

Flow-Oriented Incentive Spirometry in the Reversal of Diaphragmatic Dysfunction in Bariatric Surgery Postoperative Period

Authors : Eli Maria Forti-Pazzianotto, Carolina Moraes Da Costa, Daniela Faleiros Berteli Merino, Maura Rigoldi Simões Da Rocha, Irineu Rasera-Junior

Abstract : There is no conclusive evidence to support the use of one type or brand of incentive espirometry over others. The decision as to which equipment is best, have being based on empirical assessment of patient acceptance, ease of use, and cost. The aim was to evaluate the effects of use of two methodologies of breathing exercises, performed by flow-oriented incentive spirometry, in the reversal of diaphragmatic dysfunction in postoperative bariatric surgery. 38 morbid obese women were selected. Respiratory muscle strength was evaluated through the nasal inspiratory pressure (NIP), and the respiratory muscles endurance, through incremental test by measurement of sustained maximal inspiratory pressure (SMIP). They were randomized in 2 groups: 1- Respirom® Classic (RC) the inspirations were slow, deep and sustained for as long as possible (5 sec). 2- Respirom® Athletic1 (RA1) - the inspirations were explosive, quick and intense, raising balls by the explosive way. 6 sets of 15 repetitions with intervals of 30 to 60 seconds were performed in groups. At the end of the intervention program (second PO), the volunteers were reevaluated. The groups were homogeneous with regard to initial assessment. However on reevaluating there was a significant decline of the variable PIN ($p < 0.0001$) and SMIP ($p=0.0004$) in RC. In the RA1 group there was a maintenance of SMIP ($p=0.5076$) after surgery. The use of the Respirom Athletic 1, as well as the methodology of application used, can contribute positively to preserve the inspiratory muscle endurance and improve the diaphragmatic dysfunction in postoperative period.

Keywords : bariatric surgery, incentive spirometry, respiratory muscle, physiotherapy

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