Background This article aims to analyze the clinical characteristics of myositis in Chinese patients with systemic lupus erythematosus (SLE).

Methods From January 2013 to April 2018, patients with myositis were included from the SLE database of Shanghai Ren Ji Hospital, South Campus. Myositis was diagnosed based on clinical symptoms, electromyography, magnetic resonance imaging, myositis antibody profile or muscle biopsy. Clinical and laboratory features at the diagnosis of myositis were collected. In this retrospective study, patients without myositis at the same time were selected as 1:1 by matching gender and age. Univariable and multivariable analysis were performed.

Results Of 1401 SLE patients, 21 (1.5%) had myositis. The mean follow-up of these patients was 3.3±3.3 years. Cardiac involvement was observed in three patients. 52.4% (n=11) patients had the data of myositis antibody profile, of which four patients were anti-Ku positive, two were anti-Ro-52 positive, one was anti-OJ positive, one was anti-Jo-1 and anti-OJ double positive, one was SAE1 weakly positive, and two were negative. All the patients received at least 1 mg/kg corticosteroids. The creatinine kinase level of most patients (76.2%) fell back to normal within six months. One patient was refractory to many immunosuppressive agents including methotrexate, tacrolimus, rituximab and tocilizumab. Three patients died during follow-up. One of them deceased due to uncontrolled myositis with the involvement of myocardium and the other two died of invasive infections including septic shock and brain abscess.

Compared to matched SLE patients without myositis, they had more Raynauds phenomenon, interstitial lung diseases, and lupus nephritis, as well as lower creatinine level, lower disease activity and higher positive rate of anti-RNP (p<0.05). Upon multivariate logistic regression analysis, Raynauds phenomenon (OR 5.69, 1.10~29.51) and lupus nephritis (OR 2.25%, p<0.004) were associated with more damage accrual and new developed PAH. Logistic regression analysis showed that new developed LN [OR 3.233, p<0.004], NEURO [OR 5.314, p<0.001] and ILD [OR 12.739, p<0.001] were associated with more damage accrual and new developed PAH [OR 26.078, p=0.001] was associated with more deaths.

Conclusions Lupus nephritis, hematologic involvement and neuropsychiatric lupus were the most frequently developed new organ involvements for Chinese SLE patients. Along with interstitial lung disease and pulmonary arterial hypertension, they were closely related to damage accumulation and mortality. Therefore, we should keep an eye on them during follow-up and seek for potential strategies to prevent for new organ involvement development.

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