

The influence of ion-reflex impulsive magnetic electrophoresis on bioelectric activity of the brain

S. Turuspekova¹, K. Musahmetova², D. Mitrohin¹, Zh. Alzhanova¹, D. Ahmet¹, M. Idrisova¹, K. Kurarova¹, M. Mahsatova¹, G. Ospanova¹, I. Ten¹

¹*Department of neurology and neurosurgery, Kazakh National Medical University named after S.D. Asfendiyarov, Kazakhstan*

²*Department of physiotherapy, City Clinical Hospital № 1, Kazakhstan*

In recent years, more and more attention of researchers attracted neurostimulatory effect of pulsed magnetic fields, such as transcranial magnetic stimulation. There is information about the increase of the functional activity of clock mechanisms of the brain under the influence of short-term local alternating magnetic field. The aim: To study the effect of ion-reflex impulsive magnetic electrophoresis on bioelectric activity of the brain. Materials and Methods: There was study of bioelectrical activity of the cerebral cortex of 30 relatively healthy volunteers aged 21 to 61 years with the help of electroencephalography recording. The study was carried out three times: before the experiment, after the first magnetic electrophoresis session, third record - at the end of 5 sessions. Results and Discussion: The decrease in the asymmetry of alpha rhythm in the dynamics on the background of magnetic therapy sessions with magnetic electrophoresis. Also an improvement in the frequency parameters of the alpha rhythm from 7.0 to 11.6 Hz is observed in the dynamics. Over both hemispheres, mainly in the fronto-temporal leads registered low- and high-frequency beta rhythm. The activity of beta rhythm by frequency remained 14-35 Hz (prior to treatment 12 to 35 Hz), by amplitude was modulated over 8-35 μ V. Volunteers noted improvement in general well-being, increase in efficiency, improvement of memory, attention, synchronization of circadian rhythms of sleep. Conclusions: The study showed a positive effect of ion-reflex impulse magnetic electrophoresis on the functional state of the brain, as evidenced by the the results of our study that can be used in neurorehabilitation and requires further study.