Variation in the Oxytocin Receptor Gene Is Associated with Social Cognition and ADHD

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Abstract

Objective:
Children with ADHD show substantial deficits in social cognitive abilities. Oxytocin, mediated through its specific receptor (OXTR), is involved in the regulation of social behavior and social cognition.

Method:
The entire coding sequence of the human OXT and OXTR genes were sequenced to identify mutations and single nucleotide polymorphisms (SNPs) in 151 children with ADHD (ADHD-combined, n = 51; inattentive subtype, n = 50; ADHD-C plus conduct disorder [CD], n = 50; 11-18 years) and 100 healthy controls.

Results:
We examined the association of three detected SNPs of OXTR with social cognition deficits. A significant association was shown between the children with ADHD and children with CT/TT genotypes of rs4686302 (χ² = 3.695; p = .037). ADHD children with CT/TT genotype for the OXTR rs4686302 performed significantly lower on the facial emotion recognition task than those with CC genotype.

Conclusion:
OXTR rs4686302 polymorphism was shown to be a genetic marker in social cognition deficits in ADHD children.