PHARYNGITIS: Management Considerations

PEARLS for the MANAGEMENT of PHARYNGITIS

- The majority of pharyngitis cases do **NOT** require antibiotics as they are viral infections (80-90% in adults, >70% in children).
- Pharyngitis is typically self-limiting (often 3-7 days; up to ≤10 days).
- A validated clinical decision rule e.g. modified Centor score can help identify low risk patients who do not require diagnostic testing (see below) or antibiotics.
- For confirmed Group A Streptococcus (GAS) pharyngitis, penicillin for 10 days is the drug of choice. There is no documented GAS resistance to penicillin.
- Advise on treatments that will provide **symptomatic relief**: NSAIDs, acetaminophen, medicated throat lozenges, topical anesthetics, warm liquids.
- Patients should see their prescriber if: 1) symptoms worsen, 2) symptoms take longer than 3 to 5 days to resolve, &/or 3) unilateral neck swelling develops.

PRE-TREATMENT CONSIDERATIONS

- Inappropriate antibiotic use is driving resistance & leading to a crisis. Please examine your own prescribing practices.
- A validated clinical decision rule, like the modified Centor score, can be used to help identify low risk patients who do not require diagnostic testing or antibiotics.

**Table: Modified (or McIssac) Score**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature &gt; 38°C (&gt;100.5 °F) oral temperature used in Centor score (adults)</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 exudate</td>
<td>1</td>
</tr>
<tr>
<td>Age 3 to 14 years</td>
<td>1</td>
</tr>
<tr>
<td>Age 15 to 44 years</td>
<td>0</td>
</tr>
<tr>
<td>Age ≥ 45 years</td>
<td>-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>Risk of Streptococcal Infection</th>
<th>Suggested Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1 to 0</td>
<td>1 to 2.5%</td>
<td>- Symptomatic treatment</td>
</tr>
<tr>
<td>1</td>
<td>5 to 10%</td>
<td>- No RADT, culture or antibiotic needed</td>
</tr>
<tr>
<td>2</td>
<td>11 to 17%</td>
<td>- RADT or throat swab for culture.</td>
</tr>
<tr>
<td>3</td>
<td>28 to 35%</td>
<td>- If positive for GAS ⇒ antibiotic.</td>
</tr>
<tr>
<td>24</td>
<td>51 to 53%</td>
<td></td>
</tr>
</tbody>
</table>

Modified Centor score: sensitivity 94% (95% CI 92-97%), specificity 54% (95% CI 49-59%). Lower specificity leans towards false positives & over-treatment.

Back-up throat cultures are recommended for negative lateral flow RADT in children.

- Diagnostic testing is **not** recommended if:
  - A modified Centor score of ≤1
  - symptoms of a viral infection rhinorrhea, cough, oral ulcers, hoarseness **IDSA 2012** (strong, high)
  - <3yrs, unless other risk factors e.g. sibling with GAS infection **IDSA 2012** (strong, moderate)
  - asymptomatic contact of patient with GAS pharyngitis **IDSA 2012** (strong, moderate)

- **Exceptions**: the modified Centor score may not accurately predict risk of GAS during epidemics or in high risk populations, e.g. individuals with a history of rheumatic fever, valvular heart disease, or immunosuppression. Use clinical judgment & consider testing (RADT/throat swab) more broadly.

SHOULD ANTIBIOTICS BE USED TO TREAT PHARYNGITIS?

- **80-90%** of adults (>).70% of children) do **NOT** require antibiotics as infection likely viral.
- Patients with a positive throat swab should receive an antibiotic to ▼ the risk of complications. See modified Centor score on left column, & antibiotic table below.
- The turn-around-time for throat swab results can take a few days. However, antibiotics started within 9 days of symptom onset in confirmed GAS will prevent rheumatic fever.
- If antibiotics are started empirically, ensure agent is discontinued if throat swab negative.

MOST COMMON BACTERIAL PATHOGEN

- Group A Streptococcus (GAS) (outpatient Group C and G strep do not require antibiotics)

EMPRIc DRUG REGIMENS OF CHOICE & SUSCEPTIBILITY CONCERNS

**FIRST LINE**

<table>
<thead>
<tr>
<th>No antibiotic</th>
<th>- Majority of cases are viral.</th>
<th>- Only use antibiotics in confirmed bacterial pharyngitis.</th>
<th>- See Symptom Management following page.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin V</td>
<td>Peds: ≤27 kg: 40mg/kg/day ÷ BID or TID x10 days (maximum 750mg/day)</td>
<td>&gt;27 kg &amp; Adults: 300mg TID x 10 days, or 600mg BID x 10 days</td>
<td>Compared to penicillin:</td>
</tr>
<tr>
<td>PEN-VK, g</td>
<td>max absorption when given on an empty stomach</td>
<td>Adults: 500mg BID x 10 days</td>
<td>- broader spectrum than required; as effective</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>Peds: 40-50mg/kg/day ÷ BID x10 days (maximum 1000mg/day)</td>
<td>Adults: 500mg BID x 10 days</td>
<td>- liquid more palatable for peds</td>
</tr>
<tr>
<td>AMOXIL, g</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PENICILLIN ALLERGY: TYPE IV HYPERSENSITIVITY (e.g. rash)**

- Do not use the following antibiotics unless confirmed GAS & confirmed type I reaction to penicillin, due to concerns with ↑ resistance to macrolides & adverse events e.g. C diff.

**PENICILLIN ALLERGY: TYPE I HYPERSENSITIVITY (i.e. anaphylaxis)**

- No documented resistance to GAS.

**Clindamycin**

<table>
<thead>
<tr>
<th>DALACIN C, g</th>
<th>Peds: 20mg/kg/day ÷ TID x10 days (maximum 900mg/day)</th>
<th>Adults: 300mg TID x 10 days</th>
<th>Macrolide considerations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarithromycin</td>
<td>Peds: 15mg/kg/day divided BID x10 days (maximum 500mg/day)</td>
<td>Adults: 250mg BID x 10 days</td>
<td>- Clarithromycin x 10 days was superior to azithromycin x 5 days for bacterial eradication (NNT=9) in adults, but equivalent for clinical cure.</td>
</tr>
<tr>
<td>BIAxin, g</td>
<td>Peds: 40mg/kg/day ÷ BID or TID x10 days (maximum 2000mg/day)</td>
<td>Adults: 250mg QID x 10 days</td>
<td>- ↑ GI side effects with erythromycin.</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>Peds: 12mg/kg/day daily x5 days, or 20mg/kg/day daily x3 days (max 500mg/d)</td>
<td>Adults: 500mg Day 1, 250mg x Days 2-5, or 500mg daily x3 days</td>
<td>- Azithromycin 3 vs 5 days: no head-to-head trials. Both regimes provide same total dose over the course of therapy (i.e. 600mg/kg/d; 1.5g).</td>
</tr>
<tr>
<td>ZITHROMAX, g</td>
<td></td>
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</tbody>
</table>

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### Duration of Antibiotic Therapy:
- Confirmed bacterial pharyngitis should be treated with 10 days of antibiotics (exception: if azithromycin is used in penicillin allergic patients; other options available).
- Patients will likely have clinical improvement within the first few days of therapy, but 10 days of therapy is recommended for preventing acute rheumatic fever, & short courses are not as effective for treating the infection.
  - E.g. a meta-analysis comparing 5 vs 10 days of penicillin (2 RCTs, n=309) concluded short courses were inferior in achieving bacterial cure, OR 0.29 (CI 95% 0.13-0.63).

### Symptom Management

#### MEDICATED LOZENGES
- **Benzocaine**
  - **Cepacol ES, Chloraseptic**
  - Alleviates throat pain if used frequently.
  - Avoid in children due to: choking & methemoglobinemia concerns.

#### MEDICATED SPRAYS
- **Phenol**
  - **Chloraseptic** 5 sprays q2hr PRN
  - No evidence, but anecdotally may provide relief from associated pain.

#### RINSES
- Gargling or drinking warm liquids
  - e.g. warm salt water rinse, tea
- Benzydamine
  - **Tantum, Pharixia** 15mL gargle or rinse q1.5-3hr PRN
  - Little evidence, but anecdotally provide relief from associated pain.

### Treatment Evidence Summary

#### Penicillin vs Cephalosporins vs Macrolides:
- Penicillin remains the antibiotic of choice
- There is no clinically relevant difference in symptom resolution between antibiotics.
- Penicillin has the most evidence for preventing complications; has a narrow spectrum; is efficacious, safe, inexpensive; & there is no documented resistance to GAS.

### Clinical Q&A

#### What is the risk of acute rheumatic fever?
- In Canada, the current prevalence of acute rheumatic fever is 0.1 to 2 cases per 100,000.
  - The incidence in some remote, Canadian Aboriginal communities may be higher (i.e. Northern Ontario 8.33/100,000).
  - The risk may also be higher in immigrants from endemic areas, e.g. Philippines, China.
- It is difficult to estimate the risk of acute rheumatic fever due to untreated pharyngitis:
  - as the majority of studies comparing antibiotics versus placebo were conducted prior to the 1960s (higher rate of acute rheumatic fever, and in young males from the US Armed Forces)
  - bacterial versus viral etiology was often not confirmed
  - newer studies have either no documented cases or did not assess this outcome
- In an effort to balance unnecessary antibiotic use with preventing rheumatic fever:
  - use the modified Centor score to identify patients who require a throat swab/RADT
  - wait to prescribe antibiotics until the results of the throat swab are available
  - starting antibiotics within 9 days of symptom onset prevents acute rheumatic fever
- if antibiotics are started empirically, discontinue if throat swab is negative
  - children are at a greater risk of complications (e.g. otitis media, peritonsillar abscess, rheumatic fever); may initiate antibiotics sooner
- A full 10 day course of penicillin is recommended for confirmed GAS pharyngitis.

#### Pharyngitis caused by Chlamydia trachomatis
- It is rare that Chlamydia trachomatis causes pharyngitis, but rates appear to be ↑.
- Risk factors include: age 15 -24 years, sexually active, engagement in oral sex.
- In Saskatchewan, Chlamydia trachomatis screening requires a different lab requisition.
- Treatment: doxycycline 100mg po BID x 7days, or azithromycin 1g x 1 dose.

### Management of Recurrent Pharyngitis

- Potential causes: recurrent pharyngitis due to inadequate eradication, new infection, viral infection in an asymptomatic carrier ~20% of the population are GAS carriers.
- Controversial as to whether or not asymptomatic carriers with recurrent pharyngitis need to be identified.
  - Identification may help avoid antibiotics in those with recurrent viral pharyngitis.
  - Avoid identifying asymptomatic carriers without recurrent pharyngitis.
- Consider age, season, signs/symptoms to rule out viral etiology (see modified Centor score).
- Avoid continuous long-term antibiotic therapy (i.e. repeated courses or prophylaxis).

### Abbreviations
- °<sub>tastes good</sub>
- GAS<sub>=Group A Streptococcus</sub>
- GI<sub>=gastrointestinal</sub>
- IDSA<sub>=Infectious Diseases Society of America</sub>
- NSAID<sub>=non-steroidal anti-inflammatory drug</sub>
- NNT<sub>=number needed to treat</sub>
- OR<sub>=odds ratio</sub>
- PRN<sub>=as needed</sub>
- RADT<sub>=rapid antigen detecting test</sub>
- RR<sub>=relative risk</sub>
References – Pharyngitis - RxFiles.ca

Guidelines:
2019 Sanfords
2018 NICE Sore throat (acute): antimicrobial prescribing (published January 2018). Available at: https://www.nice.org.uk/guidance/ng84
2012Bugs & Drugs

General:

Antibiotics:


Rheumatic Fever:


Symptom Management


