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The Nature Of Cognitive Impairment In Patients With Astheno-Neurotic Syndrome

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Summary: The nature of the cognitive dysfunctions of the vascular factor is very diverse, ranging from minimal impairment to the level of the stage of dementia. In most cases of converted patients associated with cognitive impairment, the elderly, in whom, in addition to vascular cerebral disorders, there is a layering of neurodegenerative processes and a wide range of somatic chronic diseases, these are arterial hypertension, diabetes mellitus, impaired hepatic-renal metabolism, vascular atherosclerosis, cardiovascular vascular diseases.

Keywords: Astheno-Neurotic Syndrome, Minimal Impairment, Discirculatory Encephalopathy,Neurovisual Change.

All these signs form a progressive form of cerebrovascular pathology, or the so-called discirculatory encephalopathy (1, 3). The main pathomechanism of the formation of cognitive impairment in such conditions is the absence or decrease in communication between the subcortical structures and other parts of the brain, primarily the frontal. Of course, the earlier the risk factor for vascular dementia is identified, the more effective treatment is and the severity of dementia decreases. But the difficulty is precisely the early prognosis, due to the extreme nonspecific symptoms of cognitive vascular impairment (2, 6). Therefore, in assessing the level of pathological signs, it is extremely important to take into account social status, education, bad habits, the level of the environment, taking medications, the presence of trauma in the past, hereditary predisposition, dietary habits (4, 5, 1). The foregoing confirms the relevance of the selected problem, confirms the need for the development of early diagnosis and preventive measures in relation to the purposeful study of vascular cognitive changes in older persons.

Target. To study in a routine study the early signs of cognitive impairment, to carry out rehabilitation measures in identified patients with initial signs of vascular dementia.

Material and research methods. Taking into account the compiled register (patient card), residents of several makhallas of Samarkand over the age of 50 were examined, with a written consent, in total, more than 350 people were examined . Of this number, 86 people were selected, according to the signs of the corresponding cognitive change , of whom a larger number were women (perhaps this was due to a benevolent attitude towards this survey, or to the fact that they were more often at home) 69%. At the first stage, anamnesis was carefully collected from the examined persons, a primary clinical and neurological history, neuropsychological testing to recognize cognitive impairments was performed. The second stage, if necessary, additionally carried out electroencephalography, neuroimaging (MRI) of the brain, laboratory tests, examination of narrow specialists. Subsequently, when the patients were divided according to the degree of cognitive dysfunctions, rehabilitation therapy was proposed, after half a year from the moment of treatment, out of 86 people, only 40 were re-examined in dynamics. Statistical processing of the results of the study was carried out on an individual computer, according to Student's t criteria , with a reliability of $p < 0.05$

Research result. In this study, without going into details of the sample selection of patients for further analysis; presents the results of 86 volunteers with chronic cerebral vascular disorders, or dyscirculatory encephalopathy, the average age was 65.9 ± 7.5 years. All persons of the basic composition are divided into groups with moderate (38) I and mild (48) II -cognitive impairments. Judging by the history in group 1, hereditary factors such as arterial hypertension, ischemic stroke, myocardial infarction occurred in 77%, in the second only in 26%. The main point when interviewing patients was to identify the level of decrease and preservation of memory. Most often, complaints from the surveyed were about a decrease in memory for current events, forgetfulness (choose the right word, the name of a visually familiar person, household items, their location, past events). The timing of the onset of memory impairment and the frequency of such memory loss differed in the groups. So, in group 1, memory loss was diagnosed from 3 to 6 years, and in group 2 from 1 to 3 years, respectively. Permanent forgetfulness was noted in group 1, 50% of cases. Syndromic manifestations in the examined groups are as follows, in group 1 the vestibular-coordinating syndrome was pronounced in 89%, while in group 2 in 79%. Pyramidal syndrome in group 1 was detected in 70% of cases, in group 2 in 57.5% of cases. Extrapyramidal syndrome was found only in group 1 in 4 people. As a result of the examination of specialists in somatic pathology, the risk factors leading to vascular disorders of the brain and, as a consequence, to cognitive deficit were identified. To reproduce the complete picture of the severity of cognitive impairment, the mean value was assessed according to the MMSE scale (a scale for the primary assessment of the state of cognitive functions and screening of their impairments). The data

obtained in group 1 was 24.0 ± 0.5 points, which corresponds to moderate cognitive changes, in group 2, the result was higher and corresponded to 22.8 ± 0.5 points, which is characteristic of mild cognitive impairments, upper bounds. The clock drawing test in the group with moderate cognitive shifts corresponded to 7.0 ± 0.5 points, with mild impairment scores within 8.0 ± 0.5. To identify the presence or absence of attention, the simplest Schulte table is proposed . Finding the numbers in patients with moderate cognitive impairment took 1.5 minutes. on average, in the group with mild changes it took less time 61 ± 55 sec, which significantly corresponded to p <0.001. Careful collection of complaints in the anamnesis revealed a note of emotional disturbance in many patients. Vascular confirmation studies were performed on the individuals who showed the most anxiety and anxiety. The severity of anxiety according to Spielberg-Khanin, in the group with moderate cognitive impairment, 10 people had an average score of 35.0 ± 3.0, 2 had high anxiety of more than 48 points, in the second group with mild cognitive impairment the level of situational and personal anxiety from 7 people identified low score to 30 on average, and y is 5 persons average score 38.0 ± 3.0. The data are confirmed by literary sources, where emotional disturbance in the form of anxiety and asthenization depends on the severity of focal changes in the brain against the background of chronic ischemia of the basal ganglia, leading to dissociation of the frontal and subcortical connections. Testing is necessary because cognitive impairment can be masked by depression and vice versa. So, the relatives of one of the examined patients were worried about his behavior, the lack of desire to communicate, talk, at first glance, beginning signs of dementia, but the test indicators showed good results, not confirming a deep cognitive impairment, and at the time of the conversation, it turned out that the patient communicates well with strangers. he explains his behavior by the desire to attract the attention of loved ones.

Neuroimaging changes were observed in both study groups, the worst indicators were found in patients with moderate cognitive impairment, which is obvious. The incidence of leukoriasis was recorded reliably often in group 1, almost 3.5 times more often, with p <0.05. The presence of brain subatrophy is 5.5 times more common in the same group. Signs of leukomalacia and light ischemic foci in group 1 were found in 34.0% and in 7% in group 2, respectively, with a significant p <0.05 (Table 1).

Table 1 Neurovisual changes identified among the examined patients (%)

Neuroimagingchanges	Group 1 (n = 38)	Group 2 (n = 48)
Leukoaraiosis	50	21
Small foci of dystrophy of the brain substance	56	32
Moderatehydrocephalus	34	7.0

Leukomalacia	20	12
Small ischemic foci of the brain	25	12

Note: * - reliability of data between groups (P <0.05)

The comparative nature of bioelectric activity showed a sufficiently high power of EEG rhythms . An interesting fact was the fact of detecting changes in rhythms on the EEG in most cases in women in the surveyed groups, in whom a correlation was noted with increased asthenia, depression. Thus, an increase in delta activity in the frontal leads was revealed. Comparison indicators of neurophysiological data between groups were more pronounced in group 1, an increase in the EEG rhythm of almost all indicators of derivation, but to a greater extent in the frontal zones of the brain of both hemispheres. In 18.9% of cases, there was an asymmetry of the alpha diagnosis of low frequencies in women, which indicates a pronounced emotional lability.

Without stopping at what has been achieved, taking into account the set goal, clearly differentiating patients into mild and moderate cognitive impairment by groups, on an outpatient basis, patients were offered treatment. For this, each group is divided into subgroups. A - where it was recommended to take Akatinol (Memantine), B - In addition to Akatinol, patients took Sonopax. If Akatinol (in the dose increase mode, from 1/4 tab. To 2 tab. Per day) was taken in the morning, then Sonopax 1 tab. (With 25 mg) at night only. Within 6 months. the patients carefully accepted the treatment, every month they were monitored (in online format). Six months later, the repeated examination in dynamics was pleasing with the results in both groups. In the group with moderate cognitive impairment, motor symptoms changed, underwent significant regression in both subgroups. The best indicators were in subgroup B (where a drug that reduces signs of depression was added to the drug that increases the cognitive potential). Vestibulo-koordinatornyh syndrome was maintained at the 3 patients from 8 and ekstropiramidny syndrome in 3 patients from 6. A positive result in the second group with a large margin, the effective index was in the subgroup B. Pyramid syndrome absent vestibulo-koordinatornyh preserved in 2 patients from 10, extrapyramidal in only one patient out of 7. The dynamics of the level of cognitive dysfunctions according to the results of the MMSE scale test in the moderate cognitive group (group I) showed the best indicators in subgroup B. So, after treatment, they increased to 26.2 ± 0.2, corresponding to the upper limit on the border with mild cognitive impairment. In the mild cognitive group (group II), the indices in subgroup B were normal after treatment. The results of the clock drawing test interpretation improved in group I by 2 points with an average, increased in subgroup B to 7.8 ± 0.2 points, in the group with mild cognitive shifts the result improved to 9.5 points on average, in subgroup B to 9 , 8 ± 0.5 points, reliability $p < 0.05$. Testing according to the Schulte table revealed a decrease in the time required for solving the problem by

several seconds in group I, in subgroup B, the time spent on testing was 75.1 ± 3.1. In group II, the indicators were on average close to normal, in subgroup B, 58.0 ± 3.5, respectively.

The study of neuroimaging of the brain was carried out only in a few cases from each subgroup, in this regard, the reliability of the results in comparison with the test results does not show a high difference. Regression of moderate hydrocephalus was noted in both groups, however, more pronounced changes were recorded in subgroups B and had a significant difference to the initial data. The disappearance of signs of leukoreosis after treatment was noted in the B subgroup of the second group. A similar picture was observed in the identification of small ischemic foci of the brain when comparing both groups after treatment. The disappearance of pathological changes on MRI, depending on the initial data, was 10% versus 18% (groups I and II, B subgroups), however, there was no reliability between the indicators (Table 2).

Table 2 Neurovisual changes in the examined patients after treatment (%)

MRI signs	A group (n = 20)		B group (n = 20)	
	beforetreatment	aftertreatment	beforetreatment	aftertreatment
Leukoaraiosis	50	33.3	21	16.0
Small foci of dystrophy of the brain substance	56	40.0	32	25.7 *
Moderatehydrocephalus	34	20.0	7.0	11.4 *
Leukomalacia	twenty	13.3 ^	12	8.0 *
Small ischemic foci of the brain	25	10.0 ^	12	8.6 *

Note: * - reliability of data in groups before and after treatment (P <0.05); ^ - reliability of data between groups after treatment (P <0.05).

Changes in the EEG after treatment were characterized by the fact that in patients in the group with improved memory, the alpha rhythm was recorded in 50% increased and the frequency of the flattened alpha rhythm decreased by 1.5 times. A positive moment on the EEG, a change in the violation of differences in the zones (p <0.05) and in parallel, the asymmetry of bioelectrical activity decreased, the power of slow activity increased. This is important for age-related changes and the duration of the chronic process, as a result of treatment. Thus, the treatment improved the energy structure and the integrative process in the brain.

Conclusions

1. A routine study showed a fairly high level of cognitive impairment in older adults who did not seek help from a doctor

2. A close relationship has been established between memory and attention loss, with the level of mental decline in mood, asthenoneurotic syndrome, depression, which is clearly reflected in electroencephalography in the dominant hemispheres.

3. The result of neuroprotective and antidepressant treatment showed a positive result on the part of cognitive shifts and an increase in wakefulness, normalization of the nature of the bioelectrical activity of the brain and neuroimaging parameters

4. An important analysis for a complete diagnosis, the degree of cognitive impairment, the level of depression is the result of neuropsychological testing at a certain stage of treatment.

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