Abstract

BACKGROUND: Frailty syndrome in elderly people is characterized by a reduction of energy reserves and also by a decreased resistance to stressors, resulting in an increase of vulnerability. OBJECTIVE: The aim of this study was to verify the effect of a muscle-strengthening program with load in pre-frail elder women with regards to the functional capacity, knee extensor muscle strength and their correlation. METHODS: Thirty-two pre-frail community-dwelling women participated in this study. Potential participants with cognitive impairment (MEEM), lower extremities orthopedic surgery, fractures, inability to walk unaided, neurological diseases, acute inflammatory disease, tumor growth, regular physical activity and current use of immunomodulators were excluded. All participants were evaluated by a blinded assessor using: Timed up and go (TUG), 10-Meter Walk Test (10MWT) and knee extensor muscle strength (Byodex System 3 Pro® isokinetic dynamometer at angular speeds of 60 and 180(0)/s). The intervention consisted of strengthening exercises of the lower extremities at 70% of 1RM, three times/ week for ten weeks. The statistical analysis was performed using the ANOVA and Spearman tests RESULTS: After the intervention, it was observed statistical significance on the work at 180(0)/s (F=12.71, p=0.02), on the power at 180(0)/s (F=15.40, p=0.02) and on the functional capacity (TUG, F=9.54, p=0.01; TC10, F=3.80, p=0.01). There was a good negative and statistically significant correlation between the TUG and work at 60(0)/s, such as the TUG and work at 180(0)/s (r=-0.65, p=0.01; r=-0.72, p=0.01). CONCLUSION: The intervention improved the muscular power and the functional capacity. The increase of the power correlated with function, which is an important variable of the quality of life in the pre-frail elders. Article registered in the ISRCT register under number ISRCTN62824599.

Keywords

Physical therapy, rehabilitation, elderly, functional performance, muscle strength.