Abstract

OBJECTIVES: The aims of this study were to evaluate whether there are changes in lung volumes, capnography, pulse oximetry and hemodynamic parameters associated with manual chest compression-decompression maneuver (MCCD) in patients undergoing mechanical ventilation (MV). Method: A prospective study of 65 patients undergoing to MV after 24 hours. All patients received bronchial hygiene maneuvers and after 30 minutes they were submitted to ten repetitions of the MCCD during 10 consecutive respiratory cycles in the right hemithorax and then in the left hemithorax. The data were collected before the application of the maneuver and after 1, 5, 10, 15, 20, 25, 30, 35 and 40 minutes following application of the maneuver. RESULTS: There were statistical significant (p<0.0001) improvements in the following parameters after MCCD maneuver during all phases of data collection until 40 minutes: inspiratory tidal volume (baseline: 458.2±132.1 ml; post 1 min: 557.3±139.1; post 40 min: 574.4±151), minute volume (baseline: 7.0±2.7 L/min; post 1 min: 8.7±3.3; post 40 min: 8.8±3.8), and pulse oximetry (baseline: 97.4±2.2%; post 1 min: 97.9±1.8; post 40 min: 98.2±1.6; p<0.05). There was a reduction in CO2 expired (baseline: 35.1±9.0 mmHg; post 1 min: 31.5±8.2; post 40 min: 31.5±8.29; p<0.0001). There was no statically significant changes in heart rate (baseline: 94.5±20.5 mmHg; post 1 min: 94.7±20.5; post 40 min: 94.92±20.20; p=1) and mean arterial pressure (baseline: 91.2±19.1 bpm; post 1 min: 89.5±17.7; post 40 min: 89.01±16.88; p=0.99). The variables were presented in terms of means and standard deviations. CONCLUSION: The MCCD maneuver had positive effects by increasing lung volume and pulse oximetry and reducing CO2 expired, without promoting hemodynamic changes in patients undergoing mechanical ventilation.

Keywords
Manual chest maneuver, mechanical ventilation, atelectasis, physical therapy.