ABCB1 GENETIC VARIANTS AND RESPONSE TO ANTIEPILEPTIC DRUGS IN NORTH INDIAN COHORT OF EPILEPSY PATIENTS

K. Bala

Neurology & Neuropsychopharmacology, Institute of Human Behavior & Allied Sciences (IHBAS), New Delhi, India
Genomic and Molecular Medicine, Institute of Genomics and Integrative Biology, CSIR, New Delhi, Delhi, India
balakiran56@gmail.com

Aim: To study the association of common genetic polymorphisms of ABCB1 gene and drug response to first line antiepileptic drugs (AEDs) namely phenobarbitone, phenytoin, carbamazepine and valproate in North Indian cohort of epilepsy patients

Methods: Patients with epilepsy of either gender, 5-60yrs of age ,taking one of the first line AEDs Phenobarbitone (PB), Phenytoin (PHT), Carbamazepine(CBZ) and Valproate (VPA) or their combinations, of North Indian descent attending outpatient department of Neurology, Institute of Human Behavior and Allied Sciences (IHBAS) Delhi, India were enrolled. They were clinically assessed and treated by a neurologist. Genotyping of C1236T, G2677T/A and C3435T SNPs from ABCB1 gene was performed in these patient samples and 100 ethnically matched unrelated healthy control samples from same region

Results: The study included 392 patients out of which, 228 (127 Male, 101 Female) completed 12 months follow up and were divided into two groups depending upon the seizure control: no seizure group (133) & recurrent seizure group (95). Most common seizure type was GTCS (147) followed by partial seizure with or without secondary generalization (94). All the three SNPs studied were highly polymorphic in both epilepsy patients as well as healthy individuals. Single SNP association testing did not reveal any significant association between any polymorphism and seizure recurrence. Comparison of allelic, genotypic and haplotypic frequencies of ABCB1 polymorphisms between patients with “recurrent-seizures” and “no-seizure” did not show any statically significant difference.

Conclusion: Our finding disproves a general association between ABCB1 polymorphisms and drug response in epilepsy patients from North India.