The use of systemic magnetic laser puncture at initial manifestations cerebrovascular accident

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SUMMARY

The results of treatment of patients with initial manifestations of cerebrovascular insufficiency (n = 158) using the developed method of systemic magnetic laser puncture (n = 130) in comparison with drug therapy (n = 28) are presented. A significant hypotensive effect of magnetolaser puncture on blood pressure with its increase and a normalizing effect on the lipid spectrum of blood has been shown.

With the same duration of the course of treatment, magnetic laser puncture was not inferior to the drug one in its effect on the main clinical manifestations of the disease, and in terms of its effect on the lipid spectrum it was superior to drug treatment.

KEY WORDS: magnetic laser puncture, initial manifestationscerebral circulation insufficiency, arterial hypertension of the 1st stage, lipids.

The medical and social significance of scientifically based prevention of vascular diseases of the brain and treatment of their initial manifestations are convincingly substantiated by the wide prevalence of this pathology and the severity of its consequences [3; 7; eight; ten; eleven; twenty; 23]. As for cerebrovascular diseases (CVD), timely treatment (prevention) of risk factors, prevention of psychoemotional overload, smoking, alcohol abuse and, of course, controlled treatment of the initial manifestations of cerebrovascular insufficiency (CVDF) as one of the main causes of stroke are important [1- 3; 7; eighteen; twenty; 21; 23]. There are 4 groups of increased risk of stroke [7; 12; 24]:

1) persons with persistent arterial hypertension (AH), the level of arterial pressure (BP) 180/105 mm Hg. Art. and higher. People with high blood pressure develop ischemic heart disease (CHD) 3-4 times more often and cerebrovascular accident 7 times more often [2; 20], and fatal acute disorders of cerebral and coronary circulation occur 35% more often in the population of patients with hypertension [2] and, as a rule, in untreated or ineffectively treated patients;

2) persons with hypertension, regardless of the level of blood pressure in combination with one of additional factors - ischemic heart disease, NPNMK, hypertensive cerebral crises, diabetes mellitus, obesity, atherosclerosis, etc. It follows that during the treatment of hypertension or atherosclerosis, it is important to control not only the blood pressure level, but also some metabolic indicators - the level of glucose, cholesterol and

the state of the autonomic nervous system;

3) persons with persistent or paroxysmal heart rhythm disturbances of various origins [7; twenty];

4) persons with transient ischemic attacks or cerebral stroke with good recovery of functions [10; twenty].

Our study is devoted to the study of NPNMK as one of the significant risk factors in the onset of stroke. The NPNMK concept that has existed in the CIS countries for over 30 years [1; 23], considers this pathology as an important risk factor for the occurrence of acute disorders of cerebral circulation: in patients with PNCI with hypertension, transient disorders of cerebral circulation were 2.8 times more frequent and strokes were 2.7 times more frequent than in persons who did not have cerebral »Complaints during the initial examination [10; eighteen].

In foreign literature, various terms are used to define slowly progressive cerebrovascular accidents: subcortical atherosclerotic encephalopathy, Binswanger's disease, vascular dementia, ischemic encephalopathy, etc.; in domestic works [24] - chronic insufficiency of cerebral circulation, ischemic disease of the brain, cerebrovascular insufficiency.

Currently, the most recognized is the division of NPNMK into 3 stages (forms) of the clinical course [1; eleven; 18]: subclinical stage, NPNMK, initial cerebral circulatory insufficiency.

1. Subclinical stage (form) of circulatory insufficiency of the brain characterized by the absence of complaints, and only with emotional or physical overstrain do transient neurotic syndromes appear (irritability, emotional lability, trembling of the eyelids, etc.). On the electroencephalogram (EEG), diffuse changes in bioelectric activity are possible; on a rheoencephalogram (REG), in some cases - changes in the tone of cerebral vessels; Doppler ultrasound (USG) does not detect changes.

2. NPNMK are characterized by a significant number of subjective complaints patients (headache, memory impairment, noise in the head, unsystematic dizziness, decreased ability to work, etc.). An objective neurological examination reveals no pathological changes, EEG shows irritation of nonspecific brain systems, REG shows changes in cerebral vessels, venous dysfunction, USDG shows no changes. The diagnosis is made on the basis of the patient's subjective complaints, REG, EEG and biomicroscopy of the bulbar conjunctiva of the eye (narrowing of the arteries, decreased blood flow).

3. The initial circulatory failure of the brain corresponds to discirculatory encephalopathy (DE) stage I and is characterized by the deepening of clinical manifestations in comparison with the previous stage.

However, according to E.V. Schmidt et al. [23], NPNMK differs from DE I Art. lack of clinical objective symptoms of organic brain damage. However, instrumental and electrophysiological techniques (EEG, REG, USDG, etc.) reliably record signs of cerebral ischemia, especially when using functional tests [10; eighteen].

The main reasons for the onset and development of PNCI are hypertension (HD) and atherosclerosis, or a combination of these two reasons [1; twenty; 23], which means that predominantly drugs and methods of treatment of the underlying cause are used for the treatment of NSAIDs, ie. antihypertensive and cholesterol-lowering drugs.

However, it should be noted that the drug therapy of PNCM, along with some advantages (availability, convenience of taking medications, etc.), has significant disadvantages (side effects, addiction to drugs, reduced effectiveness, etc.).

Promising is an complex application pathogenetically justified methods of physical and pharmacotherapy [15], especially in the treatment of CVD, which have a chronic course and require virtually constant medical supervision. This also applies to NPNMK, the timely treatment of which will help prevent such serious complications as stroke and discirculatory encephalopathy. The aim of this study was to study the systemic magnetic laser puncture (LSMS) on the clinical course of PNLMK and the dynamics of lipid levels under the influence of LSMS.

MATERIAL AND METHODS

158 patients with PNCM were under observation, 88 men (55.7%), 70 women (44.3%), aged 30 to 53 years, the average age was 41.7 + 3.4 years.

The selection of patients was carried out from a group of patients of 270 individuals referred for examination with a diagnosis of hypertension, atherosclerosis, cerebrovascular disease, NPNMK, chronic fatigue, etc. dizziness, noise in the head, irritability, rapid fatigability and reduced ability to work, emotional lability, sleep disturbance, etc. With an objective neurological examination, such patients should not have significant pathological signs, except for 2-3 microsymptoms (deviation of the tongue, asymmetry of deep reflexes , smoothness of the nasolabial fold, sometimes pseudobulbar reflexes of Marinescu-Radovici).

Patients with comorbidities requiring any additional treatment, i.e. observed patients with cerebrovascular manifestations of the disease - NPNMK.

All patients were examined according to a single program, including a thorough clinical examination with a mandatory minimum of laboratory and instrumental studies (general blood and urine analysis, urine analysis according to Amburzhe and Zimnitsky, ECG), biochemical blood tests (lipids and lipoproteins, creatinine, glucose, etc.), examination of the fundus. Special electrophysiological and instrumental techniques were also carried out: EEG, REG, Doppler sonography, biomicroscopy of the bulbar membrane of the eye, selective daily monitoring of blood pressure, axial computed tomography of the brain and magnetic resonance imaging.

According to the results of clinical and electrophysiological studies, all patients

were divided into 2 groups depending on the leading cause of NPNMK:

1st - 91 (18) - 57.6% - patients with hypertension I stage, in combination with atherosclerosis; 2nd - 67 (10) - 42.4% - patients with atherosclerosis.

The number of patients in the control groups is given in brackets, a total of 28 patients with a similar pathology, who did not differ from the patients of the main groups in terms of age, sex, clinical course of the disease, etc.

All patients of the main groups (130 patients) received LSMS according to the methods developed by us, which provided for regulating puncture physiotherapy (RPF) based on the data of electropuncture diagnostics using the Nakatani method [5; 6; 16].

On systems (meridians) that were in a hyperfunctional state, magnetic laser puncture (MLP) was carried out using laser radiation of the infrared (IR) range (l - 780 nm) using a sedative technique, 1.5-3.0 J / cm^2 one acupuncture point (TA) [13; 17]. Magnetic laser emitter area - 0.5 cm^2, the power flux density was regulated from 20 to 40 mW / cm^2, magnetic field strength (MF) - from 10 to 20 mT. To obtain the required energy dose of laser radiation (LI), the exposure time ranged from 40 sec. up to 2.5 min. for one TA. The following TA were included in the recipe for hyperfunction of the meridian: sedative, lo-point, source.

On systems in a hypofunctional state, MLP was performed using LR of the red range (l - 670 nm) according to the tonic technique, 0.09-0.15 J / cm^2 for one TA. The following TA were included in the recipe for hypofunction of the meridian: tonic, source, lo-point. The total RPF time, regardless of the number of imbalanced meridians, did not exceed 15 minutes.

In addition to the RPF, a magnetic laser effect was carried out on the main zones of regulation of the circulatory system: peripheral, segmental, suprasegmental and humoral, i.e. the impact was multi-level. Magnetic laser emitters with an area of 5 cm were used^2 (l - 780 nm, adjustable power - from 10 to 100 mW; MP - from 5 to 40 mT) with an energy dose of 2.0-5.0 J / cm^2 for one zone.

Used zones:

1 - zone of kidneys and adrenal glands (level D_{12}-L_2 vertebrae);

2 - segmental zone of the heart (level D_5-D_6 vertebrae);

3 - collar zone (level C_7-D_1 vertebrae).

4 - projection of the foramen magnum;

5 - segmental zone of the liver (level D_{nine}-D_{eleven} vertebrae);

6 - projection of the liver from the front (6th intercostal space along the midclavicular lines);

7 - projection of the carotid sinus and n. vagus (bilateral zones).

The peculiarity of the developed technique consisted not only in the systemic principle of exposure, but also in the use of frequency-modulated MLP, depending on the reasons for the NPNMK. In hypertensive nature, the modulation frequency is 37.5 Hz, which is resonant for the physical blocking of calcium channels [14], in atherosclerotic nature - 1.25 Hz, the base modulation frequency in

diseases of the cardiovascular system [17]. With a combination of hypertension and atherosclerosis, frequencies of 1.25 and 37.5 Hz were used (the first 5-10 minutes in the session - 1.25 Hz, the second 5-10 minutes - 37.5 Hz).

In case of significant asthenoneurotic disorders, depressive syndrome in patients with NPNMK in a treatment session lasting 3-5 minutes. the frequency of 9-10 Hz was switched on, that is, the dominant frequency of the bioelectric activity of the brain (b-rhythm), capillary tremor and blocking of sodium channels.

In one session, in addition to regulating puncture physiotherapy, the impact was carried out on the above zones (simultaneously on two zones); only 7 zones, the total exposure time on them ranged from 5 to 14-15 minutes. The control of the effectiveness of the treatment was carried out according to the previously given methods and on the basis of the Nakatani method.

In cases where Ryodoraku indicators have normalized, i.e. were within the physiological corridor, the regulating puncture physiotherapy was not carried out, the impact on the zones continued.

Treatment was carried out every other day, in most cases on an outpatient basis, the total number of procedures was 15. Patients of the main group did not receive drug therapy. The control consisted of patients with similar clinical manifestations (n = 28), who received drug therapy (calcium channel blockers of prolonged action in hypertension, nicotinic acid, multivitamins, etc.) [10; eleven; 24].

20 practically healthy individuals made up a comparison group in the study of lipid content, EEG, REG, etc.

OBTAINED RESULTS AND THEIR DISCUSSION

Prior to LSM, elevated blood pressure was recorded in the 1st and the corresponding control groups of patients, not significantly differing between the groups (p> 0.05), and amounted to: systolic - 168.7 ± 3.32 mm Hg. Art., diastolic - 98.1 ± 2.0 mm Hg. Art. After a course of treatment with the use of LSMS, blood pressure in patients with high blood pressure (n = 73) was: systolic - 137.3 ± 2.2 mm Hg. Art., diastolic - 82.5 ± 1.6 mm Hg. Art. and did not significantly differ (p> 0.05) from patients in the control group (n = 18) who received calcium channel blockers (their blood pressure was, respectively, 136.8 ± 2.3 mm Hg and 81.8 ± 1.7 mmHg). In other words, in the case of so-called mild hypertension (grade I hypertension), the course of LSML did not differ significantly in terms of effectiveness from treatment with calcium channel blockers in individually selected doses.

The results obtained from the influence of LSM on the level of lipids in blood serum were important. In all examined groups, including control groups (n = 158), the level of lipids in blood serum before treatment was as follows: total cholesterol - 5.94 ± 0.22 mmol / l (4.35 ± 0.62 mmol / l); low density lipoproteins (LDL) - 3.457 ± 0.23 mmol / l (2.13 ± 0.29 mmol / l); high density lipoproteins (HDL) - 1.430 ± 0.08 mmol / l (1.359 ± 0.18 mmol / l); triglycerides - 1.825 ± 0.080 mmol / l (1.701 ± 0.276 mmol / l); atherogenic index - 3.25 ± 0.17 units. (1.99 ± 0.258). All indicators of the lipid spectrum in patients with PNCI

the main and control groups did not differ from each other (p> 0.05). In practically healthy individuals, these indicators were significantly lower (they are given in parentheses) and did not go beyond the normal range, but were significantly lower than in patients (p <0.05).

After treatment in the main groups of patients (n = 130) who received LSMS, the level of total cholesterol was 4.59 ± 0.53 mmol / L, LDL - 2.8 ± 0.3 mmol / L, HDL - 1.39 ± 0 , 18 mmol / l, triglycerides - 1.74 ± 0.25 mmol / l, atherogenic index - 2.01 ± 0.17 units, which was close to the indicators of healthy individuals of the same age (p> 0.05). In the control group of patients (n = 38) with NSAID, who received conventional drug therapy for a month, no significant changes in serum lipids were obtained (p> 0.05). Perhaps this is due to the relatively short duration of medication.

The importance of dyslipoproteinemia as risk factors for the development of cardiovascular and cerebrovascular diseases is widely discussed in the literature [7; 19; 25]. It is known that, in addition to the atherogenic effect on the vascular wall, hyperlipidemia can cause functional and morphological changes in the microcirculation system [11] and thereby contribute to the development of ischemic disorders in the brain parenchyma. The European Community for the Study of Atherosclerosis advises to determine the content of cholesterol, high and low density lipoproteins, and plasma triglycerides. If the level of atherogenic LDL is more than 130 mg / dL (3.36 mmol / L), the patient is advised to diet. Drug therapy for hypocholesterolemic action (lovastatin, pravastatin, probucol, cholestyramine, nicotinic acid, etc.) is prescribed in cases where

It should be noted that LSML, as evidenced by our studies, actively affects lipid metabolism, normalizing its main indicators in patients with PNLMK. Perhaps this process is associated with the effect of magnetic laser radiation on liver function and increased microsomal oxidation of LDL by cytochrome P-450 (an iron-containing hemoprotein) of hepatocytes at a constant level of HDL cholesterol [9].

When comparing the clinical effect of LSMS and drug therapy (one course of treatment for a month), first of all, it should be noted its significant normalizing effect on autonomic homeostasis (in terms of cardiovascular tests), lipid metabolism and cerebral hemodynamics. Follow-up observations showed that after a course of LSMS, 85% of patients remained in a clinically satisfactory condition for 6 months, and in 62% - 9 months (corresponding terms of improvement with drug treatment, one course - 30%).

Magnetic laser therapy acts on the human body as a kind of "adaptogen", increasing resistance to hypoxia and physical activity, has a neurotropic effect, normalizing the activity of the sympathetic and parasympathetic parts of the autonomic nervous system [5; 12; fourteen; 22], ie stimulates (launches) sanogenetic mechanisms in patients with PNCM.

The studies carried out allowed us to come to the following conclusions:

1. Systemic magnetic laser puncture is an effective method for

treatment of NPNMK, influencing the main links of the pathogenetic mechanisms of development of NPNMK and, first of all, on the state of the autonomic nervous system (stimulation of the function of its parasympathetic division, i.e., has an antispasmodic effect), which leads to the normalization of lipid metabolism and blood pressure in GB I stage ...

2. When using LSMS in patients with PNLU, the main reason which was GB, the most effective was the use of magnetic laser radiation with a frequency of 37.5 Hz, which by its action resembles antihypertensive drugs - calcium channel blockers. In cases of NPNMK of atherosclerotic nature, magnetic laser radiation with a frequency of 1.25 Hz had a more significant effect. With a combination of these two factors, when the patient had hypertension and atherosclerosis as the cause of NSAID, it is advisable to use these frequency modulations in one session: the first 10 minutes. a frequency of 1.25 Hz is used, the second 10 min. - frequency 37.5 Hz. All subjective complaints and some microsymptoms disappeared faster when using magnetic laser radiation with a frequency modulation of 9-10 Hz (the frequency of the a-rhythm of the brain).

3. LSMS should be It is carried out in courses (14-15 procedures per course of treatment with the choice of the necessary frequencies) and can be used in the complex treatment of patients with PNCI.

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