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FRI0332 IL-2 RESTORED THE REDUCED ABSOLUTE NUMBER OF TREG CELLS IN THE PATIENTS WITH IDIOPATHIC INFLAMMATORY MYOPATHY

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Background: Idiopathic inflammatory myositis (IIM) is a group of skeletal muscle non-suppurative inflammatory disease, including polymyositis (PM), dermatomyositis (DM), inclusion body myositis (IBM), DM/PM associated with malignancy and so on. The latest studies suggest that there is an increase of Th17 cells levels and a decrease of regulatory T cells (Tregs) levels in IIM, which lead to the Th17/Treg imbalance. IL-2 promotes the proliferation and differentiation of several subsets of CD4⁺T cells and inhibits Th17 cells. It is provided to Tregs from IL-2-producing cells such as activated CD4⁺CD25^{low} T cells, NK and NKT cells. Tregs express IL-2R $\alpha\beta\gamma$, a high affinity IL-2 receptor complex. Therefore, Tregs may be selectively stimulated by low-dose IL-2 and amplified.

Objectives: To explore the quantitative changes of peripheral Th17 cells and Tregs in IIM before and after receiving treatment with low-dose interleukin-2 (IL-2) and analyze the relationship between peripheral Th17 cells and Tregs and clinical indicators disease activity.

Methods: Total 151 IIM patients were enrolled, and 196 healthy adults were used as normal controls. Of them, 76 cases were treated with low dose IL-2 (5.0*10⁵ international units (IU) for 5 days). The absolute number of peripheral T, CD4⁺ T, CD8⁺ T, Th1, Th2, Th17 and Treg subsets were analyzed by flow cytometry. Laboratory examinations were analyzed retrospectively. Since the data was disregarded from the normal distribution, the median four quantile method was used for statistical description. Multiple samples were compared with Kruskal-Wallis H test, and the correlation between variables was Spearman rank correlation analysis.

Results: (1) In the patients, the absolute number of Treg cells was significantly decreased as compared with that in the control group (P<0.05) and increased by treated with a low dose IL-2. After IL-2 treatment, the absolute numbers of T, CD4⁺ T, CD8⁺ T, Th1, Th2 and Th17 cells and the ratio of Th17/Treg were still significantly lower than that in the control group (P<0.05); the ratio of Th17/Treg in the patients was not significantly different from that in the control group (P>0.05). (2) The peripheral Th17 cells levels were negatively correlated with ESR, CRP, LDH and HBDH (r=-0.42, r=-0.28, r=-0.21, r=-0.20, P<0.05); the peripheral Treg cells levels were negatively correlated with ESR, CRP, LDH and HBDH (r=-0.18, r=-0.20, r=-0.18, r=-0.20, P<0.05); the ratio of Th17/Treg was negatively correlated with ESR (r=-0.23, P<0.05).

Conclusion: The absolute number of peripheral Th17 cells and Tregs declined significantly in IIM, and had correlation with ESR, CRP, LDH and HBDH. However, after receiving treatment with low-dose IL-2, the Tregs levels elevated, which means that IL-2 may plays an essential role in the differentiation and development of Tregs. It also provides new thought and strategy for the therapy of IIM.

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FRI0333 ASSESSING SYSTEMIC SCLEROSIS CARDIAC INVOLVEMENT USING MAGNETIC RESONANCE T1-MOLLI MAPPING

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Background: Patients with systemic sclerosis (SSc) and symptomatic cardiac involvement have a disease-associated mortality of 20% in 10 years. Prevalence of subclinical cardiac involvement is 15%-35%. Early diagnosis and monitoring is therefore critical in the management of SSc-associated cardiac involvement. Conventional cardiac magnetic resonance imaging (cMRI) T1-weighted sequence with late gadolinium contrast has good accuracy for detecting localized fibrosis but not diffuse fibrosis that occurs in SSc. Modified look-locker inversion recovery (T1-MOLLI) mapping, a novel cMRI sequence, has been used to detect and quantify diffuse fibrosis in aortic stenosis. T1-MOLLI values have also been correlated with the degree of biopsy-quantified fibrosis.

Objectives: To investigate whether cMRI T1-MOLLI is able to detect fibrosis associated with SSc cardiac involvement.

Methods: We recruited 16 patients fulfilling the 2013 ACR/EULAR criteria for SSc and 17 healthy age-matched (within 5 years) controls. Patients underwent cMRI T1-MOLLI mapping on the Siemens Biograph mMR 3.0T (Erlanger, Germany).

T1-MOLLI values were compared between SSc patients and healthy controls using student t-test and statistical significance was taken to be p<0.05.

Results: Demographics and clinical features of our study cohort are as shown in Table 1. Two (12.5%) SSc patients were symptomatic with palpitations or had arrhythmia requiring treatment. Eleven (68.8%) SSc patients had elevated T1 MOLLI values, using a normal cut-off threshold of 1284 ms.

Mean cardiac T1 values were significantly higher in SSc patients (1329 ± 88.0 ms) than in controls (mean T1 = 1238 ± 93.7 ms, p=0.0075), indicating the presence of cardiac fibrosis.

Conclusion: cMRI T1-MOLLI mapping demonstrated that SSc patients who were predominantly asymptomatic showed evidence of cardiac fibrosis. cMRI T1-MOLLI is potentially a useful diagnostic and monitoring tool for SSc cardiac disease.

Table 1. Demographics and clinical features

	SSc patients (n=16)	Controls (n=17)
Limited/Diffuse SSc, n	11/5	Not applicable
Female, n (%)	14 (87.5%)	14 (82.3%)
Age, years	49.2 ± 13.9	51.5 ± 14.8
Mean disease duration from Raynaud's phenomenon onset, years	6.1 ± 7.3	Not applicable
Mean disease duration from non-Raynaud's phenomenon onset, years	6.6 ± 7.4	Not applicable
Hypertension, n (%)	4 (25%)	1 (5.9%)
Palpitations, n (%)	2 (12.5%)	0
Arrhythmia requiring treatment, n (%)	2 (12.5%)	0
Anti-centromere positivity, (n)	3	Not applicable
Anti-Topo-I positivity, (n)	4	Not applicable

Disclosure of Interests: None declared

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FRI0334 PERFORMANCE OF THE SCLERODERMA SKIN PATIENT-REPORTED OUTCOME (SSPRO) IN A PHASE 2 TRIAL WITH LENABASUM

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Background: Skin thickening is a distressing feature of systemic sclerosis (SSc). The severity and extensiveness of skin thickening, as traditionally