Dressings for the Treatment of Pressure Ulcers

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A Few Over-Arching Statements

- Since the 1960's, it has been accepted that wound healing is optimized when the wound is kept in a moist environment rather than air-dried, dried with heat lamps or topically applied drying agents.

Winters, 1952

A Few Over-Arching Statements

- Wound dressings are a central component of pressure ulcer care
- The selection of a dressing should be based on the nature and volume of drainage, tissue in the ulcer bed, the condition of the skin around the ulcer bed* and the goals of the person with the ulcer

NB: Exudate usually decreases as pressure ulcers heal

(*More on this later)

General Recommendations

1. Assess pressure ulcers at every dressing change and confirm the appropriateness of the current dressing regimen. (SOE = C)
2. Follow manufacturer recommendations, especially related to frequency of dressing change. (SOE = C)
3. The plan of care should guide usual dressing wear times and contain provisionary plans for dressings changes if needed (for family, individual and staff) due to soilage, loosening, etc. (SOC = C)

General Recommendations

4. Choose a dressing to keep the wound bed moist. (SOE = C)
5. Choose a dressing that remains in contact with the wound bed or use a skin barrier product to keep the periwound skin dry and prevent maceration. (SOE = C)

Goals of Topical Therapy

- Some find it easier to remember the principles of topical therapy if they can use a mnemonic
- Try something like: *"I DIP A MOP"*

Goals of Topical Therapy: I DIP A MOP

- I= Infection (Eliminate, address bioburden)
- D= Debride necrotic tissue
- I= Insulate the wound
- P= Protect periwound tissue
- A= Absorb excess exudate
- M= Maintain constant moisture level
- O= Obliterate dead space
- P= Prevent further injury

This talk

- Will address the state of the literature as it pertains to topical dressings and provide Strength of Evidence ratings found in the NPUAP/EPUAP Guidelines (© 2009) for common topical therapies
- Discuss Best Practice for topical wound care/dressings in the care of pressure ulcers

The Guidelines Say

- …the selection of a dressing should be based on the nature and volume of drainage, tissue in the ulcer bed, the condition of the skin around the ulcer bed.

We Know How to Do That!

- We improve a patient's Braden Scale Score by addressing those areas that cause a person to obtain a low score, don't we? For example:
- Problem = Poor Mobility

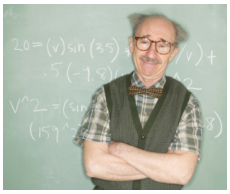
  Care Plan = Involve PT to improve mobility, implement ROM exercises, etc.

- Problem = Poor Nutrition

  Care Plan = Involve registered dietitians to improve nutritional status, provide food of choice, etc.

Match Dressings to the Ulcer Characteristics

- Harder than it sounds but
- Not impossible to teach
- Those with limited formularies can provide state-of-the-science care



Too Little Knowledge Can be Dangerous

- It is no longer enough for clinicians to have a "favorite" dressing
- Consumers and employers demand a thorough understanding of the tools available

You May Have to Change Several Times

- The wound healing process is complex and does not always follow an orderly or predictable path
- Wounds may progress through several stages during the wound healing process
- Different stages of wound healing require different interventions

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Time is of the Essence

- You are responsible for recommending appropriate care in a timely manner: your patient's progress is dependent on application of the right therapy at the right time.

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What are the Consequences?

- Your patient's wound may stall and develop unexpected complications e.g.,
  - ✓ Hypergranulation
  - ✓ Infection
  - ✓ Closed wound edges
  - ✓ Maceration and Margin Extension

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Then What?

- Hospitalizations may be prolonged
- Home Health Services may be discontinued if the wound is deemed to be chronic
- Wound complications might impact other comorbidities (e.g., diabetes, depression)

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What You Already Know, Will Learn Tomorrow or Can Learn by Reading the Guideline About Topical Care

- How to cleanse/what to use
- Culture technique
- Methods of debridement

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Dressings: What to Use When

What's in *Your* Toolbox?

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Hydrocolloid Dressings

- Occlusive
- Shallow wounds with minimal exudate
- Change every 5-7 days
- Requires minimum of 1 inch of intact skin to which it can adhere

Hydrocolloid Dressings

1. Use for clean Stage II pressure ulcers in body areas where they will not roll or melt. (SOE = B)
2. Consider using on non-infected, shallow Stage II pressure ulcers. (SOE = B)
3. Change the dressing if feces seep beneath the dressing. (SOE = C)
4. Consider using filler dressings beneath hydrocolloid dressings in deep ulcers to fill in dead space. (SOE = B)

Hydrocolloid Dressings (Cont.)

5. Consider using to protect body areas at risk for friction injury or injury from tape. (SOE = C)
6. Carefully remove hydrocolloid dressings on fragile skin to reduce skin trauma. (SOE = B)

Transparent Film Dressings

- Semi-occlusive
- Varying degrees of moisture-vapor transmission rate (MVTR)
- Shallow wounds with minimal exudate
- Change every 5-7 days

Transparent Film Dressings

1. Consider using to protect body areas at risk for friction injury or at risk of injury from tape. (SOE = C)
2. Consider using for autolytic debridement when the individual is not immunocompromised. (SOE = C)
3. Consider use as a secondary dressing for ulcers treated with alginates or other wound filler that will likely remain in the ulcer bed for an extended period of time (e.g., 3-5 days). (SOE = C)

Transparent Film Dressings (Cont.)

4. Carefully remove film dressings on fragile skin to reduce skin trauma. (SOE = C)
5. Do not use as the tissue interface layer over moderately to heavily exudating ulcers. (SOE = C)
6. Do not use as the cover dressing over enzymatic debriding agents, gels or ointments. (SOE = C)

Hydrogel Dressings

- Shallow or cavity dry wounds
- Depending on product specifications, change frequency may be every 24-72 hours
- Maintains uniform level of moisture in wounds

Hydrogel Dressings

1. Consider use on shallow, minimally exudating pressure ulcers. (SOE = B)
2. Consider use for treatment of dry ulcer beds so that the gel can moisten the ulcer bed. (SOE = C)
3. Consider use for painful pressure ulcers.(SOE = C)
4. Consider the use of hydrogel sheet dressings for pressure ulcers without depth and contours and/or on body areas that are at risk for dressing migration. (SOE = C)

Hydrogel Dressings (Cont.)

5. Consider the use of amorphous hydrogel for pressure ulcers with depth and contours and/or on body areas that are not at risk for dressing migration. (SOE = C)
6. Consider the use of amorphous hydrogel for pressure ulcers that are not infected and are granulating. (SOE = B)

Alginate Dressings

- Organic product interacting at cellular level to absorb exudate
- Change daily, QOD or otherwise to manage exudate
- Cavity or shallow wounds with exudate

Alginate Dressings

1. Consider for the treatment of moderately and heavily exudating ulcers. (SOE = B)
2. Consider in infected ulcers when there is proper concurrent treatment of infection. (SOE = C)
3. Gently remove the alginate dressing, irrigating it first to ease removal if necessary. (SOE = C)
4. Consider lengthening the dressing change interval or changing the type of dressing if the alginate dressing is still dry at the scheduled time for dressing change (SOE = C)

Foam Dressings

- Non adherent or adherent
- Absorbs exudate and (often) wicks exudate outward to prevent maceration
- Change daily or an infrequently as once a week to manage exudate
- Can be used as a topper dressing

Foam Dressings

1. Consider using on exudative Stage II and shallow stage III pressure ulcers. (SOE = B)
2. Avoid using single small pieces of foam in exudating cavity ulcers. (SOE = C)
3. Consider using on painful pressure ulcers. (SOE = C)
4. Consider placing on body area and pressure ulcers at risk for shear injury. (SOE = B)
5. (For Polymeric Membrane Dressings) Consider using for Stage II and shallow Stage III pressure ulcers. (SOE = C)

Silver Impregnated Dressings

- Product may remain in the pressure ulcer for an extended period of time without losing efficacy (5-7 days)
- The evidence base is still in its infancy (really!), but points toward accelerated healing when other factors are corrected (i.e., malnutrition, necrotic tissue, etc.)

Silver-Impregnated Dressings

1. Consider us for pressure ulcers that are infected or heavily colonized. (SOE = B)
2. Consider use for ulcers at high risk of infection. (SOE = B)
3. Avoid prolonged use of silver dressings; discontinue when the infection is controlled. (SOE = C)
4. Consider the use of silver sulfadiazine (Silvadene™) in heavily contaminated or infected pressure ulcers until definitive debridement is accomplished. (SOE = C)

Honey-Impregnated Dressings

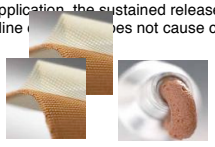
- Honey made by bees that frequent the Leptospermum (or Tea Tree) plant
- Manuka honey produces hydrogen peroxide (H2O2), contains antioxidants, and releases anti-inflammatory products
- Manuka honey reduces odor in wounds by producing an alternative product for bacterial metabolism that yields lactic acid rather than ammonia, amines, and sulfur, which are odorous.

Honey-Impregnated Dressings

1. Consider use of dressings impregnated with medical-grade honey for the treatment of Stage II and III pressure ulcers. SOE = C

Cadexomer Iodine Dressings

- When applied to an ulcer, cadexomer iodine based products absorb fluid, reducing exudate.
- As they swell, iodine is slowly released, killing micro-organisms and forming a protective gel over the wound surface.
- Unlike povidone iodine dressings which deposit their iodine immediately upon application, the sustained release of iodine from cadexomer iodine [illegible]es not cause cytotoxic effects.



Cadexomer Iodine Dressings

1. Consider in moderately to highly exudating pressure ulcers. (SOE = C)
2. Avoid use in individuals with iodine sensitivity and in those with thyroid disease. (SOE = C)
3. Avoid use in large, cavity ulcers that require frequent (daily) dressing changes. (SOE = C)

Silicone Dressings

- Often selected for their atraumatic removal property, silicone dressings have gained popularity since care providers acquired an increased awareness of the pain in pressure ulcers phenomenon

Silicone Dressings

1. Consider using as a wound contact layer to promote atraumatic dressing changes. (SOE = B)
2. Consider using to prevent tissue injury when the ulcer or periwound tissue is fragile or friable. (SOE = B)

Collagen Matrix Dressings

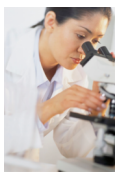
- Generally considered a second-line therapy, collagen matrix dressings are sometimes selected for recalcitrant wounds
- The premise of these dressings is that they will donate collagen to the wound bed, providing a "scaffolding" upon which new tissue can grow

Collagen Matrix Dressings

1. Consider use for non-healing Stage III and IV pressure ulcers. (SOE = C)

Two categories with insufficient evidence to make recommendations

Opportunities for research-*for you*?



Biological Dressings

1. There is insufficient evidence to support the use of biological dressings (skin substitutes) in the treatment of pressure ulcers.

Growth Factors

1. The combined clinical evidence on platelet-derived growth factor (PDGF) suggests that PDGF-BB may improve healing of pressure ulcers. However, the evidence is not sufficient to recommend this treatment for routine use. (SOE = B)

Gauze Dressings

- Keep gauze continually moist (damp); change often enough to avoid drying/desiccation of wound bed
- Protect periwound tissue
- Open gauze and "fluff" pack to fill cavity ulcers

Gauze Dressings

1. Avoid use for clean, open pressure ulcers because they are labor-intensive to use, cause pain when removed if dry, and lead to desiccation of viable tissue if they dry. (SOE = C)
2. When other forms of moisture-retentive dressings are not available, continually moist gauze is preferable to dry gauze. (SOE = C)
3. Use as a cover dressing to reduce evaporation when the tissue interface layer is moist. (SOE = C)

Gauze (Cont.)

4. Use loosely woven gauze for highly exudative ulcers; use tightly woven gauze for minimally exudative ulcers. (SOE = C)
5. When other forms of moisture-retentive dressings are not available, ulcers with large tissue defects and dead space should be loosely filled with saline-moistened gauze, rather than tightly packed, to avoid creating pressure on the wound bed. (SOE = C)
6. Change gauze packing frequently to promote absorption of exudate. (SOE = C)

Gauze (Cont.)

7. Use a single strip/roll to fill deep ulcers; do not use multiple single gauze dressings, because retained gauze in the ulcer bed can serve as a source of infection. (SOC = C)
8. Consider using impregnated forms of gauze to prevent evaporation of moisture from continuously moist gauze dressings. (SOC = C)

Summary: Critical Concepts

1. Topical therapies are *GOAL* oriented. Assess the wound, determine goals at least weekly
2. Keep *PRINCIPLES* of wound healing in mind as you select dressings
3. *CONSIDER* resources (fiscal and human) as well as care setting when selecting dressings
4. Seek assistance when wounds fail to progress in spite of aggressive interventions.

Next Steps: Apply Evidence to Practice

- It is every clinician's responsibility to educate other healthcare providers and to provide references for their consideration
- Contemporary practice should always incorporate evolving evidence
- Inspire change in your practice setting!

My thanks to

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NATIONAL PRESSURE ULCER ADVISORY PANEL

And to you, for your attention.

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