

CYP2D6*4 Allele Frequency and Extrapyrimal Side Effects during Haloperidol Therapy Among Russians and Tatars: A Pilot Study

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Abstract : Cytochrome P450 CYP2D6 activity affects antipsychotic therapy safety. CYP2D6*4 polymorphism frequency varies among different ethnic groups. We studied CYP2D6*4 polymorphism frequency in Tatar and Russian schizophrenic patients and association of CYP2D6*4 polymorphism and extrapyramidal disorders (EPD) frequency in schizophrenic patients on haloperidol monotherapy in daily doses up to 20 mg. Results: Heterozygous CYP2D6*4 allele carrier frequency among Tatars was lower (23.8% vs 32.4% in Russians), but the differences did not reach statistical significance. CYP2D6*4 allele frequency among Tatars was also lower (11.9% vs 24.3% in Russians), but the difference was not quite significant ($p=0.0592$). Average daily haloperidol dose in the group without EPD was significantly higher than in the group with EPD (11.35 ± 4.6 vs 13.87 ± 3.3 mg, $p=0.0252$), but average daily haloperidol dose/weight ratios in the compared groups had no significant differences. Statistically significant association between EPD development and heterozygous CYP2D6*1/*4 genotype and CYP2D6*4 allele carrier frequency was revealed among all schizophrenic patients and among those of Tatar nationality. Further well designed pharmacogenetic studies in different Russian regions are needed to improve psychotropic therapy safety and to establish evidence-based indications for pharmacogenetic testing in clinical practice.

Keywords : antipsychotic, CYP2D6 polymorphism, ethnic differences of CYP2D6*4 allele frequency, extrapyramidal side effects/disorder, schizophrenia, pharmacogenetics, Russians, Tatars

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