Introduction

Sore throat is a common symptom and is the result of inflammation of the throat (pharynx). It ranges in severity from a feeling of scratchiness to severe pain. Acute pharyngitis refers to a sore throat that comes on suddenly whereas chronic pharyngitis refers to a sore throat that lasts a long time. Complaints of sore throat are common in children and adolescents.3,4

Most sore throats are viral in aetiology, are self-limiting and can resolve without medical intervention. Sore throats can also be caused by bacteria with group A beta-haemolytic streptococcus (GABHS) being the leading bacterial cause accounting for approximately 15 percent of all cases.6,7

Proper management of sore throat depends on appropriate interpretation of clinical findings. Therefore, the strategy for diagnosis would be to distinguish between the many patients with viral aetiology that would not benefit from antimicrobial treatment and the minority with acute GABHS pharyngitis that would benefit from such therapy.3

Aetiology

A sore throat is generally a symptom of an inflammatory process in the tonsils, pharynx or nasopharynx.9,10 Most sore throats have a viral aetiology and can resolve without the need for pharmacological management. Common viral causes of sore throats are enteroviruses, adenoviruses, influenza A and B, para-influenza and Epstein-Barr virus.7

GABHS is the most common bacterial cause of pharyngitis and is spread from person to person via the respiratory droplet route. Groups B, C and G streptococci and other bacteria such as Mycoplasma pneumonia and Arcanobacterium haemolyticum are found rarely in adolescents with pharyngitis. In adults, bacterial pharyngitis accounts for 5–15% of cases, whereas the number of cases increases to approximately 30% in children.8,11 GABHS pharyngitis is uncommon in children < 3 years old.12

Other causes not related to viral or bacterial aetiology are:

- Dry air
- Cigarette smoking or second-hand smoke
- Hay fever
- Breathing heavily polluted air or chemical fumes
- Gastric reflux (heartburn)
- Swallowing sharp foods that hurt the lining of the throat

Abstract

Sore throat (also known as pharyngitis) is a common symptom encountered in general practice and a major cost and cause for antibiotic prescriptions.1 Viruses are, in the majority of cases, the most common pathogen for sore throat with infectious aetiology.2 For sore throat with bacterial aetiology, group A beta-haemolytic streptococcus (GABHS) is the most significant causative pathogen. The increase in antimicrobial resistance due to antimicrobial overuse, has led to a need for accurate diagnosis.3,4,5

Sore throat - viral vs strep throat

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Clinical features

A viral sore throat is more common in summer and autumn and usually presents with nasal discharge, nasal congestion and cough.10

A bacterial sore throat usually presents in winter or early spring and is most common in children aged between five and 15 years of age.5,6,7 It is transmitted via respiratory secretions and has an incubation period of 24 to 72 hours.13

Table I. Summary of viral vs GABHS sore throat symptoms5,6,7,10,13

<table>
<thead>
<tr>
<th>Viral sore throat</th>
<th>GABHS sore throat</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cough</td>
<td>• Sudden onset of sore throat</td>
</tr>
<tr>
<td>• Conjunctivitis</td>
<td>• Dysphagia (difficulty in swallowing)</td>
</tr>
<tr>
<td>• Coryza</td>
<td>• Fever</td>
</tr>
<tr>
<td>• Hoarseness</td>
<td>• Malaise</td>
</tr>
<tr>
<td>• Anterior stomatitis</td>
<td>• Headache</td>
</tr>
<tr>
<td>• Discrete ulcerative lesions</td>
<td>• Nausea, vomiting, abdominal pain</td>
</tr>
<tr>
<td>• Diarrhoea</td>
<td>• Chills</td>
</tr>
<tr>
<td>• Redness in the throat</td>
<td>• Loss of appetite</td>
</tr>
<tr>
<td>• Tender, swollen glands in the neck</td>
<td>• Tender anterior cervical lymphadenopathy</td>
</tr>
<tr>
<td>• A tender feeling in the throat that often makes swallowing, breathing and speaking painful</td>
<td>• Pharyngeal erythema or exudate</td>
</tr>
</tbody>
</table>

Diagnosis

Accurate clinical diagnosis is challenging in practice and it is not always possible to distinguish between viral and bacterial aetiology. The practical approach to diagnosing a patient with sore throat rests on taking a good history and a thorough examination.1,14

The Centor score for the clinical diagnosis of sore throat is used widely and may help to categorise the individual patient’s risk level for GABHS infection. It is based on the following four signs and symptoms1,2,9:

- Temperature > 38 °C
- Tonsillar exudate
- Painful and enlarged anterior cervical lymph nodes
- Lack of cough or catarrhal symptoms such as blocked, stuffy, runny nose or headache or facial pain, etc

Each of the above symptoms is given one point and depending on the total score, the diagnosis can be assessed as follows2:

- 4 points – patients have a high probability for GABHS
- 2–3 points – patients have a moderate probability for GABHS
- 0–1 point – patients have a low probability for GABHS

A score of three to four of the criteria has a 40–60% positive predictive indication of GABHS. The absence of three to four of the criteria has a 80% negative predictive indication of GABHS.

The Centor score should, however, be used to assist the clinician on whether to prescribe an antibiotic, but should not be relied upon for accurate diagnosis.14

Laboratory testing

The disadvantage of throat culture is the delay in obtaining culture results, which may take 18–24 hours or longer.7 Therefore, most guidelines and reviews do not advocate throat culture as necessary for routine diagnosis for GABHS.

In South Africa, extensive use of throat swabs for GABHS confirmation is not feasible due to increased direct and indirect financial implications and extra healthcare visits.15,16

Duration

Viral pharyngitis usually lasts five to seven days.

For bacterial pharyngitis, there is often relief of symptoms within two to three days after an antibiotic has been started.15,16

Goal of treatment6,10

- To decrease symptoms
- To prevent transmission especially in children
- To prevent supplicative complications such as retropharyngeal abscess, sinusitis or peritonsillar abscess
- To prevent acute rheumatic fever which is a significant problem in developing countries

Symptomatic treatment

Symptomatic treatment is generally reserved for sore throat without bacterial complications and includes the following4:

- Rest
- Gargle with salt water
- Suck on lozenges
- Use a cool mist humidifier to add moisture to the air
- Drink enough fluids, clear soups, etc
- Use a warm compress around the neck
- Do not smoke or inhale second-hand smoke
- Antipyretics
- Pain management

Pharmacological treatment

**Penicillin VK**

Penicillin VK is the drug of choice in all guidelines for pharyngitis caused by GABHS. Penicillin VK has proven to be effective, has a relatively narrow spectrum of activity, lacks resistance by GABHS and is low cost. Penicillin VK decreases the risk of acute rheumatic fever and provides symptom relief in GABHS.1,6,12,13

Penicillin VK should be given 30 minutes before food, as food decreases absorption. A 10-day course is recommended. Refer to Table II for penicillin VK recommended dosages.1,6,12,13

A single intramuscular dose of benzathine penicillin can be given when a patient is unlikely to complete a course of oral antibiotics.6,13,15
Amoxicillin

Amoxicillin is also prescribed for GABHS pharyngitis in place of penicillin VK. It is often prescribed as it is more palatable and the cost is comparable to penicillin VK. However, amoxicillin has a broader spectrum of activity resulting in a greater possibility of the development of antimicrobial resistance. Also, a rash can occur when Epstein-Barr virus (EBV) infection is present. This can lead to an inaccurate diagnosis of penicillin allergy or sometimes a severe skin reaction. Refer to Table II for amoxicillin recommended dosages.

Alternative antibiotics

A 10-day course of first generation cephalosporins can be used in penicillin allergic patients (for those not anaphylactically sensitive). However, cephalosporins generally are broader spectrum agents than penicillin VK or amoxicillin, are considerably more expensive and have a greater susceptibility for development of GABHS resistance.

Macrolide agents should be reserved for penicillin-allergic patients due to GABHS resistance. Refer to Table II for azithromycin and clarithromycin recommended dosages.

Prognosis

The symptoms of viral pharyngitis usually resolve within seven to 10 days and complications are extremely rare.

GABHS pharyngitis treated with antibiotics results in a decrease in symptom intensity and duration. Treatment also prevents long-term complications of rheumatic fever. General symptom resolution occurs within one to a few days. However, infected patients are not immune to reinfection.

How to prevent infections of the throat?

In order to prevent the spread of viral and GABHS:

- Wash hands after coughing and before touching food, dishes, etc
- Use a tissue when coughing and dispose after use
- Food and eating utensils should not be shared with others

These measures are especially important for GABHS as no vaccine is available. Patients who have been diagnosed as having GABHS should be advised to avoid contact with other people until antibiotics have been used for at least 24 hours.

Persistent sore throat

The initial diagnosis should be reconsidered, if the patient presents with persistent sore throat and has not responded to a course of antibiotics.

Adult patients presenting with recurrent sore throat may benefit from tonsillectomy.

Urgent referral must be considered for the following:

- Red and/or white patches or swelling or ulceration of the oral/pharyngeal mucosa for more than three weeks
- Dysphagia (difficulty in swallowing) for more than three weeks
- Persistent painful or sore throat for three to four weeks
- Unexplained hoarseness with persistent sore throat

Non-infectious causes of sore throat must also be considered such as chronic irritation from cigarette smoking, hay fever, alcohol or gastro-oesophageal reflux disease.

Conclusion

The management of sore throat is still controversial with various guidelines and diagnostic criteria. It is also still a high cause and cost for antibiotic prescriptions. Education of the patient is important in understanding that pharyngitis is more likely to have a viral origin than a bacterial one. Patient education is also necessary regarding the use of antimicrobial treatment for GABHS. It is essential that the patient understands that the successful treatment with antimicrobial therapy depends upon compliance with treatment and the prospect of treatment failure and antibiotic resistance rises with poor compliance.
References

2. ISKRA guidelines on sore throat: diagnostic and therapeutic approach – Croatian national guidelines [homepage on the Internet]. Available from: http://iskra.bfm.hr/eng/