Cytochrome P450 System Activity in Alcoholic Patients From Different Ethnic Groups

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Background. Sensitization of cytochrome P-450 system to action of alcohol can become a significant problem of psychopharmacotherapy. M-chlor-benzhydrylurea - Galodif® is an efficient anticonvulsant. We investigated effect of Galodif on activity of the liver cytochrome P450 system of alcoholics from two different ethnic groups.

Methods. As a test-drug antipirine was used. 68 patients (from Russian and Tatar ethnic groups) were examined. The concentration of test-drug antipirine in saliva was determined by spectrophotometry assay. Pharmacokinetic parameters were counted by model-independent method of statistical moments by K. Yamaoka: period of half-elimination ($T_{1/2}$, h), total clearance (Cl t, ml/min), middle time of residual drug in organism (MRT, h), middle time of elimination (MET, h), area under the pharmacokinetic curve (AUC, mkgh/ml).

Results. Clinical monitoring provides a possibility to considerably optimize the process of treatment of alcoholic patients. We observed, that $T_{1/2}$ of drug kinetic was 8,81±5,23 before treatment and 4,37±2,31* after treatment with Galodif; Clt: 113,42±38,67 and 137,37±54,00; MRT: 11,44±5,43 and 3,69±0,60* (p<0.05); MET: 6,03±2,10 and 4,64±1,83* (p<0.05); AUC: 7,05±5,74 and 6,39±2,18, respectively. Galodif causes reduction of period of half-elimination, significant decrease of middle time of residual drug in organism and middle elimination time. Drug pharmacokinetics parameters in alcoholic patients from Tatar ethnic group were as follows: $T_{1/2}$: 11,19±2,95 and 2,57±0,69*; Clt: 71,108±11,58 and 116,23±9,40*; MRT: 8,66±1,13 and 2,60±0,46*; MET (h) 5,71±0,57 and 3,68±0,49*; AUC: 11,58±1,71 and 7,30±1,04*, respectively.

Conclusion. These data suggest that the individual sensitivity of organism to the drug is caused not only by biochemical, but also by anthropo-morpho-physiological polymorphism.