



# DETERMINATION OF THE PROPORTION OF VESTIBULAR PATHOLOGY BASED ON MATERIALS FROM PATIENTS' INITIAL VISITS TO A CONSULTATIVE CLINIC

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<p><b>Received:</b> April 20<sup>th</sup> 2024 <b>Accepted:</b> May 14<sup>th</sup> 2024</p>	<p><b>Introduction</b> According to mass surveys of urban and rural populations, hearing organ pathology is observed in 6% of residents; approximately 0.65–2% of them have a pronounced hearing impairment, which makes speech communication difficult. Clinical observations indicate that among surdological patients there are persons with mixed cochleo-vestibular lesions, diseases of the vestibular apparatus, in which there is a need to study not only auditory, but also vestibular functions to establish the nature of the lesion and the choice of treatment tactics.</p> <p><b>The purpose</b> is to determine the specific weight of vestibular pathology and its place among other lesions of the ear, throat and nose based on the materials of the primary referral of patients to a consultative polyclinic.</p> <p><b>Materials and methods</b> We examined 47,000 residents living in various areas of the republic and found that the prevalence of all types of vestibular disorders.</p> <p><b>The results</b> of complaints of impaired vestibular function were presented by 1,850 persons, which is 0.42% of the total number of patients and 3.8% of the number of patients with ear pathology. Subsequently, symptoms of vestibular dysfunction were found in all these patients with vestibulometry. Vestibular disorders in 86% of cases were combined with pathology of the hearing organ, in the remaining 14% they were the result of hypertension, skull injury, cervical osteochondrosis, diseases of the central nervous system.</p> <p><b>Conclusions</b> On average, the ratio of the number of patients with vestibular pathology and the total number of people with ear diseases is 1:25, i.e. out of 100 patients with ear pathology, 4 had pronounced vestibular disorders.</p>

**Keywords:** Vestibular disorders, sign language assistance, stabilometry, Fukuda test, Frenzel glasses

## RELEVANCE

The study of the prevalence of ear, throat and nose diseases is of interest from the point of view of further improvement of planning and organization of medical and preventive care of the population.

The analysis of literature shows that the specific weight of ENT pathology in the structure of general morbidity of the population is 9,5-11%. In recent years, the structure of the prevalence of ear, throat and nose diseases is undergoing changes in the direction of reducing the incidence of acute and chronic purulent otitis media, sinusitis and other forms that previously occurred after some infectious diseases (measles, scarlatina, diphtheria). At the same time, the frequency of upper respiratory tract and hearing organ affections increased 1.5 times (2,3).

According to the data of mass surveys of urban and rural population, hearing pathology is observed in 6% of residents; approximately 0.65-2% of them have a pronounced hearing impairment, which hinders speech communication (4,5). This information was the starting

point for determining the population's need for surdological care and organizing surdological offices in the country.

Clinical observations indicate that among the surdological patients there are persons with mixed cochleovestibular lesions, diseases of the vestibular apparatus, in which there is a need to study not only auditory but also vestibular functions to determine the nature of the lesion and the choice of treatment tactics. However, the prevalence of vestibular disorders in the general system of ENT pathology is poorly studied.

**PURPOSE OF THE STUDY** We aimed to determine the specific weight of vestibular pathology and its place among other lesions of the ear, throat and nose according to the materials of primary treatment of patients in the consultative polyclinic of Samarkand State Medical University for the last 6 years (2015-2022).

Materials of the study We examined 47 thousand residents living in different zones of the republic and



found that the prevalence of all types of vestibular disorders is  $13.7 \pm 1.7$  per 10 thousand population.

It is also important to find out the frequency of vestibular apparatus morbidity among general ENT pathology. No specific works in this direction have been found. The absence of such data complicates the solution of organizational issues of vestibulometric service improvement.

**RESULTS OF THE STUDY** As a result of the study of documents it was established that during this period 433460 patients applied to the polyclinic for ear, throat and nose diseases. Of these, 48240 people were diagnosed with various pathologies of the ear (11.1% of the total number of all ENT patients).

Complaints of vestibular dysfunction (dizziness, balance disorder, susceptibility to motion sickness, etc.) were presented by 1850 persons, which is 0.42% of the total number of patients and 3.8% of the number of patients with ear pathology. Subsequently, vestibulometry revealed symptoms of vestibular dysfunction in all these patients.

In different years, the rate of treatment of persons with vestibular pathology varied from 0.34 to 0.58% ( $M = 0.42$ ) in relation to all outpatient ENT patients, and in relation to patients with ear pathology - from 3.1 to 4.2% ( $M = 3.8$ ). Vestibular disorders in 86% of cases were combined with the pathology of the hearing organ, in the remaining 14% - were a consequence of hypertension, cranial trauma, cervical osteochondrosis, diseases of the central nervous system.

On average, the ratio of the number of patients with vestibular pathology and the total number of persons with ear diseases is 1:25, i.e. 4 out of 100 patients with ear pathology had pronounced vestibular disorders.

On the basis of these data we can tentatively predict the expected volume of work of vestibulometric office of polyclinic and labor costs associated with diagnostic examination of patients with vestibular disorders. Let's assume, for example, that the given consulting polyclinic accepts 10000 outpatients per year. According to our results, about 11% of them, i.e. 1100 people, will be persons with ear pathology. Among the latter 4%, i.e. 44 people, will have various vestibular disorders and need vestibulometric examination. Since a single study is not always reliable (due to the novelty of the procedure, possible fatigue of the patient, nervous and mental stress, etc.), each patient requires at least two examinations. Thus, 44 individuals need 88-90 examinations.

Diagnosis of vestibular apparatus disease is a labor-intensive process that requires the attention of the patient and the staff. The program of examination includes the following main stages: 1) study of

complaints and vestibular anamnesis of the patient; 2) examination by an otolaryngologist (if necessary, consultation of other specialists); 3) study of stability of static balance (by the method of stabilometry; 4) study of gait with "Fukuda walking test; 5) determination of spontaneous and positional nystagmus with the help of Frenzel glasses; 6) caloric stimulation according to the method of Hallpike or according to the method of N. S. Blagoveschenskaya with registration of nystagmus. S. Blagoveshchenskaya with registration of nystagmus, sensory and vegetative reactions; 7) rotational stimulation with registration of the same vestibular reactions; 8) interpretation of the results of electronystagmography, other reactions, data analysis and issuing a conclusion about the state of vestibular function.

One vestibulometric examination according to the described program, as our chronometric measurements have shown, takes from 1 to 2 hours. 20 min (on the average 1,5 h.). Thus, for carrying out 90 vestibulometric examinations time expenditures will make approximately 180 hours. If we assume that the working day of a doctor-otolaryngologist of a consulting polyclinic, who is charged with the duty to conduct vestibulometric examination of patients, is 6 hours, then to perform 90 studies, he will need about 28 working days.

Based on this calculation can be with a certain degree of confidence to plan the need for a particular polyclinic in vestibulometric studies and rationally distribute the workload of specialists. As starting points for determining the need can serve two indicators: a) the share of the number of patients who go to a consultative polyclinic in connection with vestibular disorders is 0.42% of the total number of otolaryngological patients or b) 4% of the total number of all surdological patients. It is quite clear that these figures can not claim to absolute reliability and are only indicative. If we take into account that the consultative polyclinic of the Institute was mainly referred to patients from other ENT institutions, who had undergone preliminary otolaryngological selection and needed to clarify the nature of the disease or to determine the rational tactics of treatment, we can assume that the figure of primary referral of patients with probable vestibular disorders to the usual ambulatory ENT-polyclinics is much higher. The seeming at first glance "unprofitable" vestibulometric room in the examination of patients in the polyclinic is fully compensated by the examination of inpatients hospitalized in connection with exacerbation of chronic purulent otitis media or upcoming hearing-improving surgery for the consequences of inflammation of the middle ear,



otosclerosis. In these cases vestibular function disorder is observed in 20-98% of the examined persons. In such patients vestibulometry as an objective method of research is repeatedly performed, which allows to observe the dynamics of the process, to detect early manifestations of postoperative labyrinthitis, to evaluate the effectiveness and determine the tactics of treatment, to predict the results of surgical interventions

**CONCLUSION** The workload of the vestibulometric room when examining inpatients is determined by the number of hospitalized persons, the nature of pathology, the frequency of vestibular disorders. Each patient with labyrinth complication after purulent otitis media or hearing-improving surgery is subject to vestibulometric examination not less than 2-3 times. After radical surgery, tympanoplasty, vestibular disorders occur more often (approximately in 70-90% of cases) than after stapedoplasty (4,6). Depending on the equipment of the vestibulometric room and the volume of applied methods, the time spent on examination of one person with interpretation and evaluation of results can vary from 40-60 min to 2 hours.

Having these approximate figures, it is not difficult to calculate the need of the consulting polyclinic and ENT hospital in vestibulometric studies in relation to the specifics of their work.

#### LITERATURE

1. Nasretidinova M.T., Nabiev O.R. (2020) Features of manifestation of optokinetic nystagmus in Meniere's disease. *Indian Journal of Forensic Medicine and Toxicology*, vol. 14, no 4, pp. 7319–7321.
2. Kruchinin P. A. (2014). Mechanical models of stabilometry. *Russian Journal of Biomechanics*, vol.18, no 2, pp. 184-193.
3. Ziyadullaev Sh.Kh., Khudaiberdiev Sh.Sh., Aripova T.U., Rizaev J.A., Kamalov Z.S., Sultonov I.I., Pardaev B.B., Kim A.A. (2023) Immune changes in synovial fluid in rheumatoid arthritis. *Immunologiya*, vol.44, no 5, pp. 653-662
4. Yuntao Li, Yuting Zhang, Guoxing You, Danwen Zheng, Zhipeng He, Wenjie Guo, Kim Antonina, Ziyadullaev Shukhrat, Banghan Ding, Jie Zan, Zhongde Zhang (2023) Tangeretin attenuates acute lung injury in septic mice by inhibiting ROS-mediated NLRP3 inflammasome activation via regulating PLK1/AMPK/DRP1 signaling axis. *Inflammation Research*, vol. 73, pp. 47-63
5. Indiaminov, S.I., Kim, A.A. (2020) Epidemiological aspects and a current approach to the problem of carbon monoxide poisoning. *Russian Journal of Forensic Medicine*, vol. 6, no 4, pp. 4–9
6. Takada H. et al. (2021) Stabilometry. *Bio-information for Hygiene*, pp. 93-111.
7. Solovykh E. A. et al. (2011) Comparative analysis of methods for evaluation of stabilometry parameters. *Bulletin of experimental biology and medicine*, vol.152, no 2 pp. 266-272.
8. Scoppa F. et al. (2017) Clinical stabilometry standardization: Feet position in the static stabilometric assessment of postural stability. *Acta Med. Mediterr*, vol.33, pp. 707-713.