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ANIMAL MODELING OF DUAL DIAGNOSIS: SCHIZOPHRENIA AND ALCOHOLISM

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Alcoholism prevalence is three times higher in patients with schizophrenia than in general population.

The aim of this study was to create two experimental models of dual disorders: schizophrenia and alcoholism.

The study was carried out on 90 male Wistar rats. The first dopaminergic model of schizophrenia was conducted by means levodopa-carbidopa (LC) introduction: 300 mg/kg for 5 days every month of the experiment. The second model was rat earlier isolation from 21 till 56 day after birth. During 4 month all experimental animals had 15% ethanol solution intermittent half-voluntary drinking. Alcohol preference was evaluated in the 'two-bottle-test'. Behavior parameters and anxiety level was estimated in the 'open field' test, Porsolt test and auditory stimulus reactions.

LC rats have shown significantly higher alcohol intake in earlier experimental period, compared to water controls. Alcohol preference was higher exactly after LC administration ('acute psychosis') than in three weeks ('remission'). The LC rats have shown the reduced threshold sensitivity to auditory stimuli and no differences in locomotor and exploratory activity. Compared to control animals the early isolated rats have shown higher alcohol preference as well. After isolation rats have demonstrated the increased motor activity and anxiety in the open field. After the end of alcoholization the isolated rats have shown significantly less swimming time than controls in Porsolt test.

Different mechanisms of alcoholism origin in different schizophrenia models are discussed: common sub-cortical DA transmission changes in schizophrenia and alcoholism in LC model and self-medication mechanisms in early isolation model.

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