

PATHOGENESIS OF EPILEPTIC SEIZURE

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A New Hypothesis The pathogenesis of epilepsy is still unknown. In our opinion the reasons are the following mistakes in neuroscience:

1. Reticular formation of the brain has an activating role and regulates asleep and awake conditions. Physiological mechanisms of these are still unknown. Some authors believe that reticular nuclei are biological accumulators of electricity.
2. It is well known that neurons do not generate electricity. Therefore, bioaccumulators must be charged from somewhere. The only structures which can generate electricity in an organism are muscular spindles which recharge reticular nuclei during the sleep.
3. We think that during electroencephalography variations of intercellular electric currents are being recorded, but not the sum of electric potentials of cortical neurons.
4. It is accepted that during hyperventilation an arterial spasm and hypoxia of the brain occurs as a result of hypocapnia. We think that in such cases hypoxia of the cortex occurs due to the decreasing of intracranial pressure. At the same time hyperemia of subcortical structures occurs.

As long as these mistakes are not corrected, the pathogenesis of epilepsy cannot be understood.

Based on these corrections we proposed the hypothesis of "short circuit" of pathogenesis of epileptic seizures. According to it during epileptic seizures an outflow of electricity into intercellular space occurs in one of reticular nuclei. The acute loss of electricity brings to a short violation of brain's functions, which clinically manifests as a seizure.

The proposed corrections prove and explain the actual nature of this disease and make it possible to create new ways of pathogenetic treatment.