

CLINICAL CAPSULES

Pneumococcal Serogroups Emerge

In a retrospective review of *Streptococcus pneumoniae* cases from 1996 to 2003, the incidence decreased 27% after the introduction of the 7-valent pneumococcal conjugate vaccine (PCV7 or Prevnar) in 2001, reported Carrie L. Byington, M.D., of the University of Utah, Salt Lake City, and her colleagues. In a study of children younger than 18 years treated at Intermountain Health Care, Salt Lake City, the overall percentage of cases from serogroups in PCV7 decreased after the introduction of the vaccine, but the number of invasive infections due to serotypes not included in PCV7 increased (Clin. Infect. Dis. 2005;41:21-9). The investigators identified 1,535 episodes of invasive pneumococcal disease, and the 86 children infected with non-PCV7 isolates had hospital stays twice as long as the 146 children infected with PCV7 isolates. Although the incidence of bacteremia and pneumonia decreased from the pre- to post-vaccine periods (6.9 vs. 4.6 cases/100,000 children and 31 vs. 16 cases per 100,000 children, respectively), the incidence of parapneumonic empyema increased (10.3 vs. 14.3 cases/100,000 children). At approximately 5 years after PCV7's introduction, "the effect of colonization of nonvaccine *S. pneumoniae* serotypes depends entirely on whether new serotypes cause disease," Sarah S. Long, M.D., of Drexel University, Philadelphia, wrote in an accompanying editorial (Clin. Infect. Dis. 2005;41:30-4).

Procalcitonin Predicts Reflux

A high concentration of procalcitonin was a significant independent predictor of vesicoureteral reflux (VUR) in a study of 136 infants aged 1 month to 4 years, said Sandrine Leroy, M.D., of Saint-Vincent-de-Paul Hospital, Paris, and colleagues (Pediatrics <http://pediatrics.aappublications.org/cgi/content/abstract/115/6/e706>). In a retrospective cohort study, the median procalcitonin concentration was 1.2 ng/mL in children with reflux, compared with 0.6 ng/mL in children without reflux. High procalcitonin concentration demonstrated 85% sensitivity and 44% specificity for all-grade VUR, and 92% specificity and 44% sensitivity for high-grade VUR. Use of procalcitonin to predict VUR could help pediatricians identify low-risk patients and avoid unnecessary voiding cystourethrography, the investigators said.

Strep Lingers in Nose

An early clinical recurrence of acute otitis media (AOM) was significantly more likely if *Streptococcus pneumoniae* remained in the nose at the end of antibiotic treatment, said Shai Libson, M.D., and associates at Ben-Gurion University of the Negev, Beer-Sheva, Israel. Nasopharyngeal aspirate samples were obtained after successful antibiotic treatment for AOM (J. Infect. Dis. 2005;191:1869-75). The study included 494 children aged 3-36 months who presented to an emergency room with AOM from Jan. 1, 1996, to Dec. 31, 2002. Overall, 208 (42%) of the cultures were positive for *S. pneumoniae*, and 86 (41%) of these patients also had yielded positive *S. pneumoniae* nasal cultures prior to their antibiotic treatment. In addition, 66 of the 208 (32%) patients with positive cultures after treatment developed another

episode of AOM within 3 weeks, compared with 64 of 286 (22%) patients who had negative cultures after treatment. There were no significant differences between patients who did and did not have clinical AOM recurrence. The persistence of *S. pneumoniae* in the nose despite its eradication from the middle ear fluid suggests the need for further research into the impact of antibiotics on nasopharyngeal carriage, Keith P. Klugman, M.D., and Kerry J. Walsh, M.D., of Emory University, Atlanta, wrote in an accompanying editorial (J. Infect. Dis. 2005;191:1790-2).

Streptococcal Role in AOM

AOM caused by *Streptococcus pyogenes* was associated with older age and higher rates of tympanic perforation and mastoiditis, compared with AOM caused by other pathogens, said Nili Segal, M.D., and associates at Ben-Gurion University of the Negev, Beer-Sheva, Israel (Clin. Infect. Dis. 2005;41:35-41). In the study of 11,311 episodes, overall, those caused by *S. pyogenes*, also known as group A β -hemolytic *Streptococcus* (GAS), were significantly less often associated with fever or upper respiratory tract infection, compared with non-GAS episodes (60% vs. 77% and 35% vs. 55%, respectively). GAS episodes also were

significantly less likely to be bilateral, or to be associated with antibiotic treatment during the month prior to the infection. The increased risk of mastoiditis supports data from previous studies, Stanford T. Shulman, M.D., and Robert R. Tanz, M.D., of Northwestern University, Chicago, wrote in an accompanying editorial (Clin. Infect. Dis. 2005;41:42-4). Episodes of GAS otitis media may be preceded by pharyngeal colonization, given the patients' older age, acute symptoms, and lack of respiratory tract complaints, and this colonization may contribute to the increased frequency of mastoiditis in these patients, they noted.

—Heidi Splette



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