



Complete Summary

GUIDELINE TITLE

Pharyngitis.

BIBLIOGRAPHIC SOURCE(S)

Pharyngitis. Guidelines for clinical care. Ann Arbor (MI): University of Michigan Health System; 2000 Dec. 8 p. [8 references]

COMPLETE SUMMARY CONTENT

SCOPE
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SCOPE

DISEASE/CONDITION(S)

Pharyngitis

GUIDELINE CATEGORY

Evaluation
Management

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To utilize symptoms and signs to determine pretest probability of disease
- To confirm negative result with culture when strep is suspected and a rapid strep screen is performed
- To reduce indiscriminate use of expensive antibiotics
- To assure adequate courses of antibiotic treatment

TARGET POPULATION

Pediatric, adolescent, and adult patients with a sore throat

INTERVENTIONS AND PRACTICES CONSIDERED

1. Diagnosis of pharyngitis, including identification of group A beta-hemolytic streptococcal (GABHS) pharyngitis:
 - Evaluation of signs and symptoms
 - Laboratory confirmation: group A beta-hemolytic streptococcus throat culture; group A beta-hemolytic streptococcus antigen screen (rapid strep screen)
2. Treatment of group A beta-hemolytic streptococcal pharyngitis:
 - Preferred treatment. For adolescents and adults: penicillin or amoxicillin; erythromycin, in penicillin-allergic patients. For children: amoxicillin; erythromycin, in penicillin-allergic patients
 - Alternative treatments. For adolescents and adults: Augmentin, azithromycin, cefixime, cefuroxime, cephalexin, clindamycin. For children: cefixime, cefuroxime, cephalexin, clindamycin, cefprozil, or cefadroxil
3. Reevaluation of any patient with documented group A beta-hemolytic streptococcal infection who fails to improve, despite an appropriate course of antibiotics
4. Consultation with otolaryngology for peritonsillar abscess (Quinsy) or retropharyngeal abscess

MAJOR OUTCOMES CONSIDERED

- Symptomatic improvement (i.e., symptom scores)
- Overall duration of symptoms (days)
- Eradication of Streptococcus (i.e., recovery rate of group A beta-hemolytic streptococci from the pharynx)
- Incidence of acute rheumatic fever

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The literature search for this project was conducted prospectively using the major keywords of: GABHS (streptococcal infections, streptococcus pyogenes, pharyngitis, pharynx), clinical trials (MeSH: clinical trials, phase IV; controlled clinical trials; multicenter studies; randomized controlled trials; cohort studies. Publication types: clinical trials; multicenter studies; cohort studies; randomized controlled trials; controlled clinical trials), guidelines (Mesh: clinical protocols; physician practice patterns; algorithms; practice guidelines; outcome and process assessment [health care]; NIH consensus development conferences; consensus development conferences. Publication types: practice guideline; guideline; NIH consensus development conference; consensus development conference), since 1996 (i.e., since the guideline developer's previous search) on Medline. Terms used for specific diagnosis and treatment topic searches within the major key words included: history (medical history taking, recurrence), physical exam (physical exam, signs and symptoms), throat culture (bacteriological techniques, "throat adj3 culture"), rapid strep (bacterial antigens, immunoassay, diagnostic reagent kits, "rapid strep"), diagnosis (diagnosis [subheading], diagnostic use (subheading), sensitivity and specificity, false negative reactions, false positive reactions, likelihood functions, "sensitivity", "specificity") observation (decision making, "observation"), antibiotics, treatment (treatment, therapeutic use), and alternative medicine (alternative medicine, zinc, ascorbic acid, medicinal plants, vitamin A, beta carotene). The search was conducted in components each keyed to a specific causal link in a formal problem structure (available upon request). Negative trials were specifically sought. The search was a single cycle.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of evidence for the most significant recommendations:

- A. Randomized controlled trials
- B. Controlled trials, no randomization
- C. Observational trials
- D. Opinion of expert panel

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

Published cost-analyses were reviewed. One article analyzed the treat/test/symptomatically treat model, using assumptions with regard to sequelae of treating, not treating and estimated benefits of treatment, produced a pretest probability threshold of 47%, over which treatment without testing was most cost-effective. Under 47%, the best approach was test and treat only positives, assuming good follow-up can be anticipated.

Another article, along with an accompanying editorial, provides some basic cost analysis data on possible approaches to diagnosis and treatment. It explores possible explanations for treatment failure.

For more information, refer to the Annotated References section of the original guideline document.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

University of Michigan Health System (UMHS) guidelines are reviewed by leadership in departments to which the content is most relevant. This guideline concerning pharyngitis was reviewed by members of the following departments: Pediatrics; General Medicine; Family Medicine.

Guidelines are approved by the Primary Care Executive Committee (PCEC) and the Executive Committee of Clinical Affairs (ECCA).

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The levels of evidence [A-D] are defined at the end of the "Major Recommendations."

General Approach

- Viral agents cause most cases of pharyngitis: 90% in adults, 60% to 75% in children [C].
- The prime reason to identify and treat group A beta-hemolytic streptococcal (GABHS) pharyngitis is to decrease the risk of acute rheumatic fever [A]. The endemic incidence of acute rheumatic fever is around 0.23 to 1.88/100,000.

- Early treatment of group A beta-hemolytic streptococcal pharyngitis can decrease the time a patient is symptomatic by 1/2 to 2 days from a typical 3 to 7 days [A] and may decrease the period of contagiousness [C].

Diagnosis

- Symptoms/signs can indicate the probability of group A beta-hemolytic streptococcal pharyngitis, with the probability more accurate for adults than for children:
 1. Adults: a limited set of symptoms and signs can identify a low, intermediate, or high probability of having group A beta-hemolytic streptococcal pharyngitis [C].
 2. Children: symptoms and signs and epidemiologic criteria can identify a high probability of having group A beta-hemolytic streptococcal pharyngitis [C].
- Laboratory confirmation:
 1. Adults: confirmation is most useful when group A beta-hemolytic streptococcal pharyngitis is suspected but not highly probable; test those with intermediate probability [C].
 2. Children: confirmation is most useful when group A beta-hemolytic streptococcal pharyngitis cannot be excluded but is not highly probable. The threshold for testing is lower for children because the risk of non-suppurative complications is higher than for adults.
- Throat culture is the "gold standard" for diagnosis [C]. Strep screens identify group A beta-hemolytic streptococcal pharyngitis more rapidly, but have variable sensitivity [C]. Reserve rapid tests for patients with high probability of having group A beta-hemolytic streptococcal pharyngitis, culture alone in all others will be more cost effective. In patients where group A beta-hemolytic streptococcal pharyngitis is suspected and tested with a streptococcal antigen screen, a negative result should be confirmed by culture [C].

Treatment

- Penicillin or amoxicillin are the drugs of choice in adults; if suspension is prescribed, amoxicillin is the drug of choice for children. Erythromycin for patients allergic to penicillin.
- Antibiotic treatment must be continued for 10 days for penicillin [D], amoxicillin 1000 mg b.i.d. may be given for 6 days in adults [A].

Controversial Areas:

- Based on a description over the phone, a clinician may decide to treat for group A beta-hemolytic streptococcal pharyngitis [C]:
 1. An adolescent or adult with symptoms suggesting a high probability of group A beta-hemolytic streptococcal pharyngitis.
 2. A patient of any age with a family member with documented group A beta-hemolytic streptococcal pharyngitis.

Definitions

Levels of evidence for the most significant recommendations:

- A. Randomized controlled trials
- B. Controlled trials, no randomization
- C. Observational trials
- D. Opinion of expert panel

CLINICAL ALGORITHM(S)

Algorithms are provided in the original guideline document for:

- Management of adult pharyngitis
- Management of pediatric pharyngitis

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Conclusions were based on prospective randomized clinical trials if available, to the exclusion of other data; if randomized clinical trials were not available, observational studies were admitted to consideration. If no such data were available for a given link in the problem formulation, expert opinion was used to estimate effect size. The type of evidence is identified and graded for the most significant recommendations (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Prevention of sequelae: The prime reason to identify and treat group A beta-hemolytic streptococcal (GABHS) pharyngitis is to decrease the risk of acute rheumatic fever.
- Effective treatment: Early treatment of group A beta-hemolytic streptococcal pharyngitis can decrease the time a patient is symptomatic by 1/2 to 2 days from a typical 3 to 7 days and may decrease the period of contagiousness.
- Appropriate utilization of antibiotics: The majority of sore throats are not caused by group A beta-hemolytic streptococcal pharyngitis and do not require antibiotic therapy. Rational use of antibiotics contains cost and prevents harms associated with indiscriminate antibiotic use, including increased incidence of allergic reactions to antibiotics and the emergence of resistant strains of group A beta-hemolytic streptococcal pharyngitis or other pathogenic bacteria.

POTENTIAL HARMS

- Cost of additional testing: The value of early diagnosis in the minority of cases when strep is present and identified must be weighed against the higher total laboratory charges for the majority of cases screened. Most screens are negative and additional charges will be incurred for a subsequent culture.

- Adverse effects of antibiotics: A single intramuscular injection of benzathine penicillin produces a significant amount of pain at the injection site that may last a number of days. Other adverse effects include rash, nausea, and diarrhea.

QUALIFYING STATEMENTS

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These guidelines should not be construed as including all proper methods of care or excluding other acceptable methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding any specific clinical procedure or treatment must be made by the physician in light of the circumstances presented by the patient.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Pharyngitis. Guidelines for clinical care. Ann Arbor (MI): University of Michigan Health System; 2000 Dec. 8 p. [8 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1996 Nov (updated 2000 Dec)

GUIDELINE DEVELOPER(S)

University of Michigan Health System - Academic Institution

SOURCE(S) OF FUNDING

Internal funding for University of Michigan Health System (UMHS) guidelines is provided by the Office of Clinical Affairs. No external funds are used.

GUIDELINE COMMITTEE

Pharyngitis Guideline Team

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Team Leader: John Crump, MD

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

None of the members of the Pharyngitis guideline team have a relationship with commercial companies whose products are discussed in this guideline. The team members are listed on the front page of the guideline document.

GUIDELINE STATUS

This is the current release of the guideline. It updates the previous version of this guideline published by the University of Michigan Health System (UMHS) in 1996 (Pharyngitis [in adults and children]. Ann Arbor [MI]: University of Michigan Health System; 1996. 8 p.)

An update is not in progress at this time.

GUIDELINE AVAILABILITY

Electronic copies: Available for download (in Portable Document Format [PDF]) from the [University of Michigan Health System Web site](#).

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on May 20, 1999. The information was verified by the guideline developer on June 17, 1999. This summary was updated by ECRI on December 14, 2001. The updated information was verified by the guideline developer as of February 8, 2002.

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