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Effect of pulmonary rehabilitation on physical and mental status in cognitively impaired patients with COPD: Preliminary data

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The beneficial effects of Pulmonary Rehabilitation (PR) are well established in COPD. However, data for the effectiveness of PR in patients with COPD and co-existing cognitive impairment are limited. We wish to compare the effect of a Pulmonary Rehabilitation program on cognitive function, health status, and exercise outcomes in Cognitively Normal (CN) and Cognitively Impaired (CI) patients with COPD. Methodology & Theoretical Orientation: Sixty COPD patients (FEV1: 47±15%; 42%women) referred to 3-week in-patient PR and classified as "CN" or "CI" according to the Montreal Cognitive Assessment (MoCA) cutoff-score (≤25points). Domain-specific cognitive function (MoCA, SMMSE, ACER, T-ICS), health status (CAT), health-related quality of life (SF-36), the Six-Minute Walk Test (6MWT) and cerebral oxygen availability during cycle endurance test (CET) at 75% of peak Work Rate, were assessed on admission and discharge of PR program. Findings: Twenty-five patients (42%) presented evidences of CI and low performance in cognitive tests. Compared to CN, CI patients improved visuospatial skills and fluency (Effect Size; ES: 0.44; 0.48), whilst similar improvements in memory (ES: 0.75), physical and social function (ES: 0.45; 0.47), vitality (ES: 0.56), general and mental health (ES: 0.47; 0.67) were observed, respectively. CI patients did not improve body pain and limitations from emotional problems as assessed by SF-36 but increased 6MWD (from 378 to 403m, p=0.052), CET (from 10.0 to 12.3min, p<0.001) and SpO_2 nadir ([Δ]: +1.1%, p=0.047) in cycling, whilst CET cerebral oxygen availability remained unchanged. The proportion of CI and CN with clinically relevant improvements in 6MWT, CET and CAT was similar. Conclusion & Significance: CI patients gain significant benefits in cognitive function from PR but are not responsive to improvements in body pain and emotional limitations compared to CN. Persistent body pain may have limited the effectiveness of PR and improvements in the 6MWT in cognitively impaired patients with COPD.

Biography

Vasileios Andrianopoulos is a clinical exercise physiologist / researcher working as postdoctoral research fellow at Schoen Klinik Berchtesgadener Land in Germany. He has his expertise in COPD pathophysiology, COPD-related cognitive impairment, clinical exercise assessment and Pulmonary Rehabilitation programs for COPD patients. Devoting himself to research, he acquired experience in designing research protocols, analyzing data and writing manuscripts as well as in operating several clinical devices. He has numerous scientific publications in healthy individuals and COPD patients. Since 2014, he is an active member of the European Respiratory Society (ERS) College of Experts and recently, in 2016, he has been awarded with a prestigious Marie Skłodowska-Curie fellowship co-funded by the European Union (EU) and the European Respiratory Society (ERS) for his project about cognitive dysfunction in patients with COPD

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