

Article: 0371

Topic: EPO05 - "the dreamers": changes in european psychiatry over the last 10 years

Brain-derived Neurotrophic Factor in Patients with Affective Disorders

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Currently new biological models of the pathogenesis of affective disorders are developed which give crucial irregularities in neurotrophic factors.

Objectives of the study was to investigation of brain-derived neurotrophic factor (BDNF) with study the polymorphisms of locus rs6265 of gene BDNF and the content of BDNF in the serum of patients with affective disorders and healthy persons.

We studied the patients with a current depressive episode (F32, F33, ICD-10, 218 persons) and 94 mentally healthy persons. Genotyping was performed with TaqMan® SNP Genotyping Assay and StepOnePlus Real-Time PCR System (Applied Biosystems, USA). The concentrations of BDNF was determined by enzyme immunoassay using reagent kits Human BDNF Immunoassay (R&D Systems) and automatic microplate spectrophotometer Epoch BioTek Instruments (USA). Statistical analysis was performed using the program SPSS, version 20.0.

Statistical analysis of the results revealed a significant increased frequency of the allele T of gene BDNF in patients compared with healthy people ($p=0,0003$). Frequency of genotypes CT and TT in patients with affective disorders were significantly higher than in control ($OR=1,62$, $95\% CI=0,94-2,78$, $p=0,003$). The study of concentration of BDNF in patients showed slightly reduced level of neurotrophin in patients compared with healthy individuals (4852,02 (4052,7-4985,15) pg/ml and 4950,33 (4625,03-5003,58) pg/ml).

Thus, patients with current depressive episode characterized by changes in the neurotrophic system, increased frequency of the allele T of locus rs6265 and reduced content of BDNF in serum.

The investigation is supported by grant of President RF N14.120.14.3854-MK and project of RFBR N14-04-01157 and N14-04-31925.