Using collagen hydrogel for Skin Wound healing in animals

Supported by: GREEN, IAS, AIC

Background
Hydrogels are recently applied for skin healing purposes in a wide range of skin conditions. The aim of this study was to investigate the effects of collagen hydrogel on skin wound healing in diabetic male rats.
Methods
40 mg of bovine collagen was used in our study. The back of rats was shaved with a sterilized razor blade. After general anesthesia with ketamin and xylazin (ip) an area of the back of rats was burned with red-hot coin and similar grade II burns were created. The rats were divided into two groups: control (normal saline treated) and experimental (collagen hydrogel treated) group. After the treatment, wound healing was evaluated morphologically on days 7, 14 and 21. Skin elasticity also was assessed with a Cutometer. Ultrasound method was used to measure skin thickness.
Results
Skin elasticity was higher in rats dressed with collagen than control untreated animals. Ultrasound imaging showed that dressing with collaged resulted in significant increase in skin thickness compared to control group. However, there was not morphologically wound closure difference in macroscopic observation among two groups.
Conclusion
Although collagen hydrogel improves some aspects of burn wound healing in diabetic rats, wound area is not significantly decreased.

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