9. EPILEPSY ASSOCIATED WITH CEREBRAL TOXOPLASMOSIS

Author: Olaru Natalia**; Co-authors:** Dragan Diana, Vataman Anatolie, Chiosa Vitalie

Scientific advisor: Groppa Stanislav, PhD, Professor, Academician of the Academy of Sciences of the Republic of Moldova, Neurology Department No. 2, Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Parasitic infections of the central nervous system (CNS) are an acquired cause of epileptic seizures and epilepsy in countries with low and medium economic incomes, including the Republic of Moldova. Cerebral toxoplasmosis is caused by the intracellular protozoan parasite, Toxoplasma gondii, which forms brain cysts, especially in immunocompromised patients. Parasite proliferation and microglia produce a modulation in the expression of pro-inflammatory genes, with the establishment of chronic latent infection. The latest studies show that toxoplasmosis-induced structural damage in the brain parenchyma and recurrent inflammation interfere with GABAergic signaling, which is mainly responsible for the occurrence of epileptic seizures, using it as a carbon source for parasite metabolism and facilitating parasite dissemination.

Aim of study. Evaluation of neurological manifestations, seizure semiology, electrophysiological and neuroimaging changes in epilepsy caused by cerebral toxoplasmosis, and the neurobiological mechanisms involved in epileptogenesis.

Methods and materials. The study included 11 patients with cerebral toxoplasmosis and epileptic seizures. The diagnosis was established based on the clinical manifestations, serological tests analysis, electrophysiological (EEG) and neuroimaging examination.

Results. In the study 8 patients were HIV positive, stage C3 and 1 patient suffered from congenital toxoplasmosis. Typical seizure semiology showed focal onset: clonic 54.2%, tonic, cognitive and focal to bilateral tonic-clonic. EEG abnormalities was found in 39.2 % as focal slowing and focal epileptiform discharges. All patients performed neuroimaging, which identified cystic lesions in affected areas of CNS: frontal and temporal lobes, basal ganglia, thalami, periventricular regions and cerebellar white matter.

Conclusion. Toxoplasmosis is a frequent opportunistic infection in immunocompromised patients, a late complication of HIV infection and usually occurs in patients with CD4-T-cell counts below 200/mm3.The clinical manifestations and epileptic seizures caused by cerebral toxoplasmosis are polymorphic and depends on the number and location of the cysts, and also on the host's immune response.

Keywords. Cerebral toxoplasmosis, cysts, epilepsy.