Use of glucocorticoids during pregnancy and risk of attention-deficit/hyperactivity disorder in offspring: a nationwide Danish cohort study

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Abstract

Objective
Prenatal exposure to excess endogenous glucocorticoid (GC) has been linked to attention-deficit/hyperactivity disorder (ADHD). We investigated whether prenatal exposure to exogenous GC is associated with ADHD.

Design
Nationwide cohort study.

Setting
A cohort of 875,996 singletons born alive between 1996 and 2009 in Denmark. Data were obtained from national registries.

Exposures
We identified children exposed prenatally to GCs, children unexposed prenatally and born to maternal former users, and children unexposed and born to maternal never users.

Main outcome measures We compared ADHD risk in children prenatally exposed to GCs and in children of former GC users with risk in unexposed children of never users. We computed cumulative incidence at 10 years of age and adjusted HRs (aHRs). In addition, we compared exposed children with unexposed siblings in a sibling design.

Results
We identified 875,996 children, among whom 5319 were prenatally exposed to systemic GCs and 36,780 to local/inhaled GCs. Cumulative incidences of ADHD at 10 years of age were 2.65% in prenatally exposed children and 2.03% in unexposed children of never users. At the general population level, prenatal exposure was associated with ADHD compared with unexposed, with aHR of 1.43 (95% CI 1.24 to 1.65) for systemic exposure and 1.23 (95% CI 1.15 to 1.31) for local/inhaled exposure. However, our former user analysis (aHR of 1.25 (95% CI 1.20 to 1.29)) and sibling design (aHR of 1.03 (95% CI 0.87 to 1.20)) indicated that these findings were due to confounding.

Conclusion
This study provides no evidence of a causal association between prenatal exposure to GCs and risk of ADHD.