2010

Gender specific effects of perinatal influences on the risk for alcoholism in a 45-year Danish birth cohort

Anna Manzardo
Wendy Madarasz
Elizabeth C. Penick
Joachim Knop
Erik Lykke Mortensen

See next page for additional authors

Follow this and additional works at: https://digitalcommons.wustl.edu/guzeposter2010

Part of the Medicine and Health Sciences Commons

Recommended Citation
Manzardo, Anna; Madarasz, Wendy; Penick, Elizabeth C.; Knop, Joachim; Mortensen, Erik Lykke; Sorenson, Holger J.; Becker, Ulrik; Nickel, Elizabeth J.; and Gabrielli, William F. Jr., "Gender specific effects of perinatal influences on the risk for alcoholism in a 45-year Danish birth cohort" (2010). Posters. Paper 16 Samuel B. Guze Symposium on Alcoholism.
https://digitalcommons.wustl.edu/guzeposter2010/16

This Poster is brought to you for free and open access by the 2010: Disentangling the Genetics of Alcoholism: Understanding Pathophysiology and Improving Treatment at Digital Commons@Becker. It has been accepted for inclusion in Posters by an authorized administrator of Digital Commons@Becker. For more information, please contact vanam@wustl.edu.
Authors

This poster is available at Digital Commons@Becker: https://digitalcommons.wustl.edu/guzeposter2010/16
Gender Specific Effects of Perinatal Influences on the Risk for Alcoholism in a 45-Year Danish Birth Cohort

Department of Psychiatry & Behavioral Sciences, The University of Kansas Medical Center, Kansas City, KS; Danish Institute of Preventive Medicine, Copenhagen, DK

Abstract

Objective: A large Danish birth cohort was used to test the independent and joint effects of perinatal measures on the development of lifetime alcohol dependence (N=448) in male and female subjects at age 45.

Method: Subjects were born at the State University Hospital in Copenhagen, Denmark between 1959 and 1961 (N=9,125). A comprehensive series of measures were obtained for each of the 8,109 surviving infants before, during, and shortly after birth as well as at 1 year of age. The adult alcoholism outcome was defined as any ICD 10 F10 (Mental and Behavioral Disorders Due to Alcohol Use) or equivalent ICD 8 diagnosis extracted from the Danish Central Psychiatric Register or the Municipal Alcohol Clinics of Copenhagen by 2007.

Results: Social class, maternal smoking and multiple perinatal markers of premature birth independently predicted (p<0.05) the development of alcoholism. Separate logistic regression modeling for male and female subjects that included maternal smoking, social status and a global prematurity score found that the global prematurity score significantly increased the odds ratio for alcoholism in male subjects (OR=1.16, 95% CI 1.03-1.31) but not in female subjects (OR=1.04, 95% CI 0.86-1.26). When the effects of prematurity were controlled, maternal smoking in pregnancy was associated with a significant odds ratio for alcoholism in female (OR=2.06, 95% CI 1.32-3.22) but not male subjects (OR=1.25, 95% CI 0.97-1.71).

Discussion: The results suggest that the neurodevelopmental sequelae of premature birth has gender-specific effects on the risk for alcoholism. Small, premature or growth-delayed male babies appear to be selectively vulnerable to alcoholism years later. The previously identified association between maternal smoking and risk for alcoholism among males may be partially explained by the effects of premature birth. Female infants appear to be more directly sensitive to the influence of maternal smoking or established correlates of maternal smoking, such as maternal mental illness. However, the association between prematurity and alcoholism was not significant for female babies.

Conclusions:

1) The sequelae of premature birth induces a specific biological change in male babies that increases their vulnerability to develop alcoholism later in life.

2) The nature of this change may be a function of direct injury to developing brain systems or possibly a genetic imprinting phenomenon.

3) Female babies are either resistant to the induction of this change or this change has no effect on their vulnerability to develop alcoholism.