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THE STRUCTURE OF COGNITIVE IMPAIRMENT IN PATIENTS WITH ISCHEMIC STROKE, DEPENDING ON THE LOCALIZATION OF THE ISCHEMIC FOCUS.

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Introduction. Post-stroke cognitive disorders (PCD) are disorders of memory, attention, thinking and other cognitive functions that occur after a stroke. RCC is an urgent problem of neurology, as it reduces the quality of life of patients, increases the risk of recurrent strokes and dementia, and also affects social adaptation and rehabilitation. According to various studies, PCD occurs in 20-80% of patients after stroke, depending on the diagnostic criteria, follow-up time and sample characteristics. Various neuropsychological tests evaluating different aspects of cognitive activity are used to identify PCD. There are different classifications of PCD by severity, type of violations, time of occurrence and duration. The results of studies concerning the problem of the effect of lateralization of the ischemic focus on the severity of cognitive deficits are contradictory. Some authors point to more significant changes in the cognitive sphere in patients with right hemisphere stroke [1-2]. According to other data, patients who have suffered a violation of cerebral circulation in the right hemisphere, on the contrary, are characterized by a more preserved ability to social cognition and communication [3].

Keywords: cognitive impairment, ischemic stroke,

The purpose of this study is a comparative assessment of the structure and severity of cognitive impairment in patients who have had an ischemic stroke with different localization of the ischemic focus.

Materials and methods. The analysis of the results of assessing the cognitive functions of 34 patients (22 men and 12 women, average age 63.55±7.57 years) referred to the rehabilitation department of the ASMI clinic after an ischemic stroke was carried out. Of these, 17 (50.0%) of the studied patients were admitted in the early recovery period of ischemic stroke, 3 (8.8%) — in the late recovery period, 14 (41.2%) patients underwent rehabilitation treatment for the residual effects of ischemic stroke suffered more than a year ago. At the same time, 15 (44.1%) patients suffered a violation of cerebral circulation in the basin of the right middle cerebral artery, 18 (52.9%) — in the basin of the left middle cerebral artery, 1 (3%) people suffered a stroke in the vertebral basilar basin. The cognitive functions of the patients were assessed on the Roschina scale, MMSE, FAB, clock drawing test, Schulte tables on the day of admission. Continuous quantitative values were analyzed using the concept of media (Me), quartiles (25%, 75%), the criterion of reliability was the Mann–Whitney criterion (U).

Results. When assessing cognitive status by scale methods, the average MMSE score in stroke observations in the RMCA pool was 26.0 (25.0; 27.0) points, in stroke observations in the LMCA pool -24.0 (20.0; 26.0) points, and in observations with impaired cerebral circulation in the VBB — 26.0 (26.0; 26.0) points. The average score on the Grove scale was 21.0 (17.75; 24.25) points for right—hemisphere strokes, 27.0 (20.0; 29.0) points for left—hemisphere strokes, and 18.5 (17.75; 19.25) points for stem strokes, respectively. Patients who had suffered a violation of cerebral circulation in the left hemisphere of the brain had significantly more pronounced cognitive deficits compared with patients who had suffered a right-hemisphere stroke (for the Roshchina test, $U=72$, $p<0.05$). This corresponds to the data of studies involving neuroimaging methods, according to which the incidence of dementia in patients with post-stroke disorders of higher brain functions correlates with the left-sided localization of post-stroke foci [2]. A detailed analysis of the structure of cognitive

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impairment revealed that a decrease in memory was observed in the vast majority of the subjects, regardless of the vascular basin (fixation hypomnesia was noted in 100% of the observations). A decrease in the volume of attention was somewhat more often observed among patients who had suffered a violation of cerebral circulation in the LMCA basin (noted in 16 (88.86%) cases) than among patients with right-hemisphere stroke (detected in 10 (66.67%) cases), however, this difference was statistically unreliable (U=173, p>0.05). Also, in left-hemisphere stroke more often than in right-hemisphere stroke, there was a decrease in the level of generalization [16 (88.86%) and 11 (73.33%) observations, respectively] (U=152, p<0.05), inertia of thinking [16 (88.86%) and 11 (73.33%) observations, respectively] (U=189.5, p>0.05), inconsistency of judgments (5 (27.77%) and 2 (13.33%) observations, respectively) (U=194, p>0.05), violation of serial counting [5 (27.77%) and 2 (13.33%) observations, respectively] (U=194, p>0.05), difficulties in solving arithmetic problems [12 (66.67%) and 3 (20%) observations, respectively] (U=148.5, p<0.05). Thus, the left-sided localization of the ischemic focus was more often accompanied by violations of verbal logical thinking, which corresponds to the results of neuro-psychological studies. According to the literature, cognitive impairments in right-hemisphere strokes are manifested by operational disorders, problems in the field of visual spatial thinking [2]. When assessing praxis and gnosis, it was revealed that auditory agnosia was observed more often when stroke was localized in the RMCA basin than LMCA [10 (55.55%) and 6 (40%) observations, respectively] (U=151, p<0.05). The same trend was observed for opto-spatial agnosia [16 (84.21%) and 8 (34.78%) observations, respectively] (U=101, p<0.01). Also, a violation of cerebral circulation in the RMAC basin was more often accompanied by spatial and kinetic apraxia, but this difference was recognized as statistically unreliable (p>0.05). Insults in VBB were manifested modally by nonspecific disorders of attention, memory and thinking; apracto-agnostic syndrome, characteristic of cortical foci, was not detected in stem strokes.

Conclusion. Thus, when comparing the structure of cognitive impairments of patients who have suffered an ischemic stroke, it can be concluded that the symptom complex of disorders of higher brain functions is largely determined by the vascular pool. There is a clear connection between the nature of cognitive deficits and the localization of an ischemic focus. Nevertheless, in terms of observations, there is still a combination of symptoms that do not correspond to the ischemia zone. A possible explanation for this phenomenon — a violation of the interactions between the intact and affected hemispheres as a result of stroke — is confirmed in a number of studies of cerebral blood flow, which revealed its bilateral decrease in patients with hemispheric stroke [4]. In addition, vascular cognitive disorders are characterized by cortical-subcortical dissociation, which can cause neurodynamic disorders that are so frequent in disorders of cerebral circulation.

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