circulating immune complexes (CICs) have been described in SLE but the relationship with disease activity in our multi-ethnic Asian patients remains unclear.

Objectives: To determine the correlation between disease activity and the levels of CICs, serum and urine IL-6 in a Singapore cohort of multi-ethnic Asian SLE patients.

Methods: Serum levels of CICs, IL-6 and urine IL-6 were measured in 88 SLE patients using CIC-C1q and high sensitivity IL-6 ELISAs. All patients fulfilled the 1997 revised American College of Rheumatology (ACR) classification criteria. Clinical and laboratory manifestations, therapy, disease activity and damage at the time of sample collection was collected. Disease activity was scored with the SLE Activity Measure-revised (SLAM-R) and damage with the ACR/Systemic Lupus International Collaborating Clinic SLE damage index (SDI). The correlation between disease activity score and CICs, serum and urine IL-6 were assessed using Spearman's correlation. Receiver operator characteristic (ROC) curve analysis was performed to assess the performance of the individual biomarkers in discriminating SLE disease activity.

Results: The cohort of 88 patients were predominantly female ($n = 78$, 89.6%), with a mean age of 40 years ± 13.1 . The majority were of Chinese ethnicity ($n = 73$, 83%), 13% were Malay ($n = 11$) and 4 individuals were of other races. The mean disease duration was 98.4 months ± 86.4 . The mean scores of SLAM-R and SDI were 2.9 ± 2.2 and 0.9 ± 0.9 respectively. SLE disease manifestations at the time of sample collection included mucocutaneous involvement (5.7%) and active urine sediment (28.7%). 77% had hypocomplementaemia and 70.1% had elevated titres of anti-dsDNA antibody. The majority were on corticosteroids (75.9%) and hydroxychloroquine (65.5%). Immunosuppressive drugs included azathioprine in 37.9%, mycophenolate in 6.9%, intravenous pulse cyclophosphamide in 6.9% and cyclosporin in 1 patient. There was significant positive correlation between SLAM-R and serum CICs ($R = 0.4121$, $p < 0.01$), serum IL-6 ($R = 0.4227$, $p < 0.01$) and urine IL-6 ($R = 0.3142$, $p = 0.01$). Based on the area under the curve (AUC), CICs and urine IL-6 were better in discriminating active SLE (AUC 0.8002, $p < 0.01$ and AUC 0.7397, $p < 0.01$ respectively) compared to serum IL-6 (AUC 0.5554, $p = 0.1718$).

Conclusion: Our study observed significant correlation between levels of serum circulating immune complexes, serum and urine IL-6 with SLE disease activity in our multi-ethnic Asian patient cohort. ROC curve analysis suggests that serum CICs and urine IL-6 may serve as sensitive biomarkers to identify SLE patients at risk of flares.

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THU0270

THE BURDEN OF CHRONIC KIDNEY DISEASE IN SYSTEMIC LUPUS ERYTHEMATOSUS: A NATIONWIDE EPIDEMIOLOGIC STUDY

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Background: Clinical-epidemiological research has advanced our knowledge on the negative impact of lupus nephritis (LN) on systemic lupus erythematosus (SLE) outcomes. Impaired renal function at LN diagnosis and failure to normalize renal function upon aggressive immunosuppressive therapy are associated with a very poor long-term renal outcome. Most reports on that field are however based on tertiary care data of limited sample size that impede the ability to generalize the findings. In order to measure the impact of renal function impairment on clinical outcome such as death or cardiovascular events effectively, updated comprehensive information at national level is needed.

Objectives: We conducted an analysis of a French nationwide database to assess the characteristics associated with the presence of CKD (i.e. eGFR $< 60 \text{ mL/min/1.73m}^2$) and the prognosis associated with CKD in SLE patients.

Methods: Characteristics of all admitted SLE patients experiencing CKD in France from 2009 to 2015 were analyzed through the French medico-administrative database. Factors associated with CKD and major clinical outcomes such as end-stage renal disease (ESRD), cardiovascular event (CVE), septic shock and death were assessed. We used a multivariate Cox proportional

hazard model and subdistribution hazard models to analyze survival without major clinical events according to the presence of CKD.

Results: From 2009 to 2015, 26 320 SLE patients were hospitalized in France. Among them, 6 439 (86.5% women; mean age 45.7 [16.5] years old) had a baseline stay in 2009 during which CKD was reported in 428 (6.7%) cases. Multivariate analysis showed that lupus nephritis (OR 6.6 [5.2-8.4]), high blood pressure (OR 3.5 [2.8-4.5]), septic shock (OR 3.2 [1.7-6.0]) and past cardiovascular history (OR 1.4 [1.0-2.0]) were associated with CKD status.

From 2009 to 2015, ESRD, CVE, septic shock, and death occurred in 4.0%, 14.4%, 6.3% and 9.6% of the 6 439 SLE patients. CKD at baseline was independently and strongly associated with the occurrence of ESRD (sdHR 15.9 [11.6-21.9]), CVE (sdHR 1.7 [1.4-2.2]), septic shock (sdHR 2.1 [1.5-2.8]) and death (HR 1.7 [1.3-2.2]) during the follow up.

Conclusion: CKD is a major risk factor for overall morbidity and mortality in SLE patients, highlighting the need for early pre-CKD lupus nephritis diagnosis and treatment.

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THU0271

SERUM LEVELS OF TRANSFORMING GROWTH FACTOR B (TGF- β) IN PATIENTS WITH PRIMARY SJÖGREN'S SYNDROME

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Background: Primary Sjogren's syndrome (pSS) is an autoimmune disease affecting primarily exocrine, especially salivary, glands. The epithelial damage, autoantigens release, activation of innate and acquired immunity form the underlying of the pSS pathogenesis. The main role in pSS is played by B-lymphocytes and production of autoantibodies. One of the cytokines which may play a role in autoimmune processes is tumor growth factor beta (TGF- β), pleiotropic cytokine, which is involved in the control of autoimmune reactions, cell proliferation and the organ accumulation of lymphocytes. Numerous studies focused on the expression of TGF- β in salivary glands, as an organ targeted in pSS.

Objectives: The aim of this study was to evaluate the activity of TGF- β in serum of patients with pSS and to show its significant relationships with other cytokines active in the pathogenesis of this syndrome.

Methods: 33 patients with pSS (according to current EULAR/ACR criteria) were included into the study, female 28 (85%), men 5 (15%), mean age 47 ± 16 . Routine laboratory tests (blood morphology, ESR, CRP, rheumatoid factor) were performed along with ophthalmological assessment (Schirmer's test, ocular staining score) with confirmation of dry eye. Patients had routine chest X-ray and, in case of clinical indications, high resolution computed tomography to assess interstitial changes. Serum concentrations of TGF- β were determined using an Quantikine ELISA Kit. Serum cytokines levels of BAFF, APRIL, FLT-3L, LT- α , IL-21, TNF- α were evaluated using standard ELISA assays. Level of antinuclear antibodies (IF;HEP-2000) was measured; presence of anti-SS-A and anti-SS-B antibodies was determined by semi-quantitative immunoblotting evaluation. Biopsy of minor salivary gland with the histopathological evaluation (focus score-FS) and the immunochemistry (CD3 +, CD4 +, CD19 +, CD21 +, CD35 + cells) was performed. Statistics: differences between groups were analyzed using U Mann-Whitney test (continuous variables). Correlations between quantitative variables were assessed with the Spearman correlation coefficient. Statistical significance $p < 0.05$. The study was approved by the ethics committee.

Results: The negative correlation ($\rho = -0.472$) between TGF- β and TNF- α was demonstrated. There was no correlation between TGF- β and other tested cytokines or autoantibodies (ANA, anti-SS-A, anti-SS-B). There was no correlation between TGF- β and results of ocular examinations, FS and immunochemistry. There was no correlation between TGF- β and lung involvement, especially fibrosis, in this group.

Conclusion: i) results may indicate that TGF- β , influences the serum TNF- α activity in pSS patients, ii) our findings suggest, that TGF- β may

be the strongest inhibitor of TNF- α among cytokines involved in pSS pathogenesis, iii) results may explain the ineffectiveness of anti-TNF drugs in the treatment of pSS

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THU0272 FUNCTIONAL GASTROINTESTINAL DISORDERS IN WOMEN WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Systemic lupus erythematosus (SLE) is a chronic autoimmune disease with multisystemic involvement. Gastrointestinal (GI) manifestations are frequent in patients with SLE, but functional gastrointestinal disorders (FGIDs), a heterogeneous group of GI diseases have hardly been evaluated in SLE patients.

Objectives: We evaluated the prevalence of FGIDs in SLE patients compared with age-matched controls and the role of potential risk factors for FGIDs.

Methods: SLE patients who met the ACR classification criteria for SLE and age-matched controls completed the Rome III questionnaire to assess the prevalence of FGIDs. Exclusion criteria were organic gastrointestinal disorders. Patients completed a structured interview to assess sociodemographic, clinical and treatment variables. Logistic multivariate analysis was performed to determine potential clinical factors (alcohol ingestion and medications) for FGIDs.

Results: The study responders included 116 SLE patients and 122 controls. The prevalence of FGIDs was higher in SLE patients than in controls (74.1% vs. 54.1%; $p = 0.01$). The most frequent FGIDs were nausea and vomiting disorders, belching disorders and globus pharyngeus. Anorectal disorders, mainly anorectal pain, were more frequent in SLE patients than controls (14.7% vs. 5.7%). After adjusting for confounding variables, SLE was associated with globus pharyngeus (OR: 3.5, 95%CI: 1.3-9.3), functional heartburn (OR: 2.5, 95% CI: 1.5-4.4), nausea and vomiting disorders (OR 7.1, 95% CI 2.7-19.1) and anorectal disorders (OR: 3.4, 95% CI 1.4-8.4). Overlap symptoms were present in 69.8% of patients vs. 31.8% of controls. When only SLE patients were evaluated, glucocorticoid therapy and non-steroidal anti-inflammatory drugs (NSAIDs) were associated with any FGID and functional bowel disorders, while alcohol ingestion was associated with gallbladder and sphincter of Oddi disorders.

Conclusion: There is a higher prevalence of FGIDs in patients with SLE and a wider distribution of various GI tract symptoms compared with controls. Medication that may alter gastrointestinal homeostasis, such as NSAIDs and protein pump inhibitors, were associated with FGIDs in SLE patients.

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THU0273 EVALUATION OF RELAPSE RATE AND LIFE PROGNOSIS AFTER INDUCTION THERAPY IN PROLIFERATIVE AND MEMBRANOUS LUPUS NEPHRITIS

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Background: The most common cause of morbidity and mortality in systemic lupus erythematosus (SLE) is lupus nephritis (LN). Renal flares are disadvantageous to the renal function of patients with severe LN, and the flares contribute to morbidity in patients with SLE. The reported incidence of renal flares has varied with the populations studied, the distribution of histological classes of LN, the treatment administered and the definitions of renal flare.

Objectives: Here we evaluated the relapse rate and life prognosis after induction therapy in proliferative and membranous LN.

Methods: We retrospectively analyzed the cases of 151 patients who underwent renal biopsy at our hospital and community hospitals from 1993 to 2016. We determined the complete response (CR) rate at 6 and 12 months after induction therapy and evaluated the predictive factors for CR, relapse rate, and life prognosis in proliferative and membranous LN.

Results: We were able to examine the therapeutic response, relapse rate and life prognosis at 6 and 12 months after therapy was introduced in 140 cases. Most of the patients were female (84.3%). The median age at LN onset was 34.0 years (interquartile range [IQR] 25.3-45.0 years), and the disease duration of SLE was 42 months (IQR 2.0-121.0 months). The median follow-up duration after renal biopsy was 96 months (IQR 44.0-168.0 months). The renal pathology of 99 (70.7%) patients was classified as ISN/RPS Class III or IV, and 41 (29.3%) patients were ISN/RPS Class V. Thirty-five patients (35.4%) were Class III or IV, and 17 patients (41.5%) in Class V achieved a CR at 6 months. Fifty patients (50.5%) in Class III/IV and 22 patients (53.7%) in Class V achieved a CR at 12 months. A multivariate analysis showed that a lower index of chronicity as assessed by the NIH histological scoring system in Class III/IV, and neutrophil infiltration and CH50 in Class V were predictive factors for achieving a CR at 12 months. A Kaplan-Meier analysis showed that the relapse rate and life prognosis were not different between proliferative and membranous LN.

Conclusion: Our results suggest that the predictive factors for a CR at 12 months after induction therapy are a lower index of chronicity in class III/IV and neutrophil infiltration and CH50 in Class V. In general, proliferative LN is more immunologically active than membranous LN, but we observed no significant differences in the achievement of a CR at 6 or 12 months after induction therapy, the relapse-free period, of life prognosis between proliferative and membranous LN. The therapeutic response and life prognosis of membranous LN as well as proliferative LN should be monitored closely.

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