ETIOLOGY, PATHOGENESIS, CLINICAL AND DIAGNOSTIC FEATURES OF ACUTE AND CHRONIC TONSILLITIS AND IMPROVEMENT OF MODERN TREATMENT METHODS

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Abstract. *This article examines the etiology, pathogenesis, clinical manifestations, diagnostic characteristics, and contemporary treatment approaches for acute and chronic tonsillitis. Tonsillitis is an inflammatory disease of the palatine tonsils that may be caused by viral or bacterial pathogens, with group A beta-hemolytic Streptococcus being one of the most clinically significant bacterial agents. The development of the disease is associated with interactions between infectious microorganisms, local immune responses, environmental factors, and the functional condition of the lymphoid tissue of the oropharynx. Particular attention is given to distinguishing acute tonsillitis from chronic and recurrent forms, identifying clinical warning signs, and selecting appropriate diagnostic methods, including clinical assessment, rapid antigen detection tests, and microbiological culture when indicated. The article also discusses evidence-based treatment strategies, emphasizing symptomatic management, the rational use of antibiotics in confirmed or strongly suspected bacterial infections, and the prevention of complications. Furthermore, modern approaches to managing recurrent tonsillitis, including individualized treatment planning, patient education, and consideration of tonsillectomy in selected cases, are explored. Improving diagnostic accuracy, antimicrobial stewardship, and multidisciplinary clinical decision-making may contribute to better treatment outcomes, reduced complications, and improved quality of life among affected patients.*

Keywords: *Acute tonsillitis, chronic tonsillitis, etiology, pathogenesis, clinical diagnosis, antibiotic therapy, antimicrobial resistance, tonsillectomy.*

Tonsillitis is one of the most common inflammatory diseases of the upper respiratory tract and represents a significant clinical problem in contemporary otorhinolaryngology. It is characterized by inflammation of the palatine tonsils, which play an important role in the local immune defense of the oropharynx. The tonsils are components of Waldeyer's lymphatic ring and contribute to the recognition of pathogens entering the body through the respiratory and digestive tracts. Although this lymphoid tissue performs a protective function, it may also become a site of acute or persistent inflammation when exposed to infectious agents and unfavorable

environmental conditions. Acute tonsillitis commonly develops following viral or bacterial infection, whereas chronic tonsillitis is frequently associated with recurrent inflammatory episodes, persistent local symptoms, and structural changes in the tonsillar tissue.

The etiology of tonsillitis is multifactorial. Viral pathogens, including adenoviruses, rhinoviruses, influenza viruses, and Epstein–Barr virus, are important causes of acute tonsillar inflammation. Among bacterial pathogens, group A beta-hemolytic Streptococcus pyogenes is particularly significant because of its potential to cause suppurative complications and immune-mediated sequelae. The clinical course of the disease depends on the causative microorganism, the patient's immune status, age, environmental exposure, and the presence of predisposing conditions. In chronic and recurrent cases, repeated infections, impaired local immune responses, and changes in the tonsillar crypts may contribute to persistent inflammation and difficulties in achieving sustained clinical recovery.

The clinical manifestations of tonsillitis vary according to the severity and duration of inflammation. Common symptoms include sore throat, painful swallowing, fever, tonsillar enlargement, erythema, and cervical lymphadenopathy. In some patients, tonsillar exudates, halitosis, fatigue, and recurrent throat discomfort may also occur.

However, clinical symptoms alone cannot reliably distinguish viral from bacterial infection in every case. Consequently, accurate diagnosis requires a comprehensive assessment of the patient's medical history, physical examination findings, and appropriate laboratory investigations. Rapid antigen detection tests and throat cultures may be particularly useful when group A streptococcal infection is suspected [1,2].

Despite advances in diagnostic methods and therapeutic strategies, the management of acute and chronic tonsillitis remains challenging. Inappropriate antibiotic prescribing, recurrent infections, delayed diagnosis, and insufficient adherence to treatment recommendations may contribute to complications and unnecessary healthcare expenditure. Therefore, the rational selection of diagnostic procedures, evidence-based antimicrobial therapy, effective symptom management, and individualized decisions regarding surgical intervention are essential components of modern clinical practice.

The aim of this article is to provide a comprehensive scientific overview of the etiology, pathogenesis, clinical and diagnostic characteristics of acute and chronic tonsillitis and to examine contemporary approaches to improving treatment effectiveness. Particular emphasis is placed on optimizing diagnostic accuracy, promoting the rational use of antibiotics, preventing complications, and selecting appropriate treatment strategies according to the clinical characteristics and individual

needs of each patient. Such an integrated approach may improve clinical outcomes, reduce the risk of recurrent disease, and enhance the quality of life of patients affected by tonsillar inflammation.

The analysis of the etiology, pathogenesis, clinical manifestations, diagnostic approaches, and treatment strategies for acute and chronic tonsillitis demonstrates that effective disease management depends on accurate identification of the underlying cause, assessment of disease severity, and selection of an individualized therapeutic approach.

Acute tonsillitis is most frequently associated with viral infections, although bacterial pathogens, particularly group A beta-hemolytic Streptococcus pyogenes, remain clinically important. Differentiating viral and bacterial infections is essential because the choice of treatment, the likelihood of complications, and the need for antimicrobial therapy differ according to the causative agent. Clinical assessment alone may be insufficient to establish the etiology reliably, particularly in patients presenting with overlapping symptoms [3].

The clinical evaluation of patients with suspected acute tonsillitis should include assessment of the duration and severity of sore throat, body temperature, swallowing difficulties, tonsillar erythema, the presence of exudates, and cervical lymph node enlargement.

Clinical prediction rules, such as the Centor or McIsaac criteria, can help determine which patients may benefit from further testing for streptococcal infection. However, these criteria should not be considered definitive diagnostic tools. Rapid antigen detection tests and throat cultures provide additional information when bacterial infection is suspected and testing is clinically indicated. The integration of clinical findings and microbiological investigations can improve diagnostic precision and reduce unnecessary antibiotic prescribing.

The pathogenesis of chronic tonsillitis is more complex than that of an isolated acute episode. Recurrent inflammatory processes may be associated with persistent microbial exposure, alterations in the tonsillar crypts, local tissue changes, and variations in host immune responses. Patients with recurrent tonsillitis may experience repeated episodes of sore throat, fever, swallowing discomfort, and limitations in daily activities.

Nevertheless, persistent throat symptoms do not always indicate chronic bacterial infection, and alternative diagnoses should be considered when symptoms are atypical or prolonged. Therefore, comprehensive clinical assessment is necessary to distinguish recurrent acute tonsillitis from other inflammatory and noninfectious conditions [4].

Contemporary treatment strategies should be based on the presumed or confirmed etiology. Viral tonsillitis generally requires supportive management, including

adequate fluid intake, rest, and appropriate analgesic or antipyretic medication when necessary. Antibiotics should be prescribed for confirmed group A streptococcal infection or in accordance with applicable clinical guidelines and individual clinical circumstances. Penicillin or amoxicillin is generally recommended for eligible patients with confirmed streptococcal tonsillitis, subject to allergy status and other relevant contraindications. The unnecessary use of broad-spectrum antibiotics should be avoided because it increases the risk of adverse reactions and antimicrobial resistance.

An important aspect of improving treatment effectiveness is the timely identification of complications. Peritonsillar abscess, dehydration resulting from severe swallowing difficulties, and, in streptococcal infections, acute rheumatic fever are among the clinically relevant concerns. Severe breathing difficulties, inability to swallow fluids, drooling, marked unilateral throat swelling, or rapidly progressive symptoms require urgent medical assessment. Early recognition of these warning signs can prevent delays in appropriate treatment and reduce the likelihood of serious outcomes.

For patients experiencing recurrent acute tonsillitis, the decision to perform tonsillectomy should be individualized. The frequency and severity of documented episodes, their effect on quality of life, previous treatment outcomes, and the presence of complications should be considered. Surgery may be beneficial for carefully selected patients, but it is not necessary for every individual with recurrent throat symptoms. Shared decision-making between the clinician and patient is therefore an important component of contemporary management.

The findings of this scientific analysis support an integrated approach combining accurate diagnosis, evidence-based pharmacological treatment, patient education, and appropriate follow-up. Improving communication between healthcare professionals and patients may increase adherence to treatment recommendations and encourage the timely recognition of complications.

In addition, antimicrobial stewardship programs and the consistent application of clinical guidelines can help optimize antibiotic use. Although the effectiveness of individual interventions depends on patient characteristics and disease severity, a coordinated diagnostic and therapeutic strategy offers a rational basis for improving outcomes in acute and chronic tonsillitis. Further prospective clinical studies are needed to evaluate the comparative effectiveness of diagnostic algorithms, treatment protocols, and surgical interventions in different patient populations [5].

Comparative characteristics of acute and chronic tonsillitis and approaches to their management

Table 1.

Criteria	Acute tonsillitis	Chronic/recurrent tonsillitis	Clinical significance
Etiology	Viral or bacterial infections	Recurrent infections and persistent inflammatory changes	Identifying the cause guides treatment
Pathogenesis	Acute inflammatory response to infectious agents	Repeated inflammation and changes in tonsillar crypts and local tissues	Helps explain disease recurrence
Main symptoms	Sore throat, fever, painful swallowing	Recurrent sore throat, discomfort, halitosis in some patients	Supports clinical assessment
Physical examination	Tonsillar erythema, swelling, possible exudates	Tonsillar changes may be present; findings vary between episodes	Examination alone may not establish etiology
Diagnostic methods	Clinical assessment; rapid antigen test or throat culture when indicated	Medical history, documented episodes, examination, and targeted investigations	Improves diagnostic accuracy
Pharmacological treatment	Symptomatic care; antibiotics for confirmed bacterial infection when indicated	Treatment of acute episodes according to etiology; individualized management	Reduces unnecessary antibiotic use
Surgical treatment	Usually unnecessary	Tonsillectomy may be considered in selected patients with recurrent, disabling episodes	Requires assessment of benefits and risks
Prevention of complications	Early recognition of severe symptoms and appropriate treatment	Follow-up and evaluation of recurrent or persistent symptoms	Supports timely clinical intervention

Table 1 presents a comparative overview of the principal characteristics of acute and chronic or recurrent tonsillitis, emphasizing the relationship between disease etiology, clinical presentation, diagnostic procedures, and treatment selection. The comparison demonstrates that although both forms affect the palatine tonsils, they differ in their clinical course and the considerations required for effective management.

Acute tonsillitis is generally characterized by the relatively rapid development of inflammatory symptoms, including sore throat, fever, tonsillar swelling, and painful swallowing. Viral infections account for many cases, while group A beta-hemolytic

Streptococcus pyogenes is an important bacterial cause. Consequently, clinical assessment should be supplemented by appropriate microbiological testing when streptococcal infection is suspected. Antibiotic therapy is indicated for confirmed bacterial infections in accordance with clinical guidelines, whereas viral cases are usually managed with supportive treatment.

Chronic or recurrent tonsillitis requires a broader assessment of the patient's medical history, the frequency and severity of episodes, and their impact on daily functioning. Repeated inflammation may be associated with changes in tonsillar tissue and crypts; however, persistent symptoms should not automatically be interpreted as evidence of an ongoing bacterial infection. Accurate differentiation from other causes of chronic throat discomfort is therefore essential.

The table also highlights the importance of individualized treatment. Conservative management remains appropriate for many patients, while tonsillectomy may be considered when recurrent episodes are sufficiently severe and documented to justify surgery. The decision should account for potential benefits, postoperative pain, bleeding risks, and the patient's preferences.

In conclusion, the comparative analysis supports an integrated approach based on etiological diagnosis, rational antibiotic prescribing, clinical monitoring, and individualized treatment planning. Applying these principles may improve treatment outcomes, reduce avoidable antimicrobial exposure, and support the timely identification of complications.

Conclusion. Acute and chronic tonsillitis remain important clinical problems in otorhinolaryngology because of their high prevalence, diverse etiological factors, recurrent clinical manifestations, and potential complications. The analysis demonstrates that effective management of these conditions requires a comprehensive understanding of their etiology, pathogenesis, clinical presentation, and diagnostic characteristics. Viral pathogens are responsible for a substantial proportion of acute tonsillitis cases, whereas group A beta-hemolytic Streptococcus pyogenes represents a significant bacterial cause requiring appropriate diagnostic assessment and, when confirmed, targeted antimicrobial treatment.

Accurate differentiation between viral and bacterial infections is a fundamental prerequisite for optimizing therapeutic outcomes. Combining clinical examination with rapid antigen detection tests and microbiological culture, when indicated, can improve diagnostic accuracy and support rational treatment decisions. Furthermore, the assessment of recurrent episodes, associated risk factors, and possible complications is essential for the effective management of chronic and recurrent tonsillitis.

The improvement of modern treatment methods should prioritize evidence-based pharmacotherapy, appropriate symptomatic management, antimicrobial stewardship,

and individualized clinical decision-making. Antibiotics should be prescribed according to established clinical recommendations, while surgical intervention, particularly tonsillectomy, should be considered for carefully selected patients with recurrent, disabling episodes or relevant complications. Patient education, adherence to treatment recommendations, and timely medical evaluation of warning signs are also important components of comprehensive care.

In conclusion, the integration of accurate diagnostic procedures, etiology-oriented treatment, preventive measures, and individualized therapeutic strategies provides a scientifically justified approach to improving the management of acute and chronic tonsillitis. Further prospective clinical research is needed to evaluate the effectiveness of contemporary diagnostic algorithms, optimize treatment protocols, and establish the long-term benefits and risks of surgical interventions in different patient populations. Such investigations may contribute to improved clinical outcomes, reduced complications, more rational antibiotic use, and enhanced quality of life among patients with tonsillar inflammation.

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