Effect of Oasis-Ultra Matrix on the Healing Rate of Stage IV Pressure Wounds

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INTRODUCTION: (Oasis-ultra) is an extra cellular collagen rich matrix derived from porcine intestinal sub-mucosa. A prospective, multi-centered, randomized, single-blinded clinical trial was conducted to study the effects of Oasis-ultra combined with negative pressure wound therapy (NPWT) on the healing rate of stage IV pressure wounds versus NPWT alone.

MATERIALS AND METHODS: Twelve subjects were involved in the study: six patients in the study group and six in the control group. NPWT was changed twice a week for all subjects, and Oasis-ultra was applied weekly. The wounds were measured weekly, and the healing rate was calculated for each subject for 12 weeks. The canisters were collected monthly for three months. For cytokine and growth factors analysis, 100 µl 1XPBS were added to the sample, and protein concentration was determined using the Bradford assay. A Bio-Rad BioPlex 96 well plate was set up with 50 µl of the sample and duplicated for cytokine analysis using Bio-Plex.

RESULTS: In the study group, the healing rate calculated at 12 weeks was found to be ~87% when compared to the control group, which was ~55%. Analysis of different growth factors, normally present in stage IV pressure wounds, revealed higher concentrations in the oasis-ultra treated group when compared with the control group. Additionally, the other proinflammatory cytokines that accused of wound chronicity were down regulated as a result of treating the subjects in the study group with oasis-ultra.

CONCLUSION: Our study demonstrates that the use of Oasis-ultra accelerates the healing rate of stage IV pressure wounds when combined with NPWT. Also, in the Oasis-ultra treated group, the proinflammatory cytokines were successfully inhibited. At the same time, Oasis-ultra promoted and upregulated the beneficial growth factors that had positive impact on the healing rate.

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