

NOVEL RIGENERATIVE DERMAL MATRIX: HYALOMATRIX PA

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Introduction: It is well accepted that Hyaluronic Acid is crucial to wound healing. The aim of this study was to test in vivo an esterified Hyaluronic Acid scaffold (Hyalomatrix PA), to act as a dermal pre-treatment and substitute prior to the application of epidermal replacement in full thickness wounds.

Hyalomatrix is a partial benzyl ester (80% esterified) of Hyaluronic acid coupled with a thin silicone layer providing fluid loss control and a microbial barrier to function as a temporarily epidermis.

Investigation of the optimal pre-treatment time was also part of the study.

Methods: A porcine model was used for the 3 sets of experiments starting with split skin autograft harvesting of keratinocytes for seeding into Laserskin (epidermal substitute).

Pre-treatment using Hyalomatrix with controls was followed by Laserskin or split skin grafting.

The second experiment tested different pre-treatment time intervals before epidermal replacement.

Histological and clinical assessment were made of the wounds until five months.

Parameters measured were: Dermal (Hyaluronic Acid degradation, collagen deposition/organization and angiogenesis) and Epidermal (Epidermis and Dermo-Epidermal junction).

Results: Results of Hyalomatrix onto full thickness wounds with different types of epithelial covers demonstrated similar cosmetic results from Laserskin compared to thin split grafts.

However, the pretreatment of wounds with Hyalomatrix resulted in better integration with surrounding skin irrespective of the epithelial cover when compared to control.

A positive angiogenic response and an improved dermal organization of collagen fibres was also noted in all pre-treated groups but more prominently with two applications of the product lasting two weeks from wounding.

Conclusion: All studies demonstrated an improved dermal wound bed in the presence of Hyalomatrix. The optimal pre-treatment time was two weeks after induction of injury two applications of Hyalomatrix at weekly intervals.

Arrangement of collagen fibres was best observed under areas with epithelial cover, demonstrating the significance of early epithelial cover and its implications on long term scarring.