sample (probing short-term memory and attention), continuous performance test (probing sustained attention), mathematical processing, and memory search (probing working memory). Anxiety and depression were assessed by the Hospital Anxiety and Depression scale (HADS). The total and individual-domain throughput scores (TPS) were compared between both groups using Student's *t* test. The presence of cognitive dysfunction, defined as total TPS <1.5 SD below the mean TPS of HC, was compared between both groups by χ^2 test. Within the SLE group, the relationships between prednisolone dose (daily [mg] or cumulative [gm]) and individual-domain TPS were first explored by bivariate correlations. Independent association between glucocorticoid dose and individual-domain TPS that showed significant bivariate associations with prednisolone dose was determined by multiple linear regression, with adjustment for potential clinically- and demographically-important cofounders.

Results: Ninety-six SLE patients and 96 HC were studied, 16 men (16.7%) were present in each group. The mean age $\pm$ SD of SLE patients and HC were 36.57 $\pm$ 11.4 and 33.61 $\pm$ 10.6 years ($p=0.073$), respectively. The mean $\pm$ SD duration of SLE, SLEDAI and daily and cumulative prednisolone doses were 98.85 $\pm$ 87.4 months, 3.37 $\pm$ 3.4, 11.01 $\pm$ 13.6mg and 16.92 $\pm$ 18.5gm, respectively. SLE patients had a significantly higher mean HADS-anxiety score than HC (6.25 $\pm$ 3.3 vs 4.62 $\pm$ 3.0, $p=0.001$) while the mean HADS-depression score was comparable between both groups ($p=0.093$). SLE patients had significantly shorter duration of education (12.92 $\pm$ 3.92 vs 15.86 $\pm$ 2.5 years, $p<0.001$), scored significantly worse across all the 8 ANAM domains, had a significantly lower mean total TPS [337.23 $\pm$ 94.4 vs 395.62 $\pm$ 87.6, $p<0.001$] and were significantly more prevalent of cognitive dysfunction as compared to HC (25.0% vs 7.3%, $p=0.001$). In SLE patients, a statistically significant negative correlation was found between daily prednisolone dose and TPS of mathematical processing ($r=-0.248$, $p<0.015$), while no significant correlation between cumulative glucocorticoid dose and any of the individual ANAM domain was found. In multivariate regression, daily prednisolone dose remained independently associated with lower TPS of mathematical processing ($\beta=-0.208$, $p=0.024$) after adjusting for age, gender, SLEDAI, total HADS, total TPS, serum albumin and 25-OH hydroxyvitamin D levels and duration of education in SLE patients.

Conclusion: Daily, but not cumulative glucocorticoid dose has an independent impact on the working memory of SLE patients. While how daily glucocorticoid dose affects working memory mechanistically requires further investigation, its impact on neurocognitive assessment in SLE patients cannot be underestimated.

Disclosure of Interests: None declared

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FRI0245 RHEUMATOID FACTOR IN IGA, IGG AND IGM IMMUNOGLOBULIN CLASSES IN PRIMARY SJÖGREN'S SYNDROME

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Background: Primary Sjögren's syndrome (pSS) is an autoimmune disease with the autoantibodies overproduction, including rheumatoid factors (RF). An association of RFs with the disease activity has been already described, with RFs in IgA, IgG immunoglobulin classes suggested as potential biomarkers of immunological/clinical pSS features.

Objectives: Examining correlations of RF in IgM, IgA and IgG immunoglobulin classes with other autoantibodies, dry eye tests and histopathological assessment (focus score) of salivary gland inflammation.

Methods: We studied 76 patients, mean age 53 (SD=13); (67Female/9Male) with pSS diagnosis (criteria ACR/Eular 2017); mean disease duration from diagnosis 2.24 year. Laboratory tests performed: ESR, C-reactive protein(CRP), concentrations of gamma globulins (g/dl), RF serum concentration assessed using Immulisa Enhanced™ RF IgA, IgG, IgM Antibody ELISA IMMCO Diagnostics, Inc. As positive result of the RF-IgA and RF-IgG concentration > 25 EU/mL was considered, as positive RF-IgM > 12.5 EU/mL; a highly positive result set as > 100 EU/mL. Anti-Ro/SSA, and anti-La/SSB antibodies were detected by semiquantitative dot blot method. The eye dryness and keratoconjunctivitis sicca were confirmed with Schirmer's test (score of less than 5 mm/5') and the ocular staining score (OSS) using lissamine green and fluorescein staining and biopsy of minor salivary gland with the histopathological evaluation

(focus score-FS). The study was approved by the proper ethics committee. Differences between groups were analyzed with U Mann-Whitney test (continuous variables). Correlations between quantitative variables were assessed with the Spearman correlation coefficient. Statistical significance was set at $p<0.05$.

Results: The detection of RF in examined sera: RF- IgA: positive(+) 66% (n=50), negative (-) 34%(n=26); highly positive (++) 51%(n=39); RF-IgG: + 55% (n=42), - 45%(n=34), ++ 9% (n=7); RF-IgM: + 88% (n=67), - 12% (n=9), ++ 55% (n=42). In comparison of patients' groups: i/RF-IgA (+) vs. RF-IgA(-) : no difference in term of FS, OSS and Schirmer's test; in RF-IgA(+) group significantly higher anti SS-A antibodies ($p=0.002$); a significant difference in anti SS-A antibodies level ($p=0.028$) RF-IgA(++) and lower positive group (less than 100EU/mL); ii/RF-IgM(+) vs. RF-IgM(-): RF-IgM (+) significantly higher anti -SS-A antibodies ($p=0.007$); iii/RF-IgG (+) vs. RF-IgG(-): RF-IgG(+) significantly higher anti SS-B antibodies ($p=0.015$). Positive correlation was found between RF-IgA(+) and RF- IgG(+) ($\rho=0.647$) and RF- IgM(+) ($\rho=0.669$); RF-IgG(+) and RF-IgM(-) ($\rho=0.429$). Surprisingly no correlations found in studied group between concentrations of RF- IgA, IgG and IgM and WBC, C4, C3 complement component, FS, OSS, and Schirmer's test.

Conclusion: 1. rheumatoid factors in main three classes of gammaglobulins, particularly RF-IgA, strongly associate with anti-SSA and anti-SSB autoantibodies production. 2. RF - IgM and RF- IgA dominate over RF-IgG in pSS. 3. both RF-IgA and RF-IgM may be used as diagnostic tool for pSS. 4. Further research is needed to distinguish activity and role of RF- IgA based upon its presence in serum vs. in saliva.

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FRI0246 CELLULAR/FIBROCELLULAR CRESCENT IS A 52-WEEK AND LONG-TERM POOR PROGNOSTIC FACTOR OF ACTIVE LUPUS NEPHRITIS

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Background: Lupus nephritis (LN) is one of the most serious manifestation of systemic lupus erythematosus (SLE), associated with poor prognosis. LN exhibits a variety of histological findings including both inflammatory lesions such as crescent formation and immune complex (IC) deposition lesions. In current INS/RPS 2003 classification, all of them are classified as class III, IV and V. Recently, in the 2016 update of Oxford classification of IgA nephropathy, crescent formation (C) was added as an independent prognostic factor. Further examination of pathological and clinical prognostic factors for LN is required.

Objectives: To identify renal remission rate and clinico-pathological characteristics associated with renal non-remission at 52 weeks (52w) in LN patients

Methods: A single center retrospective study. We enrolled Japanese 152 patients of LN class III, IV, and V those who could observe for 52 w out of 274 SLE cases performed renal biopsy in our department between 1995 to 2017. After 52w after biopsy, they were classified as complete remission (CR), partial remission (PR) and non-remission (NR) according to ACR and LUNAR remission criteria by estimated glomerular filtration rate (eGFR) or serum creatinine (sCr) and proteinuria. Overall renal remission is defined as RR (CR + PR). The primary endpoint was the RR achieving rate, and the secondary endpoints were the baseline histological and clinical factors related to NR. Clinical factors: albumin (alb), IgG, C3, C4, CH50, anti-nuclear antibodies (Abs), anti- dsDNA Abs, anti-Sm Abs, anti-RNP Abs in the sera, complete blood count, urinalysis, presence of comorbidities (antiphospholipid antibody syndrome, hypertension), disease activity score (SLEDAI and BILAG score) and therapeutic drug [prednisolone (PSL), intravenous cyclophosphamide (IVCY), etc]. Histological factors: endocapillary proliferation, cellular/fibrocellular crescents, wire-loop lesion, hyaline thrombi, karyorrhexis, tuft necrosis, segmental sclerosis, global sclerosis, interstitial inflammation and vascular lesion.

Results: Baseline data: mean age 39 years, 135 females, 18 men, histological class III, 53 cases, IV: 58 cases, pure V: 12 cases, III/IV + V: 30 cases. At 52w after biopsy, SLEDAI (16 → 2), BILAG (17 → 2) score is significantly decreased. Dose of PSL was reduced (48 → 9 mg). At 52w, all cases were classified as RR (125 cases, 82%) and NR (27 cases, 18%) by ACR/LUNAR remission criteria. Surprisingly, all cases of pure V reached remission. Class III or IV LN (RR 114 cases; 91% vs NR 27 cases; 100%, $p = 0.01$) and cellular/fibrocellular crescent formation (RR 51 cases; 40% vs NR 18 cases; 66% $p = 0.01$) were significantly higher in NR. Clinically, long disease duration ($p = 0.02$), coexisting hypertension (RR 7 cases; 6% vs NR 9; 33%, $p < 0.01$) and TMA (RR 1 case; 0.7%, NR 2 cases; 7%, $p = 0.02$), baseline urine protein (RR 1.5g vs NR 2.2g, $p < 0.01$), baseline low WBC ($p = 0.03$), baseline low IgG ($p = 0.02$) were detected. About therapeutic drugs, IVCY significantly improved remission rate (RR 84 cases 68% vs. NR 9 cases 41%, $p = 0.03$). After long-term observation, 52w NR was significantly lower eGFR level (RR 81 vs NR 50, $p < 0.01$, median observation period of 138 months). 3 cases developed ESRD and all of those cases show crescent formation.

Conclusion: As histological factors contributing to 52w-NR, class III or IV and crescent formation were detected. This result suggested that the therapeutic response was relatively better in cases with IC deposition lesions than those with inflammatory lesions. In LN, more-detailed pathological classification which could extract crescent formation might be required.

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FRI0247

PROGNOSTIC ROLE OF TUBULO-INTERSTITIAL INFILTRATE IN PATIENTS AFFECTED BY LUPUS NEPHRITIS

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Background: Lupus nephritis (LN) occurs up to 50% of patients affected by Systemic Lupus Erythematosus (SLE) representing one of the major causes of morbidity and mortality in lupus population (1). Kidney biopsy is a fundamental tool for the diagnosis and management of lupus nephritis. The presence of pathological changes such as inflammatory infiltrate in glomeruli and/or in tubulo-interstitium are relevant in terms of prognosis and response to therapy (2).

Objectives: The aim of the study was to correlate the clinical and laboratory findings and the response to therapy with presence of glomerular and/or interstitial infiltrate in kidney section of patients with a biopsy-proven LN.

Methods: Kidney sections of patients with SLE undergoing a renal biopsy for diagnostic purpose were studied; samples were classified according to the 2004 International Society of Nephrology/Renal Pathology Society classification criteria (3). Clinical, laboratory and histological data were collected in a standardized, computerized and electronically filled form, including demographics, past medical history, autoantibody profile, previous and concomitant treatments. We assessed the disease activity by using SLEDAI-2K and remission in response to therapy was defined as the absence of renal impairment and as a score 0 of renal SLEDAI (proteinuria <500mg/24 hours, absence of hematuria and urinary casts) (4). All patients underwent to cyclophosphamide or mycophenolate treatment (5, 6). Two to three micron thick sections from paraffin-embedded blocks routinely stained with hematoxylin-eosin (HE) and Periodic acid-Schiff (PAS) for light microscopy investigation were re-evaluated. Predictive value of the presence of interstitial infiltrate on renal remission was evaluated. The results were expressed as mean ± standard deviation (SD) depending on the distribution of the variables. The values of $P < 0.05$ were considered statistically significant.

Results: We evaluated 53 kidney samples from patients with LN (F:M = 51:2, mean age at biopsy 35±7.7 years; mean disease duration at date of biopsy 8±8.3 years). Class IV (46%) was the most common class

followed by class III (29%), class II (13%), class V (11.5%) and class VI (0.5%). Tubulo-interstitial infiltrate was found in 33 kidney specimens, with germinal centres (GC)-like features in 13 renal samples (Figure 1). During the follow up (6±3.8 years) the tubulo-interstitial infiltrate, either diffuse or with GC-like feature, was negatively correlated with renal remission ($P=0.03$).

Conclusion: Assessment and management of patients with LN are greatly facilitated by information obtained by renal biopsy. In the present study we demonstrate that the presence of tubulo-interstitial infiltrate is associated with a worse outcome in response to therapy. Our data highlight the importance of tubulo-interstitium damage, scarcely considered in the current classification criteria, since it represents a key point to predict long-term prognosis.

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Figure 1

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FRI0248

ANTI-CYCLIC CITRULLINATED PEPTIDE ANTIBODY IN PRIMARY SJÖGREN SYNDROME: A MARKER OF EROSIONS ON HIGH RESOLUTION ULTRASOUND OF HANDS AND WRISTS

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Background: Cyclic citrullinated peptides antibodies (anti-CCP) were described in primary Sjögren's syndrome (pSS). However, its possible associations with joint erosions, synovitis and tenosynovitis on high resolution ultrasonography of hands and wrists (US) in pSS are uncertain.

Objectives: To assess in pSS the US findings, and their possible associations with anti-CCP.

Methods: We have evaluated 97 consecutive pSS patients (2016 ACR/EULAR Classification Criteria), of both sexes, aged 18-76 years, and without meeting the 1987 ACR classification criteria for rheumatoid arthritis (RA). Twenty RA patients (disease duration <5 years, and without joint deformities), and 80 healthy controls with comparable mean age, gender and ethnicity were also included in a case-control study. Clinical evaluation was performed through a standardized protocol with interview and physical examination. Disease activity was measured according to EULAR Sjögren's Syndrome Disease Activity Index (ESSDAI). US was done in 36 joints and 36 tendon areas of wrists and hands, by the same rheumatologist with expertise in ultrasound, and blinded to autoantibody profile. Patients and controls also underwent X-ray of hands and wrists. Anti-CCP was determined by ELISA using a commercially available kit.

Results: Frequency of tenosynovitis on US was higher in the pSS group than in healthy controls (36.1 vs. 3.8%, $p < 0.001$). Moreover, the number of tenosynovitis was higher in the former group ($p < 0.001$). Importantly, the presence of erosions on US (27.8 vs. 7.5%, $p = 0.001$) and their number ($p = 0.005$) were greater in the pSS group than in healthy controls, with predominance of small erosions ($p = 0.015$). Comparative analysis between RA and pSS groups revealed that the frequency ($p < 0.001$) and number ($p < 0.001$) of synovitis on US were greater in the former group. The number of grade 1 synovitis was comparable between RA and pSS patients ($p = 0.354$). However, the number of grade 2/3 synovitis were higher in RA than in pSS patients ($p < 0.001$ / $p < 0.001$, respectively). Similarly, the number of erosions on US was higher in the RA group compared to pSS group ($p < 0.001$), particularly of moderate/large erosions