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Safety and Efficacy of Moderate to High Intensity Aerobic Exercise and Strength Training in Pulmonary Hypertension (PH): A Pilot Study

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Background: Pulmonary Hypertension patients demonstrate decreased functional activity tolerance and are limited by shortness of breath, fatigue and decreased exercise capacity. Exercise training including moderate to high intensity aerobic and strength training has been suggested as an effective treatment as an adjunct to medication. This study investigates the safety and efficacy of Exercise testing and moderate to high-intensity aerobic and strength training in patients with Pulmonary Hypertension.

Methods: Patients (5 female/3 male; mean age of 52.5) with PH underwent monitored cardiopulmonary PT for 90 minutes, 2 times per week, for 12 weeks for a total of 24 sessions consisting of breathing retraining, monitored aerobic exercise, upper and lower body strength training, and patient education

Results: The mean peak MET level achieved during the post-rehabilitation exercise tests (6.74 ± 2.48 METs) was significantly HIGHER ($p=0.018$) than pre-rehabilitation exercise test (4.27 ± 2.02 METs). The mean peak Rate of Perceived Exertion (RPE) level achieved during the post-rehabilitation exercise tests (13.38 ± 1.19) was significantly LOWER ($P=0.041$) than pre-rehabilitation exercise test (14.50 ± 0.93). The mean peak Dyspnea level achieved during the post-rehabilitation exercise tests (13.63 ± 1.30) was significantly LOWER ($P=0.041$) than pre-rehabilitation exercise test (14.75 ± 0.89). In this study, Improvements in METs, RPE and Dyspnea have a large clinical significance (effect sizes 0.72-0.84).

Conclusions: Monitored Moderate to High Intensity Aerobic Training with use of supplemental oxygen is safe and effective in improving exercise capacity and exercise tolerance in PH patients.



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