

PROSPECTS OF CREATION THE NEW PSYCHOTROPIC DRUG ON THE BASIS OF THE DRY EXTRACT FROM *LEONURUS CARDIACA* HERB

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Introduction. Modern life is full of chronic stress and emotional overload and it leads to symptoms of neurogenic and psychosomatic diseases, including diseases of the cardiovascular system. According to the results of current research, from 60 to 90% of visits to a doctor are related with stress. Choosing the sedative drugs, more than 80% of the population favored plant drugs. This is due to several reasons, such as, in particular, the combined effect is directed to the various links of the disease, a high safety profile, effectiveness, relative cheapness and availability.

Leonurus cardiaca herb is one of the most used medicinal plants with sedative effect. The most popular drug on the basis of this raw material is *Leonurus* tincture. However, it has some disadvantages: the chemical composition is changeable, so pharmacodynamics does the same; contain of ethanol is contraindicated children, pregnant women, persons whose activities require high attention.

So, this regard, the creation of standardized medicines based on *Leonurus cardiaca* herb is an important task.

Aim. The purpose of research is to carry out qualitative and quantitative analysis of the dry extract from *Leonurus cardiaca* herb and pharmacological screening of its psychotropic activity.

Materials and methods. *Leonurus cardiaca* alcohol extract has been obtained by maceration at a ratio 1 to 5, considering the absorption coefficient, which is 2. It has been infusing for three days, filtered and allowed to stand for a week. The resulting extract was evaporated at 85-95 °C under vacuum in a vacuum at pressure of 680-700 mm. Distillation residue is a thick dark-brown transparent liquid that has been left for sedimentation for 4-5 days in the refrigerator. The resulting aqueous concentrate was spray-dried with the coolant inlet temperature 160 °C and at the outlet - 80- 90 °C to a dry extract.

The dry extract from *Leonurus cardiaca* herb was investigated.

For preliminary identification of biologically active substances (BAS) we used method of thin layer chromatography (TLC).

Substances of flavonoid nature were showed with TLC and significant examples of flavonoids in the solvent system: acetic acid glacial R – water R – ethyl acetate R (20 to 20 to 60). Manifestations of chromatograms was carried out by spraying the solution dimethyl aminobenzaldehyde, after which the plate was heated

at a temperature of 100 °C to 105 °C for 10 minutes before the appearance of stains and viewed in daylight.

Such groups of BAS as hydroxycinnamic acids derivatives (caffeic, chlorogenic acid) and flavonoids (rutine, apigenin, giperozid) were found.

The study of quantitative and qualitative composition of phenolic compounds in the object was carried out by high performance liquid chromatography (HPLC) by chromatography Agilent Technologies (model 1100), which is equipped with a flowing vacuum degasser G1379A, G13111A a four-pump low pressure gradient, automatic injector G1313A, G13116A thermostat columns and diode-array detector G1316A.

Results and discussion. The studies of the dry *Leonurus cardiaca* herb extract by HPLC shows 10 compounds of phenolic nature (g/kg): caffeic acid (1.34), caffeic acid derivative 1 (5.28), chlorogenic acid (2.1), caffeic acid derivative 2 (4.68), caffeic acid derivative 3 (7.92), an unidentified substance 1 (1.29), rutin (13.04), an unidentified compound 2 (0.95), giperozide (2.14) and apigenin (2.96) .

We found 5 hydroxycinnamic acid derivatives, 2 of which were identified (chlorogenic and caffeic acid). 3 flavonoids were discovered such as rutin, apigenin, giperozid.

The total quantitative content of hydroxycinnamic acids is 21.32 g/kg: caffeic acid – 1.34 g/kg, chlorogenic acid – 2.1 g/kg; flavonoids: rutin – 13.04 g/kg, apigenin – 2.96 g/kg.

Pharmacological study of psychotropic activity was carried out with the Mouse Open Field Test. 16 nonlinear white male mice weighing 18-20 g took part in the experiment. The dry alcoholic extract was administered orally at a dose of 100 mg/kg, control group was orally administered the equivalent volume of purified water.

The study found an expressive sedative activity of the *Leonurus cardiaca* herb dry extract. It is statistically significant reduced in all types of activity by 26.7% ($p<0.05$). Locomotor activity is reduced by 29.2% ($p<0.05$), estimated research tends to decrease by 14.3% ($p<0.05$). Against the background of the *Leonurus cardiaca* dry extract also reduced vegetative support emotional reactions of mice by 13.2%. However, this reduction did not reach statistically significant values ($p>0.05$).

Conclusions. Thus, the phytochemical study shows the dry extract from *Leonurus cardiaca* herb contents phenolic compounds, flavonoids and hydroxycinnamic acids. The results of pharmacological studies have shown the prospects of creation the new psychotropic drug on the basis of the dry extract from *Leonurus cardiaca* herb.