CHRD 2024: Abstract Submission Form

Presenter Name
Sherif Eltonsy (2)

Presenter Status
Non-Trainee

Role in the project
Design
Perform Experiments
Analyze Data
Write Abstract

Research Category
Community Health / Policy

Title
Prenatal Gabapentin Exposure and the Risk of Autism Spectrum Disorder in Children

Background
The exact cause of autism spectrum disorder remains unclear, including the effects of medication exposure during pregnancy. Gabapentin, commonly used off-label for neuropathic pain, has seen increased use among pregnant women in recent years, but there is limited evidence on the risk of autism spectrum disorder associated with in-utero gabapentin exposure.

Objective
To assess the risk of autism spectrum disorder in children following prenatal exposure to gabapentin.

Methods
This study was a retrospective population-based cohort study conducted in Manitoba, Canada, utilizing health databases from the Manitoba Center for Health Policy. The cohort included all live singleton births in Manitoba from January 1, 1998, to March 31, 2021, excluding multiple births and stillbirths. The exposure of interest was gabapentin use during pregnancy, with the primary exposure window being the second and/or third trimester. Secondary analyses assessed exposure during the first trimester and at any point during pregnancy. The primary outcome was the incidence of an autism spectrum disorder diagnosis from birth until the end of follow-up. Hazard ratios (HRs) with 95% confidence intervals (CIs) were estimated using Cox proportional hazards regression models, both crude and adjusted. To address potential familial confounding, a sensitivity analysis was conducted using a one-child-per-mother cohort.

Results
The study included 289,794 children, with 1,029 exposed to gabapentin during pregnancy. Among these, 646 (63%) were exposed during the second and/or third trimester, and 940 (91%) during the first trimester. Autism spectrum disorder was diagnosed in 14 (2.2%) children exposed during the second and/or third trimester, 25 (2.6%) during the first trimester, and 27 (2.6%) at anytime during pregnancy. The adjusted hazard ratios for autism were 1.51 (95% CI, 0.88-2.56) for second and/or third trimester exposure, 1.78 (95% CI, 1.19-2.65) for first trimester exposure, and 1.69 (95% CI, 1.15-2.48) for exposure at any time during pregnancy. In the one-child-per-mother cohort, the adjusted hazard ratios were 1.15 (95% CI, 0.51-2.59), 1.26 (95% CI, 0.67-2.37), and 1.21 (95% CI, 0.66-2.21) for these exposure periods, respectively.

Conclusion
Gabapentin exposure during the second and/or third trimester was not associated with an increased risk of autism spectrum disorder. The observed increased risk with first trimester and anytime pregnancy exposure could be attributed to familial and residual confounding.

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No

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