

PHYTOTHERAPY IN DIABETES

Asly O., El Mesri F., Mala O.

Scientific supervisor: Mashtaler V.V.

National University of Pharmacy, Kharkiv, Ukraine

botanika@nuph.edu.ua

Introduction. Diabetes mellitus is one of the most common severe chronic diseases, which is a group of metabolic diseases manifested by hyperglycemia and arising from impaired insulin secretion. According to the Institute of Endocrinology and Metabolism of the National Academy of Medical Sciences of Ukraine, over the past ten years, the prevalence of diabetes mellitus in Ukraine has increased by one and a half times. The number of patients with diabetes mellitus in the coming years will increase due to second diabetes type. The most dangerous consequences of the global epidemic of diabetes are its systemic vascular complications - nephropathy, retinopathy, damage to the great vessels of the heart, brain, and peripheral vessels of the lower extremities. Currently, more than 150 medicinal plants are used to treat diabetes mellitus. Complex herbal medicine for diabetes mellitus promotes partial renewal of pancreatic cells that produce insulin.

Aim. Study the list of medicinal plants that used to treat diabetes mellitus.

Materials and methods. Analysis of scientific and scientific-methodical literature on the use of herbal medicine in the treatment of diabetes mellitus.

Results and discussion. Modern hypoglycemic therapy doesn't allow normalizing all types of metabolism of patients with diabetes. The advantage of the phytotherapeutic method of treating diabetes mellitus is a multifactorial positive effect on the body – the absence of acute fluctuations in the level of glucose in the blood, the absence of side effects from the internal organs, and a positive effect on carbohydrate metabolism. Phytotherapy in the treatment of diabetes mellitus is used all over the world. For example, in China ginseng, asparagus, dogwood, astragalus are used to treat diabetes mellitus, in Bulgaria, for the treatment of mild forms of diabetes, such plants are used as galega, corn silk, beans, dandelion, in India – preparations from onions, garlic, ferns, and eucalyptus. In our country, more than 150 plants are used, which are used to treat diabetes mellitus. So, to normalize the assimilation of glucose, the dry perianth of the common bean, the shoots (leaves) of the blueberry and the eleutherococcus are used. Horsetail herb, St. John's wort herb, chamomile flowers, rose hips have a diuretic effect necessary to remove excess glucose of the body. The following plants are used as medicines used for the prevention of diabetes mellitus and the treatment of its complications: high aralia, manchurian, marsh calamus, common barberry, black elderberry, pink radiola, dandelion, medicinal goat's rue, tall elecampane, common flax, chinese magnolia, lungwort, ginseng, common chicory. A good hypoglycemic effect is exerted by the leaves of silver birch, black currant, wild strawberry, peppermint, kidney tea, common nettle, walnut, plantain, motherwort herb, garden thyme, hawthorn, cinnamon rosehip, stigmas of corn; black elderberry flowers, flax seeds. As a hypoglycemic agent, for the prevention and treatment of mild and moderate diabetes, the drug collection "Arfazetin", is recommended, provides a complex effect on the normalization of metabolic processes in diabetes mellitus, reduces sugar levels, improves liver and intestinal functions, has an anti-inflammatory effect, fortifying, promotes an increase in processes regeneration of the endocrine parenchyma of the pancreas, which leads to an improvement in its activity in general.

Conclusions. Phytotherapy remains a very important addition to any diabetes therapy regimen. It helps to quickly compensate for carbohydrate metabolism, which in turn shortens the length of hospital stay while improving the quality of life. Medicinal plants have a number of advantages over synthetic drugs in the treatment of diabetes mellitus: they are low-toxic, have a mild effect, can be used for a long time without significant side effects, primarily allergic reactions,

are well combined with medicinal substances, enhancing their therapeutic effect; affect carbohydrate metabolism more physiologically than synthetic antidiabetic drugs.

INVESTIGATION OF THE CHEMICAL COMPOSITION OF THE *LEDUM PALUSTRE* MODIFIED EXTRACT

Bensliman Mohamed-Elamin, Vasylieva O. A.

Scientific supervisor: Upyr T. V.

National University of Pharmacy, Kharkiv, Ukraine

froyd1856@gmail.com

Introduction. Regular use of antibiotics could be the reason of allergic reactions, toxic effects on human organs, emergence of antibiotic resistance, disruption of the normal composition of the microflora and an increasing the growth of pathogenic microflora. That's why development of new herbal antimicrobial remedies that have other nature, action mechanism and properties is relevant. One of the perspective plants for research in this direction is *Ledum palustre* from the *Ericaceae* family. Various parts of this plant are used by folk and official medicine as an antitussive, antispasmodic, disinfectant, expectorant, diuretic, diaphoretic and sedative medicine.

During the development of new herbal medicines, one of the important stages is the standardization of the medicine and determination of its qualitative composition.

Aim. Therefore, the aim of our research was to study the qualitative composition of biologically active compounds of the modified extract of *Ledum palustre*.

Materials and methods. From shoots of *Ledum palustre* we obtained an extract with 96% ethanol, which was modified by adding zinc sulfate. Studies of the chemical composition of the modified extract were performed by methods of qualitative reaction and thin layer chromatography (TLC).

Presence of zinc ions in the modified extract was confirmed by using method of qualitative reactions. Addition of sodium hydroxide and sodium sulfide to the test sample caused the appearance of a white precipitate was observed. Qualitative reaction with potassium ferrocyanide caused the appearing of white precipitate.

Studies of terpene compounds of the modified extract were performed by TLC according to the method described in the monography "Ledi palustris cormus" of the State Pharmacopoeia of the Republic of Belarus (2007). Ethyl acetate: toluene (5:95) was used as the mobile phase. Chromatography was performed on plates with a layer of silica gel. While the mobile phase has passed 13 cm, the chromatograms were dried, treated with aniseed aldehyde and dried at 100-105 °C. Identification of terpene compounds was performed by Rf indexes of spots of experimental sample and by way of comparison with chromatograms of standard samples

Results and discussion. The results of studies of the qualitative composition of the modified extract of *Ledum palustre* confirmed the presence of zinc ions in the extract and the presence of terpene compounds: ledol and palustrol.

Conclusions. The obtained results will be used by us in the future in the development of quality control methods for a modified extract of *Ledum palustre*.