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LOCAL ANTI-INFLAMMATORY EFFECT OF GEL CONTAINING CONVOLVULUS ARVENSIS EXTRACT

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Abstract: Many plants have been known to cure various diseases since ancient times. Even the oldest examples of writing, created in the years before Christ, contain information about the healing properties of plants. Some natural drugs considered valuable were isolated in pure form decades ago. But there are many plants that have not yet been studied and whose medicinal properties have not been scientifically tested.

Аннотация: Кўпгина ўсимликларнинг турли касалликларга даво бўлиши инсонларга жуда қадим замонлардан бери маълум. Милоддан олдинги йилларда яратилган энг қадимги ёзув намуналарида ҳам, ўсимликларнинг шифобахш хоссалари тўғрисида маълумотлар бор. Қимматли бўлиб ҳисобланган баъзи табиий дорилар бундан бир неча ўн йил илгари соф ҳолда ажратиб олинди. Аммо ҳали ўрганилмаган, шифобахш хусусиятлари илмий асосда текшириб кўрилмаган ўсимликлар кўп.

Key words: Phlogogens, medicinal substance, alkaloids, histamine, dextran, leaf sap.

Калит сўзлар: Флогогенлар, доривор модда, алкалоидлар, гистамин, декстран, барг шираси.

A number of scientific studies are being conducted around the world to improve the effectiveness of anti-inflammatory drugs and prevent side effects. Despite the wide range of anti-inflammatory drugs currently used in practice, there remains a high demand for new drugs that exhibit high pharmacological activity, low toxicity, and minimal side effects.

The purpose of the study. A study of the effect of a hydrogel containing a field ivy extract on the exudative stage of inflammation.

One such plant is the field ivy, a member of the ivy family, which is widespread in all regions of Uzbekistan. The peoples of Central Asia call this plant by various names. The Turkmen call it cherapechak, the Kazakhs call it shermatik, the Turks call it chermashyk, and the Russians call it vyunok polevoy. The Institute of Plant Chemistry of the Academy of Sciences of Uzbekistan has made a great contribution to the discovery of medicinal plants and the extraction of alkaloids from them. The effect of medicinal plants on the body depends on the amount of chemical compounds in their composition. These compounds are concentrated in different amounts in different parts of the plant. Medicinal substances are concentrated in the shoots, leaves or fruits of some plants, and in others in the roots or bark. Therefore, the part of the plant that contains the most biologically active substances is mainly collected [9,10- 37, 372].

The field ivy plant is a perennial herbaceous plant from the Ivy family, growing as a creeper or creeper, with a stem length of 40-100 cm. Its leaves are arcuate, lanceolate with a sharp tip. The field ivy blooms in March-April. It blooms in March-August. The flowers are white or pink, trumpet-shaped. The fruits ripen in June-September. The appearance of the fruit is wide ovoid, hairless length is 6-8 mm. Field ivy grows abundantly on irrigated land. It is spread everywhere in our republic. In order to prepare medicines from the plant, the above-ground part of the plant is collected and dried in a cool and shady place. The above-ground parts of the plant contain flavonoids, caffeic acid, carotene, vitamin C, resins and some alkaloids. Many medicinal preparations are prepared from this plant. The raw juice of the plant's leaves, mixed with beef fat, was used as a remedy for lung and ear diseases. A decoction prepared from the above-ground part of the plant was used to wash wounds and bruises. In addition, a decoction was used as a medicine against scabies and lice. A powder made from the leaves was sprinkled on wounds and various injuries [4,5-32, 284].

The scientific significance of the results of the research is that it is used for the first time in the form of a gel from local plant sources, the possibility of finding among

them highly effective agents that stimulate anti-inflammatory properties, and the main aspects of the mechanism of action of the gel containing the extract of field ivy are highlighted [13, 88].

Materials and research methods. As the object of the study, a gel prepared from a complex of biologically active substances extracted from the above-ground parts of the field ivy plant was taken. The anti-inflammatory effects of ivy extract preservative gel were compared to ibuprofen gel. Because the inflammatory process is complex, choosing drugs that work against it is difficult [6, 340].

The anti-inflammatory effect of the studied drugs is determined by the difference between the growth in the volume of the paws of the experimental and comparison groups of animals or the difference between the amputated paws of mice. White rats with a mass of 155-180 g were used to perform the tasks set before us. Formalin, dextran, histamine, serotonin and carrageenan were used as phlogogenic agents. It is known that physiologically active substances - inflammatory mediators (histamine, serotonin, bradykinin) are released under the influence of various agents that injure tissues. These active substances play an important role in the course of the inflammatory process. It is clear from this that the inflammatory process can be induced by introducing the above-mentioned agents into the body. During the initial phase of inflammation, a significant exudative phase is observed. After the primary alteration, increased vascular permeability in response to the action of the injurious agent leads to the passage of blood plasma and formed elements from the focus of inflammation into the surrounding tissues, which causes the swelling characteristic of inflammation [2, 221-222].

Histamine and serotonin are of practical importance for 15-20 minutes after exposure to inflammatory agents, and subsequently, the release of proteolytic enzymes in injured cells and an increase in the concentration of biogenic amines lead to increased activity of the kallikrein-kinin system.

Among the above-mentioned phlogogenic agents, formalin is widely used by most researchers because formalin-induced inflammation occurs rapidly, with

maximum swelling occurring after 5-6 hours and is rapidly reabsorbed. In addition, formalin-induced inflammation is very similar to the inflammatory process that occurs in the human body [8, 12-646, 654].

0.1 ml of 0.1% histamine and 0.2% serotonin solution was injected under the aponeurosis of the hind paw of the rat using a syringe. Paw volume of rats was measured oncometrically before and every 60 minutes for 4 hours after the administration of phlogogenic agents, and the last time after 24 hours. Under the influence of histamine and serotonin, inflammation occurs very quickly, with maximum paw swelling observed after 1-1.5 hours and resorption within the last 24 hours.

The obtained results and their analysis. In experiments, we conducted studies to determine the antiexudative effect of field ivy extract gel in comparison with ibuprofen gel in histamine and serotonin aseptic models. The results of these series of experiments show that subplantar administration of histamine increased the paw volume of rats by 72.3% compared to the initial volume.

The anti-inflammatory activity of ivy extract was 38.3%, and the anti-inflammatory activity of ibuprofen gel was 28.8%, 1 hour after the start of application of the gel in histamine-induced animals. It can be seen that the used gels had a significant effect on the exudation process caused by histamine. Thus, a gel containing field ivy extract had a significant anti-inflammatory effect on histamine-induced inflammation.

Summary

1. A gel containing field ivy extract, when applied topically, showed high antiexudative activity in aseptic inflammations caused by various phlogogens. At the same time, it is not inferior in its pharmacological activity to the well-known nonsteroidal anti-inflammatory drug - ibuprofen.

2. Field ivy extract storage gel has practical value as a potential anti-inflammatory drug.

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