

THE PHARMACOLOGICAL STUDY OF CARBONE DIOXYDE ACTION ON THE MODEL OF TURNEPTINE DERMATITIS IN RATS

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Introduction. Dermatitis is inflammation of the skin that develops on the site of the direct effects of physical and chemical environmental factors. Carboxytherapy is a real breakthrough in modern dermatology. CO₂ is very important product of an exchange which is necessary for normal organism's activity. Throughout the world, this technique is becoming the most popular way to rejuvenate the skin.

The **aim** of that research was pharmacological study of carbon dioxide action on the model of non-allergic contact dermatitis.

Materials and methods. Research was carried out on 18 rats Wistar breed, 150-180 g weigh. Rats were divided into 3 groups: the first – positive control, the second – the animals injected by CO₂ at a dose of 0.6 ml on a background of the model pathologies, the third – animals who is obtained combined treatment (CO₂-injection (in a dose 0.6 ml) and applied ointment with ethonium (20 mg/cm) on the background of the model pathology. Pathology model reproduced by the application turpentine on pre depilated skin of rats during 10 days. As a result developed dermatitis, accompanied with expressive inflammation (hyperemia, swelling and peeling) with the formation of ulcers at the site of turpentine application. At 11th day of experiment was started treatment by CO₂ and the ointment of ethonium. Activity of researched substances was evaluated by the ability to reduce the skin fold thickness (SFT) and intensity of inflammation.

Results and discussion. On the peak of disease (10th day of the experiment) SFT increased by 4.5 times compared with the original data. On the 13th day of the experiment in the second group of animals SFT decreased in 1.7 times, and in the third – in 1.9 times relative to the peak of disease, which exceeded the spontaneous healing in group positive control in 2 times. On the 15th day of experiment it was observed reduction of SFT in 2,5 time in a group of animals treated with CO₂, and in 3 times in the group of rats treated with a combination of CO₂ and ointment with ethonium. Complete healing of animals was observed on 16th days of research in the third group, 17th – in the second, and in the first – 20th day, which testifies about a decrease of intensity of the inflammatory process.

Conclusions. Thus, this study established CO₂ anti-inflammatory activity as monotherapy agents, or the combined use of it with ethonium ointment, which is making carboxytherapy perspective method of treatment of inflammatory skin diseases.