

## Abstracts' Service

### Interstitial Pneumonia Related to Undifferentiated Connective Tissue Disease: Pathologic Pattern and Prognosis

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**Background.** Undifferentiated connective tissue disease (UCTD) involves conditions characterized by both having symptoms of connective tissue disease (CTD) and autoantibodies but not fulfilling the criteria of a specific CTD. The frequency or prognosis of the usual interstitial pneumonia (UIP) pattern in UCTD is unknown, which may be confused with idiopathic pulmonary fibrosis (IPF). This study aimed to investigate the frequency of the UIP pattern in interstitial pneumonia related to UCTD and compare its prognosis with that of IPF and UCTD-nonspecific interstitial pneumonia (UCTD-NSIP).

**Methods.** The medical records of 788 patients presumptively diagnosed with idiopathic interstitial pneumonia at Asan Medical Center from January 2005 to December 2012 were retrospectively reviewed. UCTD was diagnosed according to the criteria by Corte and colleagues, and the prognoses were compared between

UCTD-UIP and UCTD-NSIP and between UCTD-UIP and IPF.

**Results.** Among 105 patients with UCTD (13.3% of total subjects), 44 had a UIP pattern (by surgical lung biopsy: 24; by high-resolution CT scan: 20), 29 had a nonspecific interstitial pneumonia pattern (by surgical lung biopsy), and nine had an organizing pneumonia pattern (by biopsy). The overall survival of the UCTD-UIP group was shorter than that of the UCTD-NSIP group ( $P = .021$ ) but significantly better than that of the IPF group ( $P = .042$ ).

**Conclusions.** A UIP pattern, which seems to be frequent in UCTD, showed a poorer prognosis than that of UCTD-NSIP. However, the prognosis of UCTD-UIP was significantly better than that of IPF, highlighting the importance of searching for underlying UCTD in suspected IPF cases.

### Be Honest and Help Me Prepare for the Future: What People with Interstitial Lung Disease Want from Education in Pulmonary Rehabilitation

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Pulmonary rehabilitation (PR) is recommended for people with interstitial lung disease (ILD); however, the educational content of PR was not designed for this group. This study explored the perspectives of patients and ILD clinicians regarding the educational content of PR for ILD. A qualitative study using individual semi-structured interviews was undertaken. Transcripts were coded independently by two investigators and themes established by consensus. Participants were 18 people with ILD (9 idiopathic pulmonary fibrosis, diffusing capacity for carbon monoxide 54 (20)% predicted) and 14 clinicians from 5 countries and 5 disciplines. Major themes from patient interviews were the importance of

knowing what the future might bring and the need for honesty from clinicians. Most were happy to attend standard PR education sessions but wanted ILD-specific content. Patients wanted information about end-of-life planning and most were happy to discuss it in a group. Among clinicians, there was no consensus regarding whether prognosis should be discussed in PR. Most clinicians supported discussion of advanced care planning, however, some thought it should not be discussed in a group. We conclude that people with ILD have specific educational needs that may not be met in the current PR format. Patients and clinicians have some discordant views about programme content.

## Endosonography for Mediastinal Nodal Staging of Clinical N1 Non-small Cell Lung Cancer: A Prospective Multicenter Study

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**Background.** Patients with clinical N1 (cN1) lung cancer based on imaging are at risk for malignant mediastinal nodal involvement (N2 disease). Endosonography with a needle technique is suggested over surgical staging as a best first test for preoperative invasive mediastinal staging. The addition of a confirmatory mediastinoscopy seems questionable in patients with a normal mediastinum on imaging. This prospective multicenter trial investigated the sensitivity of preoperative linear endosonography and mediastinoscopy for mediastinal nodal staging of cN1 lung cancer.

**Methods.** Consecutive patients with operable and resectable cN1 non-small cell lung cancer underwent a lobe-specific mediastinal nodal staging by endosonography. The primary study outcome was sensitivity to detect N2 disease. The secondary end points were the prevalence of N2 disease, the negative

predictive value (NPV) of both endosonography and endosonography with confirmatory mediastinoscopy, and the number of patients needed to detect one additional N2 disease with mediastinoscopy.

**Results.** Of the 100 patients with cN1 on imaging, 24 patients were diagnosed with N2 disease. Invasive mediastinal nodal staging with endosonography alone has a sensitivity of 38%, which can be increased to 73% by adding a mediastinoscopy. NPV was 81% and 91%, respectively. Ten mediastinoscopies are needed to detect one additional N2 disease missed by endosonography.

**Conclusions.** Endosonography alone has an unsatisfactory sensitivity to detect mediastinal nodal metastasis in cN1 lung cancer, and the addition of a confirmatory mediastinoscopy is of added value.

**Trial Registry:** ClinicalTrials.gov; No.: NCT01456429; URL: [www.clinicaltrials.gov](http://www.clinicaltrials.gov)

## Six-minute Walk Distance in Patients with Chronic Obstructive Pulmonary Disease: Which Reference Equations Should We Use?

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The use of different 6-min walk distance (6MWD) reference equations probably results in different predicted 6MWD reference values. We wished to investigate the impact of several 6MWD reference equations for adults in patients with chronic obstructive pulmonary disease (COPD) and factors accountable for different 6MWD% predicted values. Twenty-two 6MWD reference equations were applied to a data set of 2757 patients with COPD. The predicted 6MWD reference value of Troosters and colleagues was used as the point of reference. Four out of 21 remaining equations resulted in comparable 6MWD% predicted, 16 equations resulted in significantly higher 6MWD% predicted and 1 equation resulted in a significantly lower 6MWD%

predicted. Similar differences in 6MWD% predicted were observed after stratification by sex. Body mass index and global initiative for chronic obstructive lung disease (GOLD) stage classification demonstrated varying results within and between the groups; 9 out of 21 equations resulted in comparable 6MWD% predicted in underweight patients but only 1 equation demonstrated comparable result in obese. Eight equations in GOLD I, whilst 5 out of 21 equations in GOLD IV resulted in comparable 6MWD% predicted. Existing 6MWD reference equations will give varying results. The choice of 6MWD reference equation should consider the consistency of 6-min walk test operating procedures and at least be specific for the country/region of origin.

## A Combination of Resistance and Endurance Training Increases Leg Muscle Strength in COPD: An Evidence-based Recommendation Based on Systematic Review with Meta-analyses

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Resistance training (RT) is thought to be effective in preventing muscle depletion, whereas endurance training (ET) is known to improve exercise capacity and health-related quality of life (HRQoL) in chronic obstructive pulmonary disease (COPD). Our objectives were to assess the efficiency of combining RT with ET compared with ET alone. We identified eligible studies through a systematic multi-database search. One author checked titles and abstracts for relevance using broad inclusion criteria, whilst two independent authors checked the full-text copies for eligibility. Two authors independently extracted data, and we assessed the risk of bias and quality of evidence according to the Grading of Recommendations Assessment,

Development and Evaluation guidelines. We included 11 randomized controlled trials (331 participants) and 2 previous systematic reviews. The meta-analyses showed equal improvements in HRQoL, walking distance and exercise capacity. However, we found moderate quality evidence of a significant increase in leg muscle strength favouring a combination of RT and ET (standardized mean difference of 0.69 (95% confidence interval: 0.39–0.98). In conclusion, we found significantly increased leg muscle strength favouring a combination of RT with ET compared with ET alone. Therefore, we recommend that RT should be incorporated in rehabilitation of COPD together with ET.