Gestational Influenza Increases Risk of Bipolar Disorder in Adult Offspring

July 17, 2013
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Prevention of maternal influenza during pregnancy may reduce the risk of bipolar disorder (BD), suggest new study findings published in JAMA Psychiatry.

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Previous studies have shown that gestational influenza is associated with schizophrenia in offspring. This new study is unique in that it focuses on the association between gestational influenza and BD. In addition, this nested case-control study of a population-based birth cohort from the Child Health and Development Study involved nearly every pregnant woman who received obstetric care from Kaiser Permanente Medical Care Plan, Northern California Region (KPNC), which allowed for more detailed maternal influenza exposure information than in previous studies and for more standardized diagnostic and psychiatric measures.

The study involved 214 participants with gestational exposure to influenza and 722 control subjects matched on date of birth, sex, and membership in KPNC or residence in Alameda County. Of the 214 participants, 92 cases (43%) of bipolar disorder were confirmed by structured research interviews and consensus diagnosis. BD type I, BD type II, BD not otherwise specified, or BD with psychotic features were included under the BD diagnosis.

The offspring of women who had influenza at any time during their pregnancy were nearly 4 times more likely to have a diagnosis of BD in adulthood than the offspring of women who did not have gestational influenza (odds ratio, 3.82; P=0.03). If maternal influenza occurred during the second or third trimesters, there was some evidence that the risk of BD was slightly greater than the overall risk. Of particular interest was that gestational exposure to influenza was associated with 6-fold increase in risk of a subtype of BD with psychotic features. Maternal age, race, educational level, gestational age at birth, and maternal psychiatric disorders had no effect on these results.

The findings of this study highlight the importance of preventing influenza during pregnancy. Pregnant women should be advised to avoid contact with symptomatic persons and to consider getting a flu shot. “In spite of public health recommendations, only a relatively small fraction of such women get immunized. The weight of evidence now suggests that benefits of the vaccine likely outweigh any possible risk to the mother or newborn,” said study coauthor Alan Brown, MD, PhD, of Columbia University and New York State Psychiatric Institute.2

Although confirmation of these findings is required, the implication is this, concluded the study authors: prevention of maternal influenza during pregnancy may reduce the risk of BD.

Pertinent Points:
- The offspring of women who had influenza during pregnancy had a nearly 4-fold increased risk of bipolar disorder developing in adulthood.
- Maternal influenza may be a risk factor for bipolar disorder.
- Prevention of maternal influenza during pregnancy may reduce the risk of bipolar disorder.

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