

# Hypochlorous Acid Solution is Effective in the Treatment of Chronic Venous Ulcers

Debra J. Peterson, CCRN, MSN, ACNP-BC, Jeffrey A. Niezgoda, MD, FACHM, FAPWCA, FACEP

The Center for Comprehensive Wound Care and Hyperbaric Oxygen Therapy, Aurora St. Luke's Medical, Milwaukee, WI | Hyperbaric & Wound Care Associates, Milwaukee, WI

## Exceptional Results

### Background/Objective

Chronic venous insufficiency affects approximately 2.5 million people in the US per year with more than 500,000 people developing ulcerations. Of these cases, 50% will take greater than one year to heal thereby impacting patients' social and economic activities. One study estimated that \$1 billion is spent annually treating such wounds with an additional cost of \$2 billion attributed to lost wages and work days<sup>1 2</sup>.

Standard of care for chronic venous ulcerations focuses on controlling edema and venous hypertension through appropriate compression therapy. Attention must also be given to reduction in surface bioburden as venous wounds typically are highly colonized. The development of biofilm and resistant organisms can lead to critical colonization or frank soft tissue infection further compromising wound healing.

Hypochlorous acid (HOCl), VASHE™ Wound Cleanser\*, is a novel, FDA cleared product for cleansing, irrigating, moistening, and debriding acute and chronic wounds. HOCl is chemically equivalent to an oxidant produced by the body's natural immune system to kill invading microorganisms. VASHE™ has been shown to be a quick acting and highly biocidal against many pathogens and bacteria, but does not affect human cells. The effectiveness of VASHE™ in chronic venous wounds has been reported<sup>3</sup>.

### Methods

The following Case Reports illustrate our clinical experience with this novel wound cleanser and define an appropriate protocol and regimen for clinical use. Patients who failed to heal with prior conventional therapy including topical anti-microbial agents and compression therapy were treated with VASHE™ Wound Cleanser. A regimen of VASHE™ soak followed by a vigorous VASHE™ scrub was utilized, following by the previously initiated compression therapy.



Pre VASHE Therapy



VASHE Therapy: 15 minute soak followed by gentle scrub



Post VASHE Therapy

### Conclusions

All patients healed or showed significant improvement in their venous ulcerations after treatment using the above regimen with VASHE™ Wound Cleanser. No adverse effects were seen. We conclude that VASHE™ Wound Cleanser is a safe and effective product that should be incorporated into the management of chronic wounds especially those compromised by bioburden.

1. Eberhardt, R.T. & Raffetto, J. D. (2005). Chronic venous insufficiency. *Circulation*, 111(18), 2398-2409.

2. Patel, N.P., Labropoulos, N., & Pappas, P.J. (2006). Current management of venous ulceration. *Plastic and Reconstructive Surgery*, 117(7S), 254S-260S.

\*VASHE™ Wound Cleanser, PuriCore, Malvern, PA

3. Selkon, J.B., et. al (2006). Evaluation of hypochlorous acid washes in the treatment of chronic venous leg ulcers. *Journal of Wound Care*. Volume 15.

### Results/Case Report 1



Appearance after 24 months of compression therapy with various topical agents. VASHE initiated.



Wound healed after 4 weeks of VASHE therapy.

### Results/Case Report 2



Appearance after 7 months of standard topical therapy and compression. 2.6cm x 2cm x 0.1cm and 2.3cm x 1.0cm x 0.1cm



Appearance after 3 weeks of VASHE therapy. 1.8cm x 1.5 m x 0.1cm and 0.7cm x 0.4cm x 0.1cm

### Results/Case Report 3



Initial Consult 10/15/05

Initial Consult 10/15/05



10/24/06

10/24/06



3/8/07

3/8/07



VASHE initiated 5/22/07



6/12/07



Healed 7/17/07