We investigated the performance and characteristics of the LSI in a large multiethnic lupus cohort.

**Methods** Patients from a single academic center were followed from 1990–2016 using a custom database. Records of all SLE patients were abstracted. Variables included birthdate, diagnosis date, ethnicity, ACRc, SLICC Damage Index (SDI), treatment and date of death. Ethnicity was categorized into White (WHI), Asian (ASN), Indigenous (IND), and Other. The LSI was calculated from ACRc, and compared between ethnicities and demographic variables known to be associated with severe SLE using t-tests, ANOVA, Pearson correlation coefficient and logistic regression.

**Results** 832 SLE patients were identified: 497 (60%) WHI; 220 (26%) IND; 91 (11%) ASN; 24 (3%) Other. Mean age at diagnosis 35; 163 (20%) of patients had died. The mean LSI was 6.9, range 3.2–9.7. The distribution of the LSI was similar to that in the original dataset (figure 1A) and the area under the ROC curve, measured against pre-0.73. LSI was higher in males compared to females (7.3 vs. 6.9; p<0.019), and was negatively associated with onset age (Onset <18 years LSI=7.8; 18–50 years LSI=6.8; >50 years LSI=6.6; p<0.001). LSI correlated with SDI (Pearson 0.28, p<0.001), and was a predictor of accruing any damage (SDI>1) (OR1.2 95% CI 1.1–1.3). LSI was higher in non-whites compared to whites: WHI LSI=6.6; IND LSI=7.2; Other LSI=7.3; ASN LSI 8.1; p<0.001). LSI was a predictor of early mortality (Death at age <50, or disease duration <10 years): OR 1.2; 95% CI 1.0–1.3). The distribution of the LSI varied by ethnic group with more uniformly severe disease in ASN patients (figure 1B, C) compared to WHI and IND.

**Conclusions** Similar to the original publication, higher LSI correlated with male sex, younger onset age, and non-white ethnicity; all groups shown to have more severe SLE. LSI was also a predictor of damage and early mortality. In addition we also found the distribution of LSI to differ between ethnicities. These findings confirm the utility of the LSI in stratifying patients by severity, and supports further exploration of the LSI to investigate contributors to severe SLE.

**Funding Source(s):** None
Clinical Characteristics of Systemic Lupus Erythematosus with Malignant Tumors

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Background Rheumatic disease is caused by immune abnormality, which results in the immune response of the body to auto-antigens and causes tissue damage. The immune system eliminates or inhibits the growth of tumor cells through various ways. When the immune function abnormality leads to the escape of immune surveillance of tumor cells, it can lead to tumorigenesis. The risk of malignant tumors is higher than ordinary people in systemic lupus erythematosus (SLE) patients, which were mainly hematological tumors, especially non-Hodgkin lymphoma. The risk of Hodgkin lymphoma, leukemia, and multiple myeloma was also increased, which was associated with BAFF changes, APRIL signal transduction, increased IL-6 activity and EB virus infection. Increased risk of malignant tumors in SLE patients, including lung cancer, hepatitis biliary cancer, thyroid cancer, vulvar/vaginal malignancies, and cervical dysplasia, was also reported, which was associated with SLE disease activity in specific organs, inflammatory stimulation, oxidative damage, changes in viral clearance and/or specific drug use.

Methods Twenty SLE patients with malignant tumors admitted to the General Hospital of Ningxia Medical University from October 2008 to October 2018 were selected. Their sex, age, time of diagnosis of rheumatism and tumors, types of tumors, clinical stages, and prognosis were summarized and analyzed.

Results Malignant tumors occurred in 20 (0.50%) of 3970 SLE patients, the average age was 54.43 ± 7.95. There were 4 cases of lung cancer, 3 cases of non-Hodgkin lymphoma and liver cancer, 2 cases of thyroid cancer, uterine cancer and skin cancer, multiple myeloma, gastric cancer, pancreatic cancer and nasopharyngeal carcinoma were found in 1 case respectively. The median course of malignant tumors in SLE patients was 3.42 years, 79.41% of the patients were diagnosed before tumors, 16.35% of the cases occurred at the same time, and only 4.24% of tumors were diagnosed before SLE. Phase IV was the most common clinical stage in the diagnosis of tumors, accounting for 59.74%. In SLE patients with tumors, the survival time ranged from 1 month to 39 months, with a median survival time of 9.2 months.

Conclusions Most malignant tumors are found after SLE diagnosis, with a median course of 3.42 years, and occur more frequently between the ages of 50 and 60. SLE may be associated with various types of malignant tumors, lung cancer, non-Hodgkin's lymphoma, and liver cancer were the most common tumors, and the clinical staging of tumors is late and the prognosis is poor, with the median survival time is 9.2 months.

Funding Source(s): NIH R44 AI124949-03