

## Group A Strep Is Behind Most Uncomplicated Cellulitis Cases

BY SHERRY BOSCHERT  
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SAN FRANCISCO — Don't reach for the vancomycin when you see uncomplicated cellulitis, because in most cases, empiric therapy is still needed to fight the  $\beta$ -hemolytic streptococci, Ramesh V. Nathan, M.D., said at the annual meeting of the Infectious Diseases Society of America.

Community-acquired methicillin-resistant *Staphylococcus aureus* (MRSA) might be on the tips of everyone's tongues these days, but group A streptococci remain the cause of most cases of cellulitis that can't be cultured because the patients lack abscesses or wounds, Dr. Nathan explained in a poster presentation.

Serology results for 54 adult patients with uncomplicated cellulitis showed streptococcal antibodies in 45 (83%). In general, most soft tissue infections are caused by  $\beta$ -hemolytic streptococci or *S. aureus*, so the 9 cases (17%) with negative streptococcal serologies were presumed to be caused by *S. aureus*, said Dr. Nathan of the University of California, Los Angeles.

Traditionally,  $\beta$ -lactam antibiotics have been the mainstay of treatment for uncomplicated cellulitis because of their excellent activity against both organisms.

Older literature suggested that  $\beta$ -hemolytic streptococci caused most cases of uncomplicated cellulitis even after the emergence of MRSA, but it was unclear whether this had remained true, given the current epidemic of MRSA, Dr. Nathan said.

"Even in the era of community-acquired MRSA,  $\beta$ -hemolytic strep is still a very, very common cause of cellulitis. That means that for therapy,  $\beta$ -lactam antibiotics such as oxacillin or cefazolin are still going to be the most useful," he said in an interview at the poster session.

Although serologies in most patients were positive for both antistreptolysin O and deoxyribonuclease B antibodies, indicating  $\beta$ -hemolytic streptococci infection, some were

positive for just one or the other antibody. Both tests should be done for accurate diagnosis, he said.

The most common site of infection was the legs, followed by arms or hands, trunk, and face. Several comorbidities were highly associated with  $\beta$ -hemolytic streptococci infection: chronic lymphedema, cirrhosis, obesity, and recurrent cellulitis. No comorbidities were seen, however, in 16 patients—a significant



This infection, presumed to be MRSA, did not respond to treatment with doxycycline. Once group A streptococcus was diagnosed, the patient responded well to penicillin.

COURTESY DR. ARTHUR JENG

proportion (30%) of the whole cohort.

Two patients with negative serologies were found to have group B streptococci by fortuitous blood cultures, Dr. Nathan added. Both patients had diabetes.

The proportion of  $\beta$ -hemolytic streptococci infections in diabetic patients may be underestimated because the usual antibody tests do not detect group B streptococci, he said. Even in the diabetic patients in the study, most infections were caused by  $\beta$ -hemolytic streptococci.

All patients with recurrent cellulitis who reported a previous cellulitis in the same limb had  $\beta$ -hemolytic streptococcal infection.

The study excluded patients with abscesses and significant ulcers or wounds that could be cultured.

It also excluded patients with infections that are more typically caused by a variety of etiologic agents and by polymicrobial infections including periorbital, perineal, and groin infections; diabetic foot ulcers; and infections originating from bite wounds or foreign bodies. ■

## Rapid Test Called Not Yet Reliable for Strep Diagnosis

BY JANE SALODOF MACNEIL  
Southwest Bureau

ASPEN, COLO.—Rapid antigen detection tests have a high false-negative rate, and cannot be relied upon to diagnosis strep throat without a confirmatory throat culture, according to S. Michael Marcy, M.D.

"Many people are using antigen detection tests alone. This is not what is recommended yet," he said, urging caution in adopting the new tests at a conference on pediatric infectious diseases sponsored by Children's Hospital, Denver.

Throat culture is still the preferred method, advised Dr. Marcy of the University of Southern California and the University of California, Los Angeles.

In nearly all cases, he said antibiotics should not be prescribed until group A streptococcal infection is confirmed. One exception would be a very sick child presenting with doughnut-like papules that have white centers. "These are diagnostic," he said.

The Centers for Disease Control and Prevention and the American Academy of Pediatrics say antibiotics may be prescribed without a culture if an antigen detection test is positive, according to Dr. Marcy.

If it is negative, both recommend the results be confirmed by a throat culture.

"The problem with antigen detection tests, in my opinion, is unless you get the answer immediately, you don't have a huge advantage," he said.

In practices where tests are processed in a batch, Dr. Marcy said the results typically arrive after the parent has taken the child home. Then the family has to be called back for the confirmatory culture or sent to the pharmacy.

In his own practice at Kaiser Foundation Hospital in Panorama City, Calif., Dr. Marcy said he does not

bother with the rapid test. Instead, he does a culture if strep is suspected and the clinical signs do not strongly suggest a viral etiology.

While waiting for the results, he prescribes acetaminophen to prevent fever and pain. "I tell parents about preventing rather than chasing the symptoms," he said, calling acetaminophen "as good as penicillin" during the wait.

He also posts a chart published that illustrates how long cold and flu symptoms, including sore throat, persist. The chart tells parents that these are viral illnesses for which antibiotics will not work.

"Parents look at it and say, 'I don't need to see you,'" he recounted, calling the graphic "very useful."

Only about 20% of throat cultures are positive for strep, according to Dr. Marcy. He cited a Finnish study that found a viral infection in 42% of children with febrile exudative pharyngitis; no pathogen was detected in 37%. While 37% had bacterial infections, just 12% of pathogens were group A streptococci (*Pediatrics* 1987;80:6-12). Coinfections brought the total above 100%.

Current recommendations call for throat cultures to be done with two swabs, Dr. Marcy noted.

He warned that samples must be taken from the right and left tonsils. "If you only touch one side, you will get a false negative 30% of the time. Three separate papers show that. You must touch them both."

If group A strep is confirmed, amoxicillin is the treatment of choice, Dr. Marcy said. He recommended prescribing 750 mg once a day for 10 days. "Compliance is better" than it is with the twice-a-day option, he said, dismissing controversy over the efficacy of cephalosporin vs. penicillin as dated.

"What needs to be done at this time is [a trial comparing] cephalosporin vs. amoxicillin. This has to be done," he said. ■

## CLINICAL CAPSULES

### Child Transmits MSSA to Doctor

A 4-month-old boy with fatal pneumonia transmitted Pantan-Valentine leukocidin-producing *Staphylococcus aureus* to a physician who had attempted resuscitation.

This represents the first reported incident of Pantan-Valentine leukocidin-producing *S. aureus* transmission during resuscitation, said Martin Chalumeau, M.D., of the Groupe Hospitalier Cochin-Saint Vincent de Paul, Paris, and colleagues (*Clin. Infect. Dis.* 2005;41:e29-30).

The child had presented with 3 days of coughing and 1 day of fever, with normal chest radiography, but had developed progressive respiratory failure within 12 hours after hospital admission.

The resuscitation occurred in the gen-

eral pediatric ward, when the child went into cardiac arrest while being examined by a physician. Necropsy results revealed right lobar pneumonia, a necrotizing hemorrhage of the right lung and half of the left lung, and a tracheal aspirate culture that yielded methicillin-susceptible *S. aureus* (MSSA).

Five days after the incident, the physician who had performed the oral intubation developed furuncles on the fingers and face. MSSA was found in cultures from the physician's skin lesions, and in cultures collected from 5 of the 15 health care workers involved in the resuscitation.

The presence of Pantan-Valentine leukocidin, a cytotoxin associated with tissue necrosis and leukocyte destruction, was

confirmed in the child and the infected physician, but not in the other health care workers. None of the health care personnel involved in the resuscitation efforts was wearing a face mask or gloves.

### Varicella Hospitalizations Down 88%

Hospitalizations for varicella have declined 88% since 1994-1995, with the biggest decrease seen among infants.

Because infants are not eligible to receive the vaccine, "the declines reflect the reduced force of varicella infection in the population (i.e., herd immunity), as do declining rates among adults" and adolescents, reported Dr. Fangjun Zhou, Ph.D., and associates (*JAMA* 2005;295:797-802).

Dr. Zhou of the Centers for Disease Control and Prevention examined varicella treatment codes from a national health

plan database of about 4 million consumers, from 1994 to 2002 and found an overall decline in varicella hospitalization, from 2.3/100,000 to 0.3/100,000 (88%).

Hospitalization rates declined for every age group: 100% for infants, 91% for children aged 9 years and younger, 92% for children aged 10-19 years, and 78% for adults aged 20-49 years. Ambulatory visits also decreased significantly, declining 59% over the period. Again, the decrease was most apparent among infants (90%). The rate declined 63% for children aged 9 years and younger, 42% for those aged 10-19 years, and 60% for adults aged 20-49 years.

National spending on varicella hospitalizations and ambulatory visits declined from \$85 million in 1994 and 1995 to \$22 million in 2002, a 74% decrease.

—From staff reports