

CLINICAL PRESENTATION AND PECULIARITIES OF ACUTE TONSILLITIS IN CHILDREN

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Abstract: *Introduction. Acute tonsillitis is one of the most common infectious diseases in pediatric practice and remains an important problem in outpatient pediatrics. In clinical practice, the Centor score modified by Mclsaac is widely used for diagnosing infections caused by Group A beta-hemolytic streptococcus (GABHS) and for determining antibacterial therapy. However, this scale is less commonly used for assessing acute tonsillitis caused by other etiopathogenetic factors. We proposed additional criteria to improve the diagnostic and clinical assessment value of the Mclsaac-modified Centor scale in children with viral, bacterial, and mixed infections.*

Aim. To evaluate the effectiveness of the Centor scale modified by Mclsaac with additional clinical criteria in assessing the severity and clinical presentation of acute tonsillitis in children.

Materials and Methods. The study was conducted in outpatient settings among 128 children aged 3–14 years diagnosed with acute tonsillitis. All children underwent clinical examination, pharyngoscopy, and bacteriological analysis of tonsillar swabs. The Centor scale modified by Mclsaac (1998) was supplemented with additional criteria including odynophagia, tonsillar edema, and hyperemia. The quality of diagnostic assessment was evaluated using the QUADAS-2 tool.

*Results. Catarrhal tonsillitis was diagnosed in 65.63% (n=84) of children, follicular tonsillitis in 22.66% (n=29), and lacunar tonsillitis in 11.72% (n=15). Viral infection was identified in 75.8% of cases and contributed to enhanced colonization of the tonsils by pathogenic bacteria, particularly *Staphylococcus aureus* (42.2%) and *Streptococcus pneumoniae* (32.0%). Mixed bacterial colonization was observed in 66% of cases. According to the modified scale, 21.1% of patients had mild disease, 71.9% had moderate disease, and 7% had severe disease.*

Conclusion. The modified Mclsaac-Centor scale with additional criteria allows clinicians to assess the severity of acute tonsillitis more accurately and optimize treatment strategies in outpatient pediatric practice.

Keywords: *acute tonsillitis, children, Mclsaac score, Centor scale, bacterial infection, viral infection, outpatient pediatrics*

Introduction. Acute tonsillitis is among the most frequent inflammatory diseases of the upper respiratory tract in children and represents a significant medical and social problem

worldwide. The disease is characterized by inflammation of the palatine tonsils caused by viral, bacterial, or mixed infections. Children are particularly susceptible to acute tonsillitis because of the immaturity of their immune system and frequent exposure to infectious agents in schools and preschool institutions.

Despite advances in diagnostic and therapeutic approaches, acute tonsillitis continues to account for a large proportion of outpatient pediatric visits. The disease negatively affects children's quality of life, causes temporary disability, and may lead to serious complications if inadequately treated. Therefore, timely diagnosis and proper evaluation of disease severity are extremely important in pediatric clinical practice.

The Centor score modified by McIsaac is widely used for the diagnosis of Group A beta-hemolytic streptococcal infection. The scale includes such criteria as fever, absence of cough, cervical lymphadenopathy, tonsillar exudates, and age characteristics. However, in many cases of pediatric tonsillitis, especially those associated with viral or mixed infections, the traditional scale may not fully reflect the severity of the inflammatory process.

Clinical manifestations such as odynophagia, tonsillar edema, and pronounced hyperemia are frequently observed in pediatric patients and may significantly influence the course of the disease. Incorporating these criteria into the diagnostic scale may improve the assessment of disease severity and assist physicians in selecting appropriate therapeutic tactics.

The present study was aimed at evaluating the clinical significance of the modified McIsaac-Centor scale with additional criteria in children with acute tonsillitis treated in outpatient settings.

Materials and Methods. The study was conducted in outpatient pediatric clinics and included 128 children aged between 3 and 14 years diagnosed with acute tonsillitis. All participants underwent comprehensive clinical evaluation.

Inclusion Criteria. Children aged 3–14 years; Clinical diagnosis of acute tonsillitis; Presence of symptoms such as sore throat, fever, and tonsillar inflammation.

Exclusion Criteria. Chronic tonsillitis; Severe immunodeficiency disorders; Recent antibacterial therapy before examination; Severe concomitant systemic diseases.

Clinical Examination. All children underwent: Detailed clinical assessment; Pharyngoscopic examination; General laboratory investigations; Bacteriological culture of tonsillar swabs. The bacteriological study was performed to identify the composition of pathogenic flora colonizing the tonsils.

Assessment Scale. The Centor score modified by McIsaac (1998) was used as the basis for clinical evaluation. In addition to the traditional criteria, the following parameters were included: Odynophagia; Tonsillar edema; Tonsillar hyperemia.

The modified scoring system was interpreted as follows: 1–2 points: mild disease course; 3–4 points: moderate disease course; 5–8 points: severe disease course. Treatment tactics were selected according to the severity level.

Statistical Analysis. The quality of diagnostic evaluation was assessed using the QUADAS-2 tool. Statistical analysis was performed using standard descriptive methods with percentage calculations.

Results. Among 128 examined children, the catarrhal form of acute tonsillitis was the most common and was diagnosed in 65.63% (n=84) of patients. Follicular tonsillitis was observed in 22.66% (n=29), while lacunar tonsillitis accounted for 11.72% (n=15) of cases. These findings demonstrate the predominance of catarrhal tonsillitis among pediatric outpatients.

Etiological Characteristics. Virological and bacteriological investigations revealed that viral infection predominated in 75.8% of cases. Viral pathogens appeared to contribute to enhanced colonization of the tonsils by pathogenic bacterial flora. The most frequently isolated bacteria were: *Staphylococcus aureus* — 42.2%; *Streptococcus pneumoniae* — 32.0%.

Simultaneous colonization by multiple bacterial species was detected in 66% of children, indicating the high prevalence of mixed infections in pediatric acute tonsillitis.

Severity Assessment. Using the modified Mclsaac-Centor scale: Mild disease course was identified in 27 children (21.1%); Moderate severity in 92 children (71.9%); Severe disease in 9 children (7%). Traditionally, the Mclsaac-modified Centor scale recommends: Symptomatic therapy for 1 point; Rapid testing for GABHS at 2 points; Antibacterial therapy for ≥ 3 points.

However, our modified approach allowed more precise evaluation of overall clinical severity by including additional inflammatory symptoms frequently observed in children. Children with mild disease received symptomatic treatment only, while moderate and severe cases required more intensive therapeutic strategies including antibacterial therapy when indicated. The inclusion of odynophagia, tonsillar edema, and hyperemia significantly improved the clinical applicability of the scale in outpatient pediatric practice.

Discussion. Acute tonsillitis in children remains a challenging condition due to the variability of etiological agents and clinical manifestations. Viral infections predominate in pediatric patients; however, bacterial colonization frequently complicates the course of the disease.

Our findings demonstrated that mixed infections are highly prevalent among children with acute tonsillitis. Viral pathogens create favorable conditions for bacterial colonization, leading to more severe inflammatory changes in the tonsils.

The traditional Mclsaac-modified Centor scale primarily focuses on identifying streptococcal infection. Although effective for this purpose, it may not adequately reflect the full severity of inflammatory changes associated with viral and mixed infections.

The addition of clinical signs such as odynophagia, tonsillar edema, and hyperemia enhanced the sensitivity of the scale in evaluating disease severity. These symptoms are clinically important indicators of inflammatory activity and significantly affect children's well-being and feeding behavior.

Our modified scoring system enabled clinicians to differentiate mild, moderate, and severe cases more effectively and to individualize treatment strategies. This is particularly important in outpatient settings where rapid clinical decision-making is required.

Furthermore, rational use of antibacterial therapy based on accurate severity assessment may help reduce unnecessary antibiotic prescriptions and contribute to the prevention of antimicrobial resistance.

The predominance of moderate disease severity observed in our study highlights the importance of early recognition and monitoring of acute tonsillitis in pediatric patients.

Conclusion. The modified McIsaac-Centor scale with the inclusion of additional criteria such as odynophagia, tonsillar edema, and hyperemia is an effective tool for assessing the severity of acute tonsillitis in children.

The scale improves clinical evaluation in viral, bacterial, and mixed infections and facilitates appropriate treatment selection in outpatient practice. Its use may simplify the work of general practitioners and pediatricians while improving the quality of medical care for children with acute tonsillitis. Further studies involving larger patient populations are recommended to validate the clinical effectiveness and prognostic value of the modified scoring system.

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