



CR-013: Expediting Acute Wound Healing by Integrating Multiple Therapeutic Strategies

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INTRODUCTION

Traumatic injuries can lead to massive, complex wounds with an increased propensity for infection. Despite the prevalence of patients with such wounds presenting at level 1 trauma centers, these wounds are often inadequately treated with single-purpose dressings that can impede healing. Early engagement of an acute surgical wound service (ASWS) can integrate multiple advanced wound therapies to expedite wound healing. The objective of our ongoing study was to assess if there was a correlation between innovative therapy combinations and time to wound healing.

METHODOLOGY

We conducted an ongoing prospective observaional analysis of patients with complex acute wounds from hospital admission until their wounds healed. A standardized assessment protocol incorporated T.I.M.E. (tissue, infection/inflammation, moisture balance, edge/periwound) with an “S” added to address social factors and wound size. All treatments were tracked and reevaluated at each patient encounter with adjustments based on healing progression, treatment options/availability, and individual needs.

TRADEMARKED ITEMS

*Vashe® Wound Solution, Urgo Medical North America, Fort Worth, TX, USA
°Aquacel® Ag Extra™, °DuoDerm®, ConvaTec, Inc., Bridgewater, NJ, USA
‡Allevyn® Life, Smith & Nephew, Inc., Fort Worth, TX, USA
‡Adaptic™, ‡Promogran Prisma™, ‡Tegaderm™, 3M Health Care, St. Paul, MN, USA
”MediHoney®, ”Acell®, Integra LifeSciences, Princeton, NJ, USA
‡Mepilex®, Mölnlycke Health Care, Gothenburg, Sweden

DISCLOSURES

This work was produced with support from Urgo Medical North America.

CASE STUDY #1

Patient: 66-year-old male with multiple co-morbidities
Mechanism of injury: Ran over by lawnmower
Sustained: Complex LLQ / left groin full thickness wound
Initial size: 17x6x8, tunneling 5cm @9 o'clock and 3cm @3 o'clock, undermining 1-2cm to entire wound
Time to healing: 78 days
Combination of therapies used: pure hypochlorous acid based wound cleanser (pHA)* via negative pressure wound therapy (NPWT) instillation, pHA* gauze soak, collagen/oxidized regenerated cellulose with silver‡, hydrocolloid∞, hydrofiber impregnated with silver°, non-adherent foam‡, sharp debridement, silver nitrate



5/21/21



7/15/21

CASE STUDY #3

Patient: 33-year-old
Mechanism of injury: GSW to abdomen requiring emergent surgery
Sustained: Abscess of postoperative abdominal wall incision
Initial size: Midline: 20x6x3.5cm, RLQ: 1x3.5x1.5cm, tunneling 2cm @3 o'clock
Time to healing: 22 days for RLQ, 76 days for midline,
Combination of therapies used: pHA* via NPWT instillation, pHA* gauze soak, collagen/oxidized regenerated cellulose with silver‡, hydrofiber impregnated with silver°, non-adherent foam‡, sharp debridement, delayed primary closure with staples



6/29/21



*7/1/21 (*1st dressing change)



7/6/21



7/23/21



9/9/21

CASE STUDY #2

Patient: 80-year-old male
Mechanism of injury: left neck exploration post-surgical site abscess formation with JP placement
Sustained: Full-thickness open neck wound & JP drain site
Initial size: Neck: 7x2.5x2.3cm, tunneling 4cm @12 o'clock, JP site: 0.5x0.8x1cm, tunneling 1.2cm @12 o'clock
Time to healing: 18 days for JP site, 43 days for lateral neck wound
Combination of therapies used: pHA* gauze soak, collagen/oxidized regenerated cellulose with silver‡, hydrocolloid∞, non-adherent cellulose acetate petroleum^u, NPWT, non-adherent foam‡



11/29/21



12/1/21



12/6/21



12/13/21



12/27/21

CASE STUDY #4

Patient: 93-year-old female with multiple comorbidities on blood thinners
Mechanism of Injury: Tripped & fell at home
Sustained: Large RLE hematoma
Initial size: 9.2x5.6x0.3cm
Time to healing: 57 days
Combination of therapies used: pHA* gauze soak, collagen/oxidized regenerated cellulose with silver‡, hydrocolloid∞, sharp debridement, non-adherent cellulose acetate petroleum^u, NPWT, porcine urinary bladder matrix[™], split-thickness skin graft



10/4/21



10/28/21



11/29/21

FINDINGS / RESULTS

Since project inception, 41 patients with one or more complicated wounds of a variety of acute etiologies have been assessed. The ASWS was consulted within 4.5 days of injury. It was determined that all patients had been treated with a 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/or foam dressings. The median healing time was 21.1 days for 132 wounds. Any wound healing delays were associated with factors such as tobacco use, immunocompromise, and inability to obtain recommended wound care supplies. No adverse events were noted with any of the therapies utilized.

Discussion

Earlier consultation of wound specialists can assure the incorporation of optimal therapeutic combinations into the care of massive and complex wounds. Integration of wound management strategies, including pHA and other therapeutic dressings, has 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 lead to increases in patient satisfaction in addition to optimal wound healing outcomes.

REFERENCES

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