Solventum™ Sponsored Learning:

Preventing And Managing Pressure Injuries: An Evidence-Based Approach To Optimizing Patient Outcomes

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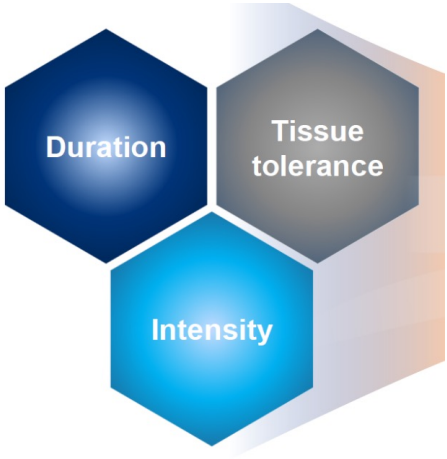
The Burden Of Pressure Injuries

Pressure injury (PI) is localized damage to the skin and/or underlying soft tissue over a bony prominence or related to a medical or other devices. PIs can present as intact skin or open wound and can be painful. They may also become infected and negatively affect a patient's quality of life. PIs are costly to the health-care system as well. In the US, management of PIs costs the government approximately $9.1-11.6 billion USD per year. The cost of individual patient care is approximately $21,000-152,000 USD per PI.[1]

The Pressure Injury Triad

There are three main factors that contribute to the development of PIs: the duration of pressure, the intensity of pressure and the patient's tissue tolerance. These contributory factors are interrelated. Low-intensity forces over a long period of time can cause as much tissue damage as high-intensity forces over a short period of time. Tissue tolerance is an important factor clinicians must consider in the prevention and management of PIs. Tissue tolerance is the condition and integrity of skin and supporting structures that can influence the skin's ability to redistribute pressure. Once the skin becomes 'sensitized' by sustained pressure, lower pressure to the same area for a shorter period of time may cause skin breakdown. This is especially important for patients who are bed-bound for extended periods of time and those with fragile skin (e.g., geriatric patients). It only takes seconds to minutes and several hours of sustained pressure to cause cell deformation and impaired tissue perfusion, respectively.



The Challenges Of Skin Microclimate

The skin microclimate can affect tissue tolerance. Local skin microclimate includes skin temperature, humidity and airflow. An imbalance of these factors can cause over- or under-hydration of the skin, predisposing it to the development of PIs. Skin that is underhydrated (i.e., dry) is prone to mechanical damages and inflammation due to increased epidermal structural stiffness. Skin that is overhydrated (i.e., too wet) can lead to softening, increased permeability and decreased barrier function. Increased local skin temperature causes an increase in blood flow and sweat gland activity. This in turn increases the local humidity and tissue oxygen demand. It also increases adjacent stiffness of the skin and causes the loss of dermo-epidermal adhesion, predisposing the skin to injuries. Other sources of humidity contributing to PIs include incontinence, wound exudate, occlusive clothing, sweating, transepidermal water loss and body worn products.[2,3]

The (Continued) Evolution Of Pressure Injury Prevention Initiatives

There is a continual effort to develop and improve PI prevention strategies. PI prevention initiatives include, but are not limited to, support surfaces, repositioning strategies, transfer aids and nutrition and hydration assessments. Interactive dressings have also been used for the prevention of PIs. An ideal dressing should have:[4]

- An outer surface made of low friction material
- A low friction coefficient
- Reduced friction forces transmitted to the patient's skin
- Adequate adhesion
- Absorption to alter microclimate
- Soft interface structures with adequate mechanical absorption capacities.

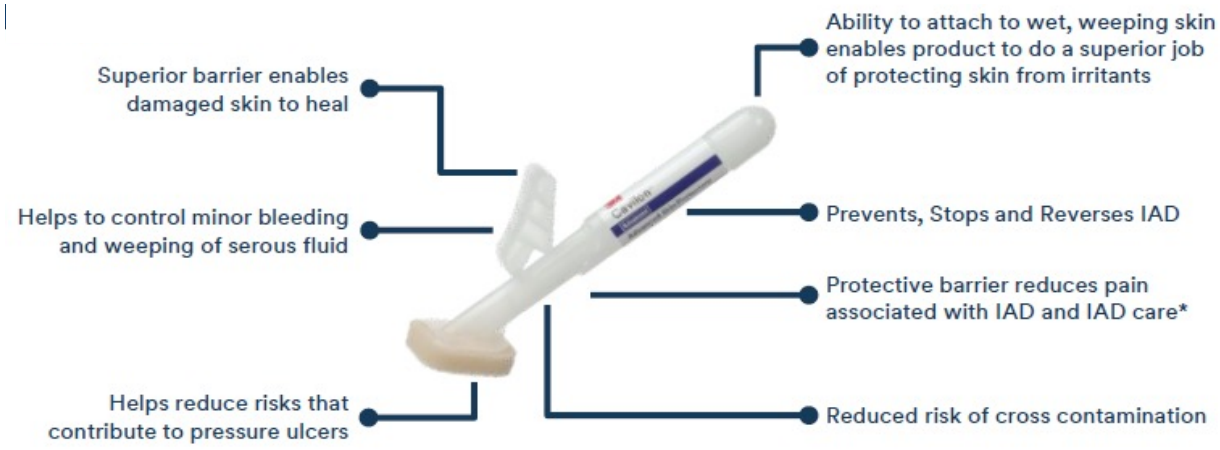
Traditionally, hydrocolloid, polyurethane foam, transparent film and hydrocellular foam dressings have been used for the prevention of PIs.[5] However, the incidence of PIs remained quite high (up to 60%) with the use of these dressings.[4] In the early 2010s, the development and use of silicone foam for the prevention of PIs significantly reduced the incidence of PIs.[4]

The Benefits of Silicone Foams for the Prevention of PIs:[6]

- Low surface tension
- Consistent adhesive strength
- Conforms quickly
- Can be repositioned
- Does not cause traumatic removal of skin cells.

Solventum™ Solutions For The Prevention And Management Of Pressure Injuries

The 3M™ Cavilon™ No Sting Barrier Film can help control the skin microclimate. Cavilon™ Barrier Film can protect intact or damaged skin from body fluids, adhesives and friction. It has non-cytotoxic and has low dermatitis



*Cavilon Advanced Skin Protectant is not an analgesic.

potential. It is ideal for routine skin protection and prevention of PI development.

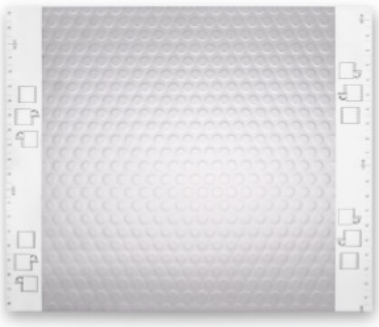
The 3M™ Cavilon™ Advanced Skin Protectant is a superior barrier dressing that can protect at-risk skin and enable damaged skin to heal. Incontinence associated dermatitis (IAD) and intertriginous dermatitis (ITD) can cause moisture associated skin damaged (MASD), predisposing patients to PIs. The Cavilon™ Advanced Skin Protectant prevents, stops, and reverses incontinence-associated dermatitis (IAD) and thus, prevents the development of PIs.

Negative pressure wound therapy (NPWT) is a useful modality for the management of PIs. The 3M™ Veraflo™ Therapy combines NPWT with topical wound solution instillation and removal. Veraflo™ can aid wound healing by:

- Cleansing the wound through instillation (with a topical wound cleanser)
- Softening, loosening and removing wound debris
- Managing bacterial bioburden through contained and controlled wound cleansing
- Promoting granulation tissue formation and perfusion.

The 3M™ Veraflo™ Cleanse Choice™ Dressing can be used in conjunction with the Veraflo™ Therapy. This dressing has a unique-constructed three-layer design to facilitate the removal of thick exudate material. It can provide immediate wound cleansing and is ideal for when surgical debridement is delayed or not possible or appropriate.

The 3M™ V.A.C. Dermatac™ Drape is a silicone-acrylic hybrid drape that improves on and replaces traditional methods of NPWT draping. The Dermatac™ drape has a single-release liner and reduces the need to 'windowpane' around the wound. This also reduces the amount of 'arts and crafts' (e.g., cutting) required for busy clinicians. The acrylic 'circles' of the drape ensures a tight seal around the wound; the silicone allows for non-traumatic removal and initial repositioning when necessary.



Kersten Reider MSN AGPNP-C CWOCN CFCN has been a nurse for 17 years. Reider has worked as a Certified Wound, Ostomy, Continence nurse (CWOCN) serving as an in-patient specialist for a licensed 700 + bed Level I Trauma Centre in West Reading, Pennsylvania for 12 years. She focused on the care of surgical patients with an interest in nursing and physician education along with fistula management and negative pressure wound therapy. She recently took a role as a nurse practitioner in a private practice performing primary care as well as running an outpatient wound and ostomy clinic.

References

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