Exercise for Enhancing Recovery in Out-Patients with Acute Exacerbation of Chronic Obstructive Pulmonary Disease

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Rationale The physical activities and exercise capacity of patients with acute exacerbation of chronic obstructive pulmonary disease (AECOPD) reduced during hospitalization. The adherence rate of pulmonary rehabilitation (PR) is low in patients with COPD. Therefore, the purpose of this study is to investigate the effects of resistance training and high intensity interval training (HIIT) on exercise capacity and lung function in out-patients after AECOPD and explore the efficacy of virtual reality (VR) on willingness. Design Thirty patients with AECOPD after discharge were divided into 3 groups and were contacted or trained 24 times for 8 weeks. One group is usual care group (control group), and the intervention are pharmacological therapy, limbs exercise at home and education. Patients were contacted 3 times/week. The 2nd group is HIIT with elliptical trainer group, and the exercise intensity is 65∼85% heart rate reserve for 30 min/session, 3 sessions/week. The 3rd group is resistance exercise training with VR group which was included 6 combined movements to train biceps brachii, triceps brachii, deltoid, pectoralis major, and quadriceps for 3 sessions/week. The resistance is 60% of muscle strength. VR was used during exercise. Before training, 4 week, 8 week, and 4 week after training, we compared exercise capacity, cardiorespiratory function, health-related quality of life, muscle strength and motivation of attending PR. Results The results showed the improvement of exercise capacity, cardiorespiratory function, muscle strength, and health-related quality of life in resistance exercise group and HIIT group. And there is also improvement of motivation of attending PR in resistance exercise group. There is no significant difference between resistance exercise group and HIIT group. Conclusion Both resistance training and HIIT improve the functional activities of daily life of patients’ and reduce symptoms when patients perform physical activities. And VR attracts patients to attend PR program.

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