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Research Article

HYPOTENSIVE THERAPY AND ITS EFFECT ON VESTIBULAR DYSFUNCTION IN PATIENTS WITH ARTERIAL HYPERTENSION

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ABSTRACT

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. 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. 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.

KEYWORDS

Arterial hypertension, cochlevestibular disorders, stroke.

INTRODUCTION

The wide prevalence of arterial hypertension [AH], the life-threatening nature of its organ complications, especially in the brain, classify this problem as the most pressing in clinical medicine [1,5,7,8]. 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 [4].

Considering the above, the purpose of this work was to study the vestibular function of patients with essential hypertension (HD) before and after treatment with modern antihypertensive drugs.

Material and research methods. We observed 79 HD patients with DCVR. Among the patients there were 71 men, 8 women, their ages ranged from 23 to 70 years. The duration of the disease varied from 1 year to 15 years. According to the structure of the DCVR, the

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patients were distributed as follows: with initial manifestations of insufficient blood supply to the brain (IPBC) - 20 patients, with hypertensive encephalopathy (HE) - stage I. – 20, with GE- II Art. – 20 patients. In 19 patients with GE, episodes of transient cerebrovascular accidents (TCI) were observed. Patients were examined for general somatic (cardiological), neurological and ENT status using standard methods. The study of vestibular function, in addition to the clinical methodology, included caloric tests and electronystagmography according to the method of N.S. Blagoveshchenskaya (1990).

In addition, to verify the diagnosis of DCVR, patients underwent echoencephaloscopy (EchoES), rheoencephalography (REG) and electroencephalography (EEG) according to generally accepted methods.

Of the 79 patients, 40 were prescribed ACE inhibitors (mainly Vasotec at a dose of 5-10 mg/day) and 39 patients were prescribed calcium antagonists (CA); Norvasc (up to 10 mg/day) or Corinfar (up to 30 mg/day). The duration of treatment was 21-30 days. The results obtained between the intervention groups were not statistically significant, and therefore are presented in a generalized form.

Research results and discussion. An analysis of patients' complaints after treatment showed that if out of 79 patients before treatment, 51 people complained of dizziness, then after treatment, 32 of them noted a decrease in the intensity, frequency and even complete disappearance of dizziness. Moreover, the positive dynamics in patients with NPNCM was much higher (up to 100%) than in patients with HE- I (85%) and GE- II (60%). The lowest dynamics of dizziness was observed in HE with PNMK (less than 40%).

The dynamics of objective symptoms were somewhat different. In particular, spontaneous nystagmus was persistently maintained in only one patient out of three cases of GE with PNMK.

The instability in the Romberg position was more firmly maintained. Thus, in patients with NPNMC, instability in the simple Romberg position remained after treatment in 1 out of 3 patients, in the sensitized position in 2 out of 6 patients, and impaired flank gait remained in 1 out of 3 patients examined. With GE- I stage. instability in the simple Romberg position after treatment remained in 3 of 6 patients, and sensitization in 5 of 9 examined. Impaired flank gait persisted in 3 of 6 patients. In patients with HE - stage II . instability in the simple Romberg position continued to remain in 5 out of 8 patients, and in the sensitized position in 6 out of 8 patients. In patients with GE with PNMC, instability after treatment remained in 6 out of 8, and sensitized in 7 out of 12 patients.

The results of a study of the excitability of the vestibular analyzer according to the caloric test showed its positive dynamics in 2/3 of those examined, regardless of the nature of the pathology. Thus, in 26 (out of 65) patients with positive dynamics initially, excitability was increased in 6, decreased in 7, no responses were observed in 4 patients, and asymmetric reactions were observed in 9. In 39 patients, there was a tendency to improve the state of excitability of the vestibular analyzer, but it was statistically unreliable. The percentage of positive dynamics also depended on the severity of DCVR. Thus, in cases with NPNCM, excitability was restored to normal in 64.3% of patients, in cases with stage I HE . - 50%, GE - II degree. - in 33.3%, and with GE with PNMK - in 21.1% of patients (P>0.05).

The dependence of the dynamics of DCVR on the degree of its severity was also confirmed by data from

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neurophysiological studies. In particular, by the end of the course of treatment, normalization of cerebral vascular tone according to REG data occurred in 22.5% to 37% of cases, depending on the severity of DCVR. At the same time, in the group as a whole, the pulse blood supply to the cerebral vessels according to the rheographic index (RI) increased by an average of 13-15% (P <0.05). So, if this indicator (RI) in patients with NPNCM improved by 13%, then in patients with stage II HE . by 8% (P <0.01).

According to EchoES data, pronounced signs of intracranial pressure (ICP) that occurred in 15.5-20% of patients passed into other (moderate, mild) gradations. The number of patients with normal ICP doubled (from 30 to 60%). All indicators were statistically significant (P <0.05).

The dynamics of EEG changes were less noticeable and were expressed mainly by a decrease in the severity of cerebral changes. Normalization of the EEG was observed in less than 10% of patients, which must be taken for granted, because normalization of EEG indicators is a long process (from 1 to 6 months or more).

Thus, we can conclude that ACE inhibitors and calcium antagonists have, along with a high hypotensive and a certain cerebrovasoactive effect, which confirms the literature (2,3,5,6,8) and our previous information (7). This process is also reflected in the manifestation of the dynamics of otoneurological symptoms of DCVR in hypertension. At the same time, in our opinion, the normalization of excitability in a group of patients with increased excitability is apparently due to the restoration of the balance of cortical processes and, accordingly, the normalization of its inhibitory function on the labyrinth.

In individuals with decreased reactivity, the restoration of normal excitability depends not only on restoring the balance of cortical processes, but also on improving the nutrition of the receptors of the labyrinth and the pathways of the vestibular analyzer.

We believe that to achieve better results, antihypertensive therapy should be long-term and combined with periodic courses of neurometabolic and antioxidant therapy.

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