Wound Management: A case series with the use of stabilized pure hypochlorous acid (pHA)* in support of skillful and comprehensive treatment

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INTRODUCTION

Wound-related outcomes are dependent on initial assessments and treatments implemented. Providers lacking wound care education often prescribe single-purpose dressings to treat even complicated acute wounds with varying efficacy.[1] Alternatively, 13,250 currently maintain wound certifications in the U.S.[2] Early referrals to wound specialists foster comprehensive, patient-centered approaches, based on clinical experience and evidence-based guidelines.[3] The objective of our case review series was to assess if healing rates were correlated with early wound specialist consultation and unique combination therapies.

METHODOLOGY

An observational, prospective analysis was performed, reviewing patients with complex acute surgical or traumatic wounds from admission through their outpatient course until wounds healed. Approval was granted by Christiana Care Institutional Review Board (Newark, DE).

Systematic assessments were standardized, employing T.I.M.E. (tissue, infection /inflammation, moisture balance, edge/periwound) plus an "S" for wound size/social considerations at every patient encounter.[4]

Key outcome events: days until wound specialist consultation, wound progression determinations, measurements, tracking individualized treatment regimens, time to healing, and healthcare utilization metrics.

TRADEMARKED ITEMS

*Vashe® Wound Solution, Urgo Medical North America, Fort Worth, TX, USA
˚Aquacel® Ag Extra™, ᵐDuoDerm®, ConvaTec, Inc., Bridgewater, NJ, USA
‡Allevyn◊ Life, Smith & Nephew, Inc., Fort Worth, TX, USA
µAdaptic™, ±Promogran Prisma™, £Tegaderm™, 3M Health Care, St. Paul, MN, USA
±Kerlix, Medline Industries, LP, Northfield, IL, USA
»MediHoney®, πAcell®, Integra LifeSciences, Princeton, NJ, USA
≠Mepilex®, ¶Mepitel® One, Mölnlycke Health Care, Gothenburg, Sweden

Table 1. SUMMARY OF INCLUDED PATIENTS

Total # of patients	**124**
Total # of wounds	**366**
Mean # days to heal	**22.5**
Median # days to heal	**19**
Mean # days to wound specialist consult	**4**
Median # days to wound specialist consult	**2**

Table 2. STUDY DIFFERENTIALS

# of patients		# of wounds	
48		1	
31		2	
11		3	
10		4	
4		5	
6		6	
6		7	
5		8	
1		12	
1		16	
1		17	
Total	**124**	**Total**	**366**

Table 3. SUMMARY OF EXCLUDED PATIENTS

Total # of patients assessed in study	**278**
# of outliers medically unstable to evaluate	**5**
# of patients lost to follow-up	**98**
# of patients requiring transfer to plastics	**36**
# of patients that expired prior to healing	**15**

CASE STUDY

Patient: 82-year-old male with PMH of PMH of CVA, HFrEF, & dementia.
Mechanism of injury: Fell, knocking over electric heater. Sustained RLE burns while asleep. Friend provided wound care. To ED 1.5 weeks post injury due to pain, seropurulence, malodor, erythema.
Initial size: R lat hip: 7.5x4.0.1cm; R lat knee: 4x2x0.1cm; R anterior knee: 3.5x1.5x0.1cm; R lat thigh: 34x13.5x0.4cm; R lat lower leg: 9x5x0.2cm;
Time to heal: R lat hip/knee- prior to 22 days; Remainder of wounds: skin-graft ready at 22 days.
Combination of therapies used: stabilized pure hypochlorous acid-based wound cleanser (pHA)*, sharp debridement, petrolatum non-adherent dressings, ABD pads, hydrofiber impregnated with silver°, Kerlix gauze bandage roll±

CASE STUDY CONT'D

RLE on admission: seropurulent drainage, malodorous, erythematic, with necrotic tissue.

OR next day: stabilized pure hypochlorous acid-based wound cleanser (pHA)*, sharp debridement, petrolatum non-adherent dressings, ABD pads.

Postop: inpatient then home health care: twice weekly: pHA*, Hydrofiber® impregnated with silver°, Kerlix gauze bandage roll±. Sharp debridement as needed at office appointments.

F/U appt. 22 days after consult:

Right lateral hip: healed

R anterior knee: healed

R lateral knee: 3x1.5x0.1cm;

R lateral thigh: 29x10x0.2cm;

R lateral lower leg: 7.5x4x0.2cm

From a wound care view, he is ready for a skin graft, but his comorbidities prevent skin graft.at this time.

Note: These pictures are representative of our typical wound patient. This is a current patient; therefore, he was seen after our data collection.

FINDINGS/RESULTS

Since inception, 124 patients met the inclusion criteria, remained within the service, were stable for wound healing, and survived until wounds healed. These patients each had one to seventeen complex acute wounds of various etiologies, with dimensions up to 1120cm^3. The median time for wound specialist consultation was 2 days from injury. It was determined that all patients had been treated with a stabilized pure hypochlorous acid-based wound cleanser* (pHA) in combination with one or more of the following: negative pressure wound therapy, collagen, silver, manuka honey, and foam dressings. Median healing time was 19 days for 366 wounds, some healing in only 6 days. These results compared favorably to 35 days described in the literature. Wound healing delays were associated with tobacco use, immunocompromise, and inability to obtain recommended wound care supplies.

DISCUSSION

Early wound specialist consultations assure integration of evidence-based, advanced therapeutic combinations, providing high-quality patient care, especially for complex wounds. While simple acute wounds may require 4 weeks to heal, innovative dressings, including pHA and other beneficial components, have shown reduced healthcare utilization, in part by shortening time to healing. The resulting decrease in dressing change frequency, follow-up outpatient appointments, and home care could increase patient satisfaction and improve wound healing outcomes.

DISCLOSURE
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