The H1N1 flu vaccine protects both pregnant women and newly-borns

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The researchers studied the immune response of 107 pregnant women after they were injected with a single dose of non-adjuvant H1N1 vaccine. They concluded that the influenza shot boosted the immune response in pregnant women and at the same time protected neuronatal babies via the antibodies that transferred through the placenta.

These results were published in the review Annals of Internal Medicine dated December 6th,.2011. They are available on-line at: http://www.annals.org/content/155/11/733.abstract

Influenza (the flu) is a contagious, acute respiratory infection caused by the family of viruses Influenzae. There are three types of Influenza virus: A, B and C. The A and B viruses cause seasonal (or winter) epidemics, but only the A virus is responsible for worldwide epidemics. Very soon into the worldwide influenza epidemic of 2009, pregnant women and neonatal babies were found to be at very high risk of complications and death if infected, as had already been observed during previous worldwide influenza epidemics. As early as August 2009, a study published in The Lancet showed that 10% of the serious cases were observed in pregnant women, whereas they represented only 1% of the total French population. So H1N1 influenza vaccination of pregnant women was recommended as a priority.

The team led by Odile Launey, the Director of vaccinology at the Centre for Clinical Investigation at Cochin Pasteur (Inserm/AP-HP/Institut Pasteur/Université Paris Descartes), carried out a vaccination study in

order to demonstrate the immunogenicity, in other words the immune response in terms of the production of antibodies, after a single injection of a nonadjuvant A strain (H1N1) into women at 21 days and 42 days of gestation and to measure the transplacentary transfer of the mother's antibodies to neonatal babies.

This study concerned 107 women between 22 and 32 weeks of amenorrhea who were monitored in 5 French neonatal clinics between November 3rd and December 4th 2009 after being injected into the arm with an injection of H1N1 A strain vaccine.

Blood tests were carried out in order to measure the antibody counts protecting against the influenza virus:

- Piror to vaccination
- 3 and 6 weeks after vaccination
- At delivery
- 3 months after delivery

On delivery, a blood sample is taken from the umbilical cord in order to measure the quantity of influenza antibodies transmitted to the newly born. All events observed in mothers and babies during the study were recorded.

Prior to vaccination, 19% of the patients already presented H1N1 strain antibodies at levels considered to be protective. Three and six weeks after vaccination, 98% of the patients presented blood antibody counts considered to be protective. On delivery and 3 weeks after delivery, the proportion of patients with antibody counts considered to be protective were between 92% and 90%. The umbilical cord samples of newly born babies showed antibody counts considered to be protective in 95% of cases, some antibody concentrations were even higher than in the

mothers (a ratio of 1.4 between neonatal babies concentrations and maternal concentrations at delivery).

"These results show that the influenza vaccine boosts the immune system in pregnant women and also protects newly-borns via transplacenta transfer ", concludes Odile Launay.

This study and an increasing number of other studies on pregnant women have confirmed the non-toxicity of the influenza vaccine during pregnancy. This year again, pregnant women are strongly recommended to take the influenza vaccine. The composition of the vaccine is modified each year to cover the major strains of the previous winter, which are the strains most likely to be present the next winter. "The H1N1 2009 virus is still around. That's why the inactivated H1N1 virus is still present in the current seasonal influenza vaccine". So it is highly recommended to vaccinate pregnant women in order to protect them and their baby, because otherwise the vaccine cannot be administered to babies before the age of 6 months", explains Odile Launay.

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