

PHYSICAL TRAINING IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE, COPD

av

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Abstract

Chronic obstructive pulmonary disease, COPD, places a substantial burden of disability on the growing number of patients and causes large costs for the society. Tobacco smoke is the most important risk factor. Progressive exertional dyspnea is the major symptom which leads to diminished physical and social activities, reduced physical capacity and decreased health related quality of life, HRQoL.

The aim of this thesis was to evaluate different physical training modalities in patients with COPD with regard to physical capacity and HRQoL. Patients with moderate to severe COPD were included in the studies. In the first intervention, 20 patients trained on a treadmill with or without supplemental oxygen, three times per week, during eight weeks. In the second intervention, 30 patients were randomised to high-intensity group training either in water or on land, and 13 patients were included in a control group. The patients in the water and land groups trained three times per week during three months and once a week during the following six months.

Oxygen supplementation during physical training did not enlarge the positive effects of the same training with air in patients with exercise-induced hypoxaemia. Both groups improved the distance walked after training. High-intensity group training in water and on land was found to be effective with regard to walking distance and HRQoL compared to the control group. Training in water seemed to be of greater benefit compared to training on land concerning walking distance and experienced physical health when the training was accomplished three times per week. The thigh muscle strength increased after training in both the water and the land group. The muscle endurance in knee extension was low in the majority of the patients and was not improved after the training intervention. An evaluation of the long-term effects of physical group training and the effects of decreased training frequency showed that training with low frequency (once a week) during six months did not seem to be sufficient to maintain the level achieved after a three months period of higher frequency training (three times per week). However, the two periods combined seemed to prevent decline in physical capacity and HRQoL compared to baseline.

The conclusion is that physical training is of benefit for patients with COPD with regard to physical capacity and HRQoL. Training can be performed individually or in groups, with high intensity, in water and on land. It is also concluded that the training can, under controlled conditions, be performed without supplemental oxygen even in patients with exercise-induced hypoxaemia.

Keywords: Chronic obstructive pulmonary disease; Physical training; Oxygen; Water training; Group training; Physical capacity; Health related quality of life; Long-term effect

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