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ANALYSIS OF PHYTOMEDICINES BASED ON MILK THISTLE

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Diseases of the hepatobiliary system are a widespread pathology that affects more than 2 billion people worldwide. Every year the morbidity in Ukraine increases in about 20% and occupies a significant place among the somatic diseases, remaining a serious socio-economic problem. In the complex therapy of such conditions the appointment of hepatoprotectors is substantiated, among which the main place belongs to phytodrugs. One of the most commonly used plants with proven pharmacological activity is Milk Thistle.

Therefore, the aim of the work was to conduct a marketing analysis of the range of Milk Thistle phytodrugs on the pharmaceutical market of Ukraine.

The main components of the Milk Thistle seeds are flavolignans silybin, silycristin, silydianin, silybinin, silymarin, isosilybin, silymonin, silyandrin, which are known under the general name "silymarin", which protect liver cells from the negative effects of toxins and radiation. Due to the great amount of biologically active substances, drugs from the Milk Thistle seeds have hepatoprotective, anti-inflammatory, hemostatic, immunomodulatory, antioxidant, and other properties, which normalize the function of the liver, biliary tract, spleen and other organs in pathological conditions.

The first stage of the research was to conduct a marketing analysis of Milk Thistle phytodrugs presented on the domestic pharmaceutical market. After conducting a marketing study, it was determined that 51 names (58%) of drugs based on the Milk Thistle and 33 names of dietary supplements, which constituted 42% of the total drugs, were registered on the pharmaceutical market of Ukraine.

The next step was to analyze the pharmaceutical market of drugs according to the producing country. According to the results of the analysis, dietary supplements are represented only by domestic manufacturers, while among drugs, the leading position is occupied by imported drugs, which is 60% (21 names), and domestic drugs account for only 40% (14 names).

Thus, in the pharmaceutical market for the treatment of the hepatobiliary system diseases most drugs are imported, which are not always economically available to people. Therefore, the development and expansion of the range of domestically produced drugs are promising.

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CURRENT ISSUES IN THE DIAGNOSIS AND TREATMENT OF ALZHEIMER'S DISEASE

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Alzheimer's disease is one of the neurodegenerative diseases that is accompanied by the gradual development of degeneration of various brain structures associated with the mass death of neurons and glial cells. This leads to memory impairment, emotional disorders, cognitive and motor disorders. According to the WHO, 47 million people worldwide suffer from Alzheimer's disease. It affects about 5% of men and women aged 65 to 74 years. By 2050, one new case of Alzheimer's disease is expected to develop every 33 seconds, accounting for nearly 1 million new cases a year. In Ukraine, the problem of Alzheimer's disease is exacerbated by the important socio-economic situation and the declining availability of effective medicines for the elderly. About 75% of such patients cannot afford medication and care.

To date, the ICD-10, DSM-IV and NINCDS-ADRDA criteria have been widely used for diagnosis, and the diagnosis of Alzheimer's disease has been based on the typical clinical picture and the exclusion of other possible causes of cognitive impairment. Recently, there has been significant progress in the development of diagnostics of the pathophysiological manifestations of the Alzheimer's process: new laboratory and neuroimaging diagnostic methods are used, such as determining the level of β -amyloid, tau protein and phosphorylated tau protein in cerebrospinal



fluid, positron emission tomography (PET) with ligands tropic to β - and fluorodeoxyglucose, which makes it possible to assess the metabolic rate of various parts of the brain; structural MRI with the ability to assess the degree of atrophy of the cerebral cortex.

Unfortunately, there are currently no drugs that stop the progression of Alzheimer's disease. To date, the FDA has approved two classes of drugs - acetylcholinesterase inhibitors (AChE) and N-methyl-D-aspartate (NMDA) antagonists - to relieve some cognitive symptoms of Alzheimer's disease, such as memory problems and other mental disorders. Donepezil, rivastigmine and galantamine are used to treat mild to moderate Alzheimer's disease (donepezil can also be used in severe Alzheimer's disease). Memantine is used to treat moderate to severe Alzheimer's disease. These drugs work by regulating neurotransmitters, chemicals that transmit messages between neurons. They can help reduce symptoms and help solve certain behavioral problems. However, these drugs do not change the underlying disease process. They are effective for some, but not all, people and can only help for a limited time. Alzheimer's therapy uses drugs and a set of measures aimed at preserving, restoring and training cognitive function (it is necessary to follow a diet, overcome the fear of death, maintain regular physical activity, communicate with friends and relatives, be socially active, etc.). As for all geriatric patients, patients with Alzheimer's disease are characterized by decreased excretory system function and the presence of a large number of comorbidities.

All this significantly limits the possibilities of pharmacotherapy and makes it important to find ways to improve the effectiveness of pharmaceutical care for these patients. Currently, there is no specific therapy for dementia, in connection with which treatment should be aimed at preventing the growth of disorders and correction of existing disorders, psychotherapy and social support of the patient.

To address the problem of Alzheimer's disease around the world, it is necessary to make research in the field of dementia a global priority, to promote international cooperation to intensify efforts to find drugs that can stop or prevent brain disorders caused by Alzheimer's.

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**THE NEPHROPROTECTIVE ACTIVITY OF LIPIN
IN GENTAMICIN-INDUCED NEPHROPATHY**

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Despite the development of diagnostics and the improvement of treatment, the number of nephrological patients in the XXI century is growing among adults and children. A significant increase in the number of kidney lesions is manifested against the background of endocrine, allergic diseases, alcohol and drug use, and under conditions of drug toxicity. Most of the overall structure of acute kidney damage is occupied by nephropathy caused by antibiotics, including aminoglycosides.

Aminoglycosides cause the development of tubular dysfunction and necrosis of tubular epithelial cells. According to the literature, the accumulation of gentamicin in the cortical layer of the kidneys causes structural and functional disorders of the proximal tubules of the kidneys, which are most associated with the formation of reactive oxygen species and weakening of antioxidant protection. Reduction of antibiotic toxicity may be achieved through the combined use of substances that can prevent or reduce the development of oxidative stress caused by gentamicin in the kidneys of animals. For this reason, a powerful antioxidant, namely lipin, has attracted our attention as a means of pathogenetic correction of gentamicin. The aim of the research is to study nephroprotective potential of lipin in conditions of gentamicin-induced nephropathy development in rats.

Research was conducted on 21 mature non-linear white rats weighting 130-180 g, randomly divided into 3 groups (n = 7): I group – intact control, II group – gentamicin- induced nephropathy (injection of 4% gentamicin sulfate solution at a dose of 80 mg/kg for 6 days),