Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Diseases Society of America

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The guideline is intended for use by healthcare providers who care for adult and pediatric patients with group A streptococcal pharyngitis. The guideline updates the 2002 Infectious Diseases Society of America guideline and discusses diagnosis and management, and recommendations are provided regarding antibiotic choices and dosing. Penicillin or amoxicillin remain the treatments of choice, and recommendations are made for the penicillin-allergic patient, which now include clindamycin.

EXECUTIVE SUMMARY

Group A streptococcal (GAS) pharyngitis is a significant cause of community-associated infections. This document constitutes a revision of the 2002 guideline of the Infectious Diseases Society of America (IDSA) on the treatment of GAS pharyngitis [1]. The primary objective of this guideline is to provide recommendations on the management of this very common clinical condition among adult and pediatric patients. The guideline addresses issues related to the diagnosis of streptococcal pharyngitis and its treatment in patients who are or are not allergic to penicillin. The guideline does not discuss active surveillance testing or other prevention strategies. Each section of the guideline begins with a specific clinical question and is followed by numbered recommendations and a summary of the most-relevant evidence in support of the recommendations. Areas of controversy in which data are limited or conflicting and in which additional research is needed are indicated throughout the document and are highlighted in the Future Research section.

Summarized below are the recommendations made in the updated guidelines for the diagnosis and management GAS pharyngitis. The Panel followed a process used in the development of other IDSA guidelines,

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Table 1. Strength of Recommendations and Quality of the Evidence

Strength of Recommendation and Quality of Evidence	Clarity of Balance Between Desirable and Undesirable Effects	Methodological Quality of Supporting Evidence (Examples)	Implications
Strong recommendation, high-quality evidence	Desirable effects clearly outweigh undesirable effects, or vice versa	Consistent evidence from well-performed RCTs or exceptionally strong evidence from unbiased observational studies	Recommendation can apply to most patients in most circumstances. Further research is unlikely to change our confidence in the estimate of effect.
Strong recommendation, moderate quality evidence	Desirable effects clearly outweigh undesirable effects, or vice versa	Evidence from RCTs with important limitations (inconsistent results, methodological flaws, indirect, or imprecise) or exceptionally strong evidence from unbiased observational studies	Recommendation can apply to most patients in most circumstances. Further research (if performed) is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Strong recommendation, low-quality evidence	Desirable effects clearly outweigh undesirable effects, or vice versa	Evidence for at least 1 critical outcome from observational studies, RCTs with serious flaws or indirect evidence	Recommendation may change when higher-quality evidence becomes available. Further research (if performed) is likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Strong recommendation, very-low-quality evidence (very rarely applicable)	Desirable effects clearly outweigh undesirable effects, or vice versa	Evidence for at least 1 critical outcome from unsystematic clinical observations or very indirect evidence	Recommendation may change when higher-quality evidence becomes available. Any estimate of effect for at least 1 critical outcome is very uncertain.
Weak recommendation, high-quality evidence	Desirable effects closely balanced with undesirable effects	Consistent evidence from well-performed RCTs or exceptionally strong evidence from unbiased observational studies	The best action may differ depending on circumstances or patients or societal values. Further research is unlikely to change our confidence in the estimate of effect.
Weak recommendation, moderate-quality evidence	Desirable effects closely balanced with undesirable effects	Evidence from RCTs with important limitations (inconsistent results, methodological flaws, indirect, or imprecise) or exceptionally strong evidence from unbiased observational studies	Alternative approaches likely to be better for some patients under some circumstances. Further research (if performed) is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Weak recommendation, low-quality evidence	Uncertainty in the estimates of desirable effects, harms, and burden; desirable effects, harms, and burden may be closely balanced	Evidence for at least 1 critical outcome from observational studies, from RCTs with serious flaws or indirect evidence	Other alternatives may be equally reasonable. Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Weak recommendation, very-low-quality evidence	Major uncertainty in the estimates of desirable effects, harms, and burden; desirable effects may or may not be balanced with undesirable effects	Evidence for at least 1 critical outcome from unsystematic clinical observations or very indirect evidence	Other alternatives may be equally reasonable. Any estimate of effect, for at least 1 critical outcome, is very uncertain.

Information is based on GRADE (Grading of Recommendations Assessment, Development, and Evaluation) criteria [2–8]

Abbreviation: RCT, randomized controlled trial.

which included a systematic weighting of the strength of recommendation (ie, "strong" or "weak") and quality of evidence (ie, "high," "moderate," "low," or "very low"), using the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) system [2–8] (Table 1). 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. Specific treatment

Table 2. Antibiotic Regimens Recommended for Group A Streptococcal Pharyngitis

Drug, Route	Dose or Dosage	Duration or Quantity	Recommendation Strength, Quality[a]	Reference(s)
For individuals without penicillin allergy				
Penicillin V, oral	Children: 250 mg twice daily or 3 times daily; adolescents and adults: 250 mg 4 times daily or 500 mg twice daily	10 d	Strong, high	[125, 126]
Amoxicillin, oral	50 mg/kg once daily (max = 1000 mg); alternate: 25 mg/kg (max = 500 mg) twice daily	10 d	Strong, high	[88–92]
Benzathine penicillin G, intramuscular	<27 kg: 600 000 U; ≥27 kg: 1 200 000 U	1 dose	Strong, high	[53, 125, 127]
For individuals with penicillin allergy				
Cephalexin,[b] oral	20 mg/kg/dose twice daily (max = 500 mg/dose)	10 d	Strong, high	[128–131]
Cefadroxil,[b] oral	30 mg/kg once daily (max = 1 g)	10 d	Strong, high	[132]
Clindamycin, oral	7 mg/kg/dose 3 times daily (max = 300 mg/dose)	10 d	Strong, moderate	[133]
Azithromycin,[c] oral	12 mg/kg once daily (max = 500 mg)	5 d	Strong, moderate	[97]
Clarithromycin,[c] oral	7.5 mg/kg/dose twice daily (max = 250 mg/dose)	10 d	Strong, moderate	[134]

Abbreviation: Max, maximum.

[a] See Table 1 for a description.

[b] Avoid in individuals with immediate type hypersensitivity to penicillin.

[c] Resistance of GAS to these agents is well-known and varies geographically and temporally.

recommendations regarding streptococcal pharyngitis are included in Table 2.

RECOMMENDATIONS FOR THE DIAGNOSIS OF GAS PHARYNGITIS

I. How Should the Diagnosis of GAS Pharyngitis Be Established?

Recommendations

1. Swabbing the throat and testing for GAS pharyngitis 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 except when overt viral features like rhinorrhea, cough, oral ulcers, and/or hoarseness are present. In children and adolescents, negative RADT tests should be backed up by a throat culture (strong, high). Positive RADTs do not necessitate a back-up culture because they are highly specific (strong, high).

2. Routine use of back-up throat cultures for those with a negative RADT is not necessary for adults in usual circumstances, because of the low incidence of GAS pharyngitis in adults and because the risk of subsequent acute rheumatic fever is generally exceptionally low in adults with acute pharyngitis (strong, moderate). Physicians who wish to ensure they are achieving maximal sensitivity in diagnosis may continue to use conventional throat culture or to back up negative RADTs with a culture.

3. Anti-streptococcal antibody titers are not recommended in the routine diagnosis of acute pharyngitis as they reflect past but not current events; strong, high).

II. Who Should Undergo Testing for GAS Pharyngitis?

Recommendations

4. Testing for GAS pharyngitis usually is not recommended for children or adults with acute pharyngitis with clinical and epidemiological features that strongly suggest a viral etiology (eg, cough, rhinorrhea, hoarseness, and oral ulcers; strong, high).

5. Diagnostic studies for GAS pharyngitis are not 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, such as an older sibling with GAS infection, may be considered for testing (strong, moderate).

6. Follow-up posttreatment throat cultures or RADT are not recommended routinely but may be considered in special circumstances (strong, high).

7. Diagnostic testing or empiric treatment of asymptomatic household contacts of patients with acute streptococcal pharyngitis is not routinely recommended (strong, moderate).

RECOMMENDATIONS FOR THE TREATMENT OF PATIENTS WITH GAS PHARYNGITIS

III. What Are the Treatment Recommendations for Patients With a Diagnosis of GAS Pharyngitis?

Recommendations

8. Patients with acute GAS pharyngitis should be treated with an appropriate antibiotic at an appropriate dose for a

duration likely to eradicate the organism from the pharynx (usually 10 days). Based on their narrow spectrum of activity, infrequency of adverse reactions, and modest cost, penicillin or amoxicillin is the recommended drug of choice for those non-allergic to these agents (strong, high).

9. Treatment of GAS pharyngitis in penicillin-allergic individuals should include a first generation cephalosporin (for those not anaphylactically sensitive) for 10 days, clindamycin or clarithromycin for 10 days, or azithromycin for 5 days (strong, moderate).

IV. Should Adjunctive Therapy With Nonsteroidal Anti-inflammatory Drugs (NSAIDs), Acetaminophen, Aspirin, or Corticosteroids Be Given to Patients Diagnosed With GAS Pharyngitis?

Recommendation

10. Adjunctive therapy may be useful in the management of GAS pharyngitis.

(i) If warranted, use of an analgesic/antipyretic agent such as acetaminophen or an NSAID for treatment of moderate to severe symptoms or control of high fever associated with GAS pharyngitis should be considered as an adjunct to an appropriate antibiotic (strong, high).
(ii) Aspirin should be avoided in children (strong, moderate).
(iii) Adjunctive therapy with a corticosteroid is not recommended (weak, moderate).

V. Is the Patient With Frequent Recurrent Episodes of Apparent GAS Pharyngitis Likely to Be a Chronic Pharyngeal Carrier of GAS?

Recommendations

11. We recommend that clinicians caring for patients with recurrent episodes of pharyngitis associated with laboratory evidence of GAS pharyngitis consider that they may be experiencing >1 episode of bona fide streptococcal pharyngitis at close intervals, but they should also be alert to the possibility that the patient may actually be a chronic pharyngeal GAS carrier who is experiencing repeated viral infections (strong, moderate).

12. We recommend that 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 (eg, acute rheumatic fever; strong, moderate).

13. We do not recommend tonsillectomy solely to reduce the frequency of GAS pharyngitis (strong, high).

Supplementary Data

Supplementary materials are available at *Clinical Infectious Diseases* online (http://www.oxfordjournals.org/our_journals/cid/). Supplementary materials consist of data provided by the author that are published to benefit the reader. The posted materials are not copyedited. The contents of all supplementary data are the sole responsibility of the authors. Questions or messages regarding errors should be addressed to the author.

Notes

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Disclaimer. It is important to realize that guidelines cannot always account for individual variation among patients. They are not intended to supplant physician judgment with respect to particular patients or special clinical situations. IDSA considers adherence to these guidelines to be voluntary, with the ultimate determination regarding their application to be made by the physician in the light of each patient's individual circumstances.

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Potential conflicts of Interest. The following list is a reflection of what has been reported to the IDSA. To provide thorough transparency, the IDSA requires full disclosure of all relationships, regardless of relevancy to the guideline topic. The reader of these guidelines should be mindful of this when the list of disclosures is reviewed. S. S. has served as a consultant to Novartis Vaccines and Merck Vaccines and received research support from Quidel. A. B. has served as a consultant for SPD Development, Cornerstone BioPharma, and Rib-X Pharmaceuticals. All other authors report no potential conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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