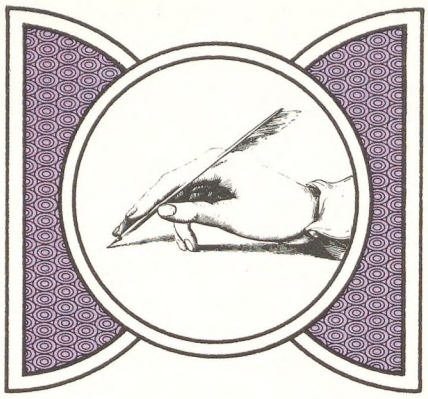
Letters to the Editor



The Journal welcomes Letters to the Editor; if found suitable, they will be published as space allows. Letters should be typed double-spaced, should not exceed 400 words, and are subject to abridgment and other editorial changes in accordance with journal style.

Treatment of Streptococcal Pharyngitis

To the Editor:

I write concerning the article "Streptococcal Throat Infections in Family Practice," by Robert Gillette (*J Fam Pract 6:251, 1978*). I am happy to see the problem of streptococcal pharyngitis discussed in Dr. Gillette's excellent paper. However, I believe some reactions and further perspectives on this subject deserve mention.

1. Dr. Gillette offers the referenced comment that about one third of sore throats are streptococcal, and then uses this to extrapolate how many of the cases of pharyngitis in the Virginia Study[1] were streptococcal. This is a very tenuous assumption to make. An excellent article by a Canadian family physician, W. J. Hart, revealed only ten percent of throat cultures positive for streptococcus, and a large study at the Children's Hospital National Medical Center revealed 11 and 16 percent of cultures taken became positive.[2,3] In our own four-month study, we found 11 percent of our throat cultures positive for beta streptococcus. Furthermore, Wannamaker has suggested that perhaps only 50 percent of positive throat cultures for beta strep are true acute infections, ie, with an antibody rise.[4] My point is, the fraction of pharyngitis cases that are streptococcal is highly variable, ranging from less than 10 percent in some studies to perhaps 40 percent in others. This should be made clear and perhaps documented for any given data referred to (eg, the Virginia Study).

2. Dr. Gillette suggests that appropriate antibiotic given early in the course of an acute streptococcal pharyngitis provides dramatic relief of symptoms. However, I know of no controlled studies in the literature to support this. Alternatively, two studies reflect the opposite point of view.[5,6] I respect all physicians' opinions, perhaps based on years of experience, but we must realize there may be a large placebo effect associated with prescribing penicillin, as well as the fact that the natural history of streptococcal pharyngitis is to improve, even without therapy. A well-controlled, double-blind study concerning this issue would be an

Continued on page 436

Continued from page 432

ideal topic of research for current family physicians.

3. In further supporting the use of the throat culture for all cases of pharyngitis, I refer to Hart's work again.[2] In this study, four physicians performed cultures on 540 patients complaining of sore throat, withholding treatment until the results were known. Their clinical diagnosis was correct in only 56 percent of cases. Without relying on the culture, 190 patients would have been treated unnecessarily, and 22 cases of strep throat would have gone unrecognized. In our own residency setting, we have documented that, even when our residents are highly suspicious of streptococcal pharyngitis, they are correct (by positive culture) in only one third of cases.

4. Finally, concerning the technique of throat culturing, Dr. Gillette describes a practical and efficient method. However, recent studies have suggested that primary plating of bacitracin discs, with reliance on the appearance of a primary zone of inhibition, can lead to a high percentage of false-negative interpretations.[7,8] To avoid missing these false negatives, it may be wise not to require the appearance of a zone of inhibition on first-day interpretations as a criterion for treatment. Ideally, applying the bacitracin disc to a pure subculture on a second-day plate will more accurately identify Group A beta hemolytic streptococcus.

I realize that the management of streptococcal pharyngitis has long been debated and will continue to be discussed. However, we in family practice must strive to be as current, and at the same time as practical, as possible in our management of this common infection.

J. Christopher Shank, MD
Director of Research
Cedar Rapids
Family Practice Center
Cedar Rapids, Iowa

References

1. Marsland DW, Wood M, Mayo F: Content of family practice: Rank order of diagnoses by frequency. J Fam Pract 3:38, 1976

2. Hart WJ: Streptococcal pharyngitis. Can Fam Physician 22:516, 1976

3. Pedreira FA, Margileth AM, Perry LW, et al: Streptococcal surveillance during 1975: Experience with rheumatic fever and rheumatic heart disease. Clin Proc, Childrens Hospital National Medical Center 33:51, 1977

4. Wannamaker LW, Ferrieri P: Streptococcal infections: Updated. DM, October 1975, pp 3-17

5. Brink WR, Rammelkamp CH Jr, Denny FW, et al: Effect of penicillin and aureomycin on the natural course of streptococcal tonsillitis and pharyngitis. Am J Med 10:300, 1951

6. Merenstein JH, Rogers KD: Streptococcal pharyngitis: Early treatment and management by nurse practitioners. JAMA 227:1278, 1974

7. Murray PR, Wold AD, Hall MM, et al: Bacitracin differentiation for presumptive identification of beta hemolytic streptococci: Comparison of primary and purified plate testing. J Pediatr 89:576, 1976

8. Murray PR, Wold AD, Washington JA: Recovery of group A and non-group A beta hemolytic streptococci from throat swab specimens. Mayo Clin Proc 52:81, 1977

To the Editor:

With great interest, I read the article by Dr. Gillette, "Streptococcal Throat Infections in Family Practice" (*J Fam Pract 6:251, 1978*). Since sore throats are the fourth most common symptom seen in practice today,[1] the article was certainly timely and applicable. However, a few additional points seem warranted.

(1) Diagnosis and treatment on

Continued on page 438

Continued from page 436

"findings suggestive of streptococcal" pharyngitis is fraught with hazard.[2] (2) Treatment with "appropriate antibiotics" does *not* alter the course of the disease.[3] (3) Even early treatment does not prevent acute glomerulonephritis.[4] (4) Treatment can be delayed up to nine days without significantly increasing the risk of rheumatic heart disease,[5] which is the major reason for treatment. (5) Failure to do a throat culture on a child who eventually developed rheumatic fever led to a successful malpractice suit.[6] (6) Approximately 10 to 25 percent of asymptomatic children are normal carriers of Group A streptococci making routine culturing of family contacts almost uninterpretable. (7) Benzathine penicillin is, in fact, surpassed "for reliability in eradicating streptococci" by lincomycin.[7] (8) It is true that one third of pediatric patients with pharyngitis are positive for B hemolytic streptococcus, but this incidence rapidly drops off to five percent in adults,[8] making the premise of "7,000 cases of this illness" untenable. This is especially true if you consider that only 60 percent of positive cultures show detectable titer rise.[2]

With the above facts in mind, would it not be better for the practicing physician in an endemic situation to have throat cultures available for use, and withhold treatment until cultures are positive in the symptomatic patient? Even in this situation, overtreatment would probably be the rule since, once again, only 60 percent of these culture-positive patients demonstrate an antibody rise indicating actual infection.[2]

David A. Driggers, Maj, USAF, MC
Department of Family Practice
David Grant USAF Medical Center (SGHC)
Travis Air Force Base, California

References

1. National ambulatory medical care survey: 1973 summary: United States, May 1973-April 1974. In National Center for Health Statistics (Rockville, Md): Vital and Health Statistics, series 13, No. 21. DHEW publication No. (HRA) 76-1772. Government Printing Office, 1975

2. Wannamaker LW: Perplexity and precision in the diagnosis of streptococcal pharyngitis. Am J Dis Child 124:352, 1972

3. Denny FW, Wannamaker LW, Hahn EO: Comparative effects of penicillin, aureomycin and terramycin on streptococcal tonsillitis and pharyngitis. Pediatrics 11:7, 1953.

4. Wannamaker LW: Medical progress, differences between streptococcal disease of the throat and skin. N Engl J Med 282:23, 1971

5. Catanzaro JF, Stetson CA, Morris AJ, et al: The role of the streptococcus in the pathogenesis of rheumatic fever. Am J Med 17:749, 1954

6. Curran WJ: Glaucoma and streptococcal pharyngitis: Diagnostic practices and malpractice liability. N Engl J Med 291:508, 1974

7. Howie M: Treatment of Group A streptococcal pharyngitis in childhood. Am J Dis Child 121:477, 1971

8. Walsh BT, Bookheim WW, Johnson RC, et al: Recognition of streptococcal pharyngitis in adults. Arch Intern Med 135:1493, 1975

To the Editor:

As a family physician and a family practice educator who spends much of his time explaining to parents why their children don't need a "penicillin shot" and advising residents *not* to prescribe antibiotics unnecessarily, I read with interest Dr. Gillette's article (*J Fam Pract 6:251, 1978*) regarding streptococcal throat infections. Although I enjoyed the paper, I feel there were some important omissions and inaccuracies.

Continued on page 440

Continued from page 438

First, Dr. Gillette states that "antibiotics give dramatic relief of symptoms and may well be justified on that basis alone if the patient is seen in the first or second day of the illness." This point is inaccurate at least, and controversial at best.[1,2]

Though the author alludes to the difficulty in differentiating streptococcal and viral pharyngitis on clinical grounds, he goes on to state that "children with findings suggesting streptococcal infections are treated with oral penicillin—until the culture is reported." These statements seem somewhat conflictual to me. The worst cases of exudative pharyngitis and adenopathy in my experience have occured in patients with mononucleosis.

Finally and most importantly are the questions of increasing the incidence of penicillin reactions and allergy, which the author mentioned, and the emergence of bacterial strains resistant to penicillin, which he ignored. We are all now having to deal with new enemies, such as ampicillin-resistant Hemophilus influenzae and penicillin-resistant gonococcus, treacherous organisms which owe their existence to the indiscriminate use of these antibiotics in the past. If we foster a precedent of prescribing penicillin before culture results are known to every child with a fever, cervical adenopathy, and exudative pharyngitis, how long will it be before the emergency of more resistant strains of staphylococci and gonococci, and even a penicillin-resistant streptococcus? I shall continue to await culture results before prescribing antibiotics, and I don't believe my patients will suffer for it.

E. Scott Medley, MD
Chief, Graduate Education
Department of Family Practice
Medical University of
South Carolina
Charleston, South Carolina

References

1. Wannamaker LW: A penicillin shot without culturing the child's throat. JAMA 235:913, 1976
2. Prevention of rheumatic fever. Report of the Committee on Rheumatic Fever, Council on Rheumatic Fever and Congenital Heart Disease of the American Heart Association. Circulation 43:983, 1971

The preceding letters were referred to Dr. Gillette who responds as follows:

A response to the issues raised by Drs. Medley, Shank and Driggers should start by noting what the paper in question does and does not say about various ways of managing streptococcal throat infections. First, under "Comment," it is pointed out that there are three possible approaches: antibiotics without cultures, antibiotics after positive cultures, or no antibiotics. No recommendations are made in this part of the paper. Next comes the report of a poll done in an effort to determine how family physicians actually manage such problems. Finally, my personal recommendations are outlined in a separate section. Please note that the only population group for whom I do not recommend cultures is adults with no history of rheumatic fever and with current clinical findings suggestive of a viral infection.

Continued on page 444

Continued from page 440

All three writers questioned the assertion that the administration of appropriate antibiotics early in the course of streptococcal throat infections gives relief of symptoms. Drs. Shank and Driggers have made reference to papers on this topic from the 1950s. I have read both papers and find that they clearly support the conclusion that administration of appropriate antibiotics early in the course of streptococcal throat infections does indeed hasten the resolution of symptoms; see also Peebles, 1971.[1]

All three writers challenged my suggestion that it may be appropriate to administer oral penicillin or erythromycin to children with clinical findings suggestive of streptococcal infections during the interval between initial examination and reporting of throat culture findings. I am not aware of any solid evidence that such management has contributed to antibiotic resistance as Dr. Medley suggests or that it is "fraught with hazard" as Dr. Driggers indicates. There is an additional factor to be considered: Clinical decisions often have to be made at the end of Friday afternoon office hours or immediately before a holiday. The clinician who is willing to come in on a Sunday, read the culture, and contact the family for treatment is much to be admired, but he probably is a rara avis in most practice settings.

Dr. Driggers asserts that "benzathine penicillin is, in fact, surpassed . . . by lincomycin." The point is irrelevant since lincomycin's drawbacks make it unsuitable for use in cases of strep throat.

Drs. Shank and Driggers challenge the extrapolations made from the work of Marsland et al, attempting to project the number of cases of streptococcal throat infections that occurred in the course of the "Virginia Study." They are correct. The extrapolation was weak in the absence of age-specific data.

Dr. Shank disagrees on the value of bacitracin discs applied to the original culture plate. His reference 8 is not applicable since that paper refers to the identification of Group A streptococci by the fluorescent antibody technique. His reference is relevant, although certain aspects of my technique (particularly placing the bacitracin disc at the junction of the second and third swabbings) are designed to minimize this problem. Further work is needed in this area.

Dr. Driggers observes that "treatment can be delayed up to nine days without significantly increasing the risk of rheumatic heart disease, which is the major reason for treatment." His statement is generally correct, although nine days appears to be a point on a curve which has, to my knowledge, been only vaguely defined.

Robert D. Gillette, MD
Director
Riverside Family Practice Center
Department of Family Medicine
Medical College of Ohio
Toledo, Ohio

References

1. Peebles TC: Identification and treatment of group A beta-hemolytic streptococcal infections. Pediatr Clin North Am 18:145, 1971