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CORRECTION OF INITIAL CEREBRAL DISORDERS IN ARTERIAL HYPERTENSION

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КОРРЕКЦИЯ НАЧАЛЬНЫХ ЦЕРЕБРАЛЬНЫХ НАРУШЕНИЙ ПРИ АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИИ

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A comprehensive examination of 114 patients with stage I and II hypertension was carried out. The aim of the study was to develop a modern, pathogenetically substantiated, comprehensive non-medicamentous method of curative correction of early cerebral manifestations of hypertension. The main correction of the initial manifestations of hypertension was a special technique of curative gymnastics and respiratory gymnastics with elements of group psychotherapy. Group 1 (n=80) – patients who received complex non-drug treatment; Group 2 (n=34) – patients who received drug-induced antihypertensive therapy on the basis of monotherapy or low-dose combination therapy. Patients of the 1 st group reported a significant ($p<0.01$) improvement after the end of treatment. Intergroup differences obtained before and after treatment, in patients of the 1 st and 2 nd groups it had a significant ($p<0.01$) nature. The study of cerebral hemodynamics significantly ($p<0.01$) indicated an increase in the majority of patients of the 1st group of blood flow along the vertebral arteries, the posterior cerebral arteries. In the state of vasomotor reactivity and autoregulation of cerebral blood flow, there was significant ($p<0.01$) positive dynamics only in patients of the 1st group. Thus, the analysis of the results of our algorithm for treating patients with initial manifestations of hypertension, conducted with the use of non-drug methods, demonstrates the validity of the proposed pathogenetic approach to ongoing therapy.

Keywords: arterial hypertension, therapy, combined therapy, nonmedical methods

Было проведено комплексное обследование 114 пациентов с АГ I и II стадии. Цель исследования – разработать современный патогенетически обоснованный комплексный немедикаментозный метод лечебной коррекции ранних церебральных проявлений артериальной гипертензии (АГ). Основой коррекции начальных проявлений АГ являлась специальная методика лечебной гимнастики и дыхательной гимнастики с элементами групповой психотерапии. 1-я группа (n=80) – пациенты, получавшие комплексное немедикаментозное лечение; 2-я группа (n=34) – пациенты, получавшие медикаментозную гипотензивную терапию на основе монотерапии или низкодозированной комбинированной терапии. Пациенты 1-й группы отмечали достоверное ($p<0,01$) улучшение после окончания лечения. Исследование церебральной гемодинамики достоверно ($p<0,01$) свидетельствовало об улучшении мозгового кровотока. В состоянии вазомоторной реактивности и ауторегуляции мозгового кровотока также отмечалась достоверная ($p<0,01$) положительная динамика только

у пациентов 1-й группы. Таким образом, анализ результатов использованного алгоритма лечения пациентов с начальными проявлениями АГ с применением немедикаментозных методик свидетельствует об обоснованности предложенного патогенетического подхода к проводимой терапии.

Ключевые слова: артериальная гипертензия, терапия, комбинированная терапия, немедикаментозные методики

Arterial hypertension in the Russian Federation, as in all countries with a developed economy, is one of the urgent medical and social problems [3, 5, 6, 9, 12, 15, 19]. This is due to the high risk of complications, widespread prevalence and insufficient control at the scale of population. It is known that in Western Europe blood pressure is properly controlled in less than 30 % of the population and in Russia it is controlledin 17.5 % of women and 5.7 % of men who have arterial hypertension [2]. However, there is often a situation when there is no correlation between the frequency and intensity of cephalalgia and increased blood pressure in a patient with arterial hypertension and, hence, taking antihypertensive drugs does not lead to relief headache [1, 2, 14]. In today's date, it has been scientifically substantiated and proved by clinical practice that the use of adequate, therapeutic hypotensive programs allows to improve significantly the effectiveness of treatment of patients, to reduce the incidence of cardiovascular complications of the disease and of the rates of disability and mortality [11, 13, 16, 20].

However, since even with a prolonged course of hypertension, the disease is always accompanied by a significant deterioration in well-being. Patients often refuse the recommended permanent intake of medications because they are less concerned about the risk of complications that may occur in the distant future [7, 8, 17]. In connection with this perspective, the search and application of modern pathogenetically justified non-medicaments methods of correction of initial manifestations of hypertension are presented in addition to the generally accepted curative programs.

The aim of the studyis to develop a modern, pathogenetically substantiated, comprehensive non-medicament method of curative correction of early cerebral manifestations of arterial hypertension based on the features of clinical manifestations of the disease and evaluation of neurophysiological indices.

Material and Methods. To achieve this aim and to solve the research problems, a comprehensive examination of 114 patients with stage I and II mild and moderate AH was conducted. At the same time, the elderly were not included in the study group with an indication of an anamnesis for previously acquired craniocerebral trauma or neuroinfections.

The diagnosis of hypertension was made in accordance with the criteria developed by the Committee of Experts of the All-Russian Scientific Society of Cardiology (2013). The average age of patients was 34.6±5.5 years; the median duration of the disease was 6.5±3.7 years. The control group was represented by 36 practically healthy persons, comparable in sex and age, who had no elevated blood pressure values at the time of the examination or in the anamnesis.

The evaluation of the effectiveness of the treatment was carried out based on the analysis of the dynamics and indicators of the scales «physical activity», «mood» from the questionnaire «Quality of life» and the nature of changes in individual indices of cerebral hemodynamics before the course of treatment, after its completion and follow-up after 4 months. The received data were processed by static methods, providing for the calculation of the average value, the mean error, the Student's reliability test; the rank correlation coefficient and its error were performed using Statistica.

Results and Discussion. The main component of the complex therapeutic programs developed by us for the non-medicamentous correction of the initial manifestations of hypertension was a special technique of curative gymnastics and respiratory gymnastics with elements of group psychotherapy.

The choice of exercises was determined by the ability to provide an adequate training effect on the circulatory system, reducing psychoemotional stress and normalizing the mental status. As a rule, medium-intensity loads were used at which the frequency of cardiac contractions (HR) was 70–80 % of the submaximal level. The load was increased by making the exercises more complicated and then increasing the number of their repetitions. Laterwe introduced walking with a gradual increase in distance and speed, free swimming and gymnastics in the pool. A characteristic feature of therapeutic physical culture is not only the restoration of the affected system, but also the recovery of the entire body, which is important for the construction of the rehabilitation process. It is advisable to combine the exercises with aerophytotherapy and aromatherapy, which will increase the physical working capacity and have a beneficial effect on hemodynamics and the respiratory system. Essential oils are selected for each nosological group. These oilshelp to form quickly positive thoughts, moods and emotions in a patient. Therapeutic dosed walking is the most accessible, available kind of cyclic exercises. It can be recommended to people of all ages who have different physical fitness and health, regardless of their professional activities. Walking is used for the prevention and rehabilitation after cardiovascular and other diseases. While walking, the contraction of the muscle alternates with their relaxation which allows to with stand long physical stress (the main muscle groups are involved in this work), the activity of the cardiovascular and breathing systems is moderately increased, and the energy expenditure is also increased.

After exercise, exercise procedures are performed for manual correction of the spine using soft tissue techniques and post-isometric relaxation, myofascial release, indirect functional techniques, therapeutic massage, acupuncture sessions.

The main purpose of technical techniques in manual therapy is the restoration of the reserve of movements of the locomotor system with the subsequent normalization of the motor stereotype. This is achieved by mobilization, which allows restoring the barrier functions of the affected parts of the motor system. In turn, mobilization as the main technical device contains many technical varieties. Their application is conditioned by the object of influence. With the removal of articular blockades, manipulation of rhythmic and positional mobilization, rhythmic simple traction, post-isometric relaxation of reciprocal relaxation, stretching, local pressure, ordinary massage is used. For elimination of periosteal pain kneading pressure is used. In the mobilization of fascia and ligaments the local pressure, stretching is used.

In the complex of medical activities in this category of patients, it is advisable to apply training that allows increasing the person's ability to self-regulate, thereby helping patients to overcome psychological and social

consequences of illness. The state of muscle relaxation and rest arising during autogenic training is accompanied by weakening of the tone not only of the striated, but also of the smooth muscles, and by a decrease in emotional tension, i.e. autogenic training can be attributed to the methods of relaxation.During relaxation there is a slight decrease in blood pressure, slowing of the pulse rate, breathing becomes slower. The state of relaxation is characterized by mild drowsiness.

The state of rest and relaxation are hypnotical phases. In this connection, a special power is acquired by self-suggestion. The peculiarity of relaxation is that it is caused by self-suggestion and that with it the hypnotic state can be selective, so that you can control your experiences and exercise further by autosuggestions. Before classes of autogenic training individual conversations with the patients are conducted. The purpose of the interviews is to familiarize with the personality of the patient, clarify the nature of mental changes, establish close psychological contact with patientsand form a positive attitude in patients to autologous training.In addition, autogenic training is considered as one of the necessary and effective forms of exercise therapy, using general, special, respiratory and other exercises for the regulation of muscle tone, which are reflected as reflex manifestation of higher nervous activity actively influencing the processes of mobilization and reduction of excitation level in CNS and consequently the activity of all systems and organs of a man.

To assess the validity of our approach to the treatment of patients with initial manifestations of hypertension, all patients were divided into 2 groups: group 1 (n=80) – patients who received comprehensive non-drug treatment; group 2 (n=34) – patients who received drug-induced antihypertensive therapy based on monotherapy or low-dose combination therapy in accordance with current approaches to the treatment of hypertension. For the treatment of hypertension diuretics, α-adrenoblockers, calcium antagonists, angiotensin-converting enzyme (ACE inhibitors), α-blockers were used.

In addition to monotherapy, a combination of two or three antihypertensive drugs was used. The most commonly used are safe and effective combinations: ACE inhibitors+diuretics; diuretics+α-adrenoblockers; diuretics+angiotensin Receptor II blockers; dihydropyridine series+α-adrenoblockers; calcium blocker+angiotensin receptor II blocker; calcium blockers+angiotensinreceptor IIblocker+diuretics; α-adrenoblockers+α-adrenoblockers; preparations of central action+diuretics.

The analysis of the results of treatment of patients showed that the subjective and objective assessment of the effectiveness of the treatment was significantly lower in patients who received only medical therapy.

At the same time, all patients of the 1st group noted improvement in health, normalization of sleep, and increase in capacity for work directly in the process of treatment. The differences between the indices obtained with the use of the QoL questionnaire before and after the beginning of treatment authentic ($p \leq 0.01$)were of a valid nature. The intergroup differences obtained before the start of treatment and after its end in the patients of groups I and II, also authentic ($p \leq 0.01$)were of a prefabricated character.

The study of cerebral hemodynamics on extra- and intracranial arteries, conducted after treatment, authentic ($p<0.01$) indicated an increase in most of many of patients of the 1st group of blood flow through the vertebral arteries, the posterior cerebral arteriesauthentic ($p<0.05$)and the corresponding decrease in the pulsation index and systolic coefficient.

In patients of the 2nd group, qualitative indicators of hemodynamics in the vertebral artery and posterior cerebral arteries did not change significantly ($p<0.05$), which confirmed the lack of effectiveness of such treatment.

In the state of vasomotor reactivity and autoregulation of cerebral blood flow, positive dynamics were observed only in patients of the 1st group, which was authentic ($p<0.01$)manifested by a significant increase in the respiratory retention index with a significant increase in the overall rank of the vasodilation.

Thus, in this group the index of respiratory arrest in the examined patients increasedauthentic ($p<0.01$) by an average of 57.1 %, and the index of the general rank of the vasodilation was 57.23±16.3 %, which is explained by the increase in the arterial reserve of cerebral vessels due to increased blood flow through the arteries vertebrobasilar basin and normalization of vegetative regulation of cerebral blood flow.

On the basis of the results obtained by us, we can conclude that there isetiopathogenetic direction and significant clinical efficacy of the proposed complex of non-medicated correction method for the treatment of initial manifestations of hypertension. This circumstance makes it possible to conduct with more confidence the therapy aimed at preventing the emerging neurological disorders, cognitive imbalance, as well as distant vascular accidents due to arterial hypertension.

Conclusions. For patients with initial manifestations of hypertension there should be provided a complex program of non-medicamentous treatment including a special method of curative gymnastics, procedures for manual correction of the spine, individual and group psychotherapy to achieve an adequate training effect on the circulatory system, to reduce psychoemotional stress, normalize mental status. The analysis of the results of our proposed algorithm for the treatment of patients with initial manifestations of hypertension, conducted with the application of nonmedical methods, demonstrates the validity of the proposed pathogenetic approach to the ongoing therapy.

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INVESTIGATION OF CLINICAL AND PSYCHOLOGICAL PECULIARITIES OF PATIENTS AT EARLY STAGES OF HYPERTENSIVE ENCEPHALOPATHY

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ИССЛЕДОВАНИЕ КЛИНИКО-ПСИХОЛОГИЧЕСКИХ ОСОБЕННОСТЕЙ ПАЦИЕНТОВ НА РАННИХ СТАДИЯХ ГИПЕРТОНИЧЕСКОЙ ЭНЦЕФАЛОПАТИИ

Е. С. Кипарисова [1], С. М. Карпов [2], И. С. Денищук [1], М. Н. Пузин [1], Ю. В. Лепаев [1], Е. В. Хоженко [1], М. А. Омаров [1], И. Н. Халястов [1]

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A complex examination of 97 patients with initial manifestations of hypertensive encephalopathy was carried out. The average age of the examined patients was 46.9±13.2 years. The mandatory selection criteria were the presence of hypertension with I or II stage AH, in patients, subjective symptoms of brain damage. The patient's quality of life