

Ten ID Articles Likely to Change Your Practice

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MIAMI BEACH — Your diagnosis and management of infectious diseases in children should have changed following the publication of 10 articles in 2006 and 2007, according to Dr. Russell W. Steele.

The reports range from antimicrobial therapy for methicillin-resistant *Staphylococcus aureus* infections to an update on cat scratch disease to the well-published alterations to antibacterial prophylaxis prior to dental and gastrointestinal procedures.

Dr. Steele explained why these reports are important for optimal pediatric practice at the annual Masters of Pediatrics conference sponsored by the University of Miami.

"These are all about infectious diseases, and [are] things that have a practical impact immediately—things that might change your practice," Dr. Steele, division head of pediatric infectious diseases at Ochsner Children's Health Center and Tulane University in New Orleans, said in an interview. He was not an author of any of the articles and had no relevant financial disclosures.

Dr. Steele does a lot of journal reading and scanning. "When something is of obvious practical value—will change someone's practice—I make note of that." Sometimes colleagues recommend a study to him or ask him questions about it. "Someone will call me when something comes out, and sometimes I haven't even seen it yet. For example, a cardiologist called me about the endocarditis article and it wasn't even out yet."

Dr. Steele selected the following articles of import:

1. Community-onset methicillin-resistant *Staphylococcus aureus* skin and soft-tissue infections: impact of antimicrobial therapy on outcome (Clin. Infect. Dis. 2007;44:777-84). Dr. Jörg J. Ruhe of the University of Arkansas for Medical Sciences, Little Rock, and associates determined that use of an antimicrobial with activity against uncomplicated community-onset methicillin-resistant *S. aureus* (MRSA) skin and soft-tissue infections successfully treated 296 of 312 (95%) episodes. In contrast, treatment was successful for 190 of 219 (87%) cases in patients who did not receive an active antimicrobial. The researchers conducted the retrospective cohort study to address the conflicting data in the literature regarding the role of antimicrobials for these uncomplicated MRSA infections. Use of an inactive antimicrobial agent was an independent predictor of treatment failure, the authors noted. There were 45 treatment failures among the 531 infectious episodes experienced by the 492 adult patients.

2. Is Epstein-Barr virus transmitted sexually? (J. Infect. Dis. 2007;195:469-73). Dr. Joseph S. Pagano, in this editorial commentary, provides perspective on a report in the same issue by Craig D. Higgins of the Institute of Cancer Research, Surrey, England, and associates that demonstrates sexual transmission is possible for Epstein-

Barr virus (J. Infect. Dis. 2007; 195:474-82).

The retrospective study of 2,006 college students in Edinburgh is among the first to provide seroepidemiologic evidence of sexual transmission, wrote Dr. Pagano of the Lineberger Comprehensive Cancer Center, University of North Carolina, Chapel Hill. He pointed out that nonsexual contact, however, remains responsible for more cases of transmission of EBV and the other three well-established human herpesviruses transmitted sexually: herpes simplex virus type 2, cytomegalovirus, and Kaposi's sarcoma-associated herpesvirus.

Dr. Steele commented, "This article offers additional information as how [Epstein-Barr virus] might be transmitted. If you get an adolescent with Epstein-Barr virus, you might do a lot more history regarding sexual activity and more counseling."

3. Specific real-time polymerase chain reaction places *Kingella kingae* as the most common cause of osteoarticular infections in young children (Pediatr. Infect. Dis. J. 2007;26:377-81). This prospective study identified *Kingella kingae* as the causative pathogen for 39 out of 87 (45%) children admitted to a pediatric unit for an osteoarticular infection. *S. aureus* was the second leading cause, identified in 25 (29%) children. Dr. Sylvia Chometon and the other French researchers implicated *K. kingae* as the leading pathogen at their institution using a real-time polymerase chain reaction assay they developed.

4. Practice parameter: treatment of nervous system Lyme disease (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology (Neurology 2007;69:91-102). There are sufficient data to conclude that, in both adults and children, nervous system Lyme disease infection responds well to penicillin, ceftriaxone, cefotaxime, and doxycycline, according to panel recommendations following a review of 37 articles in the literature. In addition, the subcommittee found no compelling evidence of a beneficial effect from prolonged antibiotic treatment in patients with post-Lyme syndrome. The number of children in the studies is limited, but available data indicate that findings are comparable to those in adults, they noted.

5. The clinical assessment, treatment and prevention of Lyme disease, human granulocytic anaplasmosis, and babesiosis: clinical practice guidelines by the Infectious Disease Society of America (Clin. Infect. Dis. 2006;43:1089-134). Updated evidence-based guidelines for the management of patients with Lyme disease, human granulocytic anaplasmosis (formerly known as human granulocytic ehrlichiosis), and babesiosis replace guidelines from 2000. An Infectious Diseases Society of America expert panel provided information about prevention, epidemiology,

clinical manifestations, diagnosis, and treatment for each of these *Ixodes* tick-borne infections. The guidelines recommended antimicrobial therapy regimens for Lyme disease prevention and treatment, and include a partial list of therapies to be avoided.

6. How reliable is a negative blood culture result? Volume of blood submitted for culture in routine practice in a children's hospital (Pediatrics 2007;119:891-6)

"In routine clinical practice, a negative blood culture result is almost inevitable for a large proportion of blood cultures because of the submission of an inadequate volume of blood," wrote Dr. Thomas G. Connell of the University of Melbourne, Parkville,

Australia, and his associates. They assessed blood samples submitted for culture over 6 months at a children's hospital for adequate volume and use of proper culture bottles. Before an educational intervention to improve these parameters, they found 491 of 1,067 (46%) blood cultures had an adequate volume and 378 (35%) were submitted in the correct bottle type. After the intervention, there were significant improvements in the number of submission with adequate volume, 186 of 291 (64%) and use of the correct vial, 149 of 291 (51%) cultures.

7. Etiology of severe sensorineural hearing loss in children: independent impact of congenital cytomegalovirus infection and GJB2 mutations (J. Infect. Dis. 2007;195:782-8). In this study, Dr. Hiroshi Ogawa of Fukushima Medical University, Fukushima City, Japan, and associates demonstrated that congenital cytomegalovirus (CMV) infections are an important cause of severe sensorineural hearing loss. In addition, the incidence from this etiology is comparable to one of the major genetic causes of the condition, GJB2 gene mutations. These findings come from an assessment of DNA samples from 67 affected children born in Japan.

A total of 15% had congenital CMV infection and 24% had GJB2 mutations. All participants with CMV infection developed the severe hearing loss before age 2 years, and most had no clinically obvious abnormality at birth.

8. Surgical excision versus antibiotic treatment for nontuberculous mycobacterial cervicofacial lymphadenitis in children: a multicenter, randomized, controlled trial (Clin. Infect. Dis. 2007; 44:1057-64). Dr. Jerome A. Lindeboom of the University of Amsterdam and associates determined that surgery was more effective than antibiotics for children with nontuberculous mycobacterial cervicofacial lymphadenitis. Although surgery is considered standard treatment, increasing reports of successful antibiotic treatment spurred the study. The investigators randomized 100 children with the condition to surgical excision of the involved lymph nodes or to clarithromycin and ri-

fabutin treatment for at least 12 weeks. Surgery was more effective with a cure rate of 96%, compared with the antibiotic therapy cure rate of 66%. Treatment failures were not associated with resistance to or noncompliance with the antibiotic regimens.

9. Lymph node biopsy specimens and diagnosis of cat-scratch disease (Emerg. Infect. Dis. 2006;12:1338-44). A diagnosis of cat scratch disease does not rule out a diagnosis of mycobacteriosis or neoplasm, according to this report. Dr. Jean-Marc Rolain, professor at the Unité des Rickettsies in Marseille, France, and associates performed microbiologic assessment of lymph node biopsies from 786 patients with suspected cat-scratch disease. The most common infectious agent was *Bartonella henselae*, found in 245 patients (31%). Mycobacteriosis was diagnosed in 54 patients (7%) by culture, and neoplasm was detected in 181 (26%) specimens suitable for histologic analysis from 47 patients. Of note, 13 patients with confirmed *B. henselae* infections had concurrent mycobacteriosis (10 cases) or neoplasm (3 cases). This suggests routine histologic testing of lymph node biopsy specimens is indicated because some patients might have a concurrent malignant disease or mycobacteriosis, the authors wrote.

10. Prevention of infective endocarditis: guidelines from the American Heart Association: a guideline from the American Heart Association Rheumatic Fever, Endocarditis, and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group (Circulation 2007;116:1736-54). This is an update to American Heart Association recommendations for prevention of infective endocarditis, last released in 1997. The recommendations are based on literature reports of procedure-related bacteremia and infective endocarditis, in vitro susceptibility data for infective endocarditis microorganisms, prophylaxis findings from animal studies, and retrospective and prospective studies of prevention in humans.

Only an extremely small number of cases of infective endocarditis might be prevented by antibiotic prophylaxis for dental procedures, even if such prophylactic therapy were 100% effective, the writing committee found. In addition, prophylaxis for dental procedures is reasonable only for patients with underlying cardiac conditions associated with the highest risk of adverse outcome from infective endocarditis. The recommendations also state that administration of antibiotics solely to prevent endocarditis is not recommended for patients who undergo a genitourinary or gastrointestinal tract procedure.

These 10 articles have the potential to alter infectious disease practice, Dr. Steele said. "This article on endocarditis is the most dramatic example. We are using a lot less prophylaxis before dental procedures now." ■

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