A Dozen Pediatric Flu Shots May Prevent One Visit

BY KATE JOHNSON
Montreal Bureau

TORONTO — As few as 12 pediatric influenza immunizations and probably even fewer in each practice could prevent an outpatient visit for influenza later in the season, according to a poster presented at the annual meeting of the Pediatric Academic Societies.

"Most physicians already know the benefits of influenza immunization, but when you have such a simple number it's just easier to stick inside your head," said the study's author Elizabeth Lewis, a medical student at Vanderbilt University, Nashville, Tenn. "Our goal was to provide a clinically relevant number for primary care providers."

The study used published literature to ascertain rates of influenza infection in children aged between 6 and 59 months, and assumed various rates of vaccine efficacy, also published in the literature. "The published range of efficacy is anywhere from 46% to 80% or 90%," she said in an interview. "Assuming only half of 6- to 59-month-old children are vaccinated—at a conservative 50% vaccine efficacy—that eliminates 2,250 hospitalizations and upwards of 650,000 outpatient visits."

Translating that down to the individual physician, Ms. Lewis and her colleagues estimated that, depending on season severity and children's ages, between 12 and 42 would need to be vaccinated to prevent one outpatient visit for influenza. The corresponding range for preventing one influenza-attributable hospitalization was about 1,000-3,000 for children aged 6-23 months, and twice that for those aged 24-59 months.

"We also conservatively assumed no herd immunity, but we know there is a basis in the literature for herd immunity. Influenza is highly contagious, and vaccination of schoolchildren decreases influenza in the entire population. So, accounting for herd immunity, the number needed to treat would be less," she said. ■

Three Vaccines at Once Found Safe And Effective

Coadministering the seven-valent pneumococcal conjugate vaccine and a *Haemophilus influenzae* type b conjugate vaccine with the pentavalent diphtheria, tetanus, acellular pertussis, hepatitis B, and polio combination vaccine in infants does not compromise the safety and immunogenicity of the latter vaccine, according to Dr. Michael E. Pichichero of the University of Rochester (N.Y.) and his colleagues.

Previous studies have shown comparable safety and immunogenicity of both the pentavalent vaccine containing diphtheria and tetanus toxoids, acellular pertussis, hepatitis B, and inactivated poliovirus vaccines (DTaP-HepB-IPV) and the separate administration of the component vaccines when the *H. influenzae* type b vaccine (Hib) is administered to both groups. However, the coadministration of the seven-valent pneumococcal conjugate vaccine (PCV-7) with separate DTaP, Hib, HepB, and IPV vaccines has been linked with inconsistencies in immunologic responses, the authors said (J. Pediatr. 2007;151:43-9).

To compare the immunogenic impact of coadministration of the PCV-7 and Hib vaccines with the combined DTaP-HepB-IPV vaccine with that achieved by separate administration of the component vaccines, the researchers enrolled 575 healthy infants from 22 U.S. sites in the current study and randomly assigned them to one of three conditions: Combination Vaccine Group (DTap-HepB-IPV plus PCV-7 and Hib), Separate Vaccine Group, or Staggered Vaccine Group (DTap-HepB-IPV plus Hib, with PCV-7 administered 2 weeks later). The vaccines were administered at each of the three primary immunization visits at 2, 4, and 6 months of age.

With respect to diphtheria, tetanus, pertussis, and poliovirus antibody responses, the immunogenicity of the combination vaccine coadministered with Hib and PCV-7 "was at least as good as" that achieved with the separate and staggered vaccine schemes. The three groups achieved similar rates of seroprotection for HepB and Hib, and seropositivity for PCV-7 was high in all groups. Despite higher rates of fever observed in the combination group, there were no significant differences in rates at or above 102.2° F [39.0° C], and the fevers were not longlasting or clinically important.

—Diana Mahoney

Pages 22a—22b