Abstract

Background: Although respiratory physical therapy is considered fundamental in the treatment of hypersecretive patients, there is little evidence of its physiological and therapeutic effects in bronchiectasis patients. Objective: To evaluate the acute physiological effects of ELTGOL and Flutter VRP1® in dynamic and static lung volumes in patients with bronchiectasis and, secondarily, to study the effect of these techniques in sputum elimination. Methods: Patients with clinical and radiological diagnosis of bronchiectasis were included. Patients underwent three interventions in a randomized order and with a one-week washout interval between them. Before all interventions patients inhaled two puffs of 100 cg of salbutamol. There was a cough period of five minutes before and after the control protocol and the interventions (ELTGOL and Flutter VRP1®). After each cough series patients underwent assessments of dynamic and static lung volumes by spirometry and plethysmography. The expectorated secretions were collected during the interventions and during the second cough series, and quantified by its dry weight. Results: We studied 10 patients, two males and eight females (mean age: 55.9±18.1 years). After using Flutter VRP1® and ELTGOL there was a significant decrease in residual volume (RV), functional residual capacity (FRC) and total lung capacity (TLC) (p<0.05). There was a higher sputum production during ELTGOL compared with Control and Flutter VRP1® (p<0.05). Conclusion: The ELTGOL and Flutter VRP1® techniques acutely reduced lung hyperinflation, but only the ELTGOL increased the removal of pulmonary secretions from patients with bronchiectasis. Trial Registration ClinicalTrials.gov NCT01300403.

Keywords

Bronchiectasis, plethysmography, physical therapy, respiratory therapy.