MINISTRY OF PUBLIC HEALTH OF UKRAINE
NATIONAL UNIVERSITY OF PHARMACY

TOPICAL ISSUES OF NEW DRUGS DEVELOPMENT

Abstracts of XXV International Scientific
And Practical Conference
Of Young Scientists And Student

April 18-20, 2018
Kharkiv

Kharkiv
NUPh
2018

UDC 615.1

Editorial board: prof. A. A. Kotvitska, prof. V. P. Chernykh, prof. A. L. Zagayko, S. Yu. Danylchenko

Compilers: K. Y. Netosova, I. O. Surikova, O. S. Prokopenko, A. S. Materiienko, D. V. Lytkin

Topical issues of new drugs development: Abstracts of XXV International Scientific And Practical Conference Of Young Scientists And Student (Kharkiv, April 18-20, 2018). – Kharkiv: NUPh, 2018. – 554 p.

ISSN 2616-6615

Book of Abstracts includes materials of Scientific and Practical Conference of Young Scientists and Students "Topical issues of new drugs development". Materials are groupped according to the main directions of scientific, research and educational work of the National University of Pharmacy. Teoretical and practical aspects of the synthesis of biologically active compounds and development of medicinal substances on their basis; standardization of drugs, pharmaceutical and chemical-technological analysis, the study of raw materials and herbal remedies development, modern drug technology and extemporal recipe; biotechnology in pharmacy, modern advances in pharmaceutical microbiology and immunology, clinical trials of new drugs, pharmaceutical care for prescription and OTC-drugs, evidence-based medicine, modern pharmacotherapy, socio-economic studies in pharmacy, marketing management and pharmacoeconomics during the development, implementation and use of drugs, quality management in development, production and traffi cking of drugs; information technologies in pharmacy and medicine; basics of pedagogy and psychology; social science; philology are presented. Also in book there are published material ob All-ukrainian contest of student scientific work on speciality "Pharmacy, Industrial Pharmacy".

For a wide audience of scientists and pharmaceutaical and medicinal employees.

UDC 615.1

ISSN 2616-6615

appetite, which may be due to the attraction of emotional memory, whose mechanism consists in reproducing actions that lead to the growth of dopamine, in particular, eating.

Conclusions. Thus, according to the conducted studies results, it can be argued that the level of serotonin and dopamine in the brain is an important part of the regulation of eating behavior, but, as you know, not the only levers of influence on the appetite formation, which requires further research.

COMPARATIVE STUDY OF BEARBERRY LEAVES POLYPHENOL EXTRACTS HYPOGLYCEMIC ACTIVITY

Kravchenko I. V.
Scientific supervisor: assoc. prof. Kravchenko G. B.
National University of Pharmacy, Kharkiv, Ukraine
kravchenko.irina.ns@gmail.com

Introduction. The modern diet and lifestyle lead to metabolic disorders development. Quite often the insulin resistance (IR) state is registered in patients. One of the main features of IR is tolerance to glucose, so the improving of glucose metabolism must be the primary task. In this regard, plant diet has benefits because of polyphenols and other biologically active compounds.

Aim. The aim of this study was to conduct the comparable oral glucose tolerance test (OGTT) after treating rats by bearberry (Arctostáphylos úva-úrsi) leaves polyphenol extracts with the different way of extraction.

Materials and methods. 24 male rats weighting 160-180 g, who were kept in standard vivarium conditions, were randomly divided into 4 groups. One group was intact animals (G1), other 3 groups were intragastrically administered plant origin complex preparations during 2 weeks: ethanol polyphenol extract (EPE) of bearberry leaves (G2), water polyphenol extract (WPE) of bearberry leaves (G3) and control group (G4). Polyphenol extracts were administered in dose 9 mg of polyphenols on 100 g of body weight. On the 15th day of the administration was conducted OGTT. Fasting animals, except G1, were given intragastrically glucose solution in dose 3 mg/100 g of body weight. Blood samples for glucose analysis using glucometer were taken at time 0, 15, 30, 60 and 120 minutes after glucose load.

Results and discussion. In 30 minutes induced hyperglycemia resulted in 1,78-fold increase of blood glucose level on the average of control group (G4). In the G2 hyperglycemic rats, maximum reduction of blood glucose level by 27.32% compared to control level was fixed on 60th minute of the experiment. However maximum reduction of 23.54% was observed in control on 120 minute compared to the beginning of the experiment. In generally our results indicate that the EPE administration is relatively more potent than WPE administration, so the way of ethanol extraction allows to store more biologically active compounds. Bearberry leaves contain arbutin, flavonoids and alkaloid compounds that may stimulate glucose utilization by the tissues.

Conclusions. Thus, we have found that bearberry leaves ethanol polyphenol extract administration improved the tolerance to glucose in glucose induced hypeglycemic rats. Such treatment can be useful for correction of IR state or complex therapy of diabetes mellitus type 2. But future investigations are definitely required.

STUDY OF THE INFLUENCE OF THE GENISTA TINCTORIA ON THE FUNCTION OF THE THYROID GLAND

Lazutina A. A.
Scientific supervisor: assoc. prof. Shcherbak O. A.
National University of Pharmacy, Kharkiv, Ukraine
alenashcherbak2201@gmail.com

Introduction. Diseases of the thyroid gland are an actual medical and social problem of modern society. This is due both to the wide, constantly growing prevalence of thyroid gland pathology, and to the resulting, with its dysfunction, damage to the somatic, reproductive, mental health of the population. The causes of thyroid diseases are plentiful - from iodine deficiency and adverse environmental conditions to

genetic disorders. Iodine deficiency diseases, in their prevalence and manifestations, constitute a significant problem for many countries in the world. Elimination of iodine deficiency means solving one of the problems of mankind.

The **aim** of this study was against to study the effect on thyroid function of 30% tincture from Genista tinctoria with experimental mercazolil-induced hypothyroidism carried out.

Materials and methods. Experimental studies were performed on white non-linear male rats with mercazolil-induced hypothyroidism model for 34 days. Animals were divided into 5 groups: 1 - intact control, 2 - control pathology, 3 - 30% ethanol, 4 - Iodomarine, 5 - 30% tincture of grass from Genista tinctoria. At the end of the experiment, the animals were withdrawn from the experiment by decapitation and serum levels of thyroxine (T4) and triiodothyronine (T3) were determined by the enzyme immunoassay.

Results and discussion. As a result of the study, it was found that the T3 and T4 levels in the group of control pathology were 1.4 and 2.6 times lower than in the group of intact animals. In the group of animals treated with 30% ethanol, the content of T3 and T4 decreased by 1.7 and 2.5 times, respectively, and was at the level of the group control pathology. The use of iodomarin increased the levels of T3 and T4 by 1.2 times in comparison with the control pathology. Course introduction of 30% tincture of grass from Genista tinctoria contributed to an increase in the concentration of triiodothyronine in 1.5, 1.9 and 1.4 times compared with the group of control pathology, 30% ethanol, Iodomarin, respectively. The level of thyroxine in the experimental group was 1.6, 1.5 and 1.3 times greater in comparison with the group of control pathology, 30% ethanol, Jodomarin, respectively.

Conclusions. The use of 30% tincture from Genista tinctoria has a corrective effect on the thyroid gland with hypothyroidism. This is evidenced by an increase in the concentrations of iodine-containing hormones.

THE EFFECT OF AROMATASE INHIBITORS ON FOOD BEHAVIOR IN HAMSTERS WITH EXPERIMENTAL DIET-INDUCED METABOLIC SYNDROME

Mazya V. V., Lytkin D. V., Maloshtan A. V.
Scientific supervisor: prof. Zagayko A. L.
National University of Pharmacy, Kharkiv, Ukraine
biochem@nuph.edu.ua

Introduction. Metabolic syndrome is harmful disease, which includes combination of several most frequent conditions: obesity, dyslipidemia, insulin resistance and cardiovascular disease. Nowadays, metabolic syndrome is spread all over the world regardless of geographic location and economic situation, and it varies from 7% to 84% in different regions of our planet. Metabolic syndrome is the common disease that mostly manifests in insulin resistance and obesity. Sex hormones imbalance caused by increased peripheral aromatase activity is also plays an important role in aggressive clinical behavior of metabolic syndrome with overweight and obesity. The most common condition that changes the ratio of sex hormones is the enhancement of peripheral aromatase activity caused by fat weight gain, that also may cause food behavior disorders. In view of the foregoing, the pharmacological correction of peripheral aromatase activity needs to be examined as a method of metabolic syndrome and obesity therapy.

Aim. Study of the effect of aromatase inhibitors on food behavior in the experimental metabolic syndrome has become the objective of this research.

Materials and methods. We evaluated the influence of third-generation aromatase inhibitors (exemestane, letrozole, anastrozole) on food behavior in hamsters of different age and sex with diet-induced metabolic syndrome (high-calorie diet containing large amount of fat and carbohydrates, especially fructose, for 6 weeks. Preparations daily dose for hamsters were calculated by the animal equivalent doses coefficient from human therapeutic doses, and the treatment period was 21 days. In this experiment we measured the frequency of food intake and serum leptin and ghrelin levels in hamsters.

Results and discussion. In each group of animals with diet-induced metabolic syndrome after 21-days treatment course we recorded improvement of all or several parameters of food behavior. Under the aromatase inhibitors treatment the frequency of food intake decreased in 2,6-3,5 times, leptin serum level decreased in 18-28% and ghrelin serum level – in 14-22%. The most efficiency was indicated in mature