Abstract

Eight Weeks of Pulmonary Rehabilitation in Patients with Pulmonary Embolism: A Preliminary Report [†]

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Abstract: **Aim:** Pulmonary rehabilitation (PR) is an important and safe intervention which can improve health indicators and quality of life. The purpose of our study was to investigate the effect of 8 weeks of PR in patients with pulmonary embolism (PE) during (tele)rehabilitation and self-selected exercise (SSE) versus supervised exercise in a rehabilitation center (SE). **Material & Method:** 14 patients with PE participated in our study (age, 50.7 ± 15.1 yrs; BMI, 30.0 ± 3.3 kg/m²; male, 78.6%) and were divided into two groups (SSE, $n = 7$, vs. SE, $n = 7$). Inclusion criteria were diagnosis of PE > 6 months and weekly exercise ≤ 100 min. For each patient, demographics, characteristics of PE episodes, follow-up after the thromboembolic event, and echocardiography were recorded. Before and after the PR program we recorded anthropometric characteristics and questioners [Quality of life (SF-36) and Pittsburg sleep quality index (PSQI)], and we performed blood sampling for NT-proBNB measurement. Patients underwent cardiopulmonary exercise testing until exhausting. The PR exercise program included the following: SE, 3/w, 30-min intermittent exercise 1/1 in cycle ergometer at 70% $\dot{V}O_{2max}$ calculated from heart rate, 10-min respiratory physiotherapy, and 10-min strength exercises; SSE, 50-min walking at 60% $\dot{V}O_{2max}$, 10-min (tele)respiratory physiotherapy and 10-min strength exercise. **Results:** The SSE group differed in mean arterial pressure at the end of ergospirometry pre- and post-PR (87.6 ± 3.3 vs. 95.0 ± 5.5 mmHg, $p < 0.05$). All patients showed differences pre- and post-PR in SF-36 (general health, 57.5 ± 14.9 vs. 63.8 ± 20.5 , $p < 0.05$; physical health, 63.8 ± 18.9 vs. 75.6 ± 14.5 , $p < 0.05$) and PSQI (cannot get to sleep within 30 min, 5.3 ± 2.2 vs. 3.5 ± 1.7 , $p < 0.05$; enthusiasm, 1.3 ± 0.7 vs. 0.3 ± 0.5 , $p < 0.05$) but we observed no differences between groups. The NT-proBNB (73.8 ± 11.8 vs. 104.0 ± 55.7 pg/mL) and ergospirometry parameters were not significantly different pre- and post-PR or between groups. **Conclusions:** PR may present a safe intervention in patients with PE. Post-PR results are similar in patients with SE and SSE.

Keywords: exercise; pulmonary embolism; pulmonary rehabilitation

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