# Biosynthetic processes at the intercellular level in patients with ischemic cerebral circulation disorders according to autonomic resonance data test

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## Introduction

Ischemic disorders of cerebral circulation (IICI) are an important medical and social problem. Recent epidemiological studies indicate an increase in the "epidemic" of stroke in developing countries and countries of eastern Europe, [10] including in Russia. INI is one of the leading causes of morbidity, mortality, significant disability, social maladjustment of patients [6, 7]

At present, the problem of diagnosing the state of the tissue, the vascular system in patients with IUD during the recovery period, the possibility of preventing the occurrence of IUD, remains urgent. In this regard, it arises about the study of the possibilities of non-drug methods in the complex of rehabilitation measures in the recovery period of INMC. The state of the brain tissue at the intercellular level is important for the development of rehabilitation programs for evaluating the effectiveness of treatment methods.

In this regard, the autonomic resonance test is of great importance as an assessment of the state of biosynthetic processes at the intercellular level in the pain of INMC [3–5]. When performing autonomic resonance testing with IUD, there are individual characteristics of the pathological problem for each patient [1–5]. This is especially important in IHI, accompanied in the early recovery period by cerebral edema, resorption of toxins formed during ischemia and necrosis, improved blood flow in the ischemic area, and recovery of damaged neurons per hour [6–10]. The aim of this study was to identify the specific features of the state of biosynthetic processes at the intercellular level in BOIs, such as: hyalinosis, amyloidosis, thrombotic state with peri-infarction state of the brain tissue, cystic changes in the brain tissue.

## Materials and research methods

253 patients with IUD were examined by the method of random sampling. The study was carried out in the conditions of the rehabilitation treatment department of the Moscow Clinical Hospital of Novokuznetsk.

Study inclusion criteria: ischemic stroke in the recovery period; discirculatory encephalopathy (according to the classification of N.N. Yakhno corresponds to chronic cerebral ischemia according to ICD-10).

Exclusion criteria: hemorrhagic stroke; subarachnoid hemorrhage; inflammatory and autoimmune vascular diseases.

Exclusion criteria: refusal to be examined.

253 patients with IUD were examined. The number of men - 120 and women The average age of men was 56.92 ± 4.52 years, women - 59.24 ± 4.26 years. The proportion of nosological forms in them was: with discirculatory encephalopathy was ± 3.63%, cerebral infarction - 76.46 ± 3.64%; by the degree of clinical manifestations: 0.32 degrees; in terms of duration after suffering an acute disorder, the period - 5.61

months. The following instrumental and clinical studies were used, conducted in all patients with IUD according to a single scheme: clinical neurological examination, statistical research methods. To confirm the diagnoses, the data of laboratory and paraclinical research methods were taken into account (EEG, USDG, REG, CT, MRI, X-ray examination).

Research results

Among the examined were 253 patients with ischemic stroke in the recovery period, discirculatory encephalopathy according to Yakhno's classification, which corresponded to chronic cerebral ischemia according to ICD 10.

The dominant complaints were: dizziness in 93.68 ± 1.52%, pain in 88.14 ± 2.03%, including pain in the temporo-frontal region in 32.02 ± 3.13%.

Tab

Syndromes identified in the examined patients,% + m

| Syndromes | Total n = 253 | Men n = 120 | Women n = 133 | R |
|---|---|---|---|---|
| Vestibulo-atactic | 93.68 ± 1.52 | 90.00 ± 2.73 | 96.99 ± 1.48 | > 0.05 |
| Asthenoneurotic | 83.79 ± 2.31 | 88.33 ± 2.93 | 79.70 ± 3.48 | <0.05 |
| Dyssomnic | 81.54 ± 2.43 | 71.67 ± 4.11 | 90.23 ± 2.57 | > 0.05 |
| Hemiparesis pyramidal | 72.73 ± 2.79 | 84.17 ± 3.33 | 62.41 ± 4.19 | > 0.05 |
| Psychoorganic | 20.55 ± 2.54 | 15.83 ± 3.33 | 24.81 ± 3.74 | <0.05 |
| Cerebellar hemisyndrome | 4.35 ± 1.28 | 4.17 ± 1.82 | 4.51 ± 1.79 | <0.05 |
| Epileptiform | 1.45 ± 0.75 | 0.00 ± 0.00 | 1.50 ± 1.05 | |

Pain from the occipital-temporal region radiated to the frontal region, to the apples. In terms of emotional coloring, the patients characterized the pain as “pressing the“ squeezing with a golden hoop, ”“ squeezing with a silver hoop, " YOUR. In m, the average degree of headache intensity was 7.87 ± 0.61, in women -

0.36. A combination of several syndromes was detected in all patients with IUD. The table shows the frequency of syndromes identified in the examined patients. From table 1 in that 72.73 ± 2.79% of patients had pyramidal hemiparesis. Pyramidal hemi was found significantly more often in men. Power paresis in the main group was 0.41 points, in the control group - 2.60 ± 0.51 points.

Table 2 shows that in the examined group there was a slight lower mechanical auditory-speech memory, investigated using the test of memorizing d words from ten presentations.

Tab

Average number of words retained during examination of 65 patients, M ± m

| Number of presentations | The number of memorized words d treatment |
|---|---|
| one | 4.87 ± 0.37 |
| 2 | 6.62 ± 0.41 |
| 3 | 7.64 ± 0.50 |
| 4 | 8.26 ± 0.43 |
| five | 8.41 ± 0.30 |
| 6 | 8.54 ± 0.33 |
| 7 | 8.74 ± 0.30 |
| eight | 9.03 ± 0.30 |
| nine | 9.00 ± 0.33 |
| 10 | 9.13 ± 0.27 |

Doppler ultrasonography of extracranial vessels revealed changes in blood flow in 87 ± 4.66% of the examined patients by the type of decrease and increase in linear blood flow rate. The blood flow velocity was significantly reduced in a greater number of patients with the common carotid and vertebral arteries. In the external carotid and internal carotid art, there was no significant difference between the number of patients with decreased and increased blood flow velocity. The linear blood flow velocity was reduced in general carotid arteries to 34.56 ± 4.09 m / s and 8.62 ± 1.33 m / s, in the internal carotid arteries - to 34.44 ± 5.81 8.72 ± 1.83 m / s; in the external carotid arteries - up to 40.27 ± 6.08 m / s and 7.09 ± 1.68 vertebral arteries - up to 23.08 ± 3.03 m / s and 5.85 ± 0.80 m / s. With a reduced blood flow rate, the systolic and diastolic components significantly decreased in all extracranial vessels. With increased blood flow extracranial vessels was happening statistically meaningful took away diastolic component of blood flow velocity in vertebrates arteries 69.07 ± 10.16 m / s, in the external carotid artery up to 88.28 ± 7.42 m / s.

When examined by the method of vegetative resonance test (ART) it was found that all patients had a peri-infarction state in the brain tissue, reflecting a part of the pathological process. According to peri-infar ART data, the state of the brain was determined in all examined patients. In m, the peri-infarction state was determined at the level of 57.38 ± 1.65; in women - 64.24 ± 0 > 0.05.

All patients had a deviation from the normal value of the peri-infarction state. A peri-infarction state was detected (the zone of borderline blood supply both in the recovery period of cerebral infarction and in patients with discirculate encephalopathy. In men, the deviation from the normal value was 22.63 ± 1 women - 17.76 ± 1.19, P <0.05. the presence of a significantly greater peri-infarction state (zone of border blood supply) in men.

The thrombotic state of the vessels was observed in all patients. The mean values were 56.44 ± 2.06 in men, 60.55 ± 1.89 in women; P> 0.05. The optimal value of the thrombotic state was rejected in men 23.65 ± 2 women - 19.45 ± 1.89. There was no significant difference in the degree of thrombotic changes in men and women. P> 0.05.

95.65% of the examined patients had hypertension, 59.6% had coronary heart disease. Electromagnetic wave characteristics of the vascular wall, characteristic of the processes of hyaline amyloidosis, were determined in all patients with IUD.

The noted mean values of the amyloidosis state in men were 5
1.64, in women - 63.95 ± 1.27; P <0.05. Deviations from the optimal amylo value for men were 23.83 ± 1.64, for women - 16.05 ± 1.27; P <0.05. The deviated optimal value was a statistically significant greater value in mu. The degree of severity of vascular amyloidosis was statistically significantly higher in men.

All examined patients had vascular hyalinosis. Averages were tested at an average level in men - 50.63 ± 2.53, in women - 63.53 ± 1.42; P <Deviations from the optimal value indicating hyalinosis were in m
29.38 ± 2.53, in women - 16.41 ± 1.42. More pronounced, statistically known, changes in blood vessels by the type of hyalinosis were found in men, P <0.05.

All examined patients had cystic processes of the head and microcysts, arising in hypertensive, hypotonic to the consequences of "silent", lacunar infarctions, formed in the restore period. The determined mean values of cystic changes in the head were 54.29 ± 1.60 in men; in women - 66.05 ± 1.50; P <0.05.

Deviations from the optimal value of the cystic process were in m
25.71 ± 1.64, in women - 13.45 ± 1.50; P <0.05. The severity of the degree of brain cyst process in men was significantly higher than in women.

The presence of brain cysts was confirmed by the data of magnetic resonance imaging (MRI), computed tomography (CT) of the brain. MRI of the brain in the examined patients revealed single foci of discirculum in the frontal lobes; post-stroke cysts in the white matter of the frontal and parietal periventricular; lacunar heart attacks; forming post-stroke to post-stroke cysts.

Summary

Thus, in patients with ILI in the recovery period, I have clinical syndromes: vestibulo-atactic, asthenoneurotic
dyssomnic, pyramidal hemiparesis, psychoorganic, cerebellum
hemisyndrome, epileptiform, reveals changes in biosynthetic processes at the intercellular level in the form of a peri-infarction state of the tissue of the cerebral thrombotic state, cystic changes in the brain, disorders of the vessel wall by the type of amyloidosis and hyalinosis according to autonomic resonance testing. Peri-infarction state, thrombotic state, cysts, changes in the brain, disorders of the vascular wall by the type of amyloidosis, hyalae statistically significantly prevailed in men.

The results of diagnostics using the ART method allow us to clarify the genesis and pathological process of the brain and blood vessels and can be used
early differential diagnosis, degree at the and changes in biosynthetic percent of intercellular level, definitions the degree of efficiency of the wire rehabilitation therapy.

The method of vegetative resonance test can be included in the set of the program of primary examination and treatment of patients with IUD in the acute period of the process of rehabilitation measures.

Literature

1. Boyko A.N., Sidorenko T.V., Kabanov A.A. Chronic ischemia (discirculatory encephalopathy) // CONSILIUM MEDICUM. - 2004. - T.6. No. 8

598-601.

2. Gekht A.B., Gusev E.I., Bogolepova A.N., Alferova V.V. Rehabilitation principles pharmacotherapy of stroke patients in the recovery period // Materials of the All-Russian Congress of Neurologists. - Kazan, 2001 .-- S. 220.

3. Gotovsky Yu.V., Kosareva LB, Blinkov I.L., Samokhin A.V. Exog Bioresonance therapy with fixed frequencies: Methodical recommendations. IMEDIS, 2000 .-- P. 96.

4. Gotovsky Yu.V., Kosareva LB Electro-acupuncture diagnostics and thera using the vegetative resonance test "IMEDIS-TEST +": Methodical recommendations. - M .: IMEDIS, 2002 .-- 112 p.

5. Gotovsky Yu.V., Kosareva LB, Perov Yu.F. Resonant frequency diagnosis therapy (supplements, 2003): Methodical recommendations. - M .: IMEDIS, 2003 .-- 27

6. Gusev E.I., Skvortsova V.I., Platonova I.A. Ischemic insu therapy Journal. CONSILIUMMEDICUM. - 2003. - T.5. No. 8. - S. 466–473.

7. Damulin I.V. Post-stroke movement disorders // CONSI MEDICUM. - 2003. - T.5. No. 2. - S. 64–70.

8. Zhulev N.M., Pustozerov V.G., Zhulev S.N. Cerebrovascular disease Prevention and treatment of strokes. - SPb .: "Nevsky dialect", 2002. - 384 p.

9. Kamchatov P.R., Chugunov A.V., Volovets S.A., Umarova H.Ya. Brain disorders circulation // CONSILIUMMEDICUM. - 2005. - T. 7. No. 8. - S. 686–692.

10. Modern technologies of restorative medicine / Ed. Trukh A.I. - M .: Medica, 2004 .-- 280 p.

11. Feygin V.L. Epidemiology of stroke at the turn of the century: lessons and perspectives Modern approaches to the diagnosis, prevention and treatment of neurodegenerate diseases (dementia, stroke and Parkinson's disease) December 5-7, 2003 // Collection of scientific papers. - Novosibirsk: Sibmedizdat, 2003. - pp. 3–7.

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S.L. Chepurnaya, I.R. Schmidt Biosynthetic processes at the intercellular level in patients with ischemic disorders of cerebral circulation according to the autonomic resonance test //

"- M .:" IMEDIS ", 2008, vol. 2 - C.90-98