PHARYNGITIS PATHWAY

EXECUTIVE SUMMARY

Physician Owner: Dr. Melissa St. Germain

Primary Objective

Develop a pharyngitis pathway to guide providers at Children's Physicians on best practice recommendations in the treatment of confirmed positive Group A Streptococcal (GAS) infections and management of symptoms without giving antibiotics in confirmed negative streptococcal infections.

RECOMMENDATIONS

KEY POINTS TO CONSIDER:

- In order to prevent suppurative and nonsuppurative complications of GAS pharyngitis, patients should be prescribed an antibiotic if they test positive for GAS pharyngitis by rapid GAS antigen detection or by throat culture AND have clinical signs/symptoms consistent with infection.
- In order to prevent unnecessary exposure to antibiotics, patient should only be prescribed antibiotics if they test positive for GAS pharyngitis by rapid GAS antigen detection or by throat culture AND have clinical signs/symptoms consistent with infection.
- As 25% of healthy asymptomatic children have (+) throat culture for GAS during school outbreaks of pharyngitis (non-GAS)[1]
- GAS is 100% susceptible to penicillin/amoxicillin[1]
- If experiencing treatment failure, consider alternative diagnosis, lack of adherence to antibiotic regimen, suppurative and nonsuppurative complications of GAS pharyngitis or if after completion of antibiotics consider reinfection.
- Recovery of GAS from the pharynx (by rapid test or culture) does not distinguish individuals with true streptococcal infection from streptococcal carriers who have an intercurrent viral pharyngitis[1,2]
- Patients who test negative for GAS pharyngitis should only receive supportive care and an alternative diagnosis should be considered for ST or pain with swallowing.
- GAS pharyngitis is rare in children < 3 years of age and unlikely in children with additional URI symptoms (e.g. runny nose, cough, etc.)[1]. Strongly consider alternative diagnosis in these patients.

CLINICAL MANAGEMENT

Clinical assessment:

- Sore throat (ST) or pain with swallowing
- Associated features in history suggestive of Group A Streptococcal (GAS) pharyngitis:
    - Sudden onset of sore throat
    - Age 5-15 years (GAS pharyngitis peaks at age 7-8)
    - Fever

- Headache, nausea, vomiting, abdominal pain
- Winter and early spring presentation
- Household or close contact exposure to documented GAS pharyngitis

- Associated features in physical exam suggestive of GAS pharyngitis in the absence of other signs of URI:
  - Tonsillopharyngeal erythema (± exudate)
  - Patchy tonsillopharyngeal exudates
  - Tender cervical lymphadenopathy
  - Uvular edema
  - Palatine petechiae
  - Scarlatiniform rash
- Associated features not suggestive of GAS pharyngitis:
  - Absence of fever
  - Rhinorrhea
  - Conjunctivitis
  - Cough
  - Hoarseness
  - Stomatitis
  - Viral exanthema
  - Diarrhea

ALTERNATIVE DIAGNOSES TO CONSIDER:

- If the patient has a ST or pain with swallowing without associated features in H&P suggestive of GAS pharyngitis, consider:
  - Viral etiologies including HSV
  - Gonococcal or chlamydial pharyngitis in sexually active patients
- If the patient is toxic appearing, has airway compromise or respiratory distress consider:
  o Epiglottitis
  o Retropharyngeal abscess
  o Peritonsillar abscess
  o Foreign body
  o Croup
  o Diphtheria

Laboratory Studies:

- For patients not treated with antibiotics in the past 4 weeks for GAS pharyngitis: A rapid GAS antigen detection test (refer to policy PC 37 for specimen collection procedure) or Rapid PCR test should be ordered, followed by a throat culture (for patients that test negative for GAS by rapid antigen detection only) should be ordered.

- If the patient has been treated for GAS pharyngitis in the past 4 weeks
  - Evaluate any issues with treatment adherence
  - Order a throat culture.

ANTIBIOTIC THERAPY[1]:

Amoxicillin:

o 50 mg/kg/dose (max: 1000-1200 mg/day) PO once daily x 10 days
o If concurrent Otitis Media consider high dose Amoxicillin: 90 mg/kg/day divided PO BID x 10 days

OR

Penicillin V Potassium:

o (< 27 kg) 250 mg PO 2-3 times/day x 10 days
o (≥ 27 kg) 500 mg PO BID x 10 days OR
o 250 mg PO QID x 10 days

OR

Benzathine Penicillin G (Bicillin LA):

o (< 27 kg) 600,000 units IM once
o (≥ 27 kg) 1.2 million units IM once
o (may substitute Bicillin CR 900,000 units/300,000 units IM once for most children, but the efficacy for heavier patients has not been demonstrated)

Penicillin allergy-non-anaphylactic

Cephalexin:

o Child: 30-50 mg/kg/day divided PO BID x 10 days
o Adult: 500 mg PO BID x 10 days (Max dosing)

Penicillin allergy-anaphylactic

Clindamycin:

o 30 mg/kg/day (max 900 mg/day) divided PO TID x 10 days

Azithromycin:

o Child: 12 mg/kg/day PO everyday x 5 days
o Adult: 500 mg PO everyday x 5 days (Max dosing)

Penicillin V Potassium is the drug of choice for treatment of GAS pharyngitis--a clinical GAS isolate resistant to penicillin or a cephalosporin never has been documented.

- Be aware of increasing macrolide resistance (up to 20%) in GAS infections.
- The use of penicillin and narrowest spectrum cephalosporin (cephalexin) decreases the potentiation of antibiotic resistance and risk of *Clostridioides difficile* colitis.

ADDITIONAL INSTRUCTIONS:

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For patients that test positive for GAS, child must be on antibiotics for ≥ 24 hours and be fever free before returning to school.

RATIONALE

- **Safety:** This pathway will improve the quality-of-care patients receive by ensuring antibiotics are only prescribed if testing confirms a bacterial cause of pharyngitis. Appropriate testing and treatment will prevent streptococcus sequelae.
- **Quality**: Will be improved by instituting consistent terminology, testing, dosing and care between providers.
- **Cost:** Will be improved by decreasing the cost associated with doing unnecessary testing and prescribing unnecessary antibiotics.
- **Delivery:** Providing appropriate antibiotic therapy to GAS positive patients should reduce complications associated with the infection.
    - Not testing suspected negative GAS patients will reduce the amount of time patients need to be in provider clinics and provider contact time.
    - Providing appropriate therapy to GAS negative patients will help reduce antibiotic resistance.
- **Engagement:** Is created and supported by the involvement of a multidisciplinary team in the development and maintenance of the pathway.
- **Patient/Family Satisfaction:** Shall be improved by providing the highest quality care based on established guidelines and the latest evidence available in the literature.

IMPLEMENTATION ITEMS

Epic Pharyngitis Smart Set which includes order set, note template, and diagnosis options.

METRICS PLAN

1. Maintain ≥ 94% of children who are diagnosed with Group A Streptococcal pharyngitis will have been tested by Rapid (GAS) Antigen Detection Test or Rapid PCR Test before antibiotics are prescribed. (Process Metric)
2. Maintain Pathway compliance with narrow spectrum antibiotics listed on algorithm and built into Epic Smart Set shall be ≥ 94%. (Outcome Metric)
3. Monitor number of patients prescribed re-treatment antibiotics within 7-30 days of the first antibiotic course for same diagnosis. (Balancing Metric)

SUPPORTING DOCUMENTS

Policy PC 37 Specimen Collection: Throat Culture
Pharyngitis Algorithm

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TEAM MEMBERS

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EVIDENCE

1.American Academy of Pediatrics. Group A Streptococcal Infections. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH, eds. Red Book:®: 2021-2024 Report of the committee on infectious diseases. American Academy of Pediatrics; 2021; 694-707.

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5.University Health System Pharyngitis Algorithm, March 2010.