19A Serotype Dominant Among Infection Isolates

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SAN DIEGO — Serotype 19A is the most common serotype isolated from children's invasive pneumococcal infections, results from a national multicenter study suggest.

The finding comes from the United States Pediatric Multicenter Pneumococcal Surveillance Study Group, a network of eight children's hospitals that has been identifying patients with systemic pneumococcal infections since 1993. The researchers send the isolates to a central laboratory for serotyping and complete a standardized case report form that includes demographic and clinical information, including the number of 7-valent pneumococcal conjugate vaccinations (PCV7) the child has received.

At the annual meeting of the Infectious Diseases Society of America, Dr. Sheldon L. Kaplan reported on 1,234 isolates collected between April 1, 2000, and Dec. 31, 2006. Ages of patients ranged from 0 to 20 years, but most infections occurred in the first 5 years of life. Serotype 19A accounted for 19% of all nonvaccine serotype isolates in 2000, 22% in 2001, 18% in 2002, 23% in 2003, 39% in 2004, 34% in 2005, and 49% in 2006.

Serotype 19A has been the most common nonvaccine serotype each year since 2003. In 2005 and 2006 combined, the next most common nonvaccine serotypes were 1 (21 cases), 3 (14 cases), 33, 15, and 7 (13 cases each), and 6A (11 cases).

No deaths were reported associated with pneumococcal infections in 2006. "The number of invasive infections reached its lowest point in 2004 and then increased 13% in 2005 and another 5% in 2006," Dr. Kaplan, chief of the infectious disease service at Texas Children's Hospital, Houston, noted in a later interview. "Nevertheless, the number of cases annually was still 60% less than seen each year before the pneumococcal conjugate vaccine was licensed for routine administration to infants."

The most common type of infection among children with serotype 19A was bacteremia, followed by pneumonia, bacterial meningitis, and other infections.

Continued surveillance of invasive pneumococcal infections was predicted to remain necessary following the inclusion of serotype 19A.

When the researchers applied the 2007 breakpoints for minimum inhibitory concentration interpretations, they found that 28% of 19A isolates in 2006 were susceptible to penicillin, 34% were immediately susceptible to penicillin, and 37% were resistant to penicillin.

Dr. Kaplan, who is also a professor of pediatrics at Baylor College of Medicine, predicted that the percentage of isolates resistant to penicillin "will go down dramatically" when the Clinical and Laboratory Standards Institute publishes new *Streptococcus pneumoniae* penicillin breakpoints for nonmeningeal pneumococcal isolates in 2008. He concluded that continued surveillance of invasive pneumococcal infections "will remain necessary following the inclusion of serotype 19A and other serotypes."

The pneumococcal surveillance group includes clinicians from Texas Children's Hospital, Houston; Children's Hospital of Pittsburgh; Children's Hospital San Diego; Columbus (Ohio) Children's Hospital; Children's Memorial Hospital, Chicago; Arkansas Children's Hospital, Little Rock; Brenner Children's Hospital, Wake Forest, N.C.; and Children's Hospital Los Angeles.

Dr. Kaplan disclosed that he has received research grants from Roche and Wyeth Pharmaceuticals. ■

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