7 versus 12 weeks of exercise in hospital-based COPD rehabilitation. Does it make a difference?

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Background: In the Danish guideline for COPD rehabilitation, the exercise recommendations are primarily based on studies using interventions lasting minimum 10 weeks. Furthermore, patients with COPD often have cognitive problems, requiring an intervention of a longer duration to facilitate life style changes including exercise habits. The aim of this study was to investigate whether increasing the duration of a COPD rehabilitation program from 7 to 12 weeks would correspondingly increase the effect.

Materials and Methods: The study is a before-after study with 3 months follow-up. All patients participating in the COPD rehabilitation program at Regional Hospital Silkeborg in the period May 2015 to October 2016 were included. The effect was assessed using the Endurance Shuttle Walk Test (ESWT), the sit-to-stand test (STT), the COPD Assessment Scale (CANS) and the Canadian Occupational Performance Measure (COPM). The outcomes were measured before and after the rehabilitation program, and 3 months after termination of the rehabilitation program.

Results: 23 patients were included in the 7-week group and 27 in the 12-week group. Both groups improved significantly on all the measured outcomes from pre- to post rehabilitation, with no differences between the two groups. At the three months follow-up this improvement was no longer significant, except for the COPM, and there were no differences between the two groups on any outcomes.

Conclusion: Prolonging our COPD rehabilitation program from 7 to 12 weeks, did not improve the effect significantly in terms of physical capacity and muscle strength, and neither did the effect last longer. Only the COPM did the two groups maintain their improvement, but again there was no difference between groups. Based on these findings we did not find reason to maintain the prolonged program.

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Barriers and motivational factors towards physical activity in COPD - an interview based pilot-study

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Background: Surprisingly few people in Denmark with Chronic Obstructive Pulmonary Disease (COPD) engage in physical activity even though it is evident that pulmonary rehabilitation has positive effects on activity level, dyspnea, anxiety, fatigue and quality of life.

Aims: To explore why people with COPD do not engage in physical activity and their motivational factors for being physically active.

Methods: Fieldwork among five people with COPD in Jutland, Denmark 2013-2016 using qualitative semi-structured interviews. Supplementary short semi-structured interviews with three general practitioners, and participation in a closed Facebook-group for people with COPD.

Results: Preliminary findings reveal that one main reason for not being physically active before rather late in the course of COPD was that people with COPD did not receive the necessary information from the general practitioners about the benefits of physical training neither the negative consequences of an inactive lifestyle.

Motivational factors for living a physically active life were first of all information about COPD and the benefits of physical training, secondly to experience the benefits on one's own body ("I get more energy when I train"). Other motivational factors were to experience that it was not dangerous to feel breathless and to have success coping with breathlessness. Functional tests were very important for persons with COPD because they showed the positive progress and were much easier to comprehend than spirometry tests.

Conclusion: It is of paramount importance that people with COPD, first of all and as early as possible receive information about the benefits of physical activity, and secondly experience the benefits of physical training on their own body. Physical training moves mountains in COPD.

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Trial Registration: Our work was approved by: The Central Denmark Region Committee on Biomedical Research Ethics, Skottenborg 26, Postboks 21, DK-8800 Viborg, Denmark.

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Maximal inspiratory pressure in patients with COPD

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Introduction: Decreased capacity of the respiratory muscles in patients with chronic obstructive pulmonary disease (COPD) is a known consequence of the disease. A low maximal inspiratory pressure (MIP) is associated with increased morbidity.

Objective: To examine MIP in patients with COPD who receive pulmonary rehabilitation (PR) in a hospital setting, and compare the data with gender and age matched reference values.

Methods: Patients with severe COPD (FEV1/FVC<0.7 and FEF25%−75%>50%) from Hillerød and Nordjylland Hospita factors were included in the study. Before PR MIP was tested using the PowerBreathe KH2 device. In addition, max knee-extension was measured with a dynamometer, and 6 min-walk, CAT, MRC and spirometry were assessed.

Results: 97 patients were included (39 men, 58 women, aged (mean±SD) 70±9.2 years, FEV1% pred. 35±10). The mean MIP was 63 (CI:95% 59-67) cm H2O and matched reference values were 76 (73-79) cm H2O (p<0.001), 39% had low MIP (< 62 cm H2O) and 7% were below the lower limit of normal. 76% performed the test with values varying less than 10 cm H2O. When data were adjusted for age and gender in linear regression analyses, MIP was associated with FVC%pred. and either 6 min-walk (r 0.05, CI 0.99 0.01-0.9, p<0.001) or max knee-extension (r 0.1, CI 95% 0.1-0.3, p<0.001), but not with CAT or MRC.

Conclusion: Mean MIP was significantly reduced in patients with COPD compared to age and gender matched reference. MIP was not associated with self-reported health and symptoms. Even though an association was found between quadriceps strength and inspiratory muscle strength other unknown factors affect MIP. To determine the inspiratory muscle strength in a patient with COPD, it is necessary to measure MIP.

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Dysfunctional breathing - extent of screening and treatment in Denmark 2016; an exploratory survey

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Background: Dysfunctional breathing (DB) is an identified cause of dyspnoea. DB is defined as biomechanical alterations of the breathing pattern, without an inflammatory component. No medical therapy is available. The only therapy supported by some evidence is targeted physiotherapy, however high-quality trials are missing. Little is known about current DB screening and treatment practice in Denmark. Furthermore, major co-morbidities associated with DB are also unknown.