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Poster Hall A

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

Pres No: LB-11 - Maternal Influenza Immunization Increases Birth Weight: A S. Asian RCT

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Background: There have been few studies of the effect of influenza immunization in pregnancy on fetal and infant outcomes. We analyzed the effect of influenza immunization in Bangladeshi mothers on birth weights, focusing on the interval when influenza vaccine demonstrated high clinical effectiveness on maternal flu-like respiratory illness with fever (RIF).

Design/Methods: Pregnant women were randomized in the 3rd trimester to receive either inactivated trivalent influenza or pneumococcal 23v vaccine (control group). We defined 'flu vaccine clinical effectiveness by calculating vaccine-associated reduction of RIF in each study month from Aug 2004 thru November 2005. Mean rates and birth weights in each interval were compared with T tests.

Results: From August '04 - January '05 there was little difference between study groups: (16.5 vs. 14.3 RIF episodes/100 p -mo. $p=0.24$). In contrast, during the interval of February - November '05 there was a 49% (95% CI, 34 to 70%) reduction of RIF episodes in the flu vaccine group ($p = 0.0009$). The difference in mean birth weights during the interval of no vaccine effect was +25g ($p= 0.70$), but during the interval of high flu vaccine effectiveness the mean birth weight of infants in the 'flu vaccine group was 3,186g (SD 466g) vs. 2,972g (SD 498g) in controls; \square +215g or +7% ($p=0.018$). The % of SGA infants was increased in the control group ($p=0.004$).

Conclusions: During the interval when influenza vaccine reduced flu-like RIF in the mothers, the birth weights of their infants were substantially increased, compared to control mothers. These unique, robust RCT vaccine data reveal that epidemic maternal influenza infection reduces fetal growth in this Asian setting. Studies analyzing the fetal effects of influenza vaccine in pregnancy are needed from other regions.

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