domains (Lupus Symptoms, Physical Health, Pain-Vitality, Emotional Health and Body Image) were responsive to changes in patient reported and physician assessed health status (disease activity and damage) (Table 1). Procreation and Cognition domains showed responsive trends with patient reported change in health status, while Lupus Medications domain was responsive additionally to changes in Damage.

Table 1: Responsiveness of LupusPRO to Change in Health

		Patient reported Change						Physician Assessed Change								
	Anchor Used →	F36-C			Global Change in Health			PGA			SELENA-SLEDAI			SDI		
	Category	N	Mean Change	P value	N	Mean Change	P value	N	Mean Change	P value	N	Mean Cha	P value	N	Mean Change	P value
LupusPRO HRQOL	Worse	118	-3.64	<0.001	117	-3.74	<0.001	72	-3.21	0.008	48	-2.72	0.020	21	-7.66	0.00
	Same	155	0.17		155	0.25		251	-0.12		341	-0.13		405	0.31	
	Better	158	2.36		158	2.36		105	2.08		40	3.8				
Lupus Symptoms	Worse	117	-2.85	0.014	117	-2.71	0.015	72	-8.22	<0.001	48	-5.78	0.005	21	-5.36	0.14
	Same	155	-1.02		155	-1.13		251	0.76		341	0.10		405	0.27	
	Better	158	3.11		158	3.11		105	3.77		41	6.25				
Cognition	Worse	118	-4.45	0.101	117	-4.77	0.07	72	-2.43	0.808	48	-1.79	0.555	21	-5.36	0.32
	Same	155	-0.56		155	-0.82		251	-0.33		341	-0.55		405	-0.65	
	Better	158	1.08		158	1.03		105	-0.85		41	-4.27				
Procreation	Worse	118	-2.75	0.08	117	-2.75	0.08	72	-2.48	0.325	48	-1.58	0.566	21	-4.17	0.21
	Same	155	0.40		155	0.4		251	0.15		341	0.29		405	0.09	
	Better	158	1.27		158	1.27		105	0.95		41	-1.83				
Physical Health	Worse	118	-5.85	<0.001	117	-6.10	<0.001	72	-4.65	0.048	48	-4.80	<0.001	21	-5.95	0.15
	Same	155	-0.58		155	-0.39		251	-0.54		341	-1.19		405	-0.39	
	Better	158	3.23		158	3.23		105	1.95		41	9.02				
Lupus Medications	Worse	118	-2.44	0.165	117	-2.44	0.165	72	0.65	0.535	48	1.02	0.658	21	-9.52	0.03
	Same	155	2.34		155	2.34		251	1.64		341	1.32		405	1.38	
	Better	158	2.14		158	2.14		105	-1.31		41	-21.13				
Pain-Vitality	Worse	118	-6.36	0.001	117	-6.36	0.001	72	-3.75	0.008	48	-6.22	<0.001	21	-14.05	0.00
	Same	155	-0.84		155	-0.84		251	-2.41		341	-1.56		405	-0.39	
	Better	158	2.78		158	2.78		105	4.00		41	9.88				
Emotional Health	Worse	118	-0.81	0.156	117	-1.20	0.147	72	-1.74	0.177	48	-2.47	0.028	21	-10.52	0.00
	Same	155	-0.67		155	-0.38		251	-0.15		341	0.21		405	1.17	
	Better	158	2.98		158	2.98		105	3.21		41	7.83				
Body Image	Worse	118	-4.41	0.002	117	-4.41	0.002	72	-3.19	0.06	48	-0.20	0.819	21	-6.19	0.08
	Same	155	2.29		155	2.29		251	0.12		341	0.38		405	0.71	
	Better	158	2.34		158	2.34		105	3.29		41	2.07				
LupusPRO non HRQOL	Worse	118	-1.62	0.137	117	-1.38	0.129	72	0.34	0.575	48	-0.79	0.930	21	-1.96	0.60
	Same	155	-1.29		155	-1.48		251	0.16		341	-0.15		405	-0.16	
	Better	158	1.67		158	1.67		105	-1.66		41	-0.91				
Desires-Goals	Worse	118	-2.81	0.144	117	-3.18	0.144	72	-4.08	0.308	48	0.64	0.861	21	-8.62	0.15
	Same	155	-3.15		155	-2.86		251	0.40		341	-1.45		405	-0.68	
	Better	158	1.90		158	1.9		105	-2.68		41	-1.37				
Social Support	Worse	118	-3.30	0.661	117	-2.86	0.736	72	3.13	0.10	48	0.26	0.408	21	-1.62	0.66
	Same	155	-1.88		155	-2.18		251	-0.85		341	-1.25		405	1.18	
	Better	158	-0.34		158	-0.24		105	-6.19		41	-7.32				
Coping	Worse	118	-1.13	0.429	117	-0.92	0.475	72	0.56	0.271	48	-4.42	0.189	21	-1.39	0.59
	Same	155	1.34		155	1.18		251	2.42		341	2.05		405	1.27	
	Better	158	2.58		158	2.58		105	-1.98		41	0.00				
Satisfaction with Treatment	Worse	118	0.9	0.448	117	1.43	0.359	72	1.74	0.237	48	0.38	0.547	21	1.00	0.90
	Same	155	-1.65		155	-2.06		251	-1.34		341	0.04		405	0.42	
	Better	158	2.48		158	2.45		105	4.23		41	3.03				

Conclusions: LupusPRO summary HRQOL and HRQOL domains show responsiveness to changes in patient-reported and physician assessed changes in health status in this observational study among Chinese SLE patients. Results support inclusion of LupusPRO into larger clinical trials to allow for robust estimates of responsiveness.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.3943

THU0265 IDENTIFYING THE LINKS BETWEEN IRON DEFICIENCY AND FATIGUE IN ADOLESCENTS AND YOUNG ADULTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

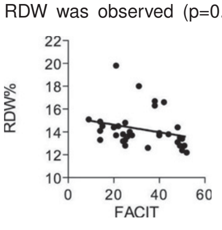
C. Wincup[1], Y. Ioannou[1], T. Richards[2], F. Josephs[1], L. Suffield[1], A. Rahman[1]. [1]*Department of Rheumatology;* [2]*Division of Surgery & Interventional Science, University College London, London, United Kingdom*

Background: Between 80–90% of patients with systemic lupus erythematosus (SLE) report fatigue to be the single most troublesome and debilitating symptom of their illness.[1] Recent studies have found that functional iron deficiency and iron deficiency anaemia have been linked with fatigue and decreased cognitive performance.[2] Increased red blood cell distribution width (RDW) is an early indicator of iron deficiency that can be useful in assessing iron stores in patients with SLE who may have an elevated serum ferritin due to underlying inflammation.

Objectives: To investigate the relationship between early iron deficiency (measured by RDW) and fatigue in adolescents and young adults with SLE.

Methods: Adolescent and young adult patients with SLE were recruited prospectively between November 2016 and January 2017. All patients were asked to complete the Functional Assessment of Chronic Fatigue Illness Therapy (FACIT) Fatigue Scale v4, in which a numerical score between 0–52 is generated. Lower scores indicate more fatigue. Standard measures of lupus disease activity including Erythrocyte Sedimentation Rate (ESR), C-Reactive Protein (CRP), Complement C3 levels, anti-double stranded DNA binding (anti-dsDNA) and SLEDAI were recorded. Haemoglobin (Hb) and RDW were also measured. Anaemia was defined by World Health Organisation criteria (male Hb $<$130g/L and female Hb $<$120g/L). Non-parametric analysis was performed using Spearman's rank with a p-value $<$0.05 felt to be significant.

Results: 33 patients aged between 16.7 and 27.5 years (median age 20) were included. 85% of the patients were female. Their FACIT scores were lower than those published for healthy individuals of the same age group - median 24, IQR 22–44 for SLE vs median 43, IQR 35–48 for healthy. There was no statistically significant correlation between FACIT Fatigue score and SLEDAI (p=0.92), anti-dsDNA (p=0.36), C3 levels (p=0.37), ESR (p=0.30) or CRP (p=0.85). Interestingly a statistically significant negative correlation between FACIT Fatigue score and RDW was observed (p=0.012; r=-0.43). A correlation between FACIT Fatigue score and Hb was noted although this was not statistically significant (p=0.079). 12 of the 33 patients were found to be anaemic (11 female, 1 male). Analysis of the sub-group of 21 non-anaemic patients found FACIT Fatigue Score and RDW continue to show a statistically significant association (p=0.026; r=-0.49).



Conclusions: Fatigue is a common and debilitating symptom described by young patients with SLE. Standard serological and clinical markers of disease activity did not correlate with the burden of fatigue. Increased RDW has been shown for the first time to correlate with increased fatigue in patients with lupus, suggesting that iron deficiency may play a significant role in the manifestation of this troublesome symptom. A trial of therapeutic iron infusions in the treatment of fatigue in SLE is planned.

References:

[1] Tench CM, McCurdie I, White PD, D'Cruz DP. The prevalence and associations of fatigue in systemic lupus erythematosus. Rheumatology 2000;39:1249–1254.

[2] Greig AJ, Patterson AJ, Collins CE, Chalmers KA. Iron deficiency, cognition, mental health and fatigue in women of childbearing age: a systematic review. J Nutr Sci 2013;29;2:e14.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.2440

THU0266 DAMAGE INDEXES IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS AND SECONDARY ANTIPHOSPHOLIPID SYNDROME: DIAPS VS SLICC/ACR DAMAGE INDEX

D. Potarniche[1], D. Mazilu[2], I. Saulescu[2], A. Borangiu[2], L. Groseanu[2], C. Constantinescu[2], V. Vlad[1], F. Berghea[2], V. Bojinca[2], D. Opris-Belinski[2], A. Balanescu[2], D. Predeteanu[2], R. Ionescu[2]. [1]*"Sfanta Maria" Clinical Hospital;* [2]*"Sfanta Maria" Clinical Hospital, "Carol Davila" University of Medicine, Bucharest, Romania, Bucharest, Romania*

Background: Systemic lupus erythematosus (SLE) and antiphospholipid syndrome (APS) are systemic autoimmune diseases that have overlaping irreversible organ damages. Since SLICC/ACR Damage Index (SDI) misses key features of APS, the Damage Index in patients with Thrombotic Antiphospholipid Syndrome (DIAPS) was proposed.

Objectives: To assess the differences in indexes available for measuring organ damage in a cohort of patients with SLE and secondary APS.

Methods: Clinical records of patients with SLE and secondary APS were reviewed. Data on medical history and clinical manifestations were collected. The two damage indexes, SDI and DIAPS, were applied. Comparison between the two indexes was done for each organ system affected.

Results: Sixty five clinical charts were reviewed, 5 had been excluded for incomplete information. SDI and DIAPS was recorded in 60 patients. Patient's mean age was 45.05±14.61 years, with mean disease duration of 9.47±6.96 years. Mean SDI in our cohort was 4,15±2.58 and mean DIAPS – 4.08±3.41. SDI correlated significant to DIAPS (R=0.826, p$<$0.000). Neuropsyhiatric manifestations were found in 25 patients (41.7%). Their mean SDI value was 4.92±2.73 and DIAPS value of 5.52±3.47. DIAPS value was higher in the subgroup of patients with neuropsyhiatric (p=0.006) and respiratory system damage (p=0.037). This difference was not observed regarding SDI value. DIAPS value correlated significantly to neurological (R=0.397, p=0.002) and pulmonary damage (R=0.364, p=0.004), but not to SDI value. No diferrences were observed between the two scores regarding perypheral vascular manifestation (DIAPS p=0.221, SDI p=0.136) and renal involvement (DIAPS p=0.062, SDI p=0.078).

Conclusions: SDI may underestimate APS related damage in patients with SLE and secondary regarding neurological and pulmonary organ involvement. Given the implications for high morbidity and mortality, DIAPS may be the appropriate damage score to be used.

References:

[1] P. Alba et al. Organ Damage and Quality of Life in Antiphospholipid Syndrome. Current Rheumatology Reports. February 2016, 18:7.

[2] Barbhaiya et al. Utility of the Systemic Lupus International Collaborating Clinics (SLICC)/American College of Rheumatology (ACR) Damage Index for Antiphospholipid Antibody (aPL) Positive Patients. [abstract]. Arthritis Rheum 2011;63 Suppl 10:7.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.4384

THU0267 METABOLIC SYNDROME AND HEALTH-RELATED QUALITY OF LIFE IN SYSTEMIC LUPUS ERYTHEMATOSUS

D.P.E. Margiotta, F. Basta, M. Vadacca, G. Dolcini, F. Pignataro, A. Vernuccio, C. Mazzuca, L. Navarini, A. Afeltra. *Unit of Allergology, Immunology and Rheumatology, Università Campus Bio-Medico di Roma, Rome, Italy, Rome, Italy*

Background: Systemic Lupus Erythematosus (SLE) is associated to a huge prevalence and incidence of cardiovascular diseases (CVDs) due to accelerated atherosclerosis. Several evidences demonstrated that metabolic syndrome (MeS) could contribute to CVDs burden in SLE. In general population, MeS components and, according to some reports, MeS itself are associated to worsened Health related Quality of Life (HR-QoL). In SLE patients, a severe decline of HR-QoL has been widely demonstrated.

Objectives: In the study, we evaluated the association between MeS, HR-QoL and QoL-related factors, such as depression, fatigue and physical activity.
Methods: We conducted a cross-sectional study with retrospective evaluation of disease activity, damage and therapies cumulative dosage. MeS was defined according to International Federation of Diabetes (IFD) criteria. All patients were evaluated to explore MeS IFD criteria and other CVD risk factors (familiar history, lifestyle, smoking). SLE disease activity and damage were evaluated using SELENA-SLEDAI and SDI indices, respectively. Disease flares were retrospectively assessed by SFI index. HR-QoL was quantified by SF-36 instrument. We used Beck Depression Inventory (BDI) to assess depression and Facit-Fatigue to evaluate fatigue. Physical activity was quantified using International Physical Activity Questionnaire (IPAQ) and expressed according to categorical IPAQ total score. Patients also completed Pittsburgh Sleep Quality Index (PSQI) exploring sleep pathology.
Results: We enrolled 55 SLE patients (2 male and 53 female). Mean age was 45±12.5. MeS prevalence was 23.6% and obesity (according to IFD definition) was recorded in 36.4% of patients. SLE patients with MeS presented reduced scores in SF-36 summary components MCS and PCS compared to patients without MeS (p 0.002 and p 0.04, respectively). The SF-36 individual components significantly decreased in MeS were the Mental Health, the Physical Rose and the Social Role (p 0.003, p 0.03, p 0.05, respectively). In multiple linear regression the values of MCS was significantly associated only to obesity (p 0.01), while neither MeS it self nor any MeS components were associated to PCS values. BDI score was significantly higher and Facit-Fatigue score was reduced in SLE patients meeting MeS criteria compared to subjects without MeS ($p<0.0001$, p 0.005, respectively). A greater proportion of SLE patients with MeS presented almost mild depression (p 0.03). We found to be physically inactive, according to IPAQ score, the majority of SLE patients with MeS compared to patients without MeS ($p<0.0001$). In multiple logistic regression, factors related to MeS were the Number of flares in the previous one year [OR (95% CI) 13.7 (1.7–107.8)], to have a BDI>13 (to have almost mild depression) [OR 0.05 (0.004–0.87)] and to be physically inactive (IPAQ=1) [OR 33.5 (2.3–496.4)].
Conclusions: HR-QoL seems to be compromised in SLE patients with MeS, especially in mental components. Moreover, SLE patients with MeS often presented depression, are burdened by more severe fatigue and frequently are physically inactive. The presence of MeS in SLE was associated to the number of flare and, above all, to the physical inactivity, while not having depression seems exert a protective effect on MeS.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.6712

THU0268 PREVALENCE AND FEATURES OF CELIAC DISEASE IN PATIENTS WITH SYSTEMIC AUTOIMMUNE DISEASES: RESULTS OF A LARGE MULTICENTER STUDY

E. Bartoloni[1], A. Alunno[1], O. Bistoni[1], L. Cavagna[2], L. Nalotto[3], C. Baldini[4], R. Priori[5], G. Picarelli[5], C. Fischetti[6], F. Franceschini[7], L. Quartuccio[8], F. Carubbi[9], M. Fredi[7], C. Montecucco[2], A. Doria[3], M. Mosca[4], G. Valesini[10], A. Gabrielli[6], S. De Vita[11], R. Giacomelli[9], R. Gerli[1]. *[1]Rheumatology Unit. University of Perugia, Perugia; [2]Department of Rheumatology. University of Pavia, Pavia; [3]Rheumatology Unit. University of Padova, Padova; [4]Rheumatology Unit. University of Pisa, Pisa; [5]Rheumatology Unity. Sapienza University, Roma; [6]University 'Politecnica delle Marche', Ancona; [7]Rheumatology and Clinical Immunology. Spedali Civili of Brescia, Brescia; [8]Rheumatology Clinic. University of Udine, Udine; [9]Division of Rheumatology. University of L'Aquila, L'Aquila; [10]Rheumatology Unit. Sapienza University, Roma; [11]Rheumatology Clinic. University of Udine, Udine, Italy*

Background: Celiac disease (CD) is an inflammatory and immune-mediated gluten-dependent enteropathy occurring in genetically susceptible individuals. CD is recognized to affect between 0.6% and 1% of worldwide population, with wide regional differences. Disease clinical features are protean and highlight the systemic nature of the disease. In recent years, an increased prevalence of CD has been also reported in patients with connective tissue diseases (CTDs). This association may be due to a shared genetic predisposition, to immunological mechanisms and/or exposure to a common triggering event. However, this observation remains controversial since data are usually based on descriptive case reports. Different methods of antibody detection and enrolled population sample size may contribute to result discordance. Moreover, CD diagnosis is often delayed because disease clinical spectrum may be atypical mimicking rheumatologic conditions and autoimmune disease itself may display typical symptoms of CD. Undoubtedly, awareness of CD occurrence in CTDs is important to prevent potential long-term systemic complications related to an unrecognized CD in these patients.
Objectives: To evaluate the prevalence of overt and subclinical CD and features of the disease in a large cohort of patients with systemic lupus erythematosus (SLE), systemic sclerosis (SSc) and primary Sjögren's syndrome (pSS) with a multicenter prospective study involving 9 Italian Rheumatology Units.
Methods: Data from consecutive 580 SLE, 354 pSS and 524 SSc patients were collected. Disease-specific features were registered in patients with known CD. Remaining patients were tested for IgA transglutaminase (Eu-tTG® human IgA new, Eurospital S.p.A., Trieste). Anti-endomysium (EMA) IgA and IgG were tested in IgA tTG positive and borderline patients. Esophagogastroduodenoscopy with duodenal biopsy was proposed in IgA tTG+/EMA+, IgA tTG-/EMA+ and IgA tTG±/EMA+ patients.
Results: CD prevalence was 1,7% in SLE, 7% in pSS and 1,3% in SSc patients. Higher frequency of elevated liver enzymes was detected in SLE-CD and of herpetiform dermatitis in SSc-CD patients in comparison to the other groups ($p<0.05$ for both). Interestingly, pSS-CD and SSc-CD patients were younger and had a lower age at diagnosis in comparison to pSS and SSc without CD ($p<0.05$ for all). Of interest, higher prevalence of CD was detected in SSc patients with diffuse form in comparison to limited SSc (86% vs 14%, p=0.002).
Conclusions: The results of the present large multicenter study confirm higher prevalence of CD in CTD patients, especially in pSS. Screening of CD may be considered in younger patients with CTD and lower age at diagnosis. The strong association of CD with the diffuse type of SSc is of note and suggests that different, still unexplored, pathogenic mechanisms may characterize the two subsets of the disease.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.4388

THU0269 ELECTROCARDIOGRAPHIC NONSPECIFIC ST-T ABNORMALITIES ARE ASSOCIATED WITH HIGHER MODIFIED FRAMINGHAM RISK SCORE IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS WITHOUT CLINICAL CARDIOVASCULAR DISEASE

E. George, T. Perez-Recio, L. Geraldino-Pardilla. *Department of Rheumatology, Columbia University College of Physicians & Surgeons, New York, United States*

Background: Cardiovascular disease (CVD) is a leading cause of mortality in systemic lupus erythematosus (SLE). Traditional CVD risk scores underperform in SLE. Interestingly, a high prevalence of nonspecific ST-T changes (NST-T) has been recently reported in lupus patients[1,2]. These electrocardiographic findings are known to increase the risk for myocardial infarction, coronary artery disease, CVD, and all-cause mortality[3] in the general population, but in SLE this association remains unknown. Therefore, we sought to define the association of NST-T with the modified Framingham Risk Score (mFRS) as a surrogate outcome for CVD[4].
Objectives: To evaluate if NST-T are associated with higher mFRS in SLE patients without clinical cardiovascular disease.
Methods: Adult SLE patients without clinical CVD continuously seen at the Columbia University Lupus Center between April 2016 and January 2017, meeting 1997 American College of Rheumatology classification criteria for SLE were studied. Twelve-lead electrocardiogram (EKG), high sensitivity C-reactive Protein (hsCRP), demographics, disease-specific characteristics, medication use, and CVD risk factors were ascertained. Univariable and multivariable linear regression models were constructed to test the association of NST-T with the mFRS.
Results: Seventy-four lupus patients were studied (baseline characteristics in table 1). In univariable analysis, patients with NST-T had a significantly higher mFRS (0.44, p=0.018). There were no confounders identified in the analysis. However after adjusting for variables associated with the mFRS: smoking, diabetes, hsCRP, Systemic Lupus International Collaborating Clinics/American College of Rheumatology Damage Index [SDI], aspirin use, this association remained statistically significant (0.38, p=0.05). Image 1 shows the association of mFRS with NST-T vs no NST-T.

Age, years ± SD	39±13
Female, n (%)	67 (90%)
Hispanic, n (%)	56 (77%)
African American, n (%)	14 (19%)
Body mass index	30±8.3
Median Disease Duration, years (IQR)	6.5 (4–12)
Median SLEDAI (IQR)	4 (2–8)
Moderate-Severe Disease activity (SLEDAI ≥6), n (%)	23 (31%)
Median SDI, n (%)	0 (0–1)
hsCRP median (IQR)	2.4 (1–6.5)
ESR , Median (IQR)	37 (23–51)
Anti-DNA, n (%)	44 (60%)
Anti-SSA, n (%)	42 (59%)
Anti-Smith, n (%)	21 (30%)
Ever smoker, n (%)	16 (22%)
Hypertension, n (%)	22 (30%)
Diabetes, n (%)	6 (8%)
mFRS, median (IQR)	0.5 (0–1.8)
NST-T abnormalities, n (%)	27 (38%)

Conclusions: Non Specific ST-T changes are independently associated with a higher mFRS in SLE patients without clinical CVD.
References:
[1] Bourré-Tessier J, Urowitz MB, Pineau CA. et al. Electrocardiographic findings in systemic lupus erythematosus: data from an international inception cohort.Arthritis Care Res (Hoboken). 2015 Jan;67(1):128–35.
[2] Geraldino-Pardilla L,Gartshteyn Y, Piña P, et al.ECG non-specific ST-T and QTc abnormalities in patients with systemic lupus erythematosus compared with rheumatoid arthritis. Lupus Sci Med. 2016 Dec 16;3(1):e000168.
[3] Daviglus ML, Liao Y, Stamler J, et al. Association of Nonspecific Minor ST-T