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ИСПОЛЬЗОВАНИЕ ЭХИНАЦЕИ ПУРПУРНОЙ В УКРЕПЛЕНИИ ИММУНИТЕТА

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ECHINACEA PURPUREA IN ENHANCING IMMUNITY

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Резюме. В статье описывается химический состав эхинацеи пурпурной и влияние ее компонентов на иммунитет человека.

Ключевые слова: иммунитет, фитотерапия, иммуностимулирующий эффект.

Resume. The article describes the chemical composition of Echinacea purpurea and the effects of its components on the human immunity.

Keywords: immunity, phytotherapy, immunostimulating effect.

Relevance. With emergence of new infections, the issue of maintaining and enhancing the immune system is as relevant as ever. It is common knowledge that the immune system of the human body is a complex structure of many different organs closely connected in their functions.

This system creates defense mechanism for the human organism protecting it from foreign bodies, which can be strong pathogenic agents. Thus, the topicality of this question is associated with the necessity for people to maintain their immune system to prevent increasing rates of infectious diseases incidence.

A great number of medicines, synthetically produced vitamins and other chemically and biologically active substances produce a beneficial effect on the human immune system. But at the modern stage of medicine and pharmacy development there is a specific method of treating human diseases called phytotherapy.

The method of the phytotherapy is based on the application of medicinal plants and complex drugs obtained from them. Phytotherapy is known to be a method of alternative medicine as there is not enough scientific evidence about efficient application of herbal treatment without using other drugs.

Therefore, medicines obtained from medicinal herbs, are generally used for additional therapeutic effect.

Aim: to study chemical composition of Echinacea purpurea on the basis of examinations and its effect on the human immune system.

Material and methods. An overview of literature revealed that Echinacea purpurea is a blooming plant belonging to the Asteraceae family. Echinacea is a perennial herb with an erect stem covered with seta often without branching, wide lancet-like leaves with

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pointed ends. Its inflorescence is anthodium, made up of edge ray and median tubular flowers.

There are a number of research works that prove that the chemical composition of Echinacea comprises various alkylamides, immunostimulating polysaccharides, caffeic, cichoric and caftaric acids, glycoproteins and flavonoids.

Practically every part of the plant is rich in trace elements, vitamins A, C, E, antioxidants, essential oils. Rhizomes and roots contain such active substances as betaine, glucose and inulin [1].

Clinical research shows that derivatives of Echinacea are frequently prescribed for stimulation of the immunity in cases of uncomplicated acute infectious diseases and for their prevention. Patients with chronic infectious illnesses should take Echinacea derivative drugs during prolonged antibiotic therapy [2] [4].

Results and their discussion. The pharmacological activity of Echinacea depends on three main mechanisms: activation of phagocytosis process, fibroblast activation and increasing respiratory activity.

There are plenty in vivo investigations of the immunostimulating and anti-inflammatory effects of this medicinal herb that confirm the improvement of the human immunity through the process of blood cells activation. The cells affected are macrophages, neutrophils, natural killers and leukocytes. There are not enough scientific data about the molecular mechanisms of action of chemicals on the blood cells.

These mechanisms may include processes of increasing the cyclic adenosine monophosphate amount, c-Jun N-terminal kinases and mitrogen-activated protein kinases, activating transcription factor of protein binding element responsive to cyclic adenosine monophosphate in monocytes and macrophages cells [3].

Other researchers found out that alkamides from roots, leaves and rhizomes extracts produced synergistic activity on cannabinoid receptor type 2 and induced immunostimulant effect.

Conclusion: the reviewed research works show the efficiency of active components of Echinacea purpurea in the processes of immune response. Therefore, there are facts proving that herbal medicines frequently interact with other synthetically obtained drugs causing their structure and metabolism changes.

It results in a negative influence of drugs on the human body and decreases their therapeutic effect, e.g., the active components of Echinacea purpurea may accelerate or reduce the process of breakdown of a number of antibiotics. It indicates that using medicinal herbs and their derivatives without consulting a doctor or a pharmacist may produce a damaging effect on human health.

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