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Research Article

HEARING CONDITION IN PATIENTS WITH HYPERTENSION DISEASE DURING TREATMENT

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ABSTRACT

Hypertension (HD) has been designated by European scientists as the greatest non-infectious pandemic in human history. 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 lower blood pressure, but also to prevent and treat organ complications. 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 discuss certain aspects of this problem.

KEYWORDS

Hypertension, auditory function conditions, encephalopathy.

INTRODUCTION

According to the latest literature data, the fight against arterial hypertension consists not only of lowering blood pressure, but also of preventing and treating the organ complications it causes [1,2,4]. In particular, damage to the auditory analyzer significantly reduces the quality of life of patients with hypertension [3]. Therefore, it is very relevant to study the state of auditory function in patients with hypertension [5-7].

Taking into account the above, the purpose of this work was to study the state of auditory function in patients with pre-stroke cerebrovascular disorders (CSCD) against the background of arterial hypertension and their dynamics during treatment with antihypertensive drugs.

MATERIAL AND RESEARCH METHODS

We examined 179 patients with arterial hypertension who had a disease duration of one to 18 years. The age

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of the patients ranged from 24 to 75 years. According to the structure of the identified DCVDs, patients were distributed as follows: with initial manifestations of insufficient blood supply to the brain (IPBC) 45 patients, with hypertensive encephalopathy (HE) - stage I - 45 people, with HE - stage II - 45 and HE with episodes of transient cerebrovascular accidents (PNMK) – 44 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 methods. This set of examinations was carried out on patients twice, before and 1 month after treatment. In 90 patients, antihypertensive therapy was carried out with an ACE inhibitor. 89 patients received antihypertensive therapy with calcium antagonists.

The results obtained and their discussion . An analysis of patient complaints showed that out of 179 patients who complained of tinnitus, in 62 they were completely regressed, and in 117 they were partially regressed. When comparing the dynamics of noise with the dynamics of blood pressure, we observed the following picture. Of the 152 patients with DCVR with a decrease in blood pressure as a result of treatment, murmurs disappeared or decreased in 100 people (65.7%). 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 38 out of 45 (84.4%), in patients with stage I HE . - in 29 out of 45 (64.4%), GE - II degree. - in 22 out of 45 (48.8%), and in patients with GE with PNMK the murmurs disappeared or decreased only in 11 out of 44 (25%). 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 conductivity is more pronounced, amounting to a positive trend in the group with calcium antagonists 41.01% and in the group of ACE inhibitors 45.0%.

Audiometric studies of auditory function have expanded the understanding of the state of hearing in patients with essential hypertension and CDVR, both according to initial and dynamic data. In particular, audiometric indicators of hearing loss according to the initial data were detected in 146 (81.5%) of 179 patients. After a month of antihypertensive therapy, positive audiometric changes were detected in 108 (73.9%) of 146 patients. The structure and dynamics of audiometric changes were as follows: 1) 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. 2) 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. 3) in several patients with GE- II and GE with PNMK, a mixed change in hearing was

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observed, which consisted 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 179 patients, blood pressure was reduced to target values in 145 (81.1%) cases. At the same time, audiometric indicators were normalized in (27.4%), improved in (39.9%) and remained unchanged in (5.4%) patients (P <0.05). There were no cases of hearing impairment. Blood pressure did not reach target values in 34 (18.9%) patients. There were no cases of hearing normalization in this subgroup. Improvement occurred in (6.6%) patients. Hearing remained unchanged in (16.1%) and worsened in (4.6%) 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.

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

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