**Background and aims** Preliminary data suggested efficacy of sirolimus in treatment of lupus nephritis (LN), but its long-term efficacy and tolerability data is lacking.

**Methods** We reviewed Class III/IV/V LN patients who received prednisolone and sirolimus either as initial or maintenance treatment during Jan 2007 to Jan 2016.

**Results** Sixteen patients were included (duration of sirolimus treatment: 27.2±19.6 months). Ten patients received sirolimus due to intolerance to standard immunosuppressive treatments and six patients because of a history of malignancy. Five patients received sirolimus during active LN, and showed improvement in proteinuria (2.8±1.9 g/day and 0.1±0.1 g/day at baseline and 36 months, p=0.011 compared to baseline), anti-dsDNA (107.7±91.9 IU/mL and 37.0±55.4 IU/mL at baseline and 36 months, p=0.145) and C3 (54.8±26.1 mg/dL and 86.3±18.6 mg/dL at baseline and 36 months, p=0.084). Eleven patients received sirolimus during disease quiescence, and showed significant improvement in C3 (90.4±18.1 mg/dL and 117.7±5.1 mg/dL at baseline and 36 months, p=0.025) and stable renal function (58.5±25.2 mL/min and 56.7±29.0 mL/min at baseline and 36 months, p=0.019) and proteinuria (0.8±0.7 g/day and 0.7±0.7 g/day at baseline and 36 months, p=0.263). One patient, whose serum creatinine was 244 μmol/L when sirolimus was started, developed renal failure after 27 months. Renal flare occurred in one patient after 36 months. Sirolimus was discontinued in five patients including one with leucopenia. Four patients showed lipid profile deterioration which was adequately controlled with statin.

**Conclusions** Sirolimus can be an alternative treatment option for LN and the long-term results do not suggest excessive adverse effects.
Results Then, anasarca and nephrosis was improved and S-Cr was decreased to 1.20 mg/dL in proportion to the reduction in activated Th17 cells in PD.

Conclusions Although recent studies have begun to shed light on the role of IL-17 in the pathogenesis of SLE, there is no convincing evidence in actual patients. In this case, improvement of disease activity of SLE was correlated with the decrease of activated Th17. This is the first report that the IL-17-targeted therapy for SLE was shown to be effective in a patient skewing towards Th17-phenotype.

DEVELOPMENT OF ARTEMISININ ANALOGUE ANALOG SM934 IN THE TREATMENT OF SYSTEMIC LUPUS ERYTHEMATOSUS

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Background and aims Besides their outstanding antimalarial activity, artemisinin and its derivatives also possess immunosuppressive activities and are clinical used to treat SLE. β-aminoarteether maleate (SM934), a water soluble artemisinin derivative, got the approval documents authorised by Chinese FDA for clinical trials. This study investigated the curative effects of SM934 on lupus-prone mice and explored its underlying therapeutic mechanisms.

Methods In vivo, SM934 was given orally to female NZB/W F1 and MRL/lpr mice; renal injury, peripheral lymphoid organ disease and serological changes were evaluated. Meanwhile, correlative pathological mechanisms were studied using different aged mice. Besides, the effects of SM934 on human PBMCs were also assessed.

Results We demonstrated that SM934 treatment could significantly improve SLE syndrome in lupus-prone animal models, including delayed the progression of glomerulonephritis; ameliorated proteinuria and renal lesion severity; increased the survival rate; decreased levels of BUN and serum anti-double-stranded DNA antibodies. Furthermore, clinical improvement was accompanied with decreased Th1-related anti-dsDNA IgG2a and IgG3 Abs, serum IL-17, and increased Th2-related anti-dsDNA IgG1 Ab, serum IL-10 and IL-4. Moreover, SM934 could significantly inhibit both of Th1 and Th17 responses, elevate Treg percentage and lower the percentage of CD3+ B220+ CD4+ CD8+ (double negative) T cells in MRL/lpr mice. We further elucidate that SM934 treatment restored the compartment of B cells in the spleen of MRL/lpr mice by increasing quiescent B cells, maintaining germinal centre B cells, decreasing activated B cells and reducing PCs.

Conclusions This work provides new evidence and clues for research about artemisinin compounds in the field of autoimmune diseases.

INCREASED NEUTROPHILS AND NEUTROPHIL SERINE PROTEASES IN THE SPLEENS OF ESTROGEN-TREATED C57BL/6 MICE AND IN SEVERAL STRAINS OF SPONTANEOUS LUPUS-PRONE MICE

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Background and aims Oestrogen, a natural immunomodulator, regulates the development and function of diverse immune cell types and has been implicated in lupus development. Methods To determine the regulatory role of oestrogen on neutrophil development and function, we treated B6 mice with placebo- or oestrogen implants for 6–8 weeks, and then analysed splenic neutrophil serine proteases (NSPs, such as cathepsin G, elastase, and collagenase, etc.)

Results Estrogen treatment increases neutrophil number, NSP and MPO expression in wild type B6 mice. (A) Flow cytometry analysis of splenic neutrophil percentage in placebo- and estrogen-treated B6 mice. (B) The total splenocytes count in placebo- and estrogen-treated mice. (C) The total CD11b+ GR1+ splenic neutrophil counts in placebo- and estrogen-treated mice. (D and E) Real-time RT-PCR analysis the expression of NSPs (D), and MPO (E) in splenocytes from placebo- and estrogen-treated mice. The graphs show means±SEMs (n ≥ 4). Unpaired students t-tests (placebo vs estrogen) were performed.* p < 0.05; ** p < 0.01; and *** p < 0.001.

Abstract 112 Figure 1  Estrogen treatment increases neutrophil number, NSP and MPO expression in wild type B6 mice. (A) Flow cytometry analysis of splenic neutrophil percentage in placebo- and estrogen-treated B6 mice. (B) The total splenocytes count in placebo- and estrogen-treated mice. (C) The total CD11b+ GR1+ splenic neutrophil counts in placebo- and estrogen-treated mice. (D and E) Real-time RT-PCR analysis the expression of NSPs (D), and MPO (E) in splenocytes from placebo- and estrogen-treated mice. The graphs show means±SEMs (n ≥ 4). Unpaired students t-tests (placebo vs estrogen) were performed.* p < 0.05; ** p < 0.01; and *** p < 0.001.