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Update on wound management: what is the scoop on sugar?

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Granulated table sugar provides an excellent topical dressing for treatment of open contaminated wounds. The healing property of sugar is based on its low water content (or high osmolality), which is thought to draw lymph into the wound, providing nutrition for regenerating tissue. The low osmolality inhibits bacterial growth. Other proposed mechanisms for which sugar helps manage wounds include: decreased inflammatory edema, attraction of macrophages to further cleanse the wound, accelerated sloughing of devitalized tissue, provision of a local cellular energy source, and formation of a protective layer of protein on the wound and a healthy granulation bed. Sugar has a deodorizing action, changing bacterial production of lactic acid rather than other malodorous compounds.

Sugar treatment is applicable for management of patients with degloving wounds, burns, infected surgical wounds, decubital ulcers, and to help promote a healthy granulation bed before considering skin grafting. There have been no reported contraindications to its use in humans or animals.

GUIDELINES FOR USE
- Lavage and debride the wound to remove debris and devitalized tissue
- Cover the wound with sugar about 1 cm thick
- Change dressings daily or twice daily. Larger more exudative wounds may need bandage changes even more frequently. As a guide, if granulated sugar is still present during the bandage change, less frequent changes are necessary.
- Lavage the wound at each bandage change with tap water or saline.
- Pat the wound margins dry with sterile towels before reapplying sugar.
- If the wound is large and highly exudative, monitor the patient’s hydration and blood protein concentrations.
- Continue to treat the wound with sugar until all pockets of the wound and undermined tissue are closed and the granulation bed is healthy.
- Use nonadherent bandages such as hydrogels to help the wound contract and epithelialize after the wound is healthy.

HONEY – ANY ADVANTAGES?
The antimicrobial effects of honey (particularly Manuka honey) are not solely from the osmotic effect (as discussed for sugar), but can also be attributed to low pH, hydrogen peroxide liberation, and yet unidentified substances in honey described as inhibines. Honey has been effective in treating burns, pressure ulcers, and traumatic and surgical wounds in humans. Most studies have found that there are no differences in bacteriostatic activity between full-strength honey and sugar syrup, but honey is much more bactericidal. At dilute concentrations, honey is more bacteriostatic and bactericidal. Honey is inhibitory against all bacteria except Pseudomonas aeruginosa, and Clostridium oedematiens. Honey, like sugar, has been found to have the same beneficial effects on wounds - decreases wound edema, helps attract macrophages to further cleanse the wound, accelerates sloughing of devitalized tissue, and allows formation of a protective layer of protein over the wound and granulation tissue.

Honey Application and Use
Grossly contaminated wounds should be lavaged thoroughly first. Pat dry the wound surface with sterile towels and resect known devitalized tissue. Use about 30ml of honey per 4x4 sponge. Unlike with sugar in wounds, it is important that occlusive or absorbent secondary dressings are provided to prevent honey from spilling out of the wound dressing. Daily dressing changes are recommended, more often if highly exudative wounds dilute the honey.

REFERENCES