CHRD 2024: Abstract Submission Form

Presenter Name
Payam Peymani

Presenter Status
Non-Trainee

Role in the project
Design
Perform Experiments
Analyze Data
Write Abstract

Research Category
Community Health / Policy

Title
Prenatal Exposure to Antiseizure Medications and ADHD Risk in Children

Background
Antiseizure medications (ASMs) are frequently prescribed during pregnancy, but their potential effects on neurodevelopmental outcomes in children, such as attention-deficit/hyperactivity disorder (ADHD), remain uncertain.

Objective
To assess the association between prenatal ASM exposure during the second and/or third trimester and the risk of ADHD in offspring.

Methods
A population-based cohort study was conducted using data from the Manitoba Research Data Repository (1998-2019). Pregnancies were classified by epilepsy diagnosis and ASM exposure. High-Dimensional Propensity Score (HDPS) analysis accounted for maternal factors, including age, asthma, chronic pain, psychiatric disorders, area of residence, socioeconomic status, multiple births, diabetes, hypertension, and the 300 most frequent covariates. Inverse Probability of Treatment Weighting (IPTW) with Cox proportional hazards regression was applied to assess ADHD risk.

Results
The study included 251,109 pregnancies, of which 3,271 involved ASM exposure during pregnancy. ADHD incidence was 15.1% among children exposed to ASMs with maternal epilepsy, 18.6% in those exposed without maternal epilepsy, and 11.2% in the unexposed group without epilepsy. HDPS IPTW-adjusted models showed an increased risk of ADHD across the overall exposed cohort (HR = 1.99, 95% CI: 1.96-2.02), particularly among pregnancies without epilepsy (HR = 2.38, 95% CI: 2.34-2.42). No significant association was observed in pregnancies with epilepsy (HR = 1.00, 95% CI: 0.96-1.05).

Conclusion
Prenatal exposure to ASMs is associated with a higher risk of ADHD in children, with the effect differing based on the presence of maternal epilepsy. These findings underscore the need for cautious use of ASMs during pregnancy, particularly for non-epilepsy-related indications.

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