Characteristics of cognitive and psychoemotional disorders in chronic cerebral ischemia.

Madjidova Yo.N Tashkent Pediatric Medical Institute

Nizamkhodzhaeva Sh. Tashkent Pediatric Medical Institute

ABSTRACT

Chronic cerebral ischemia is a slowly progressive brain lesion caused by chronic cerebrovascular insufficiency. Manifested by a complex of cognitive, emotional and motor disorders . CCI is one of the main causes of disability in old age. This article considers cognitive and psycho-emotional disorders in chronic cerebral ischemia.

Keywords: Chronic ischemia of the brain, cognitive sphere, psycho-emotional sphere, correction of disorders

Introduction. Chronic cerebral ischemia (CCI) is a progressive form of cerebrovascular insufficiency of the brain, which is accompanied by small-focal or diffuse brain damage and is manifested by neurological and cognitive disorders [2]. In CCI , as a result of cerebral ischemia, oxidative processes are enhanced, while the lack of antioxidant protection of the brain leads to the formation of a state of oxidative stress [4,6]. Oxidative stress is one of the components of the systemic stress response to any damaging effect on the body. With a decrease in cerebral blood flow, the processes of mitochondrial oxidative phosphorylation are disturbed, endothelial dysfunction develops due to disturbances in cellular energy metabolism [5,6]. As a result, micro- and macroangiopathies develop , which is clinically manifested by the formation, depending on the severity of CCI, asthenic, cognitive, psycho- neurological and focal manifestations. The earliest indicator of cerebrovascular disease are cognitive disorders, combined with emotional disorders that tend to progress. [2,3,5].

One of the factors in the development of endothelial dysfunction in CCI is an increase in the level of homocysteine in the blood plasma. Hypermocysteinemia is associated with an increased risk of developing "vascular accidents" and is an independent risk factor for the development of cognitive impairment in patients with CCI [1,2,5,6].

The purpose of the study was to assess cognitive and psycho-emotional disorders in patients with chronic cerebral ischemia.

Materials and methods of research: 40 patients with CCI of 1-2 stages were included in the study . The inclusion criteria for the study were the age of patients from 50 to 65 years, the established diagnosis of CCI stage 1-2, corresponding to the criteria of ICD-10; stable course of the disease for at least 12 months prior to screening. According to the distribution by sex among the 40 surveyed, a predominance of men over women was found (22 (55%) versus 18 (45%)). Clinical symptoms in 13 (32.5%) patients corresponded to stage 1 CCI , in 27 (67.5%)

patients - stage 2 CCI with mild and moderate cognitive impairment (classification according to DSM 5) .

The state of the cognitive sphere was studied using a short mental assessment test - Mini Mental State Examination (MMSE), which allows to quantify the overall cognitive deficit.

To study the psycho-emotional sphere, in addition to the clinical assessment (in accordance with the ICD-10 criteria), psychodiagnostic methods and clinical scales were used. To assess the severity of psycho-emotional disorders, the Beck Anxiety Scale (BTS) and the Hamilton Depression Scale (HDD) were used.

Results of the study and discussion: among the complaints of patients, psycho-emotional disorders, signs of asthenia in the form of weakness, fatigue prevailed, patients complained of headache, disturbed night sleep, excessive irritability and nervousness in behavior, isolation. When examining the neurological status in patients with CCI , neurological symptoms were noted in the form of revitalization of tendon reflexes, anisoreflexia , and mild vestibular-atactic disorders.

We studied MRI of 30 patients with chronic cerebral ischemia accompanied by MCI. The control group of comparison consisted of 10 people comparable in age without manifestations of cognitive impairment.

Brain MRI was performed to identify signs of chronic cerebral ischemia, periventricular ischemia foci, as well as to exclude the presence of degenerative forms of dementia that accompany chronic ischemia. Visual examination of MRI tomograms in both groups revealed a diffuse lesion of the white matter of the brain (leukoaraiosis), predominantly periventricular .

Another sign of CCI on MRI was lacunar ischemia, characteristic of chronic cerebral ischemia. In the literature, there are indications of focal changes in the medulla, in the form of lacunar ischemic foci [5]. They are located in the periventricular region and have different sizes, but no more than 1-1.5 cm.

In our observations, we noted multiple lacunar ischemia (no more than 15 mm) in the frontal lobe, the region of the subcortical nodes and the internal capsule.

The number and distribution of these foci in the study group of patients with MCI differed from the control group; they were somewhat more often 2.9±1.8 and 2.5±1.6 located in the frontal lobe and the region of the caudate nucleus.

Somewhat less frequently, 1.8±0.6 and 1.5±0.7, they occurred in the region of the internal capsule and thalamus. In patients of the control group, these foci were not observed in the frontal lobe and in the caudate nucleus, and in the region of the internal capsule and thalamus they occurred with approximately equal frequency of 1.7±0.9 and 1.4±0.7 cases. From which it can be assumed that the presence of these lacunar foci is associated with cognitive disorders and their localization is of fundamental importance.

As our studies have shown, their location in the frontal lobe and caudate nucleus was noted in patients with MCI. From which we can conclude that the frontal lobe is of topical importance in the development of cognitive impairment.

In the study of the cognitive sphere, the total MMSE score in patients with stage 1 CCI was 27.8±0.41 points, while in the comparison group with stage 2 CCI it was 23.6±0.09 points.

In patients with chronic cerebral ischemia, moderate hyperhomocysteinemia with a level of more than 15 μmol /l (mean values were 18.9±0.6 μmol /l), which indicates an increase in the severity of cognitive and psychoemotional disorders.

At the time of inclusion in the study, all patients had disorders in the emotional sphere. The study of the psycho-emotional state using clinical scales of depression showed that depressive syndrome is typical in the group of patients with CCI : the average score of anxiety disorders according to the Beck Anxiety Scale in the group of patients with CCI stage 2 was 9.2 ± 2.1 points, which corresponds to Beck of insignificant anxiety, while in the group with stage 1 CCI - 7.1±1.4 points.

The results according to the Hamilton Depression Scale **(** HDS) averaged 13.3±2.1 points in the group with stage 2 CCI , which corresponds to mild depression, while in the group of patients with stage 1 CCI it was 9.3±2.1 points.

Conclusions: In CCI, the increase in neurological symptoms is combined with the deepening of cognitive and depressive disorders. The formation of cognitive and depressive disorders correlates with a more extensive focal brain lesion and more pronounced vascular disorders.

Literature:

1. Antipenko E.A., Deryugina A.V., A.V. Gustov Systemic stress-limiting effect of mexidol in chronic cerebral ischemia // Journal of Neurology and Psychiatry. S.S. Korsakova, No. 4, 2016, pp. 28-31
2. Voronina T.A. Pioneer of antioxidant neuroprotection . 20 years in clinical practice // Russian Medical Journal. Neurology, No. 1, 2016.
3. Zakharov V.V. et al . Chronic cerebrovascular insufficiency: description of a clinical case // Therapeutic archive, No. 4, 2016, pp. 93-98
4. Rumyantseva S.A., and et al . Problems and prospects for correction of intermediate metabolism in patients with vascular comorbidity // Neuro news journal No. 1-2 2014.
5. Chukanova E.I., Chukanova A.S. Efficacy and safety of the drug Mexidol FORTE 250 as part of sequential therapy in patients with chronic cerebral ischemia// Journal of Neurology and Psychiatry. S.S. Korsakov 2019, vol. 119, no. 9, p. 39-45
6. Yakhno N.N. Cognitive disorders in a neurological clinic. // Neurological journal 2006, 11 (Appendix 1); p. 4-12
7. Zokirov, M. M., & Mukhammadjonov, O. (2022). Cognitive impairment in patients with Parkinson's disease and optimization of its treatment. *Eurasian Scientific Herald*, *7*, 177-180.
8. Зокиров, М., & Туланбоева, С. (2022). Когнитивные нарушений у пациентов с ВИЧ–ассоциированной энцефалопатией. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, 68-73.
9. Muzaffar, Z. (2022). Literature reviews on nervous system damage during hiv infection. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, *2*(9), 141-147.
10. Muzaffar, Z. (2022). Correction of cognitive disorders in patients with hiv encephalopathy. *Web of Scientist: International Scientific Research Journal*, *3*(12), 402-411.
11. Muzaffar, Z. (2022). Psychological State in Patients with HIV Infection. *Amaliy va tibbiyot fanlari ilmiy jurnali*, *1*(6), 52-56.
12. Зокиров, М., & Мадмаров, Д. (2022). Корреляция ээг картины головного мозга и когнтитивного статуса у пациентов с эпилепсией. *Theoretical aspects in the formation of pedagogical sciences*, *1*(5), 227-230.
13. Зокиров, М. (2021). Medical sciences. *scientific ideas of young scientists*, 21
14. Зокиров, М. (2022). Анализ когнитивных нарушений у пациентов с вич–энцефалопатией. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, *2*(10), 251-260.
15. Muhammadjonov, O., & Zokirov, M. 2-toifa qandli diabet bilan og'rigan bemorlarda yurak-qon tomir kasalliklarining xavf omillarining tarqalishi. *Студенческий вестник Учредители: Общество с ограниченной ответственностью" Интернаука" Тематическое направление: Other social sciences*, 53-54.
16. Зокирив, М. (2021). Коррекция когнитивных нарушений у больных с ВИЧ-ассоциированной энцефалопатией. *Дж. Теор. заявл. Науки*, *7*, 62