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Research Article

APPLICATION OF BETAHISTINE-DIHYDROCHLORIDE IN PATIENTS WITH ETHNICAL DISORDERS WITH COCHLEOVESTIBULAR DISORDERS

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ABSTRACT

The widespread prevalence of arterial hypertension [AH], the life-threatening nature of its organ complications, especially in the brain, classify this problem as one of the most pressing in clinical medicine. However, it should be noted that most studies on cerebral complications of hypertension relate to strokes. As for pre-stroke cerebrovascular disorders (CSCD) against the background of hypertension, they are much less well covered. The existing literature reflecting vestibular disorders in patients with hypertension is presented mainly based on the duration and stage of headache, but without taking into account cerebrovascular disorders. As for information about in-depth otoneurological studies in patients with hypertension with DCVR, including a reflection of their dynamics against the background of the use of modern antihypertensive drugs, they are extremely scarce.

KEYWORDS

Pre-stroke cerebrovascular disorders, arterial hypertension, cochlevestibular disorders.

INTRODUCTION

Betahistine dihydrochloride is a synthetic drug that has the ability to bind to H1 histamine receptors, which are located in the neuroreceptor cells of the inner ear [4]. It has a powerful stimulating effect, increasing the release of neurotransmitters (histamine) from the nerve endings of the receptor cells of the inner ear into the synapse [2]. The neurotransmitter acts on the precapillary sphincters, causing vasodilation of the vessels of the inner ear, increasing their permeability and thereby normalizing intralabyrinthine pressure, i.e. eliminating hydrops [1,3].

In addition to affecting the receptors of the inner ear, betahistine affects the H3 receptors of the vestibular nuclei located in the medulla oblongata [5,6]. Experimental work on animals has shown an increase

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in serotonin levels in the medulla oblongata [7]. This leads to a decrease in the activity of the vestibular nuclei, a decrease in their excitability and the cessation of dizziness. Thus, a vestibulodepressive effect is manifested [8] .

The purpose of our study was to determine the effectiveness and tolerability of the drug Betaserc in the treatment of such clinical symptoms of hypertension as dizziness, subjective tinnitus, noise in the head, and hearing loss. The objectives of the work included studying the dynamics of the clinical picture of the disease during therapy with Betaserc for 1 month.

METHOD

Under our supervision were 23 patients with HD with DCVR, treated at the clinical bases of the Research Institute of Cardiology of the Ministry of Health of the Republic of Uzbekistan. The diagnosis of hypertension was made according to WHO criteria (1978). All those examined were males whose age ranged from 25 to 60 years. The duration of headache varied from 1 year to 20 years.

Regarding the research methods, it should be noted that all patients underwent a general clinical examination, which included: examination of somatic (cardiological), neurological and otoneurological status, rheoencephalography (REG), electroencephalography (EEG), audiometry (AM) and electronystagmography (ENG). generally accepted methods.

RESULTS

Of the 23 patients with DCVR we examined, 18 people (78.3%) complained of noise: of these, noise was localized in the ears in 6 patients (33.3%), in the head - 3 people (16.7%), in the head and ears 9 patients (50%).

Of the above-mentioned 18 patients with hypertension with DCVR, 6 people noted constant noises, 12 - periodic ones. Most patients noted a connection between the occurrence and intensity of noise with a deterioration in general well-being, increased blood pressure and increased headaches. These noises were usually subjective in nature and expressed in a very diverse manner: patients noted whistling, ringing, buzzing, gurgling of water, slight wind noise, etc.

Of the 23 examined, deterioration in the perception of whispered speech was found in 17 (77.3%) patients, and in only 3 it was unilateral, and in the rest it was bilateral. The majority of those examined had reduced hearing for whispered speech from 3 to 6 meters.

The perception of spoken speech is not impaired in 9 (39.1%) of the examined, in 14 (60.9%) the perception of spoken speech is reduced; with NPNMK - in 3 out of 6 patients, HE - stage I. in 5 out of 8, with GE - stage II . - in 3 out of 5, and with GE with PNMK in 3 out of 4 examined.

We conducted a tuning fork hearing study in 23 patients. Perception of C128 from the middle of the crown was reduced in 18 (78.2%) subjects. The perception of C128 from the mastoid processes in hypertensive patients with DCVR was shortened in 17 (73.9%) people, in 6 (26.1%) examined - within normal limits. The perception of bone-conducted sounds from the mastoid processes is impaired in all stages of GE in the vast majority of those examined. Most often, perception is reduced by 25-50%.

The perception of C128 through the air was impaired in 16 patients. In the majority of patients with PNMC, its perception was within normal limits; in the stage of GE with PNMC, it was impaired in all those examined. Consequently, impairment of airborne C128 perception increases with disease progression.

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During an audiometric examination, audiograms of 17 (73.9%) patients revealed impairment of sound perception of varying degrees; in 6 (26.1%) patients, tonal hearing was within normal limits. If we consider the state of tonal hearing according to the stages of GE, then normal hearing was found in 3 out of 6 patients with NPNMK, and in stage 1 with GE . in 2 out of 8, with GE - stage II . in 1 of 5 patients and in patients with GE with PNMK, normal hearing was not detected.

The study revealed that damage to the organ of hearing in DCVR is characterized by a predominant decrease in the perception of high tones. Thus, if when perceiving tones of the speech zone, hearing loss of more than 30% was detected in 3 (13.1%) patients, then when perceiving tones of 3000-8000 Hz in 14, which is more than 4 times more often. In patients with NPNMC and HE- I stage, a decrease in hearing acuity of more than 30% was not detected in any of the patients; in patients with HE- II stage. in 1 out of 5, and in those suffering from GE with PNMK - in 2 out of 4 examined. Consequently, as the disease worsens, the volume of hearing for high tones decreases.

Thus, to accurately determine hearing acuity in patients with DCVR, it is necessary to conduct pure-tone audiometry. With the latter, the majority of those examined exhibit a bilateral decrease in perception of both air and bone conduction of sounds. The curves are located almost at the same level, but the volume of hearing acuity in the vast majority of those examined during bone conduction of sounds decreases to a much greater extent, especially for high tones. Normal tonal hearing is quite rare. The majority of those examined have varying degrees of impairment of sound perception. The decrease in tonal hearing acuity increases depending on the stage of the disease, and not on age.

Studying the state of the vestibular analyzer during DCVR, we, before caloric examination of the labyrinth, identified the presence or absence of spontaneous vestibular reactions.

Of the 23 patients with DCVR we examined, 18 people noted dizziness of varying severity (from a slight sensation of objects shaking to attacks with a clear sensation of rotation of surrounding objects) and of a very different nature.

Based on the nature of these dizzinesses, we divided the patients into two groups. We included 11 patients in the first group who noted dizziness, characteristic of damage to the peripheral part of the vestibular analyzer, for which the sensation of rotational movement of one's own body or surrounding objects is typical. Another group of patients, numbering 7 examined, had so-called "tactile" dizziness, in which patients feel the imaginary movement of tangible objects, for example: the bed on which they are lying, or the floor on which they are standing.

We noted imbalances in the Romberg position with vision turned off in 6 people with a simple position and in 12 with a sensitized position, and a backward fall in 1 person with a simple position and 3 with a sensitized position. When changing the position of the head, the direction of the fall did not change.

A caloric test was performed in all 23 patients. All patients underwent ENG assessment of the caloric test.

According to the functional state of the vestibular apparatus, patients can be divided into two groups: with symmetric and asymmetric reactions. Symmetrical changes were detected in 17 (73.9%), asymmetrical - in 6 (26.1%) examined. A normal response to the test was detected in 5 people (21.7%),

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changes in the excitability of the vestibular apparatus were detected in 18 (78.3%) patients. Of these, 5 (27.7%) patients had hyporeflexia, 6 (33.3%) patients had asymmetric reactions, 5 (27.7%) patients had hyperreflexia, and 2 (11.3%) patients had areflexia.

Consequently, when conducting a caloric test, the majority of patients with hypertension showed altered responses to calorization, and only 5 had normal excitability. Asymmetric reactions predominated, which were expressed in differences in the duration of nystagmus, in amplitude, and in autonomic and protective reactions.

REG examination was performed in all 23 patients. When visually analyzing rheoencephalograms, the waveform most often was "double-humped" or "hump-shaped", or biphasic "plateau" type. The apex had a rounded configuration, the additional wave and incisura were shifted towards the apex and were weakly expressed, which indicated a high tone of the brain vessels and difficulty in venous outflow from the cranial cavity. In patients with NPNMC, the normotonic type was found in 3 examined patients. The rest had mild changes in the REG of the hypertensive type, 1 patient had a moderate form of hypertonicity. In patients with HE - stage I. in most cases, a REG picture of a moderate increase in the tone of large and small vessels of the brain was observed. In persons with GE-II degree. the normotonic type was found only in 1 case. Basically, a REG picture of a moderate and pronounced increase in cerebral vascular tone was observed. In persons with GE with PNMK, the normotonic type was not found at all. All patients in this group showed varying degrees of increased cerebral vascular tone, but mostly a pronounced form. Signs of obstruction of venous outflow increased as the disease progressed. Thus, if with NPNMK 33.3% of patients with changes in cerebral vascular tone were observed, then with GE with PNMC it was already in 100%, and the REG picture was qualitatively different: the number and severity of presystolic waves increased compared to PNMC.

An electroencephalographic study was also performed in all 23 patients. As our studies have shown, disturbances in the functional activity of the brain, according to electroencephalography, are detected in 21 (91.3%) of the examined.

Analyzing the encephalograms according to the forms of CVR, it can be noted that with NPNMC, mild and moderate changes in bioelectrical activity (BEA) predominate; with HE - stage I. and GE- II Art. more moderate and pronounced changes in BEA. The worsening of neurological pathology is naturally accompanied by a corresponding worsening of the EEG condition. Thus, a shift occurs towards an increase in the class of severity: in case of HE with PNMK, mild EEG changes are extremely rare, the frequency of occurrence of pronounced ones increases sharply, in addition, in cases with the development of acute cerebrovascular accidents, focal EEG changes are noted in 10.5%, which indicate the development local vascular pathology.

Concluding the above, it can be noted that DCVR, complicated by cerebral circulatory disorders, has not only a pronounced clinical, but also a corresponding paraclinical picture: spasm of cerebral vessels with disturbances in their pulse blood supply, difficulty in venous outflow from the cranial cavity with phenomena of secondary cerebrospinal fluid hypertension, disorders of bioelectrical activity various degrees of expression. Moreover, the degree of the above changes is directly dependent on the severity of the systemic and cerebral vascular process.

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Achieving high clinical effectiveness of therapy for patients with cochleovestibular disorders is possible through the use of an optimal complex treatment regimen developed for patients individually. The treatment plan was drawn up based on an analysis of the results of a multifaceted examination.

The analysis showed the prevalence of polymorbidity in patients, i.e. the presence of two or more diseases, especially in elderly patients. Therefore, drug therapy included, in addition to betaserc and antihypertensive drugs, also nootropic, diuretic, antianginal drugs, and vitamins. The increase in the clinical effectiveness of pharmacological correction of cochleovestibular disorders was facilitated by the use of non-drug methods: physical therapy and massage of the collar area for osteochondrosis of the cervical spine, reflexology, etc.

As a result of the complex treatment, positive clinical dynamics were recorded in the vast majority of cases. After treatment, noises disappeared or significantly decreased in 15 (83.3%) patients. When examining hearing with whispered speech, an improvement in perception was noted by 15 people (83.3%), and the perception of spoken speech improved in 12 patients (85.7%), and these indicators improved in all patients with NPNMK and GE-1st, and with GE-1st. 11st and GE with PNMK improvement was not observed in all.

During repeated audiometric examination, 13 patients (76.5%) out of 17 showed an improvement in sound perception; only 1 patient with GE-11st and 2 patients with GE with PNMK did not experience any obvious improvement.

We observed the most striking positive dynamics with the use of betaserc when identifying such a symptom of the disease as dizziness. If before treatment, 18 patients noted attacks of dizziness, then after using the drug for 10 days, 17 patients (94.4%) noted the absence or significant decrease in dizziness.

The good effectiveness of using this drug was also shown by the results of electronystagmography when conducting a caloric test before and after treatment. Thus, if before treatment, changes in the excitability of the vestibular apparatus were detected in 18 (78.3%) patients, and asymmetric reactions predominated, then after treatment, altered responses were detected only in 6 patients (26.1%), and asymmetric reactions were only observed in 1 patient.

Conclusions Thus, our observations have shown that the inclusion of betaserc in the treatment regimen of patients with cochleovestibular disorders reduces the time for the onset of compensation of vestibular function in comparison with patients in whom similar basic therapy was managed without the use of betahistine dihydrochloride.

Concluding the above, we believe that an integrated approach to the treatment of patients with HD with DCVR is the key to its high clinical effectiveness. The use of betahistine dihydrochloride in the complex therapy of cochleovestibular disorders can relieve dizziness, normalize statics and coordination, and improve hearing. In addition, taking into account the possibility of relapse of chronic diseases, it seems advisable to carry out a long course of maintenance monotherapy with betaserc, or its combined use with other drugs.

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