p284

ASSOCIATION OF POLYMORPHISM OF THE SODIUM CHANNELS GENE *SCN1A* WITH THE EFFECTIVENESS OF PHENITOINE TREATMENT IN PATIENTS WITH EPILEPSY

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Purpose: Establish the association between the type of polymorphism of (Na) channels B3 receptor and phenitoine effectiveness in patients with epilepsy

Method: We examined 201 patients with a diagnosis of epilepsy. To establish the (Na) channels B3 receptors polymorphism used biological material (whole blood) from patients with epilepsy. Investigated patients were divided into two groups: first group included 135 patients with effective drug treatment and the second group – 69 pharmacoresistent patients that was 66.2% and 33.8% respectively. Pharmacoresistence of the patients was evaluated on the basis of adequate long-term medication, using international criteria developed by Brodie and others. [3].

Results: Using PCR reaction was established three polymorphisms of the *SCN1A* – TT, CT, and CC combination of alleles of this gene. Distribution in the study group was: 76 patients had a CT polymorphism (37.4%), 65 patients – TT polymorphism (31.8%), and in 63 patients was set CC polymorphism of *SCN1A* (30.8%). The distribution analysis of polymorphism of *SCN1A* receptor in groups according to the efficiency of phenitoine was performed.

Conclusion: Based on the above is possible to assume a clear association between the effectiveness of phenitoine as AED and CC polymorphism of *SCN1A*. There is also a clear association between resistance to the phenitoine and TT polymorphism *SCN1A*. We understand the need for further research in this area, but we consider it appropriate to investigate of *SCN1A* receptor polymorphism before prescribing phenitoine. This would avoid the long-term drug titration in the presence of ineffective cases with TT polymorphism.