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 cancer 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.

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