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## **PLANIMETRIC AND MORPHOMETRIC PARAMETERS OF THE BURNS HEALING PROCESS USING CHITOSAN MEMBRANES IN ANIMALS OF DIFFERENT AGE GROUPS**

**ABSTRACT. Background.** The primary purpose of burn wound treatment is to promote healing. In the last decade the number of studies devoted to chitosan application has incredibly increased. Chitosan is a derivative of chitin, a natural polymer, used to create medical dressings to treat skin defects. However, the age-related features of skin regeneration with chitosan application are still uninvestigated. **Objective.** The purpose of the research was to investigate the influence of chitosan coating on the optimization of regenerative processes after its application to treat thermal damage of the skin in animals of different age. **Methods.** We modeled IIIb burns on the rats of different age from both experimental and control groups and applied innovative chitosan membranes on the burns. Planimetric analyses of the affected areas and morphometry of histological specimens were performed by the “SEO Image lab 2.0” program (Sumy, Ukraine). **Results.** On day 3<sup>rd</sup> after chitosan application the relative area of stromal edema was significantly lower than in controls. On day 7<sup>th</sup> the growth of granulation tissue was more active. The relative area of vascular granulation tissue was significantly greater and the average diameter of vessels was significantly increased compared with the controls. On the day 14<sup>th</sup> granulation and connective tissue were more common regarding the corresponding periods. The area of vessels of the dermis and their average diameter was significantly decreased, respectively. **Conclusion.** Application of chitosan membranes to treat thermal burns enhanced wound cleaning from the dead tissue, decreased the intensity of inflammatory reactions and disorders of blood circulation, improved epithelization of the wound and regulated formation of the scar tissue.

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