

ABSTRACT 09

Beyond Structural Support: Powdered Collagen as Adjunctive Treatment for Chronic Wounds

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Objective: Collagen-based wound care products play a pivotal role in improving the progress and outcome of chronic wounds. Powdered or fractionated collagen exhibits minimal cross-linking and is purported to exert its biological activities immediately upon application onto the wound. Fragments of collagen have chemotactic properties that facilitate myofibroblast migration, differentiation and recruitment of macrophages and neutrophils. Collagen plays an important role in all four overlapping phases of wound healing; homeostasis, inflammation, proliferation and remodeling. In this work, we developed a powdered form of collagen to specifically target molecular abnormalities presented in chronic wounds to improve the outcome and shorten the time for treatment with a more economical approach. The objective of this study is to optimize the method and conditions for the production of powdered collagen as an adjunctive treatment for chronic wounds. **Method:** We focused on the optimization of conditions for the powdered collagen and studied its biological activities on human dermal fibroblasts. In comparison to collagen scaffold, this invention modulates the local application for wound healing and utilizes an independent and smart glass bottle packaging to minimize cross-contamination and facilitate sterilization, storage and transportation. **Conclusion:** The use of glass bottles assists in the preparation of hydrocolloid gel that can be easily applied in all areas of the wound to help create moist wound bed and an environment that supports healing. This application is intended for the management of exuding wounds, partial thickness burns, diabetic ulcers, venous ulcers and pressure ulcers.

Keywords: Spiral curriculum-medical faculty-non communicable disease

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