Nursing Grand Rounds: Wound Care Update

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Disclosure Statement

- I do not have any conflict of interest, nor will I be discussing any off-label product use.

- This class has no commercial support or sponsorship, nor is it co-sponsored.
Objectives

• Describe the uses of therapeutic honey in the treatment of wounds.
• Discuss best dressing choices for tracheostomy dressings and how these dressings may be used for other wounds.
• Contrast the wound care consultant role as seen in adult and pediatric care settings.
Honey
Perfect for Wound Care
Honey

• **History of Honey**
  • Used to treat wounds in pre-ancient Egypt
  • Ancient Greeks believed honey could prolong life
  • Mentioned in religious texts
Honey

- Avoiding Conservative and Sharp Debridement

Conservative Debridement at Bedside

Sharp Debridement in Operating Room
Honey

- Therapeutic Honey at Seattle Children’s

Medihoney HCS  Therahoney Gel
Honey

• **Manuka Tree – Leptospermum Scoparium**
  • Shrub blossoms from spring to summer
  • 9,000-12,000 tons of honey are exported per year
  • 287 beekeepers that produce 96% of all exported Manuka honey
What makes Manuka honey different from other honeys?

- Manuka honey has the unique antimicrobial factor called Methylglyoxal (MGO).
- Hydrogen Peroxide is found in all honeys, but only Manuka honey with MGO is resistant to heat, body fluids and enzymatic activity, making it more stable than the hydrogen peroxide found in regular honey.
Honey

- **Methylglyoxal (MGO)**
  - MGO is measured in ppm
  - Either a UMF or MGO rating
  - Methylglyoxal is antimicrobial to staph, strep, H. pylori and E. coli

<table>
<thead>
<tr>
<th>UMF RATING</th>
<th>MGO*</th>
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<tbody>
<tr>
<td>UMF 5+</td>
<td>83</td>
</tr>
<tr>
<td>UMF 10+</td>
<td>263</td>
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<tr>
<td>UMF 12+</td>
<td>356</td>
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<td>UMF 15+</td>
<td>514</td>
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<tr>
<td>UMF 18+</td>
<td>696</td>
</tr>
<tr>
<td>UMF 20+</td>
<td>829</td>
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</tbody>
</table>

* MGO is measured as methylglyoxal mg/kg (ppm)
Honey

**Osmotic Activity**

- Strong osmotic action of honey promotes autolysis by pulling lymph fluid from the surrounding tissues and adding moisture to the wound, cleansing debris, eschar, and scab.
Honey

- **pH in Honey**
  - Honey has a pH of 3.5-4.5
  - Protects the stratum corneum (see below)
  - Protects skin pH (4 – 5.5 pH)
  - Protects against environmental factors and bacteria
Honey

- **Why Honey?**
  - Strong osmotic action promotes autolysis
  - Moisturizes the wound
  - Maintains an acid pH to protect the stratum corneum
  - Methylglyoxal has strong anti-bacterial and anti-inflammatory properties. It is resistant to heat, body fluids and enzymatic activity
Honey

• How to Apply?

**MEDIHONEY HC**

1. Wash wound with normal saline
2. Apply skin prep to periwound for moisture protection
3. Cut sheet to mirror wound shape
4. Remove film lining
5. Place in wound
6. Cover with an absorbent silicone edge dressing, such as Allevyn Gentle Border
7. Change when wet or every seven days
Honey

• How to Apply?

THERAHONEY

1. Wash wound with normal saline
2. Apply skin prep to periwound for moisture protection
3. Squeeze small amount of gel onto wound bed and spread with a Q-Tip
4. Cover with an absorbent silicone edge dressing, such as Allevyn Gentle Border
5. Reapply when dressing is wet or up to every seven days

*May need to soak with normal saline if stuck to wound
Honey

• Additional Info

  • Don’t use honey on a third degree burn
  • Don’t apply on people allergic to bee venom or honey
  • Tell family to expect the wound to be red and pink after autolytic debridement of the necrotic tissue
  • May sting when applied due to low pH–typically subsides
  • Do not combine honey with silver dressings
Honey

Case Study 1

- 19 years old

5/12/17  5/15/17  5/18/17
Honey

Case Study 2

• 15 years old

4/10/17 4/14/17 5/1/17
Honey

Case Study 3

• 2 months old

4/23/17  5/15/17
Tracheotomy Dressings
Suggestions for Success
A variety of problems can be encountered when caring for a child with a tracheotomy:
Tracheotomy Dressings

• 1. Formation of granulomas
Tracheotomy Dressings

• 2. Pressure Wounds
Tracheotomy Dressings

• 3. Infection of the soft tissues in the peristomal region
• 4. Large surgical tracheotomy wounds after placement
• 5. Large amount of drainage from the stoma due to respiratory infection or copious secretions

• 6. Discomfort
Tracheotomy Dressings

- **Granulomas**
  - Can form due to new foreign body on skin, friction, or moisture
  - Typically a nuisance rather than an emergency, unless granulation tissue is seen in trachea and causing obstruction
  - It is thought granulomas are formed due to the inflammatory phase of healing being extended
  - Steroid creams such as Triamcinolone are first-line treatment
  - Silver nitrate is applied if granulomas continue to grow
Tracheotomy Dressings

• At Seattle Children’s we primarily use four different dressings:
  • ExuDry
  • Allevyn AG Non-Adhesive
  • Mepilex AG
  • Polymem
Tracheotomy Dressings

- **ExuDry**
  - Most frequently used dressing used at home besides a split 2x2 gauze
  - Multiple layers of polyurethane and a layer of cellulose for trapping drainage
  - Combats friction and pressure injuries
  - One piece dressing and inexpensive—about $1.50 a piece—insurance likes it
  - Not antimicrobial or cleansing
  - Best used on a very low draining trach stoma without wounds or large granulomas
  - Good to transition to before discharge if stoma healed, no pressure wound, no large granulomas or infection.

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Tracheotomy Dressings

Gastrostomy Tube
Allevyn AG Non-Adhesive Dressing
- Antimicrobial due to presence of Ag, preventing bacterial invasion
- Appropriate for newly inserted tracheotomy tube
- Maintains moisture which all wounds need (not a large amount of drainage though)
- Does not adhere to new formation of granulation tissue
- Does not shed material when cut
- Will not prevent pressure under phlanges because does not stretch that far, but does under trach tube itself
- If the stoma is draining a lot it will drip out onto surrounding skin
Tracheotomy Dressings

- Allevyn AG Non-Adhesive Dressing (Continued)

- Not to be used on premature infants
- Not compatible with oil based products such as petrolatum or ointments
- Do not use with severe liver or kidney failure because of the possibility of over absorption
- Silver is not usually seen systemically
- Has a wrong and right side to touch the skin
- Costs around $6.00
Tracheotomy Dressings

Pin Sites
Tracheotomy Dressings

- **Polymem**
  - Cleanses and moisturizes
  - Contains glycerol which moisturizes the wound, prevents hypergranulation tissue, and soothes
  - Absorbs 10x the amount of drainage as ExuDry
  - Protects from pressure well and can extend to underneath the phlanges
  - Cannot contain excessive drainage because the edge does not seal
  - Has a wrong and right side to touch the skin
  - Costs around $5.00
Tracheotomy Dressings

- **Mepilex AG**
  - It is antimicrobial silver dressing that prevents bacterial invasion
  - It has a Safetac very slightly tacky side that adheres to skin without damaging or hurting when removed.
  - It is foam so it can absorb a larger amount of drainage
  - The foam also prevents pressure and extends to underneath the phlanges
  - Works well on new trach sites because like the Allevyn AG Non-Adhesive dressing can protect new incision site from infection
  - Do not use on premature infants
  - If possible transition to a non silver dressing when discharged
  - The price is ~ $5.00
  - Store silver dressings in dry, dark locations
Tracheotomy Dressings

Mepilex Ag
Tracheotomy Dressings

- **Tracheotomy Post-Operation Care Recommendations:**

  1. Wash off all Chlorhexidine products and allow skin to fully dry. Apply Cavilon Skin Prep to neck and peristomal region.
Tracheotomy Dressings

- Tracheotomy Post-Operation Care Recommendations:

2. Apply Advazorb Silfix Lite under the chin and on the chest butted up near the new stoma. This dressing is made of silicone and easily removed if wet.
Tracheotomy Dressings
Tracheotomy Dressings

Tracheotomy Post-Operation Care Recommendations:

3. Line the trach ties with Mepilex Lite. Cut to extend beyond the edge of the ties
Tracheotomy Dressings
Tracheotomy Dressings

- **Tracheotomy Post-Operation Care Recommendations:**

  4. Based on size of child, use either an Allevyn AG Non-Adhesive foam on an infant, or Mepilex Ag foam on a toddler or larger child.
Tracheotomy Dressings

Second Degree Burn
Tracheotomy Dressings

- Tracheotomy Post-Operation Care Recommendations:

5. Cut a square of Algisite M. Then place the square loosely below the stoma to wick away drainage or blood to prolong the life of the protective dressings that must be in place for 5-7 days. Change every four hours or when wet.
Tracheotomy Dressings
Tracheotomy Post-Operation Care Recommendations:

6 Place child on a waffle overlay if bed is large enough, or a bariatric air cushion if the patient is a toddler or infant size. Put a cloth roll under the air cushion in the area of the shoulders so that the head tips back and the chin is off of the trach tube.
7 Every four hours, assess peristomal skin and rotate ventilator tubing from side to side, alternating the pressure placed upon the new stoma
Tracheotomy Dressings
Conclusion
Questions?

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