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Title: Respiratory function, functional capacity, and physical activity in patients with scleroderma

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Body: Aim: Scleroderma is a chronic multisystem disease of unknown origin, characterized by fibrosis on the connective tissue of skin and internal organs. Because of pulmonary involvement, patients' exercise tolerance is poor and functional capacity is impaired. The purpose of this study was to compare lung function, functional capacity, and physical activity, between patients with scleroderma and healthy controls. Materials and Methods: Ten scleroderma patients (9F, 1M, 53.3±9.4 years) and ten healthy controls (8F, 2M, 45.5±12.6 years) participated in the study. Pulmonary function test was performed using spirometry. Functional capacity was evaluated using six-minute walk test (6MWT). Heart rate, oxygen saturation, dyspnea and fatigue perception using modified Borg Scale was recorded before and after the test. Subject's physical activity level was assessed using the International Physical Activity Questionnaire (IPAQ). Results: All scleroderma patients involved in this study had interstitial lung involvement. The FEV_1, $FEF_{25-75\%}$, and 6MWT distance were significantly, lower in patients with scleroderma ($p<0.05$). The %6MWT distance of the patients was 64.5±23.2%. Oxygen desaturation, dyspnea and fatigue perception at the end of 6MWT were significantly higher in patients with scleroderma as compared with the healthy controls ($p<0.05$). The IPAQ moderate physical activity score and IPAQ total score were significantly lower in patients with scleroderma ($p<0.05$). Conclusions: Lung function, functional exercise capacity, and physical activity level is adversely affected in patients with scleroderma. Exercise training programs may be useful in scleroderma patients.