

Increased risk of ADHD in families with ASD

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Abstract

Attention Deficit and Hyperactive Disorder (ADHD) and Autism Spectrum Disorders (ASD) are frequent comorbid neurodevelopmental conditions and the overlap between both disorders remains to be delineated. A more complete understanding of the shared genetic and environmental factors is needed. Using a family-based method, we evaluated the risk of ADHD in a group of relatives with an ASD proband (ASD-) and a group of relatives with an ASD and ADHD proband (ASD+). We enrolled 1245 individuals in the study: 499 probands, their 746 first-degree relatives and 140 controls. We used a multivariate generalized estimating equation (GEE) model, in which the dependent variable was the ADHD diagnosis in the relatives and the independent variable the ASD+ or ASD- in probands. We adjusted for sociodemographic factors (age, sex, IQ) and for the nature of the familial relationship with the affected proband (parent or sibling). Among the probands, there were 287 ASD- and 212 ASD+ individuals. ADHD was more frequent in relatives (19%) than in the control group (7%) ($p = 0.001$). The risk of ADHD was higher in the ASD+ relatives group than in the ASD- relatives group (GEE model OR 1.58 [95% CI 1.04-2.38], $p = 0.032$). This result was found in parents (OR 1.96 [95% CI 1.14-3.36], but not in siblings (OR 1.28 [95% CI 0.84-1.94], $p = 0.434$). Our study provides a representative estimate of the family distribution of ADHD in relatives of ASD probands but supports the modest effect of shared genetic and environmental factors between both disorders.