

عنوان مقاله:

Resistance Training May Improve Rectus Femoris Muscle Parameters in Elderly Women

محل انتشار:

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خلاصه مقاله:

Introduction: One of the important issues in aging is sarcopenia characterized by muscle mass and function reduction. The present study investigated the effect of high intensity interval resistance training (HIIRT) on muscular parameters in sarcopenic elderly women. Methods: A total of ۳۰ sarcopenic women aged ۶۰ to ۷۰ years (appendicular skeletal muscle mass index < ۶.۷۶ kg/m^۲, hand grip < ۲۰ kg) were randomly assigned to the experimental (n=۱۵) and control (n=۱۵) groups. The experimental group (EX) participated in the training protocol that was implemented in ۲ phases, the first phase (۲ weeks/۳ times per week/۵۰-۵۵% ۱RM) and the second phase (۶ weeks/۳ times per week/۶۰- ۸۵% ۱RM). The control group (C) did not participate in any training program during this period and performed their normal daily activities. Rectus femoris cross-sectional area (RFCSA), Myostatin (MSTN) to Insulin-like growth factor-۱ (IGF-۱), and MSTN to RF CSA were evaluated in two stages: pre-test (week ۰) and post-test (end of week ۸) and compared between groups. Independent t test and within groups one-way analysis of variance were subsequently utilized to assess the research variables through SPSS software version ۲۳ at ۰.۰۵ level of significance. Results: The results showed that body mass (P=۰.۰۰۰۱), body mass index (P=۰.۰۰۰۱), MSTN to RF CSA (P=۰.۰۰۰۱), and MSTN to IGF-۱ (P=۰.۰۴) decreased significantly in the EX group compared to the C group. While ASMI (P=۰.۰۰۰۱), handgrip (P=۰.۰۰۰۱), RF CSA (P=۰.۰۰۰۱), and walking speed (P=۰.۰۰۰۱) significantly increased. Conclusion: It seems that the HIIRT protocol resulted in an improvement in muscular parameters in sarcopenic elderly women. Based on our results, this type of training is safe and risk-free for the elderly and prevents the progressive reduction of muscle mass and strength. However, determining the exact mechanisms involved in these changes in response to HIIRT requires further molecular-cellular studies.

کلمات کلیدی:

Keywords: High Intensity Interval Training, Cross Sectional Area, Aging, Sarcopenia, Hypertrophy

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