NACI update on pertussis vaccination in pregnancy

I am writing on behalf of the National Advisory Committee on Immunization (NACI) in response to the Child Health Update by Drs Gilley and Goldman.\(^1\)

The National Advisory Committee on Immunization has published a review of the literature, along with a review of Canadian pertussis epidemiology and recommendations for protecting infants from pertussis. The NACI statement containing this information can be found online.\(^2\) The review concluded that the pertussis vaccine has been shown to be safe and immunogenic in pregnant women. However, the effectiveness of maternal vaccination to prevent severe disease in newborns has not been established, and the potential of maternal vaccination to interfere with infants’ immune response to their infant pertussis vaccinations has not yet been defined. Therefore, NACI made the following recommendations.

- Pregnancy is an opportunity to review immunization status and offer pertussis vaccination to pregnant women at 26 weeks of gestation or greater if it has not already been received in adulthood (NACI recommendation, grade A). Immunization should not be delayed until close to delivery, as this might not provide sufficient time for optimal transfer of antibodies to the infant or direct protection of the infant against pertussis.

- Depending on regional epidemics, immunization with the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine might be offered during pertussis outbreaks (as defined by each jurisdiction) to pregnant women at 26 weeks of gestation or greater irrespective of their immunization histories (NACI recommendation, grade B). Jurisdictions should have the capacity to monitor local epidemics to make a decision to routinely encourage vaccination for pregnant women (NACI recommendation, grade A). Coverage and safety should be monitored (NACI recommendation, grade A).

- However, in view of the current pertussis epidemiology in Canada, NACI does not recommend immunization of all women against pertussis during pregnancy (NACI recommendation, grade E).

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Response

We thank Dr Warshawsky for the update on the National Advisory Committee on Immunization position on tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccination in pregnancy in response to our article.\(^1\) Dr Warshawsky is correct that there are no data on how maternal vaccination during pregnancy affects infants’ immunologic response to the regularly scheduled acellular pertussis vaccinations at 2 months, 4 months, 6 months, and 18 months. Despite that, since 2012, the US Centers for Disease Control and Prevention Advisory Committee on Immunization Practices has recommended that women receive Tdap boosters with every pregnancy. They recommend vaccination between 27 and 36 weeks, which is the optimal time for antibody transfer.\(^2\) The Advisory Committee on Immunization Practices determined that cocooning alone (vaccination of household members and close contacts) was not sufficient to reduce the number of infant pertussis cases given the severity of the disease in this age group.\(^3\)

A cost-effectiveness model analysis by Terranella et al found that maternal vaccination during pregnancy would prevent more infections, hospitalizations, and infant deaths compared with the postpartum model for 2 reasons: earlier protection of the mother from pertussis, which prevents transmission to the infant; and transfer of maternal antibodies to the infant.\(^4\)

The differences in practices and recommendations between the National Advisory Committee on Immunization and the Centers for Disease Control and Prevention illustrate the subtle differences between Canadian and American practices. That being said, both organizations agree that a pregnant woman should receive a Tdap booster in her late second to third trimester to provide immunity to her newborn in the first 6 months of life.

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Competing interests

Dr Warshawsky has been a member of the National Advisory Committee on Immunization since June 2004 and served as its Chair from June 2011 to June 2014.

References


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