CLINICAL CAPSULES

MRSA and Thrombosis in Osteomyelitis

Although venous thrombosis is rare in osteomyelitis patients, the community-acquired methicillin-resistant *Staphylococcus aureus* that predominates in Texas may have a unique ability to cause VT in these patients, reported Dr. Blanca E. Gonzalez of Baylor College of Medicine in Houston.

Venous thrombosis occurred near the sites of infection in 9 children with osteomyelitis and pyomyositis attributed to community-acquired *S. aureus*. All 9 patients were male, with a mean age of 10.6 years (range 2.5-12 years). About half of the patients experienced thrombosis in the femoral veins, and most of the VTs were identified while evaluating the patients' infections.

Community-acquired methicillin-resistant *S. aureus* (MRSA) was the cause of infections in 7 patients, who were treated with vancomycin for at least 42 days. Infections in the other 2 patients were caused by community-acquired methicillin-susceptible *S. aureus*; these patients were treated with nafcillin for 2 weeks, followed by intravenous cefazolin for a total of 42 days of therapy (Pediatrics 2006;117:1673-9).

Risk factors were not easily identified; 6 of the 9 patients had no family history of VT or predisposing conditions. Septic emboli were detected in 3 patients based on chest imaging at the time of hospital admission. Two of these patients were intubated and one was placed on bilevel positive airway pressure; these 3 patients had intravascular filters. Ultimately, the thromboses resolved in 7 patients after about 10 weeks on average (range 2.5-32 weeks).

One of 3 patients with emboli had radiologic resolution of VT by 12 weeks, a second patient continued to use a filter with anticoagulation therapy that was discontinued after 10 months, and a third patient continued to use a filter with ongoing anticoagulation.

Vancomycin Linked to Hearing Loss

A significant increase in hearing loss occurred among children with pneumococcal meningitis who received vancomycin less than 2 hours after a first dose of cefotaxime or ceftriaxone, reported Dr. Steven C. Buckingham of the University of Tennessee Health Science Center in Memphis and his associates.

The retrospective study included 114 children with an average age of 10 months. Of these, 109 received vancomycin and either cefotaxime or ceftriaxone given previously or concomitantly (Pediatrics 2006;117:1688-94).

Audiometric tests were conducted on 67 of the children who were discharged from the hospital, and 37 (55%) demonstrated moderate to profound sensorineural hearing loss in at least one ear.

Data on vancomycin start times were available for 98 children. The vancomycin start time after receiving a cephalosporin was less than 1 hour in 38 children, 1-2 hours in 16 children, 2-5 hours in 16 children, and more than 5 hours in 28 children.

Overall, the median vancomycin start time was less than 1 hour after receiving a cephalosporin among the children with hearing loss, compared with a median start time of 4 hours among children without hearing loss. The proportion of children with hearing loss decreased as the vancomycin start time from the administration of a cephalosporin increased: 18 of 23 (78%) at less than 1 hour, 6 of 9 (67%) at 1-2 hours, 3 of 9 (33%) at 2-5 hours, and 5 of 18 (28%) at greater than 5 hours.

Although combination therapy has been recommended for children with pneumococcal meningitis, the data showed no clinical benefit from early vancomycin dosing. Physicians might consider delaying the first dose of vancomycin until at least 2 hours after the first dose of cephalosporins, the investigators wrote.

Hispanic Neonates and Pertussis

Low concentrations of pertussis toxin-specific immunoglobulin G (PT-specific IgG) might explain the increased risk of pertussis that has been consistently reported in Hispanic infants, reported Dr. C. Mary Healy of Baylor College of Medicine, Houston, and her colleagues.

The investigators evaluated data from singleton infants born in the same hospital during July and August of 2004. The geometric mean concentration of PT-specific IgG in umbilical cord serum samples taken from 220 Hispanic neonates was 8.45 EU/mL. This level dropped significantly, to 4.63 EU/mL, if the mothers were 19 years old or younger (CID 2006;42:1439-42). Both of these mean concentrations of antibodies were too low to be associated with protection from pertussis antigens, the investigators noted.

The finding that PT-specific IgG levels were especially low among neonates of adolescent mothers supports data from previous studies, but the levels were low enough among neonates of women aged 30 years and older (8.55 EU/mL) to suggest that babies born to older mothers are vulnerable to pertussis as well.

—Heidi Splete