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K.A. ISMATOVA, Sh.Z. UMAROVA

ETIOLOGICAL FACTORS AND CLINICAL FEATURES OF CHRONIC ADENOIDITIS IN CHILDREN AGED 2–10 YEARS

Tashkent State Medical University

Chronic adenoiditis is among the most prevalent upper respiratory tract diseases in children, holding a leading position in pediatric otorhinolaryngological morbidity. According to the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), it is classified as a distinct nosological entity under code J35.02. Recent years have seen a rising number of patients with chronic inflammation of the pharyngeal tonsil accompanied by complications affecting the nasal cavity, pharynx, and middle ear, which underscores the high clinical significance of this condition [2, 3].

The pharyngeal tonsil is a key peripheral organ of the immune system, playing a crucial role in protecting the upper respiratory tract against infectious agents. Prolonged inflammation leads to impaired physiological functions, the formation of a chronic infectious focus, and lymphoid tissue hyperplasia. The disease most commonly occurs in children aged 1–10 years, which is linked to age-related characteristics of the immune system [4, 5].

Chronic adenoiditis is characterized by nasal obstruction, chronic hypoxia, sleep disturbances, hearing impairment, and a reduced quality of life in children. Bacterial, viral, and allergic factors play a substantial role in the development and progression of this condition.

Despite numerous studies, the age-specific etiological features of chronic adenoiditis remain insufficiently investigated. This underscores the need for further research aimed at improving diagnostic approaches and optimizing treatment strategies for this condition.

Aim of the Study

To investigate the primary etiological factors and clinical characteristics of chronic adenoiditis in children aged 2–10 years to improve diagnostic approaches and enhance the efficacy of pathogenetic treatment.

Materials and Methods

A comprehensive examination was conducted on 87 children aged 2–10 years diagnosed with chronic adenoiditis. The patients were treated at the Happy Life Clinic and the clinical base of Tashkent State Medical University between 2023 and 2025. The age distribution of the examined patients is presented in Table 1.

All patients underwent a comprehensive clinical evaluation, including medical history analysis, endoscopic video rhinoscopy, bacteriological culture of nasopharyngeal swabs, polymerase chain reaction (PCR) assay for herpesvirus infections, allergological screening, and tympanometry.

Results

The findings demonstrated that chronic adenoiditis is a multifactorial condition. Bacterial infection was identified as the predominant etiological factor, detected in 62 (71.3%) children. The most frequently isolated pathogens were *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Staphylococcus aureus*.

PCR testing demonstrated a high prevalence of herpesvirus infections among younger children. Specifically, active Epstein–Barr virus (EBV) persistence was identified in 17 (37.0%) patients aged 2–5 years.

Allergic sensitization was identified in 30 (34.5%) children. Concomitant allergic rhinitis was diagnosed significantly more frequently in the older age group than in younger patients. The clinical presentation was predominantly characterized by impaired nasal breathing.

Endoscopic evaluation revealed grade II–III adenoid hypertrophy in the majority of patients.

Tympanometric evaluation revealed Eustachian tube dysfunction in 21 (24.1%) children.

These findings suggest that infectious and viral mechanisms predominate in younger children, whereas the role of allergic sensitization becomes significantly more pronounced in older age groups.

Table 1

Age distribution of study participants

Age group	***n***	**%**
2–5 years	46	52.9
6–10 years	41	47.1
Total	**87**	**100,0**

Table 2

Microbiological Profile of the Study Patients

Pathogen	**n**	**%**
Streptococcus pneumoniae	28	32.2
Haemophilus influenzae	21	24.1
Staphylococcus aureus	13	14.9
Other microorganisms	9	10.3
No growth detected	16	18.5

Table 3

Prevalence of herpesvirus infections by age group

Herpesvirus type	**2–5 years (*n* = 46), *n* (%)**	**6–10 years (*n* = 41) *n* (%)**
EBV (Epstein–Barr virus)	38.0%	12.2%
CMV (Cytomegalovirus)	10.9%	7.3%
HHV-6 (Human herpesvirus type 6)	8.7%	4.9%

Table 4

Clinical manifestations of chronic adenoiditis in the study cohort

Clinical Symptom	***n***	**%**
Nasal airway obstruction	80	91.9
Nasal discharge (rhinorrhea)	58	66.7
Hyponasality (rhinolalia)	34	39.1
Nocturnal snoring	25	28.7
Hearing impairment	18	20.7
Sleep apnea episodes	8	9.2

Table 5

Severity of adenoid hypertrophy in the study cohort

Hypertrophy grade	*n*	%
Grade I	21	24.1
Grade II	39	44.8
Grade III	27	31.1
Total	87	100.0

Table 6

Results of Tympanometric Examination

Tympanogram type	*n*	%
Type A	66	75.9
Type C	13	14.9
Type B	8	9.2
Total	**87**	**100.0**

Discussion

This study confirms the multifactorial nature of chronic adenoiditis in children. The findings align with current evidence highlighting the leading role of bacterial infection in maintaining chronic nasopharyngeal inflammation. Furthermore, the high detection rate of Epstein–Barr virus (EBV) infection in younger children suggests a potential role of herpesviruses in driving lymphoid tissue hyperplasia and conventional therapy resistance.

The established association between allergic rhinitis and chronic adenoiditis in older children underscores the necessity of integrating allergological assessment into the diagnostic protocol. Additionally, the observed prevalence of Eustachian tube dysfunction confirms a substantial risk of otitis media with effusion, necessitating continuous, dynamic follow-up for these patients.

Conclusions

1. Chronic adenoiditis in children aged 2–10 years is characterized by a multifactorial etiology with a predominant bacterial component (71.3%).

2. In younger children, a combination of bacterial infection and herpesvirus persistence, particularly Epstein–Barr virus, is most typical.

3. In older children, the role of allergic sensitization and concomitant allergic rhinitis increases significantly.

4. Grade II–III adenoid hypertrophy is highly prevalent, affecting 75.9% of the examined children.

5. Eustachian tube dysfunction occurs in 24.1% of patients, representing a major risk factor for otitis media with effusion.

6. Integrating endoscopic, microbiological, and allergological evaluations enhances diagnostic accuracy and enables an individualized approach to the treatment of chronic adenoiditis.

Conflict of interest

The authors declare no conflict of interest.

Use of Generative Artificial Intelligence

The authors of the manuscript hereby certify that all stages of the work from conceptualization to final editing were performed solely by the authors without the involvement of generative artificial intelligence.

Data availability statement

The authors of the manuscript hereby confirm that the study is based on their own clinical research, the results of which were systematized and analyzed by the authors. The primary data include aggregated patient indicators, protocols, and examination findings. All materials are stored in the archive of the research group and may be provided upon a justified request to the corresponding author, in accordance with confidentiality requirements and ethical standards.

References

1. Bowers I, Shermetaro C. Adenoiditis. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan. https://pubmed.ncbi.nlm.nih.gov/30725616/.
2. Wang H. Chronic adenoiditis. J Int Med Res. 2020 Nov;48(11):300060520971458. doi: 10.1177/0300060520971458.
3. Purnell PR, Ramadan JH, Ramadan HH. Can symptoms differentiate between chronic adenoiditis and chronic rhinosinusitis in pediatric patients. Ear Nose Throat J. 2019 Jun;98(5):279-282. doi: 10.1177/0145561319840133.
4. Torretta S, Drago L, Marchisio P, Ibba T, Pignataro L. Role of biofilms in children with chronic adenoiditis and middle ear disease. J Clin Med. 2019 May 13;8(5):671. doi: 10.3390/jcm8050671.
5. Vintilescu ŞB, Ioniţă E, Stepan AE, Simionescu CE, Matei M, Stepan MD, Becheanu CA, Niculescu EC. Comparative clinicopathological aspects of chronic tonsillitis and adenoiditis in children. Rom J Morphol Embryol. 2020 Jul-Sep;61(3):895-904. doi: 10.47162/RJME.61.3.28.
6. Karlıdağ T, Bulut Y, Keleş E, Alpay HC, Seyrek A, Orhan İ, Karlıdağ EG, Kaygusuz İ. Presence of herpesviruses in adenoid tissues of children with adenoid hypertrophy and chronic adenoiditis. Kulak Burun Bogaz Ihtis Derg. 2012 Jan-Feb;22(1):32-7. doi: 10.5606/kbbihtisas.2012.006.

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Ismatova KA, Umarova ShZ
Tashkent State Medical University
Email: ismatovakamola21@gmail.com

A b s t r a c t

Background: Chronic adenoiditis is among the most common upper respiratory tract pathologies in children, associated with impaired nasal breathing, adenoid hypertrophy, and middle ear complications.

Aim: To investigate the primary etiological factors and clinical characteristics of chronic adenoiditis in children aged 2–10 years.

Methods: A comprehensive evaluation was conducted on 87 children treated at the Happy Life Clinic and the clinical base of Tashkent State Medical University between 2023 and 2025. Clinical, endoscopic, microbiological, allergological, and functional diagnostic methods were employed.

Results: Bacterial infection was identified as the leading etiological factor, detected in 71.3% of cases. Herpesvirus infections played a significant role in younger children, whereas the impact of allergic sensitization increased with age. Grade II–III adenoid hypertrophy was identified in 75.9% of patients, and Eustachian tube dysfunction was detected in 24.1% of the examined children.

Conclusion: These findings underscore the necessity of a comprehensive approach to the diagnosis and management of chronic adenoiditis, factoring in the predominant etiological triggers.

Keywords: chronic adenoiditis; children; adenoid hypertrophy; Epstein–Barr virus; allergic rhinitis; Eustachian tube dysfunction.

ЕТІОЛОГІЧНІ ФАКТОРИ ТА КЛІНІЧНІ ОСОБЛИВОСТІ ХРОНІЧНОГО АДЕНОЇДИТУ У ДІТЕЙ ВІКОМ 2–10 РОКІВ

Ісматова КА, Умарова ШЗ
Ташкентський державний медичний університет
Email: ismatovakamola21@gmail.com

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Актуальність: Хронічний аденоїдит є однією з найпоширеніших патологій верхніх дихальних шляхів у дітей, що асоціюється з порушенням носового дихання, гіпертрофією аденоїдів та розвитком ускладнень з боку середнього вуха.

Мета: Дослідити основні етіологічні фактори та клінічні характеристики хронічного аденоїдиту у дітей віком 2–10 років.

Методи: Комплексне обстеження було проведене у 87 дітей, які проходили лікування в клініці «Happy Life» та на клінічній базі Ташкентського державного медичного університету в період між 2023 і 2025 роками. Було застосовано клінічні, ендоскопічні, мікробіологічні, алергологічні та функціональні методи діагностики.

Результати: Бактеріальну інфекцію було визначено як провідний етіологічний фактор, який виявили у 71,3% випадків. Герпесвірусні інфекції відігравали суттєву роль у дітей молодшого віку, тоді як значення алергічної сенсибілізації зростало з віком. Гіпертрофію аденоїдів II–III ступеня було діагностовано у 75,9% пацієнтів, а дисфункцію слухової труби виявлено у 24,1% обстежених дітей.

Висновки: Отримані результати підкреслюють необхідність комплексного підходу до діагностики та ведення пацієнтів із хронічним аденоїдитом з урахуванням домінантних етіологічних тригерів.

Ключові слова: хронічний аденоїдит; діти; гіпертрофія аденоїдів; вірус Епштейна–Барр; алергічний риніт; дисфункція слухової труби.