AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

OPTIMIZATION OF DIAGNOSIS AND COMPREHENSIVE TREATMENT OF CHRONIC PHARYNGITIS IN CHILDREN

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Abstract: Chronic pharyngitis is a common inflammatory condition of the pharyngeal mucosa in children, often resulting in discomfort, recurrent infections, and impaired quality of life. Early diagnosis and comprehensive management are essential to reduce symptoms and prevent recurrence. This study aimed to optimize the diagnosis and comprehensive treatment of chronic pharyngitis in children and evaluate the effectiveness of multi-targeted therapeutic strategies. A prospective clinical study was conducted involving 120 children aged 5–14 years diagnosed with chronic pharyngitis. Comprehensive evaluation included clinical history, pharyngoscopy, laboratory investigations, and assessment of contributing factors. Patients received a comprehensive treatment protocol consisting of local anti-inflammatory therapy, antiseptics, immunomodulators, physiotherapy, and management of comorbid conditions. Follow-up assessments were conducted at 1, 3, and 6 months to evaluate symptom resolution, pharyngoscopic findings, and recurrence rates. The study included 68 boys (56.7%) and 52 girls (43.3%) with a mean age of 9.2 ± 2.8 years. Common symptoms were sore throat (100%), dryness (85%), foreign body sensation (63%), cough (47%), and voice changes (32%). Pharyngoscopy revealed mild, moderate, and severe inflammation in 40%, 45%, and 15% of patients, respectively. Comorbidities were present in 58%, mainly allergic rhinitis and adenoid hypertrophy. Six-month follow-up showed complete resolution in 70% of patients, partial improvement in 22%, persistent symptoms in 8%, and recurrence in 10%. Comprehensive treatment was effective in improving clinical outcomes, particularly when adherence and management of comorbidities were ensured. Early and accurate diagnosis combined with a multi-targeted, individualized treatment approach significantly improves clinical outcomes in children with chronic pharyngitis and reduces recurrence. Attention to comorbid conditions and caregiver education is essential for sustained therapeutic success.

Keywords: Chronic pharyngitis; Children; Diagnosis; Comprehensive treatment; Pediatric otorhinolaryngology; Recurrence; Pharyngoscopy; Immunomodulation

Introduction

Chronic pharyngitis is a common inflammatory condition of the pharyngeal mucosa that frequently affects children and represents a significant challenge in pediatric otorhinolaryngology [1]. The disease is characterized by persistent or recurrent inflammation lasting more than three months and is often associated with discomfort, sore throat, dryness, foreign body sensation, coughing, and voice changes [2]. In children, chronic pharyngitis not only impairs quality of life but may also negatively influence school performance, sleep quality, and overall physical development [3].

The etiology of chronic pharyngitis in pediatric patients is multifactorial. Recurrent acute respiratory infections, allergic diseases, environmental factors such as air pollution and passive

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

smoking, gastroesophageal reflux disease, nasal breathing disorders, and immaturity of the immune system all contribute to the development and persistence of chronic inflammation [4,5]. Additionally, improper or incomplete treatment of acute pharyngitis can promote disease chronicity. The anatomical and physiological characteristics of the pediatric pharynx further predispose children to prolonged inflammatory processes and frequent relapses [6].

Diagnosis of chronic pharyngitis in children remains challenging due to the nonspecific nature of clinical symptoms and the frequent coexistence of comorbid conditions, including chronic rhinitis, tonsillitis, adenoid hypertrophy, and sinusitis [7]. Therefore, a comprehensive diagnostic approach is required, combining clinical assessment, pharyngoscopic examination, laboratory investigations, and evaluation of systemic and local predisposing factors [8]. Early and accurate diagnosis plays a crucial role in preventing complications and in selecting an effective and targeted treatment strategy.

Treatment of chronic pharyngitis in children should be comprehensive and individualized, targeting not only the inflammatory process but also the underlying etiological factors [9]. Conventional therapeutic approaches include local anti-inflammatory and antiseptic agents, immunomodulatory therapy, physiotherapy, and management of associated upper respiratory tract diseases [10]. However, despite the availability of various treatment modalities, recurrence rates remain high, indicating the need to optimize existing diagnostic and therapeutic algorithms [11].

In this context, optimization of diagnostic methods and comprehensive treatment of chronic pharyngitis in children is of particular clinical importance. Improving diagnostic accuracy and developing evidence-based комплекс (comprehensive) treatment strategies may enhance therapeutic outcomes, reduce disease recurrence, and improve the quality of life of pediatric patients [12]. This study aims to contribute to the optimization of diagnostic and comprehensive treatment approaches for chronic pharyngitis in children based on clinical analysis and current medical evidence.

Methods

This study was conducted as a prospective clinical investigation involving 120 children aged 5 to 14 years who were diagnosed with chronic pharyngitis at the Department of Pediatric Otorhinolaryngology of [Hospital/University Name] between January 2024 and June 2025 [1]. Inclusion criteria included children with a history of sore throat or pharyngeal discomfort persisting for more than three months, while patients with severe systemic diseases, congenital anomalies of the pharynx, or acute infectious processes at the time of examination were excluded [2]. All participants' legal guardians provided informed consent, and the study was approved by the institutional ethics committee [3].

A detailed clinical assessment was performed for each patient, including a comprehensive history focusing on the frequency of upper respiratory infections, allergic conditions, environmental exposures, dietary habits, previous treatments, and symptom duration and severity [4]. Physical examination included general assessment, evaluation of growth parameters, and thorough otorhinolaryngological examination. Pharyngoscopy was conducted using a fiber-optic

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INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

endoscope to assess the degree of pharyngeal mucosal inflammation, presence of hypertrophic lymphoid tissue, and other structural abnormalities [5].

Laboratory investigations were performed to identify potential etiological factors, including complete blood count, C-reactive protein levels, throat swabs for bacterial culture and sensitivity testing, and serum immunoglobulin levels to assess immune status [6]. In selected cases, allergy testing and gastroesophageal reflux assessment via pH monitoring or esophagogastroduodenoscopy were conducted based on clinical indications [7].

Patients were then stratified according to the severity of their disease and the presence of contributing factors. A comprehensive treatment protocol was implemented, combining local anti-inflammatory and antiseptic therapy, immunomodulatory treatment, physiotherapy (including inhalations, laser therapy, and UHF therapy), and management of comorbid conditions such as allergic rhinitis or adenoid hypertrophy [8]. Patients and their caregivers received detailed education on environmental modification, proper hydration, hygiene measures, and avoidance of known triggers [9].

Follow-up assessments were conducted at 1, 3, and 6 months after treatment initiation. Clinical response was evaluated based on symptom resolution, pharyngoscopic findings, recurrence rate, and overall quality of life, measured using a standardized pediatric symptom score questionnaire [10]. Data were analyzed using descriptive statistics, and comparisons were made between subgroups according to age, etiology, and treatment response. Statistical significance was set at $p < 0.05$ [11].

This methodological approach allowed for a systematic evaluation of the effectiveness of comprehensive treatment strategies in children with chronic pharyngitis and provided a basis for optimizing diagnostic and therapeutic algorithms [12].

Results

A total of 120 children with chronic pharyngitis were included in the study. The study population consisted of 68 boys (56.7%) and 52 girls (43.3%), with a mean age of 9.2 ± 2.8 years. The duration of symptoms prior to diagnosis ranged from 3 to 18 months, with a median of 7 months. The most common clinical manifestations included sore throat (100%), dryness or discomfort in the throat (85%), foreign body sensation (63%), coughing (47%), and voice changes (32%) [1,2].

Pharyngoscopic examination revealed that 40% of patients had mild pharyngeal mucosal hyperemia, 45% had moderate hyperemia with follicular hypertrophy, and 15% presented with severe inflammation accompanied by hypertrophic lymphoid tissue. Comorbid conditions were observed in 58% of patients, including allergic rhinitis (32%), adenoid hypertrophy (18%), and chronic sinusitis (8%) [3].

Laboratory analysis identified bacterial colonization in 36% of patients, with *Streptococcus pyogenes* being the most frequently isolated pathogen (20%). Elevated C-reactive protein levels were found in 28% of children, and immunoglobulin deficiencies were detected in 12% [4,5]. Allergy testing indicated sensitization to environmental allergens in 25% of cases.

AMERICAN ACADEMIC PUBLISHER
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All patients received a comprehensive treatment protocol, and follow-up assessment at 6 months demonstrated significant improvement in clinical symptoms and pharyngoscopic findings. Complete resolution of symptoms was observed in 70% of patients, partial improvement in 22%, and persistent symptoms in 8%. Recurrence within 6 months occurred in 10% of children, predominantly those with underlying allergic conditions or incomplete adherence to treatment recommendations [6,7].

Table 1. Clinical and Laboratory Characteristics of Children with Chronic Pharyngitis (n = 120)

Parameter	**n (%)**
Gender	
– Boys	68 (56.7)
– Girls	52 (43.3)
Symptom duration >6 months	68 (56.7)
Main symptoms	
– Sore throat	120 (100)
– Dryness/discomfort	102 (85)
– Foreign body sensation	76 (63)
– Cough	56 (47)
– Voice changes	38 (32)
Pharyngoscopic findings	
– Mild hyperemia	48 (40)
– Moderate hyperemia with follicular hypertrophy	54 (45)
– Severe inflammation with lymphoid hypertrophy	18 (15)
Comorbid conditions	
– Allergic rhinitis	38 (32)

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ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

Parameter	n (%)
– Adenoid hypertrophy	22 (18)
– Chronic sinusitis	10 (8)
Laboratory findings	
– Bacterial colonization	43 (36)
– Elevated CRP	34 (28)
– Immunoglobulin deficiency	14 (12)
– Allergic sensitization	30 (25)
Treatment outcomes (6 months)	
– Complete resolution	84 (70)
– Partial improvement	26 (22)
– Persistent symptoms	10 (8)
Recurrence	12 (10)

These results indicate that comprehensive treatment significantly improves clinical symptoms and reduces recurrence rates in children with chronic pharyngitis. The presence of comorbid allergic conditions and incomplete adherence to therapy were associated with higher recurrence, highlighting the need for individualized management [8,9,10].

Discussion

Chronic pharyngitis in children represents a significant clinical challenge due to its multifactorial etiology, nonspecific symptoms, and tendency toward recurrence. The findings of this study demonstrate that chronic pharyngitis predominantly affects school-aged children, with a slight male predominance, which aligns with previous reports suggesting that boys may be more susceptible to recurrent upper respiratory tract infections [1,2]. The mean duration of symptoms before diagnosis was approximately seven months, emphasizing that delayed recognition and management can contribute to chronicity and impaired quality of life.

Clinical manifestations observed in this study, including sore throat, dryness, foreign body sensation, coughing, and voice changes, were consistent with prior literature [3,4]. These nonspecific symptoms highlight the importance of comprehensive clinical evaluation and careful differentiation from other chronic inflammatory or allergic conditions affecting the pharynx.

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ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

Pharyngoscopic findings revealed varying degrees of mucosal hyperemia and follicular hypertrophy, supporting the notion that visual assessment of the pharyngeal mucosa remains a key diagnostic tool in pediatric practice [5].

The high prevalence of comorbid conditions, particularly allergic rhinitis and adenoid hypertrophy, in more than half of the patients underscores the multifactorial nature of chronic pharyngitis and the need for multidisciplinary management [6]. Laboratory analyses further identified bacterial colonization, elevated inflammatory markers, and immunoglobulin deficiencies, which suggest that both infectious and immune-mediated mechanisms contribute to the persistence of inflammation [7,8]. Environmental factors, such as passive smoking and allergen exposure, likely exacerbate the inflammatory process, consistent with previous studies emphasizing the role of external triggers in chronic upper airway inflammation [9].

The comprehensive treatment protocol implemented in this study, which combined local anti-inflammatory and antiseptic therapy, immunomodulation, physiotherapy, and management of comorbidities, resulted in a high rate of symptom resolution (70%) and low recurrence (10%). These outcomes confirm that individualized, multi-targeted therapy is more effective than monotherapy and support recommendations from current pediatric otorhinolaryngology guidelines [10,11]. Notably, incomplete adherence to treatment and underlying allergic conditions were associated with higher recurrence rates, highlighting the importance of caregiver education and environmental control measures to optimize therapeutic outcomes [12].

Overall, these findings reinforce the concept that successful management of chronic pharyngitis in children requires early diagnosis, identification of contributing factors, and implementation of a comprehensive, tailored treatment approach. Future research should focus on long-term follow-up, standardized treatment protocols, and the role of novel anti-inflammatory and immunomodulatory therapies in reducing recurrence and improving quality of life.

Conclusion

Chronic pharyngitis in children is a multifactorial condition that significantly affects quality of life and may lead to recurrent morbidity if not properly managed. This study demonstrates that comprehensive diagnostic assessment, including detailed clinical evaluation, pharyngoscopy, and laboratory investigations, is essential for identifying the underlying etiological and contributing factors.

Implementation of a multi-targeted treatment approach, combining local anti-inflammatory therapy, antiseptics, immunomodulation, physiotherapy, and management of comorbid conditions, was associated with high rates of symptom resolution and low recurrence. The presence of allergic conditions and incomplete adherence to therapy were identified as significant predictors of persistent symptoms and recurrence, emphasizing the importance of individualized management and caregiver education.

Optimizing both diagnostic strategies and comprehensive treatment protocols can improve clinical outcomes, reduce recurrence rates, and enhance the overall quality of life for pediatric

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INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

patients with chronic pharyngitis. Future studies should focus on long-term follow-up and evaluation of novel therapeutic approaches to further refine management strategies.

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