Just the Berries

Kevin Forward, MD

Diagnosing and managing Group A streptococcus pharyngitis

Pharyngitis is one of the most frequent reasons for patients to visit their family doctors.[1] Most cases of pharyngitis are not bacterial in origin, but about half the patients presenting with sore throat receive antibiotics. Because the current level of antimicrobial therapy contributes to ongoing development of resistance, physicians have an obligation to prescribe fewer antibiotics. Better management of pharyngitis is one way they can do so.

Numerous studies have demonstrated that it is impossible on clinical grounds to differentiate streptococcal from viral pharyngitis.[2] Although there are other causes of bacterial pharyngitis besides *Streptococcus pyogenes*, it is not clear that patients benefit much from antibiotic treatment (with the obvious exception of *Neisseria gonorrhoeae* and diphtheria).

Overuse of antibiotics for respiratory infections is often attributed to physicians' inability to differentiate bacterial from viral infections. Certainly, this is true for otitis media and acute sinusitis. It is not the case for Group A streptococcus where both antigen detection tests and cultures are widely available. Physicians expert in management of infectious diseases advise treating patients only when Group A streptococcus has been confirmed, which is also the approach advocated in the Infectious Disease Society of America (IDSA) Guidelines.[3] At the Queen Elizabeth II Health Science Centre in Halifax, NS, approximately 20% of antigen tests on children 1 to 5 years old, 35% on children 5 to 10 years old, 20% on children 10 to 15 years old, and 15% on adults have positive results. If we treat only those infected with *S pyogenes*, we can markedly reduce the amount of antibiotics prescribed.

The Group A streptococcus antigen detection test, which is almost ideal for this purpose, has 80% to 90% sensitivity and more than 95% specificity for detecting *S pyogenes*.[4] Results can be available on the day of testing, and antibiotics can be prescribed by the end of the day. Negative results of antigen tests should be confirmed by culture, and laboratories culturing antigen-negative swabs should report most positive culture results by telephone or fax on the following day.

A scoring system has been suggested for patients with pharyngitis to identify those most likely to have *S pyogenes* and to guide initial empiric therapy (**Table 1**).[5] **Table 2** shows the experience of a large number of family physicians in applying such a scoring system when prevalence of streptococcal pharyngitis was 17%.[6] Patients with scores of -1 or 0 had a prevalence of only 1%; these patients should probably never receive empiric antibiotic therapy, and cultures are seldom warranted. Some researchers have argued that patients with scores of 4 and 5 should be treated empirically without culture. Even in these patients, however, almost half would receive unnecessary antibiotics with the attendant cost and risk of adverse reactions. We

"Just the Berries" for Family Physicians originated at St Martha's Regional Hospital in 1991 as a newsletter for members of the Department of Family Medicine. Its purpose was to provide useful, practical, and current information to busy family physicians. It is now distributed by the Medical Society of Nova Scotia to all family physicians in Nova Scotia. Topics discussed are suggested by family physicians and, in many cases, articles are researched and written by family physicians.

Just the Berries has been available on the Internet for several years. You can find it at **www.theberries.ns.ca**. Visit the site and browse the Archives and the Berries of the Week. We are always looking for articles on topics of interest to family physicians. If you are interested in contributing an article, contact us through the site. Articles should be short (350 to 1200 words), must be referenced, and must include levels of evidence and the resources searched for the data. All articles will be peer reviewed before publication.

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Table 1. Pharyngitis scoring system

CONDITION	SCORE
Temperature ≥38°C	+1
Absence of cough	+1
Tender cervical adenopathy	+1
Tonsillar swelling or exudate	+1
Age <15 years	+1
Age >44 years	–1

Adapted from McIsaac et al[5] with permission from the Canadian Medical Association Journal.

Table 2. Prevalence of *Streptococcus pyogenes*

SCORE	NO. POSITIVE/NO. TESTED	% POSITIVE
–1 and 0	2/179	1
+1	3/134	10
+2	8/109	17
+3	28/81	35
+4 or +5	39/77	51
OVERALL	102/600	17

Adapted from McIsaac et al[6] with permission from the Canadian Medical Association Journal.

believe that the scoring system should be used only to identify patients who should have cultures performed or should be treated with empiric antibiotics when access to a laboratory is difficult.

When should you reculture? Almost never! It might be necessary for patients with rheumatic fever and poststreptococcal glomerulonephritis, but we almost never see these diseases any more.[4] Some experts advocate reculturing when there appears to be "ping-pong" spread of disease within a family (category B, grade III evidence).

Recommended treatment for streptococcal pharyngitis has not changed much in the last 20 years. Penicillin V is still the recommended antibiotic. Even the IDSA acknowledges, however, that amoxicillin, despite its wider spectrum, is appropriate for young children. A 10-day course of a penicillin or another older erythromycin preparation is still recommended, although several clinical trials show that 5 days of a newer agent is equally efficacious (eg, clarithromycin, azithromycin, cefdinir, cefuroxime).[7-11]

The problem is that use of broad-spectrum cephalosporins is more expensive and might be more prone to result in development of antibiotic resistance just because they have a broader spectrum of activity. Fluoroquinolones are inappropriate for streptococcal pharyngitis in any circumstance. The IDSA has developed the following indicators of high-quality care for patients with acute pharyngitis.[4]

- Always perform throat cultures or rapid antigen-detection tests when you suspect streptococcal pharyngitis.
- Prescribe only after positive test results and, if already started, stop antibiotics when a culture report is negative.
- Prescribe only penicillin (or amoxicillin for toddlers) or, for penicillin-allergic patients, erythromycin.
- Do not perform follow-up cultures on patients who have received an appropriate course of therapy (except for very rare exceptions, such as rheumatic fever).
- Do not perform routine throat cultures on asymptomatic family contacts.
- Do not use long-term prophylaxis to prevent recurring episodes of pharyngitis.

How do you rank in the management of streptococcal pharyngitis? Are you doing a good job? ✱

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