МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ВИЩИЙ ДЕРЖАВНИЙ НАВЧАЛЬНИЙ ЗАКЛАД УКРАЇНИ
«БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»

М А Т Е Р І А Л И

100 – ї
підсумкової наукової конференції
професорсько-викладацького персоналу
Вищого державного навчального закладу України
«БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»
11, 13, 18 лютого 2019 року

(присвячена 75 - річчю БДМУ)

Чернівці – 2019

УДК 001:378.12(477.85)
ББК 72:74.58
М 34

Матеріали 100 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет», присвяченої 75-річчю БДМУ (м. Чернівці, 11, 13, 18 лютого 2019 р.) – Чернівці: Медуніверситет, 2019. – 544 с. іл.

ББК 72:74.58

У збірнику представлені матеріали 100 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет», присвяченої 75-річчю БДМУ (м.Чернівці, 11, 13, 18 лютого 2019 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

ISBN 978-966-697-543-3

mechanisms. It is known, that sulfur-containing amino acids, presented on the pharmaceutical market of Ukraine with drugs ademetionine, and taurine, possess such capacities.

The task of the research was to study the renal effects of ademetionine and taurine in a comparative aspect by their influence on the morphofunctional state of rat kidneys after the 7-day administration.

Experiments were performed on mature non-linear white rats weighing 130-180 g. Animals were divided into 3 groups (n = 7): the I group – intact control, the II group – animals which were given ademetionine («Geptral», «Abbott SpA», Italy) at a dose of 20 mg/kg, the III group – animals administered with taurine («Sigma-Aldrich», USA) at a dose of 100 mg/kg. All drugs were injected intramuscularly for 7 days.

The research on the renal effects of the studied sulfur-containing amino acids derivatives (SAD) upon the 7-day administration to conditionally healthy animals has shown that taurine has a weak diuretic effect, which is probably due to a decreased tubular reabsorption of water without significant changes in the glomerular filtration rate. Besides, the usage of ademetionine resulted in a slight reduction of azotemia. An impact on the acid regulatory kidney function was manifested in a tendency to increase in urine pH and excretion of titrated acids. Administration of ademetionine and taurine resulted in a significant decrease in proteinuria, which is probably caused by the effect on the processes of protein reabsorption. The effect on the ion regulatory kidney function upon the course of SAD administration is characterized by an increase in urinary sodium excretion against the background of a decrease in relative sodium reabsorption, which was accompanied by an intensification of a distal transport of sodium ions due to the activation of the tubular-tubular balance. Morphological examination hasn't revealed any histopathological changes in renal tissue, confirming an absence of nephrotoxicity of the studied SAD.

According to obtained data, the 7-day administration of ademetionine and taurine to conditionally healthy animals moderately affects the processes of glomerular filtration and tubular transport in nephrons, which results in a slight increase in diuresis along with a preservation of the renal mechanisms of autoregulation and the absence of histopathological changes in kidneys.

Ezhned M.A.

HYPOGLYCEMIC ACTION OF DRY EXTRACT MADE OF DANDELION ROOTS

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Diabetes mellitus (DM) and its complications remain one of the most serious medical, social and economic problems of modern health care. Today, in the world, about 382 million people suffer from diabetes, and by 2035, according to the International Diabetic Federation, this figure will increase by 55%, mainly due to patients with type 2 DM. DM type 2 is accompanied by an imbalance of the body's protective system and a violation of physiological processes. Therefore, the search for alternative use of herbal drugs containing a complex of biologically active compounds, which simultaneously affects several body's systems, are relevant.

The aim of the work is to study the pharmacological properties of 60% dandelion roots dry extract in order to determine possible hypoglycemic action under conditions of glucose tolerance test by means of single oral introduction of glucose.

For the experiment dandelion roots dry extract has been used on 60% solvent with oral administration on 1% starch gluc in the dose of 0,1 g/kg during 14 days. As a drug of comparison the plant collection "Arfazetin" (the producer – Ltd "Liktravy", Zhytomyr) has been chosen in the form of infusion in a dose of 24 ml/kg. The model pathology in rats of weight 180-220 g has been caused by oral administration of glucose in a dose of 3 g/kg. The experimental animals have been divided in the following way: 1 group of animals with simulated pathology (control); animals of 2 group received dandelion extract; animals of 3 group animals received a drug of comparison.

According to the results of the experiment it has been determined that oral administration of glucose in a dose of 3 g/kg led to the development of acute hyperglycemia, which has been

manifested in increasing of glucose levels throughout the experiment period. So the glucose level in the blood of control group rats (simulated pathology) significantly exceeded the initial data after 15, 30 and 60 minutes of the experiment, respectively, in 2.9; 2.0 and 1.6 times. While using dandelion extract after modeling of pathology, glucose level decreased in 1.9 times (15 min), in 1.5 times (30 min) and in 1.4 times (60 min) compared to the control group of animals. With the use of reference drug, glucose level decreased by 1.5 times (15 min), in1.2 times (30 min) and in 1.1 times (60 min) compared to the simulated pathology. The level of hypoglycemic effect of a dandelion extract is 47.55%, and the reference drug - 33.68% after 15 minutes of the experiment. After 60 minutes of the experiment, the hypoglycemic effect of the dandelion extract is 30%; it also should be noted that the sugar level almost restored to the initial data, while the hypoglycemic effect of reference drug was only 6%.

Therefore, it was found that the hypoglycemic effect of the dandelion roots extract in a dose of 0.1 g/kg has an advantage over the herbal collection "Arphasitin" with proved hypoglycemic activity. Hypoglycemic activity increases with a long-term administration in contradistinction to the reference drug with the restoring of glucose sugar level to the initial data.

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MELATONIN AS A CYTOPROTECTIVE MEDICINE

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After melatonin (N-acetyl-5-methoxytryptamine) was discovered in 1958 by A. Lerner and others (Lerner A.B., Case J.D., Takahashi Y, et al., 1958) as the main secretory product of the pineal gland, it was found in almost all living things: from all vertebrates to almost all invertebrates, including protozoa, as well as in a number of bacteria and plants. Consequently, the presence of the pineal gland is not a prerequisite for the melatonin production, although melatonin remains a pineal hormone for the vertebrates and, therefore, humans. At the same time, for all animals, and probably for all living beings, melatonin is a hormone of darkness, that is, a substance, produced in the body only in the dark, regardless of the organism's inhabitant, and whether it is an animal with day, night, or dusk activity.

Initially the role of melatonin for vertebrate animals was established as a hormone regulating seasonal reproductive activity. After some time, due to the accumulation of numerous data, this hormone was considered to be the main humoral regulator of the organism rhythmicity in living beings, the main neuroendocrine transducer, transmitting a signal about the state of the external light to the system of the internal clock, thus synchronizing the work of the internal clock with the photoperiod as the main time setting device (Zeitgeber) for living beings on the Earth. Thus, melatonin has become a hormone regulating circadian, as well as the circannual rhythms of the organism, in particular the daily rhythms of sleeping and being awake, seasonal rhythms of the reproductive, immune and other systems of the organism, including the neuro-immuno-endocrine system.

As a result of the above, for the last two decades, melatonin and its analogues agonists have been widely used in clinical practice as effective, low-toxic (in particular, hormone melatonin itself) hypnotics for the treatment, primarily, of rhythmic sleep disorders (e.g., jet lag, shift work, delayed-sleep and advanced-sleep phase syndrome), as well as seasonal affective diseases, including seasonal depression and major depression. For this purpose, in addition to the usual melatonin preparations, slow-release melatonin preparation (Circadin), as well as non-selective melatonin receptor MT1-MT2 agonists: ramelteon, tasimelteon, agomelatine, are used. Actually, melatonin is sold in the United States and other countries as a supplement without prescription (Oishi A, Jockers R, 2018).

At the same time, in 1993, Russell J. Reiter laboratory (Tan DX, Chen LD, Poeggeller B et al., 1993) revealed a powerful antioxidant activity of melatonin, which exceeded the effect of tocopherol twice, ascorbate – 1.8 times, and the effect of glutathione – three times. Due to its