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The Importance Of Neurovisual Examinations In The Dynamics Of Clinical And Neurological Disorders In Patients With Mild Head Injuries

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Abstract: Neurovisual examinations are of great importance in the early detection of neurological and neuropsychological disorders in the period of complications of mild traumatic brain injury. Neurovisual methods contribute to early differential diagnosis, early assessment and dynamic monitoring of clinical, neurological, and neuropsychological disorders in the period of mild TBI complications, improvement of new treatment methods, development of disability criteria, and creation of a special algorithm.

Keywords: mild traumatic brain injury, clinical and neurological disorders, neuroimaging methods.

Craniocerebral injuries (CCI) are currently one of the most pressing problems not only in our republic, but also in countries around the world, leading patients to disability and exacerbating the emergence of socio-economic problems [1,8,11,14]. Because among traumatic injuries, brain injuries rank first and are considered one of the main causes of death. The origin of traumatic injuries varies. The mechanism of occurrence of clinical-neurological and neuropsychological disorders after traumatic brain injury also differs sharply depending on the type of injury [2,5,6,10].

In patients with mild traumatic brain injury, it may resolve with mild clinical symptoms at the time of injury, but after a certain time, separate clinical-neurological and neuropsychological disorders begin to appear. Such disorders intensify dynamically, leading to the loss of working capacity in patients and exacerbating disability [3,4,7].

In this regard, the study of the clinical, neurological, and neuropsychological characteristics of patients who have undergone LCM, depending on the prevalence,

age, sex, and duration of the disease, and the development of measures for their early rehabilitation based on this data is a very relevant issue.

Neurophysiological and neuroimaging examinations are of great importance in the early detection of neurological and neuropsychological disorders in the period of complications of mild traumatic brain injuries [9,12,13]. These include EchoEG and EEG, MRI, CT, and MSCT. These studies will contribute not only to the early diagnosis of TBI in patients, but also to the improvement of new treatment methods depending on the pathological changes in the future. The study of the protective-compensatory physiological mechanisms of the brain in patients with mild traumatic brain injury is one of the most pressing and requiring further in-depth study problems of clinical neurophysiology [8,17]. Clinical-neurological and neuropsychological disorders are closely related to the functional state of the brain. Neurovisual CT, MSCT, and MRI examinations are important in determining the functional state of any brain injury [2,15,18,19].

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Research material and its methods.

83 patients with mild brain injuries were registered in the departments of the Khorezm Regional Multidisciplinary Medical Center and the Khorezm branch of the Republican Scientific Center for Emergency Medical Care. The control group consisted of 20 age-appropriate practically healthy patients without traumatic brain injury. A total of 103 patients were examined. The age of patients in the main group ranged from 18 to 60 years, averaging 38.7±6. Patients of working age were registered. Aof the examined patients in the main group, 62 (74.7%) were men and 21 (25.3%) were women. Patients with moderate and severe TBI were not included in the list, taking into account 3 types of TBI severity: mild (13-15 points), moderate (9-12 points), and severe (3-9 points). Only patients with mild TBI were examined. Patients of the main group were divided into groups according to the types of TBI. The

examination was repeated in the acute period (up to 2 weeks), in the early recovery period (up to 3 months), and in the late recovery period (after up to 6 months).

Neuro-visual examination methods were used in the patients.

Obtained results: We compared neurological disorders in dynamics with CT, MSCT, and MRI signs. In patients who underwent CT, MSCT, and MRI in the acute period of the disease, focal organic changes were observed only in patients who had suffered a mild traumatic brain injury. When compared separately by periods of the disease, symptoms of vestibular ataxia and focal disorders increased in a correlation with an increase in ischemic foci on CT, MSCT, and MRI, while general cerebral symptoms did not have a correlation with an increase in ischemic foci on CT, MSCT, and MRI throughout the periods of the disease. It should be noted that, although general cerebral symptoms and symptoms of vegetative dystonia are less common in the early and late recovery periods of the disease, MRI shows pronounced pathological changes, ischemic foci, ventricular dilation, and pronounced atrophic processes in the cerebral cortex. When we analyzed the degree of cognitive impairment with the clinical manifestations of traumatic brain injury, it turned out that the degree of cognitive impairment in dynamics in patients with traumatic brain injury does not have a direct correlation with the results of MRI, CT, and MSCT of the brain. From this point of view, timely assessment and correction of cognitive impairments in these patients in dynamics without comparison with neuroimaging methods can lead to expected results. In patients with BMLE (26 patients), mild cognitive impairment was observed in 23.1% of patients in the acute period, moderate cognitive impairment in 57.6% of patients, and cognitive impairment characteristic of dementia at the early stage was observed in 19.3% of patients, and when reassessing patients using neuropsychological scales in the early and late recovery periods, the deficit of cognitive impairment was more pronounced in the early recovery period than in the late recovery period. The state of cognitive impairments in dynamics in TE patients (29 patients) shows that severe cognitive impairments can be observed in all periods, but in the early recovery period compared to the acute period, and in the late recovery period compared to the

early recovery period, cognitive impairments characteristic of dementia increased, the cognitive deficit characteristic of dementia was 55.1% - 65.6% - 75.8%, respectively. ($p<0.05$). When comparing these changes with the results of MSCT, CT, and MRI studies, the results showed a correlation. Firstly, the expansion of the ventricles, as well as the observation of organic changes around the ventricles, as well as the intensification of the atrophy process in the cerebral cortex, proved the results.

At the next stage of the study, we compared the levels of anxiety and depression in patients with the results of neurophysiological examination in dynamics. Anxiety was observed in 73 (87.9%) patients who underwent general LCM, that is, the average score on the Spielberg-Khanin scale was 44±9.7. Indicators of anxiety and depression depended on the type of injury and were more often observed in patients with traumatic brain injury and concussion. In the acute period of the disease, this condition was not associated with changes on CT, MSCT, and MRI.

Conclusions:

1. Neurovisual research methods were conducted in patients with a high deficit of cognitive impairments in dynamics, according to MRI data, ventricular dilation was not observed, and foci around the ventricles were not observed at all. The degree of cognitive impairment in dynamics in patients who have undergone brain injuries does not have a direct correlation with the results of brain MRI, CT, and MSCT examination. From this point of view, timely assessment and correction of cognitive impairments in these patients in dynamics without comparison with neuroimaging methods can lead to expected results.

2. In patients with mild traumatic brain injury, the level of anxiety and depressive disorders in dynamics does not always coincide with the results of neuroimaging examination, which, of course, is inextricably linked with the clinical picture of traumatic brain injury, as well as with each examined period.

3. In the acute periods of the disease, it is advisable to conduct clinical-neurological and neuroimaging examinations, and in the early and late recovery periods - cognitive and personality-emotional disorders and neurophysiological examinations.

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