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**THE RELATIONSHIP OF MUSCLE STRENGTH AND  
OSTEOARTHRITIS  
IN WOMEN**

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Epidemiological studies demonstrate the high prevalence of osteoarthritis (OA) in the population. Thus, the frequency of OA of large (supporting) joints in people older than 65 years varies from 19.2 to 50%. The leading role in maintaining the stability of the joints belongs to the muscles that hold them in a physiological position and provide, together with the ligaments and capsule, full functioning. Degenerative changes in muscle fibers associated with aging underlie the development of sarcopenia.

**Purpose.** To determine the presence of sarcopenia in women with OA by determining the condition of skeletal muscles and determining the relationship of muscle dysfunction with clinical and radiological manifestations of OA.

**Materials and methods.** The study was performed on 20 patients. mean age  $58.55 \pm 1.47$  years. The diagnosis of sarcopenia was established according to the EWGSOP (2018) sarcopenia criteria. Muscle function was determined by determining the speed of walking a short distance (4 m), walking speed was considered low as a result of  $\leq 0.8$  m/s. Assessment of muscle strength was performed using a manual dynamometer, the decrease in normal muscle strength was determined at a rate of  $< 16$  kg. The lean body mass index was determined by bioelectric impedance analysis. The condition of sarcopenia was assessed by a low-fat mass index  $< 6.76$  kg/m<sup>2</sup>. All patients X-ray examination of knee joints was done, the severity of pain, stiffness and joint function were determined by the WOMAC index.

**Results and discussion.** The study found that the strength of the muscles of the hand ranged from 12.0 kg to 27.0 kg, with a decrease in muscle strength was found in 30% of women. The lean mass index in the studied patients with OA ranged from 10.3 to 33.1 kg / m<sup>2</sup> (average was  $22.5 \pm 1.43$  kg/m<sup>2</sup>). The walking speed ranged

from 0.7 m/s to 1.15 m/s, the average walking speed was  $1.03 \pm 0.05$  m/s. Analyzing the data obtained, sarcopenia was diagnosed in 6 patients, presarcopenia - in 10 patients. In the group of patients there were significant negative correlations between gait speed and WOMAC total score ( $r = -0.58$ ,  $p < 0.05$ ), WOMACpain ( $r = -0.52$ ,  $p < 0.05$ ) and WOMAC functional ( $r = -0.46$ ,  $p < 0.05$ ). There was also a negative relationship between OA duration and gait speed ( $r = -0.46$ ,  $p < 0.05$ ).

**Conclusion.** A high incidence of presarcopenia and sarcopenia was observed in the studied patients with OA. Thus, it may indicate the impact of muscle dysfunction on quality of life and the course of OA in women.