

spleen with 4 weeks of induction therapy. The potent effect of SINE compound monotherapy on GC and auto-reactive ASC was further highlighted by the pronounced elimination of GCs histologically and reduction in auto-reactive ASC achieved after 4 weeks of maintenance therapy administered once weekly. In a concurrent study, when combined with bortezomib, 1 week verdinexor plus PI treatment resulted in a synergistic effect, significantly reducing in the number of auto-reactive ASC, particularly in the BM.

Conclusions Verdinexor has demonstrated efficacy by reducing generation and survival of auto-reactive immune cells. Additional experiments are underway to examine if inhibition of the canonical NFB pathway underlies verdinexors inhibitory effect. Together, our findings suggest the potential of SINE compounds to have a significant impact on SLE disease progression alone or in combination with currently utilized PIs.

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229 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, hepatobiliary 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.

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230 SYSTEMIC LUPUS ERYTHEMATOSUS AND RAPIDLY PROGRESSIVE CARDIOGENIC SHOCK

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Background Symptomatic lupus myocarditis is a rare but life-threatening complication of systemic lupus erythematosus (SLE). Clinical manifestation is variable and includes dyspnea, chest pain, peripheral edema, fever, nausea, vomiting, or palpitations. We describe a case of a young female who developed rapid progressive cardiogenic shock secondary to lupus myocarditis.

Methods Not applicable as it is a clinical vignette.

The abstract for clinical vignette is attached as a separate document

Results Not applicable as it is a clinical vignette

The abstract for clinical vignette is attached as a separate document

Conclusions The diagnosis of lupus myocarditis is usually achieved clinically and with the use of TTE, cardiac MRI or biopsy. However, none of the current diagnostic modalities have established sensitivity or specificity. Our patient only developed significant TTE findings during the late stage, which led to an unfortunate delay in diagnosis. We suggest that physicians should always have a broad differential diagnosis and high clinical suspicion to avoid late diagnosis and mismanagement of patients, especially when dealing with cardiac manifestations of SLE.

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231 tRNA DERIVED FRAGMENTS (tRFs) REGULATE OXIDATIVE PHOSPHORYLATION TO PARTICIPATE IN SLE PATHOGENESIS

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Background tRNA derived fragments (tRFs) are 18 to 40-nucleotide (nt) small RNAs cleaved from mature tRNAs or precursor tRNA transcripts. There is growing evidence that tRFs play important roles in cellular homeostasis. This study focused on abnormal expression of tRFs in CD4 + T lymphocytes from SLE patients, their function on

regulation of oxidative metabolism and potential roles in development of systemic lupus erythematosus (SLE).

Methods CD4 +T lymphocytes isolated from 97 SLE patients, 30 RA patients, 10 AS patients and 20 healthy donors were used in our *in vitro* experiments. Total RNA of CD4 +T lymphocytes isolated from 4 SLE patients and 3 healthy donors were used to perform small RNA sequencing. Total RNA of CD4 +T lymphocytes transfected with synthetic tRF-3009 or negative control (a random sequence, single strand) were used to perform next generation sequencing. CD4 +T lymphocytes isolated from healthy donors were transfected with tRF-3009/negative control or tRF-3009 siRNA/si-NC *in vitro*, with/without IFN-alpha treatment, to analyze OCRROS and ATP concentration. Real-time qRT-PCR was performed to analyze expression of tRF-3009 and related gene expressions.

Results We have identified a series of tRFs expressed abnormally in SLE CD4 +T lymphocytes. Interestingly, almost all up regulated tRFs were from 3end of mature tRNA while down regulated ones were from 3end of tRNA precursors. We have found that expression of tRF-3009 was correlated with lupus nephritis (LN) and urine protein (PRO). The expression of tRF-3009 could be induced by IFN-alpha treatment *in vitro*. Knockdown of tRF-3009 by siRNA could rescue the metabolism change of CD4 +T lymphocytes induced by IFN-alpha. Transfection of tRF-3009 alone could up regulate oxidative phosphorylation of CD4 +T lymphocytes *in vitro*.

Conclusions This study identified a series of abnormally expressed tRFs existed in CD4 +T lymphocytes isolated from SLE patients. One of these small RNAs, tRF-3009 also enriched in kidney and correlated with occurrence of lupus nephritis. tRF-3009 anticipated in metabolism regulation, may play important roles in SLE pathogenesis.

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PREDICTORS OF HYDROXYCHLOROQUINE TREATMENT ADHERENCE AMONG PEOPLE WITH LUPUS

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Background Treatment adherence is associated with better disease control, improved morbidity and mortality and increased quality of life.¹ Studies examining treatment adherence predictors have varied in examined characteristics and results. This study analyzes demographic and socioeconomic factors, perceptions, and experiences influencing hydroxychloroquine (HCQ) treatment adherence among people with lupus. HCQ has long been used to treat lupus, and has been shown to reduce damage accrual and has protective effects on diseases such as diabetes and hyperlipidemia as well as overall survival in people with lupus.²

Methods Cross-sectional study data was obtained through the 2015–2016 Lupus Needs Survey, an online national needs assessment among 3022 adults self-reporting a lupus diagnosis. Univariate analyses were conducted using chi-square and simple logistic regressions among 21 variables, which were subsequently dichotomized. Variables with rates of missing values >15% of total sample were removed in further analysis.

Abstract 232 Table 1 Results of Binary Logistic Model of Predictors of HCQ Treatment Adherence

	Odds Ratio	95% Confidence Interval	p-value
Black	0.35	0.18–0.67	0.002*
Other (mixed, American Indian/Alaskan Native, Pacific Islander, or Middle Eastern)	0.35	0.14–0.85	0.021*
Moderate severity of lupus at diagnosis	0.57	0.31–1.03	0.061
HCQ improves/helps treat my symptoms	2.49	1.25–4.92	0.009*
Positive impression of HCQ	2.14	1.08–4.24	0.029*
Rheumatologist as primary doctor treating lupus	2.0	1.01–3.95	0.046*

*Significant p-value<0.05.

Next, 13 variables with a p-value<0.20 were entered into a binary logistic model using backwards stepwise selection.

Results 2028 individuals reported currently taking HCQ with 1581 (78.0%) individuals reporting taking the medication exactly as prescribed all of the time, 385 (19.0%) reporting some of the time, and 62 (3.1%) reporting sometimes or never taking HCQ as prescribed. People with lupus were twice as likely to adhere to HCQ if they reported having a rheumatologist as the primary doctor treating their lupus (p=0.046, OR=2.00) and more than twice as likely if they reported having a positive impression of HCQ (p=0.029, OR=2.14) or experienced improvement in treating their symptoms using HCQ (p=0.009, OR=2.49). Notably, African Americans and those indicating race as Other (mixed, American Indian/Alaskan Native, Pacific Islander or Middle Eastern) were 65% less likely to adhere to HCQ treatment (p=0.002, OR=0.35; p=0.021, OR=0.35, respectively).

Conclusions The study confirms the importance of experiential factors such as medication impression and patient-reported symptom improvement in HCQ treatment adherence. Additionally, results highlight the potential significance of having a specialist as the primary lupus doctor. This may be due to rheumatologists higher awareness of the value of HCQ for lupus patients compared to other providers. Further exploration is needed on cultural factors negatively influencing treatment adherence among certain racial groups, particularly African Americans and Other racial groups (mixed, American Indian/Alaskan Native, Pacific Islander or Middle Eastern). Treatment adherence is particularly important in lupus given the complex nature of the disease and fluctuation of disease activity, which may be exacerbated by poor adherence.

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AUTOANTIBODY-POSITIVE HEALTHY INDIVIDUALS CONSTRAIN T CELL PATHWAYS TO REGULATE AUTOIMMUNE DISEASE

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Background Anti-nuclear antibody (ANA) positivity is a principal feature of individuals with an autoimmune disease, yet up to one in five healthy individuals are ANA-positive (ANA+)