THE INVESTIGATION OF RELATION BETWEEN THE ANTI-INFLAMMATORY ACTIVITY AND THE CHEMICAL STRUCTURE OF BIOLOGICALLY ACTIVE COMPOUNDS OF SALIX BARK EXTRACTS

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Introduction. Nowadays drugs received from natural plant materials occupy a leading position in present medicine and pharmacy. The key to success is in their quality, safety and proven effectiveness. The main advantage of these phytodrugs compared to synthesized analogues is in the possibility of rational use among all groups of patients. They guarantee minimum side effects in comparison to synthetic medications. And also it is worth noting that they function when there are strict contraindications to synthetic ones. That is why the search for effective and safe herbal medicines with a broad spectrum of pharmacological activity is so promising.

Aim. Screening research and proving new-found effective dose of Salix bark extract on experimental anti-inflammatory activity using the model of acute edema.

Materials and methods. Anti-inflammatory effect of Salix extracts was demonstrated on normal model of acute inflammatory edema induced by subcutaneous phlogogenic agent – carragenan. The model describes the exudative phase of acute inflammation in the pathogenesis, where biogenic amines, prostaglandins and kinin–kallikrein system play the leading role. In order to eliminate the effects of fluctuations in hormonal levels the experiment was conducted in laboratory through applying to white male same age and weight (180-200 g) rats of the Wistar line. The substances were divided into doses according to animals' body weight and were injected intragastric in an hour after subcutaneous injection of 0.1 ml 1% carrageenan. There were two control groups: water and diclophenac sodium as compared preparation (ED_{50}=8 mg/kg). Every hour measured leg increased in size and was fixed. Anti-inflammatory activity is determined by the degree of reduction of edema in tested animals compared to control groups and expressed as a percentage.

Results and discussion. After the screening test the effective dose of Salix bark extract was found in dose 10 mg, in terms of the animal weight the dose was reduced to 2 mg on a rat. It caused inhibition of experimental edema in 55% compared to the compared preparation diclofenac sodium - 93%.

Conclusions. The experimental results and argumentative analysis show that Salix bark extract is perspective in founding effective dose for further study of its specific pharmacological activity and safety. And it absolutely could be implemented into the practical medicine in future as effective and convenient way to overcome most dangerous diseases and even warn them at all.