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NRG1 AND DISC1 GENE POLYMORPHISMS WITH RESPECT TO COGNITIVE ENDOPHENOTYPE IN SCHIZOPHRENIA

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Background: Neuregulin-1 (NRG1) and DISC1 may be important factors in pathogenesis of schizophrenia due to their role in neurodevelopmental processes. NRG1 and DISC1 link directly into a common pathway mediated by Erb receptors and P13K/AKT1 signaling and have been implied to play role in cognitive impairments. Digit Symbol Coding Task (DSCT) from WAIS-R is a sensitive measure for cognitive decline in schizophrenia as well as it indexes poor prognosis and functional disability in schizophrenia.

Purpose: The study was carried out to investigate the association of a polymorphisms of the *NRG1* gene (rs62510682) as well as of *DISC1* gene (rs1538979) 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 addition to unstructured interviews and review of medical records, the patients were evaluated for lifetime psychotic symptomatology using OPCRIT checklist. DCSTR was administered to 80 patients.

Results: The polymorphisms were in HWE for healthy controls and schizophrenia patients. In single marker analysis, we did not find an association for the SNPs tested. However; with respect to DCST we found that with respect to *NRG1* gene T allel carriers performed worse than G allel carriers ($p<0.5$) and with respect to *DISC1* gene patients with TC genotype performed worse than with CC genotype ($p<0.05$).

Conclusion: Our data do not support the role of *NRG1* or *DISC* gene polymorphisms in the predisposition to schizophrenia; however, they might be considered as risk factors for the cognitive decline in schizophrenia.

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