Supplementary material

Patients and methods

Definitions

Patients were considered having respiratory symptoms, if they had persistent dyspnoea and/or dry cough lasting for at least three consecutive months. Patients with other obvious causes of dyspnoea and dry cough [asthma, chronic obstructive pulmonary disease (COPD), bronchiectasis, congestive heart failure, gastroesophageal reflux (GERD), medication (angiotensin-converting enzyme inhibitors)] were excluded from the study (1). Systemic manifestations were defined as described in the EULAR Sjögren's syndrome disease activity index (ESSDAI) domains (2) and for those not included in the ESSDAI, either by tissue biopsy or by applying international consensus criteria (3-5). Active smokers were defined as patients who were smoking at the time of inclusion in the study or had quit smoking less than a year. Former smokers were defined as patients who had ever smoked and had quit smoking more than a year before inclusion (6). History of treatment received by the patients included conventional synthetic disease modifying antirheumatic drugs (csDMARDs) (methotrexate, leflunomide, mycophenolate mofetil, azathioprine) and biologic disease modifying antirheumatic drugs (bDMARDs) (rituximab). Treatment modalities were recorded if they were administered for at least six months, except for rituximab which was recorded if at least one cycle of treatment was administered.

Pulmonary function tests

Classic spirometry was performed with the Q-Box (Cosmed Micro Quark, Italy). Age, gender, height and weight were recorded. Measurements were conducted while participants were seated and wore nose clips, using an automated spirometer connected to Q-Box. Up to three trials were conducted and the average of two technically acceptable tests was recorded. The following spirometric parameters were measured: forced vital capacity (FVC), forced expiratory volume in 1 second (FEV_1), maximal expiratory flow at 25%, 50% and 75% of vital capacity (MEF_{25}, MEF_{50}, MEF_{75}), forced expiratory flow after an expiration of 25% to 75% of forced vital capacity (FEF_{25-75}). Predicted values of respiratory parameters were calculated automatically, by comparing each respiratory parameter of patients to an average for a person of the same gender, height and age (7). DLCO was measured using the single breath holding technique with CH_4 and CO as tracer gases. DLCO was corrected according to the haemoglobin concentration. Up to four trials were conducted and the average of two technically acceptable tests was recorded. The predicted values of the European Respiratory Society were used (8).

High resolution computed tomography (HRCT) of the lungs

The HRCT of the lungs was performed at full inspiration and at end-expiration, visualising the lungs from their apex to their base in a supine position, with slice thickness of 1.5 mm. Radiographic findings of interstitial lung disease (reticular opacities, ground-glass opacities, consolidations, nodules, cysts, traction bronchiectasis, honeycombing) and their distribution were recorded for the definition of ILD and for the imaging pattern of ILD (fibrotic non-specific interstitial pneumonia [fNSIP], cellular non-specific interstitial pneumonia [cNSIP], lymphoid interstitial pneumonia [LIP], usual interstitial pneumonia, [UIP], organising pneumonia [OP]), according to the Fleischner Society definitions (9). The presence of radiographic features of small airways disease was also recorded (mosaic attenuation, hyperlucent areas implying air trapping on expiratory CT scan). Extent of ILD on HRCT scans was estimated in a semi-quantitative ordinal score, to the nearest ten percent.

Questionnaires for respiratory symptoms

St. George's Respiratory Questionnaire (SGRQ) is a 50-item self-completed questionnaire comprised of three domains: a. symptoms, concerned with respiratory symptoms, their frequency and severity, b. activity, concerned with limitation of activities by dyspnoea, c. impacts, concerned with impact of respiratory symptoms on quality of life. SGRQ score ranges from 0 to 100, with higher scores indicating worse respiratory symptoms and quality of life (10, 11). Functional Assessment of Chronic Illness Therapy-Dyspnoea (FACIT-D) questionnaire is a 10-item self-completed questionnaire concerned with the severity of dyspnoea when completing 10 common tasks. The raw score of FACIT-D questionnaire ranges from 0 to 30 and the scaled score from 27.7 to 75.9, with higher scores indicating worse dyspnoea (10, 12). Chronic obstructive pulmonary disease (COPD) assessment (CAT) score is an 8-item self-completed questionnaire, concerned with dyspnoea, cough and their impact on quality of life. CAT score ranges from 0 to 40, with higher scores indicating worse respiratory symptoms (13, 14).

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