MMR, Varicella Vaccines Benefit Preterm Infants

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Preterm infants vaccinated against measles, mumps, rubella, and varicella at age 15 months mount adequate antibody responses similar to those of term infants, according to study findings.

"These findings support the prevailing recommendations for immunization of the preterm infant at the chronological age appropriate for a term infant," concluded Dr. Carl T. D'Angio of the University of Rochester (N.Y.) and his colleagues (Pediatrics 2007;119;574-9).

They noted that whereas few data previously have existed on these particular vaccines in preterm infants, limited data on other vaccines—such as inactivated influenza, *Haemophilus influenzae* type b booster, tetanus, diphtheria, and polio—have suggested diminished responses in preterm compared with term infants.

"The relatively robust responses in preterm infants in this study may be explained in part by the specific vaccine antigens studied," they noted. "Live viral vaccines, such as MMR [measles, mumps, rubella] and varicella, often are highly immunogenic."

The study included 16 term infants, aged 37 weeks or older, and 16 preterm infants younger than 29 weeks. All infants were immunized with MMR and varicella vaccines between the ages of 14.4 and 16 months. Blood specimens were obtained before and again 3-6 weeks after immunization. Measles antibody was measured by plaque reduction neutralization assay; mumps and rubella immunoglobulin G (IgG) titers were measured by enzyme-linked fluorescent immunoassay; and varicella IgG was measured using a glycoprotein enzyme-linked immunosorbent assay.

Before vaccination, all patients in both groups were seronegative for measles-neutralizing antibody, and all had measles titers of more than 120 mIU/mL after vaccination, reported the authors. Varicella titers were similar in both groups before and after vaccination; mumps and rubella titers were similar in both groups after vaccination, but lower in preterm than in term infants before vaccination. "This is consistent with lower transplacental antibody transfer in the preterm infants, because the most likely source of detectable prevaccine antibodies would be maternal," they explained. ■

Predictors Noted For Prolonged AOM in Infants

The risks of prolonged acute otitis media in children who are not initially treated with antibiotics are two times higher if the patients are aged younger than 2 years and have acute bilateral infection, compared with older children who have unilateral infection, according to a meta-analysis.

"Clinicians can use these features … to inform parents more explicitly about the expected course of their child's AOM [acute otitis media] and to explain which features should prompt parents to contact their clinician for reexamination of the child," wrote Maroeska M. Rovers, Ph.D., of the Julius Center for Health Sciences and Primary Care, and Wilhelmina Children's Hospital, University Medical Center Utrecht, the Netherlands, and colleagues (Pediatrics 2007;119; 579-85).

The meta-analysis included six randomized, controlled trials of children aged 6 months to 12 years with AOM who were randomized to antibiotic therapy or observation (either placebo or no treatment). Only the 824 patients in the observation arms were included in the analysis. The primary outcome was a prolonged infection defined as fever and/or pain at 3-7 days, and the predictors analyzed were age, gender, season, having been breast-fed or not, presence or absence of recurrent AOM, and baseline symptoms of fever, pain, bilateral AOM, otorrhea, and appearance of tympanic membrane (bulging, redness, perforation).

Of the 824 children, 303 (37%) had fever and/or pain at 3-7 days.

The absolute risks of pain and/or fever at follow-up were highest for children aged under 2 years with bilateral infection (55%) and lowest for those aged 2 years or older with unilateral infection (25%).

—Kate Johnson