

CLINICAL CAPSULES

Norovirus Locates Katrina Evacuees

An outbreak of norovirus occurred from Sept. 2-12, 2005, among evacuees from Hurricane Katrina who were temporarily sheltered at Reliant Park, a recreation and convention complex in Houston. During this period, about 6,500 of an estimated 24,000 evacuees visited the Reliant Park medical clinic, and 1,169 (18%) reported symptoms of acute gastroenteritis; one-quarter were younger than 18 years of age. The peak occurred on Sept. 5, when 211 people reported acute GI symptoms. During peak days, about 40% of pediatric

visits and 21% of adult visits to the clinic were related to acute gastroenteritis, according to a report from the Centers for Disease Control and Prevention in Atlanta (MMWR 2005;54:1016-8). Samples from 44 patients were tested, and 22 (50%) of these yielded norovirus; no other enteropathogen was identified. Norovirus is highly contagious and transmissible in crowded conditions. Overall, 511 (44%) of those with acute symptoms had diarrhea only, while 342 (29%) reported vomiting, and 316 (27%) reported both vomiting and diarrhea. Local health authorities im-

plemented preventive measures at the start of the outbreak, including placing patients with suspected illness in a separate observation area, then placing them in an isolation area for at least 48 hours after the abatement of symptoms. Also, more sinks and hand sanitizers were installed. Still, the outbreak continued for at least a week.

Amoxicillin Ups Fluorosis Risk

Use of amoxicillin in the first 6 months may increase the risk of fluorosis in permanent teeth, said Liang Hong, D.D.S., formerly of the University of Iowa in Iowa City, and associates. Dr. Hong, currently of the University of Missouri,

Kansas City, and colleagues conducted a longitudinal study of 579 children to assess the possible impact of amoxicillin use in infancy on tooth enamel at a mean age of 9 years (Arch. Pediatr. Adolesc. Med. 2005;159:943-8). After controlling for fluoride intake and otitis media (OM), the risk of fluorosis on the maxillary central incisors was significantly associated with amoxicillin use from 3-6 months of age, with a risk ratio of 1.85. OM accounted for 60%-82% of reported illnesses in the group, and amoxicillin accounted for 73%-85% of the antibiotics given to treat OM in the first year of life. However, given the presence of fluorosis in teeth long before the introduction of amoxicillin, more data are needed, and current pediatric practice is unlikely to change as a result of the study, Paul S. Casamassimo, D.D.S., of the Ohio State University, Columbus, said in an accompanying editorial (Arch. Pediatr. Adolesc. Med.;159:995-6).

HPV Transmits Nonsexually

Anogenital warts in children with human papillomavirus were less predictive of sexual abuse with decreasing age, based on a review of 124 children younger than 13 years with anogenital and respiratory tract human papillomavirus (HPV) infections, said Kelly A. Sinclair, M.D., formerly of Wake Forest University, Winston-Salem, N.C., and her colleagues. Of these, 55 with anogenital warts were evaluated at a childhood sexual abuse clinic, and 17 (31%) were considered to have been abused. Children younger than 4 years were 3 times less likely to have been sexually abused than those aged 4-8 years, and those younger than 4 years were 12 times less likely to have been abused than those older than 8 years. These findings challenge the notion that 24 months of age is the upper limit for perinatal transmission of anogenital warts. None of the 49 children evaluated for laryngeal or oral lesions were considered to have been sexually abused, and the onset of illness peaked at 2-5 years. Since the majority of preadolescent anogenital HPV cases are older than 2 years, the use of 2 years as a cutoff to cite sexual abuse as the cause of infection could subject innocent families to unnecessary scrutiny, said Dr. Sinclair, currently at Children's Mercy Hospital, Kansas City, Mo., and her associates.

UTI Prophylaxis Choices

Children who received prophylactic antibiotics for urinary tract infections were significantly more resistant to third-generation cephalosporins, compared with those who didn't receive prophylaxis, said Stephanie A. Lutter, M.D., and colleagues at the Medical College of Wisconsin, Milwaukee (Arch. Pediatr. Adolesc. Med. 2005;159:924-8). The study included 361 children younger than 18 (mean age 31 months) with UTIs. Cefotaxime resistance occurred in 7 of 26 (27%) children who received antibiotic prophylaxis for urinary tract infections, compared with 9 of 335 (3%) children who did not. *Escherichia coli* accounted for 87% of all infections, but 58% of the infections in those who received prophylaxis. Overall resistance to aminoglycosides was 1%, which makes them more appropriate antibiotics for children treated prophylactically, they said.

—Heidi Splete

RESPIRATORY SYNCYTIAL VIRUS (RSV): ARE WE DOING ALL WE CAN?

Enormous progress has been made in the fight against RSV, but there remains much more to do. Despite our best efforts, RSV still sends more than 125,000 infants to the hospital each year in the United States alone.¹ And RSV continues to be the leading cause of lower respiratory tract infections such as bronchiolitis and pneumonia among young children.² In fact, an analysis of recent trends has identified 372 annual deaths that are probably attributable to RSV in infants and children.³ RSV is also the leading viral cause of death in children <5 years of age.⁴ Part of the reason may be that many infants eligible for immunoprophylaxis continue to slip through the cracks.

Premature lungs and vulnerability to severe RSV

Premature infants are especially vulnerable to infection because their lungs are not fully developed. For instance, compared to full-term infants, 34 week gestational age (GA) infants have:

- Only 52% of the estimated lung volume⁵
- About 35% thicker alveoli walls⁵

This means that the lungs of 34 week GA infants have less volume to accommodate air and poor gas exchange.

At 1 year, prematurity continues to impact lung function. Results from a study conducted in premature (≤ 36 week GA) infants who had no history of respiratory disease during the neonatal period demonstrated:

- Greater than 50% reduction in airway function compared to the normal predicted value^{6,7}

This means even healthy-looking premature infants are susceptible to infection.

RSV can affect all premature infants regardless of degree of prematurity. A recent study of infants hospitalized with RSV compared 33-35 week GA infants with those ≤ 32 weeks' GA. Interestingly, the "older" infants (33-35 weeks' GA) had a(n)⁸:

- 24% longer hospital length of stay,
- 33% longer ICU length of stay, and
- 81% greater rate of intubation

Preventable adverse events and medical errors (such as procedural, preventive, and diagnostic errors) commonly occur when infants are hospitalized for bronchiolitis, especially in critically ill infants.⁹

RSV-related hospitalizations also result in significant stress for infants, their caregivers, and immediate family members.¹⁰ The impact of this stress, such as poorer overall health and higher levels of anxiety both for caregivers and for their children, can last up to 2 months.¹⁰ Assessment of at-risk infants* for RSV can help reduce these consequences.

The need for RSV prevention is critical

While a premature infant may appear to be healthy, their lung development is not complete. That is because premature infants' lungs continue to develop and mature, while underdeveloped lungs place all premature infants, even those who are near term, at risk. In fact, healthy-looking 33-35 week GA infants face severe consequences from RSV.⁶ This patient population is often overlooked for immunoprophylaxis during the RSV season.

Unfortunately, RSV is highly contagious. And because serious RSV infections are associated with both short- and long-term consequences, as well as with increased morbidity and mortality, it is important to consider all at-risk infants* for immunoprophylaxis.

*Infants with bronchopulmonary dysplasia or a history of premature birth (≤ 35 weeks' GA) and children with hemodynamically significant congenital heart disease.

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