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TREATMENT OF INTERSTITIAL LUNG DISEASE IN PATIENTS WITH PRIMARY SJOGREN SYNDROME: A SINGLE-CENTER RETROSPECTIVE ANALYSIS

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Background: Interstitial lung disease (ILD) is one of the main contributor to morbidity and mortality in patients with primary Sjogren syndrome (pSS), and whether immunosuppressive treatments are effective for pSS-ILD is uncertain. Cyclophosphamide (CYC) and rituximab (RTX) are effective in stabilizing pulmonary function in patients with ILD caused by systemic sclerosis, inflammatory myositis, and rheumatoid arthritis^{1,2}. Reports regarding the treatment response for cyclophosphamide or rituximab in pSS-ILD patients are lacking.

Objectives: To investigate whether add-on CYC or RTX in addition to steroid and oral DMARDs leads to greater improvement in pulmonary function test than conventional treatment in patients with pSS-ILD with impaired baseline pulmonary function.

Methods: pSS-ILD patients with ILD confirmed by a chest computed tomography were screened. Those with impaired baseline pulmonary function test (FVC<80% and DLCO<80%) and available results of pulmonary function tests at 6th-18th month post-treatment were retrospectively enrolled. The patients were clustered into two groups: steroid and oral DMARDs alone (steroid/oDMARD group), and add-on CyC and/or RTX (Add-on CyC/RTX group).

Results: This study enrolled 22 patients. The median age of these patients was 65. Among them, 68% were female and 18% were smokers. The median baseline FVC was 63.5% and the median DLCO was 54.4%. The predominant CT pattern was NSIP (54%), followed by UIP (22%), LIP (13.6%) and OP (9%) (table 1).

Five patients received steroid and oral DMARDs alone (hydroxychloroquine +/- azathioprine), while 17 patients received add-on CYC and/or RTX (8 patients received CYC, 3 received RTX, and 6 received CYC and RTX). There was no significant difference in baseline characteristic between these two groups (table 1).

With a median follow-up period of 9.8 months (interquartile range 7.6 - 13.4 months) after treatment, the FVC improved significantly from 61.3% to 65.5%

($p=0.013$) in CYC/RTX group, while the FVC improvement was not significant in steroid/oDMARD group (figure 1A). In CYC/RTX group, patients with non-UIP pattern (NSIP, LIP and OP) on chest CT had significant FVC improvement ($p=0.021$), contrasting to the patients with UIP pattern on chest CT (figure 1B).

Conclusion: In pSS patients with ILD and impairment of pulmonary function at baseline (FVC<80%, DLCO<80%), FVC improved significantly in patients received add-on cyclophosphamide and/or rituximab therapy.

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Table 1. Baseline characteristics of patients with Sjögren's syndrome and interstitial lung disease

	Total (n = 22)	Steroid/oDMARDs (n = 5)	Add-on CYC/ RTX (n = 17)	Comparison between two groups (p-value)
Age, year, median (IQR)	65.1 (61.7 - 69.1)	64 (64.6 - 67.4)	65.6 (61.6 - 69.2)	0.88
Female sex, n (%)	15 (68%)	4 (80%)	12 (70%)	1.00
Smoking, n (%)	4 (22%)	0 (0%)	4 (21%)	0.54
Baseline FVC, % of predicted value, median (IQR)	63.6% (53.8 - 68.2)	63.9% (63.7 - 67.5)	61.3% (50.2 - 68.2)	0.43
Baseline DLCO, % of predicted value, median (IQR)	54.4% (39.4 - 66.4)	69.1% (57.8 - 75.5)	52.1% (38.5 - 58.1)	0.12
CT pattern, n (%)	NSIP - 12 (54%) UIP - 5 (22%) LIP - 3 (13.6%) OP - 2 (9%)	NSIP 1 (20%) UIP 1 (20%) LIP 2 (40%) OP 1 (20%)	NSIP - 11 (65%) UIP - 4 (24%) LIP - 1 (6%) OP - 1 (6%)	-
UIP pattern, n (%)	5 (22%)	1 (20%)	4 (24%)	1.00

CYC, cyclophosphamide; oDMARDs, oral DMARDs; RTX, rituximab

Figure 1. FVC change before and after the immunosuppressive treatment

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