Bristol, Speakers bureau: Abbvie, Pfizer, Roberta Priori: None declared, Alessia Alunno: None declared, Guido Valesini: None declared, Roberto Giacomelli Grant/research support from: Actelion, Pfizer, Speakers bureau: Abbvie, Roche, Actelion, BMS, MSD, Ely Lilly, SOBI, Pfizer, Roberto Gerli: None declared, Chiara Baldini: None declared, Athanasios Tzioufas: None declared, Salvatore De Vita Consultant of: Roche, Human Genome Science, Glaxo Smith Kline and Novartis

DOI: 10.1136/annrheumdis-2020-eular.3689

THU0266 RESILIENCE IN WOMEN WITH PRIMARY SJÖGREN'S SYNDROME

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Background: Resilience is the ability to react positively to stressful life events, a multidimensional feature that varies in relation to context, time, age, sex, culture and personal experience, appearing among the most important traits in patients suffering from rheumatic diseases¹. Several studies focus on patients with RA and SLE and the role of resilience in the respective clinical manifestations, as well as in the development of anxiety and depression^{2,3}. Conversely, the data available regarding patients with primary Sjögren's Syndrome (pSS) are limited.

Objectives: To assess, in women with pSS (classified according to the criteria of Vitali et al.⁴), the relationship between resilience and anxiety, depression, health, fatigue, physical activity and quality of life in relation to disease activity and duration and in consideration of demographic, job and cultural characteristics.

Methods: 74 female patients with pSS afferent to the dedicated clinic of the University Hospital Policlinico Umberto I of Rome were recruited. Resilience was assessed by administering the Italian validated version of the Resilience Scale (RS-14)⁵ consisting of 14 items, each of which is assigned a score from 1 to 7, with a range from 14 to 98. Higher scores relate to greater resilience. ESSDAI (EULAR Sjögren's syndrome disease activity index), ESSPRI (EULAR Sjögren's Syndrome Patient Reported Index), SSDDI (Sjögren's Syndrome Disease Damage Index) were assessed and EuroQol / GH EQ VAS (visual analogue scale), HADS (Hospital Anxiety and Depression Scale), SF-12 (Short-form 12 health survey), FAS (Fatigue Assessment Scale), IPAQ (International Physical Activity Questionnaire), FACIT-F (Functional Assessment of Chronic Illness Therapy – Fatigue) questionnaires were submitted. Educational qualifications and job were also considered. The statistical analysis was carried out by means of Spearman's correlation.

Results: No relationship was found between resilience, systemic disease activity, disease duration, patient-reported symptoms and damage. Furthermore, no apparent link was found between socio-demographic characteristics, employment and resilience. Conversely, an inverse relationship was found between resilience and mood disorders ($p=0.0379$), with greater resilience associated with a better perception of quality of life ($p=0.0232$) and general health ($p=0.0002$), mainly mental ($p=0.0001$) than physical ($p=0.0035$), as well as less fatigue ($p=0.0079$) and more physically active lifestyle ($p=0.0012$).

Conclusion: For the first time, the role of resilience in women with pSS in relation to their disease and other individual parameters was assessed. The most resilient patients are less depressed and show better perception of their health. Greater resilience tends to correlate with less anxiety, physical and mental fatigue and a more active lifestyle, while there was no relation between resilience value, active disease and socio-demographic features.

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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.4757

THU0267 SERUM IGG2 LEVELS PREDICT VERY LONG-TERM PROTECTION FOLLOWING PNEUMOCOCCAL VACCINE IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

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Background: Systemic lupus erythematosus (SLE) patients are at increased risk for *Streptococcus pneumoniae* infection. Although pneumococcal vaccination is an attractive method to prevent invasive pneumococcal infection, vaccination coverage remains dramatically low in SLE. Moreover, the efficacy of vaccination may be reduced in SLE patients and sequential pneumococcal vaccination using new conjugated pneumococcal vaccines in combination with 23-valent pneumococcal polysaccharide vaccine (PPV23) is now advocated. However, limited study directly addressed the immune efficacy of such prime-and-boost strategy in SLE

Objectives: We aimed to measure the immunological efficacy of the sequential pneumococcal vaccination using PCV13 in combination with PPV23 and identify factors associated with long-term immune protection following vaccination in SLE.

Methods: SLE patients received PCV13 vaccine followed by PPSV23 vaccine 8 weeks later. Immune protection, defined by an antigen-specific IgG concentration $\geq 1.3 \mu\text{g/mL}$ for at least 70% of 7 pneumococcal serotypes (4, 6B, 9V, 14, 18C, 19F, 23F), was assessed at baseline, 2 months, 12 months, and 36 months, defining very long-term protection.

Results: 21 (40[25-75] years; 85.7% female) SLE patients received the sequential PCV13/PPV23 vaccines. Only 10 (47.6%) showed a sustained immune protection against pneumococcal infection 36 months after PCV13 shot (very long-term protected, VLTP). Eleven patients had no long-term protection (NLTP) with a seroconversion that never ($n=6$) or only transiently ($n=5$) occurred. SLE disease features, treatment received and immunological characteristic did not differ between VLTP and NLTP patients except for a lower serum IgG2 levels in NLTP (1.45 [1.30, 1.82] vs 3.30 [2.92, 4.44] g/L, $p<0.001$). Noteworthy the ROC curve showed that the serum IgG2 level before vaccination (AUC 0.95 [95% CI: 0.84-1]; $p=0.004$) was predictive for very long-term protection. A baseline serum IgG2 level of $2.125 \mu\text{g/mL}$ or more showed a sensitivity of 100% and a specificity of 90.9% for very long-term protection

Conclusion: The benefit of sequential PCV13/PPV23 vaccination in SLE is limited. Baseline IgG2 serum level before vaccination is strongly indicative of very long term protection following vaccination

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.783

THU0268 NEURO-DEVELOPMENTAL OUTCOME IN CHILDREN BORN TO MOTHERS WITH SLE AND APS

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Background: Systemic Lupus erythematosus and antiphospholipid disease are very common autoimmune diseases in women at reproductive age.

Objectives: Evaluate the neuro-developmental outcome in children born to mothers with SLE or APS and to assess and characterize memory impairment in children's born to mother with systemic lupus erythematosus or APS using children's memory scale and the relation between tetrahydrobiopterin concentration range of children with developmental and neurological disorders.

Methods: Women attending rheumatology clinics University of Assut, SLE patients were eligible if they met the American College of Rheumatology (ACR) criteria for SLE and APS prior to pregnancy, and had at least one live birth following SLE diagnosis. Maternal history Data collected using a structured format that included medical and obstetric history. A detailed history of medication exposures and the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) during pregnancy was obtained. Offspring history Medical and developmental histories of the offspring including antenatal, delivery, prenatal and pediatric histories, as child's cognitive, physical or social maturity compared with established age-appropriate norms. Speech or hearing delays, diagnosis of attention- deficit hyperactivity disorder (ADHD), or any special educational needs (eg, occupational or speech therapy, behavioral counseling) was recorded. Assessment and characterization of memory impairment using children's memory scale by neurologists. Tetrahydrobiopterin was measured by ELISA compared to children born to control healthy subjects of the same age and sex.

Results: Data on 38 mothers and 60 offspring were analysed: ADHD was reported for 15 of 60 (25%) offspring. Recent memory delay was detected in 93% (14/15) Speech delay 40% (6/15). Maternal APS history was significantly associated with increased use special educational need among offsprings, including after adjustment for lupus anticoagulant (LA) positivity (39.4% for delays age >2 years; $p<0.05$). Anticardiolipin and anti-BETA2GP1 were not detected to be associated with delays. Recent memory delay was associated with increased Tetrahydrobiopterin level ($P=0.01$).

Conclusion: The prevalence of neurodevelopmental abnormalities in children born to mothers with SLE or APS seems to be higher than normal population and more educational attention is important in these children, and need long-term follow-up.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.240

THU0269

CLINICAL COMPARISON OF NEW CRITERIA FOR SYSTEMIC LUPUS ERYTHEMATOSUS IN A COLOMBIAN COHORT

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Background: Due to heterogeneity of the disease, there has been several classification criteria for Systemic Lupus Erythematosus (SLE). These have considered the knowledge obtained through the years and have strived for increased sensibility and specificity. Recently, both EULAR and ACR have proposed new criteria for disease classification that mandate a positive ANA result to apply the criteria.

Objectives: To compare the 2019 EULAR/ACR classification criteria (1) with the Systemic Lupus International Collaborating Clinics (SLICC) 2012 classification criteria (2) and the American College of Rheumatology (ACR) 1997 classification criteria in a Colombian cohort (3).

Methods: A cross-section retrospective study was done with data collected between 2014 and 2018 from a population diagnosed with SLE by a group of rheumatology in an autoimmunity referral centre and followed for one year. The new 2019 EULAR/ACR classification criteria were applied to the information collected from the clinical records. Three sets of criteria were compared using Cohen's kappa coefficient and concordance was evaluated

Results: We obtained information for 480 patients, in this analysis were mostly females (96%). Anti-nuclear antibody (ANA) results were available for 95% of the patients. According to SLICC classification criteria the diagnosis of SLE was definite in 92% of patients, 81% by ACR 1997 and 89% using ACR/EULAR 2019. The sensibility was 93% and 97% for ACR/EULAR 2019 and SLICC 2012, and the specificity was 67% and 48% respectively. The concordance analysis between the two sets of criteria showed agreement of 92% (kappa 0.52 p<0.001) in the whole group.

Conclusion: We found good agreement between SLICC 2012 criteria and EULAR/ACR 2019 classification criteria. In contrast with previous studies, where the new criteria had a sensitivity of 96.1% and specificity of 93.4%, in our cohort the sensitivity was maintained in 93% but the specificity decreased to 67%. A possible explanation could be the ANA negativity that was seen in 5% of the patients and would force to discard patients with false negative results. Despite this, the agreement of the criteria is good and should continue to be applied in our population, without abandoning the expert's clinical criteria.

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Disclosure of Interests: Sebastian Herrera Speakers bureau: academic conference, Juan camilo Diaz-Coronado: None declared, Deicy Hernandez-Parra: None declared, Yecenia Durango-Durango: None declared, Carolina Perez-Rios: None declared, Marcela Posada-Velásquez: None declared, Jennifer Rojas-Londoño: None declared, Manuela Vallejo-Patiño: None declared, Katherine Marín: None declared, Carlos Guerrero-Calderón: None declared, Sara Jaramillo: None declared, Veronica Usuga-Graciano: None declared, Martha Isabel López-Flórez: None declared, Camilo Restrepo-Raigosa: None declared, Juan Pablo Restrepo-Hincapié: None declared, Catalina Carvajal-Naranjo: None declared, Sarita Restrepo-Upegui: None declared, Ricardo Pineda Tamayo: None declared

DOI: 10.1136/annrheumdis-2020-eular.6527

THU0270

ONLINE INTERACTION AND FREQUENT SELF-ASSESSMENTS PROMOTED TREAT-TO-TARGET FOR SLE VIA EMPOWERING PATIENTS: A COHORT STUDY FROM CHINA BY SMART SYSTEM OF DISEASE MANAGEMENT (SSDM)

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Background: Treating to target (T2T) is routine in RA, but no comparable standard has been defined for SLE. In 2015, the definition of Lupus Low Disease Activity State (LLDAS) was generated by Asia-Pacific Lupus Collaboration, and the preliminary validation demonstrated its attainment to be associated with improved outcomes in SLE. A SLEDAI-2K score lower than 4 is the main criteria for LLDAS. SSDM is an interactive mobile disease management application, including application systems for both the doctors and patients.

Objectives: To evaluate the patterns of T2T and related influential factors among SLE patients after applying SSDM in real world.

Methods: Patients were trained to master SSDM by healthcare professionals in clinics. The first assessment for SLEDAI-2K was performed as the baseline. Patients were required to perform repeated self-assessments after leaving the clinics. The data is synchronized to the SSDM of authorized rheumatologists. Based on the patients' data, rheumatologists will provide medical advices to the patients.

Results: From July 2015 to Jan 2020, 32,559 SLE patients enrolled in SSDM. The mean age is 36.35 years old and median disease duration is 3.85 years. Among them 1,937 SLE patients from 134 hospitals across China were followed up for more than 12 months, and the demographics were summarized in table 1.

Table 1.

Baseline/Final follow-up	n	%	x <= 4	%	5 <= x <= 9	%	10 <= x <= 14	%	15 <= x	%
x <= 4	1040	53.69%	820	78.85%	135	12.98%	50	4.81%	35	3.37%
5 <= x <= 9	357	18.43%	230	64.43%	60	16.81%	32	8.96%	35	9.80%
10 <= x <= 14	222	11.46%	120	54.05%	38	17.12%	40	18.02%	24	10.81%
15 <= x	318	16.42%	156	49.06%	49	15.41%	47	14.78%	66	20.75%
Total	1937	100%	1326	68.46%	282	14.56%	169	8.72%	160	8.26%

The ratio of T2T achievers was 53.69% (1,040/1,937) at the baseline and improved significantly to 68.46% (1,326/1,937) after a 12-month follow-up, p<0.01. Among T2T achievers at the baseline, 78.85% (820/1,040) maintained T2T, and 21.15% (220/1,040) relapsed. Of patients who didn't achieve T2T at baseline, 56.41% (506/897) of the patients achieve T2T after 12-month follow-up.

The impact of the online interaction and the frequency of self-assessment for SLEDAI-2K on T2T has been analyzed. Compared with 1,475 patients who didn't interact online with their physicians through SSDM, 462 patients with online interaction achieved higher rate of T2T improvement (19.48% vs 13.29%, p<0.05). The more frequent of the self-assessments being performed by patients, the higher improvement of T2T rate will be. The improvement rates of T2T in the subgroups which self-assessed with SSDM by quarterly, bimonthly and monthly were 8.56%, 16.14% and 23.24% respectively. The improvement rate (y) of T2T was positively correlated with the frequency of self-assessment for SLEDAI-2K(x) independently, r = 0.9998. (Figure 1)

Conclusion: After proactive disease management via SSDM for more than 12 months, the rate of T2T in SLE patients increased significantly. Online interaction between patients and physicians contributed in promoting T2T improvement rate. The patients who performed more self-assessments through SSDM had higher probability of T2T achievement. SSDM is a valuable tool for long term SLE follow-up through empowering patients.