Prenatal exposure to dental amalgam and risk of symptoms of attention-deficit and hyperactivity disorder (ADHD)

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Abstract

BACKGROUND:
ADHD is multifactorial, including both genetic and environmental factors. The safety of amalgam used in dental treatment has been discussed due to its content of mercury and potential risks for negative neurodevelopmental consequences in the offspring. The aim of the study was to investigate possible associations between symptoms related to ADHD in children of three and five years of age and prenatal exposure to mercury from mothers' amalgam fillings.

METHODS:
Data from the Norwegian Mother and Child Cohort Study (MoBa) were used. Data were collected by questionnaires sent to participating women in week 17 (Q1) and 30 (Q3) of pregnancy and when the child was three (Q6) and five years of age (Q7). Information about exposure to amalgam during pregnancy was obtained from Q3. Information about symptoms related to ADHD was obtained from Q6 and Q7. Valid data were obtained for 42 163 children at three years of age and 23 392 children at five years of age. Logistic regression models, including mothers' age, education, body mass index, parity, smoking and alcohol consumption during pregnancy, were used to estimate the association between ADHD symptoms and prenatal exposure to amalgam fillings.

RESULTS:
No significant associations between number of teeth with amalgam filling, amalgam fillings placed or removed during pregnancy, and symptoms related to ADHD in children of three and five years of age were found.

CONCLUSIONS:
In a large, prospective cohort study, we found no indication of increased risk of ADHD-related symptoms in children prenatally exposed to mother's amalgam fillings.