

The Diagnosis and Management of Acute Group A Streptococcal Pharyngitis in Adolescent and Pediatric Patients

Clinical Practice Guideline MedStar Health

Antibiotic Stewardship

“These guidelines are provided to assist physicians and other clinicians in making decisions regarding the care of their patients. They are not a substitute for individual judgment brought to each clinical situation by the patient’s primary care provider in collaboration with the patient. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication but should be used with the clear understanding that continued research may result in new knowledge and recommendations.”

MedStar Pediatrics and MedStar Family Choice accept and endorse the clinical guidelines set forth by the Infectious Diseases Society of America published in 2012.

The online version of this article is available at:

<https://academic.oup.com/cid/article/55/10/e86/321183?login=true>

Each of the Key Points listed includes a systematic weighting of the strength of the recommendation (i.e., “strong” or “weak”) and quality of evidence (i.e., “high”, “moderate”, “low” or “very low”), using the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) system. A detailed description of the methods, background, and evidence summaries that support each of the recommendations can be found in the full text of the guidelines.

This guideline discusses diagnosis and management of **Group A Streptococcal (GAS)** pharyngitis in Pediatric and Adolescent patients. Recommendations are provided regarding antibiotic choices. See table below for dosing.

The following selected Key Points are extracted from the guideline for **ADOLESCENT AND PEDIATRIC** patients:

1. Testing for GAS pharyngitis is not routinely recommended for patients with clinical and epidemiological features that strongly suggest a viral etiology (e.g., cough, rhinorrhea, hoarseness, and oral ulcers (strong, high)). The diagnosis of GAS pharyngitis should be established by rapid antigen detection test (RADT) and/or culture should be performed because the clinical features alone do not reliably discriminate between GAS and viral pharyngitis. In **children and adolescents**, negative RADTs should be followed up with a throat culture (strong, high). Positive RADTs do not necessitate a follow up culture because they are highly specific (strong, high).
2. Diagnostic studies for GAS pharyngitis may not be indicated for children < 3 years old because acute rheumatic fever is rare in children < 3 years old, and the incidence of streptococcal pharyngitis and the classic presentation of streptococcal pharyngitis are uncommon in this age group. Selected children < 3 years old who have other risk factors (household contact with a school-aged sibling with documented GAS infection, attending day care or another setting with a high rate of cases of GAS infection, invasive retropharyngeal space infection) may be considered for testing (strong, moderate). *It should be noted that GAS*

infection in children <3 years old is often associated with fever, mucopurulent rhinitis, excoriated nares, and diffuse adenopathy and that exudative pharyngitis is rare in this age group.

3. Penicillin or amoxicillin remain the treatments of choice.
4. To prevent non-suppurative complications, rheumatic fever, and rheumatic heart disease, treat with the appropriate antibiotic for 10 days. The exceptions are a single IM dose of penicillin G or azithromycin for 5 days.
5. Penicillin-allergic individuals, without an anaphylaxis reaction, should receive a first-generation cephalosporin (i.e., cephalexin) for 10 days. If penicillin-related anaphylaxis, then use clindamycin or clarithromycin for 10 days, or azithromycin for 5 days (strong, moderate).
 - a. Resistance of GAS to Macrolide agents is well known and varies geographically and temporally. Macrolide resistance rates 5 – 20%. Clindamycin resistance rare ~ 1-3%.
6. Adjunctive therapy may be useful in the management of GAS pharyngitis. Analgesic/antipyretic agents such as acetaminophen or Ibuprofen for treatment of symptoms such as control of high fever and sore throat associated with GAS pharyngitis should be considered as an adjunct to an appropriate antibiotic (strong, high). Aspirin should be avoided in children due to the risk of Reye's Syndrome (strong, moderate). Corticosteroid therapy is not recommended (weak, moderate).
7. Recurrent episodes of pharyngitis associated with laboratory evidence of GAS pharyngitis may be due to chronic pharyngeal GAS carrier who is experiencing repeated viral infections rather than repeated streptococcal pharyngitis at close intervals (strong, moderate).
8. GAS carriers do not ordinarily justify efforts to identify them nor do they generally require antimicrobial therapy because GAS carriers are unlikely to spread GAS pharyngitis to their close contacts and are at little or no risk for developing suppurative or nonsuppurative complications such as acute rheumatic fever (strong, moderate). Clindamycin is recommended for eradication of the GAS carrier.
9. Follow-up post-treatment throat cultures or RADT are not recommended routinely (strong, high). Follow up culture to identify the GAS carrier state may be considered in special circumstances.
10. Diagnostic testing or empiric treatment of asymptomatic household contacts of patients with acute streptococcal pharyngitis is not routinely recommended (strong, moderate). Test only if symptomatic.
11. Tonsillectomy solely to reduce the frequency of GAS pharyngitis is not recommended (strong, high).
12. Non-group A strep does not need to be treated as it will not cause the non-suppurative consequences of rheumatic fever, rheumatic heart disease or post glomerulonephritis. Antibiotic treatment for non-group A strep is indicated if symptoms of sore throat or fever are still present for symptomatic improvement. The treatment regimen is the same as for GAS.

CENTOR CRITERIA

Clinical scoring criteria have been developed to help determine the likelihood of a bacterial cause. The most widely used are the modified Centor criteria, which include:

- fever by history
- tonsillar exudates
- tender anterior cervical adenopathy
- absence of cough

Patients who meet 3 or more Centor criteria have an increased risk of GAS and strep testing should be considered. If fewer than 3 Centor criteria are present, then strep testing is optional.

Clinical features alone do not distinguish between GAS and viral pharyngitis.

The American College of Physicians (ACP) - Clinicians should test patients with symptoms suggestive of group A streptococcal pharyngitis (for example, persistent fevers, anterior cervical adenitis, and tonsillopharyngeal exudates or other appropriate combination of symptoms) by rapid antigen detection test and/or culture for group A Streptococcus. Clinicians should treat patients with antibiotics only if they have confirmed streptococcal pharyngitis.

CDC Pediatric Treatment recommendations –Testing should not generally be performed in children younger than 3 years in whom GAS rarely causes pharyngitis and rheumatic fever and subsequent rheumatic heart disease) is uncommon. In children and adolescents, negative RADT tests should be backed up by a throat culture and positive RADTs do not require a backup culture.

GROUP A STREPTOCOCCUS (STREPTOCOCCUS PYOGENES) PHARYNGITIS TREATMENT HIGHLIGHTS

- Antibiotic therapy is recommended to prevent rheumatic heart disease in children ≥ 3 years old.
- Antibiotic therapy for group A Streptococcal pharyngitis confirmed by rapid group A Streptococcal (RADT):
 - First line: **Amoxicillin** 50 mg/kg/day PO divided q12-24h (max 1000 mg/day)
 - Non-severe Penicillin allergy: **Cephalexin** 20 mg/kg/dose PO q12h (max 500 mg/dose)
 - Severe Penicillin allergy:
 - **Clindamycin** 7 mg/kg/dose PO q8h (max 300 mg/dose) **OR**
 - **Azithromycin** 12 mg/kg/dose PO x 1 (max 500 mg/dose) on day 1, then 6 mg/kg/dose PO q24h (max 250 mg/dose) on days 2-5.
- **Duration:** 10 days (5 days for Azithromycin)

Table 1: Antibiotic Regimens Recommended for Group A Streptococcal Pharyngitis

Drug Route	Dose or Dosage	Duration	Recommendation Strength, Quality
<i>For individuals without penicillin allergy</i>			
Penicillin VK, oral	Acute Treatment (<i>Primary prevention of rheumatic fever</i>): Children <27 kg: 250 mg 2 to 3 times daily. Children ≥ 27 kg and adolescent: 500 mg 2 to 3 times daily.	10 days	Strong, high
	<i>Rheumatic fever, secondary prevention:</i> Children and Adolescent: 250mg Q12h		
Amoxicillin, oral	50 mg/kg/day divided q12-24h (max = 1000mg/ day)	10 days	Strong, high
Benzathine penicillin G, intramuscular	< 27 kg: 600,000 units. ≥ 27 kg: 1, 200,00-0 units	1 dose	Strong, high
<i>For individuals with penicillin allergy</i>			
Cephalexin, oral *	20 mg/kg/dose twice daily (max= 500mg/dose)	10 days	Strong, high
Cefadroxil, oral*	30 mg/kg/ day once daily (max = 1000 mg)	10 days	Strong, high
Clindamycin, oral	7 mg/kg/dose 3 times daily (max = 300mg/dose)	10 days	Strong, moderate
Azithromycin, oral**	12 mg/kg once (max = 500mg/day), then 6 mg/kg (max = 250mg/dose) q24h on days 2-5	5 days	Strong, moderate
Clarithromycin, oral**	7.5 mg/kg/dose twice daily (max = 250mg/dose)	10 days	Strong, moderate

Abbreviation: max, maximum.

*Avoid in individuals with immediate type hypersensitivity to penicillin.

**Resistance of GAS to these agents is well known and varies geographically and temporally. Macrolide resistance rates 5 – 20%. Clindamycin resistance rare, ~1-3%

PATIENT EDUCATION

Choosing wisely: <https://www.choosingwisely.org/patient-resources/antibiotics-for-respiratory-illness-in-children/children/>

DEFINITIONS

Antibiotic stewardship refers to coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration. Antimicrobial stewards seek to achieve optimal clinical outcomes related to antimicrobial use, minimize toxicity and other adverse events, reduce the costs of healthcare for infections, and limit the selection for antimicrobial resistant strains. - See more at: https://www.idsociety.org/Stewardship_Policy/

EFERENCE

REFERENCE

1. Shulman et al, Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Diseases Society of America. Clinical Infectious Disease, Sept 2012. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22965026?dopt=Abstract> (Guideline Summary NGC-9315 - Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Disease Society of America_
2. Harris, A. M., MD, Hicks, L. A., DO, & Qaseem, A., MD. (2016, March 15). Appropriate Antibiotic Use for Acute Respiratory Tract Infection in Adults: Advice for High-Value Care. From the American College of Physicians and the Centers for Disease Control and Prevention. *Annals of Internal Medicine*, 164(6), 425-434. Retrieved from <http://annals.org/article.aspx?articleid=2481815&resultClick=3#AcuteRhinosinusitis>
3. Pediatric Treatment Recommendations. Retrieved March 18, 2020, from <http://www.cdc.gov/groupastrep/diseases-hcp/strep-throat.html>
4. Adult Treatment Recommendations. Retrieved March 18, 2020. <http://www.cdc.gov/groupastrep/diseases-hcp/strep-throat.html> [HA1]
5. Khan, ZZ, Bronze, MS, (2014). Group A Streptococcal infections treatment and management. Retrieved from <http://emedicine.medscape.com/article/228936-treatment>
6. Wessels, MR., (2011). Streptococcal Pharyngitis. *New England Journal of Medicine*. 364:648-55. Retrieved from <http://www.nejm.org/doi/full/10.1056/NEJMcp1009126>
7. Fine, AM., (2012). Large-Scale Validation of the Centor and Mclsaac Scores to Predict Group A Streptococcal Pharyngitis. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3627733/#R3>
8. Hsu et al, 2022. The Johns Hopkins Hospital Antibiotic Guideline 2022-2023. Treatment Recommendations For Hospitalized Children. Johns Hopkins Medicine Press

Clinical Guidelines are reviewed every two years by a committee of experts in the field. Updates to guidelines occur more frequently as needed when new scientific evidence or national standards are published.

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