# Adolescent Pharyngitis: A Common Complaint With Potentially Lethal Complications

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**ABSTRACT**

Acute pharyngitis is 1 of the 20 most common primary care diagnoses in the United States. The majority are attributed to viral etiologies or allergic rhinitis. Although Group A β-hemolytic streptococcus (GABHS) or Streptococcus pyogenes are the main bacterial causes of pharyngitis, new bacteria, specifically Fusobacterium necrophorum, are emerging. Rare yet potentially fatal complications—peritonsillar abscess or Lemierre's Syndrome—may also occur. The latest Clinical Practice Guideline for the Diagnosis and Management of GABHS was issued by the Infectious Diseases Society of America in 2012. Nurse practitioners must be astute in assessment and aware of current treatment recommendations.

**Keywords:** adolescent, Lemierre's Syndrome, pharyngitis, peritonsillar abscess

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A 16-year-old male presents to the nurse practitioner (NP) with a 2-day history of sore throat, swollen glands, and fever. He took over-the-counter analgesics/antipyretics with some relief but was awake all night with sweating, delirium, and weakness, according to his mother. He has not been drinking fluids because he cannot swallow. He is allergic to amoxicillin and takes no medications on a regular basis. He has a history of "strep" throat and 2 years ago was hospitalized with Lemierre's syndrome. His girlfriend and her younger siblings recently had "strep" throat.

The patient appears very ill and lethargic. His tympanic temperature is 102.8°F (last dose of acetaminophen was 10 hours ago), and his skin is warm and moist. His apical rate is regular with no murmurs at 100 beats per minute. Respirations are 30 per minute with nasal flaring. Blood pressure is 100/60 in his right arm (sitting) and SpO2 is 95% (room air). He is unable to open his mouth for adequate visualization. His neck is supple but has limited range of motion because of significant tender cervical lymphadenopathy.

As the NP, are you prepared to care for this patient? Most NPs would say "absolutely," yet how many are familiar with Lemierre's syndrome and what effect this prior diagnosis may have on the young patient's treatment? What impact does the latest Clinical Practice Guideline (CPG) for the diagnosis and treatment of Group A streptococcal pharyngitis (2012) have on his care?[1]

The purpose of this article is to review briefly the common causes of pharyngitis in the adolescent/young adult and highlight rare but potentially life-threatening complications that need prompt recognition. The newest update of the CPG issued by the Infectious Diseases Society of America (IDSA) is addressed, particularly changes in antibiotic therapy for pharyngeal bacterial infections.[1]

## THE PROBLEM

According to the Centers for Disease Control and Prevention (CDC), "symptoms referable to the throat" rank 11th of the 20 leading principal reasons for health care office visits.[2] The majority of these visits may be attributed to viral etiologies or allergic rhinitis and usually are episodic illnesses. Recent evidence indicates that overuse and inappropriate use of antibiotic therapy are leading to resistance.[3]

Group A β-hemolytic streptococcus (GABHS) occurs across the age spectrum, yet the peak incidence is in the 5- to 15-year-old age group.[4] In

a recent meta-analysis, Shaikh, Leonard, and Martin[5] found that in children younger than 18 years, the pooled prevalence of GABHS was 37% (95% CI: 32%-43%); in children younger than 5 years, 24% (95% CI: 21%-26%); and among asymptomatic children, 12% (95% CI: 9%-14%).

Although many parents and patients expect a prescription to be "called in" after describing symptoms over the phone, a thorough inspection is necessary to make a proper diagnosis. Unless a documented case of GABHS is known in the household, empiric antibiotic treatment without diagnostic testing is not indicated because "he/she always gets strep." The clinical presentation must be taken into consideration when assessing the adolescent with a sore throat. Visualization is key in diagnosing an early peritonsillar abscess, mononucleosis, or suspected bacterial infection. Airway patency assessment is critical by the NP.

The duration of the illness and accompanying symptomatology need to be investigated, as well as pertinent negatives. If the discomfort is greater in the morning or at night, PND, allergic rhinitis, mouth breathing, or gastroesophageal reflux (also after meals) may be the source of pharyngeal irritation.[6] Differential diagnoses vary according to age and presentation. When completing a history of present illness (HPI) with the adolescent, questions related to throat irritants should include use of alcohol, recreational drugs, cigarettes and exposure to other sources of smoke, toxic substances, infectious agents (including sexually transmitted infections), or trauma. Any sore throat persisting for 3 weeks or progressing in severity requires closer attention.[6]

Not only is the HPI important, but a complete description and exact site of discomfort assist in making a diagnosis. The patient may be referring to the entire pharynx and larynx, the soft tissues of the neck, or a small localized area.[6] For instance, an adolescent may present with a severe sore throat and describe an infectious process or a unilateral white patch that may be an aphthous ulcer upon examination.

A scoring system often used by health care providers, the Centor Criteria, lists 4 symptoms for evaluating patients to determine the probability of GABHS.[7] Refer to Table 1 for symptoms and scoring. The Centor score was modified by McIsaac and colleagues in a 1998 Canadian study. Recognizing that younger patients generally have GABHS more frequently than older ones, the McIsaac score adds 1 point to the Centor score for patients 3 to 14 years old and subtracts 1 point for those 45 or older.[8]

**Table 1. Centor Criteria: Prediction Model for GABHS[a]**

| Variable | Score |
|---|---|
| Tonsillar exudates | +1 |
| Swollen tender anterior cervical nodes | +1 |
| Lack of a cough | +1 |
| History of fever $\geq$ 38°C | +1 |

[a]Adapted with permission from RM Centor, MD.

Fine, Nizet, and Mandl[9] conducted a large-scale validation study of the Centor and McIsaac prediction models based on patients 3 years and older who presented to a retail health chain in the United States. The authors concluded that the scores were valid and their study more precisely classified the risk of GABHS among patients presenting to the retail health chain with the symptom of a painful throat. The CPG issued by the IDSA notes that the use of the 4-clinical feature algorithm had 32%-56% positive predictive accuracy but may lead to overtreatment in adults, considering only 5%-15% of acute pharyngitis is this population is from GABHS.[1]

## DIFFERENTIAL DIAGNOSES

There is less certainty in the diagnosis of pharyngitis in adolescents and young adults because they rapidly respond to antibiotics for GABHS, often have Group C (and other non-group A) β- hemolytic strep throat infections, and develop mononucleosis more often, as well as Fusobacterium (F) necrophorum.[10] Therefore, the differential diagnoses for the adolescent are more varied than the patient who is in his mid to late 20s or older.

### Viral Pharyngitis

Viruses that cause pharyngitis may include Epstein-Barr virus (EBV), herpes simplex virus (HSV), adenovirus, enterovirus, human immunodeficiency virus (HIV), cytomegalovirus (CMV), influenza, and parainfluenza viruses.[11] The patient generally presents with the chief complaint that his throat hurts, particularly upon awakening, is dry, and has difficulty

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