Activated Collagen* An Evidence Based Study in Human Leg Ulcers

Purpose:
Evidence based medicine is defined as the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. Native collagen is a stable rigidly coiled helical molecule and must be acted on by macrophages to expose the amino acid components. Hydrolyzed collagen is the conversion of the rigidly coiled helix to a random coil which supports fibroblast activity needed to produce wound granulation tissue.

Migrating epithelium cannot migrate over collagen but must convert the extracellular matrix granulation tissue collagen to hydrolyzed collagen in order to advance. Additionally, those cleaved amino acid segments which were hydrolyzed are “activated” as they are prepared to participate in the repair process as a function of their introduction into the biological pool.

Methods:
Sixteen patients were enrolled in this study, eight (8) treated and eight (8) controls. Patients with below the knee diabetic ulcers were employed in this study. The sixteen (16) patients constitute two (2) groups of eight (8) patients per group. Each wound was photographed and wound area measured using image analysis. One group received application of activated collagen powder to the wound. The wound was then dressed with an absorbent occlusive dressing** secured with an elastic wrap. Control wounds did not receive activated collagen and were dressed as described**.

Each patient was evaluated weekly to healing or at fourteen (14) weeks at which time final wound areas were measured and photographed.

RESULTS:
All activated collagen powder treated wounds were healed by five (5) weeks. Control wounds were approximately 80% healed at twelve (12) weeks.

Conclusions:
Hydrolyzed collagen provides a moist wound environment needed for wound repair to proceed. Hydrolyzed collagen facilitated epidermal migration resulting in healed wounds in an average of five (5) weeks. Control wounds healed at the rate described in the meta-analysis literature and twice that of Hydrolyzed Collagen treated wounds. The study was expanded to assign statistical significance to the previously presented interim data. CellerateRX-treated patients had a mean SEM for percent wound healing of 100% ± 0% and a median value of 100%, p<0.002 by Mann-Whitney test.

*CellerateRX Hydrolyzed Collagen Powder (Wound Care Innovations)
**Silk-Sorb Absorbent Dressing (Dukal)

References:

Control Photos

**CellerateRX® Hydrolyzed Collagen Powder and Gel, Wound Care Innovations Inc.