

INVESTIGATION OF GLYCOSAMINOGLICANS METABOLISM DURING REPARATIVE REGENERATION IN THE LABORATORY RAT'S SKIN UNDER NEW SOFT MEDICINAL FORMS USING

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Introduction. Wound treatment is one of the oldest problems of medicine and pharmacy. Nowadays the importance of the topic is not lost and become even more actual due to growth of military conflicts, domestic and occupational injuries. Skin integrity damages that occur at these situations are one of the most severe and sometimes incurable pathology. Medications for local use are diverse. The search of new molecules and the creation of metabolic type drugs based on them can reduce the toxicity and improve the conditions that can positively influence on the process of wound healing and, as a consequence, provide quality treatment.

The **aim** of the research was to investigate glycosaminoglicans metabolism during reparative regeneration in the laboratory rat's skin under using a metabolic type drug based on wide-spread biological molecules of human, animal and plant origin such as natural amino sugar 2-D - (+) - glucosamine and its derivates.

Materials and methods. The object of the study was the 1% cream based on the derivate of amino sugar 2-D - (+) - glucosamine and oxalic acid (oxoglucamin - OGA). The substance and medical form based on the substance was previously developed by O. I. Pavlii, I. A. Zupanets, M. O. Lyapunov, L. V. Brun.

Experiments were performed on 40 white breadless rats according to International requirements of humane animal treatment and Directive 86/609/EEC on the protection of animals used for experimental and other scientific purposes. Wound healing activity of the 1% cream OGA and glycosaminoglicans metabolism (GAG) in rat's skin were investigated in the linear cut wound model on 6-th day of pathology. The "Mefenat" ointment was chosen as a comparison drug. Histochemical study of rat's skin for glucosaminoglican (GAG) identification was performed.

Results and discussion. Reparative activity was 80.3% and 11.7% ($p < 0.05$) using 1% cream OGA and "Mefenat" correspondingly. Using histochemical methods it was confirmed that in the 1% cream OGA treatment group the intensive positive reaction to GAG ("+++") was found whereas in the control group (without any treating) and in the "Mefenat" ointment application the moderate positive reaction to GAG ("+") was noted.

Conclusions. The study has shown that 1% OGA cream was a highly effective metabolic type drug with expressed wound-healing properties and due to its metabolic activity and structure features led to more delicate cosmetic scar formation.