

Muscle atrophy in women with chronic alcoholic myopathy

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Abstract

Statement of the Problem: Chronic alcoholic myopathy (CAM) is observed in 40–60% of patients with chronic alcoholic intoxication. The majority of studies have been performed in male patients; therefore, sex-related differences in the development of atrophic changes in CAM in women have not been investigated. The purpose of this study was to compare morphological changes in lower limb muscles in female patients with a current history of alcohol abuse using magnetic resonance imaging (MRI) and immune histochemical morphometric tests of biopsy specimens. **Methodology & Theoretical Orientation:** The study included eight female patients with alcohol abuse. The mean age of patients was 44.8 ± 1.9 years; the mean duration of alcohol abuse was 7.1 ± 1.3 years; the daily dose of ethanol was 12.3 ± 1.7 units. The control group included 15 female volunteers of the same age with no history of alcohol abuse. All patients and volunteers underwent clinical examination in order to rule out concomitant disorders. All patients and eight volunteers underwent MRI examination of hip muscles. We also performed the biopsy of m. quadriceps femoris vastus lateralis in five patients. The clinical signs of myopathy were observed in five (62.5%) patients. MRI examination showed that the volume of m. quadriceps femoris in the group of patients was significantly decreased. The immune histochemical morphometric analysis of m. vastus lateralis specimens showed, that the mean cross-sectional area (CSA) of both type I and type II muscle fibers in the group of patients is decreased (Table 1). **Conclusion & Significance:** this is the first study to observe the atrophy of m. quadriceps femoris and a decrease in the size of type I and II muscle fibers in women with chronic alcoholic intoxication.

Table 1. Cross-sectional area (μm^2) of muscle fibers in patients with chronic alcoholic intoxication and healthy controls.

Parameters	Groups	
	control (n = 7)	patients (n = 5)
CSA of type I muscle fibers	4802 ± 128	$3353 \pm 189^*$
CSA of type II muscle fibers	4498 ± 132	$2529 \pm 310^*$

* Significant differences, $p < 0.05$.



Biography

Zinovyeva is a Professor of the Department of nervous diseases Sechenov First State Medical University, Moscow, Russia. Together with specialists radiologists, morphologists, pathophysiologists conducted studies of the mechanisms of injury of the peripheral nerves and skeletal muscles in patients with chronic alcohol intoxication. The algorithm for diagnosing chronic alcoholic myopathy has been developed. A search is conducted for pathogenetically substantiated methods of treating neurological manifestations of alcoholic illness. Research in this area is of great scientific and socio-economic importance.

Publication

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