Influenza Vaccination During Pregnancy and its Effects on Your Baby

"In both mothers and their babies aged <6 months, does in-utero exposure to influenza vaccination have an effect on their health from the time of vaccination to 6 months after birth?"

By Alex Hook

Influenza affects people worldwide, and causes more illness than any other vaccine-preventable illness. Some of the most vulnerable population include pregnant women and their neonates, who are at high risk of developing severe complications.

There is currently no safe influenza vaccine for children under six months of age—they depend on maternal antibodies transferred across the placenta and through breast milk. The highest rates of hospitalisation related to influenza are in children less than one year old, therefore their protection is a public health priority.

The current WHO recommendations are that the inactivated influenza vaccine be given to all pregnant women.

http://kellybroganmd.com/article/rejecting-flu-vaccine-in-pregnancy/

http://baby.more4kids.info/2008/05/baby-classes/

Recommendations

The main barrier to maternal vaccination for both clients and health professionals is lack of knowledge and misconceptions about safety and adverse effects (Ding et al., 2014).

- Government campaign to highlight importance and address safety concerns
- Incentive approach directed towards mothers emphasizing that they are protecting their infants
- Healthcare provider recommendation is a significant predictor of client acceptance (Howland et al., 2010)
- Implement a reminder system to ensure that influenza vaccination is offered to clients at each visit
- Provide vaccination at multiple primary health care services to increase opportunities for vaccination, as well as client education and acceptance (Ding et al., 2010)

Health Outcomes of Vaccination

- Numerous studies show a strong correlation between mothers receiving the vaccination while pregnant and their infants having lower incidence of complications or hospital admissions related to influenza
- Reduction in cases of laboratory-confirmed influenza in children whose mothers had received an influenza vaccination during their pregnancy
- Maternal influenza vaccination has a substantial positive effect on the mean birth weights and proportion of infants who are small for gestational age (Steinhoff et al, 2012)
- Women have a 27% lower chance of pre-term birth, and an inverse association between foetal death and vaccination has been observed (Fell et al., 2012)
- Maternal illness is averted and associated risk of sepsis and foetal death are decreased. Maternal antibody transfer confers protection to neonates until they are old enough to be vaccinated
- Research shows that there is no link between vaccine exposure and appearance of abnormalities in neonates

http://bodyecology.com/articles/genetically-modified-babies-are-we-too-sick-to-have-our-own-children

Immunisation, and therefore prevention, of influenza in pregnant women has been shown to benefit not only the mother, but also their infant, both in-utero and during their first six months of life. In the studies available, "no evidence of serious harmful effects following influenza vaccination during pregnancy have been reported" (Fell et al., 2012).

By utilising both reminder systems for health professionals and increasing client based education, maternal vaccination rates would rise and families would be more aware and better protected against a disease that can have serious health implications, especially for those in the high-risk groups of pregnant woman and neonates.

References

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Howland, R., Lu, E., & Diop, H. (2013). Influenza vaccination among pregnant women - Massachusetts 2009-2010. *Morbidity and Mortality Weekly Report*, *62*(43), 854-856.

Steinhoff, M., Omer, S., Roy, E., Arifeen, S., Raqib, R., Dodd, C., … Zaman, K. (2012). Neonatal outcomes after influenza immunization during pregnancy: a randomized controlled trial. *Canadian Medical Association Journal*, *184* (6), 645-653. doi:10.1503/cmaj.110754

Rationale

Immunisation is a public health priority in New Zealand, and the lack of knowledge surrounding what is safe and who vaccinations are recommended for needs to be addressed. In particular, vaccination in pregnant women is a controversial topic in many people's opinions – two lives are being affected and many people do not understand the health benefits that it provides.

I have chosen to present my information in a poster form as I believe that this is the best way to spread the knowledge I have gained. Posters are a time and cost-effective way to present essential information (Miller, 2007), and provide a quick overview of the most important facts and findings to the viewer. Posters also allow a large number of people to view the information without having to read through a whole research paper. Poster sessions in nursing conferences are becoming increasingly important, and have been proven to be an excellent effective way to build knowledge in nursing practice (Keely, 2004). One of the recommendations of my literature review was to provide up-to date information to both clients and health professionals – by utilising a poster format with bright colors and pictures, I will be able to both captivate my audience and speak with those who are interested in the topic, as opposed to sending away a submission which may only be read by a select few.

Search question

In order to explore this topic, I used the PECOT model to formulate a research question. PECOT stands for population studied, exposure, comparison, outcomes, and time (Jackson, 2006).

PECOT category	Information relating to question	Explanation
Population	Babies aged <6 months whose mothers received an influenza vaccination during their pregnancy	In children, the highest incidence and risk of being hospitalized as a result of influenza is aged <6 months, however no vaccine is available for this population.
Exposure (intervention)	Mothers who received an influenza vaccination during their pregnancy	I will be looking for articles where pregnant women received an influenza injection during their pregnancy and the infants were followed up and any adverse or positive effects were recorded. The intervention in these articles will be administering influenza vaccinations to pregnant mothers
Comparison / Control	Mothers who received no vaccination against influenza during their pregnancy	I am interested in any differences in the infants whose mothers did not receive influenza vaccinations while pregnant.
Outcome	Effect of in-utero exposure to influenza vaccine on the infant and mother	I want to know if vaccination during pregnancy has any effects on the outcome of the health of the infant and how the health of the mother is affected as a result of the immunisation
Time	From administration of vaccination to mother, until infant is 6 months old	Children are eligible for their first influenza vaccination at the age of 6 months.

Using this framework, the research question that I have developed is: In both mothers and their babies aged <6 months, does in-utero exposure to influenza vaccination have an effect on their health from the time of vaccination to 6 months after birth?

References

Jackson, R. (2006). The GATE frame: critical appraisal with pictures. *Evidence-Based Nursing, 9*(3), 68-71. doi:10.1136/ebn.9.3.68

Keely, B. (2004). Planning and creating effective scientific posters. *The Journal of Continuing Education in Nursing, 35(4),* 182-185.

Miller, J. (2007). Preparing and presenting effective research posters. *Health Services Research, 42(1),* 311-328. doi: Miller JE. Preparing and Presenting Effective Research Posters. *Health Services Research*. 2007;42(1 Pt 1):311-328. doi:10.1111/j.1475-6773.2006.00588.x.