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Gestational Influenza and Bipolar Disorder in Adult Offspring

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ABSTRACT

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Importance Gestational influenza has been associated previously with schizophrenia in offspring, but the relationship between this exposure and bipolar disorder (BD) is unclear. The identification of gestational influenza as a risk factor for BD may have potential for preventive approaches.

Objective To test the hypothesis that maternal influenza during pregnancy is related to BD among offspring.

Design Nested case-control study of a population-based birth cohort from the Child Health and Development Study (CHDS). From January 1, 1959, through December 31, 1966, the CHDS recruited nearly all pregnant women receiving obstetric care from the Kaiser Permanente Medical Care Plan, Northern California Region (KPNC). Data on treated maternal influenza from the CHDS were used. Potential cases with BD from the cohort were identified by database linkages of identifiers among the CHDS, Kaiser Permanente database, and a large county health care database; by a mailed questionnaire to the CHDS cohort with subsequent interviews; and from an earlier psychiatric follow-up study on this birth cohort.

Setting The CHDS, Kaiser Permanente, and county health care databases.

Participants Cases of BD (n = 92) confirmed by structured research interviews and consensus diagnosis among the 214 subjects (48% of those ascertained) who participated and control subjects (n = 722) matched on date of birth, sex, and membership in KPNC or residence in Alameda County.

Exposures Influenza.

Main Outcome and Measures Bipolar I or II disorder, BD not otherwise specified, or BD with psychotic features.

Results We found a significant, nearly 4-fold increase in the risk of BD (odds ratio, 3.82 [95% CI, 1.58-9.24; *P* = .003]) after exposure to maternal influenza at any time during pregnancy. The findings were not confounded by maternal age, race, educational level, gestational age at birth, and maternal psychiatric disorders.

Conclusions and Relevance Maternal influenza may be a risk factor for BD. Although replication is required, the findings suggest that prevention of maternal influenza during pregnancy may reduce the risk of BD.