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Perinatal risk factors for infantile autism.

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Abstract

BACKGROUND: Etiologic hypotheses in infantile autism suggest a strong genetic component, as well as possible environmental risks linked to early fetal development. We evaluated the association of maternal, pregnancy, delivery, and infant characteristics and risk of infantile autism.

METHODS: We conducted a case-control study nested within a population-based cohort (all Swedish children born in 1974-1993). We used prospectively recorded data from the Swedish Birth Register, which were individually linked to the Swedish Inpatient Register. Cases were 408 children (321 boys and 87 girls) discharged with a main diagnosis of infantile autism from any hospital in Sweden before 10 years of age in the period 1987-1994, plus 2,040 matched controls. Conditional logistic regression was used to calculate odds ratios (ORs) and 95% confidence intervals (CIs).

RESULTS: The risk of autism was associated with daily smoking in early pregnancy (OR = 1.4; CI = 1.1-1.8), maternal birth outside Europe and North America (OR = 3.0; CI = 1.7-5.2), cesarean delivery (OR = 1.6; CI = 1.1-2.3), being small for gestational age (SGA; OR = 2.1; CI = 1.1-3.9), a 5-minute Apgar score below 7 (OR = 3.2, CI = 1.2-8.2), and congenital malformations (OR = 1.8, CI = 1.1-3.1). No association was found between autism and head circumference, maternal diabetes, being a twin, or season of birth.

CONCLUSIONS: Our findings suggest that intrauterine and neonatal factors related to deviant intrauterine growth or fetal distress are important in the pathogenesis of autism.

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Smoking mothers link to autism



Smokers were 40% more likely to have an autistic child. Smoking during early pregnancy could increase a child's risk of developing autism. Swedish researchers studied over 2,000 children and found that those mothers who smoked regularly were 40% more likely to have autistic children.

Researcher Dr Christina Hultman from the Department of Medical Epidemiology at the Karolinska Institutet, Stockholm, said there was already thought to be a link between the growth of the foetus in the womb and autism. She said that because smoking also restricts growth it could have a similar effect.

"We have tested the hypothesis of reduced growth in utero related to other psychiatric disorders like schizophrenia and anorexia nervosa and there might be similar early risk factors.

Smoking

"As smoking during pregnancy, maternal age and mother's country of birth is all known to influence children's birth weight and foetal growth we included these variables.

"However we were surprised that smoking during early pregnancy was an independent risk factor for autism, which has not been shown earlier."

She said that similar studies on animals had shown that exposure to nicotine while in the womb had physical and behavioural effects and could lead to problems with the function of the brain.

Autism is a developmental disability that affects the way a person communicates and interacts with other people.

People with autism cannot relate to others in a meaningful way and they also have trouble making sense of the world at large.

As a result, their ability to develop friendships is impaired and they also have a limited capacity to understand other people's feelings.

Autism is often also associated with learning disabilities.

More research

Dr Hultman said there was now a need for further extensive studies to separate the effects of smoking from other environmental and genetic factors.

David Potter, of the National Autistic Society, agreed that the study in the Journal Epidemiology showed there was an urgent need for further research.

"Those who smoked daily in pregnancy were 1.4 times more likely to have a child with autism than those who didn't smoke, according to this study," he said.

"This is quite a small confidence interval and would need further studies either to confirm or disprove it. It seems unlikely to explain much about the overall influence of autism.

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"While we know that autism is a strongly genetic condition there is an urgent need to conduct further studies to determine which environmental risk factors are involved in triggering it."

Mr Potter added: "At prenatal stages several factors including carbon monoxide, drugs and endocrine factors have been suggested.

"The recent Medical Research Review of Autism considered these to be only speculative at present but further studies are needed."