

Control Number: 2294

110 - Latebreaker Posters
10/31/2009, 12:30-14:00
Poster Hall A

P. Pediatric and perinatal infections. Studies of pediatric and adult vaccines

Pres No: LB-10 - Serologically Defined Influenza Infection in Early Infancy in South Asia

EMILY HENKLE, MPH; *Bloomberg Sch. of Public Health, Baltimore, MD.*

Background:

There is limited information on influenza infection rates in infants in the tropics. We analyzed infant sera prospectively collected in a maternal vaccine trial to detect influenza infection in early infancy in Bangladesh.

Methods:

340 pregnant women in Dhaka randomly received trivalent inactivated influenza vaccine (TIV) or polysaccharide pneumococcal vaccine (PPV, control), and their infants were followed from 0-6 months. Serum influenza antibodies against vaccine strains A/Fujian (H3N2), A/New Caledonia (H1N1), and B/Hong Kong were measured using a standard hemagglutination inhibition assay (HAI) at birth 10 weeks, and 18 or 22 weeks of age. We assumed that lack of decline in maternally-acquired influenza antibody levels in infants is due to active infant antibody production in response to infection with influenza. Non-declining antibodies were defined as antibody titers of at least 1:20 and \geq the previous antibody titer. Proportions were compared using chi square.

Results:

HAI data from 241/331 study infants (73%: 112 TIV and 129 PPV) were analyzed. Estimated half-life of HAI antibody calculated from the first 10 weeks ranged from 29-36 days. 12 infants had a 4-fold increase in titer (n=4 TIV and 8 PPV; p=.35). Overall, 45 infants (18.7%) experienced a non-declining titer at 10 weeks or 18/22 weeks against at least one of the 3 vaccine strains. Non-declining antibody levels were primarily against A/Fujian (43 infants, 86%), with fewer against A/New Caledonia (6) and B/Hong Kong (1). Significantly fewer infants in the maternal TIV group had non-declining titers (n=12, 10.7%) compared to the PPV group (n=33, 25.6%; p=0.005). Maternal influenza immunization effectiveness against infant serological influenza is 58% (SD 4%).

Conclusion:

We observed serologic evidence of high rates of influenza infection among infants <6 months of age in Bangladesh. Among infants whose mothers did not receive influenza vaccine, 7% (SD 2%) had a 4-fold antibody increase, and 26% (SD 4%) had non-declining antibody levels. The high rate of influenza infection suggests maternal immunization may be an important strategy to protect pregnant women and young infants in tropical regions.

Disclosures: E. Henkle, None.