ASSOCIATION STUDY OF THE DIO2 GENE AS A SUSCEPTIBILITY CANDIDATE FOR SCHIZOPHRENIA IN THE TURKISH POPULATION; A CASE-CONTROL STUDY

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Introduction: Schizophrenia (SCH) is one of the major and potentially severe mental illness that is characterized by both genetic and clinical heterogeneity. Thyroid hormone plays an important role in the development of the brain and nervous system both in the basic process of neurogenesis and of terminal brain differentiation. Type II deiodinase (DIO2) enzyme which has a critical role on thyroid hormone metabolism to convert pro-hormone thyroxine (T4) to the active hormone triiodothyronine (T3). Recently, DIO2 gene variations have been identified in association with mental disorders.
Methods: To investigate the potential genetic contribution of the DIO2 gene to SCH, we studied DIO2 Thr92Ala (rs225014) and ORFa-Gly3Asp (rs12885300) polymorphisms in a Turkish cohort of 290 unrelated SCH patients and 198 healthy controls. All subjects were genotyped by Taqman SNP genotyping assays.
Results: Single marker analysis showed a positive association of SCH and rs225014. Particularly, Thr92Ala genotype frequency was significantly higher in patients with SCH than controls (*p=0.045*) and in male patients with SCH, both allele and genotype frequencies were significantly higher compared to male controls (*p=0.03*). Allele and genotype frequencies of ORFa-Gly3Asp polymorphism were no different within the study group.
Conclusion: These data show a potential role of DIO2 as a candidate gene for susceptibility to SCH and provide a strong evidence for a role of the DIO2 Thr92Ala allele and genotype in the etiopathogenesis of SCH with sexual difference.

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