Prevalence of Respiratory Function Abnormalities in Asymptomatic Chinese Patients with Juvenile Onset Systemic Lupus Erythematosus

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Abstract

Objectives: To determine the prevalence and features of respiratory function alterations in asymptomatic Chinese patients with juvenile onset systemic erythematosus (JSLE) and to assess its relationship with clinical and immunological parameters. Methods: Twenty-two Chinese patients with JSLE followed up at our Rheumatology Clinic were recruited. Each underwent pulmonary function test (PFT) and completed a respiratory questionnaire. Four were excluded because of past history of pulmonary disease. Abnormal respiratory function findings if present would be correlated with the disease duration, disease activity, organ involvement, clinical features and immunological findings using multiple regression analysis. Results: All 18 patients analysed were totally free of pulmonary symptoms and disease. Thirteen patients (72%) had abnormal PFT results. Ten patients (56%) had decreased diffusion capacity of the lung (DLCO). Among them, 2 had restrictive lung pattern and one had mixed pattern while 7 had isolated DLCO impairment. Disease duration and renal involvement were both found to be significantly associated with decreased DLCO (p=0.037 and p=0.035 respectively). However, both factors became insignificant after multiple regression analysis. Neurological lupus was significantly associated with decreased FEF 25-75% and FEF 75% (p value 0.03 and p<0.001 respectively). Conclusion: Asymptomatic Chinese patients with JSLE and no prior pulmonary involvement showed frequent PFT abnormalities with decreased DLCO being the most common impairment. Neurological involvement was the only factor found to be significantly associated with abnormal lung function parameters. We speculate that decreased DLCO could be related to high occurrence of SLE-associated pulmonary hypertension in Chinese. Further in-depth evaluation and long term follow up study is warranted.

Key words: Children; Chinese; Respiratory function; Systemic lupus erythematosus

Introduction

Systemic lupus erythematosus (SLE) is a chronic autoimmune disorder affecting multiple organ systems including the skin, musculoskeletal system, kidneys, central nervous system, blood and respiratory system. Pulmonary involvement is frequent in adults with SLE and the disease spectrum ranges from asymptomatic pleuritis to life threatening pulmonary haemorrhage. The lungs may be directly affected or impaired as a result of other organ involvement. The overall reported prevalence of pulmonary involvement in adult SLE patients varies from 10% to 100% depending on the stage of disease and the criteria used to define such involvement. The reported incidence of clinically significant respiratory disease ranged from 3% to 17% at disease onset and 3-36% over the course of the disease. Many of the patients with abnormal pulmonary functions were asymptomatic. Pulmonary function test has been recommended for early detection of lung involvement...