing spondylitis (AS) and evaluate its impact on AS and comorbidities.

Methods: The one-time continuous study included 124 men with AS. Patients were assessed for total testosterone levels and subsequently divided into subgroups with normal (≥12.0 nmol/l) and reduced levels. An intergroup comparison was carried out.

Results: The frequency of detected testosterone deficiency in the study group was 25.0%. With testosterone deficiency, a more frequent incidence of uveitis (45.2% vs 23.6%, p=0.022), as well as arterial hypertension (51.6% vs 30.1%, p=0.030) and type 2 diabetes mellitus (16 .1% vs 4.3%, p=0.028). Testosterone deficiency was accompanied by higher levels of C-reactive protein (16.7 [3.2;43.4] mg/l vs 5.0 [1.3;17.4] mg/l; p=0.020), as well as higher frequency of increased ESR (45.2% vs 25.8%; p=0.043). There was a higher glucose level (5.75±1.19 mmol/l vs 5.36±0.71 mmol/l; p=0.027) and more frequent impaired fasting glucose (25.8% vs 4.3%; p <0.001). A more frequent occurrence of hypercholesterolemia was revealed (43.3% vs 16.3%; p=0.010). Testosterone deficiency was accompanied by higher levels of uric acid (377.0±105.3 µmol/l vs 324.0±67.7 µmol/l; p=0.002) and the incidence of hyperuricemia (67.9% vs 41.2%; p=0.014).

Conclusions: A high incidence of hypogonadism in patients with AS has been revealed. Testosterone deficiency was accompanied by a higher incidence of uveitis, higher laboratory indicators of AS activity, and the incidence of concomitant metabolic disorders.

Keywords: testosterone, hypogonadism, ankylosing spondylitis

PD037 / #384

E-POSTER DISCUSSION 08: SPONDYLOARTHRITIS, HASHIMOTO THYROIDITIS
03-08-2025 10:00 AM - 10:30 AM

FACTORS ASSOCIATED WITH WORK ABANDONMENT IN YOUNG PATIENTS WITH AXIAL SPONDYLOARTHRITIS: A PROSPECTIVE OBSERVATIONAL STUDY

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Background and Aims: This study aimed to assess the factors associated with occupational withdrawal in patients with axial spondyloarthritis (SpAx), including ankylosing spondylitis (AS) and non-radiographic axial SpAx.

Methods: We conducted a prospective observational study including young patients (age ≤ 40 years) diagnosed with SpAx between August 2023 and July 2024. Patients who had never been professionally active were excluded from the study. Data were extracted from patient observation files and the electronic archive.

Results: The final study cohort included 128 patients with a mean age: 34.09 ± 4.75 years, and a mean disease duration of 8.64 ± 5.71 years. Most patients (95.3%) were diagnosed with AS (122 patients). HLA-B27 was positive in 93.8% of cases (120 patients). Occupational withdrawal was observed only in the AS subgroup (31.1% of AS group). The radiographic stage of sacroiliitis was more advanced in patients who had left the workforce ($p=0.001$), and it was correlated with disease duration ($p<0.001$) and inversely related to the age of onset ($p=0.006$). Occupational withdrawal was associated with restrictive ventilatory defect ($p<0.001$) and depression ($p=0.006$), while limited cervical spine mobility approached statistical significance ($p=0.051$). Hip involvement (coxitis and secondary hip osteoarthritis), uveitis (current/past), dactylitis, peripheral arthritis, and cardiovascular, gastrointestinal, and metabolic comorbidities were not associated with occupational withdrawal. Disease-modifying therapy and disease activity (BASDAI, ASDAS) and functional scores (BASFI) did not show significant differences for occupational withdrawal.

Conclusions: In patients with AS, advanced radiographic sacroiliitis, longer disease duration, younger age at disease onset, restrictive ventilatory defect, and depression were significant factors associated with occupational withdrawal.

Keywords: axial spondyloarthritis, WORK ABANDONMENT

PD038 / #553

E-POSTER DISCUSSION 08: SPONDYLOARTHRITIS, HASHIMOTO THYROIDITIS
03-08-2025 10:00 AM - 10:30 AM

EFFICACY OF SENIPRUTUG (BCD-180), NOVEL ANTI-TRBV9 INHIBITOR IN RADIOGRAPHIC AXIAL SPONDYLOARTHRITIS

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Background and Aims: Seniprutug (SENI, BCD-180), novel monoclonal antibody inducing depletion of autoreactive $CD8^+TRBV9^+$T-lymphocytes which play the key role in the pathogenesis of axial spondyloarthritis (axSpA). We present the results of 60 weeks efficacy analysis of the phase 2 randomized double-blind clinical trial (NCT05445076).

Methods: 260 HLA-B27+ biologic-naïve patients with active radiographic axSpA (r-axSpA) and inadequate response to NSAID were randomized into groups: SENI 5mg/kg (n=103), SENI 7mg/kg (n=107), Placebo (n=50). The first SENI infusion was performed in the ½ dose at W0 for SENI groups, W24 for Placebo group, the subsequent full dose infusions were carried out at W12 and W36 for SENI groups and at W36 for Placebo group. The axSpA activity was assessed using ASDAS during 60 weeks and SPARCC spine and SIJ scores at W24 and W48.

Results: At baseline, all subjects had very high (ASDAS>3,5) or high (ASDAS≥2.1) activity disease status. Over the 60-weeks there was permanent increase in the proportion of patients with inactive and low-activity r-axSpA (Fig.1). At W24, the proportion of very high activity was significantly lower in SENI groups 5mg/kg and 7mg/kg compared to placebo: p=0.0416 and p=0.0018 respectively. In both SENI's groups ASDAS decreased after the first

infusion with significant differences in ASDAS change from baseline compared to placebo up to W24 ($p<0.05$) (Fig.2A). A decrease in the SPARCC scores from baseline was observed in SENI groups with significant differences of SPARCC spine to placebo at W24 (Fig.2B, Fig.2C).

Conclusions: Treatment with SENI results in significant decrease of inflammation in active r-axSpA patients.

PD039 / #324

E-POSTER DISCUSSION 09: ANTIPHOSPHOLIPID ANTIBODY SYNDROME, PREGNANCY IN RHEUMATIC DISEASES
03-08-2025 10:00 AM - 10:30 AM

ANTIPHOSPHOLIPID NEPHROPATHY IS ASSOCIATED WITH AN INCREASED RISK OF RENAL INSUFFICIENCY. A SYSTEMATIC REVIEW OF THE LITERATURE AND META-ANALYSIS

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Background and Aims: Antiphospholipid syndrome (APS) could affect the entire renal vasculature, ranging from thrombosis of renal arteries and veins to microvascular injuries. Antiphospholipid antibodies (aPL) nephropathy (aPL-N) is a complex feature of antiphospholipid syndrome due to microvascular lesions. Renal prognosis and predictors of outcome are not yet known.

Methods: We performed a systematic review of the literature (February 2006-January 2024) using Pubmed, Scopus, Cochrane Library, and EMBASE databases. Two reviewers independently conducted literature screening and data extraction in a blinded, standardized manner. A random-effects model was used to pool odds ratio (OR) (with 95% CI) for the primary analysis, the risk of renal insufficiency.

Results: Six records involving 709 patients were included in the meta-analysis. Pooled analysis showed that APL-N was associated with an increased risk of CKD/ESKD [OR 6.89, 95% CI: 2.42-19.58] and AKI [OR 2.97, 95% CI: 1-4-6.29]. Furthermore, arterial hypertension and positivity for LAC, aCL, and anti-b2GPI antibodies were associated with an increased risk of developing aPL-N [OR 3.7, 95% CI: 1.9-7.23], [OR 4.01, 95% CI: 1.88-8.53], [OR 2.35, 95% CI: 1.31-4.21] and [OR 19.2, 95% CI: 2.91-125.75], respectively. Pooled analysis regarding triple aPL positivity was not possible because only one study reported the association between aPL-N and triple aPL positivity.

Conclusions: This meta-analysis summarizes the current evidence on the impact of aPL-N on renal outcome and available predictors of renal outcome. Pooled analysis showed that

aPL-N is associated with poor renal outcomes. High blood pressure and aPL positivity have been identified as predictors of adverse renal outcomes.

Keywords: antiphospholipid antibodies,, antiphospholipid syndrome,, antiphospholipid antibodies nephropathy,

PD040 / #319

E-POSTER DISCUSSION 09: ANTIPHOSPHOLIPID ANTIBODY SYNDROME, PREGNANCY IN RHEUMATIC DISEASES
03-08-2025 10:00 AM - 10:30 AM

OCULAR MICROVASCULAR INVOLVEMENT IN PRIMARY ANTIPHOSPHOLIPID SYNDROME EVALUATED WITH THE OPTICAL COHERENCE TOMOGRAPHY ANGIOGRAPHY

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Background and Aims: Primary Antiphospholipid Syndrome (PAPS) is a rare autoimmune systemic syndrome characterized by thrombotic and pregnancy morbidities. Optical coherence tomography angiography (OCTA) is a non-invasive technique for detecting retinal blood flow and has been used to evaluate subclinical retinal impairment in systemic lupus erythematosus (SLE). This study aims to identify subclinical microvascular alterations through the OCTA in a PAPS cohort compared to healthy controls (HC) and SLE without APS.

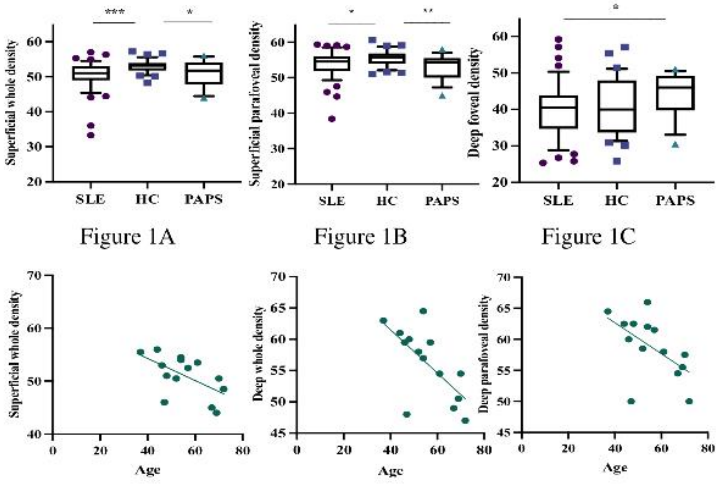
Methods: Cross-sectional study enrolling consecutive PAPS, SLE and HC, age and sex-matched. OCTA was performed. Statistical analysis was conducted considering the OCTA average value between the two eyes and using t-test/Mann-Whitney and Pearson/Spearman tests, when appropriate.

Results: 14 PAPS, 46 SLE and 34 HC were included (Table 1).

	SLE (n=46)	HC (n=34)	PAPS (n=14)
Female (n/%)	42 (91.3)	16 (80)	11 (78.5)
Age (mean ± SD)	51.8 ± 14.6	46 ± 8.9	48.8 ±13.3
Disease duration from diagnosis (months)	190 (4-600)	/	72 (12-324)
Thrombotic APS (n/%)	0 (0)	/	8 (57.1%)
Obstetric APS (n/%)	0 (0)	/	9 (64.3%)
Thrombotic + Obstetric APS (n/%)	0 (0)	/	3 (21.4)

PAPS had lower VD in the whole superficial retinal plexus and parafoveal area compared to HC (*p=0.02, p= 0.005,* respectively, Figure 1A-B). A reduction in deep foveal VD was observed in SLE compared to PAPS (*p=0.03*) (Figure 1C). Stratifying patients based on history of obstetric or thrombotic manifestations, obstetric PAPS showed a trend of reduced vascularization in the foveal region of the superficial (0.21% vs 0.27%) and deep retinal plexus (0.39% vs 0.49%). We observed a negative correlation between age and superficial and deep whole retinal VD (*p=0.027*, r=-0.5 and p=0.01, r=-0.6), and deep parafoveal VD (*p=0.04*, r=-0.5) (Figure

1D).



Conclusions: PAPS patients exhibit a reduced vascularization in the superficial retinal vascularization compared to healthy controls, potentially due to a subclinical vasculopathy. OCTA could have a potential role in characterizing subclinical retinal microvascular involvement in PAPS.

Keywords: Antiphospholipid antibody syndrome, microvascular involvement, OCTA

PD041 / #167

E-POSTER DISCUSSION 09: ANTIPHOSPHOLIPID ANTIBODY SYNDROME, PREGNANCY IN RHEUMATIC DISEASES
03-08-2025 10:00 AM - 10:30 AM

IMPACT OF ORGAN DAMAGE ON PREGNANCY OUTCOMES, AND THE PROGRESSION OF ORGAN DAMAGE DURING PREGNANCY IN PREGNANT WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background and Aims: Organ damage in systemic lupus erythematosus (SLE) is linked to increased mortality, making early disease control and glucocorticoid tapering essential to prevent further damage. However, its impact on pregnancy outcomes in SLE remains unclear. The use of certain immunosuppressants is contraindicated during pregnancies, often requiring discontinuation of some immunosuppressants and glucocorticoid escalation, potentially increasing the risk of SLE flare or glucocorticoid-induced organ damage. This study investigates the effect of organ damage on pregnancy outcomes and the progression of damage during pregnancy.

Methods: We retrospectively studied SLE patients who delivered at our institution, stratified by the presence of organ damage using the SLICC–ACR Damage Index (SDI). Pregnancy outcomes and SDI progression during pregnancy were compared between groups, and associated factors were analyzed.

Results: Among 48 pregnancies, 8 cases (16.7%) had organ damage at pregnancy diagnosis. These patients had significantly higher rates of PROMISSE adverse preganancy outcomes (APOs) (62.5% vs 7.5%, p = 0.002), preterm delivery (50% vs 14.7%, p = 0.082), and lower birth weights (2145.00 [1526.50, 2744.00]g vs 2738.00 [2429.00, 3008.50]g, p = 0.053). Logistic regression revealed that organ damage was significantly associated with increased risk of PROMISSE APOs (OR 20.6, 95% CI 3.22-131, p = 0.001). No SDI progression occurred despite five flare-ups during pregnancy.

Conclusions: The presence of organ damage in pregnancies complicated by SLE is associated with an increased risk of PROMISSE APOs, underscoring the need for pre-

pregnancy risk assessment. On the other hand, appropriate pregnancy planning can help mitigate the progression of organ damage during pregnancy in SLE patients.

Factor	Organ damage (-)	Organ damage (+)	p value
n	40	8	
Epidemiological data			
Age at conception	31.5 [29.8, 36.0]	33.0 [31.5, 33.3]	1.00
BMI	19.7 [17.8, 21.1]	20.4 [19.3, 20.9]	0.41
Duration of SLE (days)	2389 [1310, 3907]	3279 [805, 5471]	0.98
Smoking history (%)	4 (10.0)	1 (12.5)	1.00
Previous spontaneous abortion (%)	5 (12.5)	3 (37.5)	0.12
Infertility treatment (%)	13 (32.5)	3 (37.5)	1.00
SLE flare at conception (%)	2 (5.3)	0 (0.0)	1.00
Remission at conception(%)	21 (55.3)	6 (75.0)	0.36
Discontinuation of immunosuppressant at conception (%)	3 (7.5)	1 (12.5)	0.53
Glucocorticoid increment at conception (%)	4 (11.8)	1 (12.5)	1.00
Organ manifestation			
Skin and mucocutaneous (%)	27 (67.5)	7 (87.5)	0.41
Joint and muscular (%)	32 (80.0)	5 (62.5)	0.36
Renal manifestation (%)	**11 (27.5)**	**6 (75.0)**	**0.017**
Lupus nephritis class III/IV(%)	**2 (5.3)**	**3 (37.5)**	**0.031**
Serositis (%)	8 (20.0)	3 (37.5)	0.36
Neurological manifestation (%)	4 (10.0)	1 (12.5)	1.00
Hematological manifestation (%)	30 (75.0)	6 (75.0)	1.00
Immunological finding			
Anti-dsDNA antibody (%)	**22 (55.0)**	**8 (100.0)**	**0.018**
Anti-RNP antibody (%)	10 (28.6)	3 (42.9)	0.66
Anti-Sm antibody(%)	5 (13.2)	2 (25.0)	0.59
Anti-SSA antibody (%)	24 (60.0)	5 (62.5)	1.00
Anti-SSB antibody (%)	2 (6.7)	0 (0.0)	1.00
LAC(%)	**2 (5.0)**	**4 (50.0)**	**0.005**
Anti-CL antibody (%)	**9 (23.1)**	**5 (62.5)**	**0.04**
Anti-CLβ2 antibody (%)	5 (12.8)	1 (12.5)	1.00
Low C3 (%)	21 (53.8)	6 (75.0)	0.44
Low C4 (%)	27 (69.2)	7 (87.5)	0.41

Factor	Organ damage			Logistic regression		
	(-)	(+)	p value	OR	95% CI	p value
n	40	8				
overall APO	21 (52.5)	6 (75.0)	0.44	2.7	0.49-15.10	0.25
maternal APO	10 (25.0)	4 (50.0)	0.21	3.00	0.63-14.3	0.17
neonatal APO(%)	18 (45.0)	4 (50.0)	1	1.22	0.27-5.59	0.80
PROMISSE APO(%)	**3 (7.5)**	**5 (62.5)**	**0.002**	**20.6**	**3.22-131**	**0.001**
SLE flare during pregnancy	4 (10.0)	1 (12.5)	1.00	1.29	0.12-13.30	0.83
Gestational diabetes	**1 (2.5)**	**2 (25.0)**	**0.07**	**13**	**1.02-166**	**0.049**
Hypertensive disorder of pregnancy	8 (20.0)	2 (25.0)	0.67	1.33	0.23-7.89	0.75
Preeclampsia	3 (7.5)	2 (25.0)	0.19	4.11	0.56-30.0	0.16
HELLP syndrome	0 (0.0)	0 (0.0)	NA	NA	NA	NA
Oligohydramnios	1 (2.6)	0 (0.0)	1.00	NA	NA	NA
Maternal death	0 (0.0)	0 (0.0)	NA	NA	NA	NA
Live birth rate (%)	34 (85.0)	6 (75.0)	0.61	0.53	0.09-3.27	0.49
Total duration of gestation (days)	268.5 [253.8, 277.0]	238.5 [197.8, 264.0]	0.12			
Preterm birth (%)	**5 (14.7)**	**3 (50.0)**	**0.082**	**5.80**	**0.90-37.3**	**0.064**
Still birth (%)	0 (0.0)	0 (0.0)	NA	NA	NA	NA
Weight at birth (g)	**2738 [2429, 3009]**	**2145 [1527, 2744]**	**0.053**			
Low birth weight (%)	12 (35.3)	4 (66.7)	0.20	3.67	0.58-23.0	0.17
SGA (%)	**2 (.9)**	**2 (33.3)**	**0.10**	**8.00**	**0.87-73.6**	**0.066**
Apgar score (1m)	8.00 [8.00, 8.00]	7.50 [6.25, 8.00]	0.024			
Apgar Score (5m)	9.00 [9.00, 9.00]	9.00 [8.25, 9.00]	0.34			
Birth defect (%)	1 (2.9)	1 (16.7)	0.28	6.60	0.35-123	0.21

Keywords: systemic lupus erythematosus, pregnancy, organ damage

PD042 / #403

E-POSTER DISCUSSION 09: ANTIPHOSPHOLIPID ANTIBODY SYNDROME, PREGNANCY IN RHEUMATIC DISEASES
03-08-2025 10:00 AM - 10:30 AM

INVESTIGATION OF FERTILITY AND REPRODUCTIVE SYSTEM DAMAGES DURING AUTOIMMUNITY WITH OR WITHOUT HORMONAL THERAPY IN PRISTANE-INDUCED MOUSE MODEL OF SYSTEMIC LUPUS ERYTHEMATOSUS

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Background and Aims: Systemic lupus erythematosus (SLE) is an example of autoimmune disease manifesting itself in aberrated immune response directed against nuclear, cytoplasmic and cell-surface antigens. Among patients, symptoms are frequently intensified in females during their active reproductive years, pinpointing the interaction between reproductive and immune systems. Hence, it is urgent to address the question how SLE can influence female fertility and the impact of hormones on disease manifestation. Mouse models of SLE are suitable tools for studying in detail the interactions of different systems and the impact of lupus development on the process of oogenesis.

Methods: Lupus-like symptoms were induced through intraperitoneal injection of hydrocarbon oil pristane in healthy Balb/C mice. A short protocol for hormonal stimulation of humans was adapted for mice. Methods used to follow the immune status of the experimental animals were flow cytometry, ELISpot and ELISA, while the variety of autoantibodies, histology and quality of oocytes were characterized using fluorescent microscopy.

Results: A single *i.p.* injection of pristane induced production of autoantibodies, depositions of IgG-containing immune complexes in the kidneys and proteinuria. The hormonal stimulation of lupus mice increased the percentage of pro-inflammatory immune cell subtypes, altered ANA immunofluorescence imaging patterns, and increased

the number of plasmacytes secreting anti-dsDNA IgG antibodies. In addition, depositions of IgG-containing immune complexes were found in the kidneys and ovaries of treated mice as well as structural abnormalities in the isolated oocytes.

Conclusions: The exhibited impairments of oocytes in pristane-treated mice provide evidence for disturbed local microenvironment as a result of disease activity.

Keyword: Pristane-induced SLE; Balb/C mice; oogenesis; hormonal stimulation

PD043 / #480

E-POSTER DISCUSSION 10: FIBROMYALGIA, HYPERMOBILITY SYNDROME
03-08-2025 10:00 AM - 10:30 AM

CANNABIS USE IN FIBROMYALGIA PATIENTS: THE CONTROVERSIAL ASSUMPTION OF SAFETY

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Background and Aims: Recent reviews have concluded that the available data on the effectiveness of Cannabis in the treatment of chronic pain and Fibromyalgia, specifically, is weak but generally considered positive, and safety is often assumed. Cannabis use is widespread among Fibromyalgia patients, with up to 50% reporting use in a large study. The present study was designed to assess the pattern of cannabis use and misuse in a sample of 569 Fibromyalgia patients.

Methods: Diagnosis of Fibromyalgia was clinically established through comprehensive evaluation at a tertiary care center. The study used the Cannabis Engagement Assessment (CEA), a 30-question tool to assess Cannabis use in the past 30 days. The Cannabis Abuse Screening Tool (CAST), a 6-question tool, was used to evaluate the risk of Cannabis Use Disorder (CUD). CAST scores are interpreted as follows: 0-2 indicates low risk, 3-6 moderate risk, and 7 or more high risk.

Results: Of the 569 patients in the study, 53% reported Cannabis use, a finding consistent with previous reports. 25% percent reported use within the last month. Of the recent users, 57% endorsed criteria consistent with moderate to high risk of Substance Use Disorder.

Conclusions: As in the case of opiates, prescription Cannabis or non-prescription Cannabis use might put patients with Fibromyalgia at risk of developing Cannabis Use Disorder, especially given that there are no well-defined formulations or dosages for using Cannabis for pain or other symptoms of Fibromyalgia.

Keywords: fibromyalgia, cannabis, substance use disorder

PD044 / #362

E-POSTER DISCUSSION 10: FIBROMYALGIA, HYPERMOBILITY SYNDROME
03-08-2025 10:00 AM - 10:30 AM

IS FIBROMYALGIA SYNDROME AN AUTOIMMUNE DISEASE AND WHY DO IMMUNOSUPPRESSANTS NOT WORK?

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Background and Aims: Fibromyalgia syndrome (FMS) is a frequent disease characterized by widespread tenderness and pain, accompanied by fatigue, emotional stress and autonomic dysfunction. Studies indicate the involvement of autoantibodies in the pathogenesis of disease. However, immunosupressants do not seem to be beneficial in treatment of symptoms associated with FMS. Currently, there are no therapeutics approved for FMS.

Methods: Here, we will summarize the current state in the literature and present own research data on autoantibodies. Moreover, we ill summarize therapeutic studies for treatment of FMS.

Results: Growing evidence supports that autoantibodies play an important role in FMS. Accordingly, Goebel et al. showed that IgG from FMS patients, but not from healthy controls, evoke sensory hypersensitivity and sensitize nociceptive neurons. In mice, FMS-IgG bind to satellite glial cells, neurons and myelinated fiber tracts in dorsal root ganglia. We analysed the levels of autoantibodies directed to G-protein-coupled receptors (GPCR) and further proteins in patients with primary and secondary FMS and compared these to HC. By this, we identified several autoantibodies with altered levels that might be involved in the pathogenesis. Several therapies targeting autoantibodies are currently under investigation, e.g., aptamer BC007 in post-COVID syndrome, IVIGs or B-cell targeting therapies in connective tissue diseases and vasculitis. However, current data support that the anti-GPCR autoantibody levels are not altered by immunosuppressive drugs. Nevertheless, functional alterations of autoantibodies might be induced by these therapeutic strategies.

Conclusions: Symptoms in FMS seem to be caused by dysregulated autoantibodies. Further research is needed to understand these pathophysiological processes. Potentially, targeting these autoantibodies might be beneficial in FMS.

Keywords: Autoimmunity, AUTOANTIBODIES, G-Protein coupled receptors

PD045 / #487

E-POSTER DISCUSSION 10: FIBROMYALGIA, HYPERMOBILITY SYNDROME
03-08-2025 10:00 AM - 10:30 AM

SEVENTY PERCENT OF HYPERMOBILE PATIENTS HAVE FIBROMYALGIA: IS THIS EARLY DETECTION OF FIBROMYALGIA OR A DISTINCT VARIANT?

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Background and Aims: The Ehlers Danlos Clinic at Mayo Clinic Florida opened in 2019. Of the 2,729 patients diagnosed with Hypermobility in this clinic, up to 70% were also diagnosed with Fibromyalgia. The Fibromyalgia Treatment Program at Mayo Clinic Florida is a 2-day intensive outpatient treatment program. The present study was designed to compare 264 patients with Fibromyalgia without Hypermobility who completed the Fibromyalgia Treatment Program to 312 patients with Hypermobility plus Fibromyalgia who also completed the Fibromyalgia Treatment Program addressing the question of whether the Hypermobile patients with Fibromyalgia represent a distinct variant of Fibromyalgia.

Methods: The two groups were compared on demographic variables and baseline levels of Central Sensitization, depression, pain catastrophizing, functional capacity, anxiety, resiliency, level of disability, and social support. Initial response to treatment was assessed at 3-month follow-up.

Results: revealed that Hypermobile patients with Fibromyalgia were significantly younger than patients with Fibromyalgia without Hypermobility ($p<.001$). No significant differences were found between the two groups on any other demographic or clinical variable assessed at baseline ($p<.001$). Additionally, the initial response to treatment by both groups showed significant improvement across all clinical domains ($p<.001$).

Conclusions: Results suggest that the patients with Hypermobility and Fibromyalgia may not be a distinct variant of Fibromyalgia as hypothesized. Rather, the similarities between both groups and initial response to treatment suggest that early detection of Fibromyalgia may have been achieved. Further studies are needed to determine if early detection and intervention provide improved long-term outcomes in this population.

Keywords: hypermobility, fibromyalgia, early detection

PD046 / #160

E-POSTER DISCUSSION 10: FIBROMYALGIA, HYPERMOBILITY SYNDROME
03-08-2025 10:00 AM - 10:30 AM

GENE EXPRESSION AND DISEASE ONTOLOGY IN HYPERMOBILITY AND THE ROLE OF AN INFLAMMATORY CHALLENGE: INSIGHTS FROM TRANSCRIPTOMICS

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Background and Aims: Hypermobilty conditions are heterogenous and include extra-articular features. Eitology is debated/incompletely understood but thought to relate to variant connective tissue. Joint hypermobility is associated with a number of auto-immune (e.g. inflammatory bowel disease), neuropsychiatric (e.g. anxiety, bipolar disorder, ADHD, autism) and cardiovascular (e.g mitral valve prolapse) conditions.

Methods: Existing transcriptomic data gathered from 69 healthy subjects and patients with fibromyalgia/ME/CFS (ISRCTN78820481) was analysed using total RNA sequencing of blood (Illumina NextSeq 500) including two samples per participant: one post saline injection, one psot inflammatory challenge (typhoid vaccination). Participants were categorised by 2017 hEDS criteria (Crit 1). Differential gene expression analysis comparing hypermobile (n=21) to non-hypermobile (n=48) was performed in EdgeR. Baseline differences determined and differential responses to the inflammatory challenge were detected. Gene ontology was performed (DAVID's Functional Annotation Clustering tool).

Results:

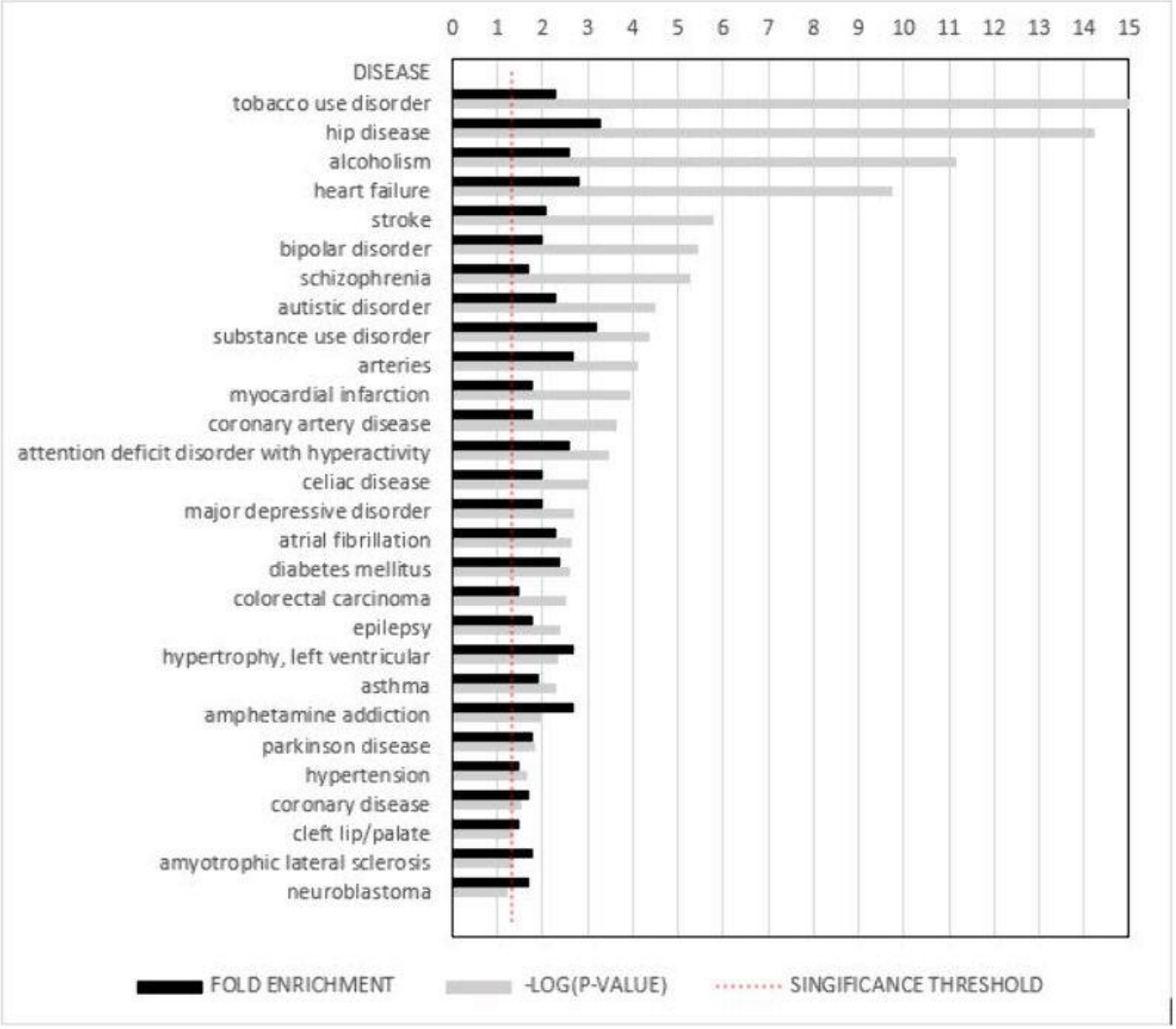

Figure 1. Gene ontology analysis in hypermobile versus non hypermobile individuals following an inflammatory challenge.

Gene ontology of differentially expressed genes (hypermobile/non-hypermobile) at baseline was found to associate with AIDS, leiomyoma, cardiomegaly, eczema, atopic dermatitis and SLE. After inflammatory challenge, the hypermobile group displayed a gene expression profile associated with 27 diseases including substance misuse, bipolar disorder, autism, ADHD, myocardial infarction and atrial fibrillation.

Conclusions: We note multiple associations with hypermobility and immunological disease, both immunodeficiency/autoimmunity, suggesting impaired immunological regulation. After inflammatory challenge there were associations with a number of neuropsychiatric conditions and cardiovascular conditions, suggestings a two-factor model whereby hypermobility is possibly constitutionally associated with deranged

immunological function and following an inflammatory insult, neuropsychiatric/cardiovascular sequelae occur. This provides rationale for further research and invites a personalized medicine approach which may mitigate risk of multimorbidity.

Keywords: hypermobility, EDS, transcriptomics

PD047 / #547

E-POSTER DISCUSSION 10: FIBROMYALGIA, HYPERMOBILITY SYNDROME
03-08-2025 10:00 AM - 10:30 AM

PATHOMORPHOLOGICAL FEATURES OF THE HEART INVOLVEMENT IN DIFFERENT TYPES OF AMYLOIDOSIS

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Background and Aims: Amyloid cardiomyopathy has been increasingly recognized as an etiology for chronic heart failure.The aim of this study is to describe histopathological characteristics of cardiac amyloidosis (CA) and to estimate the frequency of clinically underdiagnosed CA.

Methods: Histopathological features were assessed in 107 cases of CA (46 endomyocardial biopsies (EMB) and 61 autopsies), using H&E and Congo red staining, and a panel of antibodies for immunohistochemical amyloid typing.

Results: In the evaluated EMBs, AL amyloidosis was detected in 21 (46%) specimens, comprising 15 (33%) cases of AL lambda and 6 (13%) cases of AL kappa amyloidosis. ATTR amyloid was found in 24 (52%) EMBs and AA amyloid in one EMB (2%). Post-mortem examination revealed AL amyloidosis in 21 (34%) cases, AL kappa – 3 (5%), ATTR – 21 (35%), and AA amyloidosis in 16 (26%). The ante- and post-mortem-diagnosed cases of AL lambda amyloidosis accounted for 48% and 52%, respectively. Clinically AL kappa amyloidosis was identified in 67% and at the autopsy in 33% of patients. ATTR and AA amyloidosis was identified at the autopsy in 90.5% and 62.5% of cases, and during life in 9.5% and 37% of patients, respectively.

Conclusions: Commonly, AL amyloidosis is accompanied by heart failure. The most extensive amyloid deposits were detected in patients with AL kappa amyloidosis, causing a rapid progression of the disease and a poor outcome. ATTR amyloidosis was usually detected at the autopsy suggesting that ATTR is a frequent underdiagnosed cause of heart failure in elderly patients.

Keywords: heart failure, amyloidosis, cardiomyopathy