

Tonsillitis & pharyngitis, peritonsillar abscess, bacterial tracheitis and epiglottitis

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Tonsillitis & Pharyngitis

Background

- **Acute tonsillitis:** Inflammation of the tonsils
- **Acute pharyngitis:** Inflammation of the oropharynx
- **Common causes:**
 - Most are viral, particularly in those <3yo. Most common bacterial pathogen is *Group A β-haemolytic streptococcus* (GAS)
 - No evidence that bacterial infections are more severe than viral infections, or that the duration is significantly different
- **95% resolve within 1 week irrespective of cause**

Complications

Suppurative	Non-suppurative
<ul style="list-style-type: none"> ▪ Otitis media, acute mastoiditis (<i>see above</i>) 	<ul style="list-style-type: none"> ▪ Post-streptococcal glomerulonephritis
<ul style="list-style-type: none"> ▪ Peritonsillar abscess AKA Quinsy (<i>see below</i>) 	<ul style="list-style-type: none"> ▪ Acute rheumatic fever
<ul style="list-style-type: none"> ▪ Retropharyngeal abscess 	
<ul style="list-style-type: none"> ▪ Cervical adenitis 	

Assessment

Non-specific symptoms: fever, vomiting, abdominal pain, headache, URTI symptoms, poor oral intake

Examination

- Tonsillar exudates, enlargement, erythema
- Anterior cervical lymphadenopathy
- Signs of dehydration



There are no clinical features alone that reliably discriminate between GAS and viral causes.

Use the Centor criteria (not validated in children, streptococcus low risk in young children) or the FeverPAIN scoring system to help with prescribing decisions.

Centor criteria: 1 point for each of a) tonsillar exudate b) tender anterior cervical LN or lymphadenitis c) history of fever d) absence of cough.

- Score 0,1 or 2: associated with 3-17% likelihood of isolating streptococcus
- Score 3 or 4: associated with 32-56% likelihood of isolating streptococcus

FeverPAIN
<p>NOTE: FeverPAIN has only been validated in children ≥3 years old. Younger children are less likely to have a bacterial aetiology and are less likely to develop complications. Antibiotics in this age group would be based on clinical judgement.</p>
<ul style="list-style-type: none"> ▪ Fever over 38°C ▪ Purulence (pharyngeal/tonsillar exudate) ▪ Attend rapidly (3 days or less) ▪ Severely Inflamed tonsils ▪ No cough or coryza
<p>A score of 0 or 1 is associated with a 13% to 18% likelihood of isolating streptococcus. A score of 2 or 3 is associated with a 34% to 40% likelihood of isolating streptococcus. A score of 4 or 5 is associated with a 62% to 65% likelihood of isolating streptococcus.</p>

Differential Diagnosis

Epstein-Barr Virus (EBV) AKA Glandular Fever, Infectious Mononucleosis

- Pharyngitis of longer than several days' duration
- Lymphadenopathy
- Hepatosplenomegaly
- Investigations: Serum monospot test, FBC
(A raised WCC with lymphocytosis and atypical lymphocytes is suggestive of EBV)

Scarlet Fever (caused by GAS)

- Scarlet-fever type rash: Blanching, sandpaper-like rash, more prominent in skin creases, flushed face/cheeks with peri-oral pallor

Investigations:

Throat swabs are not routinely taken – due to poor sensitivity and they cannot differentiate between infection and carriage.

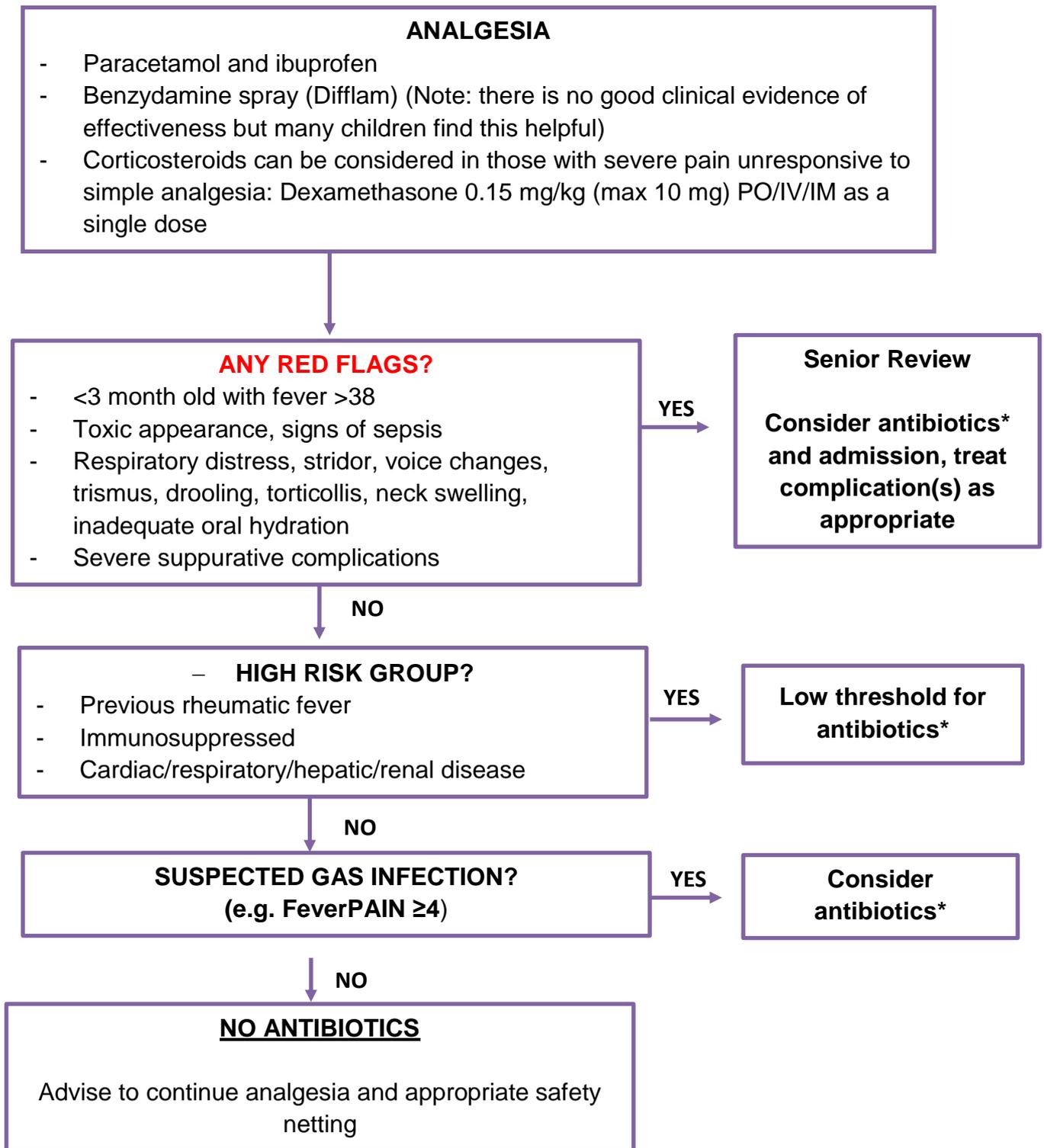
Positive throat culture makes GAS more likely but a negative throat culture does not rule out diagnosis.

Management

See management flow chart.

Studies suggest that antibiotics for streptococcal sore throat decreases symptoms by *less than 1 day*. The main benefit is to prevent complications.

Management flow chart



Antibiotics for tonsillitis & pharyngitis

First line: **Phenoxymethylpenicillin (Penicillin V)** PO 7 days
 Penicillin allergic: **Clarithromycin** PO 5 days

Unable to tolerate oral antibiotics (consider early IV to PO switch): **Ceftriaxone** IV 5 days
 Penicillin allergic: **Clarithromycin** IV 5 days

Peritonsillar abscess AKA Quinsy

Background

- Very rare in children
- Normally unilateral, rarely bilateral.
- Usually due to a complication of acute tonsillitis/pharyngitis with abscess formation between the tonsil and lateral pharyngeal wall.
- May also occur without preceding infection. These are thought to be due to obstruction of a peritonsillar salivary gland (Weber gland).
- **Common pathogens:**
 - Often polymicrobial
 - Bacterial: *Group A streptococcus*, *Staphylococcus aureus*, and respiratory anaerobes (including *fusobacteria*, *prevotella*, and *veillonella* species). *Haemophilus* species are found occasionally.

Complications:

- Airway obstruction
- Aspiration pneumonia if the abscess ruptures into the airway
- Vascular involvement: Jugular vein thrombophlebitis or thrombosis, carotid artery rupture or pseudoaneurysm

Assessment

Diagnosis is usually made clinically, and confirmed by collection of pus if drained.

- Tonsil enlarged and deviated towards midline or across midline. May be fluctuant, with swelling extending to soft palate.
- Uvula deviated to the unaffected side. If bilateral, uvula may deviate anteriorly.
- Cervical lymph nodes enlarged and tender on affected side
- Pain can be severe, associated with ear pain, trismus, dysphagia, 'hot potato' muffled voice, and drooling of saliva.
- Usually pyrexial and systemically unwell.



Management

- Analgesia
- All cases should be referred to ENT for joint care
 - Most will require drainage
- All cases require antibiotics, most need IV antibiotics with admission
- Ensure a pus swab is sent for microbiology
- Corticosteroids can be considered for management of both pain and inflammation:
 - Dexamethasone 0.15 mg/kg (max 10 mg) PO/IV/IM as a single dose
- **These patients are at risk of airway compromise.** Avoid oropharyngeal examination if presenting with respiratory distress

Antibiotics for peritonsillar abscess

First line:

Benzylpenicillin IV + **Metronidazole** IV 7-10 days

Penicillin allergic: **Clarithromycin** IV + **Metronidazole** IV 7-10 days
(10 day course if Group A streptococcus isolated)

Consider IV to PO switch:

First line switch: **Co-amoxiclav** PO 7-10 days total course

Penicillin allergic: **Clindamycin** PO 7-10 days total course
(10 day total course if Group A streptococcus isolated)

Bacterial Tracheitis & Epiglottitis

Background

Bacterial Tracheitis (AKA pseudomembranous croup)

- Bacterial infection of the soft tissues of the trachea, often a complication of a previous viral infection
- Common bacterial pathogens: *S. aureus*, *S. pneumoniae*, *Group A strep.*, *α-haemolytic strep.*, *M. catarrhalis*, *H. influenzae* strains.



Epiglottitis

- Inflammation of the epiglottis and adjacent supraglottic structures
- Risk factors: Incomplete/lack of HiB vaccination, immune deficiency
- Traumatic non-infectious causes: Thermal injury, foreign body ingestion, caustic ingestion
- Common bacterial pathogens: *H. influenzae type B*, *S. pneumoniae*, *Group A strep.*, *S. aureus*



Assessment

These patients are at high risk of airway compromise. Avoid distressing patients with marked respiratory distress, e.g. allow to remain with carer, do not attempt oropharyngeal examination. Airway should be secured if necessary, and be prepared for difficult intubation.

Croup, Bacterial tracheitis, and Epiglottitis can all present with similar features:

	Croup <i>(See croup guideline)</i>	Bacterial Tracheitis	Epiglottitis
Anatomy	Subglottic	Tracheal Lumen	Supraglottic
Peak age	6 months – 6 years Peak 1-2 years	3 months – 13 years Peak 3-5 years	3 – 7 years
Onset	2-3 days	1-3 days with progressive worsening	6-24 hours (rapid)
Toxicity	Mild to moderate	Mild to severe	Moderate to severe
Fever	Low grade fever	High grade fever	High grade fever
Cough	Present, barking	Present, may be barking	Usually absent
Drooling	Sometimes present	Sometimes present	Usually present
Voice	Hoarse	Hoarse	Hot potato (muffled) or Hoarse
Position	Sitting	Lying flat	Upright/tripod posture, refusing to lie down
Presentation	Barking cough, stridor, worse at night	Cough (may be barking), stridor, appears more toxic than croup	Abrupt and rapid progression. Drooling, dysphagia, distressed

Management

- Senior review immediately
- All patients will require IV antibiotics and admission +/- HDU monitoring
- During distressing procedures e.g. IV access, ensure airway management kit is available

Antibiotics for bacterial tracheitis and epiglottitis

First Line:

<1 month: **Cefotaxime** IV 7-10 days

>1 month: **Ceftriaxone** IV 7-10 days

IgE mediated penicillin allergic: **Chloramphenicol** IV 7-10 days.

- Risk of bone marrow depression or aplastic anaemia. Ensure microbiologist is aware of use and monitor FBC.
- Plasma concentrating monitoring advised.

IV to PO switch:

Co-amoxiclav PO 7-10 days total course

Penicillin allergic: Discuss with microbiologist