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Features of usual interstitial pneumonia in patients with primary Sjögren's syndrome compared with idiopathic pulmonary fibrosis

Yasunori Enomoto[a], *Tamiko Takemura*[b], *Eri Hagiwara*[a], *Tae Iwasawa*[c], *Koji Okudela*[d], *Noriyo Yanagawa*[e], *Tomohisa Baba*[a], *Fumikazu Sakai*[f], *Yuh Fukuda*[g], *Shouhei Nagaoka*[h], *Takashi Ogura*[a,*]

[a]*Department of Respiratory Medicine, Kanagawa Cardiovascular and Respiratory Center, 6-16-1, Tomioka-Higashi, Kanazawa-ku, Yokohama 236-0051, Japan*
[b]*Department of Pathology, Japanese Red Cross Medical Center, 4-1-22, Hiroo, Shibuya-ku, Tokyo 150-8935, Japan*
[c]*Department of Radiology, Kanagawa Cardiovascular and Respiratory Center, 6-16-1, Tomioka-Higashi, Kanazawa-ku, Yokohama 236-0051, Japan*
[d]*Department of Pathobiology, Yokohama City University Graduate School of Medicine, 3-9, Fukuura, Kanazawa-ku, Yokohama 236-0004, Japan*
[e]*Department of Radiology, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital, 3-18-22, Honkomagome, Bunkyo-ku, Tokyo 113-8677, Japan*
[f]*Department of Diagnostic Radiology, Saitama International Medical Center, Saitama Medical University, 1298, Yamane, Hidaka, Saitama 350-1298, Japan*
[g]*Department of Diagnostic Pathology, Itabashi Chuo Medical Center, 2-12-7, Azusawa, Itabashi-ku, Tokyo 174-0051, Japan*
[h]*Department of Rheumatology, Yokohama Minami Kyosai Hospital, 1-21-1, Mutsuura-Higashi, Kanazawa-ku, Yokohama 236-0037, Japan*

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ABSTRACT

Background: The different characteristics of usual interstitial pneumonia in patients with primary Sjögren's syndrome (UIP/pSS) compared with idiopathic pulmonary fibrosis (UIP/IPF) are not fully understood. This study aimed to compare characteristics, prognosis, and treatment responses in these patients.

Methods: Among 129 consecutive patients who underwent surgical lung biopsy to diagnose diffuse lung diseases at Kanagawa Cardiovascular and Respiratory Center between 1998 and 2002, we identified 10 and 19 patients with UIP/pSS and UIP/IPF, respectively. Baseline characteristics, chest high-resolution computed tomography (HRCT) and pathological findings, and the clinical course were compared between the two groups. Responses to

*Corresponding author. Tel.: +81 45 701 9581; fax: +81 45 786 4770.
E-mail addresses: yasuyasuyasu29@yahoo.co.jp (Y. Enomoto), byori@med.jrc.or.jp (T. Takemura), hagiwara@kanagawa-junko.jp (E. Hagiwara), tae_i_md@wb3.so-net.ne.jp (T. Iwasawa), krascv@yahoo.co.jp (K. Okudela), noriyo_yana@ybb.ne.jp (N. Yanagawa), baba@kanagawa-junko.jp (T. Baba), fmksakai@yahoo.co.jp (F. Sakai), fukuda@nms.ac.jp (Y. Fukuda), nagaokascrt@msn.com (S. Nagaoka), takashiogurajunko@yahoo.co.jp, ogura@kanagawa-junko.jp (T. Ogura).

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immunosuppressive therapy were analyzed by comparing pulmonary function and clinical status before and one year after treatment initiation.

Results: More patients in the UIP/pSS group tended to be female and older than those in the UIP/IPF group (mean age, 68 years vs. 62 years). In addition, they more commonly exhibited enlarged mediastinal lymph nodes and bronchial wall thickening on HRCT. Pathologically, in the UIP/pSS group, interstitial inflammation, plasma cell infiltration, lymphoid follicles with germinal centers, cysts, bronchiolitis, and pleuritis were significantly more prominent, whereas smooth muscle hyperplasia and fibroblastic foci were milder (all $P<0.05$). The prognosis was better for UIP/pSS compared with UIP/IPF patients ($P=0.01$). In addition, immunosuppressive therapy provided better disease control for those with UIP/pSS (83%, 5/6) compared UIP/IPF (7%, 1/15).

Conclusion: This study identified distinct clinical, radiological, and pathological characteristics of UIP/pSS compared with UIP/IPF. Immunosuppressive treatment could be a therapeutic option for UIP/pSS.

1. Introduction

Interstitial lung disease (ILD) is the most frequent form of lung involvement in primary Sjögren's syndrome (pSS), and it is classified into several patterns including non-specific interstitial pneumonia (NSIP), usual interstitial pneumonia (UIP), and organizing pneumonia [1]. Of these, NSIP is the most common, but UIP is not rare [2–4]. The characteristics of UIP in patients with collagen vascular diseases (CVDs) compared with idiopathic pulmonary fibrosis (UIP/IPF) have been evaluated in a number of studies [5–8], but none has distinguished between pSS and other CVDs. Most cases are accompanied by rheumatoid arthritis or scleroderma, and pSS is relatively rare. Patients with UIP and CVDs often have a better prognosis than those with UIP/IPF [6–9]. One study has suggested that the poor prognosis of patients with UIP and rheumatoid arthritis resembles that of patients with UIP/IPF [10]. These discrepancies emphasize the importance of analyzing each CVD separately. To the best of our knowledge, no study to date has undertaken a direct comparison of UIP in patients with pSS (UIP/pSS) compared with those with IPF (UIP/IPF), and the differences between the two groups are not fully understood.

The prognosis of patients with UIP/pSS is generally favorable, cases of progressive and/or symptomatic disease requiring intervention have also been reported [2,3,11]. According to a recent guideline, immunosuppressive treatments including corticosteroids and immunosuppressants, such as cyclophosphamide, azathioprine, and cyclosporin, are not recommended for patients with UIP/IPF [12]; however, it is unclear whether this is also applicable for patients with UIP/pSS.

The aim of this retrospective study was to directly compare the clinical, radiological, and pathological findings of patients with UIP/pSS and UIP/IPF, and to evaluate their prognosis and responses to immunosuppressive therapy.

2. Methods

2.1. Study subjects

We retrospectively reviewed the medical records of 129 consecutive patients who underwent a surgical lung biopsy for the diagnosis of diffuse lung diseases at Kanagawa Cardiovascular and Respiratory Center between December 1998 and May 2002. At our institution, a surgical lung biopsy is recommended for all patients with ILDs bar those who have a poor general condition, severely deteriorated pulmonary function, or typical UIP/IPF based on clinical and radiological findings. We included patients with a long-term follow-up to determine the accuracy of the prognosis and clinical course. Of the 129 patients, 10 were categorized as UIP/pSS and 19 as UIP/IPF. The excluded patients were diagnosed with other idiopathic interstitial pneumonias ($n=34$), a form of pSS other than UIP/pSS ($n=18$), or other diffuse lung diseases ($n=48$). Rheumatologists diagnosed pSS on the basis of the diagnostic criteria of the American–European consensus group [13]. The details of the pSS diagnosis are summarized in Table 1. The diagnosis of "UIP" was confirmed according to the pathological criteria of the 2002 American Thoracic Society/European Respiratory Society consensus classification of idiopathic interstitial pneumonias (2002 ATS/ERS classification of IIPs) [14]. That is, the hallmarks of the UIP pattern are patchy and paraseptal distribution of fibrosis, architectural destruction including honeycombing, and scattered fibroblastic foci. All patients diagnosed with UIP/pSS were also included in another recent study of ours [2], and none had identifiable causes for their lung disease other than pSS. The diagnosis of UIP/IPF was also based on the 2002 ATS/ERS classification of IIPs. The patients with UIP/IPF had never shown any signs or symptoms of CVDs during their clinical course. None of the patients in our study

Abbreviations: ATS, American Thoracic SocietyBAL, bronchoalveolar lavageCVD, collagen vascular diseaseDLCO, diffusion capacity for carbon monoxideERS, European Respiratory SocietyFVC, forced vital capacityHRCT, high-resolution CTIIPs, idiopathic interstitial pneumoniasILD, interstitial lung diseaseIPF, idiopathic pulmonary fibrosisLDH, lactate dehydrogenaseNSIP, non-specific interstitial pneumoniapSS, primary Sjögren's syndromeUIP, usual interstitial pneumonia UIP/IPF, usual interstitial pneumonia/idiopathic pulmonary fibrosisUIP/pSS, usual interstitial pneumonia/primary Sjögren's syndrome

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