

INFECTIONS DURING PREGNANCY AND AFTER BIRTH, AND THE RISK OF AUTISM SPECTRUM DISORDERS: A REGISTER-BASED STUDY UTILIZING A DANISH HISTORIC BIRTH COHORT

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Introduction: Mounting evidence suggests that immune dysfunction may play a crucial role in the pathophysiology of autism spectrum disorders (ASD). In addition, several studies have reported that congenital and postnatal infections may contribute to the neurobiological basis of ASD.

Aims/objectives: This study aimed to investigate the relationship between infections during pregnancy and after birth, and ASD.

Methods: A case-control study design was adopted. Both cases and controls were retrieved from a historic birth cohort (HBC) maintained at Statens Serum Institute in Copenhagen/Denmark and were followed up retrospectively during pregnancy and after birth over four pre-defined periods. Study subjects were followed-up utilizing Danish nation-wide health registers for outpatient and hospital admissions due to infections. Associations between infections and ASD were analyzed using Mantel-Haenszel estimate of the odds ratio (OR) and logistic regression models.

Results: In total, 414 ASD cases and 820 controls were followed-up during pregnancy and a mean 16.3 years after birth. Crude, but not adjusted estimates showed that ASD cases had an increased risk of hospital admission due to infection at the end of the first year of life (OR = 1.48 [range: 1.07-2.05], P = 0.02) and at the end of the follow-up period (OR = 1.30 [range: 1.02-1.64], P = 0.03).

Conclusion: The present findings indicate that infections have a potential role in the pathophysiology of ASD; however, further studies are necessary to determine if infections etiologically contribute to ASD or if they act as an epiphenomenon due to distorted immunity in children with ASD.