Is Afghan walking sessions integration of interest for COPD patients rehabilitation?

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Résumé

Context: Chronic Obstructive Pulmonary Disease (COPD) is characterized by progressive and non-reversible airflow limitation. Recommendations for exercise training in patients with COPD consist of combining endurance, strength and inspiratory muscle training programs. Pulmonary rehabilitation improves exercise tolerance, reduces respiratory symptoms and increases patient's quality of life (QoL) (Gloeckl, Marinov & Pitta, 2013). Meditation and breathing control activities have also shown benefits (Yudhawati & Rasjid Hs, 2019). The Afghan walk (Stiegler, 2004) is a physical activity that combines an aerobic effort, a meditative state and a rhythmic breathing technique based on the subject's footstep. The main respiratory pattern consist of an inspiratory phase during 3 footsteps, keeping inflated lungs during a fourth and then an expiratory phase during 3 footsteps, ending with keeping deflated lungs during a last footstep, before starting a new cycle. Despite of the many supposed benefits associated with this activity, to our knowledge, there is no scientific evidence supporting the interest of conducting this activity in COPD patients.

The aim of this study was to assess the effects of implementing Afghan walking sessions in a respiratory rehabilitation program on functional capacity, ventilatory parameters and QoL in COPD patients.

Methods: Thirty patients with COPD (GOLD score: 2.7±1) gave their written informed consent to participate in the study. After having completed an evaluation of anthropometric characteristics, respiratory function, functional capacity (6-MWT) and QoL (SF-36) examinations, participants were randomly allocated to either a control group or an experimental group. For all participants, the 4-weeks respiratory rehabilitation program was composed of daily cycloergometer sessions, strength-training and stretching sessions. In addition, each week, 5 treadmill walking sessions were added to the control group (CTRL) while the experimental group (EXP) completed 3 Afghan walking sessions, completed by 2 treadmill walking sessions. Ventilatory, functional and QoL assessments were repeated at the end of the program in both groups. Descriptive analysis and a Linear Mixed Model (LMM) were used to assess the impact of each rehabilitation program.

Results: Compared to CTRL, EXP had higher improvements in vital capacity (VC: -0.3% vs. +7.5%) forced vital capacity (FVC: 0% vs. +13.7%), forced expiratory volume

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in 1 second (FEV1: -4% vs. +14.9%) and inspiratory and expiratory capacities (-0.8% vs. +11% and +4.1% vs. +8.7%). The LMM tended to show significant effects of Afghan walking sessions on VC, FVC and FEV1. Both groups improved 6-MWT distance (+13.9% vs. +11.9%). The lower benefit observed for EXP could be explained by lower walking speed and travelled distance during Afghan walking sessions compared to treadmill sessions. Finally, QoL was not improved in CTRL and EXP. This surprising result could be related to biased responses linked to pre-program quarantine week.

Conclusion: Afghan walking could be a usefull activity in COPD patient's rehabilitation. Further analyzes are required to confirm this assumption.

References:

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