

Studying The Importance Of Magnetic-Resonance Spectroscopy In The Consequences Of Traumatic Brain Injury

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Purpose

The purpose of this research is to study local metabolic changes in the brain with the help of magnetic resonance spectroscopy (MRS) in various consequences of TBI.

Materials and Methods

We studied the results of MRS in 43 patients with various consequences of TBI. Men-29 patients. Age of patients from 6 to 48 years. The post-traumatic focal and diffuse changes revealed of the consequences of TBI are divided into 3 degrees: posttraumatic focal CT and MRI changes in mild degree in 12 patients, moderate in 27 patients and severe in 9 patients.

Results

In 29 patients on the spectrum and images of color mapping, at the site of cystic-cicatrical atrophic degeneration, in comparison with the spectrum from the unchanged substance of the brain in the contralateral side, an increase in Cho and ratios $\frac{Cho}{Cr}$, a slight increase in Lac and a pronounced decrease in Cr content, NAA. In 11 patients there was an increase in Lac, which is considered a marker of anaerobic oxidation of lipids and a negative metabolic sign. In 8 patients, there was a marked decrease in Cr, NAA.

Conclusion

Thus, the results of the study show that MRS allows in vivo to determine and evaluate the dynamics of the main metabolites of the brain, like Cr, NAA, Cho, Lac and Ala, which can provide information on the state of the metabolic processes of structures central nervous system with various consequences of TBI. This will give grounds for choosing the optimal set of pharmaceutical for effective treatment.