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Title: Inspiratory muscle training in pulmonary hypertension

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Body: Aim and Background: Pulmonary hypertension (PHT) is a syndrome, associated with hemodynamic alteration of a number of diseases and processes. It has been demonstrated that patients with PHT have inspiratory muscle weakness, possibly further increase fatigue and dyspnea during exercise. Therefore, the purpose of this study was to investigate the effects of inspiratory muscle training (IMT) on functional exercise capacity, respiratory muscle strength, activities of daily living (ADL), and fatigue perception in patients with PHT. Methods: Twenty-nine clinically stable PHT patients were included. These patients were randomly assigned to a six-week IMT program (14 patients) or to a sham IMT (15 patients) protocol. Before and after the treatment, respiratory muscle strength using mouth pressure device, functional capacity using 6-minute walking test (6MWT), ADL using Health Assessment Questionnaire (HAQ), and fatigue perception using Fatigue Severity Scale (FSS) were evaluated. Results: There were significant increases in maximal inspiratory pressure (99.9 ± 21.5 vs. 73.0 ± 29.6 cmH₂O), maximal expiratory pressure (114.6 ± 29.1 vs. 93.5 ± 27.7 cmH₂O), and 6MWT distance (476.4 ± 90.1 vs. 334.0 ± 121.6 m) in the IMT group as compared with sham therapy group ($p < 0.05$). There were significant decreases in FSS score (9.9 ± 3.7 vs. 13.5 ± 3.9) and HAQ scores (4.9 ± 5.0 vs. 14.5 ± 11.6), in IMT group as compared with the control group ($p < 0.05$). Conclusion: The IMT ensures significant improvements in respiratory muscle strength and functional capacity, thus resulting in reduction of discomfort during ADL, increase in exercise capacity and decrease fatigue perception in patients with PHT. IMT is a practical and safe treatment without any complications in PHT.