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NEUREGULIN-1 GENE POLYMORPHISM WITH RESPECT TO COGNITIVE FUNCTIONING IN SCHIZOPHRENIA

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Background: Neuregulin-1 (NRG1) may be an important factor in pathogenesis of schizophrenia due to its role in neurodevelopmental processes: myelination, neurotransmitter receptor expression and synaptic plasticity. NRG1 has been also implied to play role in cognitive impairments, which are considered to be endophenotypes of schizophrenia, i.e. subclinical, heritable and independent of clinical state traits associated with genetic susceptibility. Surprisingly, a recent meta-analysis (Dickinson, 2007) demonstrated that reliable and easy to administer Digit Symbol Coding Task (DSCT) discriminate people with schizophrenia from comparison individuals better than the more widely studied neuropsychological instruments.
Purpose: The study was carried out to investigate the association of a polymorphisms of the *NRG1* gene (rs62510682) and schizophrenia with respect to performance on DSCT.
Material and methods: We included 103 patients diagnosed with schizophrenia according to ICD-10 criteria and 578 controls in our study. The patients were evaluated for lifetime psychotic symptomatology using the Operational Criteria for Psychotic Illness (OPCRIT) checklist. DSCT was administered to 80 patients.
Results: The polymorphisms were in HWE both in the cases' and controls' groups. In single marker analysis, we did not find an association for the SNP tested. However; we have found that T allel carriers (TT and/or GT genotype) performed worse than G allel carriers (p=0.4) suggesting weaker cognitive processing efficiency.
Conclusion: Our data do not support the role of the *NRG1* gene polymorphism (rs62510682) in the predisposition to schizophrenia; however, the studied SNP might be considered to be a risk factor for cognitive impairment in schizophrenia.

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