Neonatal MRSA Is Often Community Acquired

**BY KATE JOHNSON**

**MONTREAL** — Community-acquired strains are the most common source of methicillin-resistant *Staphylococcus aureus* colonization and infection in babies in the neonatal intensive care unit, even though they have never left the hospital, researchers found.

Findings in a 5-year retrospective study of 50 MRSA-colonized neonates in the NICU were presented at the annual meeting of the Infectious Diseases Society for Obstetrics and Gynecology.

“There are higher rates of community-acquired MRSA infection in our neonates than in our general adult and pediatric patient population,” said lead investigator Dr. Gweneath Lazenby of the Medical University of South Carolina in Charleston said. “This is a call for people to really detail the sources of such early colonization, how we can prevent it, and how we can prevent subsequent infection.”

Theories on how neonates are exposed to MRSA in the NICU include maternal transmission, transmission from other family or hospital workers, contaminated equipment, and a recently reported possible transmission through breast milk, she said.

“We have some concern about family members and maternal transmission to neonates and so we would like to consider interrupting transmission by possibly culturing the individuals the babies are exposed to.”

In the current study, there was a mean of 21 days between birth and colonization of the 50 infants. However, 30% tested positive within 7 days of birth, she said.

“The 30% of infants who acquired early MRSA colonization, within the first week, were 2.5 times more likely to go on to develop infection,” she explained. No other risk factors for infection could be identified, although there was a nonsignificant trend toward a higher risk with lower birth weight.

In total, 16 of the 50 colonized infants (32%) eventually developed MRSA infections, which included 8 bloodstream infections, 6 skin and soft tissue infections, and 2 ventilator-associated pneumonias. One of the bloodstream infections was fatal and was identified as a community-acquired MRSA strain (USA 300).

Pulse field gel electrophoresis identified in 36% of colonizing strains and 56% of 9 infection strains, she said. “This is considerably higher than what is seen in the rest of our hospital’s pediatric and adult patient population, where we see a 4%-6% colonization rate and a 19% infection rate, with one-quarter of those infections being community-acquired.”

Dr. Lazenby said decolonization is not currently attempted in neonates.

The current management is isolation and contact precautions to prevent spreading the infection, she said. Dr. Lazenby said she had no disclosures to declare.

Zoster Risk Sharply Reduced After Varicella Vaccination

**BY BRUCE JANCIN**

**VAIL, Colo.** — The risk of herpes zoster in children under age 10 years who’ve been vaccinated against varicella was 4- to 12-fold less than in those with naturally acquired varicella in a large population-based study.

Moreover, when herpes zoster did occur, the pain was significantly less if the eruption was caused by the vaccine strain varicella zoster virus (VZV).

This has previously been anecdotally reported, but the new study by the Los Angeles County Department of Public Health and the Centers for Disease Control and Prevention provides the first actual proof that herpes zoster in varicella vaccinees is a generally benign disease.

The second vaccine dose boosts antibody to levels similar to those seen in adults after varicella. “We are in the midst of a very large clinical experiment,” Dr. Levin said of the two-dose strategy.

It makes sense that herpes zoster in VZV vaccine recipients should be less frequent and less severe because the vaccine virus is attenuated. Plus, the latent VZV that causes herpes zoster comes from skin lesions—and skin lesions are rare following vaccination. In contrast, herpes zoster in leukemic recipients of VZV vaccine correlates with the occurrence and extent of rash following vaccination, he noted.

Dr. Levin disclosed that he is a consultant to, is on the speakers bureau for, and receives royalties from Merck & Co.

**EXPERT OPINION**

**Circumcision and MRSA**

**BY STEPHEN I. PELTON, M.D.**

Pustular infections due to *Staphylococcus aureus* in the newborn nursery are prevalent. Approximately 4% of all newborns develop an infection within the first 30 days of life. Of these, pustulosis is the second-most common (after pneumonia respiratory tract infections), occurring in about 1 in every 100-200 newborns with a peak onset at 15- to 10 days of life. Most of these infections are due to *S. aureus*, and increasingly, methicillin-resistant *S. aureus* (MRSA).

Indeed, outbreaks of neonatal pustular disease should prompt concern about MRSA in the community. Colonization with *S. aureus* requires very little exposure. The problem can often be traced to crowding and failures of standard infection control practices in the newborn nursery, along with two other specific recently identified risk factors: circumcision and the use of multidose lidocaine vials.

A case-control study investigated 11 newborns who had onset of MRSA skin and soft-tissue infection within 21 days after discharge from a well-infant nursery at a community hospital over an 8-month period. All were term male infants with pustular-vesicular lesions in the groin. Dr. Dan Nguyen and associates at the Centers for Disease Control and Prevention reported (Infect. Control Hosp. Epidemiol. 2007;28:406-11).

Risk factors associated with the MRSA infections were length of stay, circumcision, and receipt of lidocaine injections used to anesthetize for surgical technique and hygiene during circumcision procedures, along with the use of single-dose lidocaine vials. For newborns who do not develop pustular disease in the diaper area, lower abdomen, or any other area, the approach to management varies considerably.

Some infants are hospitalized and treated systematically while others are managed with local or topical therapy. An individualized approach would appear necessary as the spectrum of clinical disease is broad. First, the child should be evaluated for other possible etiologies. If staphylococcal disease is suspected, the presence or absence of systemic signs, such as fever, abdominal pain, and weakness, can help determine whether systemic therapy is needed or if initial local management is appropriate. In all cases, close follow-up is needed to ensure that resolution occurs.

Dr. Pelton is chief of pediatric infectious disease and coordinator for the maternal-child HIV program at Boston Medical Center. To respond to this column, e-mail Dr. Pelton at sknews@elsevier.com.