

Anhedonia correction at different types of chronic stress

Lutsenko R.V., Sydorenko A.H.

Higher State Educational Establishment of Ukraine “Ukrainian Medical Stomatological Academy”, 36011, Poltava, Shevchenko Street 23, Ukraine. sidorenko.med@gmail.com

Anhedonia is the main symptom of such diseases as schizophrenia, depersonalization, anxiety and depressive disorders, Parkinson’s disease. Stressor disorders are the main symptoms of neurotic and depressive disorders, correction, which will indicate the effectiveness of therapy.

The aim of the paper is to investigate the effect of 2-hydroxyindoline-3-glyoxylic acid derivatives (compound 18 and E-38) on anhedonia in experimental neurosis and chronic moderate stress. The experiments were done on Wistar rats. The neurosis lasted 30 days. Depressive state (chronic moderate stress) contains 8 weeks. Compound 18 was used to correct the neurosis, substance E-38 was used at moderate stress. Derivatives of 2-oxyindoline were administered at a dose of 12 mg/kg orally 1 hour prior to exposure to stressors and every 3 days.

Neurosis reduced the number of approaches to drinking bowl by 1.9 times and the amount of sucrose consumed by 2.2 times compared with the control group ($p < 0.001$). Diazepam increased the number of approaches to drinking bowl by 1.4 times ($p < 0.02$), significantly increased the amount of consumed sucrose compared to pathology. The use of compound 18 increased the number of approaches to the drinking bowl with sucrose by 1.4 times and increased the amount of consumed sucrose by 1.3 times ($p < 0.02$) compared to the control pathology without correction. After the reproduction of the depressive state, decrease in the number of approaches to the drinking bowl was observed in 3.8 times and decrease in the amount of consumed sucrose in 4.3 times compared with intact animals ($p < 0.001$). Imipramine in chronic moderate stress did not change the number of approaches to drinking bowl, the amount of consumed sucrose in one approach, the total amount of consumed sucrose compared to the control pathology. Compound E-38 with chronic moderate stress increased the number of approaches to the drinking bowl by 2.4 times compared with control pathology ($p < 0.001$). In this case, the substance increased the amount of consumed sucrose by 1.9 times.

The therapeutic and preventive use of 2-hydroxyindoline-3-glyoxylic acid derivatives effectively corrected anhedonia in studied pathology.