European Respiratory Society
Annual Congress 2013

Abstract Number: 919

Publication Number: P3569

Abstract Group: 1.2. Rehabilitation and Chronic Care

Keyword 1: Rehabilitation **Keyword 2:** Idiopathic pulmonary fibrosis **Keyword 3:** Exercise

Title: The effect of pulmonary rehabilitation on exercise tolerance pulmonary function dyspnea and quality of life in patients with idiopathic pulmonary fibrosis

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Body: Idiopathic pulmonary fibrosis (IPF) is a chronic, progressive, fatal lung disease with worse prognosis and no effective treatment. IPF characterized by restriction, impaired gas exchange, dyspnea, exercise intolerance and poor quality of life (QOL). However, little is known regarding the effect of pulmonary rehabilitation (PR) on IPF. The aim of the study was to examine the effect of PR on exercise tolerance, pulmonary function, dyspnea and QOL in IPF patients. Methods: A randomized controlled trial was conducted. Thirty-two IPF patients aged 67±8 years were allocated to PR group (n=15) or control group (n=17). PR group participated in 12-week outpatient pulmonary rehabilitation program, consisting of twice weekly 60-minute exercise training, while control group continued with regular medical treatment. Pulmonary function test, cardiopulmonary exercise test, 6MWT, dyspnea and QOL questionnaires were assessed at baseline and after 12-week intervention. Results: VO_2 peak and 6MWT increased significantly by 2.1 ml/kg/min p=0.002 and 70 m p<0.0001 respectively only in PR group. FVC % predicted, MVV, VT and VE increased by 3% p=0.038, 8 L, 0.16 L and 7 L respectively in PR group after the intervention. mMRC and SGRQ showed both a decrease (-0.8 and -7 p<0.0001 units respectively) in PR group. Conclusions: PR in patients with IPF improves exercise tolerance, pulmonary and ventilatory capacities, dyspnea and quality of life. PR effectively reversed several disease manifestations, which have an important clinical significance for IPF patients. We suggest considering include PR for all IPF patient as a standard comprehensive treatment.