This decision support tool is effective as of October 2014. For more information or to provide feedback on this or any other decision support tool, email certifiedpractice@crnbc.ca

PEDIATRIC PHARYNGITIS (SORE THROAT)

DEFINITION
A painful condition of the oropharynx associated with infection of the mucus 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) 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
• Diptheriae

Non-infectious
• Allergic rhinitis

1 RN(C) is an authorized title recommended by CRNBC that refers to CRNBC-certified RNs, and is used throughout this Decision Support Tool (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 (PHARYNGITIS/TONSILLITIS)**
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, tripoding, 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.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature &gt; 38° Celsius</td>
<td>1</td>
</tr>
<tr>
<td>Absence of cough</td>
<td>1</td>
</tr>
<tr>
<td>Swollen, tender anterior cervical nodes</td>
<td>1</td>
</tr>
<tr>
<td>Tonsillar swelling or exudates</td>
<td>1</td>
</tr>
<tr>
<td>Age 3-14 years</td>
<td>1</td>
</tr>
<tr>
<td>Age 15-44 years</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Risk of Streptococcal infection (%)</th>
<th>Suggested Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 1</td>
<td>1-10 %</td>
<td>No culture or antibiotic required</td>
</tr>
<tr>
<td>2-3</td>
<td>11-35%</td>
<td>Perform culture or rapid strep test. Treat only if test is +</td>
</tr>
<tr>
<td>4 or more</td>
<td>51-53%</td>
<td>Start antibiotic therapy if situation warrants (e.g., high fever or clinically unwell)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If culture or rapid strep test performed and negative, discontinue antibiotic</td>
</tr>
</tbody>
</table>

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
- Do not swab a child you suspect has epiglottitis and is drooling and sitting in the tripod position
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-pharmacological Interventions**

- Rest and increase fluid intake
- Avoidance of irritants (smoke)
- Saline gargles (1 tsp 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. Do not exceed 75mg/kg/24hr or a total of 4,000mg/24hr, whichever is less, or
  - ibuprofen 5-10mg/kg, po q6-8h prn. Do not exceed 40mg/kg/24hr

- Oral antibiotic therapy:
  - Pen VK 40mg/kg/day, po divided bid for 10 days,
  - OR (if Pen VK suspension not readily available)
    - Amoxicillin 25 mg/kg BID (50 mg/kg/day divided) for 10 days

- In case of unavailability of the previously listed antibiotics, or allergies to the above antibiotics:
  - Cephalexin 40 mg / kg/ day 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 500 mg/day)
Pregnant and Breastfeeding Youth
- Acetaminophen, penicillin VK, amoxicillin, azithromycin and cephalexin may be used as listed above.
- DO NOT USE ibuprofen.

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:
  o acetaminophen 10-15 mg/kg, po q4-6h prn. Do not exceed 75mg/kg/24hr or a total of 4,000mg/24hr, whichever is less
  OR
  o ibuprofen 5-10mg/kg, po q6-8h prn. Do not exceed 40mg/kg/24hr

Pregnant and Breastfeeding Youth
- Acetaminophen may be used in pregnant and breastfeeding youth
- Ibuprofen is not safe during pregnancy or while breastfeeding

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)

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
For help obtaining any of the items on this list, please contact CRNBC Helen Randal Library at circdesk@crnbc.ca

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.


APPENDIX 1

Table 1: Review of pathogens that cause tonsillitis

<table>
<thead>
<tr>
<th>Pathogens</th>
<th>Clinical Appearance of Tonsils</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Viruses</strong></td>
<td></td>
</tr>
<tr>
<td>Rhinovirus, adenovirus, influenza virus, parainfluenza virus, etc.</td>
<td>Enlarged, erythematous.</td>
</tr>
<tr>
<td>Coxsackie virus (herpangina)</td>
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<tr>
<td>Epstein-Barr virus (mononucleosis syndrome)</td>
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</tr>
<tr>
<td><strong>Bacteria</strong></td>
<td></td>
</tr>
<tr>
<td>Aerobic</td>
<td></td>
</tr>
<tr>
<td>Streptococcus pyogenes and other streptococcal species.</td>
<td>Enlarged, erythematous, with yellowish-white spots. May have membrane or purulent exudate.</td>
</tr>
<tr>
<td>Neisseria gonorrhoeae.</td>
<td></td>
</tr>
<tr>
<td>Corynebacterium diphtheriae.</td>
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</tr>
<tr>
<td>Anaerobic</td>
<td></td>
</tr>
<tr>
<td>Bacteroides species.</td>
<td></td>
</tr>
<tr>
<td>Yeast</td>
<td></td>
</tr>
<tr>
<td>Candida species.</td>
<td></td>
</tr>
<tr>
<td><strong>Spirochetes</strong></td>
<td></td>
</tr>
<tr>
<td>Treponema pallidum (syphilis).</td>
<td></td>
</tr>
<tr>
<td>Spirochaete denticolata and treponema vincentii (Vincent’s angina).</td>
<td></td>
</tr>
</tbody>
</table>

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