ABSTRACT: The Symposium on Advanced Wound Care (SAWC), Dallas, TX, April 2011

Control of Wound Oxygen Free Radicals During Elastic Compression of Refractory Venous Leg Ulcer Dramatically Speeds Healing: pain control and compliance are advantages.

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Problem

Refractory venous leg ulcers (VLUs), wound clinic therapy more than 9 weeks, in our experience, result when elastic compression of painful peri wound dermatitis has not been adequate. Inadequate compression often results from pain leading to poor patient compliance. 2-Hydroxyethyl methacrylate HEMA gels palliate VLU pain increasing compliance with elastic compression.(1) Free radical activity is a major cause of tissue damage in VLU. Cyclic amine HEMA gel (*) has the advantage of unfilled electron orbitals that absorbs the single electron present in free radical oxygen species present in high concentration in VLUs.(2,3)

The pathophysiology of venous hypertension generates high levels of VLU oxygen free radicals from two inflammatory sources: exuberant enzymes remodeling injured substrate (matrix metaloprotineases) and the immune response to the ever present bacterial biofilms.(4,5)

Methods

Five refractive VLU patients were treated with Longitudinal Yarn Compression (**) elastic textile in a three layered dressing in tandem with sterically hindered 2-hydoroxyethyl methacrylate (HEMA) gel. Biofilm was controlled with ultrasonic powered debridement and hypochlorous acid washes.

Results

Photos document healing. Costs, pain palliation and compliance are discussed.

Conclusion

Sterically hindered Cyclic amine HEMA gel (*) to control VLU free radical injury in tandem with LYC (**) stockinet compression to control skin edema, and venous hypertension appears to: 1. dramatically enhance VLU healing, 2. decrease VLU wound pain, 3. increase elastic therapy compliance, and 4. decrease cost.

* Wound-Be-Gone®, Wake Pharm US Inc., Bellwood, IL

**EdemaWear®, Compression Dynamic LLC, Omaha, NE

References

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