

exhibits an anti-exudative effect. In terms of the speed of onset and duration of this effect, sage infusion at a dose of 5 ml/kg is superior to a dose of 10 ml/kg, which makes it possible to predict similar benefits in further studies.

STUDY OF ANTI-EXUDATIVE PROPERTIES OF THE BURDOCK LEAVES THICK EXTRACT

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Introduction. The problem of pharmacological correction of inflammation, as before, remains an urgent problem of modern medicine. Nonsteroidal anti-inflammatory drugs (NSAIDs) are drugs of first choice for the treatment of inflammatory diseases of the musculoskeletal system. However, it should be determined that despite the undoubted clinical effectiveness, the use of NSAIDs is accompanied by serious side effects related to the mechanism of their action. In connection with the above, despite the diverse assortment of anti-inflammatory agents, there is a need for drugs to correct inflammation. The search for new drugs with an unconventional mechanism of action and minimal side effects is relevant and ongoing. Phytotherapy is one of the promising areas of creating safe and effective anti-inflammatory drugs. Unlike synthetic drugs, they have a mild physiological effect and have a high level of safety. It is also worth noting that medicinal plants contain many pharmacologically active substances, which determines their wide pharmacodynamic capabilities.

Burdock is One of the plants traditionally used in folk medicine to treat inflammation. It is known that burdock leaves contain ascorbic acid, carotene, rutin, hyperoside, essential oil, mucilage, tannins. Analysis of the phytochemical composition of burdock leaves allows us to predict the presence of anti-inflammatory properties in this medicinal raw material.

Aim of the study: experimental study of the antiexudative properties of a thick extract of large burdock leaves.

Materials and methods. We studied the antiexudative properties of a thick extract of burdock leaves on a model of acute aseptic inflammation in rats - zymosan edema.

It is known that the metabolism of arachidonic acid can occur not only by the oxygen (cyclooxygenase), but also by the oxygen-free (5-lipoxygenase) pathway, which leads to the formation of leukotrienes. To determine the effect of burdock leaf extract on the course of the inflammatory process, the leading role in the development of which belongs to leukotrienes, it was advisable to investigate its effect on the model of zymosan edema in rats. Quercetin was chosen as a comparator, along with diclofenac sodium, because it has the ability to inhibit the 5-lipoxygenase pathway of arachidonic acid conversion and inhibit the formation of leukotrienes.

Acute aseptic inflammation was reproduced by the introduction of 2% zymosan solution in accordance with the methodological recommendations of the Ministry of Health of Ukraine for the preclinical study of medicinal products. The phlogogenic agent was administered subplantarily in a volume of 0.1 ml per animal 1 hour after the last administration of the studied drugs. The amount of paw edema was measured using a mechanical oncometer according to A.S. Zakharevskiy in dynamics: 1, 2, 3, 4 hours after the introduction of phlogogenic substance. The antiexudative activity of the studied substances was determined by their ability to reduce the development of edema in comparison with the group of control pathology and expressed as a percentage.

A thick extract of burdock leaves was administered intragastrically in doses of 25; 50 and 75 mg/kg, comparison drugs diclofenac sodium and quercetin - intragastrically in doses of 8 mg/kg and 5 mg/kg, respectively. Control animals were injected with an equivalent amount of solvent. The drugs were administered prophylactically for 4 days before the reproduction of the model pathology, the last time - 1 hour before the induction of inflammation.

Results and discussion. The introduction of a phlogogenic agent caused swelling and an increase in the volume of the limbs of experimental animals by an average of 1.2-1.7 times. Prophylactic administration of the studied substances contributed to a reliable decrease in the volume of paws, that is, they all showed anti-inflammatory effects to varying degrees. Only the extract of burdock leaves at a dose of 25 mg/kg for the first and second hours of the experiment showed a reliable anti-exudative effect, which was 27% and 37.4%, respectively. Other drugs also showed only a tendency to anti-edema effect. At the third hour, burdock leaves extract in doses of 25 mg/kg (49.9%) and 50 mg/kg (45.8%) maximally reduced paw swelling. The antiexudative activity of quercetin and diclofenac sodium was in the range of 40-41.5%. Burdock leaves extract at a dose of 75 mg/kg (32.6%) was the least active. At the end of the fourth hour, quercetin (45.9%) and burdock leaves extract at a dose of 25 mg/kg (42.1%) most actively reduced the swelling of the limbs of rats. Burdock leaves extract at a dose of 75 mg/kg (33.6%) and diclofenac sodium (30.8%) were less active.

The drugs are arranged in the following order according to the average anti-exudative effect: burdock leaves extract, 25 mg/kg (39.1%) = quercetin (37.4%) = burdock leaves extract, 75 mg/kg (36.3%) ≥ diclofenac sodium (34.2%) ≥ burdock leaves extract, 25 mg/kg (30.6%).

Conclusions. Burdock leaves extract at a dose of 25 mg/kg showed the greatest anti-edematous effect on the zymosan edema model. This dose is conditionally effective and can be used in further studies.