

ARE POLYMORPHISMS IN CANDIDATE GENES ASSOCIATED WITH DRUG METABOLISM AND ION CHANNELS AND PHARMACORESISTANCE IN EPILEPSY?

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Temporal lobe epilepsy-TLE is associated with the highest proportion of the drug-resistant patients. One hypothesis to explain differences in drug response in epilepsy treatment is the association with pharmacogenetic differences present in genes related to drug-metabolism and ion channels. Therefore, allelic variations in these genes could be responsible for decreased efficiency of antiepileptic drugs and failure to control of epileptic seizures. The purpose of this study was to investigate whether single nucleotide polymorphisms-SNPs on drug-transporter genes (ATP-binding cassette family: *ABCB1*, *ABCC2*, *ABCC4*; and *RLIP76-ralA-binding-protein1*) and ion channels (*SCN11A*-Na⁺channel α subunit; *CACNA1B*-Ca²⁺channel α 1B subunit) could be associated to pharmacoresistance in a large group of TLE patients. We chose 7 SNPs in dbSNPs database: 12680(*RALBP1*); 2235039\282564(*ABCB1*); 2273697(*ABCC2*); 2274407(*ABCC4*); 2298771(*SCN11A*); 4422842(*CACNA1B*). Genotyping was carried out using the *TaqMan system*TM(*Applied Biosystems*). We included 81 drug-resistant TLE patients and compared with 55 drug-responsive TLE patients. Genotypic frequencies were in Hardy-Weinberg equilibrium in both groups and no significant allelic differences were observed, for any of the SNPs tested, between the two groups ($p > 0.01$). In addition, no differences were found between the allelic frequencies in both groups and the *NCBI SNPs database*. In conclusion, we found a lack of correlation between exonic SNPs in candidate genes associated with drug-metabolism and ion channels and pharmacoresistance in TLE.

Key words: Temporal lobe epilepsy, pharmacoresistance, antiepileptic drugs, SNPs.

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