

ORIGINAL ARTICLE

Influence of Pulmonary Rehabilitation on Clinical Characteristics in Patients with Chronic Heart Failure and Chronic Obstructive Pulmonary Disease

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Abstract

Background: The improvement of treatment strategies in patients with chronic obstructive pulmonary disease (COPD) and especially with comorbid pathology should provide rational conversion of standard schemes of therapy and rehabilitation in accordance with their clinical, pathogenic, functional and economic feasibility.

Objective: To assess the influence of pulmonary rehabilitation on clinical characteristics in patients with chronic heart failure (CHF) and concomitant COPD.

Methods: The study included 102 patients with CHF and concomitant COPD (males, 62%; mean age, 68.2 ± 4.5 years). All patients were divided into two groups: control group (CG) (n = 54), received only standard therapy of CHF and COPD; and intervention group (IG) (n = 48) were additionally taught the full yogic breathing as a program of pulmonary rehabilitation. Calculation of points by clinical evaluation scale (CES), assessment of CHF functional class (FC) (NYHA) and 6-minute walk test (6MWT - with the evaluation of dyspnea by the Borg scale) were performed in all patients on admission to the department and at discharge. Significant association was defined by p value < 0.05.

Results: At baseline, there were no significant differences in clinical characteristics of the patients and studied parameters between the groups. At discharge both groups showed significant reduction of dyspnea by the Borg scale (in CG: from 7.2 ± 0.8 points to 5.2 ± 0.3 ; in IG: from 7.4 ± 0.6 points to 3.2 ± 0.4), the number of points by CES (in CG: from 10.8 ± 0.3 points to 7.2 ± 0.4 ; in IG: from 10.7 ± 0.6 points to 5.9 ± 0.6). Increase in exercise tolerance (by the distance of 6MWT) was observed in both groups (in CG: from 215 ± 24 m to 275 ± 22 m; in IG: from 219 ± 21 m to 308 ± 24 m). The changes were more significant in IG compared to CG. We observed the prominent decrease in CHF FC and length of hospital stay in IG.

Conclusions: Application of full yogic breathing as the program of pulmonary rehabilitation in addition to standard therapy of the patients with CHF and COPD is associated with a significant decrease in CHF FC, an increase in exercise tolerance and a reduced length of hospital stay. (Int J Cardiovasc Sci. 2018; [online].ahead print, PP.0-0)

Keywords: Cardiac Insufficiency / physiopathology; Pulmonary Disease, Chronic Obstructive / rehabilitation; Exercise Therapy; Oxygen Consumption.

Introduction

Scientists have extensively been discussing the necessity of pulmonary rehabilitation in patients with chronic obstructive pulmonary disease (COPD), the main objectives of which are to reduce symptoms and improve the quality of life.¹ It was found that the rehabilitation

measures have a positive impact on important aspects of the patient's life. The results of several studies show that pulmonary rehabilitation could increase physical activity, oxygen consumption and patients' endurance, reduce the frequency and duration of hospitalization, and greatly improve the efficiency of therapy.²⁻⁴ It follows that the improvement of treatment strategies in patients with

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