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Maternal Influenza A(H1N1) Immunization During Pregnancy and Risk for Autism Spectrum Disorder in Offspring

A Cohort Study

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Author, Article and Disclosure Information

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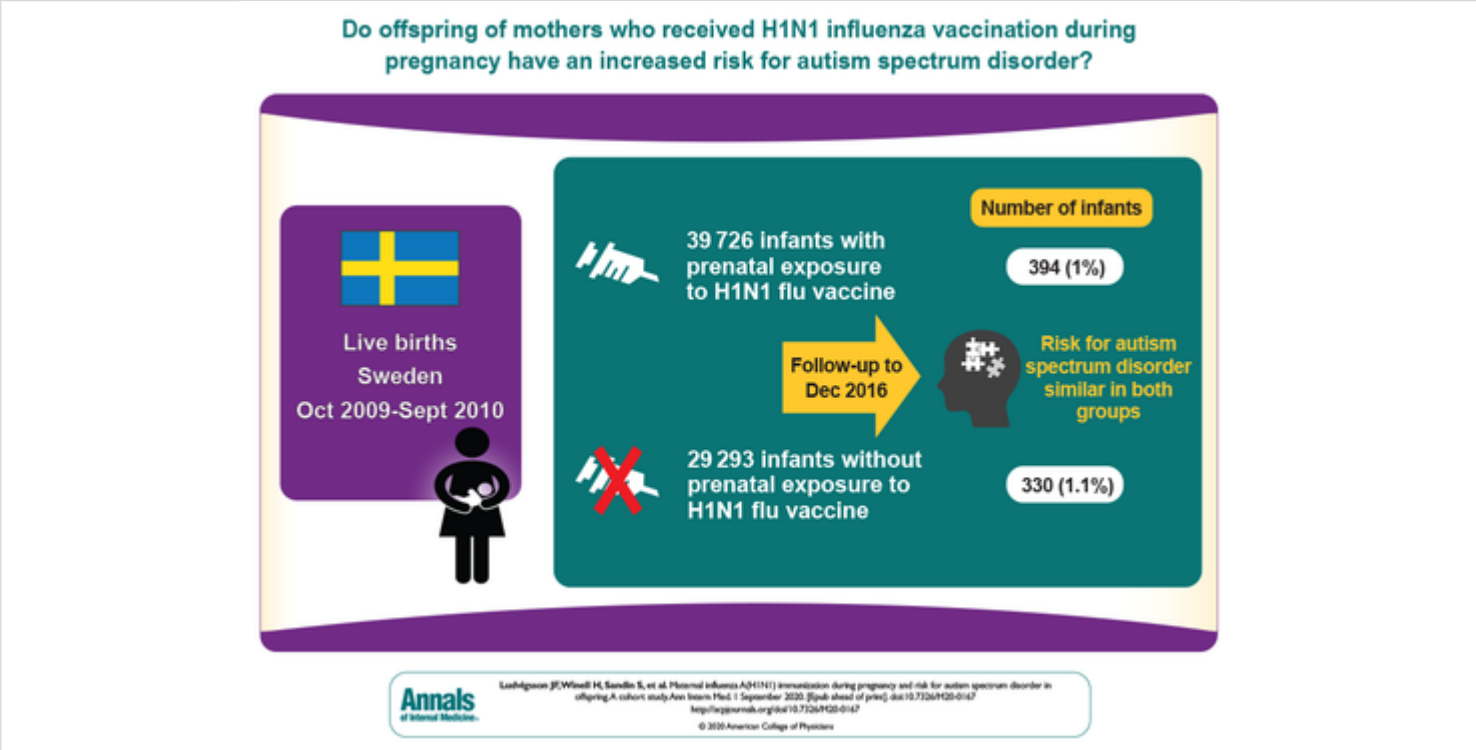
Eligible for CME Point-of-Care



Visual Abstract. Influenza A(H1N1) Immunization During Pregnancy and Risk for Offspring ASD

Influenza vaccination during pregnancy has beneficial effects on maternal health. This analysis of national health registry data in Sweden examined the risks for autism spectrum disorder among offspring of mothers who received influenza A(H1N1)pdm09 ("swine flu") vaccination during pregnancy.

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Background:

There are concerns that influenza vaccine exposure during pregnancy may be associated with increased risk for autism spectrum disorder (ASD).

Objective:

To examine the risk for ASD in offspring of mothers who were vaccinated against influenza A(H1N1)pdm09 ("swine flu") during pregnancy.

Design:

Population-based cohort study using nationwide registers.

Setting:

Seven health care regions in Sweden.

Participants:

Live births between October 2009 and September 2010, with follow-up through December 2016. In total, 39 726 infants were prenatally exposed to H1N1 vaccine (13 845 during the first trimester) and 29 293 infants were unexposed.

Measurements:

Cox regression was used to estimate hazard ratios (HRs) for the primary outcome, ASD, before and after adjustment for potential confounders. The secondary outcome was autistic disorder (AD).

Results:

Mean follow-up was 6.7 years in both unexposed and exposed children. During follow-up, 394 (1.0%) vaccine-exposed and 330 (1.1%) unexposed children had a diagnosis of ASD. In adjusted analyses, prenatal exposure to H1N1 vaccination was not associated with a later diagnosis of ASD (adjusted HR [aHR], 0.95 [95% CI, 0.81 to 1.12]) or AD (aHR, 0.96 [CI, 0.80 to 1.16]). The 6-year standardized cumulative incidence difference between the unexposed and exposed children was 0.04% (CI, −0.09% to 0.17%) for ASD and 0.02% (CI, −0.09% to 0.14%) for AD. Restricting the analysis to vaccination in the first trimester of pregnancy did not influence risk estimates (aHR, 0.92 [CI, 0.74 to 1.16] for ASD and 0.91 [CI, 0.70 to 1.18] for AD).

Limitation:

Data on H1N1 influenza infection are lacking.

Conclusion:

This large cohort study found no association between maternal H1N1 vaccination during pregnancy and risk for ASD in the offspring.

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