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## PEDIATRIC PHARYNGITIS (SORE THROAT)

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### DEFINITION

A painful condition of the oropharynx associated with infection of the mucous membranes of the pharynx and the palatine tonsils. The peak prevalence is found in children less than 5 years.

Nurses with Remote Practice Certified Practice designation (RN(C)s<sup>1</sup>) are able to treat children with pharyngitis who are **1 year of age and older**.

### POTENTIAL CAUSES

#### Infectious

##### Viruses

- Adenovirus
- Parainfluenza virus
- Epstein –Barr
- Coxsackievirus
- Herpes simplex virus
- Enterovirus (more common in children less than 3 years of age)
- Influenza virus

##### Bacterial

- Group A beta-haemolytic strep (GAS) (streptococcus pyogenes)
- *Mycoplasma pneumoniae* (10% of adolescents)
- *Neisseria gonorrhoeae* or *Chlamydia trachomatis* (related to sexual activity)
- Chlamydia pneumoniae
- Diphtheriae

##### Non-infectious

- Allergic rhinitis

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<sup>1</sup> RN(C) is an [authorized title](#) recommended by BCCNP that refers to BCCNP-certified RNs, and is used throughout this Decision Support Tool (DST).

BCCNP monitors and revises the BCCNP certified practice decision support tools (DSTs) every two years and as necessary based on best practices. The information provided in the DSTs is considered current as of the date of publication. BCCNP-certified nurses (RN(C)s) are responsible for ensuring they refer to the most current DSTs.

The DSTs are not intended to replace the RN(C)'s professional responsibility to exercise independent clinical judgment and use evidence to support competent, ethical care. The RN(C) must consult with or refer to a physician or nurse practitioner as appropriate, or whenever a course of action deviates from the DST.

- Sinusitis with post nasal drip
- Mouth breathing
- Trauma
- GERD (gastroesophageal reflux disease)

## **PREDISPOSING RISK FACTORS**

- Previous episodes of pharyngitis or tonsillitis
- Smoking, exposure to cigarette smoke
- Overcrowding
- Immunocompromised
- Steroids, oral or inhaled
- Diabetes mellitus
- Oral sex

## **TYPICAL FINDINGS OF SORE THROAT**

See Appendix 1 for pathogens and clinical appearance of tonsils

**Note:** Always consider the potential for epiglottitis and airway obstruction. If symptoms of airway distress, tripodding, stridor, dysphagia, drooling and anxiety exist, do not exam the child's mouth or throat, but immediately consult with or refer the client to a physician or nurse practitioner.

### **Bacterial**

#### ***History***

- Acute onset
- Very sore throat
- Absence of cough and coryza
- Fever
- Headache
- May have nausea, vomiting, abdominal pain
- General malaise

#### ***Physical Assessment***

- Significant fever
- Tachycardia

- Weigh until 12 years of age for medication calculations
- Pharyngeal and tonsillar erythema
- Petechiae of soft palate
- Tonsillar exudate (particularly with streptococcal infection, diphtheria or mononucleosis)
- Anterior cervical lymphadenopathy
- Erythematous “sandpaper” rash of scarlet fever (may be present with streptococcal infection)
- Erythematous rash (particularly if child is receiving amoxicillin)
- Lymphadenopathy with splenic enlargement in children with mononucleosis
- Koplik spots

## **Viral**

### ***History***

- Acute sore throat combined with symptoms consistent with a viral upper respiratory tract infection (rhinorrhea, cough and often hoarseness)

### ***Physical Assessment***

- Fever (low-grade to significant)
- Tachycardia
- Weigh until 12 years of age for medication calculations
- Pharyngeal and tonsillar erythema and swelling
- Petechiae of soft palate
- Tonsillar exudate similar to that occurring with bacterial infection may be present, particularly in adenovirus pharyngotonsillitis
- Anterior cervical lymphadenopathy
- Vesicles and ulcers may be present with coxsackievirus infection or herpes
- Hepato- and splenomegaly

**Note:** It is often impossible to distinguish clinically between bacterial and viral pharyngitis. Most pharyngitis is due to viruses (up to 70% in the pediatric population) and does not require treatment with antibiotics. For this reason, it is important to utilize a sore throat score and diagnostic testing as available.

Criteria		Points
Temperature > 38° Celsius		1
Absence of cough		1
Swollen, tender anterior cervical nodes		1
Tonsillar swelling or exudates		1
Age 3-14 years		1
Age 15-44 years		0
Total Score	Risk of Streptococcal infection (%)	Suggested Management
0 to 1	1-10 %	No culture or antibiotic required
2-3	11-35%	Perform culture or rapid strep test. Treat only if test is +
4 or more	51-53%	Start antibiotic therapy if situation warrants (e.g., high fever or clinically unwell) If culture or rapid strep test performed and negative, discontinue antibiotic

**Note:** Treatment with antibiotics may be warranted regardless of the score if there is a concern such as:

- household contact with streptococcal infection,
- a community epidemic of streptococcal infection,
- a history of rheumatic fever, valvular heart disease, or immunosuppression, or
- a population in which rheumatic fever remains a problem

### Diagnostic Tests

- Rapid strep test (if available)
- Throat swab for culture and sensitivity
- If the child is greater than 2 years old, culture the throat before treatment or do rapid *Strep* antigen test (if available); if negative, do throat culture.
- Monospot if suspect viral

## MANAGEMENT AND INTERVENTIONS

### Bacterial

#### Goals of Treatment

- Control pain and fever
- Prevent complications

- Rapid reduction in infectivity
- Prevent spread of Group A Streptococcus
- Decrease antibiotic resistance

### Non-Pharmacologic Interventions

- Rest and increase fluid intake
- Avoidance of irritants (smoke)
- Saline gargles (1tsp of salt in 1 cup of warm water)
- Increase room humidity

### Pharmacologic Interventions

**Note: All doses must be calculated by weight up until age 12.**

**Pediatric doses should not exceed recommended adult doses.**

- To relieve pain:
    - acetaminophen 10-15 mg/kg, po q4-6h prn. Maximum dose 75mg/kg/24hr, or a total of 4,000mg/24hr, whichever is less, or
    - ibuprofen 5-10mg/kg, po q6-8h prn. Maximum dose 40mg/kg/24hr
  - Oral antibiotic therapy:
    - Pen VK 40mg/kg/24hr, po divided bid for 10 days,  
OR (if Pen VK suspension not readily available)
    - Amoxicillin 25 mg/kg bid (50 mg/kg/24hr divided) for 10 days (Maximum dose 1,000mg/24hr)
  - In case of unavailability of the previously listed antibiotics, or allergies to the above antibiotics:
    - Cephalexin 40 mg/kg/24hr divided bid for 10 days. (DO NOT USE if patient has a severe anaphylactic reaction to penicillin.)
- OR
- Azithromycin 20 mg/kg po daily for 3 days (Maximum dose 500 mg/day)

### Pregnant and Breastfeeding Women

- Acetaminophen, penicillin VK, amoxicillin, azithromycin and cephalexin may be used as listed above.
- DO NOT USE ibuprofen in pregnant patients.

**If the infection has been determined to be due to chlamydia or gonorrhea, please refer to the appropriate STI DST.**

## Viral

### Goals of treatment

- Relieve symptoms
- Supportive care

### Non-pharmacological Interventions

- Rest
- Increase oral fluids
- Avoid irritants
- Warm saline gargles qid (1 tsp. of salt in 1 cup of warm water)

### Pharmacological Interventions

**Note: All doses must be calculated by weight up until age 12.**

**Pediatric doses should not exceed recommended adult doses.**

- **To relieve pain:**
    - acetaminophen 10-15 mg/kg, po q4-6h prn. Maximum dose 75mg/kg/24hr or a total of 4,000mg/24hr, whichever is less
- OR
- ibuprofen 5-10mg/kg, po q6-8h prn. Maximum dose 40mg/kg/24hr

### Pregnant and Breastfeeding Youth

- Acetaminophen may be used in pregnant and breastfeeding youth
- DO NOT use ibuprofen in pregnancy patients.

## POTENTIAL COMPLICATIONS

- Rheumatic fever (group A strep)
- Acute Glomerulonephritis (group A strep)
- Peritonsillar abscess
- Epiglottitis
- **Retropharyngeal abscess**
- Otitis media
- Sinusitis
- Splenomegaly (Epstein Barr Virus or Infectious Mononucleosis)
- Pneumonia
- Bacterial meningitis

## **CLIENT/CAREGIVER EDUCATION AND DISCHARGE INFORMATION**

- Advise on condition, timeline of treatment and expected course of disease process
- Saline gargles as described above
- Counsel parents/caregiver about appropriate use of medication (dosage, compliance, follow-up)
- If child has any difficulty swallowing, seek help immediately

## **MONITORING AND FOLLOW-UP**

- Return to clinic in 48 hours if awaiting culture results
- Return for care if no improvement in 48 hours

## **CONSULTATION AND/OR REFERRAL**

- Consult a physician or nurse practitioner if child has recurrent bouts of GAS pharyngitis/tonsillitis: greater than 5 episodes in one year.

## **DOCUMENTATION**

- As per agency policy

## REFERENCES

More recent editions of any of the items in the Reference List may have been published since this DST was published. If you have a newer version, please use it.

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## APPENDIX 1

Table 1

## Review of pathogens that cause tonsillitis

Pathogens		Clinical Appearance of Tonsils
<b>Viruses</b>	Rhinovirus, adenovirus, influenza virus, parainfluenza virus, etc.	Enlarged, erythematous.
	Coxsackie virus (herpangina).	Aphthous-like ulcers on tonsillar pillars.
	Epstein-Barr virus (mononucleosis syndrome).	Very large, swollen, and dirty-grey appearance.
<b>Bacteria</b> <b>Aerobic</b>	Streptococcus pyogenes and other streptococcal species.	Enlarged, erythematous, with yellowish-white spots. May have membrane or purulent exudate.
	Neisseria gonorrhoeae.	Acute purulent exudates.
	Corynebacterium diphtheriae.	Exudative pharyngotonsillitis with thick pharyngeal membrane.
	<b>Anaerobic</b>	Bacteroides species.
<b>Yeast</b>	Candida species.	White plaques with raw undersurface.
<b>Spirochetes</b>	Treponema pallidum (syphilis).	Oral chancres of the lip, tongue, tonsil and palate. Superficial greyish patches of mucus membrane with reddish border.
	Spirochaete denticolata and treponema vincentii (Vincent's angina).	Membrane on tonsil with underlying ulcer.

Source: Campisi and Tewfik (2003) Tonsillitis and Its Complications