



## Does influenza immunization during pregnancy confer flu protection to newborns?

**Data from a large cohort study strongly suggest a protective effect on infants younger than 6 months but are not conclusive.** Of nearly 250,000 infants born between 2005 and 2014 to women who had or had not been immunized with influenza vaccine, 658 had laboratory-confirmed flu in their first 6 months of life. Twenty were born to immunized women and 638 to unimmunized women, a case rate of 0.84/1,000 versus 2.83/1,000 ( $P < .001$ ), respectively. Despite the difference shown, however, the report provides no additional outcome data on morbidity and mortality.

### **FAST TRACK**

While influenza immunization during pregnancy reduced infants' risk of flu, flu hospitalization, and flu-like illness, the limitations of influenza vaccine protection should be considered

*Shakib JH, Korgenski K, Presson AP, et al. Influenza in infants born to women vaccinated during pregnancy [published online ahead of print May 2, 2016]. *Pediatrics*. 2016;137(6):e20152360. doi:10.1542/peds.2015-2360.*

#### ► **EXPERT COMMENTARY**

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A recent report on data obtained from the Intermountain Healthcare facilities in Utah and Idaho suggests that maternal influenza vaccination, besides its maternal protective effect, also may benefit the newborn by protecting against influenza. I think that ObGyns generally accept the notion that influenza vaccination has defined maternal benefit. Notably, acceptance of influenza

vaccine became much more widespread during and following the H1N1 flu pandemic of 2009. The fact that there may be neonatal and infant benefit as well is certainly not objectionable, especially since flu vaccine is not recommended for infants less than 6 months of age.

#### **Details of the study**

Shakib and colleagues' goal was to compare influenza outcomes in infants younger than 6 months born to women who self-reported receiving or not receiving influenza vaccine during pregnancy. The study cohort included 245,386 women and 249,387 infants who were born between December 2005 and March 2014. The outcomes studied were influenza-like illness (ILI), laboratory-confirmed influenza, and influenza hospitalizations.

Of 866 infants younger than 6 months born to women who had received a flu shot, 32 had 1 or more ILI encounters, compared with 834 born to women who were not

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immunized (relative risk [RR], 0.36; 95% confidence interval [CI], 0.26–0.52;  $P < .001$ ). Laboratory-confirmed influenza was identified in 658 infants; of these, 20 were born to women reporting immunization and 638 were born to unimmunized women (RR, 0.30; 95% CI, 0.19–0.46;  $P < .001$ ). Finally, 151 infants with laboratory-confirmed influenza were hospitalized; 3 were born to immunized women and 148 to women who had not received a flu shot (RR, 0.19; 95% CI, 0.06–0.60;  $P = .005$ ).

The authors calculated that infants born to women who reported influenza immunization during pregnancy had risk reductions of 64% for ILL, 70% for laboratory-confirmed influenza, and 81% for influenza hospitalizations.

#### **Consider immunization benefits realistically**

The authors state in their published report that “Protecting young infants from influenza through maternal immunization during pregnancy is a public health priority.” This may be overstating their case, for the following reasons. First, influenza vaccine has varying degrees of efficacy depending on the particular year and influenza strains that predominate, and it never has been shown to

#### **WHAT THIS EVIDENCE MEANS FOR PRACTICE**

ObGyns should continue to promote influenza vaccination during pregnancy for the maternal protection it imparts. These new data on the potential for newborn protection, although not conclusive, may improve maternal acceptance of vaccination; from that perspective, these data are valuable.

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be entirely protective. Second, when looking only at this study’s laboratory-proven cases of influenza in newborns, infants whose mothers were vaccinated had a case rate of 0.84/1,000, while the case rate in newborns born to unvaccinated women was 2.83/1,000. While this shows a difference, the report provides no additional outcome data regarding morbidity or mortality.

In fact, although infant hospitalization rates differed (0.13/1,000 born to vaccinated women versus 0.66/1,000 born to unvaccinated women), there were no influenza-related mortalities in this cohort. The effect seems better when including “influenza-like illness,” but it is unclear why we should think that the influenza vaccine protects against infection that is not caused by influenza. ❌