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CAUSES OF CIRCULATORY ENCEPHALOPATHY AND EPILEPSY

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Annotation: In this article, the opinions and opinions of our country's and foreign scientists are mentioned about the causes of discirculatory encephalopathy and epilepsy.

Key words: discirculatory encephalopathy, epilepsy, vascular dementia, pyramidal (spasticity), extrapyramidal (Parkinsonism, hypokinesia), ataxia, dysarthria, vestibular and vegetative diseases.

Dyscirculatory encephalopathy (DEP) — chronic cerebrovascular insufficiency — changes associated with impaired blood supply to the brain, resulting in a lack of oxygen and nutrients in neurons. This causes gradual death of neurons in different parts of the brain. . When DEP is observed, headache, dizziness, tinnitus, fatigue, cognitive decline [1].

The most serious consequence of discirculatory encephalopathy is stroke [1].

Dyscirculatory encephalopathy, as well as initial manifestations of brain blood supply deficiency (MQTYDK) belongs to chronic cerebrovascular diseases [2].

In the classification of vascular lesions of the brain and spinal cord developed by the Neurological Research Institute of the Russian Academy of Medical Sciences, discirculatory encephalopathy is described as a cerebrovascular pathology that develops with several focal or diffuse lesions of the brain [2].

Dyscirculatory encephalopathy includes a slowly progressive multifocal or diffuse vascular lesion of the brain, or a combination of the two. It is a consequence of various diseases for various reasons, the common denominator of which is damage to small arteries and arterioles (microangiopathy).

Symptoms:

The main symptoms of DEP are divided into the following groups:

1. Disorders of cognitive functions (memory, attention, thinking, the late stages of DEP are characterized by the development of dementia — vascular dementia),
2. affective disorders,

3. movement disorders: pyramidal (spasticity),
4. extrapyramidal (parkinsonism, hypokinesia),
5. pseudobulbar disorders (difficulties in eating: slow chewing, swallowing disorders; voice changes - "roughness", slowness of speech; compulsive laughing and compulsive crying),
6. cerebellar diseases (gait and stability disorders, disorders of fine sequential movements (ataxia), including speech fluency (dysarthria)),
7. Vestibular and vegetative diseases (dizziness, nausea, changes in blood pressure).
8. In the later stages, patients develop diseases of the pelvic organs: urinary and fecal incontinence.

Main features

The course of the disease is usually divided into three stages (according to the presence and severity of the main symptoms). The initial symptoms of dyscirculatory encephalopathy are mainly manifested in the form of asthenia, which often makes it difficult to diagnose at this stage of the disease's development, because such symptoms often accompany the initial stage of mental disorders, the prodromal stage of some diseases. Infectious diseases, as well as a signal about the presence of somatic diseases or overwork. Therefore, the diagnosis of "discirculatory encephalopathy" is made based on the long-term (more than 6 months) presence of the main symptoms (dizziness, impaired memory, speech, increased fatigue, impaired coordination, etc.).

Diagnostic criteria

Objectively determined neuropsychological and neurological symptoms (in order of decreasing importance: cognitive and emotional-will disorders, gait disorders, movement coordination disorders, symptoms of pyramidal insufficiency).

Symptoms of cerebrovascular disease, including risk factors (arterial hypertension, hyperlipidemia, diabetes mellitus, cardiac arrhythmias, etc.) and / or anamnestic symptoms and / or instrumentally confirmed signs of cerebrovascular damage and vascular changes in the brain substance (heart attacks and / or consequences of chronic changes in the brain substance).

Evidence of causality between points 1 and 2:

Compliance of the dynamics of neuropsychological and neurological deficits with the characteristics of the course of cerebrovascular diseases (the tendency of development with alternating periods of sharp deterioration, partial regression and relative stabilization);

Correspondence of changes in brain substance of vascular origin determined by CT / MRI to leading clinical manifestations.

Other diseases that could explain the patient's symptom complex were excluded.

Etiology

The main causes of the occurrence and development of discirculatory encephalopathy are arterial hypertension and atherosclerosis [1] .

Due to the main reasons, the following types of discirculatory encephalopathy are distinguished:

1. atherosclerotic (often the main vessels of the head suffer)
2. hypertensive
3. mixed

4. venous
5. For other reasons (vegetative-vascular dystonia, rheumatism, vascular lesions of various etiologies, systemic hemodynamic diseases, blood diseases, etc.).

In practice, atherosclerosis, arterial hypertension and their combination have the greatest etiological significance in the development of dyscirculatory encephalopathy.

The term "discirculatory encephalopathy" was introduced to Russian medicine in 1971 by E. V. Schmidt, academician of the USSR Academy of Medical Sciences, and G. A. Maksudov, candidate of medical sciences, employees of the Research Institute of Neurology of the USSR Academy of Medical Sciences [1].

The term "discirculatory encephalopathy" was proposed by G. A. Maksudov and V. M. Kogan in 1958 and was later included in the Russian classification of brain and spinal cord injuries. ICD-10 (1995) does not include this term.

Possible clinically similar conditions include ICD-10 "cerebral atherosclerosis", "progressive vascular leukoencephalopathy", "hypertensive encephalopathy", "vascular dementia", "other specified cerebrovascular lesions", including "cerebral ischemia" (chronological diseases) notes.

Dyscirculatory encephalopathy caused by arterial hypertension can be well treated. Therapy is aimed at reducing blood pressure by 10-15%. Lowering blood pressure to normal (140/90 mm Hg or less) is not recommended to prevent reduced cerebral blood flow.

Epilepsy [1] — (Greek. epilepsio - I seize) is a chronic disease of the brain manifested by repeated epileptic attacks of various characteristics [2] [3].

The term epilepsy was suggested by Hippocrates (460-377 BC) [4]. Later, Abu Ali ibn Sina (980-1037) also studied this disease.

The prevalence of epilepsy in the world is 5-10 people per 1000 people [5]. But this indicator is equal to 3.6-4.2 in Asian and African countries. According to the World Health Organization, in 2015, the number of registered patients with epilepsy exceeded 39 million. The disease is more common in men than in women.

Epilepsy is an age-related disease, and epileptic seizures are more common in children and people over 60 years old. This disease is rare in middle-aged people. According to neuropathologists, 5% of the world's population will experience an epileptic attack at least once during their lifetime.

Symptoms can be treated with medication, vagus nerve stimulators, a ketogenic diet, or sometimes surgery. Depending on the symptoms, the following drugs can be used in the medical treatment of epilepsy: carbamazepine, oxcarbazepine, valproate, pregabalin, lamotrigine, gabapentin, tiagabine, topiramate, levetiracetam, phenytoin, clonazepam, clobazam, sodium valproate.

Most of them can be treated with medication without attacks. However, in a fifth of patients, drugs do not help. Antiepileptic drugs also cause fatigue, memory problems, agitation, or hand tremors in some clients.

Cannabinoid-based anticonvulsants can sometimes be recommended, especially for patients with Lennox-Gastaut syndrome and Dravet syndrome, but the licensing of such drugs is strictly limited to the territories of several countries.

Also, anti-epileptic drugs have been found to increase the risk of heart attack and Alzheimer's disease or other types of dementia. Long-term use of anti-epileptic drugs can also cause problems with hormonal function, connective tissue and bones.

It has also been found that drugs such as levetiracetam, tiagabine, topiramate and vigabatrin triple the incidence of suicidal ideation [13]. Developed in the 1920s, the ketogenic or low-carb diet is helping many people with epilepsy.

In 10-15% of children on this diet, the cases of strife disappear completely during the first year, and in 90% of children, such cases are reduced by 30%. The ketogenic diet has been shown to be beneficial even in cases where medications have not helped at all.

Epilepsy is a polyetiological disease. A number of negative factors play a role in its development: genetics, brain injuries, congenital anomalies, infections, metabolic disorders, intoxications, neurodegeneration and cerebrovascular diseases.

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