European Respiratory Society
Annual Congress 2013

Abstract Number: 4066

Publication Number: P3733

Abstract Group: 1.2. Rehabilitation and Chronic Care

Keyword 1: COPD - management **Keyword 2:** Physiotherapy care **Keyword 3:** Lung mechanics

Title: Role of chest expansion in pulmonary rehabilitation

Ms. Zsuzsanna 25471 Balogh kuncsuzsa@freemail.hu [1], Dr. Laszlo 25472 Lengyel lengyel@koranyi.hu [1] and Dr. Janos 25473 Varga varga@koranyi.hu [1]. [1] Department of Pulmonary Rehabilitation, National Koranyi Institute for TB and Pulmonology, Budapest, Hungary, H-1121 .

Body: Rationale: Chest wall dynamic hyperinflation and rib cage distortion can be a contributor to breathlessness in patients with COPD. The procedure to increase chest mobility includes specific chest stretching and mobilization. Complex pulmonary rehabilitation, including physiotherapy, breathing- and exercise training has favourable effect. Materials and methods: 48 patients with COPD (FEV1: 43±17 %pred, age: 62±8 years) was involved in the study. Chest wall-stretching exercises were composed of thoracic rotation and anterior compression with stretching in sitting position, trunk extension and rib torsion in supine lying. Patients were performing personalized exercise training including cycling and treadmill exercise 2-3 times for 20-30 minutes per day at 60-80% of peak work rate for 6 weeks. Results: Rehabilitation resulted improvement in six minutes walking distance (6MWD: 312±42 vs. 407±35m, p<0,05), chest expansion (3,9±1,2 vs. 5,9±0,7cm, p<0,05) and modified Borg scale (Borg (D): 7,6±2,3 vs. 4,8±1,3, p<0,05). FEV1 did not change significantly (43±17 vs. 45±19 %pred), and there was no correlation between FEV1 and chest expansion. The change of inspiratory- (IRV) and expiratory reserve volume (ERV) values did correlate with chest expansion (IRV: R2=0,38; ERV: R2=0,30, p<0,05). Conclusion: Chest wall expansion, dyspnea, hyperinflation and 6MWD significantly improved. Chest expansion was correlated with IRV and ERV. Measurement of chest expansion may add valuable information for the effectivity of pulmonary rehabilitation.