Clinical Guidelines for the State of Qatar

The diagnosis and management of tonsillitis in adults and children

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Diagnosis and management of tonsillitis in adults and children
(Date of next revision: December 2018)
1 Information about this guideline

1.1 Objective and purpose of the guideline
The objective and purpose of this guideline is to define the appropriate diagnosis and management of tonsillitis in adults and children aged over 3 years. The objective is to reduce inappropriate prescribing and referral of patients presenting to any provider organisation (i.e. hospitals or clinics) in Qatar. It is intended that the guideline will be used primarily by primary care physicians.

1.2 Scope of the guideline
This guideline covers the following aspects of care:
- Presentation and management of acute tonsillitis.
- Adults and children aged over 3 years.
- Primary care management.
- Indications for referral for tonsillectomy.

Aspects of care not covered in this guideline are:
- Management of peritonsillar abscess or cellulitis.
- Management of tonsillectomy patients.
- Management of pregnant women.
- Management of immunocompromised patients.
- Children aged less than 3 years.

1.3 Editorial approach
This guideline document has been developed and issued by the Ministry of Public Health of Qatar (MOPH), through a process which aligns with international best practice in guideline development and localisation. The guideline will be reviewed on a regular basis and updated to incorporate comments and feedback from stakeholders across Qatar.

The editorial methodology, used to develop this guideline, has involved the following critical steps:

- Extensive literature search for well reputed published evidence relating to the topic.
- Critical appraisal of the literature.
- Development of a draft summary guideline.
- Review of the summary guideline with a Guideline Development Group, comprised of practising physicians and subject matter experts from across provider organisations in Qatar.
- Independent review of the guideline by the Clinical Governance body appointed by the MOPH, from amongst stakeholder organisations across Qatar.

Explicit review of the guideline by patient groups was not undertaken.

Whilst the MOPH has sponsored the development of the guideline, the MOPH has not influenced the specific recommendations made within it.
1.4 Sources of evidence
The professional literature published in the English language has been systematically queried using specially developed, customised, and tested search strings. Search strategies are developed to allow efficient yet comprehensive analysis of relevant publications for a given topic and to maximise retrieval of articles with certain desired characteristics pertinent to a guideline.

For each guideline, all retrieved publications have been individually reviewed by a clinical editor and assessed in terms of quality, utility, and relevance. Preference is given to publications that:

1. Are designed with rigorous scientific methodology.
2. Are published in higher-quality journals (i.e. journals that are read and cited most often within their field).
3. Address an aspect of specific importance to the guideline in question.

Where included, the ‘goal length of stay’ stated within this guideline is supported by and validated through utilisation analysis of various international health insurance databases. The purpose of database analysis is to confirm the reasonability and clinical appropriateness of the goal, as an achievable benchmark for optimal duration of inpatient admission.

1.5 Evidence grading and recommendations
Recommendations made within this guideline are supported by evidence from the medical literature and where possible the most authoritative sources have been used in the development of this guideline. In order to provide insight into the evidence basis for each recommendation, the following evidence hierarchy has been used to grade the level of authoritativeness of the evidence used, where recommendations have been made within this guideline.

Where the recommendations of international guidelines have been adopted, the evidence grading is assigned to the underlying evidence used by the international guideline. Where more than one source has been cited, the evidence grading relates to the highest level of evidence cited:

- **Level 1 (L1):**
  - Meta-analyses.
  - Randomised controlled trials with meta-analysis.
  - Randomised controlled trials.
  - Systematic reviews.

- **Level 2 (L2):**
  - Observational studies, examples include:
    - Cohort studies with statistical adjustment for potential confounders.
    - Cohort studies without adjustment.
    - Case series with historical or literature controls.
    - Uncontrolled case series.
  - Statements in published articles or textbooks.

- **Level 3 (L3):**
  - Expert opinion.
  - Unpublished data, examples include:
    - Large database analyses.
    - Written protocols or outcomes reports from large practices.
In order to give additional insight into the reasoning underlying certain recommendations and the strength of recommendation, the following recommendation grading has been used, where recommendations are made:

- **Recommendation Grade A1 (RGA1):** Evidence demonstrates at least moderate certainty of at least moderate net benefit.
- **Recommendation Grade A2 (RGA2):** Evidence demonstrates a net benefit, but of less than moderate certainty, and may consist of a consensus opinion of experts, case studies, and common standard care.
- **Recommendation Grade B (RGB):** Evidence is insufficient, conflicting, or poor and demonstrates an incomplete assessment of net benefit vs harm; additional research is recommended.
- **Recommendation Grade C1 (RGC1):** Evidence demonstrates a lack of net benefit; additional research is recommended.
- **Recommendation Grade C2 (RGC2):** Evidence demonstrates potential harm that outweighs benefit; additional research is recommended.
- **Recommendation of the GDG (R-GDG):** Recommended best practice on the basis of the clinical experience of the Guideline Development Group members.

### 1.6 Guideline Development Group members

The following table lists members of the Guideline Development Group (GDG) nominated by their respective organisations and the Clinical Governance Group. The GDG members have reviewed and provided feedback on the draft guideline relating to the topic. Each member has completed a declaration of conflicts of interest, which has been reviewed and retained by the MOPH.

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1.7 Responsibilities of healthcare professionals
This guideline has been issued by the MOPH to define how care should be provided in Qatar. It is based upon a comprehensive assessment of the evidence as well as its applicability to the national context of Qatar. Healthcare professionals are expected to take this guidance into account when exercising their clinical judgement in the care of patients presenting to them.

The guidance does not override individual professional responsibility to take decisions which are appropriate to the circumstances of the patient concerned. Such decisions should be made in consultation with the patient, their guardians, or carers and should consider the individual risks and benefits of any intervention that is contemplated in the patient’s care.

1.8 Abbreviations used in this guideline
The abbreviations used in this guideline are as follows:

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tr>
<td>GABHS</td>
<td>Group A beta-haemolytic <em>streptococcus</em></td>
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<td>ASO</td>
<td>Anti-Streptolysin-O</td>
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<tr>
<td>CBC</td>
<td>Complete blood count</td>
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<td>RAT</td>
<td>Rapid Antigen Testing</td>
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<td>EBV</td>
<td>Epstein-Barr virus</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>AIDS</td>
<td>Acquired Immunodeficiency Disease</td>
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2 Organisation of care in Qatar

2.1 Role of the Ministry of Public Health
The Ministry of Public Health of Qatar (MOPH) has been given the responsibility to guide reform in Qatar in order to establish one of the world’s most admired and renowned healthcare systems. The MOPH’s role is to create a clear vision for the nation’s health direction, set goals and objectives for the country, design policies to achieve the vision, regulate the medical landscape, protect the public’s health, set the health research agenda, and monitor and evaluate progress towards achieving those objectives.

The MOPH has the dual mandate to develop policies and programmes to improve the people’s health so that they may enjoy longer and more productive lives, and to lay the foundation for a vibrant country for decades to come.

The MOPH does not provide clinical services. Instead its goal is to vest responsibility for care in the hands of both public and private sector healthcare institutions, whilst regulating, monitoring, and evaluating this care against agreed upon outcomes. The MOPH is committed to establishing an environment that promotes quality and wellness through policies in such areas as public health, health insurance, information technology, licensure and credentialing; and continuing medical education.

2.2 Provision of care
Healthcare provision in Qatar comprises of the following main entities:

- **Public Sector:**
  - Primary care health centres - provided by the Primary Health Care Corporation of Qatar.
  - Secondary and tertiary care hospitals and outpatient clinics - provided by the Hamad Medical Corporation (HMC).
  - Paediatric Emergency Care provided by specialist Paediatric Emergency Centres within HMC.
  - QP Clinics for personnel and families of Qatar Petroleum.
  - Sports Medicine centre provided by a specialist Sport Medicine Hospital – Aspetar.
  - Ministry of Interior clinics for personnel and families of Qatar’s police services.
  - Ministry of Defence clinics for personnel and families of Qatar’s armed forces.
  - Specialist obstetric, gynaecological and paediatric care provided by Sidra Medical & Research Center.

- **Private sector:**
  - A range of single-handed generalist and specialist clinics.
  - Polyclinics.
  - Specialist hospitals.

The aim of the MOPH’s National Health Strategy is to rebalance healthcare delivery with a greater emphasis on primary and community care and an expansion of the role played by the private sector.
3 Key recommendations of the guideline

The key recommendations of this guideline are:

Care settings:
- Tonsillitis and other causes of sore throat are conditions that should be recognised and managed primarily in a primary care setting [R-GDG].
- Significant complications of tonsillitis, or serious systemic illness, should be managed in secondary care [R-GDG].

Investigation:
- Rapid Antigen Testing and throat swab cultures can be used in selected cases where the clinical history and examination are indicative of bacterial infection [5,6][L2, RGA2].

Treatment:
- Routine treatment of tonsillitis should be symptomatic [5,24][L1, RGA1]
- Antibiotic use should be reserved for those most likely to have any of the following [2,5,41][L1, RGA1]:
  - A bacterial infection.
  - A complication of tonsillitis.
  - Significant risk factors for developing a complication.
- If antibiotic therapy is indicated, a 10 day course of oral phenoxymethylpenicillin (penicillin V is recommended as first-line treatment [5][L1, RGA1].

Tonsillectomy:
- Watchful waiting rather than tonsillectomy is a reasonable management approach where the severity of symptoms or frequency of episodes is unclear [5][L1, RGA1].
- Tonsillectomy should be considered for adults and children when the following apply [4,5,9][L1, RGA1]:
  - Sore throats are due to acute tonsillitis.
  - The episodes of sore throat are disabling and prevent normal functioning.
  - Seven or more well documented, clinically significant, adequately treated sore throats in the preceding year or,
  - Five or more such episodes in each of the preceding two years or,
  - Three or more such episodes in each of the preceding three years.
  - Enlarged tonsils which are suspected to be causing obstruction of the airway AND has serious effects on health and wellbeing e.g. sleep apnoea.
  - Possible malignant disease of the tonsils.
4 Background information

4.1 Definition
Tonsillitis is a term used to describe [1,2,3]:
- An acute infection and inflammation of the palatine tonsils.
- Acute pharyngitis, laryngitis, tonsillitis or acute exudative tonsillitis may all cause inflammation of the throat and therefore these are considered together under the collective term of ‘sore throat’.

4.3 Aetiology
Tonsillitis can be caused by either bacterial or viral infection. The most common bacterial cause is Group A beta-haemolytic streptococcus (GABHS) also known as Streptococcus pyogenes (S. pyogenes), which causes 15-30% of sore throats in children and 10% in adults [4].

- Common causes of tonsillitis include [4]:
  - Rhinovirus.
  - Coronavirus.
  - Parainfluenza virus.
  - Influenza types A and B.
  - Adenovirus.
  - Herpes simplex virus type 1.
  - Epstein-Barr virus.
  - Cytomegalovirus.
  - Coxsackie viruses.
  - Haemophilus influenzae (H. influenzae) (non typeable).
  - Group C and G streptococcus.

- Rare causes of tonsillitis include [1,4]:
  - HIV.
  - Neisseria gonorrhoeae (N. gonorrhoeae).
  - Neisseria meningitidis (N. meningitidis).
  - Corynebacterium diphtheria (C. diphtheria).
  - Chlamydia pneumoniae (C. pneumoniae).
  - Mycoplasma pneumoniae (M. pneumoniae).
  - Candida species.

- Non-infectious causes of sore throat and/or tonsillitis include [5-9]:
  - Gastro-oesophageal reflux.
  - Physical or chemical irritation, e.g. from a nasogastric tube, chronic irritation from smoking.
  - Stevens-Johnson syndrome.
  - Kawasaki disease.
  - Oral mucositis secondary to radiotherapy or chemotherapy, which may become secondarily infected.
  - Haematological disorders, such as leukaemia, aplastic anaemia.
  - Medication side effects e.g. cytotoxic drugs, carbimazole, and sulfasalazine.
  - Tonsillar cancer.
4.3 Natural history
For the majority of patients, the following apply [10-12]:
- If caused by a viral or bacterial infection, symptoms resolve within:
  o 3 days in 40% of patients.
  o 1 week in 85% of patients.
- Symptoms of Infectious Mononucleosis (Glandular Fever) usually resolve within 1-2 weeks although mild cases may resolve within days, however lethargy may continue for months or years in rare cases.

4.4 Complications
Possible complications of tonsillitis can be classed as suppurative or non-suppurative.

Suppurative complications include [3,4,10,11,13-20]:
- Peritonsillar cellulitis or abscess (also known as quinsy) presents a risk of airway compromise, aspiration of pus from the abscess, or death due to vascular involvement.
- Parapharyngeal abscess – may compromise breathing or cause rupture of the carotid artery.
- Suppurative cervical lymphadenitis.
- Otitis media.
- Mastoiditis.
- Acute rhinosinusitis.
- Metastatic infection, e.g. brain abscess, endocarditis, meningitis, or liver abscess.
- Streptococcal toxic shock syndrome.

Non-suppurative complications [10,11,14]:
- Rheumatic fever.
- Post-streptococcal glomerulonephritis.

4.5 Higher risk groups
Patients at higher risk of developing tonsillitis include [1,21]:
- Children aged 5-10 years.
- Young adults aged 15-25 years.
- Patients with comorbidities.
5 Presentation

5.1 Clinical presentation
Typical presenting features of tonsillitis include [1,2]:
- Fever.
- Headache.
- Malaise.
- Nausea and occasionally vomiting – especially in children.
- Severe throat pain.
- White spots on the tonsils.
- Enlarged lymph nodes:
  - Commonly anterior cervical nodes (jugulodigastric in particular).
  - May also occur in the abdomen.
- Nasal features suggest a viral aetiology such as the common cold.

5.2 Indications for immediate referral to hospital
It is important to recognise serious illness by looking for the following symptoms and signs, and ensure they are assessed and managed immediately in an appropriate secondary care setting [3][R-GDG].

Immediate referral to hospital is warranted for the following presentations [3-5,22]:
- A sore throat with any of the following:
  - Stridor or respiratory distress.
  - Progressive difficulty swallowing or drooling.
  - Increasing pain.
  - Severe systemic symptoms e.g. haemodynamic instability.
- Suspected severe suppurative complications which carry a risk of airway compromise or rupture of the abscess:
  - Peritonsillar cellulitis or abscess (quinsy).
  - Parapharyngeal abscess.
  - Retropharyngeal abscess.
- Dehydration or reluctance to take any fluids.
- Immunosuppression.
- Embedded foreign body.
- Suspected Kawasaki disease.
- Suspected diphtheria – characteristic tonsillar or pharyngeal membrane.

5.3 Indications for urgent referral to an ENT specialist
The following features should prompt an urgent referral to a specialist for evaluation [1,3,23-27]:
- An unexplained, persistent sore or painful throat lasting 3-4 weeks.
- Red patches; or both red and white patches; ulceration, or swelling of the oral/pharyngeal mucosa for more than 3 weeks.
- Difficulty swallowing for more than 3 weeks.
- Oral mucositis.
6 History

Adults and children presenting with symptoms that suggest tonsillitis, should be offered a clinical assessment [3].

Ask specifically about the following [2-5,13,22]:
- Frequency and duration of sore throats. Note whether the frequency of episodes is increasing or decreasing:
  - Patients with very frequent infections may need earlier intervention.
- Severity – as indicated by the degree of interference with day-to-day functioning.
- Difficulty swallowing.
- Reluctance to take fluids.
- Presence of fever during episodes.
- Duration of symptoms.
- Snoring or clinical evidence of obstructive sleep apnoea.
- Presence of other symptoms that may indicate a particular aetiology, e.g. hepatosplenomegaly, rash, etc.
- Take into account other medical conditions and medication which may suggest an increased susceptibility to infection and lower the threshold for treatment.
- Contact with known cases of Group A streptococcal disease.

7 Examination

General examination is recommended in all patients and should be extended according to symptoms and signs [3, 30].

At a minimum, examination should look for the following [2,3,30]:
- Signs of dehydration.
- Rashes.
- Enlarged erythematous tonsils or pharynx – with or without exudate.
- Peritonsillar cellulitis or abscess (quinsy).
- Enlarged cervical lymph nodes.
- Hepatosplenomegaly.
- Changes of the oral mucosa and tongue indicative of cancerous change.

If acute epiglottitis is suspected, do not examine the throat [3].
8 Investigations

Distinguishing between a viral and bacterial aetiology is one of the main considerations in the diagnosis and management of tonsillitis [30], as a diagnosis of an infection with Group A beta-haemolytic streptococcus (GABHS) may warrant antibiotic use [3].

Possible investigations include throat cultures or Rapid Antigen Testing [3]. However, neither is able to differentiate between carrier states and an active infection [31]. The asymptomatic carrier rate for GABHS is up to 40%. Such carriers have low infectivity and are not at risk of developing complications [3,31].

Anti-Streptolysin-O (ASO) titres, CBC and peripheral film; or Monospot testing, are not routinely recommended [3]. Use only if Infectious Mononucleosis is suspected [R-GDG].

Features indicative of a viral sore throat include [2-4]:
- Coryzal symptoms.
- Throat pain.
- Fever.
- Malaise.
- Headache.
- Cough.
- The pharynx may look normal or show a mild amount of erythema and oedema.

Features indicative of a streptococcal sore throat include [3,4,12,26,32-36]:
- Pharyngeal pain.
- Odynophagia.
- Headache.
- High temperature.
- Nausea, vomiting, and abdominal pain are common in children.
- A patchy whitish exudate present on the tonsils. The uvula is often oedematous.
- The cervical lymph nodes may be enlarged and tender.
- Infection with certain strains of streptococci produces a rash characteristic of scarlet fever.

8.1 Centor scoring system

The Centor scoring system is recommended to help categorise a patient's risk for GABHS infection and aid the decision to prescribe antibiotics [3].

Under the Centor system one point is awarded for each of the following [33]:
- Tonsillar exudate.
- Tender anterior cervical lymph nodes.
- History of fever.
- Absence of cough.

Interpretation of scores [1,3,9,22,30,33,37]:
- Score of 3-4 suggests a 40-60% likelihood of GABHS.
- Score <3 indicates infection with GABHS is unlikely.
**NB:** Although the Centor score can aid management, it is not a diagnostic tool [30,33][L2]. The score is also not valid for children younger than age 3 years [30,33][L2]. Likelihood of GABHS also depends on age, local prevalence, and seasonal variation [30,33][L2]. The Centor scoring system may result in high antibiotic use due to its low specificity for bacterial infection [33,38][L2].

### 8.2 Rapid Antigen Testing (RAT)

Rapid Antigen Testing is a point-of-care test to detect bacterial causes [3][L2, RGA2]:
- Used to help distinguish between viral and bacterial causes of tonsillitis when clinical picture is not clear.
- Can produce results within 10 minutes.

### 8.3 Throat cultures

Throat cultures [3,39][L2, RGA2]:
- Should not be routinely carried out in primary care for the management of sore throat where a viral cause is strongly suspected.
- In children, throat cultures may be used where bacterial and viral causes cannot be differentiated clinically.
- They may be used to establish aetiology of recurrent severe episodes in adults when considering referral for tonsillectomy.
- A positive throat culture for GABHS makes the diagnosis of a streptococcal sore throat more likely, but is not diagnostic of an acute infection.
- A negative culture does not rule out GABHS.
- Results will vary according to technique, culture site, and culture conditions.
- If patient has started antibiotics prior to diagnosis, cultures may remain positive for a short period of time.

### 9 Differential diagnosis

The differential diagnosis of a sore throat includes the following:

- **Infectious mononucleosis (Glandular Fever)** [3,4,12,26,32-34]:
  - Most often caused by Epstein-Barr virus (EBV).
  - A fever of 38-39°C (100.4°F – 102.2°F) usually present.
  - Cervical lymphadenopathy is symmetrical.
  - Tonsils are enlarged.
  - The pharynx may be erythematous with exudate.
  - May present with splenomegaly, jaundice, and rashes.
  - There is usually moderate bradycardia.
  - Often unable to swallow.

- **Scarlet fever** [4,32]:
  - Caused by a streptococcal infection.
  - Associated with characteristic erythematous rash which later desquamates.
  - Tongue is initially covered with a white coat – enlarged red papillae (strawberry tongue) may be seen.
• Acute herpetic pharyngitis [4]:
  o Primary infection with herpes simplex virus may present as acute sore throat.
  o Pain is moderate to severe.
  o Possible cervical lymphadenopathy, fever, and exudate.
  o May see vesicles and shallow ulcers on the palate with gingivostomatitis.

• Acute rhinosinusitis [1,39]:
  o Pruritus of the eyes, nose, palate, and ears.
  o Rhinorrhea.
  o Sneezing.
  o Facial pain.
  o Dry cough.

• Epiglottitis [3,4,40-42]:
  o Alteration in voice.
  o Severe sore throat.
  o Severe dysphagia.
  o Stridor.
  o Drooling.
  o Children prefer to sit leaning forward, but adults may sit erect.

• Cancer [7,23,24,43,44]:
  o Persistent sore throat.
  o Vague discomfort on swallowing.
  o Neck mass due to cervical node metastases.
  o Progressive dysphagia.
  o In oropharyngeal cancer, an ulcer is usually visible on examination.
  o Unilateral tonsillar enlargement without symptoms of acute infection is a possible sign of malignancy.

• Less common causes which may be serious or life threatening [4,6,45,46]:
  o Kawasaki disease:
    ▪ Most cases in children under age 4 years.
    ▪ Usually present with fever.
    ▪ Associated with conjunctivitis, changes to the lips and oral cavity and rash e.g. desquamation of extremities.
  o HIV/AIDS.
  o Gonococcal pharyngitis.
  o Chlamydial pharyngitis.
  o Yersinial pharyngitis.
  o Mycoplasmal pharyngitis.
  o Diphtheria.
10 Management

If symptoms and signs are consistent with tonsillitis, management primarily consists of advice, appropriate pharmacological treatment and safety-netting [3][L1, RGA1].

10.1 Advice to patients, parents and carers

Provide the following information and advice to patients, parents and/or carers [1,3][L2, RGA2]:

- The usual natural history of the illness, including average total length of illness – 1 week.
- That recurrent sore throat is a treatable condition.
- The different treatment options available.
- How to relieve symptoms and manage pain at home.
- An information leaflet should also be provided.

10.2 Pharmacological treatment

Tonsillitis is primarily managed through symptom control [3]. Antibiotics should only be used in severe cases where the practitioner is concerned about the clinical condition of the patient or if a bacterial cause is suspected, especially Group A beta haemolytic streptococcal infection (GABHS) in children [3].

10.2.1 Symptom control

In children [3,9][L1, RGA1]:

- An adequate dose of paracetamol should be used as first-line treatment for pain relief.
- Ibuprofen may be used as an alternative to paracetamol.
- Ibuprofen should be used with caution in children with, or at risk, of dehydration.
- Aspirin should not be used in children aged less than 16 years, due to the risk of Reye’s Syndrome.

In adults [3]:

- Ibuprofen is recommended for relief of fever, headache, and throat pain in adults with sore throat [L1, RGA1]:
  - Ibuprofen has been shown to be superior to paracetamol and aspirin in reducing throat pain as early as 1 hour post dose [L1].
- Paracetamol may be used as an alternative to ibuprofen in cases of intolerance [L1].
- Ibuprofen should not be routinely given to adults with, or at risk of dehydration due to concerns regarding renal toxicity, although this is rare [L1, RGA1].

10.2.2 Corticosteroid use

In patients with acute infectious mononucleosis (glandular fever) requiring hospitalisation, corticosteroids may have a role when pain and swelling threaten the airway or where there is very severe dysphagia [3][L1, RGA1].

10.2.3 Antibiotic treatment

Antibiotics should only be used if GABHS is suspected or confirmed; or in severe cases where the practitioner is concerned about the clinical condition of the patient [3]. Unnecessary prescribing for minor self-limiting illness should be avoided, due to the risks of emerging antibiotic resistance [1,3].
Antibiotics should NOT be used for [1,3,33,47][L1, RGA1]:
- Patients with a Centor score of <3.
- Symptomatic relief in sore throat.
- Prophylaxis for recurrent sore throat.

Delayed prescribing strategy [1,3,9,22,37][L1, RGA1]:
- Consider in patients where differentiation between viral and bacterial infection is difficult, investigations are awaited or inconclusive and where it is felt safe not to prescribe immediately.
- Provide a prescription with instructions to the patient but, to only use it if symptoms do not settle after 2-3 days or worsen within 2-3 days.
- Provide advice about the need for review if symptoms worsen despite using the delayed prescription.

Immediate antibiotic prescribing is indicated for patients in whom any of the following apply [1,3,33][L1, RGA1]:
- A Centor score of 3 or 4.
- Systemically very unwell.
- Symptoms and signs suggestive of serious illness and/or complications, e.g. peritonsillar cellulitis or abscess. Such patients should be referred immediately and receive antibiotics in secondary care (see Section 5.2).
- There is a high risk of serious complications due to pre-existing co-morbidity, including:
  - Valvular heart disease, significant lung, renal, liver, or neuromuscular disease.
  - Immunosuppression.
  - Cystic fibrosis.
  - The patient has an acute cough and is older than age 65 years and two or more of the following apply, or older than age 80 years and one or more of the following apply:
    - Hospitalised in the previous year.
    - Has diabetes mellitus.
    - History of congestive heart failure.
    - Current use of systemic glucocorticoids.

A low threshold for prescribing an antibiotic should be maintained in the following patient groups [1,3,9,22,37][L1, RGA1]:
- At risk of severe infection, e.g. diabetes or immunocompromised.
- At risk of immunosuppression, e.g. on disease modifying anti-rheumatic drugs (DMARDs) or carbimazole.
- History of rheumatic fever.

Choice of antibiotic:
- First-line treatment [3,9][L1, RGA1]:
  - Use oral phenoxybenzylpenicillin (penicillin V) for 10 days.
  - Ampicillin-based antibiotics can be used for 10 days, as alternatives to penicillin V as first line treatment, however there is a risk of rash when used in the presence of infectious mononucleosis (glandular fever).
  - Consider a single dose of intramuscular benzylthine penicillin for patients with proven GABHS infection with poor compliance to treatment, however do not use without monitored administration of a test dose.
If allergic to penicillin, consider one of the following treatments for 10 days [3,9][L1, RGA1]:
  o A macrolide.
  o First generation cephalosporin (10% risk of cross-reaction in penicillin-allergic patients).

Advise the patient to expect improvement in symptoms within 48-72 hours. Advise the patient to contact their primary care physician, if symptoms have not improved after 72 hours [R-GDG]. Emphasise the importance of completing the full course of antibiotics [3,39][L1, RGA1].

Close contacts of patients with acute invasive Group A streptococcal tonsillitis should also be treated with antibiotics if they have symptoms of localised infection which may include [29][L3, RGA2]:
  • Sore throat.
  • Fever.
  • Skin infection.

10.3 Safety-netting and follow-up
Advise the patient, parent or carer, to follow-up with their usual primary care physician if they do not improve [R-GDG].

They should also be advised to seek urgent medical attention if they develop any of the following symptoms [1,3,37,39,48][L1, RGA1]:
  • Any difficulty breathing.
  • Stridor.
  • Drooling.
  • Severe pain.
  • Dysphagia.
  • Inability to take fluids.

11 Referral
Refer to Sections 4.2 and 4.3 for indications for immediate and urgent referral to secondary care.

11.1 Referral for elective tonsillectomy
Tonsillectomy should only be considered for adults and children when the following apply [2,3,49][L1, RGA1]:
  • Sore throats are due to acute tonsillitis.
  • The episodes of sore throat are disabling and prevent normal functioning.
  • Seven or more well documented, clinically significant, adequately treated sore throats in the preceding year or,
  • Five or more such episodes in each of the preceding two years or,
  • Three or more such episodes in each of the preceding three years.
  • Enlarged tonsils which are suspected to be causing obstruction of the airway AND has serious effects on health and wellbeing e.g. sleep apnoea.
  • Possible malignant disease of the tonsils.
NB: Watchful waiting is more appropriate than tonsillectomy for children with mild sore throats [3][L1, RGA1].

If in doubt as to whether tonsillectomy would be beneficial, a 6-month period of watchful waiting is recommended to firmly establish the pattern of symptoms and allow the patient to consider fully the implications of the operation [3].

Before a referral to secondary care is made, ensure the following have been performed [3,49]:

- Explain the difference between bacterial and viral sore throats.
- Advise that there is no guarantee that tonsillectomy will prevent all sore throats in the future.
- Consider the impact of recurrent tonsillitis on the patient's quality of life and ability to work or go to school.
- Documentation of significant symptoms.
- Discussion of the benefits and risks of tonsillectomy compared to watchful waiting with the patient and/or carer.
12 References