Increased risk of ADHD in families with ASD


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.