

The Influence of Carbamazepine on the Activity of CYP3A4 in Patients with Alcoholism

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Abstract : Cytochrome P-450 isoenzyme 3A4 takes part in the biotransformation of medical drugs. The activity of CYP isoenzymes depends on genetic (polymorphisms of genes which encoded it) and phenotypic factors (a kind of food, a concomitant drug therapy). The aim of the study was to evaluate a carbamazepine effect on the CYP3A4 activity in patients with alcohol addiction. The study included 25 men with alcohol dependence, who received haloperidol during the exacerbation of the addiction. CYP3A4 activity was assessed by urinary 6-beta-hydroxycortisol/cortisol ratios measured by high performance liquid chromatography with mass spectrometry. The study modeled a graph and an equation of the logarithmic regression, that reflects the dependence of CYP3A4 activity on a dose of carbamazepine: $y = 5,5 * 9,1 * 10^{-5} * x^2$. The study statistically significant demonstrates the effect of carbamazepine on CYP2D6 isozyme activity in patients with alcohol addiction.

Keywords : CYP3A4, biotransformation, carbamazepine, alcohol abuse

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