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Research Article

INDICATORS OF HEARING IMPAIRMENTS IN PATIENTS WITH ARTERIAL HYPERTENSION UNDER THE INFLUENCE OF HYPOTENSIVE THERAPY

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ABSTRACT

Hypertension and its complications in the form of various forms of hypertensive encephalopathies are very widespread in the world. It should be noted that recently this disease has become "younger," which leads to damage to people of working age, and is also the most common cause of disability and mortality from cardiovascular diseases. Despite numerous studies carried out in the world on this problem, it can be noted that the existing literature reflecting cochleovestibular disorders in patients with hypertension is presented mainly based on the duration and stage of hypertension, but without taking into account cerebrovascular disorders. We have not found any in-depth otoneurological studies in patients with hypertension with DCVR, especially those reflecting their dynamics against the background of the use of modern antihypertensive drugs.

KEYWORDS

Hypertension, cochleovestibular disorders, encephalopathy.

INTRODUCTION

Hypertension (HD) has been designated by European scientists as the greatest non-infectious pandemic in human history [7]. This definition given at the end of the 20th century retains its significance at the beginning of the 21st century , when an increasing trend in the incidence of hypertension was noted. Currently, in the fight against hypertension, it is important not only to reduce blood pressure, but also to prevent and treat organ complications [1-3,5]. As is known, among organ complications, cerebrovascular ones are life-threatening. In particular, damage to the auditory analyzer significantly reduces the quality of life of patients with hypertension. Therefore, it is very relevant to study the state of auditory function in patients with hypertension and determine the relationship of this pathology in general with dyscirculatory disorders of the brain. This issue is not sufficiently covered in the literature; only a few reports [4,6] discuss certain aspects of this problem.

Taking into account the above, the purpose of this work was to study the state of auditory function in

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hypertensive patients with pre-stroke cerebrovascular disorders (CSCD) and their dynamics during treatment with modern antihypertensive drugs.

MATERIAL AND RESEARCH METHODS

We examined 79 patients with hypertension who had a disease duration of 1 to 15 years. Among the patients there were 92 men, 18 women, their ages ranged from 31 to 73 years. According to the structure of the identified DCVDs, patients were distributed as follows: with initial manifestations of insufficient blood supply to the brain (IBPCM) - 20 patients, with hypertensive encephalopathy (HE) - stage I. – 20 people, with GE- II degree. – 20 and HE with episodes of transient cerebrovascular accidents (TCI) – 19 patients.

The examination included: examination of the somatic (cardiological), neurological and otoneurological status, rheoencephalography (REG), echoencephaloscopy (EchoES), electroencephalography (EEG), audiometry (AM) and electronystagmography (ENG) according to generally accepted standard methods. This set of examinations was carried out on patients twice, before and 1 month after treatment. In 40 patients, antihypertensive therapy was carried out with the ACE inhibitor Vasotec (enalopril) at a dose of 5-10 mg/day. 39 patients received antihypertensive therapy with calcium antagonists (Corinfar up to 30 mg/day or Norvasc 5-10 mg/day). No statistically significant differences were found in terms of the effect on indicators of auditory function, and therefore the results are presented in a generalized form.

The results obtained and their discussion . An analysis of patients' complaints showed that out of 79 patients who complained of tinnitus, in 28 they were completely regressed, and in 51 they were partially regressed. When comparing the dynamics of noise with the dynamics of blood pressure, we observed the following picture. Of the 64 patients with DCVR with a decrease in blood pressure as a result of treatment, murmurs disappeared or decreased in 42 people (65.6%). And among people with unchanged blood pressure, in 63.3% of cases the murmurs also remained unchanged. The dynamics of tinnitus in the context of the structure of the DCVR was as follows: in patients with NPNCM, the noise decreased or disappeared in 17 out of 20 (85%), in patients with stage I HE. - in 13 out of 20 (65%), GE - II degree. - in 10 out of 20 (50%), and in patients with GE with PNMK the murmurs disappeared or decreased in only 5 out of 19 (26.3%). According to a study of speech hearing acuity, after treatment, significant improvement in hearing occurs in the initial stages of the disease, while in later stages improvement occurs in a smaller percentage of cases. It should also be noted that the perception of spoken speech improves to a greater extent than whispered speech.

The results of tuning fork C 128 studies of sound perception through air in patients who received calcium antagonists showed that positive dynamics occur in 48.7%, and in patients who received ACE inhibitors in 50%. As can be seen, the differences are statistically unreliable. At the same time, the difference in bone conduction is more pronounced, amounting to positive dynamics in the group with AK 41.01% and in the ACEI group 45.0%.

Audiometric studies of auditory function have expanded the understanding of the state of hearing in patients with HD with DCVR, both according to initial and dynamic data. In particular, audiometric indicators of hearing loss according to the initial data were detected in 65 (81.2%) of 79 patients. After a month of antihypertensive therapy, positive audiometric changes were detected in 36 (55.3%) of 65 patients. The

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structure and dynamics of audiometric changes were as follows: a) in the majority of patients with isolated damage to the perception of high-pitched sounds during treatment, some improvements in the perception of these sounds were observed within 10-15 dB, less often 20 dB. b) in some patients with a general increase in auditory sensitivity thresholds, a decrease in hearing thresholds was observed across the entire frequency range within 10-15 dB, less often -20 dB. c) in several patients with GE- II and GE with PNMK, a mixed change in hearing was observed, consisting mostly of an improvement in the perception of low sounds and a deterioration in the perception of high sounds within 10-15 dB, less often 20 dB.

Interesting data were obtained when analyzing the dynamics of blood pressure and audiological changes. Of the 79 patients, blood pressure was reduced to target values in 64 (81%) cases. At the same time, audiometric indicators were normalized in (18.4%), improved in (15.3%) and remained unchanged in (3.1%) patients (P <0.05). There were no cases of hearing impairment. Blood pressure did not reach target values in 15 (19%) patients. There were no cases of hearing normalization in this subgroup. Improvement occurred in (3.1%) patients. Hearing remained unchanged in (9.2%) and worsened in (3.1%) patients.

From the comparative data it is clear that the percentage of positive changes when blood pressure is reduced to target values is much higher (%) than when antihypertensive therapy is ineffective (%). It was established that the latter patients were mostly diagnosed with stage II HE . and HE with PNMK, that is, these are those cases when the state of cerebral hemodynamics and dyscirculatory disorders are not sufficiently correlated with antihypertensive drugs. This thesis was confirmed by the results of neurophysiological (REG, EchoES, EEG) studies.

It should also be noted that when comparing the degree of improvement in hearing acuity with speech with changes in hearing sensitivity thresholds as a result of treatment, it was noted that in some patients, in the absence of any changes in hearing thresholds, there was a significant improvement in hearing acuity for whispered speech. Such data may indicate that hearing loss in patients with hypertension is caused not only by damage to the receptor of the auditory analyzer, but also to its cortical centers.

CONCLUSIONS

Thus, we can conclude that studying the state of the auditory analyzer in patients with headache makes it possible to determine not only early signs of damage to the brain - the target organ of hypertension, but also to assess the severity of circulatory disorders.

Our studies confirm the literature data (1,3,5,8) on the high hypotensive effectiveness of ACE inhibitors (Vazotec) and calcium antagonists (Corinfar, Norvasc) in patients with hypertension, and show their ability to improve hearing disorders in NPNCM and stage I hypertension . To achieve the desired results in patients with hypertension with GE- II and GE with PNMK, it is necessary to combine antihypertensive therapy with neurometabolic and antioxidant drugs. Other researchers also speak about such tactics in the treatment of dyscirculatory encephalopathy of various origins (2,4,5).

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