Wound heals without skin grafting

Outcome

Wound heals without skin grafting

Problem

Shock, sepsis in ICU
Peripheral vascular disease

Sodium Hypochlorite Hydrogel Debrides Necrotic Wound Tissue

Necrotic L heel ulcer

Problem

Shock, sepsis in ICU
Peripheral vascular disease

Treatment

Daily dressing changes
Hypochlorite gel for debridement and biofilm control

Treatment

Hypochlorite gel for debridement and biofilm control
Layered compression dressings

Treatment

Layered compression dressings
Sodium Hypochlorite Hydrogel Debrides Necrotic Wound Tissue

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Vascular terry cloth abrasion

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Multiple weeping venous leg ulcers
Comorbid CHF, COPD, PVD

Treatment

Hypochlorite gel• Fuzzy Wale Basic Compression• controls stasis dermatitis

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Venous stasis dermatitis and weeping ulcers

Problem

Painful venous stasis dermatitis
Multiple weeping venous leg ulcers
Comorbid CHF, COPD, PVD

Problem

Venous stasis dermatitis
Multiple weeping venous leg ulcers
Comorbid CHF, COPD, PVD

Problem

Venous stasis dermatitis
Multiple weeping venous leg ulcers
Comorbid CHF, COPD, PVD

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Sodium Hypochlorite Gel to "debride" exuberant granulation
Layered Jones compression dressing

Lymphorrhea

Problem

Recurrent painful refractory VLU

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Recruent painful refractory VLU

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Recruent painful refractory VLU

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Recruent painful refractory VLU

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Recruent painful refractory VLU

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Recruent painful refractory VLU

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Recruent painful refractory VLU

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Recruent painful refractory VLU

Outcome

Near complete healing with five weeks of hypochlorite gel debridement

Problem

Recruent painful refractory VLU

Outcome

Near complete healing with five weeks of hypochlorite gel debridement
This science poster is, to our knowledge, the first human use report to use hypochlorite to break down protein and debride wound eschar. Prior publications feature the antimicrobial effects of reactive oxygen free radicals. We observe that hypochlorite gel* is about as effective as commercially available enzymatic debridement gels.

Abstract

Problem

Complete debridement of necrotic tissue is the first principal of wound care. Often mechanical debridement is not possible because of pain, provider skills, facility policies and patient noncooperation. Enzymatic debridement is an expensive alternative to mechanical debridement.

Sodium hypochlorite (NaOCl), the shelf-stable salt of hypochlorous acid (HOCl), long used for wound therapy, is used by white blood cells to kill bacteria. Synthesized by the myeloperoxidase enzyme, HOCl releases oxygen free radicals that kill bacteria without harming eukaryotic cells, which are protected by a lipid membrane. HOCl is used by white blood cells to kill bacteria. Synthesized by the myeloperoxidase enzyme, HOCl releases oxygen free radicals that kill bacteria without harming eukaryotic cells, which are protected by a lipid membrane.1,2

Hypochlorite solution delivers reactive oxygen species that are: effective in controlling wound odor,3 a mild local anesthetic via disruption of nociceptive receptors,4 highly effective in controlling biofilm microorganisms which release inflammatory mediators that prevent wound healing and inhibit growth of epithelial migration precursor cells,5,6 theoretically involved in the early cell signaling that recruits bone marrow epithelial cell precursors, and vascular endothelial stem cells, to the wound bed.7

Reactive oxygen breaks bonds between proteins in a manner identical to hydrochloric acid (HCl) in the stomach, which directly breaks down proteins in digestion of meat. We reported that pretreatment with HOCl solution, to break down protein bonds, enhances effective, humane, “soft debridement” of painful granulating wounds with terry cloth.8 This study asks, does commercially available hypochlorite gel function to debride wound eschar? Could hypochlorite gel serve as an alternative to enzymatic wound debridement?

Methods

Three chronic leg wounds present > 12 weeks were treated with hypochlorite gel under appropriate dressings to control biofilm bacteria.

Results

Photos document debridement and healing of all wounds. Pain and bioburden control is discussed.

Conclusion

Hypochlorite gel appears, in anecdotal three patient series, to debride necrotic wound eschar when used under dressings for control of biofilm bacteria.

*Anasept® Antimicrobial Skin & Wound Gel, Anacapa® Technologies, Inc San Dimas, CA
**EdemaWear®, Compression Dynamics LLC, Omaha, NE

References


Anasept® Antimicrobial Skin and Wound

Anasept® Antimicrobial Skin and Wound Gel is an extremely safe topical hydrogel with exceptionally rapid broad spectrum bactericidal, including the antibiotic resistant strains MRSA & VRE, fungicidal, virucidal and sporicidal properties through the action of sodium hypochlorite. There is no known microbial resistance to Anasept. Anasept Antimicrobial Skin and Wound Gel is an extremely safe topical hydrogel with exceptionally rapid broad spectrum bactericidal, including the antibiotic resistant strains MRSA & VRE, fungicidal, virucidal and sporicidal properties through the action of sodium hypochlorite. There is no known microbial resistance to Anasept.