

The effect of vibroacoustic exposure on blood cholesterol content.

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It is considered that the total number of deaf people and people with diminished hearing form 5% of world population. According to Wilson (1965), currently there are approximately 450 million people in the world who have hearing injury as a major reason for disability.

There are two types of hearing loss: conductive and perceptive or sensorineural deafness. In our country a considerable decrease in prevalence of conductive deafness has been observed due to decrease in chronic purulent otitis media sickness rate. The rate of chronic purulent otitis media in population decreased from 32% in pre-revolutionary Russia to the nowadays' 0.8-1%. However, in the last few years in our country as well as overseas one can observe a considerable increase in the number of deaf people and people with diminished hearing due to sensorineural deafness.

Sensorineural deafness remains one of the complicated problems of otolaryngology requiring further perfecting of early diagnostics methods, prophylaxis and treatments, because modern methods of drug therapy and surgery have been ineffective.

Phylogenetically the hearing system is the youngest and therefore the auditory analyzer is sensitive to many harmful factors of the external and internal environment. More than 80 etiologic factors (state of organism, health, environmental factors, chemical substances, medical products) are known that cause the development of sensorineural deafness. Among all causes of sensorineural deafness vascular disorders have become more common lately. The changes in blood composition

(its metabolism, hematocrit, osmolarity, etc.) and sanguinary stream properties are important for pathogeny of sensorineural deafness. The role of atherosclerosis is important in cerebral and cochlear blood flow disorder and as a result the development of sensorineural deafness. Accordingly, the risk factor for the occurrence of deafness and hearing loss is the abnormality of lipid blood composition (high cholesterol, triglyceride and obesity in general) (Luckhaupt, 1989).

In Vyborg Garrison Military Hospital, sensorineural deafness of various aetiologies was monotherapeutically treated with vibroacoustic apparatus "Vitaфон". Considering the role of vascular disorder in the development of some aetiological forms of sensorineural deafness, the patients underwent the examination of the total blood cholesterol content as one of lipid metabolism indexes.

The purpose of our research was to determine how blood cholesterol level changes with vibroacoustic exposure on kidney area (K point). We examined 11 patients aged 54.7 ± 8.9 weighing 77.7 ± 10.9 kgs. During the treatment of hearing loss all patients used "Vitaфон" apparatus on kidney area set to "2" for 10 min in the first evening, from day 2-3 – 10 min in the morning and in the evening and from day 4 to 14 – 10 min in the morning and 15 min in the evening. Blood cholesterol was measured before the treatment and 2 weeks after. The research results are shown in Table 1.

The analysis showed that after a 2-week vibroacoustic exposure on kidney area the blood cholesterol level dropped from 6.74 ± 0.96 to 4.72 ± 0.99 ($p > 0.01$). These figures have a considerable correlation with weight.

Thus, the received results enable us to say that a 2-week vibroacoustic exposure on kidney area decreases blood

cholesterol content and that cholesterol level correlates with the person's weight.

Table 1. Blood cholesterol content in patients after vibroacoustic exposure dynamics increases objectivity of treatment results.

No	Sex	Age	Weight	Cholesterol	
				Initial	In 2 weeks
1	F	52	88	7.2	5.6
2	M	61	76	5.7	4.6
3	M	50	87	8.6	4.2
4	M	25	107	7.8	6.5
5	F	74	78	6.0	5.2
6	M	57	60	6.0	3.8
7	M	63	68	6.9	5.3
8	M	60	52	6.5	3.1
9	M	40	72	5.4	3.8
10	M	58	71	6.8	4.7
11	M	62	96	7.3	5.4