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THE PREVALENCE AND STRUCTURE OF ENT DISEASES IN CHILDREN

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The purpose of the study was to analyze information on the structure and prevalence of ENT diseases in children.

Materials and methods. For the analysis of morbidity, the structure of diseases, long-term morbidity, its trends and periodicity were assessed. The intensity and dynamics of the epidemic process of diseases of the upper respiratory tract were studied. According to the developed questionnaire, an anamnesis was collected, the conditions and place of residence, the frequency of visits to medical institutions, the level of medical care provided, the presence of diseases of the ENT organs and other organs and systems of the body were clarified. A detailed statistical analysis of the structure and prevalence of diseases of the ENT organs was carried out according to the extract from the case histories of patients in the ENT departments of the clinical hospital during 2015-2019. The bulk of the examined children were aged 4-7 years (40.0%) and 8-14 years (60.0%).

Results and discussion. Angina and chronic tonsillitis can be a common reason for the high incidence of various forms of infectious heart disease and cardiomyopathies. The transnasal route of penetration provides the damaging effect of the new coronavirus infection (COVID-19) on the ENT organs.

In the study of the structure of the incidence of ENT organs for the period from 2015 to 2019 on the basis of specialized medical institutions and ENT departments, we found that the largest nosological group is diseases of the nasal cavity and paranasal sinuses, an average of 55.7%, which corresponds to the data of international literary sources. In second place in terms of frequency of occurrence is ear pathology – an average of 37.5%. Diseases of the pharynx and larynx are in third place in terms of general ENT morbidity, on average 6.9%. In the structure of diseases of the nasal cavity and paranasal sinuses, on average for 5 years, purulent diseases of the paranasal sinuses prevail: acute sinusitis 20.7% and chronic sinusitis 7.8%.

Conclusion. When studying the incidence of the upper respiratory tract and ear according to statistical data, reflecting the main indicators of the health of the child population of the country aged 4 to 14 years, it was found that diseases of the nose and paranasal sinuses have the largest share in the structure of the incidence of children. The share of chronic ear diseases in the structure of the total morbidity is 37.5±1.2%, while there is a tendency to increase in prevalence in the first four years.

Keywords: ENT diseases, children, ear diseases, prevalence.

Introduction. Chronic diseases of the ENT organs and their complications negatively affect the functional state of various organs and systems of the body and are characterized by a high frequency of occurrence among children, which cannot but affect the health indicators of the entire population [1, 2, 3, 4]. Specialists of different levels and directions of medical activity note a close etiopathogenetic interdependence of diseases of the upper respiratory tract and pharynx [5]. When conducting medical examinations when patients visit a medical institution, against the background of a high level of prevalence of viral diseases, which are not properly recorded, chronic diseases of the ear and throat are stated [6, 7].

Angina and chronic tonsillitis are an urgent problem for the child population, which can be a frequent cause of the high incidence of various forms of infectious heart disease and cardiomyopathies [8]. Rhinosinusitis is a frequent complication of respiratory viral infections, as one of the forms of upper respiratory tract infection, annually recorded in childhood, which is often encountered in everyday practice by specialists in this field [9, 10]. This pathological process against the background of inflammation of the paranasal sinuses, in indicators of which there is an annual increase, and which characterizes a group of acute or chronic inflammatory changes in the nasal cavity and paranasal sinuses, in the presence of favorable

conditions (violation of ventilation, drainage, inflammation and swelling of the mucous membrane of the nasal cavity and sinuses), as well as due to improper treatment tactics, it easily turns into maxillary sinusitis, frontal sinusitis and severe orbital complications, and in the presence of concomitant bacterial infection in this area, purulent inflammation may develop [11].

Inflammatory diseases of the external ear are a fairly common pathology that occurs throughout the world, but most often it is diagnosed among people who spend a long time in hot climates and high humidity [7, 12, 13, 14, 15]. Otitis externa is observed in all age and sex groups of the population, but its share is higher in adolescence and young age and slightly increases in elderly and senile people [16, 17]. At the same time, the frequency of occurrence of chronic forms of the disease significantly prevails over its acute form [18].

The purpose of the study was to analyze information on the structure and prevalence of ENT diseases in children.

Materials and methods. To analyze the morbidity, an assessment was made of the structure of diseases, long-term morbidity, its trends and frequency. The intensity and dynamics of the epidemic process of diseases of the upper respiratory tract were studied. According to the developed questionnaire, an anamnesis was collected, the conditions and place of residence, the frequency of visits to medical institutions, the level of medical care provided, the presence of diseases of the ENT organs and other organs and systems of the body were clarified.

A detailed statistical analysis of the structure and prevalence of diseases of the ENT organs was carried out according to the data of excerpts from the case histories of patients of the ENT departments of the clinical hospital in Baku (Azerbaijan) during 2015-2019. The majority of the examined children were aged 4-7 years (40.0%) and 8-14 years (60.0%). Characteristics of the patient contingent under study, information about demographic processes, annual calculations by sex and age allowed to obtain a general idea of the studied contingent of the population.

The determination of morbidity criteria for general and age-specific indicators was carried out according to the International Classification of Diseases, Injuries and Causes of Death of the 10th revision (ICD-10). Clinical examination was carried out according to the following scheme: clarification of complaints, collection of anamnesis, clinical examination with visual assessment in endoscopic examinations.

Mathematical data processing was carried out using the Microsoft Excel 2007 software package in the Windows XP operating environment. The arithmetic mean (p), the mean error (m) were determined, the reliability of the compared values was determined by Student's t-test (t).

Results and discussion. The complex morphofunctional organization of the upper respiratory tract, a certain anatomical position in the body as the first barrier to the spread of infection, leads to the frequent occurrence of pathological processes of inflammatory origin in this area. The steady growth of chronic forms of inflammatory diseases of the ENT organs often leads to a frequent decrease in the quality of life, incapacitation and disability of patients.

One of the urgent and not fully resolved problems of pediatrics, despite the widespread introduction of modern endoscopic and allergological examination methods into clinical practice, is still the problem of differential diagnosis of allergic and infectious etiology of upper respiratory tract diseases. It is important to note here the growth of medical errors based on the prescription of various drugs that aggravate the allergic background and form drug intolerance, untimely diagnosis, not always justified surgical intervention and a variety of risk factors for the development of complications in the ENT organs, as well as infectious lesions of the lower respiratory tract and lungs.

When studying the structure of the morbidity of ENT organs for the period from 2015 to 2019, we found that the largest nosological group consists of lesions of the mucous membrane of the nasal cavity and paranasal sinuses, which corresponds to the data of scientific studies conducted by specialists from foreign countries [19].

Diseases of the ear were in second place, diseases of the pharynx, larynx and trachea were the least diagnosed.

Ear diseases of a purulent-septic nature, which are a common otorhinolaryngological pathology in both adults and children, can lead to persistent negative changes in the middle ear and hearing loss, and still remain widespread and significant for both the scientific medical community and in clinical otorhinolaryngological practice, as well as in the structure of appeals to general practitioners.

In the course of this work, a detailed visual assessment of the results of endoscopic oto-, rhino-, pharyngo-, laryngoscopic examinations was carried out. Analysis of the information obtained as a result of the study of information on the prevalence of acute and chronic forms of otorhinolaryngological pathologies in different years showed that in pediatric populations there were some characteristic features due to different indicators at different times. Thus, the indicators of the structure and prevalence of ear diseases at the initial stage of the research differed significantly from similar data revealed by the appealability among the child population in the following years. These differences were determined by such nosological forms of morbidity as purulent otitis media and exudative otitis.

According to a retrospective analysis in the structure of ear diseases in the pediatric population (**Table 1**), acute purulent otitis, which was diagnosed in 197 out of the total number of patients (35.0±2.01%), occupied the first place in terms of frequency of occurrence. Exudative otitis media and acute catarrhal otitis media were diagnosed in children who sought medical help significantly more often than other forms. When determining the structure of ENT pathology, despite a pronounced increase in the number of sick children in some cases who applied and were hospitalized until 2020, the incidence of all nosological forms, except for cases of detection of children with neurosensory diminished hearing, decreased by the end of observations.

In 2015-2016 there was an increase in cases of diseases of the ear and adnexum mastoideum up to 86.9±1.42%. At the same time, significant high rates were registered against the background of a decrease in the number of patients with traumatic otitis media and diminished hearing over the years. Among the examined children, hearing impairment was detected: in 2015 – in 2.4±1.66%, in 2017 – in 3.0±1.49% and in 2019 – in 2.2±1.52% of cases. In the structure of the general ENT morbidity, there is a tendency towards an increase in the prevalence of acute forms of inflammatory ear diseases.

Table 1 – The prevalence of ENT diseases in children during 2015–2019 (per 100 examined persons)

Disease	Observation period					Total
	2015 (n=150)	2016 (n=166)	2017 (n=200)	2018 (n=220)	2019 (n=100)	
Nasal cavities and paranasal sinuses	1505 59.5±3.1%	166 51.1±2.8%	200 56.5±2.6%	220 60.6±2.6%	100 48.1±3.46% $\chi^2_{5\text{-}1}$=5.96 p=0.0147* $\chi^2_{5\text{-}2}$=8.37 p=0.0038*	836 55.7±1.3%
Ear and adnexum mastoideum	84 33.3±3.0%	135 41.5±2.7%	132 37.3±2.6%	120 33.1±2.5%	92 44.2±3.4% $\chi^2_{5\text{-}1}$=5.72 p=0.0168* $\chi^2_{5\text{-}2}$=6.97 p=0.0083*	563 37.5±1.2%
Pharynx, larynx	18 7.1±1.6%	24 7.4±1.5%	22 6.2±1.3%	23 6.3±1.3 %	16 7.7±1.9 %	103 6.9±0.7 %
Total	252 100%	325 100%	354 100%	363 100%	208 100%	1502 100%

Note: * – The differences are significant.

As follows from the data in **Table 2**, there was a significant increase in the number of children seeking treatment for otitis externa and ear canal furuncle.

The special place occupied by inflammatory diseases of the auricle and external auditory canal in the structure of ENT pathology can be explained by the variety of etiopathogenetic causative factors, among which it is necessary to highlight the deterioration of the environmental conditions, metabolic disorders, immune status, an increase in the number of diseases of allergic origin, errors and complications in the diagnosis and treatment of inflammatory pathology in the acute stage, untimely reference to a specialist, etc.

When studying the structure of the incidence of ENT organs for the period from 2015 to 2019 on the basis of specialized medical institutions and ENT departments, we found that the largest nosological group consists of diseases of the nasal cavity and paranasal sinuses, an average of 55.7%, which corresponds to the data of international literature sources. In second place in terms of frequency of occurrence there is ear pathology – an average of 37.5%. Diseases of the pharynx and larynx are in third place in terms of general ENT morbidity, an average of 6.9%.

In the structure of diseases of the nasal cavity and paranasal sinuses, on average for 5 years, purulent diseases of the paranasal sinuses prevail: acute sinusitis 20.7% and chronic sinusitis 7.8%.

Thus, the analysis of statistical data indicates the need for a systematic study of the structure of morbidity, measures to improve medical care for patients with diseases of the nasal cavity and paranasal sinuses, since it is for this otorhinolaryngological pathology in the dynamics a high percentage of prevalence remains.

Taking into account the fact that the ENT organs act as an entry gate for any respiratory infection, it is necessary to note the transnasal route of penetration and the negative damaging impact of a new coronavirus infection (COVID-19) on these organs simultaneously with its respiratory manifestations [20-25].

Table 2 – The prevalence of diseases of the ear and adnexum mastoideum in children (per 100 patients, *P*±*m*)

Disease	Observation period, years					Total (*n*=677)
	2015 (n=150)	2016 (n=166)	2017 (n=200)	2018 (n=220)	2019 (n=100)	
Acute serous otitis media	16 19.0±4.28	32 23.7±3.66	31 23.5±3.69	24 20.0±3.65	23 25.0±4.51	126 22.4±1.76
Acute purulent otitis media	32 38.1±5.30	47 34.8±4.10	43 32.6±4.08	42 35.0±4.35	33 35.9±5.00	197 35.0±2.01
Chronic purulent otitis media	6 7.1±2.81	4 3.0±1.46	7 5.3±1.95	4 3.3±1.64	4 4.3±2.13	25 4.4±0.87
Chronic serous otitis media	19 22.6±4.56	38 28.1±3.87	32 24.2±3.73	28 23.3±3.86	24 26.1±4.58	141 25.0±1.83
Total	73 86.9±3.68	121 89.6±2.62	113 85.6±3.06	98 81.7±3.53	84 91.3±2.94	489 86.9±1.42
Other ear diseases	2 2.4±1.66	4 3.0±1.46	4 3.0±1.49	9 7.5±2.40	2 2.2±1.52	21 3.7±0.80
Otitis externa	6 7.1±2.81	7 5.2±1.91	7 5.3±1.95	7 5.8±2.14	4 4.3±2.13	31 5.5±0.96
Others (traumatic otitis, foreign bodies)	3 3.6±2.02	3 2.2±1.27	8 6.1±2.08	6 5.0±1.99	2 2.2±1.52	22 3.9±0.82

Conclusion. When studying the incidence of the upper respiratory tract and ear according to statistical data, reflecting the main indicators of the health of the child population of the country aged 4 to 14 years, it was found that diseases of the nose and paranasal sinuses have the largest share in the structure of the morbidity of children.

The share of chronic ear diseases in the structure of the total morbidity is 37.5±1.2%, while there is a tendency to the increase in prevalence in the first four years.

Perspectives of further research. The data obtained in the study allow to optimize the organization of otolaryngological care within the country, and further studies of morbidity in comparison with those presented in this paper, – to evaluate the effectiveness of the proposed methods of influencing the level of morbidity. Further deepening of research in order to study the prevalence and structure of diseases by individual nosological forms allows to optimize the organization of the provision of specialized care to the child population.

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ПОШИРЕНІСТЬ ТА СТРУКТУРА ЗАХВОРЮВАНЬ ЛОР-ОРГАНІВ У ДІТЕЙ

Заідов Е. Я.

Резюме. *Мета дослідження:* аналіз інформації про структуру та поширеність ЛОР-захворювань у дітей.

Матеріал та методи дослідження. Для проведення аналізу захворюваності проводилася оцінка структури захворювань, багаторічної захворюваності, її тенденції та періодичності. Вивчалась інтенсивність та динаміка епідемічного процесу захворювань верхніх дихальних шляхів.

Згідно з розробленим опитувальником збирався анамнез, з'ясовувались умови і місце проживання, частота відвідування медичних установ, рівень медичної допомоги, наявність захворювань ЛОР-органів і інших органів і систем у дітей. Детальний статистичний аналіз структури та поширеності захворювань ЛОР-органів проводився за даними з історій хвороби пацієнтів ЛОР-відділення клінічної лікарні за 2015-2019 роки. Основна частка обстежених дітей була у віці 4-7 років (40,0%) та 8-14 років (60,0%).

Результати. При дослідженні структури захворюваності ЛОР-органів за період з 2015 по 2019 роки на базі спеціалізованих медичних установ та ЛОР–відділень виявлено, що найбільшу нозологічну групу складають хвороби порожнини носа та приносових пазух, у середньому 55,7%, що відповідає даним міжнародних літературних джерел. На другому місці за частотою зустрічаємості займає патологія вуха - в середньому 37,5%. На третьому місці за загальною ЛОР-захворюваністю стоять хвороби глотки і гортані, в середньому 6,9%. У структурі захворювань порожнини носа та приносових пазух у середньому за 5 років переважають гнійні захворювання приносових пазух: гострі синусити 20,7% та хронічні синусити 7,8%.

Висновки. При вивченні частоти захворюваності верхніх дихальних шляхів та вуха за статистичними даними, що відображають основні показники здоров'я дитячого населення республіки Азербайджан у віці від 4 до 14 років, виявлено, що найбільшу частку у структурі захворюваності дітей мають хвороби носа та приносових синусів. Питома вага хронічних хвороб вуха у структурі загальної захворюваності становить 37,5±1,2%, при цьому, відзначається тенденція до збільшення поширеності у перші чотири роки.

Ключові слова: ЛОР-захворювання, діти, захворювання вуха, поширеність.

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The authors of this study confirm that the research and publication of the results were not associated with any conflicts regarding commercial or financial relations, relations with organizations and/or individuals who may have been related to the study, and interrelations of coauthors of the article.

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