compared to healthy controls ($n=26$) (figure 1a, b). And Tph cells were much higher in active group than those in inactive group (13.21 ± 5.96 vs. 4.19 ± 1.59 , $p < 0.0001$) (figure 1a, c). Secondly, like Tfh cells ($r=0.611$, $p < 0.0001$), Tph cells ($r=0.829$, $p < 0.0001$) were significantly associated with SLEDAI scores (figure 1d). Tph cells were associated with IgG ($r=0.650$, $p < 0.001$) (figure 1e), C3 ($r=-0.528$, $p=0.001$) (figure 1 f), C4 levels ($r=-0.561$, $p=0.001$) (figure 1 g), but not ESR, CRP, IL-2, IL-6, TNF- α , IFN- γ , and IL-17A levels. Furthermore, Tph cells were much higher in lupus patients with arthritis (17.71 ± 10.05 vs. 11.14 ± 6.84 , $p=0.045$), in skin mucous group (18.71 ± 6.08 vs. 10.32 ± 7.32 , $p=0.004$), in pleuritis (20.60 ± 8.87 vs. 11.40 ± 7.24 , $p=0.025$), in pericarditis group (26.65 ± 0.21 vs. 11.58 ± 7.25 , $p=0.006$), in group with haematological involvement (15.51 ± 7.76 vs. 8.97 ± 6.58 , $p=0.010$), when compared to patients without relevant symptoms.

Conclusions: Our data suggest that increased Tph cell proportions seem to have an important role in lupus disease development.

REFERENCE:

- [1] Rao DA, Gurish MF, Marshall JL, Slowikowski K, Fonseka CY, Liu Y, et al. Pathologically expanded peripheral t helper cell subset drives b cells in rheumatoid arthritis. *Nature* 2017;542:110–4.

Acknowledgements: This work is supported in part by grants from the National Natural Science Foundation of China (81701600), and Zhejiang Provincial Natural Science Foundation of China (LQ17H100001, LGF18H100001).

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4281

SAT0463 OLFACTORY IMPAIRMENT IN PATIENTS WITH PRIMARY SJÖGREN'S SYNDROME AND ITS CORRELATION WITH ORGAN INVOLVEMENT AND IMMUNOLOGICAL ABNORMALITIES

X. Xu, L.-Y. Geng, Z.-Y. Chen, J. Liang, L.-Y. Sun. *Department of Rheumatology and Immunology, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nan jing, China*

Background: Recent findings suggest that autoimmune disorders predispose to a diminished capacity to smell. This has been shown for patients with systemic lupus erythematosus as well as for patients with rheumatoid arthritis. However, this problem has not received much attention in primary Sjögren's syndrome (pSS).

Objectives: The aim of the study was to assess the olfactory functions of patients with primary Sjögren's syndrome and to correlate these findings with their disease activity.

Methods: Fifty-two patients with primary SS and 52 age- and sex-matched healthy control subjects underwent clinical and laboratory examination. Olfactory functions were evaluated using olfactory function assessment by computerised testing including the three stages of smell: threshold, identification and memory of the different odours. The disease activity was assessed by the EULAR SS Patient Reported Index (ESSPRI) and the EULAR SS Disease Activity Index (ESSDAI).

Results: All the olfactory scores (odour threshold, odour memory and identification) in patients with pSS were significantly below the scores in the control group (all $p < 0.001$). Multivariable regression analysis revealed that smell threshold score correlated negatively with ESSPRI and ESSDAI (adjusted $R^2=0.381$, $p < 0.05$). Smell threshold score was decreased in pSS patients with anti-SSA antibody compared with those without ($p < 0.05$). Total smell scores were significantly reduced in patients with thyroid involvement ($p < 0.01$).

Conclusions: Our findings indicate that olfactory functions are impaired in pSS patients. There was close correlation between olfactory dysfunction with disease severity and serological abnormalities. Therefore, imperative that physicians should make their patients to be aware of these sensory dysfunctions and educate them on methods to cope with it for better quality of life.

REFERENCES:

- [1] Shoenfeld N, Agmon-Levin N, Flitman-Katzeman I, Paran D, Katz BS, Kivity S, et al. The sense of smell in systemic lupus erythematosus. *Arthritis Rheum* 2009;60:1484–1487.
- [2] Proft F, Steinbach S, Schulze-Koops H, Hundt W, Heinrich P, Gruenke M. Gustatory and olfactory function in rheumatoid arthritis. *Scand J Rheumatol* 2011;40:169–177.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3924

SAT0464 COMPARISON OF DISEASE ACTIVITY SCORES PREDICTING MORTALITY IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS IN COLOMBIA

Y. Santamaria-Alza¹, J.D. Sánchez-Bautista², J. Fajardo-Rivero¹, C.L. Figueroa-Pineda¹. ¹Internal medicine, Industrial University of Santander, Bucaramanga, Colombia; ²Center for infection and inflammation Imaging Research, Centre for Tuberculosis Research, Johns Hopkins University, Baltimore, USA

Background: Systemic lupus erythematosus (SLE) is a disease with multisystem involvement. Throughout history, different activity indices have been developed trying to identify patients who have the flare of the disease. These indexes measure different aspects of the disease. Among the most recognised score is SLEDAI 2 K. Others that had been evaluated is the SLEDAI MEX and the ECLAM. The performance of the measurement of the SLEDAI 2 K is more expensive because of the number of variables evaluated. ECLAM score and the SLEDAI MEX have less number of variables and therefore costs are minor.^{1, 2, 3}

Objectives: To compare the predictive capacity of mortality of three different scores of disease activity (SLEDAI 2 K, SLEDAI MEX, and ECLAM) in a Colombian population with SLE.

To compare the predictive capacity of mortality of three different scores of disease activity (SLEDAI 2 K, SLEDAI MEX, and ECLAM) in a Colombian population with SLE.

Methods: Cross-sectional study, in which descriptive analysis with measures of frequency, central tendency and dispersion were made. Subsequently, mortality prediction analysis of the three scales was performed through the evaluation of the ROC curve. Analysis of classification statistics was done.

Results: A total of 200 patients with SLE were included, with mortality of 11%. The averages of disease activity were: for SLEDAI 2 K was 14.5 with standard deviation (SD) of 9.7, for SLEDAI MEX 9.26 with SD of 5.93 and for ECLAM 4.39 with SD of 2, 28. The area under the curve of the ROC curves was 0.9082, 0.9206 and 0.8917 for the scales SLEDAI 2 K, SLEDAI MEX and ECLAM respectively. Regarding classification statistics, a sensitivity of 36.3% was found for the SLEDAI 2 K scale, specificity was 97.7%, positive predictive value 66.6, negative predictive value 92.5% and correct classification of 91%. For the SLEDAI MEX scale were: Sensitivity 50%, specificity 96.6%, positive predictive value 64.7%, negative predictive value 93.9% and correct classification of 91.5%. Finally, for the ECLAM scale, it was obtained the following results: sensitivity 9.09%, specificity 98.88%, positive predictive value 50%, negative predictive value 89.8% and correct classification in 89%.

Conclusions: It can be observed that the predictive capacity for mortality in the patients evaluated is good with the three different scales. The sensitivity found for the three scales is not optimal for making a promptly medical decision, so later it will be necessary the formulation of a new index in which higher number of patients with SLE can be detected with death risk. An additional relevant result is that the SLEDAI MEX activity index has a similar performance than the SLEDAI 2 K activity index for predicting mortality, with the advantage of being a practical index easy to apply and a lower cost of the evaluation.

REFERENCES:

- [1] Castrejón I, et al. Índices compuestos para evaluar la actividad de la enfermedad y el daño estructural en pacientes con lupus eritematoso: Revisión sistemática de la literatura. *Reumatol Clin* 2014;10(5):309–320.
- [2] Castrejón I, Tani C, Jolly M, Huang A, Mosca M. Indices to assess patients with systemic lupus erythematosus in clinical trials, long-term observational studies and clinical care. *Clin Exp Rheumatol* 2014;32(suppl. 85):S85–S95.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7282

SAT0465

CLINICAL MANIFESTATIONS AND PROGNOSIS OF SLE WITH CLINICALLY SIGNIFICANT ANTIPHOSPHOLIPID ANTIBODIES

Y. Zhang, X. Feng, L. Sun. Department of Rheumatology and Immunology, The Affiliated Drum Tower Hospital of Nanjing University Medical School, Nanjing, China

Background: Antiphospholipid antibodies (aPLs) have been described in 20% >40% of SLE patients, with 50%>70% of patients with SLE and aPL showing the clinical features of APS after 20 years of follow-up¹. It assumes that aPLs-positive SLE patients would have a more severe clinical phenotype and worse prognosis than those without aPLs.

Objectives: We decided to investigate the clinical manifestations and prognosis of SLE with clinically significant aPLs in a multiple centre SLE cohort.

Methods: A follow-up study to investigate the prognosis of SLE, has been conducted in 26 centres across Jiangsu province as described before². SLE patients fulfilled ACR/SLICC criteria. Patients who had ever recorded first admissions and detected aPLs during the 1999±2009 decade were followed and checked for their survival status in 2015. Clinically significant aPL were defined as: positive LA test, aCL IgG/IgM antibodies>99 th percentile and/or aβ2GPI>99 th percentile on two or more occasions at least 12 weeks apart.

Results: 1) Among 1372 SLE patients, 495 patients was reported the aPLs minutely, and 146 cases was with clinically significant aPLs. Compared with aPLs negative SLE patients, the proportion of men, and the rates of oral ulcer, neuropsychiatric involvement, dsDNA, antinuclear antibody and C3 were significantly higher in aPLs positive SLE. (table 1)

	aPLs positive n=146	aPL negative n=349	P
Gender (male)	5	32	0.017
Oral ulcer	29	44	0.047
Thromboembolism	16	18	0.031
Neuropsychiatric	14	20	0.000
C3 decrease	119	248	0.015
Anaemia	109	214	0.005
ANA positive	138	317	0.048
Anti dsDNA positive	83	169	0.009

2) There were 20 deaths in aPLs positive SLE group and 52 deaths in aPLs negative SLE group during the average follow up of 7.38±0.56 years and 7.54±0.47 years respectively. There was no significant difference in survival curves by Kaplan Meier survival analysis (p=0.776). (Picture 1)

3) Multivariate Cox regression analysis revealed that long time of diagnosis (HR 4.205, p<0.05), SDI>1 in admission (HR 11.982, p<0.01), neuropsychiatric involvement (HR 2.826, p<0.05), and increased serum creatinine (HR 8.403, p<0.01) were independent predictors of mortality. (table 2)

factors	Univariate			Multivariate		
	HR	95% CI	P	HR	95% CI	P
Time of diagnosis>1 year	5.26	2.24–12.32	0	4.20	1.06–16.56	0.04
SDI≥1 on admission	4.37	1.67–11.40	0.003	11.98	2.85–50.25	0.001
Neuropsychiatric	4.52	1.89–10.84	0.001	2.82	1.01–7.85	0.048
Increased serum creatinine	4.39	1.87–10.30	0.001	8.40	2.20–32.04	0.002

Conclusions: In this study, we observed that around one-third of patients had clinically significant aPLs, and such autoantibody positivity was associated with a different clinical and serological profile. However, the mortality between aPLs

positive and negative SLE patients had no significant difference. SLE patients presented with vital organ damages rather than active disease at initial hospitalisation are likely to have a poor outcome, especially neuropsychiatric involvements and renal insufficiency.

REFERENCES:

- [1] Levine JS, Branch DW, Rauch J. The antiphospholipid syndrome. *The New England journal of medicine* 2002;346:752–763.
- [2] Feng X, Pan W, Liu L, et al. Prognosis for Hospitalized Patients with Systemic Lupus Erythematosus in China: 5-Year Update of the Jiangsu Cohort. *PLoS One* 2016;11:e0168619.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5540

SAT0466

SERUM VITAMIN D DEFICIENCY IS ASSOCIATED WITH ACTIVE RENAL DISEASE IN SYSTEMIC LUPUS ERYTHEMATOSUS

Y.-J. Park¹, I.-W. Baek², K.-J. Kim¹, W.-U. Kim³, C.-S. Cho². ¹Internal Medicine, ST Vincent Hospital, The Catholic University of Korea, Suwon; ²Internal Medicine, Yeouido St. Mary's Hospital, The Catholic University of Korea; ³Internal Medicine, St. Mary's Hospital, The Catholic University of Korea, Seoul, Korea, Republic Of

Objectives: 25-hydroxyvitamin D (25(OH)D) deficiency is common in systemic lupus erythematosus (SLE) as well as chronic kidney disease. In this study, we investigated the association of 25(OH)D deficiency and renal involvement in SLE patients.

Methods: Two hundred seventy-two SLE patients and 138 control subjects were enrolled; 102 patients with active nephritis, 42 patients with inactive nephritis, and 128 patients with non-renal disease. Serum 25(OH)D levels were measured, and clinical and laboratory data were obtained from medical records.

Results: Mean serum 25(OH)D levels were significantly lower in SLE patient than control subjects (19.6 ng/ml versus 21.7 ng/ml, p=0.006). Out of 272 patients, 61.8% were vitamin D deficient (defined as <20 ng/ml). Patients with active nephritis had lower serum 25(OH)D levels (16.9 ng/mL) than patients with inactive nephritis (20.2 ng/mL) and without nephritis (21.5 ng/mL) (p=0.030, p<0.001), but there was no difference between the inactive nephritis and non-renal disease. Moreover, serum 25(OH)D levels were positively correlated with complement C3 (γ=0.135, p=0.026) and C4 (γ=0.159, p=0.009), but inversely with anti-dsDNA antibody level (γ=-0.156, p=0.010). Analysis of receiver operating characteristic curve for differentiating active nephritis and non-renal disease revealed an area under the curve (AUC) of 0.676, which is better than those of anti-dsDNA antibody (AUC=0.585, p=0.038) and complement C3 (AUC=0.509, p=0.001), C4 (AUC=0.538, p=0.008).

Conclusions: Vitamin D deficiency is more common in SLE patients with active nephritis, and its level could be a potential marker for active renal disease in SLE. A prospective cohort study is needed to further elucidate the causal relationships over time.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6496

SAT0467

CEREBRAL VENOUS THROMBOSIS OCCURRENCE IN SYSTEMIC LUPUS ERYTHEMATOSUS WITHOUT ANTIPHOSPHOLIPID ANTIBODY SYNDROME: A MONOCENTRIC SERIE OF 10 CASES

Z. Lepine^{1,2}, A. Mathian¹, M. Pineton De Chambrun¹, F. Cohen¹, J. Haroche¹, M. Hie¹, M. Pha¹, Z. Amoura¹. ¹Service de Médecine Interne 2, Centre National de Référence Maladies Auto-Immunes et Systémiques Rares – Lupus et Syndrome des Anticorps Antiphospholipides, Pitié-Salpêtrière Hospital, Paris; ²Neurology, Purpan Hospital, Toulouse, France

Background: Cerebral venous thrombosis (CVT), which includes cerebral vein and dural sinus thrombosis, is a rare disorder that can lead to significant morbidity and mortality. Its occurrence in SLE in the absence of APS has been rarely reported. In this study we aimed to describe a cohort of SLE patients suffering from CVT without APS.

Methods: We collected retrospectively clinical and biological data of patients with confirmed CVT in the Pitié-Salpêtrière cohort of SLE (n=1352 patients). Patients fulfilled ACR SLE criteria. The diagnosis of CVT was confirmed by brain imaging studies. Exclusion criteria were patient with a lupus anticoagulant or IgG/IgM anti-cardiolipin antibodies or anti-β2 glycoprotein-1 abs. We searched on PUBMED database for case report of this association published in English until 31 August 2017. Lupus flares were defined according the SELENA Flare instrument.

Results: We included 10 patients (8 women and 2 men). The median (range) age at diagnosis of CVT was 28 years.⁹⁻⁵³ The CVT occurred with a median delay of 4