Category :**Brain: Cerebral resuscitation/postanoxic**

A241 - ***Pet-pathomorphological study of skeletal muscles in patients with chronic disorders of consciousness and critical illness polyneuromyopathies.***

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Introduction:

A comprehensive study of 23 patients with chronic disoders of consciousness (unresponsive wakefulness syndrome, minimally conscious state), treated in the ICU department of Russian Polenov Neurosurgical Institute, was conducted in order to clarify the mechanisms of impaired functions and the possibility of regeneration of striated muscles in patients with severe damage of the central nervous system.

Methods:

All patients underwent PET-CT with 18F-fluorodeoxyglucose (18F-FDG) brain, skeletal muscles of the shoulder girdle, to identify the asymmetry of muscle metabolism comparison with the scale of muscle tone . 18F-FDG was administered intravenously in a dose125-250 MBq For pathomorphological examination muscles tissue was taken by surgeon under local anesthesia with a 1% solution of novocaine, the size of the muscle biopsies was 1×1 cm Histological examination included fixation of the biopsies in buffered 10% neutral formalin, conducting alcohol wiring and filling in paraffin.Immunohistochemical (IHC) reactions were performed on paraffin sections according to the standard protocol, with the antigen unmasking in a water bath. Primary antibodies were used: dystrophin (ab85302), beclin-1 (ab62557), myosin (Fast, DBS), desmin (DBS).

Results:

Structural changes in skeletal muscles in DOC patients with CIP have a progressive nonspecific degenerative-atrophic character with more pronounced manifestations on the side of paresis. Intracellular and metabolic changes indicate that, despite the deep-seated process, changes are usually reversible and the regenerative potential of muscle fibers is preserved. Analysis of 18F-FDG metabolism of the shoulder girdle muscles in patients with CHF showed its decrease regardless of the side of paresis.

Conclusion:

A clear correlation of the metabolism level and changes in muscle tone, deep reflexes was not found, but a certain priority was found in the skeletal muscles innervated by the dominant hemisphere.

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