Self-Adaptive Dressing Usage Throughout All Stages of Wound Healing In Long-Term Acute Care
- CASE SERIES -

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PROBLEM
- Controlling moisture content of wounds and large areas of vulnerable tissue is a considerable challenge for nursing staff in long-term acute care (LTAC) facilities.
- Incontinence affects a high number of patients in LTAC facilities, and relentless use of dressings can result in significant fluid loss properties that allow reduced dressing change frequency.
- In addition, short-term treatment windows and staff nursing time constraints in LTAC facilities have increased the demand for dressings that provide moisture control across the spectrum of wound healing—frictional, dead space, and contact episodes.

RATIONALE
- We evaluated the effectiveness of self-adaptive advanced wound dressings in treating wounds of different etiologies throughout the healing phases in a long-term acute care facility.
- Self-adaptive wound care dressings are composed of multi-layered, polymeric synthetic polymers with a breathable backing film impermeable to fluids and microorganisms. The self-adaptive wound care technology is based on the concept of dynamic wound dressing materials with variable on-demand functionality; dressings are designed to facilitate moisture balance in wounds through simultaneous absorption of fluid and release of water vapor.

METHODS
- De-identified data records of patients with wounds that received at least once application of self-adaptive wound dressings from December 1, 2013 to March 31, 2014 were retrospectively analyzed.
- Self-adaptive dressings were applied over wounds with 2 to 3 cm overlap onto intact skin, and adhered with an adhesive transparent film dressing or tape.
- Post-treatment wound bed conditions were documented at least once weekly.

RESULTS
- Fifty-three patients with 84 wounds received treatment with self-adaptive advanced wound dressings.
- Dressings were changed every 3 to 6 days on average, and a reduction in dressing change frequency over time was observed.
- Twelve of 84 (14.3%) wounds closed during treatment.
- Granulation tissue formation was observed within 1 to 2 weeks in most wounds.
- There was insufficient data to evaluate post-treatment conditions in 19/84 (22.6%) wounds. Of the remaining 65 wounds, post-treatment condition was improved or maintained in 64 (93.1%) wounds, and showed deterioration in 1/65 (1.5%) wounds. Poor primary condition was thought to be a major contributing factor to wound deterioration.
- Of the 38 wounds that contained slough, prior to initiation of self-adaptive dressings, slough decreased in 27 (93.9%) wounds and delayed the same or increased in 12 (33.3%) wounds.
- There were no reports of allergic reaction to the dressing.

CONCLUSIONS
- Self-adaptive wound dressings appeared to control wound drainage in the majority of wounds, even in patients with urinary and fecal incontinence.
- Self-adaptive dressings may assist in controlling drainage as evidenced by decreased slough over time in most wounds.
- Use of self-adaptive dressings provided a safe and optimal environment for granulation tissue formation and wound bed epithelialization in this series of complex wounds of patients with multiple co-morbidities.
- Overall reduction in periwound moisture-related skin damage was observed with use of self-adaptive dressings.

DEMOGRAPHICS
- Patients: 57
- Age (avg.): 72
- Wounds: 84

WOUND ETIOLOGY
- Surfaces: 14 (25.4%)
- Trauma: 31 (54.3%)
- Diabetic ulcer: 13 (22.8%)

REFERENCES
(References for self-adaptive advanced wound dressings)

CASE 1
Reduction of slough and eschar in lower extremity traumatic calf wound subsequent to an automobile accident

66-year-old diabetic female presented with a traumatic right medial calf wound subsequent to an automobile accident.

A. Day 6, Wound bed was bright red with reduced slough and eschar. Periwound tissue appeared healthy and red with an epithelializing border.

B. Day 5, Wound size and slough were slightly decreased. Eschar was reduced and tissue appeared healthier.

C. Day 14, Wound edges were flattened, tapered, and normalizing to pink. Epithelial borders were present in the wound bed and wound size was reduced to 1.3 x 5.0 cm.

D. Day 20: Patient was discharged with partial thickness, slightly red wound free of eschar and slough.

CASE 2
Pressure ulcer and periwound tissue management in patient with incontinence

58-year-old male presented with a sacral pressure ulcer sustained after hip replacement subsequent to a fall. Patient’s medical history includes malnourishment, incontinence, and diabetes.

A. Day 6, Pressure ulcer (7.0 x 9.5 cm) was 30% slough covered with eschar throughout periwound area. Self-adaptive dressing was placed over the ulcer and surrounding intact skin, and secured with an adhesive film.

B. Day 6, Wound size and slough were slightly decreased. Eschar was reduced and tissue appeared healthier.

C. Day 11, Ulcer was 50% necrotized with reduced slough.

D. Day 21, Ulcer was closed and surrounded by healthy periwound tissue.

CASE 3
Slough and size reduction of surgical wound

67-year-old male presented with a surgical wound located in the right groin, secondary to failed dialysis catheter placement. Patient has history of diabetes and renal failure.

A. At presentation, Graciosa wound measured 1.7 x 3.5 cm and was 80% slough covered. Debridement was not performed. A self-adaptive dressing was placed over the wound and surrounding tissue, and adhered with an adhesive film.

B. Day 7, Wound size (0.7 x 0.2 cm) and slough were considerably reduced.

C. Day 18, Wound was 25% slough covered with reepithelializing wound edges and healthy surrounding intact skin at patient discharge from LTC.