Harnessing the Power of Charge: A Case Series with a Novel Approach to Chronic Wound Management With a Highly Charged Fiber (HCF)* Dressing

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INTRODUCTION

The presence of slough and adherent microbial colonies in a wound are barriers in the wound healing cascade preventing transition from the inflammatory phase into the proliferative phase and healing. A delay in this key transition phase in chronic wounds represents a major challenge in wound management.
Sharp debridement is the standard of care for removal of slough and management of microbial matter/debris.

Sharp debridement can be painful and poorly tolerated. Failure to remove slough and thus reduce microbial matter puts the patient at high risk for infection, rehospitalization, and loss of limb or life. Historically in the outpatient setting, patients who are unable to tolerate sharp debridement receive a treatment plan of cleansing with normal saline followed by autolytic, chemical, or enzymatic debridement. These are all viable choices, but they are slow and sometimes expensive or not easily accessible processes.

METHODS

Wounds were cleansed with a pure Hypochlorous Acid (pHA) Solution**, allowing contact from 5-20 minutes to lower the pH of the wound giving the slough in the wound bed a positive charge via protonation. Wounds continued to be debrided sharply, as tolerated. A Highly Charged Fiber (HCF) dressing was then applied. The interaction between the lower pH and positively charged wound bed with the negatively charged dressing supported rapid debridement of slough and continuous management of thereof.

CASE 1 FIGURES 1 A-C

DIABETIC FOOT ULCER

START OF CARE

3 DAYS LATER

2 WEEKS LATER

CASE 2 FIGURES 2 A-G

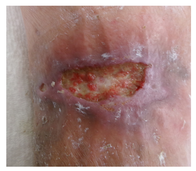
VENOUS LEG ULCER

START OF THERAPY

POST DEBRIDEMENT

DRESSING REMOVAL

DAY 4



POST SHARP DEBRIDEMENT

WEEK 3

JUST PRIOR TO CLOSURE

END OF THERAPY

CASE 3 FIGURES 3 A-E

PRESSURE INJURY

START OF URGO CLEAN

POST 1 WEEK

POST 1 MONTH

POST 2 MONTHS

POST 3 MONTHS

RESULTS

The three cases presented (Figures 1, 2 and 3) in this series were of different etiologies: diabetic foot ulcer, pressure injury, and a venous leg ulcer. All ulcers were chronic and stalled in the inflammatory phase but moved as seen via visual assessment, into the proliferative stage after 1-2 applications of the Highly Charged Fiber dressings. All wounds were first treated with the evidence based pure Hypochlrorous Acid based cleanser that lowers the pH of the wound bed. Time to closure varied, based on size of the wound and co-morbidities of the patients. All wounds treated this way closed within 4-12 weeks via secondary intention.

DISCUSSION

This case series illustrates changing, evidenced-based wound care practices based on improved understanding of role of pH in wound healing the leveraging of this knowledge with the use a negatively charged fiber dressing to quickly move a patient out of the inflammatory phase so healing can occur. This wound care protocol seems to be versatile enough to be usable on any wound type and has the potential to prevent complications and decrease days to healing.

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*UrgoClean Ag, Urgo Medical North America
**Vashe Wound Solution, Urgo Medical North America
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