The GRIN2B and GRIN2A Gene Variants Are Associated With Continuous Performance Test Variables in ADHD

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Abstract

Objective:
To examine the association between variants of N-methyl-D-aspartate (NMDA) receptor subunit-encoding genes (GRIN2A and GRIN2B) and continuous performance test (CPT) variables in ADHD and healthy controls.

Method:
In all, 253 ADHD patients and 98 controls were recruited. The diagnosis, genotype, and diagnosis–genotype interaction effects for the CPT variables were examined.

Results:
Significant diagnosis effects were detected for all CPT variables. There were significant genotype and interaction effects on response time variability (RTV) by the GRIN2B variant. The C/C subgroup had higher RTV than the C/T + T/T subgroup in ADHD, but not in controls. There were significant genotype effects on omission errors by the GRIN2A variant. The G/G subgroup had more omission errors than the G/A + A/A subgroup in ADHD patients, but not in controls.

Conclusion:
These results suggest that the genetic variants of GRIN2B and GRIN2A confer an increased susceptibility to attentional impairment in ADHD patients.