NHS
Vale of York
Clinical Commissioning Group

NHS
York and Scarborough
Teaching Hospitals
NHS Foundation Trust

Referral Support Service

Paediatrics

PA 24
Sore Throat (Acute)

Paediatric Normal Values (adapted from APLS)			
Age	Resp Rate	Heart Rate	Systolic BP
Neonate <4w	40-60	120-160	>60
Infant <1 y	30-40	110-160	70-90
Toddler 1-2 yrs	25-35	100-150	75-95
2-5 yrs	25-30	95-140	85-100

Definition
A sore throat is pain or irritation of the throat that often worsens when you swallow. The most common cause of a sore throat (pharyngitis) is a viral infection.

Epiglottitis
Inflammation of structures above the glottis which is usually caused by a bacterial infection. Acute epiglottitis and associated upper airway obstruction has significant morbidity and mortality and is seen as a medical emergency.

Haemophilus influenzae type b (Hib) was the most common cause, but Hib vaccine has significantly reduced the rate of epiglottitis. However, other bacterial infection, e.g. *Strep pneumoniae*, can lead to epiglottitis.

Persisting sore throat
A sore throat lasting for more than three weeks needs a review of their diagnosis, consider non-infectious causes, e.g. gastro-oesophageal reflux or chronic irritation from hayfever

Exclude Red Flag Symptoms

- Epiglottitis; sudden onset of severe sore throat, drooling and systemic signs of infection
- Systemically unwell (red features)
- Stridor or stertor
- Dehydrated
- Swallowing difficulties
- Immunosuppression

General Points

- Rhinovirus, coronavirus, parainfluenza virus are the most common infectious causes (25%)
- Epstein-Barr virus (glandular fever accounts for <1% sore throats)
- Group A beta-haemolytic Streptococcus is the most common bacterial cause of sore throat (15-30% sore throats in children)
- Admission to hospital with severe infection is uncommon and peritonsillar abscesses are very rare in children
- Usually a self-limiting illness with symptoms resolving within three days in 40% and within one week in 85% - irrespective of whether or not the sore throat is due to a streptococcal infection
- Antibiotics may modestly reduce complications and relive symptoms, however there are concerns about resistance.

Differential Diagnoses

Differential Diagnosis	Clinical Features
Peritonsillar abscess (rare in children)	• Referred otalgia • Trismus (due to collection of pus around the pterygoid muscle) • A 'hot potato' characteristic when speaking • Unilateral tonsillar enlargement • Uvula may be deviated
Infectious mononucleosis (glandular fever)	• Sore throat • Fever • Posterior cervical lymphadenopathy – usually symmetrical • Symmetrically inflamed tonsils • Soft palate inflammation – may be palatal petechiae • Splenomegaly – occurs in 50% and maximal at beginning of 2nd week • Rarely; jaundice, hepatomegaly, rash (macular, petechial,or urticarial)
Epiglottitis	• Abrupt onset of severe sore throat • Painful swallowing/drooling • Fever (temperatures often reach 40°C) • Stridor • Refusal to eat • Muffled or hoarse voice • If suspected DO NOT EXAMINE THROAT

Assessment

- Painful swallowing
- Headache
- Fever
- Tender neck due to enlarging lymphadenopathy

To rationalise prescriptions, NICE recommends Centor or FeverPAIN scoring tools to stratify bacterial aetiology in **older** populations. Centor was created in adult populations 40 years ago. FeverPain was developed in patients aged 3-76 years, with no specific validation in children. Due to the lack of validation of these scoring systems in children it is important to restrict antibiotic use to those who appear clinically unwell, Do not depend on just their score in either of these tools.

Centor criteria (1 point for each)
Fever
Tonsillar exudate
Anterior cervical lymphadenopathy
No cough

FeverPAIN criteria (1 point for each)
Fever (during previous 24h)
Purulence or pus on the tonsils
Attend rapidly (within 3d of onset)
Severely inflamed tonsils
No cough or coryza

Investigations

- Throat swabs should not be carried out routinely; they cannot differentiate between colonisation and infection

Suspected infectious mononucleosis

- Bloods: FBC, U&Es, LFTs
- Monospot test:
  - Rapid, cheap and specific test that can be performed from the onset of symptoms of infectious mononucleosis

    - High sensitivity and specificity in adolescents but are not useful under the age of 4 years
    - May be positive in other viral infections, autoimmune disease and haematological malignancies, but do not appear to be positive in primary bacterial infection.
- EBV VCA (viral capsular antigen) IgM and IgG antibody and EBNA IgG
    - Preferred over monospot in children under 4 years
    - A positive EBV VCA IgM result with negative EBV VCA IgG supports the diagnosis of acute EBV infection
    - Enables staging of the infection

Management

- The usual course of antibiotics is about 3 days, but can be up to 1 week
- Oral analgesia
- Consider local analgesics such as **benzydamine oromucosal spray,** for temporary relief of throat pain. This can be purchased over the counter from pharmacies.

When to Arrange Emergency Hospital Admission

- Severe systemic infection
- Suspected peritonsillar abscess
- Suspected epiglottitis
- Immunosuppressed (severe, primarily neutropenic patients or on chemotherapy)

While awaiting admission to hospital

- In suspected epiglottitis
    - Allow the child to sit in a comfortable position or on the parent's lap
    - Do not force them to lie down (may precipitate airway obstruction)
    - Avoid any examination that will upset the child including examination of the mouth and throat
- Give sufficient supplementary oxygen to try to achieve saturations of at least 92%

Low Risk for Community Management

- **No antibiotics:** seek advice if symptoms worsen rapidly or significantly, do not improve after 3 days or becomes systemically unwell.
- **Delayed antibiotics**: start if symptoms do not start to improve within 3 days. Seek medical advice if symptoms worsen rapidly or significantly
- **Immediate antibiotics:** Give a 5-10-day course.

Community Antibiotic Treatment

- Antibiotics should not be routinely prescribed for acute non-severe sore throat
- Non-severe infection but persistent/worsening symptoms for at least one week

First Line Options	Age/weight	Dose
Phenoxymethylpenicillin	1-11m	125 mg BD
	1-5y	250 mg BD
	6-11y	500 mg BD
	12-17y	1000mg BD
Alternative first choice for penicillin allergy		
Clarithromycin	1m-11y	<8kg: 7.5mg/kg BD 8-11kg: 62.5 mg BD 12-19kg: 125 mg BD 20-29kg: 187.5mg BD 30-40kg: 250mg BD
	12-17y	250mg - 500mg BD

Relapsing acute sore throat

- In a child with relapsing infection (e.g. within a six week period) it may be appropriate to take a throat swab sample for culture
- Reasons for relapse may include
    - Inappropriate antibiotic therapy
    - Inadequate dose or duration of previous therapy
    - Patient non-compliance
    - Re-infection

- Local breakdown of penicillin by beta-lactamase producing commensals

- Referral Information

Indications for referral to ENT

The following are indications for consideration of tonsillectomy for recurrent acute sore throat:

- Sore throats are due to acute tonsillitis
- Episodes of sore throat are disabling and prevent normal functioning
- Seven or more well documented, clinically significant, adequately treated sore throats in preceding year
- OR five or more such episodes in each of the preceding two years
- OR three of more such episodes in each of the preceding three years

Patient information leaflets/ PDAs

NHS Sore throat leaflet
NHS leaflet Colds, coughs and ear infections in children

References

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- Marshall-Andon. How to use…the Monospot and other heterophile antibody tests. *Arch Dis Child Educ Pract Ed* 2017; 102:188-193
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	Traffic light system for identifying severity of illness		
	Green – Low Risk	**Amber – Intermediate Risk**	**Red – High Risk**
Activity	• Responds normally to social cues • Content/smiles • Stays awake/awakens quickly • Strong normal cry	• Altered response to social cues • No smile • Reduced activity • Parental anxiety	• Not responding normally or no response to social cues • Unable to rouse or if roused does not stay awake • Weak, high pitched or continuous cry • Appears ill
Skin	• Normal skin colour • CRT <2 secs • Normal skin turgor • Warm extremities • Normal eyes	• Normal skin colour • Pallor reported by parent/carer • Cool peripheries • CRT 2-3 secs	• Pale, mottled, ashen • Cold extremities • CRT >3 secs • Sunken eyes
Respiratory	• Normal breathing • <12m: RR <50bpm • 1-5y: RR <40bpm • O_2 sats ≥ 95% • No chest recessions • No nasal flaring	• Tachypnoea • Moderate recessions • May have nasal flaring • <12m: RR 50-60bpm • 1-5y: RR 40-60bpm • O_2 sats: 92-94%	• Significant respiratory distress • Grunting • Apnoeas • Severe recessions • Nasal flaring • All ages: RR >60bpm • O_2 sats:≤ 92%
Circulation	• Tolerating 75% of fluid • Occasional cough induced vomit • Moist mucous membranes	• 50-75% fluid intake over 3-4 feeds • Cough induced vomiting • Reduced urine output	• 50% or less fluid intake over 2-3 feeds • Cough induced vomiting frequently • Significantly reduced urine output
Fever	• Systemically well • T <38°C	• Age 3-6m: T ≥ 39°C • Fever for ≥5d • Rigors • Swelling of a limb or joint • Non-weight bearing limb/not using an extremity	• Age <3m: T ≥ 38°C • Non-blanching rash • Bulging fontanelle • Neck stiffness • Status epilepticus • Focal neurological signs • Focal seizures
	All green	**Any amber and no red**	**If any red**
	• Can be managed at home • Give fever information leaflet	• Consider same day review • If you feel the child is ill, needs O_2 support or will not maintain hydration discuss with paediatrician on-call	• Refer immediately to emergency care – consider 999 • Bleep paediatrician on-call • Consider appropriate means of transport • If appropriate commence relevant treatment to stabilise child for transfer • Consider starting high flow oxygen support

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