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# Interdisciplinary Clinical Management of Streptococcal Pharyngitis: Diagnostic, Therapeutic, and Preventive Perspectives in Respiratory Care, Nursing Practice, Pharmacy, and Radiology

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## Abstract

**Background:** Streptococcal pharyngitis, caused by Group A Streptococcus (GAS), is a common respiratory infection predominately affecting children and adolescents, with lower incidence among adults. It remains a significant clinical concern due to its transmissibility, symptom burden, and potential for suppurative and nonsuppurative complications. The overlap of bacterial and viral presentations frequently challenges diagnostic accuracy, contributing to unnecessary antibiotic use.

**Aim:** This interdisciplinary review aims to synthesize current evidence regarding the diagnosis, management, prevention, and interprofessional collaboration required for optimal care of streptococcal pharyngitis.

**Methods:** A comprehensive analysis of epidemiological data, diagnostic criteria, clinical decision rules, antimicrobial guidelines, and multidisciplinary care recommendations was extracted and synthesized from the provided article.

**Results:** The review highlights key epidemiological trends, including peak incidence in children and reduced prevalence in adults. Evidence demonstrates that clinical examination alone is insufficient for diagnosis; validated scoring systems (Centor, McIsaac) combined with rapid antigen detection testing improve accuracy and reduce unnecessary antibiotic use. Penicillin and amoxicillin remain first-line therapy, with alternatives guided by allergy profile and local resistance patterns. Strategies for preventing complications and transmission include strict hand hygiene, adherence to therapy, and appropriate exclusion from school or work. Interprofessional collaboration—uniting physicians, nurses, pharmacists, and laboratory teams—enhances diagnostic precision, treatment adherence, patient education, and public health outcomes.

**Conclusion:** Effective management of streptococcal pharyngitis requires accurate diagnostic testing, evidence-based antibiotic selection, and coordinated interprofessional care. Preventive measures and patient education remain essential to reducing disease burden and complications.

**Keywords:** Streptococcal pharyngitis, Group A Streptococcus, Centor score, McIsaac score, antimicrobial therapy, rapid antigen detection test, prevention, interprofessional care.

## Introduction

Streptococcal pharyngitis represents an acute infectious condition of the oropharynx attributable to Group A Streptococcus (GAS), specifically Streptococcus pyogenes. This pathogen is a Gram positive coccus capable of colonizing the upper respiratory tract and initiating a localized inflammatory response within the pharyngeal mucosa. The disorder is widely recognized in clinical practice and is commonly referred to as “strep throat.” It constitutes a significant proportion of acute pharyngitis cases encountered in primary healthcare and outpatient settings. Transmission occurs predominantly through respiratory droplets and close interpersonal contact, which explains its frequent occurrence in community and school environments. Clinically, streptococcal pharyngitis is characterized by the sudden onset of throat pain, often accompanied by fever and a history of recent exposure to an infected individual. The presentation may include pharyngeal


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erythema, tonsillar enlargement, and regional lymphadenopathy, reflecting the acute inflammatory process triggered by bacterial invasion. The disease burden is not uniformly distributed across age groups. Epidemiological data indicate that the highest rates of infection are observed in children between 3 and 9 years of age, with a secondary peak among adolescents aged 10 to 19 years [1]. In contrast, the prevalence among adults is considerably lower. Among adult patients who seek medical evaluation for sore throat, only approximately 10% to 15% are ultimately diagnosed with streptococcal pharyngitis [2]. Despite this relatively modest proportion, antibiotic prescribing patterns reveal a substantial discrepancy, as 60% or more of adult individuals presenting with sore throat receive antimicrobial therapy [2]. This disparity underscores ongoing concerns regarding diagnostic accuracy and antimicrobial stewardship in the management of acute pharyngitis.

**Etiology**

Streptococcal pharyngitis is caused by Streptococcus pyogenes, also designated as Group A Streptococcus (GAS), which is a facultative anaerobic, Gram positive coccus. On Gram staining, the organism characteristically appears as spherical bacteria arranged in chains, a structural pattern that reflects its mode of cellular division along a single axis. This microbiological morphology assists in preliminary laboratory identification and differentiates it from other Gram positive cocci that form clusters or pairs [1][2]. Streptococcus pyogenes is a human specific pathogen with a well-established capacity to colonize the oropharyngeal mucosa. Its ability to survive in both aerobic and anaerobic environments enhances its adaptability within the upper respiratory tract. The organism expresses a range of virulence factors that facilitate adherence, invasion, and immune evasion. Among the most significant of these factors is the M protein, a surface protein that contributes to resistance against phagocytosis and plays a central role in strain typing. Additional components, including streptolysins, pyrogenic exotoxins, and various enzymes such as streptokinase and DNases, contribute to tissue damage and inflammatory responses. Transmission occurs primarily through respiratory droplets and close contact, particularly in crowded environments such as schools and households. Following colonization of the pharyngeal epithelium, the bacteria initiate a localized inflammatory cascade that results in the clinical manifestations of acute pharyngitis. The incubation period typically ranges from two to five days after exposure. Although Streptococcus pyogenes is most commonly associated with pharyngitis, it is also implicated in a spectrum of other conditions, including impetigo, cellulitis, scarlet fever, and invasive diseases. Its etiological role in streptococcal pharyngitis underscores the importance of accurate microbiological identification and targeted antimicrobial therapy to prevent both suppurative and nonsuppurative complications [1][2].

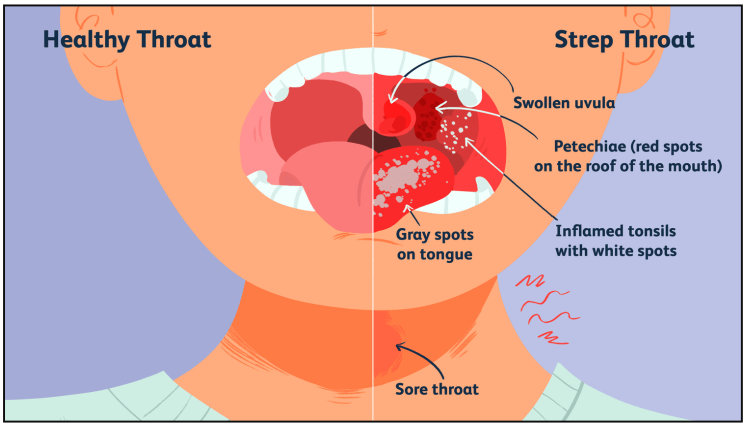


**Fig. 1:** Streptococcal Pharyngitis.

**Epidemiology**

Streptococcal pharyngitis, caused by Group A Streptococcus (GAS), represents the leading bacterial etiology of acute pharyngitis among pediatric and adolescent populations. The distribution of cases demonstrates a clear seasonal pattern, with the highest incidence observed during winter and early spring months. This seasonal variation reflects increased indoor crowding and closer interpersonal contact, which facilitate respiratory droplet transmission. The infection also occurs more frequently among individuals who have regular exposure to school-aged children, highlighting the role of household and educational settings in sustaining community spread [3]. Age-specific incidence rates reveal a pronounced decline in disease occurrence as age increases. Among children aged 3 to 9 years, the incidence reaches approximately 93.2 cases per 1000 person-years at risk (PYAR), representing the highest burden across all age groups [1]. In adolescents aged 10 to 19 years, the rate decreases to 40.9 cases per 1000 PYAR, yet remains substantial [1]. A marked reduction is evident in adulthood, with reported rates of 8 cases per 1000 PYAR among individuals aged 20 to 39 years, and only 1.1 cases per 1000 PYAR in adults between 40 and 65 years of age [1]. This progressive decline suggests the development of partial immunity following repeated exposure during childhood. The epidemiological pattern underscores the importance of targeted preventive strategies within pediatric and school-based populations, where transmission risk and overall disease burden remain highest.

**History and Physical**

Clinical evaluation remains a central component in the assessment of patients presenting with acute sore throat. Despite this, evidence consistently demonstrates that history taking and physical examination alone do not provide sufficient diagnostic accuracy to definitively identify Group A Streptococcal (GAS) pharyngitis [4]. The overlap between bacterial and viral etiologies of pharyngitis limits the reliability of isolated clinical findings. As a result, clinicians must interpret symptoms and signs within a structured clinical framework rather than relying on a single feature. Certain historical elements

increase the probability of streptococcal infection. Patients often report a sudden onset of throat pain accompanied by fever. The absence of cough is another feature that strengthens suspicion for GAS infection. A recent history of close contact with an individual diagnosed with streptococcal pharyngitis within the preceding two weeks further raises clinical concern [5][6]. These elements reflect the typical transmission dynamics of the organism and the acute inflammatory response it provokes. Physical examination may reveal tender anterior cervical lymphadenopathy, erythema of the pharyngeal mucosa, and tonsillar hypertrophy with exudative deposits. Palatal petechiae and swelling of the uvula provide additional supportive findings [5][6]. These signs reflect localized immune activation within the oropharyngeal tissues. However, none of these manifestations are pathognomonic. Similar findings may appear in viral infections, infectious mononucleosis, or other inflammatory conditions of the upper respiratory tract. The presence of viral features such as cough, rhinorrhea, and hoarseness reduces the likelihood of GAS pharyngitis, yet does not exclude the diagnosis [2]. Data from a 2020 national validation study demonstrated that 37.6% of patients presenting with sore throat were confirmed to have streptococcal pharyngitis through testing [7]. Among individuals reporting at least one viral symptom, the positivity rate remained 28.3%, and even among those exhibiting all three viral features, 23.2% tested positive for GAS infection [7]. These findings highlight the limitations of clinical judgment alone and support the integration of microbiological testing to improve diagnostic precision and guide appropriate antimicrobial therapy.

**Evaluation**

The Infectious Disease Society of America affirms that clinical history and physical examination alone are insufficient to establish a definitive diagnosis of Group A Streptococcal pharyngitis [8]. The substantial overlap between bacterial and viral presentations necessitates a structured and evidence based diagnostic strategy. To address this limitation, several validated clinical decision rules have been developed to estimate the probability of streptococcal infection and to guide further testing. These scoring systems function as risk stratification tools that categorize patients into low, intermediate, or high probability groups. When clinicians integrate these tools with rapid antigen detection testing, diagnostic precision improves and unnecessary antibiotic prescribing declines [2][9]. Patients classified as intermediate or high risk according to a clinical decision rule should undergo rapid antigen detection testing. In contrast, individuals categorized as low risk do not require additional microbiological evaluation for GAS pharyngitis [2]. This approach reduces overtesting and supports antimicrobial stewardship efforts. In telemedicine settings, patients who receive a score of 0 or 1 using either the Centor or McIsaac criteria can be considered low risk and may not require in person assessment [10]. This strategy supports safe remote triage while preserving healthcare resources. Rapid antigen testing may be omitted in children younger than three years because both the incidence of GAS pharyngitis and the risk of acute rheumatic fever are low in this age group [8]. An important exception involves young children with close household exposure, such as a sibling with confirmed GAS infection, where clinical suspicion may justify testing [8]. In pediatric populations, the American Academy of Pediatrics Red Book 2025 update recommends performing a confirmatory throat culture in children who have a negative rapid antigen test result. This recommendation reflects the higher risk of complications in children. However, earlier analyses have questioned the cost effectiveness of routine backup throat cultures for preventing childhood rheumatic fever [2].

Serologic testing with anti streptococcal antibody titers does not play a role in the acute diagnostic process because elevated titers reflect prior exposure rather than active infection. These tests are more relevant in the evaluation of post streptococcal sequelae. After appropriate antimicrobial therapy, routine test of cure is not required in uncomplicated cases. Follow up testing may be considered in specific circumstances, such as recurrent infection, outbreaks, or a history of rheumatic fever [8]. The Centor scoring system assigns one point for each of the following criteria: tonsillar exudates, tender anterior cervical lymphadenopathy, absence of cough, and temperature greater than 38 degrees Celsius [11]. A total score of 0 or 1 indicates low risk, 2 or 3 indicates intermediate risk, and 4 indicates high risk. The McIsaac modification incorporates age into the assessment. One point is added for absence of cough, tender anterior cervical nodes, temperature above 38 degrees Celsius, and age between 3 and 14 years. One point is subtracted for patients older than 45 years [12]. Risk categories parallel those of the original Centor model. These structured evaluation frameworks strengthen clinical judgment, promote rational antibiotic use, and align practice with established infectious disease guidelines.

**Treatment / Management**

Antimicrobial therapy remains the cornerstone of management in patients with confirmed Group A Streptococcal pharyngitis. Antibiotics are indicated once microbiological confirmation is obtained through rapid antigen detection testing or throat culture. In circumstances where diagnostic testing is unavailable, patients with a high probability score according to validated clinical decision rules such as Centor or McIsaac may receive empiric antibiotic therapy [2]. This approach seeks to balance timely treatment with antimicrobial stewardship principles. The primary goals of therapy include

symptom reduction, prevention of suppurative and nonsuppurative complications, limitation of transmission, and reduction in the risk of acute rheumatic fever. Penicillin and amoxicillin remain the first line agents due to their proven efficacy, narrow antimicrobial spectrum, safety profile, and low cost. No documented resistance of Streptococcus pyogenes to penicillin has been confirmed, which reinforces its continued role as standard therapy. In patients without β-lactam allergy, amoxicillin may be administered to children at a dose of 50 mg per kg per day orally, not exceeding 1,000 mg daily, for a duration of 10 days. An alternative pediatric regimen involves 50 mg per kg per dose administered twice daily, with a maximum of 500 mg per dose, also for 10 days. Penicillin V remains an effective option. Children may receive 250 mg orally two to three times daily for 10 days. Adolescents and adults may receive 250 mg four times daily or 500 mg twice daily for the same duration. For patients in whom adherence to oral therapy presents concern, a single intramuscular dose of benzathine penicillin G provides an effective alternative. Individuals weighing less than 27 kilograms should receive 600,000 units intramuscularly, while those weighing 27 kilograms or more should receive 1,200,000 units intramuscularly.

For patients with documented penicillin allergy, alternative regimens depend on the nature of the hypersensitivity reaction. Individuals with nonanaphylactic reactions to β-lactam antibiotics may receive a first generation cephalosporin such as cephalexin or cefadroxil. Cephalexin may be prescribed at 20 mg per kg per dose administered twice daily, not exceeding 500 mg per dose, for 10 days. Cefadroxil may be given at 30 mg per kg once daily, with a maximum of 1 gram daily, for 10 days. In cases of immediate type hypersensitivity reactions to penicillin, cephalosporins should be avoided. Macrolides or clindamycin serve as alternative agents in these situations. Azithromycin may be administered at 12 mg per kg orally on the first day, with a maximum of 500 mg, followed by 6 mg per kg once daily, up to 250 mg, for the subsequent four days. Clarithromycin may be prescribed at 7.7 mg per kg twice daily, not exceeding 250 mg per dose, for 10 days. Clindamycin may be given at 20 mg per kg per day, with a maximum of 900 mg daily, divided into three doses for 10 days [2][15][16]. Clinicians must remain attentive to regional antimicrobial resistance patterns. Resistance of Streptococcus pyogenes to azithromycin, clarithromycin, and clindamycin has been widely documented. Knowledge of local epidemiological data is therefore essential when selecting non β-lactam therapy. Inappropriate selection of broad spectrum antibiotics does not reduce the likelihood of treatment failure and may contribute to resistance development [14]. Targeted therapy with narrow spectrum agents remains the preferred strategy.

Clinical response should be evident within several days of initiating therapy. Patients whose symptoms fail to improve within five days, or who experience initial improvement followed by clinical deterioration, require reevaluation to assess adherence, alternative diagnoses, or potential complications [2][13]. Persistent or recurrent symptoms may indicate viral infection, peritonsillar abscess, or carrier state rather than primary treatment failure. Adjunctive therapy addresses symptomatic relief. The Infectious Diseases Society of America recommends acetaminophen or nonsteroidal anti-inflammatory drugs to control fever and throat pain [8]. Adequate hydration and rest support recovery. Routine use of corticosteroids is not recommended in uncomplicated cases of streptococcal pharyngitis due to insufficient evidence of benefit and potential adverse effects [8]. Effective management depends on accurate diagnosis, appropriate antibiotic selection, adherence to recommended dosing and duration, and careful follow up when clinical progress deviates from the expected course.

**Posttreatment and Prevention Recommendations**

After initiation of appropriate antibiotic therapy, clinical improvement typically occurs rapidly. Many patients experience reduction in fever and throat pain within one to three days of starting treatment. Infectivity declines significantly after 24 hours of effective antimicrobial therapy, which allows most children and adults to safely return to school or work after completing at least one full day of antibiotics, provided that fever has resolved and overall condition has improved. Early symptomatic recovery reinforces adherence to the full prescribed course, which remains essential to ensure bacterial eradication and prevention of complications. Routine test of cure following completion of therapy is not recommended in uncomplicated cases. Microbiological retesting does not provide additional clinical benefit for the majority of patients and may identify asymptomatic carriers rather than active infection. Exceptions apply to individuals with a documented history of acute rheumatic fever or other serious Group A Streptococcal complication. In these high risk patients, confirmation of bacterial eradication may be clinically justified to reduce the likelihood of recurrence or immune mediated sequelae [8].

Postexposure prophylaxis is also not routinely indicated. Preventive antibiotic therapy for close contacts is reserved for specific circumstances, including individuals with a prior history of acute rheumatic fever, outbreaks of nonsuppurative complications, or recurrent infections occurring within households or tightly connected groups. Indiscriminate prophylaxis contributes to antimicrobial resistance and does not significantly reduce sporadic transmission in most community settings. Primary prevention depends on interruption of person to person spread. Strict adherence to hand

hygiene practices reduces transmission risk in schools, households, and healthcare environments. Avoidance of sharing personal items, appropriate respiratory etiquette, and timely evaluation of symptomatic individuals further limit spread. Consistent implementation of these measures remains central to controlling infection within close contact populations [8].

**Differential Diagnosis**

Accurate evaluation of suspected streptococcal pharyngitis requires careful consideration of alternative diagnoses, as multiple infectious and noninfectious conditions may present with overlapping clinical features. Reliance on isolated symptoms such as sore throat, fever, or pharyngeal erythema can lead to diagnostic error if competing etiologies are not systematically assessed. A comprehensive differential diagnosis supports appropriate testing, targeted therapy, and avoidance of unnecessary antibiotic exposure. Among infectious causes, viral upper respiratory infections represent the most frequent alternative diagnosis. Viruses commonly produce sore throat accompanied by cough, rhinorrhea, hoarseness, and conjunctival symptoms, which may help distinguish them from bacterial pharyngitis. Coronavirus disease 2019 must also be considered, particularly in the presence of systemic symptoms such as myalgia, anosmia, or recent exposure history. Epstein Barr virus infection, associated with infectious mononucleosis, may produce significant tonsillar enlargement, exudates, lymphadenopathy, and fatigue. In adolescents and young adults, this condition may closely resemble streptococcal infection and requires laboratory confirmation [2].

Lemierre syndrome, caused by Fusobacterium necrophorum, represents a rare but serious bacterial condition that can initially mimic uncomplicated pharyngitis. Progression to neck pain, septic thrombophlebitis of the internal jugular vein, and systemic toxicity distinguishes it clinically. Acute HIV infection may be presented with pharyngitis, fever, rash, and lymphadenopathy, particularly in individuals with recent high risk exposure. Neisseria gonorrhoeae and Treponema pallidum should be considered in patients with relevant sexual history, as both pathogens may involve the oropharynx and produce ulcerative or inflammatory lesions [8][2]. Noninfectious causes must also be evaluated. Allergic rhinitis may produce throat irritation due to postnasal drainage. Gastroesophageal reflux disease can result in chronic throat discomfort secondary to acid exposure. Environmental irritants, including secondhand smoke, contribute to mucosal inflammation. Mechanical trauma from instrumentation or foreign body ingestion may cause localized pain. Autoimmune conditions such as Behçet syndrome and Kawasaki disease may present with mucosal inflammation and systemic findings that require prompt recognition [8]. A structured differential approach ensures that clinicians identify serious conditions, avoid diagnostic anchoring, and deliver appropriate patient centered management.

**Prognosis**

Streptococcal pharyngitis is generally considered a self-limiting illness, particularly in otherwise healthy individuals within the United States. Most patients experience symptomatic resolution within one week of onset, with or without antibiotic therapy, although antimicrobial treatment accelerates recovery and reduces the risk of complications [8]. The illness typically follows a benign course, with fever, throat pain, and malaise improving within several days. Despite the overall favorable prognosis, approximately 10% of patients may experience treatment failure or relapse, which can manifest persistent or recurrent pharyngeal symptoms despite completion of an appropriate antibiotic regimen [17]. Relapse may result from incomplete adherence to prescribed therapy, reinfection from close contacts, or the presence of an asymptomatic carrier state within the household. Early recognition and management of high-risk patients remain important to minimize the small proportion of cases that progress to complications. Clinical vigilance is particularly warranted in individuals with a history of rheumatic fever, immunocompromising conditions, or repeated exposures in community or household settings. The relatively low incidence of complications in the United States underscores the effectiveness of current public health measures, including timely antibiotic treatment, surveillance, and patient education. In developing countries, however, the risk of complications is significantly higher due to limited access to healthcare, delayed diagnosis, and inconsistent antibiotic availability. Overall, while most patients recover without long-term sequelae, adherence to evidence-based management protocols is essential to maintain favorable outcomes and prevent rare but serious complications.

**Complications**

Complications of streptococcal pharyngitis can be classified into nonsuppurative and suppurative categories, each reflecting distinct pathophysiological mechanism. Nonsuppurative complications are immune mediated and include poststreptococcal glomerulonephritis and acute rheumatic fever. Acute rheumatic fever, though exceedingly rare in the United States with an incidence of 0.5 cases per 100,000, remains a significant concern in developing countries, where estimated rates range from 8 to 51 per 100,000 [18]. Classic manifestations of acute rheumatic fever are defined by the JONES major criteria, encompassing migratory polyarthritis, carditis, subcutaneous nodules, erythema marginatum, and Sydenham chorea [19]. These manifestations reflect autoimmune cross-reactivity triggered by streptococcal antigens, emphasizing the importance of

early diagnosis and appropriate antimicrobial therapy to prevent immune-mediated sequelae. Suppurative complications arise from direct bacterial invasion and occur in approximately 1% of patients with GAS pharyngitis [20]. These include localized infections such as tonsillopharyngeal cellulitis or abscess, as well as otitis media and sinusitis. More severe presentations, although rare, can involve necrotizing fasciitis, bacteremia, meningitis, brain abscess formation, and jugular vein septic thrombophlebitis. Early recognition of suppurative complications is critical, as delayed treatment can result in significant morbidity. Supportive care, surgical drainage when indicated, and targeted antimicrobial therapy are the mainstays of management. While the overall incidence of serious complications is low, these outcomes highlight the importance of prompt diagnosis, adherence to treatment guidelines, and ongoing patient monitoring to ensure safe and effective recovery.

**Consultations**

Consultation with an otolaryngologist is indicated in selected cases of recurrent or complicated streptococcal pharyngitis. Tonsillectomy is considered a therapeutic option for patients who meet established criteria for recurrent infections. Specifically, surgical intervention may be warranted in individuals experiencing seven or more documented episodes of streptococcal pharyngitis within a single year, five episodes per year over the preceding two years, or three episodes per year over the previous three years [21][22][23]. These thresholds are based on evidence demonstrating a significant impact on quality of life, school or work attendance, and overall morbidity in patients with frequent infections. The decision for surgery should incorporate a thorough review of the patient's infection history, documentation of confirmed Group A Streptococcus in each episode, and assessment of associated complications. Additional factors may prompt earlier referral to an otolaryngology specialist, even in the absence of classic recurrence thresholds. Patients with multiple antibiotic allergies or documented intolerance to first-line treatments may benefit from surgical consideration to reduce the reliance on pharmacologic therapy and to minimize the risk of adverse drug reactions. A history of peritonsillar abscess is another indication for consultation, as it may suggest underlying anatomic or immunologic predispositions that could be addressed surgically. Furthermore, patients presenting with PFAPA syndrome, characterized by periodic fever, aphthous stomatitis, pharyngitis, and adenitis, may require specialist input, as tonsillectomy has demonstrated therapeutic benefit in reducing symptom frequency and severity [24]. Ultimately, consultation ensures that surgical decisions are individualized, balancing potential benefits against operative risks. Otolaryngology evaluation provides comprehensive assessment, including anatomical examination, review of prior infection patterns, and discussion of postoperative expectations. This multidisciplinary approach optimizes outcomes, prevents unnecessary interventions, and aligns clinical management with current evidence-based guidelines.

**Patient Education**

Effective prevention of streptococcal pharyngitis relies on a combination of behavioral interventions, hygiene practices, and patient education. Hand hygiene is a cornerstone measure, as it limits transmission of Group A Streptococcus through direct contact and contaminated surfaces. Regular and thorough handwashing, particularly after sneezing, coughing, or contact with respiratory secretions, reduces pathogen spread within households, schools, and workplace environments. Complementary strategies include adherence to respiratory etiquette, such as covering the mouth and nose when coughing or sneezing and the use of disposable tissues or masks when indicated. Patients diagnosed with GAS pharyngitis should be educated regarding the importance of limiting exposure to others during the infectious period. Exclusion from school or work is recommended until the patient is afebrile and has completed at least 12 to 24 hours of effective antibiotic therapy. This approach reduces the risk of secondary transmission and protects vulnerable populations, including young children, the elderly, and immunocompromised individuals. Patient education should also address adherence to the full prescribed antibiotic course, even after symptomatic improvement, to ensure complete bacterial eradication and to prevent relapse or development of complications. Additional guidance includes minimizing the sharing of personal items such as utensils, cups, or towels, and maintaining clean environmental surfaces in frequently used spaces. Awareness of early symptom recognition and prompt medical evaluation for recurrent or severe cases further supports infection control efforts. Integrating these preventive measures into patient education empowers individuals and caregivers to actively reduce the incidence and spread of streptococcal pharyngitis, reinforcing public health objectives and improving community health outcomes [22][23].

**Other Issues**

Several critical considerations guide the clinical management of streptococcal pharyngitis and should inform decision-making to optimize outcomes and minimize unnecessary interventions. Foremost among these is the use of rapid antigen detection testing (RADT) as the primary diagnostic modality. RADT demonstrates high specificity for Group A Streptococcus and provides rapid results, allowing clinicians to confirm infection efficiently. While clinical scoring systems such as Centor or McIsaac remain valuable for risk stratification, they should not replace RADT as the definitive diagnostic tool. The integration of clinical decision rules with RADT enhances diagnostic precision, reduces unnecessary antibiotic use, and supports evidence-based practice.

The recommended first-line treatment for confirmed streptococcal pharyngitis consists of penicillin or amoxicillin due to their proven efficacy, narrow spectrum, and the absence of documented resistance in Streptococcus pyogenes. In patients with documented penicillin allergy, alternative antibiotics may be used depending on the nature of the allergic reaction. Cephalexin may be considered for non-anaphylactic reactions, whereas macrolides or clindamycin are appropriate for patients with immediate hypersensitivity to β-lactam agents. It is important to note that the use of broad-spectrum antibiotics does not confer a reduction in treatment failure rates and may contribute to the development of antimicrobial resistance, underscoring the need for targeted therapy. Telehealth evaluations provide additional considerations for patient management. Patients scoring 0 or 1 on either the Centor or McIsaac criteria can be safely classified as low risk and may not require in-person assessment. Supportive care, including analgesics, hydration, and symptomatic management, is appropriate in these cases. This approach optimizes healthcare resource utilization while maintaining patient safety. Clinicians should also emphasize patient education regarding adherence to prescribed therapy, the importance of completing the full course of antibiotics when indicated, and measures to prevent transmission. Awareness of these factors ensures that management aligns with current guidelines, improves patient outcomes, and reduces the incidence of complications and unnecessary antibiotic exposure [23][24].

**Enhancing Healthcare Team Outcomes**

Optimal management of streptococcal pharyngitis relies on the coordinated efforts of an interprofessional healthcare team. Effective diagnosis and treatment are achieved when multiple disciplines collaborate, leveraging their specific expertise to provide timely, accurate, and evidence-based care. Primary care clinicians, emergency physicians, and nurse practitioners serve as the initial point of contact, evaluating patients' symptoms, applying clinical decision rules such as Centor or McIsaac, and ordering rapid antigen detection tests to confirm the presence of Group A Streptococcus. Otolaryngologists provide specialized consultation in cases of recurrent or complicated infections, including consideration of tonsillectomy for patients meeting defined thresholds of recurrent episodes. Nurses play a pivotal role in the continuum of care by performing diagnostic procedures, administering medications when necessary, and delivering comprehensive patient education. They reinforce adherence to antibiotic regimens, guide symptom management, and instruct patients on preventive strategies such as hand hygiene and minimizing exposure to others. Pharmacists contribute by ensuring appropriate antibiotic selection, counseling patients on correct dosing and administration, monitoring for potential adverse effects, and providing guidance on local antimicrobial resistance patterns to prevent ineffective therapy. Laboratory personnel provide critical support by performing rapid antigen detection tests, throat cultures, and other diagnostics accurately and efficiently, enabling clinicians to make informed treatment decisions. Infectious disease specialists and internists provide additional oversight for complex or recurrent cases, guiding treatment adjustments and evaluating risks of complications such as rheumatic fever or poststreptococcal glomerulonephritis. Clear communication among team members is essential to maintaining continuity of care, preventing errors, and facilitating timely interventions. Collaborative patient education ensures that individuals understand the importance of completing antibiotic courses, monitoring for persistent or worsening symptoms, and adhering to infection prevention measures. By integrating the skills of each discipline, the healthcare team reduces symptom duration, limits disease transmission, prevents complications, and enhances overall patient safety. This interprofessional approach not only improves outcomes for individual patients but also strengthens public health measures by reducing the spread of streptococcal infections within communities [24].

**Conclusion:**

Streptococcal pharyngitis continues to represent a significant cause of acute sore throat, particularly among pediatric and adolescent populations. Although typically self-limiting, the condition warrants careful clinical evaluation to prevent complications and reduce unnecessary antibiotic use. As demonstrated, reliance on symptoms alone is inadequate due to overlap with viral infections; therefore, structured diagnostic pathways incorporating clinical scoring systems and rapid antigen detection tests are critical for precise identification. Optimal treatment hinges on the use of narrow-spectrum antibiotics, especially penicillin or amoxicillin, which remain highly effective and are unchallenged by resistance. Adherence to full treatment duration is central to preventing relapse, rheumatic fever, and other complications. Preventive strategies such as hand hygiene, respiratory etiquette, and limiting exposure during the infectious period play an equally vital role in reducing community transmission. Interprofessional collaboration enhances patient outcomes across diagnostic, therapeutic, and educational domains. Nurses, pharmacists, physicians, laboratory staff, and specialists collectively ensure accurate testing, appropriate prescribing, adherence support, and timely recognition of complications. This approach not only strengthens individual patient care but also supports broader public health efforts by minimizing resistance and limiting disease spread. Overall, evidence-based management, patient education, and coordinated care are essential pillars

for improving outcomes and reducing the clinical and public health burdens of streptococcal pharyngitis.

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