Abstract

Background: Changes arising from the aging process, particularly changes in body composition, contribute to the functional decline of the elderly. Objective: To compare the body composition and muscle strength, mobility and quality in active elderly women according to the distance covered in the 6-minute walk test (6MWT). Method: The study included 77 active elderly women aged 65 to 80 years, who were divided into tertiles (A, B and C) according to the distance covered in the 6MWT. We performed anthropometric and clinical evaluations. Body composition was determined by dual energy X-ray absorptiometry (DXA). Handgrip strength (HGS) was measured with a portable dynamometer (Saehan), and knee extension strength (KES) was measured with the one repetition maximum test (1-RM). Functional mobility was assessed by the Timed Up and Go (TUG) test, and body balance was assessed by the Berg Balance Scale (BBS). Muscle quality was defined by the ratio between muscle strength (kgf) and muscle mass (kg). Results: The group that walked the shortest distance in the 6MWT had a higher BMI (A=30.8±7.0, B=27.2±4.2 and C=25.9±3.5 kg/m²), greater amount of fat mass (A=31.3±10.7, B=25.9±6.7 and C=23.8±6.46 kg) lower HGS (A=21.8±5.1, B=22.1±3.5 and C=25.5±5.1 kgf), lower knee extension strength (A=30.6±10.9, B=40.4±12.5 and C=47.2±10.1 kgf), lower arm muscle quality (A=10.1±3.7, B=11.6±2 and C=12.7±2.2 kg) and lower leg muscle quality (A=1.78±1, B=2.84±0.98 and C=3.31±0.77 kg). There was no significant difference between muscle mass (p=0.25) and lean mass (p=0.26). Conclusion: Body fat has a negative influence on functional performance, even among active elderly women.

Keywords

Body composition, muscle strength, six-minute walk test, muscle quality, elderly subjects, physical therapy.