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Optimization of Treatment Methods for Hereditary Acquired Hearing Loss

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Annotation: As a result of the research, it was shown that complex treatment with the preparation of cytoflavin leads to an improvement in cerebral circulation and coronary blood flow, activates metabolic processes in the central nervous system, contributes to a more pronounced regression of neurological symptoms in the main group 2 to 3 times compared to the control group.

Keywords: sensoneural, traditional treatment, citoflavin, antioxidant, etiopathogenetic.

Introduction. Relevance of the topic: In recent years, the number of deaf and hard of hearing people in many countries of the world is constantly increasing. At present, about 6% of the population is diagnosed with hearing loss mainly as a result of damage to the sound-receiving system. Sensorineural hearing loss accounts for 60–80% of patients with hearing loss, and most often this pathology occurs among working-age people in 20–49 ages [2, 5].

Scientific progress in the study of the problem of SHL at the world level has matured as a result of the development of biotechnological methods of molecular biology and their application to medical practice. Large-scale scientific research is being carried out in order to ensure the high efficiency of preventive measures aimed at early diagnosis, prevention and treatment of SHL caused by mitochondrial acquired mutations [3,7,9].

Methods. It is of particular importance to improve measures for early diagnosis, treatment, prevention of its origin and development, to study the features of the etiopathogenesis of acquired hearing loss, to develop a treatment system based on the analysis of a comparative diagnosis-treatment algorithm, and to improve measures aimed at improving the quality of life.

Molecular genetic characteristics, diagnosis and principles of treatment of SHL in children have been studied by many authors [2,6].

In recent years, complex antioxidant cytoflavin has been synthesized by pharmacologists. It consists of 2 metabolites, namely Na, N-methylglucamine salt, succinic acid in the form of riboxin and complex substrate complex of coenzyme - riboflavin (B2) and nicotinamide (PP). Cytoflavin is an antioxidant and antihypoxant, an energy protector, has a strong effect against ischemia, reduces the intensity of lipid peroxidation in free radicals, stimulates the antioxidant defense system, improves metabolism, and has a positive effect on the processes of energy generation in the cell [1,2]. Cytoflavin increases the resistance of nerve and glial cell membranes to ischemia, which is manifested by a decrease in the concentration of neurospecific proteins that characterize the degree of damage to the main components of nerve tissue. Cytoflavin also affects indicators of neurological condition: it reduces asthenic, vestibulo-cerebral, cochleo-vestibular syndrome, and also reduces disorders in the emotional-voluntary sphere (anxiety and depression). All components of cytoflavin are natural metabolites of the body [8].

The purpose of this study is to evaluate the effect of cytoflavin drug in the complex treatment of patients with acquired neurosensory stiffness.

Material and examination methods: 32 children aged 12-18 years, 57 patients aged 19-45 years who received ototoxic drugs and their history of medical diseases were studied at the 1st clinic of Samarkand State Medical Institute and the ENT departments of Samarkand Regional Bollalar Multidisciplinary Medical Center.

Based on the treatment plan, patients were divided into groups: acute sensorineural hearing loss (ASHL) and chronic sensorineural hearing loss (CSHL), each group was divided into research and comparison groups. Standard pulse therapy of glucocorticosteroids to OSHL patients at a dose of ≥ 250 mg per day for 5 days - especially for adults, 2 mg/kg of body weight, calculated on prednisolone. Cytoflavin as a neuroprotector (antihypoxant and antioxidant) - 10-20 ml (0.15 ml/kg) was administered intravenously in 0.9% sodium chloride solution twice a day for 10 days. Electroacoustic correction and Cytoflavin combined tool was used for CSHL patients.

In the analysis of the results of 18 ears in the comparison group, the following changes were revealed: with hearing analyzer damage before treatment - 2nd degree - 11.1%, 3rd degree - 50%, 4th degree - 38.9%, hearing analyzer damage after standard treatment severity of damage was determined by the following level of hearing loss: 2nd degree - 22.2%, 3rd degree - 61.1%, 4th degree - 16.7%. The severe level of SHL (level 4) decreased by 2.4 times, while the number of patients with level 3 damage (moderate severity) increased by 1.2 times and the mild level by 2 times - this indicates an improvement in hearing from 20-30dB to 40dB . Hearing improvement from level 4 to level 3 allows for subsequent electroacoustic hearing correction and maintenance of socially effective hearing and prevention of speech loss.

Results. In the study group of patients treated on the basis of the recommended complex, the analysis of treatment was determined for 17 ears: before treatment, the following damage to the auditory analyzer was detected - 2nd degree - 5.9%, 3rd degree - 70.6%, 4th degree - 23.5%, after the standard treatment, the severity of damage to the auditory analyzer was determined by the following level of hearing loss - 1st degree - 58.8%, 2nd degree - 29.4%, 3rd degree - 11.7%, 4th degree - not recorded. There were no patients with a severe level of SHL (level 4), while patients with level 3 of damage (moderate severity) decreased by 6 times, the number of patients with level 2 increased by 4.9 times, and patients with level 1 appeared, which were all in this group. more than 50% of patients (table 1, 2).

Table 1. Distribution of patients with ASHL in the study group according to the degree of hearing loss before treatment (study group n=12)

Damage side	Double side damage n=6		One side damage n=6		Alls		P
	AD n=6	AS n=6	AD n=2	AS n=4	n	%	
2 degrees	-	2	-	-	2	11,1	>0,05
3 degrees	3	2	2	2	9	50	>0,05
4 degrees	3	2	-	2	7	38,9	>0,05
all	6	6	2	4	18	100	>0,05

Table 2. Distribution of patients with ASHL in the comparison group according to the level of hearing loss before treatment (comparison group n=14)

Damage side	Double side damage n=6		One side damage n=6		Alls		P
	AD n=3	AS n=3	AD n=4	AS n=7	n	%	
2 degrees	1	-	-	-	1	5,9	>0,05
3 degrees	-	3	4	5	12	70, 6	>0,05

4 degrees	2	-	-	2	4	23,5	>0,05
all	3	3	4	7	17	100	>0,05

Thus, hearing improvement increased by 11.1% in the comparative group and 72.4% in the study group, which indicates the sufficiently high efficiency of this treatment-diagnostic complex of ASHL patients, which does not require the use of measures for the rehabilitation of patients, but only requires the prevention of hearing loss, the need to undergo dispensation and monitoring throughout life.

Table 3. Distribution of hearing loss in groups after treatment of patients with ASHL

Damage side	Double side damage n=6		One sided damage n=6		Alls		Double side damage n=6		One side damage n=6		Alls	
	AD n=6	AS n=6	AD n=2	AS n=4	n	%	AD n=3	AS n=3	AD n=4	AS n=7	n	%
1 degrees	0	0	0	0	0	0	2	2	3	3	10*	58,8
2 degrees	0	2	1	1	4	22,2	0	1	1	3	5	29,4
3 degrees	5	3	1	2	11*	61,1	1	0	0	1	2	11,7
4 degrees	1	1	0	1	3	16,7	0	0	0	0	0	0
all	6	6	2	4	18*	100	3	3	4	7	17*	100

Thus, the post-treatment research analysis of the treatment-diagnostic complex carried out in patients with ASHL in the early periods after the onset of the disease showed an improvement in 72.4% of cases in the study group, and in 11.1% of cases in the comparative group. In this case, the complete restoration of the hearing threshold, the normalization of the hearing threshold was 5.9% in the control group, and 58.8% in the research group.

Conclusion. The use of cytoflavin is effective in the treatment of chronic SHL patients in the absence of the mutation of the mitochondrial gene A1555G in order to maintain the stability of hearing thresholds for preventive treatment, the presence of the mutation A1555G is a factor in the development of hearing loss, which requires electroacoustic correction, and then planning cochlear implantation in the future. Statistically significant changes expressed in the standard treatment group were not detected, however, it should be taken into account that monotherapy is preferred both economically and medically, since the use of several agents is a costly and difficult process, and a positive result cannot always be achieved.

In conclusion, it can be said that the algorithm of treatment and diagnosis, which determines not only the clinical forms of acquired neurosensory hearing loss, but also the principles of its origin and etiopathogenetic development, is an effective tool for determining treatment measures and preventive methods in hereditary forms.

List of references:

1. Давронова Г. Б., Хушвакова Н. Ж. (2020). Результаты местного лечения сенсоневральной тугоухости с использованием препарата цитофлавин. Stomatologiya,1 (78), 99-102. https://doi.org/10.26739.2181-0966-2020-1-10
2. Давронова Г. Б., Хушвакова Н. Ж. Усовершенствование методов лечения наследственно обусловленных форм приобретенной нейросенсорной тугоухости //Sciences of Europe. – 2018. – №. 27-2. – С. 27-30. ps://cyberleninka.ru/article/n/usovershenstvovanie-metodov-lecheniya-nasledstvenno-obuslovlennyh-form-priobretennoy-neyrosensornoy-tugouhosti/viewer
3. Давронова Г. Б., Исхакова Ф. Ш. Эффективность озонотерапии при нейросенсорной тугоухости сосудистого генеза //In Situ. – 2016. – №. 5. – С. 41-43. s://cyberleninka.ru/article/n/effektivnost-ozonoterapii-pri-neyrosensornoy-tugouhosti-sosudistogo-geneza/viewer.

4. Хушвакова Н. Ж., Давронова Г. Б. (2013). Оценка эффективности лазерного облучения при комплексном лечении хронического тонзиллита. Российская оториноларингология, 1 (62), 221-223. doi:10.18692/1810-4800-2015-5-31-34
5. Хушвакова Н. Ж., Давронова Г. Б. (2020). Современные взгляд на диагностику и лечение приобретенной нейросенсорной тугоухости. Журнал стоматологии и краниофациальных исследований,1, 43-47. https://doi.org/10.26739.2181-0966-2020-1-10
6. Хушвакова Н., Давронова Г. Орттирилган нейросенсор қаттиққўлоқликни даволаш усулларини такомиллаштириш //Журнал вестник врача. – 2020. – Т. 1. – №. 1. – С. 90-93. https://doi.org/10.38095/2181-466X-2020931-89-92
7. Хушвакова Н., Улашов Ш., Давронова Г. Improvement of diagnostics and complex treatment of rhinosinusogenic orbital complications in children //Общество и инновации. – 2021. – Т. 2. – №. 2. – С. 296-301. https://doi.org/10.47689/2181-1415-vol2-iss2-pp296-301
8. Khushvakova N., Burkhanov U., Nurmuhamedov F. MEDICAL SCIENCES //EARTH SCIENCES. – С. 19. DOI:10.5281/zenodo.7234426
9. Khushvakova N., Burkhanov U., Nurmuhamedov F. Results of immunological status before and after endoscopic surgery in patients with chronic rhinosinusitis //polish journal of science. Учредители: Громадська Організація" Фундація Економічних Ініціатив"= Общественная Организация" Фундация Экономических Инициатив". – №. 52. – С. 19-22. DOI: 10.5281/zenodo.7234426