

## Literature review of concept of pharyngitis

Ganesh Aravind Sutar,

Assistant Professor, Rognidan Vikrutividnyan Department,

Late Kedari Redekar Ayurvedic Mahavidyalaya, Gadhinglaj, Maharashtra, India

Author Correspondence: [vaidyaganesh609@gmail.com](mailto:vaidyaganesh609@gmail.com)

### Abstract:

Using research from 1989 to 2018, the article provides family doctors with up-to-date information on diagnosing and treating pharyngitis by reviewing important symptoms, research techniques, and typical causes. Bacterial, fungal, or viral infections can cause pharyngitis, or inflammation of the throat; viral infections frequently go away on their own. Throat cultures and quick antigen tests are used to accurately diagnose bacterial infections, which require antimicrobial therapy. Since needless prescriptions do not speed recovery or reduce the risk of reinfection, the article highlights the significance of having a complete medical history and using antibiotics responsibly. This summary covers new pathogens of concern in clinical practice and lays the foundation for later sections that concentrate on diagnostic tests for acute pharyngitis.

**Key words:** Pharyngitis, laryngitis, throat infection, *Vrunda*.

### Introduction

*Streptococcus pyogenes* is the primary cause of pharyngitis, also referred to as sore throat, accounting for 20–40% of cases in children and

5–15% in adults. One the pathophysiology, animal models, adhesion, pharyngeal survival, and immunity associated with *S. pyogenes* are all covered in this chapter. Additionally, it discusses the clinical characteristics, diagnosis, and management of pharyngitis, examining both non-infectious (inflammatory/autoimmune, membranous, radiation-induced, chronic) and infectious (bacterial, viral, and fungal) causes. Due to its various causes and complications, pharyngitis is a common clinical complaint that requires precise diagnosis and treatment.

### 1. AIM AND OBJECTIVES:

- To study the concept of pharyngitis and management of pharyngitis.

### 2. MATERIAL-METHODE:

- For this study we referred various books for various references of pharyngitis.
- Related modern textbooks also referred for modern references

### 3. Literature review:

#### Etiology

One of the most frequent causes of clinic visits is pharyngitis, an inflammation of the

throat. It can be roughly classified into non-infectious (irrelative, environmental, autoimmune, etc.) and infectious (viral, bacterial, fungal) causes. The majority of acute cases are caused by viruses.

**Non-infectious:<sup>2</sup>**

Smoking, shouting, snoring, tracheal intubation, gastroesophageal reflux, medications (such as inhaled irritants), dry or cold air, indoor/outdoor pollutants, occupational chemicals, and systemic

inflammatory/autoimmune diseases are examples of non-infectious sore throats that indicate irritation or inflammation without an active infection.

**Epidemiologic :<sup>3</sup>**

Age, season, and environment all affect etiologic patterns: viral causes predominate overall; GAS and other bacteria are more common in school-aged children and during the winter; mixed viral–bacterial infections are common in children.

**Table no, 1** <sup>4,5,6</sup>

Factor	Role of factor in pharyngitis	Pathology
Rhinovirus, coronavirus, adenovirus, influenza, parainfluenza, RSV, enteroviruses, EBV, CMV, and HSV 1-2 are common respiratory viruses.	Most acute instances, particularly in adults	Commonly observed in pharyngitis
Group A Streptococcus (GAS)	Leading bacterial cause (5–15% in adults, ≈15–30% in children)	Important because of the danger of glomerulonephritis and rheumatic fever
Other streptococci (C, G)	Less common bacterial cause	Can resemble GAS and coexist with viruses.
Atypical bacteria	Mycoplasma pneumoniae, Chlamydia/Chlamydophila pneumoniae	Can function as co-pathogens or induce pure pharyngitis.
Other bacteria	Arcanobacterium haemolyticum, Fusobacterium necrophorum, N. gonorrhoeae, C. diphtheriae, mixed anaerobes	Some associated with Lemierre syndrome, diphtheria, Vincent’s angina
Fungus	Rare	primarily on inhalation steroids or immunocompromised

**Types of Pharyngitis:**

1. Acute Pharyngitis

## 2. Chronic Pharyngitis

### Risk Factors

Numerous risk factors from several domains have an impact on pharyngitis. In terms of demographics, it is most prevalent in school-age children (ages 5 to 15) and may be more common in some ethnic groups. Environmental variables are important; the prevalence is higher in winter and cold temperatures, as well as in busy places like homes and schools where close contact makes transmission easier. Healthcare-related issues can increase the burden of disease by delaying diagnosis and treatment, especially when it comes to obstacles to primary care services. Pharyngitis is also more likely to occur in those with host-related conditions such as eczema, a family history of rheumatic fever, and immunological weakness.

### Pathophysiology<sup>7,8</sup>:

Inflammation of the tonsils and/or pharyngeal mucosa brought on by non-infectious irritants or infectious agents (mostly bacteria and viruses) is known as pharyngitis. Mucosal damage, local immune and sensory pathway activation, and the ensuing pain, swelling, and systemic symptoms are the fundamental processes in all types.

### Infectious Pharyngitis:

#### Epithelial Injury and Immune Activation

- Common pathogens include respiratory viruses and group A Streptococcus (GAS), with mixed infections involving other bacteria (groups C/G streptococci, Arcanobacterium, Fusobacterium, Staphylococcus aureus), fungi, and Candida.
- Toll-like receptors on pharyngeal epithelium and innate immune cells identify pathogen-associated molecular patterns (PAMPs), which activate NF- $\kappa$ B and other pathways and produce IL-1, IL-6, TNF- $\alpha$ , chemokines, prostaglandins, and leukotrienes.

- Adaptive responses include Th1/Th17 and B-cell antibody production in tonsils; neutrophils, monocytes/macrophages, and dendritic cells are recruited.

- Strong cytokine expression (IL-6, TNF- $\alpha$ , and NF- $\kappa$ B) is also driven by Group A Streptococcus and *S. aureus*, which explains severe inflammation and consequences.

### Clinical Features of pharyngitis:

Pharyngitis, often known as sore throat, is typically an acute inflammation of the tonsils and pharynx that is primarily caused by viruses but can also occasionally be caused by bacteria, particularly Group A Streptococcus. Although there is overlap in clinical symptoms, some patterns can be used to infer severity and causation.

### Common Symptoms<sup>9,10</sup>

- Core symptoms (any cause): A sore throat that comes on suddenly or gradually and gets worse when you swallow.
- Swallowing is painful or challenging (odynophagia/dysphagia).
- Fever, chills, and an overall feeling of exhaustion.
- Headache, nausea, vomiting, and occasionally stomach pain, particularly in youngsters.
- Indicative of pharyngitis caused by bacteria, particularly Group A Streptococcus
  - A sudden, severe sore throat accompanied by a high temperature, chills, headache, and noticeable malaise.
  - The lack of rhinorrhea and cough frequently favors bacterial over viral causes.
  - Prominent cough, conjunctivitis, diarrhea, hoarseness, and rhinitis/rhinorrhea are signs of viral pharyngitis.

### Signs<sup>11,12</sup>

Table no. 2

Sr. No	Signs	What it reflected
1.	Pharyngeal erythema/hyperemia	Acute pharyngitis is a common and vague symptom.
2.	Tonsillar swelling and/or exudate	more often with germs, particularly Group A Streptococcus
3.	Tender, enlarged anterior cervical lymph nodes	Supports bacterial etiology
4.	Fever $\geq 38-38.5^{\circ}\text{C}$	Both are prevalent, although bacterial
5.	Palatal/palatal petechiae or hemorrhages	closely linked to Group A Streptococcus
6.	Rash/scarlatiniform rash	Can accompany pharyngitis (scarlet fever)
7.	noticeable edema or mucosal congestion with non-swollen tonsils	Described as characteristic of Omicron pharyngitis

### Diagnosis- Clinical Diagnosis

- **Noticeable edema or mucosal congestion with non-swollen tonsils**

In order to differentiate between viral, bacterial, and less frequent fungal causes, pharyngitis is diagnosed using a combination of clinical assessment and diagnostic tests. A comprehensive patient history and physical examination are crucial initial stages, with an emphasis on symptoms including tonsillar and posterior pharyngeal wall abnormalities, fever, mucosal congestion, and sore throat.

- **Laboratory Tests :**

The most common bacterial cause, Group A Streptococcus (GAS), can still be identified using rapid antigen detection tests (RADTs) and throat cultures, although nucleic acid

amplification tests (NAATs) are being utilized more frequently due to their greater sensitivity.

### Differential Diagnosis

- Pharyngitis
- Tonsillitis
- Diphtheria
- Purulent infections such as peritonsillar abscess
- Retropharyngeal abscess

### 9 Management<sup>13</sup>

- **General Treatment** The cornerstones of treatment are bed rest, lots of fluids, warm saline gargles or pharyngeal irrigations, and analgesics. Before meals, lignocaine viscous can ease severe cases of localized

throat irritation and make swallowing easier.

- **Specific Treatment** Specific treatment Streptococcal pharyngitis (Group A, beta-haemolyticus) is treated with penicillin G, 200,000 to 250,000 units orally four times a day for 10 days or benzathine penicillin G, 600,000 units once i.m. for patient

### Complications<sup>14</sup>

- Retropharyngeal and peritonsillar abscesses, epiglottitis, bacterial tracheitis, and post-tonsillectomy hemorrhage are serious bacterial complications that must be identified as soon as possible to avoid airway obstruction.
- Rheumatic fever, rheumatic heart disease, glomerulonephritis, and uncommon but serious disorders including pulmonary-renal syndrome, which is defined by extensive alveolar hemorrhage and rapidly progressing glomerulonephritis, can result from untreated streptococcal pharyngitis.
- Lemierre syndrome
- Pharyngeal perforation-related descending necrotizing mediastinitis is an uncommon but extremely serious consequence that need immediate surgical intervention.

### Discussion

The article provides a literature review on pharyngitis, synthesizing research from 1989 to 2018 to aid family doctors in diagnosing and treating this condition. Pharyngitis, characterized by the inflammation of the throat, can be triggered by bacterial, viral, or fungal infections, with viral cases often resolving independently. Accurate diagnosis, facilitated by throat cultures and rapid antigen tests, is crucial, especially for bacterial infections requiring antimicrobial treatment. The review emphasizes the importance of comprehensive medical history and the judicious use of antibiotics to prevent unnecessary prescriptions that do not enhance recovery or diminish reinfection risks.

### Conclusion

The article highlights *Streptococcus pyogenes* as the primary bacterial cause, accounting for 20-40% of cases in children and 5-15% in adults, while also addressing both infectious and non-infectious causes, including environmental factors and autoimmune conditions. Key factors influencing pharyngitis prevalence include age, seasonality, and contact proximity, particularly in children. The pathophysiology reveals inflammation resulting from both infectious agents and non-infectious irritants, leading to mucosal damage and subsequent immune response activation.

### References:

1. Sykes, E., Wu, V., Beyea, M., Simpson, M., & Beyea, J. (2020). Pharyngitis: Approach to diagnosis and treatment. *Canadian family physician Medecin de famille canadien*, 66 4, 251-257.
2. Renner, B., Mueller, C., & Shephard, A. (2012). Environmental and non-infectious factors in the aetiology of pharyngitis (sore throat). *Inflammation Research*, 61, 1041 - 1052. <https://doi.org/10.1007/s00011-012-0540-9>.
3. Koné, F., Dienta, L., Timbo, S., Cissé, N., Samaké, D., Guindo, B., Traoré, L., Soumaoro, S., Konaté, N., Diarra, K., Keita, M., & Mohamed, A. (2020). Study of Factors Associated with Acute Pharyngitis. *International Journal of Ophthalmology*, 6, 6. <https://doi.org/10.11648/j.ijoo.20200601.12>.
4. Bisno, A. (1996). Acute pharyngitis: etiology and diagnosis. *Pediatrics*, 97 6 Pt 2, 949-54. <https://doi.org/10.1542/peds.97.6.949>.
5. Middleton, D. (1996). PHARYNGITIS. *Primary Care*, 23, 719 - 739. [https://doi.org/10.1016/s0095-4543\(05\)70359-6](https://doi.org/10.1016/s0095-4543(05)70359-6).
6. Esposito, S., Blasi, F., Bosis, S., Droghetti, R., Faelli, N., Lastrico, A., & Principi, N. (2004). Aetiology of acute pharyngitis: the role of atypical bacteria. *Journal of*

- medical microbiology*, 53 Pt 7, 645-51. <https://doi.org/10.1099/jmm.0.05487-0>.
7. Caldwell, J., Ledebor, N., & Boyanton, B. (2024). Review: Known, Emerging, and Remerging Pharyngitis Pathogens. *The Journal of Infectious Diseases*, 230, S173 - S181. <https://doi.org/10.1093/infdis/jiae391>.
  8. Soderholm, A., Barnett, T., Sweet, M., & Walker, M. (2017). Group A streptococcal pharyngitis: Immune responses involved in bacterial clearance and GAS-associated immunopathologies. *Journal of Leukocyte Biology*, 103, 193 - 213. <https://doi.org/10.1189/jlb.4mr0617-227rr>.
  9. Zuleika, P., & , A. (2023). Characteristics of Acute Pharyngitis at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia. *Sriwijaya Journal of Otorhinolaryngology*. <https://doi.org/10.59345/sjorl.v1i1.33>.
  10. Anjos, L., Marcondes, M., Lima, M., Mondelli, A., & Okoshi, M. (2014). Streptococcal acute pharyngitis.. *Revista da Sociedade Brasileira de Medicina Tropical*, 47 4, 409-13. <https://doi.org/10.1590/0037-8682-0265-2013>.
  11. Anjos, L., Marcondes, M., Lima, M., Mondelli, A., & Okoshi, M. (2014). Streptococcal acute pharyngitis.. *Revista da Sociedade Brasileira de Medicina Tropical*, 47 4, 409-13. <https://doi.org/10.1590/0037-8682-0265-2013>.
  12. Choby, B. (2009). Diagnosis and treatment of streptococcal pharyngitis.. *American family physician*, 79 5, 383-90.
  13. Diseases of EAR, NOSE AND THROAT FIFTH EDITION PL Dhingra MS, DLO, MNAMS page no 268
  14. Hiltbrand, M., & Cushing, E. (2025). A Rare Sequela of Untreated Streptococcus Pharyngitis: A Case Report. *The Laryngoscope*, 135, 1940 - 1942. <https://doi.org/10.1002/lary.32011>.

Conflict of Interest: *Non*

Source of funding: *Nil*

*Cite this Article:*

*Ganesh Aravind Sutar,*

*Literature review of concept of pharyngitis.*

*Ayurline: International Journal of Research In Indian Medicine: 2026;10(3)*