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THE ASSOCIATION OF NRG1, DTNBP1, RGS4, G72/G30 AND PIP5K2A CANDIDATE GENES WITH COGNITION IN PATIENTS WITH SCHIZOPHRENIA AND HEALTHY CONTROLS

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Introduction: Previous studies have indicated association of schizophrenia candidate genes with cognition both in patients with schizophrenia and healthy individuals. In the same sample we have shown differential association of candidate genes with symptom severity in patients.
Objectives and aims: To test the most extensively researched schizophrenia candidate genes for association with domain-specific cognitive functions.
Methods: Cognitive functioning was assessed in a subsample of 263 patients with a DSM-IV diagnosis of schizophrenia and 135 healthy controls by a neuropsychological test-battery measuring the domains of sustained vigilance/attention, working memory, short-term memory, verbal memory, cognitive flexibility, and ideation fluency. Using the raw neuropsychological measures we calculated a global index of cognitive impairment and domain-specific composite z-scores. Clinical assessment was performed using the Schedule for Deficit Syndrome and the Positive and Negative Symptom Scale. DNA samples were genotyped for polymorphisms of the candidate genes NRG1, DTNBP1, RGS4, G72/G30 and PIP5K2A. Association between the above composite scores and the SNPs was examined using the General Linear Model (GLM) analysis.
Results: The preliminary analyses uncovered statistically significant associations between DTNBP1 rs909706 and the global index of cognitive impairment (F=3,39; p=0,03), and cognitive flexibility (F=4,81; p=0,01), and DTNBP1 rs1011313 and short-term memory (F=3,66; p=0,02). Moreover RGS4 rs10917670 was associated with working-memory (F=4,28; p=0.01). We found no association of NRG1, G72/G30 or PIP5K2A with the domains of cognitive functioning.
Conclusions: Our results support the association of DTNBP1 and RGS4 candidate genes with cognition, as a possible endophenotype of schizophrenia.

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