

CURRENT VIEWS ON THE DEVELOPMENT OF COGNITIVE IMPAIRMENT AND TREATMENT OF PATIENTS WITH CHRONIC CEREBRAL ISCHAEMIA

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Abstract: Chronic cerebral ischaemia (CCI) is a condition in which cerebral blood flow becomes inadequate due to vessel usurations, narrowings or blockages, resulting in a chronic deficiency of oxygen and nutrients to brain cells. This condition is often also referred to as dyscirculatory encephalopathy (DE) or vascular dementia. Chronic cerebral ischaemia can be caused by atherosclerosis (deposition of fatty plaques in blood vessels), thrombosis (formation of blood clots in blood vessels), embolism (sudden blockage of a vessel by a clot or blood particle from elsewhere in the body) or other circulatory disorders. The risk of developing chronic cerebral ischaemia increases with age and in the presence of risk factors such as smoking, high blood pressure, diabetes mellitus, hypercholesterolemia and insufficient physical active lifestyle.

Key words: hypertension, diabetes mellitus, hypercholesterolaemia.

Introduction. CHEM is one of the leading causes of disability and death worldwide. Estimates indicate that millions of people around the world suffer from this condition. The incidence of CHEM may vary from region to region. For example, developed countries with high levels of medical care and control of risk factors, such as the United States, Canada, and the European Union, may have higher incidence rates than countries with low access to medical care or high levels of risk factors, such as low- and middle-income countries. A number of risk factors, such as high blood pressure, diabetes, high cholesterol, smoking, obesity, and physical inactivity, are common in different regions of the world and can significantly influence the incidence of the condition.

Age is an important risk factor for the development of CIM, and with increasing life expectancy in many countries, the number of people suffering from this condition is expected to increase.

Vascular cognitive disorders are the main clinical manifestation of dyscirculatory encephalopathy (DE). They can manifest as mild to moderate cognitive impairment in the early stages of the disease and progress to vascular dementia in later stages. Neuropsychological and neurological disorders associated with diffuse or multifocal changes in the brain are due to progressive cerebrovascular insufficiency or repeated episodes of circulatory disorders in the brain, which is the main aspect of DE in the post-Soviet medical classification.

The most common causes of DE are arterial hypertension, atherosclerosis and their combination, as well as venous outflow disorders and diabetes mellitus. Other conditions are less likely to cause DE. Additional factors such as cardiac rhythm disorders, heart disease with signs of chronic circulatory insufficiency, hereditary angiopathies, arterial hypotension, cerebral amyloidosis, vasculitis and blood diseases may also aggravate the course of chronic cerebral circulatory insufficiency.

Purpose of the study: To investigate the development of cognitive impairment and treatment of patients with chronic cerebral ischaemia

Materials and Methods of the Study. : This study investigated the effect of chronic cerebral ischaemia on blood magnesium levels in 150 patients. Of these, 80 were women and 70 were men, and their ages ranged from 30 to 80 years. The study participants were divided into three groups: the first group included patients with chronic cerebral ischaemia and concomitant diabetes mellitus, the second group included patients with chronic cerebral ischaemia and arterial hypertension, and the third group included patients with chronic cerebral ischaemia, arterial hypertension and diabetes mellitus. Each group consisted of 50 people. The study analysed the amount of magnesium in the blood of each group and compared quantitatively.

RESULTS: Chronic cerebrovascular disease (CVD) is a rather diverse group of diseases. The most common diagnosis is dyscirculatory encephalopathy, which was used previously. It has now been replaced by chronic cerebral ischaemia (CCI). It implies multifocal or diffuse brain damage and is manifested by a complex of neurological and neuropsychological disorders. Presence of subjective complaints (headaches, fatigue, memory loss) and objective complaints. The incidence of CIM increases every year, which leads to severe consequences of stroke, dementia and mortality. It is necessary to undergo early diagnosis and treatment. There are three stages of CHEM:

- Stage 1: signs of asthenia predominate (rapid fatigue, easy forgetfulness, headaches, dizziness, noise in the head, unsteadiness in walking, sleep disorders);
- Stage 2: pronounced memory disorders (impaired attention, thinking, ability to plan and control their actions), emotional disorders (depression, increased irritability or disinhibition), coordination disorders. At this stage, the patient's professional and social adaptation suffers, and performance is significantly reduced.
- Stage 3: gross memory disorders, behavioural disorders (gross decrease in criticism, disinhibition, excitability, explosiveness, decreased vitality and emotional impairment), swallowing disorders, increased muscle tone, speech disorders, gross disorders of walking and balance with frequent falls, urinary incontinence. Social adaptation is impaired, patients gradually lose the ability to serve themselves and need external care.

In making the diagnosis, the presence of cognitive impairment is key:

- The process of rational cognition of the world around us;
- purposeful interaction with accessible objects, phenomena and living things;
- perception of information;
- processing and analysing the received data;
- memorisation and storage of information;
- exchange of information;
- construction and sequential execution of sequential actions, evaluation of their results.

The presence of emotional disorders and motor disorders is also observed. To objectivise the diagnosis, it is necessary to use appropriate diagnostic scales and questionnaires. With their help, it is possible to determine the degree of severity of cognitive and emotional disorders and prescribe the correct treatment. It is very difficult to assess the dynamics of treatment by computer or magnetic resonance imaging (CT or MRI), since structural changes develop over a long period of time and the detected signs of vascular lesions do not always correlate with the severity and features of the clinical picture.

Conclusions: Thus, to fully assess the effectiveness of the current therapy it is advisable to conduct dynamic neuropsychological testing with the use of appropriate scales and questionnaires, neurological examination and diagnostic methods of research. Therapy of vascular cognitive disorders is divided into non-medication and medication. The basis of treatment in patients with CHEM is correction of risk factors such as blood pressure, dyslipidemia, correction of blood rheology, diabetes mellitus, heart rhythm disturbance, excessive body weight). It is proved that normalisation of blood pressure can

reduce the risk of dementia by 50%. In addition, drugs with neuroprotective, metabolic, antioxidant action and true antidementia drugs are used. Non-medicamentous treatment involves lifestyle changes, physical activity, memory training, correction of emotional disorders, sleep hygiene, etc.

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