

COCHLEOVESTIBULAR DISORDERS CHARACTERISTICS IN ARTERIAL HYPERTENSION IN PATIENTS

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Abstract. The article presents the otoneurological characteristics of pre-stroke cerebrovascular disorders in patients with essential hypertension. Among the problems of modern otorhinolaryngology, one of the leading places belongs to cochleovestibular disorders in some cardiovascular diseases, in particular, hypertension. The state of vestibular function in arterial hypertension was studied by many authors who noted a decrease in resistance in such patients. It has been established that one of the reasons for the formation of secondary cochleovestibular disorders is chronic hypertensive encephalopathy, which develops in patients with arterial hypertension, often already in the early stages of the disease. In the study of the peculiarities of the pathogenesis of cochleovestibular disorders, certain results have made it possible to study the nature of the vestibulo-vascular interaction. It is shown, in particular, the difference in vestibulo-vascular reactions in the case of central and peripheral lesions of the vestibular analyzer, which is important for the differential diagnosis of these pathological conditions.

Keywords: hearing, arterial hypertension, cochleovestibular disorders.

Introduction. The cochleovestibular apparatus is one of the most ancient analyzers; it is the first of all receptors to form in embryogenesis [4-15]. According to its structure, extensive connections within the CNS and functional properties, the cochleovestibular apparatus differs sharply from all cranial nerves: when it is stimulated, not a narrow local reaction occurs, but an effect on all body functions (somatic and autonomic) is observed [3].

The central parts of the vestibular and auditory analyzer are very complex, which reflects the diversity and complexity of the function of this peculiar nerve [1-6]. Morphologically and functionally, the vestibular apparatus is clearly divided into two sections: the otolith apparatus and the system of semicircular canals. The first responds to rectilinear accelerations and deviations from the vertical, while the second to angular accelerations in any of the three main planes in which the channels are oriented [17-34].

The vestibular nerve enters the brainstem at the level of the cerebellopontine angle, slightly above the external (cochlear) root, between it and the spinal root of the V nerve. In the internal parts of the nerve body, not reaching the bottom of the IV ventricle, the vestibular nerve divides into ascending and descending branches. Part of the descending fibers terminate in the lower nucleus, part in the medial and lateral

nuclei [14-26]. The ascending fibers of the vestibular nerve terminate in the superior nucleus. Some of these fibers, passing through the nucleus, end in the roofing nucleus of the cerebellum [42].

Hypertension is a widespread disease that affects people of working age, and is also the most common cause of disability and death from cardiovascular diseases [39]. The fight against this disease, early detection of signs of damage to target organs is an urgent problem of modern medicine [5,31-42].

It should be noted that the existing literature reflecting cochleovestibular disorders in HD patients is presented mainly on the basis of prescription, HD stage, but without taking into account cerebrovascular disorders [39,40]. In separate reports on LCVR in HD, cochleovestibular disorders are only listed among the pathologies of other cranial nerves [11,56]. We did not find in-depth otoneurological studies in HD patients with CVD, especially with a reflection of their dynamics against the background of the use of modern antihypertensive drugs. It is also impossible to consider the issue of the frequency of occurrence and nature of auditory and vestibular disorders as resolved, so if Tanchev K.S. (1999), believes that in hypertension, hearing loss is mild and rare, then according to Agakhanova A.G. and Lebedeva N.V. (2003) such a pathology is detected in more than 90% of cases.

The aim of work is to study the otoneurological characteristics of pre-stroke cerebrovascular disorders in patients with hypertension.

Material and methods. Under our supervision were 110 patients with GB of a stable course treated in the clinical bases of the Research Institute of Cardiology of the Ministry of Health of the Republic of Uzbekistan. GB was diagnosed according to WHO criteria (1978). The control group consisted of 30 persons not suffering from GB.

All examined were males, whose age was distributed as follows. 25-44 years old - 12 people (10.9%), 45 - 59 years old - 76 patients (69.1%) and over 60 years old - 22 examined (20%).

As can be seen from the above data, among the patients with GB examined by us, persons aged 45-59 years predominate, i.e. mature and older persons.

The duration of GB varied from 1 year to 20 years, including; 1 year suffered from hypertension 1 person, 1 - 5 years - 30 patients, 5-10 years - 36 examined, 10-15 years - 30 people and more than 15 years were 13 people.

In addition, all patients underwent a general analysis of urine, blood, the level of total cholesterol, lipid fractions in the blood, and a coagulogram were determined. Since the obtained results of biochemical studies did not differ from the literature data, we did not describe them.

Excluded from the study were persons who had previously suffered from ENT - diseases that could cause hearing loss, regardless of hypertension.

Results and discussion.

Initial state of cochleovestibular function in patients with GB with CVD and in the control group.

Functional examination of the organ of hearing and vestibular apparatus was preceded by an examination of the upper respiratory tract and ear, the results of which are shown in Table 1.

Table 1

The state of the upper respiratory tract in patients with GB with DCVR.

Changes	Number of patients	% of the total
Deviated septum	26	23,6
Vasomotor rhinitis	3	2,7
Nasal bleeding	15	13,6
The development of the vascular pattern	25	22,7
a) nasal septum	14	12,7
b) oropharynx		
mucosal atrophy:	6	5,4
a) nose	9	8,1
b) throats	13	11,8
chronic tonsillitis	11	10
chronic pharyngitis		

The table shows that in hypertension with LCVR, the most common deviated septum and the development of the vascular pattern on the mucous membrane of the nose and pharynx. These changes were usually localized in symmetrical areas of the nasal septum and soft palate, and were not accompanied by any unpleasant subjective sensations..

Of the 110 patients with DCVR examined by us, 76 people (69.1%) complained of noises: of these, noise was localized in the ears in 15 patients (13.6%), in the head - 12 people (10.9%), in the head and ears 49 patients (44.6%).

The results of the study of hearing acuity speech.

Of the 110 examined, deterioration in the perception of whispered speech was found in 85 (77.3%) patients, and only in 6 it was unilateral, and in the rest it was bilateral. In the majority of the surveyed, the hearing for whispered speech is reduced from 3 to 6 meters. Information about the hearing acuity for whispered speech in the examined is presented in the table 2.

Table 2

Characteristics of hearing acuity for whispered speech in patients with GB with LCVR

Form DTSVR	Within Norms	Raising the threshold in abs. figures			
		Bcero			
		up to 3 m.	from 3 to 6 m	Quantit y	% to total qty
NPNMK	10	1	17	18	16,4
GE-I dg.	11	3	23	26	23,6
GE-II dg.	4	5	17	22	20
HPP	-	7	12	19	17,3
PNMK					
Total:	25	16	69	85	77,3

In the control group, normal perception of whispered speech was found in 28 people (93.3%), in two examined patients, a decrease in hearing for whispered speech up to 5 m on both sides was noted, which may be associated with age-related changes. Thus, the normal perception of whispered speech in the control group occurred more than 10 times more often than in patients with LCVR (table 3).

Conclusion. Thus, disturbances in the sound analyzer in GB are characterized by: deterioration in perception, mainly of high frequencies, especially during bone conduction, hearing damage of both labyrinthine and retrolabyrinthine nature, dissociation between the perception of speech and pure tones. In most patients with hypertension, various stato-kinetic disturbances are detected, both of a spontaneous nature and with the use of experimental samples. Spontaneous nystagmus in such patients is rare (4.5%) and has features of central origin (combined with dizziness of the central type, bilateral, classic, horizontal). When using experimental samples, nystagmus increases. Tonic reactions proceed normally. When using the sensitized Romberg test, tonic disorders are detected in most of these patients. Observation of the dynamics of vestibular reactions in such patients makes it possible to reveal the interest of the stato-kinetic apparatus where there are no spontaneous disorders yet. So, on the electronystagmography of the caloric reaction, the majority of the examined patients revealed altered responses (75.5%), namely: asymmetry (30%), hyporeflexia (28.2%), hyperreflexia (11.8%), areflexia (5.5%).

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