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Title: The use of high-freguency chest-wall compression therapy for COPD patients

Dr. Natalia 16096 Meshcheryakova m_natalia1967@inbox.ru MD [1], Prof. Andrey 16097 Belevsky pulmobas@yandex.ru MD [1] and Mr. Alexander 16098 Cherniak achi2000@mail.ru [1]. [1] Humanistic Laboratory, Pulmonology Research Institute, Moscow, Russian Federation .

Body: Background: The high-freguency chest-wall compression therapy (HFCCT) application on influences on muscle function. We propose that HFCCT may have an effect on lung function and quality of life in COPD patients. Aim: To assess of HFCCT on airway obstruction, lung hyperinflation, severity of dyspnea and quality of life in COPD patients. Methods: 34 COPD patients were randomized in 2 groups. Group 1 (60,4±8,6 yrs, 34,6±11,6 pack/yrs, FEV1 36,4±11,0 %pred., FEV1/FVC 40,0±10,0 %, MRC 4,0±0,2) received ICS, LABA, tiotropium bromide. Group 2 (66,2±7,0 yrs, 37,6±9,3 pack/yrs, FEV1 48,1±23,6 %pred., FEV1/FVC 45,2±17,4 %, MRC 3,9±0,1) - the same therapy + HFCCT (by The Vest Airway Clearance System). Lung function, QoL MOS SF-36, MRC - before and after 2 weeks were evaluated. Vest session parameters: frequency 8,5±1,3 Hz, compression 5,4±1,6 bar, time 16,7±3,6 min, 14 sessions. Results: There was a significant improvement in the lung function (∆FVC 5,0±2,1 %pred., p<0,01, ∆FEV1 8,7±4,9 %pred., p<0,01, ∆PEF 8,2±3,3 %pred., p<0,01, ∆TLC 9,0±4,4 %pred., p<0,05, ∆RV 20,0±3,0 %pred., p<0,01, ∆RV/TLC 5,2±0,2 %, p<0,05), QoL parameters (∆PF 13,2±2,4 %, p<0,001, ∆RP 18,4±10,5 %, p<0,05, ∆CH 9,1±1,5 %, p<0.05, ∆BP 8,2±0,3 %, p<0,001, ∆ RE 27,5±13,6 %, p<0,01) and dyspnea's severity (∆MRC 1,2±0,1) in group 2. There were not significant improvements in group 1. Conclusion: We suggest that the HFCCT use improves airway obstruction, decreases lung hyperinflation, severity of dyspnea and improves quality of life in COPD patients.