

The Effect of incentive spirometry on chest expansion and breathing work in patients with chronic obstructive airway diseases. Comparison of two methods.

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Ho S;C.;Chiang L.L.;Cheng H.F.;Lin H.C.;Sheng D.F.;Kuo

H.P.;Lin H.C.

摘要

Abstract

BACKGROUND: Chronic obstructive airway diseases (COAD), characterized by mucus hypersecretion, lead to exercise intolerance. Incentive spirometry has been used to prevent postoperative pulmonary atelectasis. **METHODS:** To compare the efficacy of two incentive spirometers, Coach (volume-oriented) and Triflo (flow-oriented), in the work of breathing in COAD patients, 22 patients were randomized in this study: 12 patients (Triflo-II group) initially used Triflo-II for 10 minutes and then Coach for the same period. In contrast, the Coach group, including 10 patients, started with Coach followed by Triflo-II. After receiving incentive spirometry, lung expansion and work of breathing were assessed. **RESULTS:** Patients in the Coach group significantly increased chest wall expansion ($p = 0.041$), as compared with patients using Triflo-II. Similarly, there was also a significantly increased abdominal wall expansion in the Coach group ($p = 0.0056$), compared with that in the Triflo-II group. The need of accessory muscle assistance for breathing in the Coach group was significantly less than in the Triflo-II group ($p = 0.047$). It was easier for patients in the Coach group to start a breath ($p = 0.0058$) than for those in the Triflo-II group. For the entire group, 17 patients (77.3%) preferred Coach to assist their breathing, and only 4 patients (18.2%) favored Triflo-II. **CONCLUSION:** COAD patients achieved a larger expansion of the chest and abdomen with a Coach device. Our data provide a good rationale for an outcome study on the use of incentive spirometer in COAD patients