

were determined by enzyme-linked immunosorbent assay (ELISA). Data were analysed using Pearson correlation analysis, ROC curve analysis, nonparametric Mann-Whitney test, t-test and  $\chi^2$  test.

**Results** We screened three candidate epitopes of UCH-L1 protein. The autoantibody against amino acid 58 to 69 of UCH-L1 (UCH58-69) showed highest diagnostic power in distinguishing NPSLE patients from SLE patients without neuropsychiatric symptoms ( $p=0.0038$ ). The ROC analysis showed that the specificity and sensitivity of anti-UCH58-69 were 92.3% and 37.5%, respectively. In addition, increased serum anti-UCH58-69 levels were associated with increased SLEDAI, CSF microprotein, CSF leukocyte count, ESR, AnuA, anti-dsDNA, IgG and IgM but with decrease of C3 in SLE patients.

**Conclusions** The serum levels of anti-UCH58-69 significantly increased in NPSLE patients compared with SLE patients without neuropsychiatric symptoms and were correlated with disease severity. Anti-UCH58-69 autoantibody may become a novel serum biomarker for NPSLE non-invasive diagnosis, which might be applicable for NPSLE early screening and diagnosis.

#### LSO-102 THE CORRELATION BETWEEN INTERLEUKIN-6 (IL-6) AND THE DEVELOPMENT OF SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) IN UNIVERSITI SAINS MALAYSIA (USM)

Mohamed Shafi Mahboob Ali\*. *General Medical, Universiti Sains Malaysia(USM), Malaysia*

10.1136/lupus-2023-KCR.89

**Background** Interleukin-6 (IL-6) is a Pro-Inflammatory cytokine with many biological activities. IL-6 is mainly involved in immunity and inflammatory process. It induces the terminal differentiation of B lymphocytes into antibody-forming cells and the differentiation of T cells into effector cells. Systemic lupus erythematosus (SLE) is an autoimmune disorder characterized by antibodies to nuclear and cytoplasmic antigens, multisystem inflammation, protean clinical manifestations, and relapsing course. We designed a study to establish the correlation between IL-6 and the severity of SLE.

**Methods** About 52 SLE-diagnosed patients were recruited based on the 1997 Updated American College of Rheumatology Revised Criteria for Classification of SLE in our centre. Their venous blood was taken and centrifuged at 4500RPM for about 5mins, and the serum was collected. ELISA test was done on these sera, and the data obtained was recorded in the form of a scatter plot and statistics, in which any 'P' value of  $>0.05$  was significant. The severity of the subject's SLE was quantified using BILAG Index. The index allocates alphabetic scores to each of the ten organ-based systems, and then a total score is calculated.

**Results** We found a direct correlation between the level of IL-6 (statistically significant  $P=0.005$ ) and the severity of the SLE. The IL-6 mean value was taken as 132.6pg/ml, while a linear scatter plot was obtained. Pearson correlation coefficient showed a linear correlation between the two variables. Thus, the higher the IL-6 levels, the higher the BILAG score.

**Conclusions** Serum IL-6 levels can be used to screen, diagnose, and act as a prognostic factor in the development and progression of SLE. These findings may open the opportunity for a new horizon in the early detection and treatment of SLE patients, which will greatly implicate the disease's complications and the cost of treating it.

## Short oral presentation session 9: SLE epidemiology and public health 2

#### LSO-048 INCIDENCE, PREVALENCE, AND BURDEN OF SYSTEMIC LUPUS ERYTHEMATOSUS IN URBAN CHINA, 2013–2017: A NATIONWIDE POPULATION-BASED STUDY

<sup>1</sup>Mucong Li\*, <sup>2</sup>Chaiquan Li, <sup>1</sup>Mengzhuo Cao, <sup>2</sup>Ke Lu, <sup>2</sup>Xun Tang, <sup>2,3</sup>Pei Gao, <sup>1</sup>Mengtao Li, <sup>1</sup>Xiaofeng Zeng. <sup>1</sup>Department of Rheumatology, Peking Union Medical College Hospital, China; <sup>2</sup>Department of Epidemiology and Biostatistics, School of Public Health, Peking University Health Science Center, China; <sup>3</sup>Center for Real-world Evidence Evaluation, Peking University Clinical Research Institute, China

10.1136/lupus-2023-KCR.90

**Background** Systemic lupus erythematosus (SLE) is becoming a public health concern because of increasing disease and economic burdens. However, epidemiological data on SLE, especially its incidence rate, were limited in China. We aimed to investigate the incidence, prevalence, and cost burdens of SLE in urban Chinese.

**Methods** We conducted a population-based study using national databases, Urban Employee Basic Medical Insurance and Urban Resident Basic Medical Insurance, in China between 2013 and 2017. Data from over 380 million patients were analyzed, and a total of 132,258 SLE patients (mean age 43.03 years, 81.34% female) were identified. Incident cases were individuals with a diagnosis of SLE with a 3-year disease-free period. Prevalent cases were patients with at least 1 insurance claim record with the diagnosis of SLE. Primary outcomes, including overall, age-, gender-, and region-specific incidence and prevalence rates of SLE, were estimated by a two-stage approach assuming a Poisson distribution. Associated annual costs and hospital visit times were also calculated.

**Results** The crude incidence and prevalence of SLE in China in 2017 were 14.96 (95%CI, 12.69–17.43) and 50.37 (95%CI, 44.19–56.95) per 100,000 person-years, suggesting incident and prevalent populations of 0.21 and 0.71 million (figure 1). The average annual rate of increase in prevalence was 16.86% during 2013 and 2017. The age-specific incidence and prevalence showed unimodal distributions, peaked at 30–49 and 40–49 years old in females and males respectively. The average estimated annual cost was US\$1,599.34 in SLE patients. Female outpatients had higher costs with more hospital visits, whereas male inpatients had higher costs. Costs of adolescent and young adult patients were the highest among age groups.

**Conclusions** Rapidly expanding SLE population and increasing costs associated with SLE have placed considerable burdens on health systems in China. Enhanced efforts are needed to make long-term care more accessible and cost-effective for SLE patients, especially young population.