Article: 0493
Topic: EPW24 - e-Poster Walk Session 24: Addictive Behaviours part 2

New Approaches to the Treatment Alcohol Addiction in Experimental Alcoholism

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Background. Studying the effects of drugs on neuronal $GABA_A$ /benzodiazepine receptors can be the basis to develop new approaches to the treatment of this disease.

Materials and methods. Wistar rats (n = 250) used in the experimental model of alcoholism. Properties of BDR 'synaptosomal" and 'mitochondrial" types were examined in respective membrane fractions obtained from brain cortex of rats with experimental alcoholism and treating of anticonvulsant meta-chloro-benzhydrylurea (m-chBHU) by radioreceptor assay with [^{3}H]flunitrazepam and [^{3}H]Ro5-4864.

Results. As a result of screening in terms of consumption of 15% alcohol and water in the rat were divided into 3 groups of animals. 1st - rats preferred to ethanol in testing - 'heavy drink" rats (15% alcohol as the sole source of drinking for 10 months); 2nd - rats preferred to ethanol - 'non-heavy drink" male contained no access to the entire period of ethanol; 3rd – 'non-prefer" alcohol rats – contained in the water. Introduction of m-chBHU rats 100 mg/kg for 14 days caused a significant decrease in alcohol consumption in animals preferring alcohol (1st and 2nd groups). Comparative study of kinetic parameters of selective ligands with bran membranes showed that properties of BDR in membranes from brain cortex of male rats with different preference to alcohol and showed that affinity of BDRs was decreased, but capacity of receptors was increased in brain cortex of 'heavy drink" and 'non-heavy drink" male rats compared with 'non-prefer" alcohol rats.

Conclusions. Administration of m-chBHU induced mediation of GABA in brain of these rats and reduced alcohol consumptions.

https://doi.org/10.1016/S0924-9338(15)30389-8 Published online by Cambridge University Press