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STUDY ON THE CHOLERETIC ACTIVITY OF THE NEW COMBINED OIL PHYTOEXTRACT

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Among the most dangerous diseases of the hepatobiliary system and gallbladder there are chronic and acute viral hepatitis, cholestasis, cholecystitis, cirrhosis and fibrosis of the liver, fatty liver, etc. Despite a large number of diseases, as well symptoms and syndromes accompanied them the main pathogenic factors are destruction of hepatocytes, formation and outflow of bile. Treatment of diseases of the liver and gallbladder is a rather complicated and long process. The maintenance therapy is important since it aims to protect the cells of the liver from the action of toxic substances, improves metabolism of hepatocytes, normalizes formation and excretion of the bile, and reduces inflammation. Recently, during the maintenance therapy of the hepatobiliary system, herbal drugs are increasingly used since they have a wide spectrum of the pharmacological activity. They are also safe and environmentally friendly.

A promising object for the treatment and prevention of diseases of the hepatobiliary system is a new combined oil phytoextract based on the vegetable components containing wild carrot seeds, chamomile flowers, corn silks, thistle oil. The raw materials are rich in phenolic compounds (flavonoids, hydroxycinnamic acids, coumarins), vitamins, minerals. Important is the fact that all components of the phytoextract are widely spread in Ukraine and available for use.

The level of choleretic activity of the phytoextract samples at different doses was evaluated by the total amount of bile released over 4 h and reflected as a percentage relative to the animals of the control group. The most expressed choleretic activity was showed in the doses of 0,5 ml/kg and 0,7ml/kg.

The state of the extracellular liver function under the influence of oil phytoextract in the studied dose range was evaluated by the dynamics of biochemical indicators of bile (bile acids, cholesterol) and the estimated cholate-cholesterol coefficient (CCC) in comparison with animals of intact control group and reference samples.

All tested samples contributed to the increase of total bile acid concentration, cholesterol content and was accompanied by an increase of CCC. Combined oil phytoextract enhanced bile formation by stimulating the synthesis of primary bile acids, while increasing CCC.

When evaluating the choleretic and bile excretory activity of the oil phytoextract by the sum of the active substances, the dose of 0,5 ml / kg was more likely to be effective, which was chosen as a conditionally therapeutic for further study of the pharmacodynamics of the phytoextract.

The studies illustrated the presence of a sufficient level of choleretic activity of oil phytoextract which is an important positive characteristic for the development of new choleretic remedy.

Velia M.I.

INVESTIGATION OF THE PHARMACOLOGICAL ACTION OF TANACETUM PARTHENIUM IN ORDER TO DEVELOP A DRUG BASED ON IT

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One of the most important tasks of modern pharmacy is creation of new highly effective drugs. In this regard, it is important to search for biologically active substances of plant origin. Representatives of the Aster family have long been used for the treatment and prevention of many diseases. One of these representatives is Tanacetum parthenium. It is a perennial herb with strong stems that form a small bush. It has a squamous root system and a stalk reaching 80 cm in height, more often 30-50 cm. Leaves sessile on top, petioles lower, leaf plate twice or thrice pinnate with rounded or toothed edges, with soft, silky pubescence. The leaves give off a clear chrysanthemum

smell, therefore the plant is called maiden chrysanthemum. White or yellow flowers are collected in a dense, sometimes spherical basket, inflorescences can reach 3 cm in diameter. They are collected at the top in the form of thyroid inflorescences. The fruit of the plant is dry, brown-yellow seeds. Tanacetum parthenium is widely cultivated in Europe and Ukraine.

According to literary sources, the chemical composition of Tanacetum parthenium is represented by phenolic compounds - hydroxybutyric acids (chlorogenic, dicfeoiloquin, chicory, etc.), flavonoids, sesquiterpene lactones (parthenolide, artecanin, chrysanthemum, cymorphin, camphorine, camphorimifene, etc.). Among flavonoids, flavones and flavonols predominate, with a large percentage being lipophilic flavonoids, namely the methyl esters of the flavonols 6-hydroxy Kempferol and quercetagetin.

For medicinal purposes the herb is collected during flowering, which has anti-inflammatory, antispasmodic, cardiotonic action. It is used in the form of infusions for fever, dizziness, arthritis, colitis, menstrual disorders, menopause. In the form of lotions, herbs are used in dermatological diseases of the skin, accompanied by itching. Tanacetum parthenium is widely used abroad as a major component of biologically active additives for the treatment and prevention of migraines in the form of capsules and tablets (Migranol®, MigraHerb®, Feverfew grande chamomile®, Feverfew® Swanson, etc.).

Previous scientific studies show that Tanacetum parthenium extracts protect the skin and reduce the effects of certain negative factors (ultraviolet radiation, inflammation triggers, etc.) due to its antioxidant properties. This has been proven by studies in skin cell culture, in which Tanacetum parthenium extract attenuated the formation of hydrogen peroxide induced by UV radiation, reduced the release of anti-inflammatory cytokines, enhanced endogenous defense mechanisms and promoted the repair of damaged cellular DNA. In vivo topical administration of Tanacetum parthenium extract reduced UV-induced epidermal hyperplasia and DNA damage. In addition, the extract was found to have antiradical activity against a wide range of free radicals, which exceeds the activity of vitamin C. Anti-inflammatory activity of the extracts of this plant was also confirmed in clinical studies, which significantly reduced erythema compared with placebo.

The urgent question today is the development of plant-based dosage forms in view of the pharmacological activity of Tanacetum parthenium.

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ANTITHROMBIN DNA APTAMERS AS A RENOPROTECTIVE AGENTS AGAINST THE RHABDOMYOLYSIS-INDUCED ACUTE KIDNEY INJURY

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Rhabdomyolysis is the rapid destruction of skeletal muscles and often results from muscle damage due to compression or crushing in severe injuries (e.g., crush syndrome) or the effects of nontraumatic factors, such as certain drugs, alcohol, myotropic poisons, microbial toxins, strenuous exercise, convulsions, hyperthermia, thrombosis, metabolic or electrolyte disturbances, and endocrine or autoimmune disorders (Torres P. A. et al., 2015). Myoglobin released from myocytes during myolysis causes acute kidney injury (AKI) due to macromolecules peroxidation, vasoconstriction, inflammation and apoptosis in kidney tissue, obstruction of renal tubules with myoglobin casts, and urothrombosis. Disseminated intravascular coagulation may develop as a consequence. In view of this, we focused on antithrombin DNA aptamers as a new class of direct inhibitors of thrombin, which is a key component of blood clotting. Aptamers are single-stranded DNA or RNA molecules of 30–60 nucleotides that have high affinity and specificity for their target and are functional analogs of monoclonal antibodies by specificity and affinity. Single-stranded nucleic acids that act as aptamers have a highly organized tertiary structure, which allows the aptamers to form stable specific complexes with various targets, in particular, thrombin (Spiridonova V. A. et al., 2015). The objective of this work was to study the effect of some original