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Hypochlorous Acid Enabled Soft Debridement Speeds Healing of Refractory Venous Leg Ulcers - simplicity, low cost and patient comfort are advantages.

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Problem

Refractory venous leg ulcers (VLUs), (treatment > 9 weeks) referred to our clinic appear to result from either ineffective elastic compression or ineffective mechanical debridement of biofilm bacteria. A tender painful wound is the culprit behind inadequate compression and debridement. Biofilm bacteria secrete enzymes and inflammatory mediators that unhinge cellular healing mechanisms: circulating progenitor cell can't survive in the wound, matrix metalloproteinases disrupt repair, and inflammatory pain complicates compliance with elastic compression.(1,2)

Hypochlorous acid (HOCl) is synthesized by myeloblasts to kill bacteria after phagocytosis.(3) Pharmacologic bactericidal concentrations of HOCl remain harmless to eukaryotic cells. HOCl is a small moiety, diffusing rapidly into mucopolysaccharide biofilms to kill bacteria.(4)

We observed that a wash cloth saturated with HOCl in concentrations of 250 ppm softens or "macerates" the wound surface eschar after 10 minutes "contact time." HOCl reacts with biomolecules including DNA, RNA, fatty acids, cholesterol and proteins breaking structural bonds to "soften" necrotic tissue, dry exudates and biofilm on painful granulation tissue.(5) Additionally, we observed that HOCl softening appears to decrease the pain of debridement of granulating ulcers.(6) We report a novel debridement technique, HOCl enabled mechanical soft wound debridement with terry cloth.

Methods

Weekly HOCl (*) enabled soft debridement was used in concert with Longitudinal Yarn elastic Compression (**) (LYC) three layer dressings to treat five refractory VLU patients.

Results

All VLUs healed. Photographs document healing of and illustrate soft debridement technique. Cost and patient comfort is discussed.

Conclusions

Hypochlorous acid enabled terry cloth “soft debridement” of refractory VLUs appears to be easy to perform, comfortable, inexpensive and therapeutic for healing refractory VLUs.

*Vashe®, PuriCore Inc, Malvern, PA

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

References

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