The Topical Hyperbaric Oxygen Therapy Debate

Dear Editor,

In response to the article, “Topical Hyperbaric Oxygen and Electrical Stimulation: Exploring Potential Synergy” (Ostomy/Wound Management. 2002;48(11):42-50), by definition, hyperbaric oxygen therapy involves the entire body, increased atmospheric pressure, and the patient breathing 100% oxygen. The increased oxygen pressure and oxygen concentration help wound healing. The treatment provides one or more of the following effects:

- Increased oxygen delivery to injured tissues
- Infection control
- Blood vessel formation (neovascularization)
- Preservation of damaged tissues
- Elimination of toxic gasses.

It is important to note that the effects of hyperbaric oxygen therapy result from a systemic oxygen-enriched blood stream and not from the oxygen’s direct contact topically.

The patients described in the article were at normal atmospheric pressure, 14.7 psi at sea level (normobaric conditions), breathing only 20% oxygen. The application of topical oxygen is exactly that. Limb chambers are occasionally used for wound healing and these are not hyperbaric either.

Kathryn Burghart, AHCRN
Scottsdale, Ariz.

Reply

To ignore the potential of a treatment due to the constraints of a definition limits the potential for research in our field. Many treatments are available for wound care, but without sufficient research, the effects of these treatments will not be known. The research cited was an exploratory study to evaluate the effectiveness of topical hyperbaric oxygen (THBO) as well as THBO used with electrical stimulation.

Systemic hyperbaric oxygen can have potentially dangerous side effects for some patients. Topical hyperbaric oxygen may provide patients with an alternative wound care treatment. Topical hyperbaric oxygen used for the treatment of wounds has been reported to decrease infection and increase healing.1-4 A great deal of research is required in all areas of wound management including systemic hyperbaric oxygen. Exploratory projects leading to further research in a particular area only begin to scratch the surface relative to cause and effect.

Our research evaluates the efficacy of treatments and seeks to better understand the biochemical changes associated with wound treatment. As we continue to explore modalities used to treat wounds, we hope that others also are evaluating the effects of treatments and that together we can learn how the treatments affect the wound to improve patient care and increase successful healing in shortened periods of time.

Laura E. Edsberg, PhD
Daemen College
Amherst, NY

References


No-Rinse Bed Bath and Skin Tears

Dear Editor,

With regard to the article, “No-Rinse, One-Step Bed Bath: The Effects on the Occurrence of Skin Tears in a Long-Term Care Setting” (Ostomy/Wound Management. 2003;49(1):64-67), a piece of information appears to be missing. The authors have clearly shown the decreased need for skin tear care products and the related decrease in cost of care for those products. However, I see no reference to the cost of the no-rinse bathing product. I realize the focus of the study was not primarily on cost comparison, but because decreased costs are pointed out in several areas, it seems only balanced to include the cost effect of this product as well.
With PANAFIL™, one step is all you need to actively promote wound healing.

PANAFIL (Papain-Urea-Chlorophyllin Copper Complex Sodium) is the first choice for multidimensional healing due to its years of use, clinical support and proven formula. PANAFIL is indicated for the treatment of pressure ulcers, diabetic ulcers, venous ulcers, burns, post-operative wounds and miscellaneous traumatic or infected wounds. Upon application, a small percentage of patients may occasionally experience a brief stinging sensation. PANAFIL has been clinically shown to demonstrate the promotion of wound healing, safety and efficacy.
PANAFIL® HEALING, DEBRIDING AND DEODORIZING OINTMENT

NDC: 0084-3410-30 (30g tube)  NDC: 0084-3410-16 (1 lb jar)

Papain-Urea-Chlorophyllin Copper Complex Sodium

DESCRIPTION: Panafil® Ointment is an enzymatic debriding-healing ointment which contains standardized Papain, USP (not less than 527,700 USP units per gram of ointment), Urea USP 10% and Chlorophyllin Copper Complex Sodium 0.5% in a hydrophilic base composed of Purified Water, USP; Propylene Glycol, USP; White Petrolatum, USP; Stearyl Alcohol, NF; Polyoxyl 40 Stearate, NF; Sorbitan Monostearate, NF; Boric Acid, NF; Chlorobutanol (Anhydrous), NF as a preservative; Sodium Borate, NF.

CLINICAL PHARMACOLOGY: Papain, the proteolytic enzyme derived from the fruit of Carica papaya, is a potent digestant of nonviable protein matter, but is harmless to viable tissue. It has the unique advantage of being active over a wide pH range, 3 to 12. Despite its recognized value as a digestive agent, papain is relatively ineffective when used alone as a debriding agent, primarily because it requires the presence of activators to exert its digestive function. Urea is combined with papain to provide two supplementary chemical actions: 1) to expose by solvent action the activators of papain (sulfhydryl group) which are always present, but not necessarily accessible, in the nonviable tissue or debris of lesions, and 2) to denature the nonviable protein matter in lesions and thereby render it more susceptible to enzymatic digestion. In pharmacologic studies involving digestion of beef powder, Miller1 showed that the combination of papain and urea produced twice as much digestion as papain alone. Chlorophyllin Copper Complex Sodium adds healing action to the cleansing action of the proteolytic papain-urea combination. The basic wound-healing properties of Chlorophyllin Copper Complex Sodium are promotion of healthy granulations, control of local inflammation and reduction of wound odors.2 Specifically, Chlorophyllin Copper Complex Sodium inhibits the hemagglutinating and inflammatory properties of protein degradation products in the wound, including the products of enzymatic digestion, thus providing an additional protective factor.3 The incorporation of Chlorophyllin Copper Complex Sodium in Panafil Ointment permits its continuous use for as long as desired to help produce and then maintain a clean wound base and to promote healing.

INDICATIONS AND USES: Panafil Ointment is suggested for treatment of acute and chronic lesions such as varicose, diabetic and decubitus ulcers, burns, postoperative wounds, pilonidal cyst wounds, carbuncles and miscellaneous traumatic or infected wounds. Panafil Ointment is applied continuously throughout treatment of these conditions: (1) for enzymatic debridement of necrotic tissue and liquefaction of fibrous, purulent debris, (2) to keep the wound clean, and simultaneously (3) to promote normal healing.

CONTRAINDICATIONS: None known.

PRECAUTIONS: See Dosage and Administration. Not to be used in eyes.

ADVERSE REACTIONS: Panafil Ointment is generally well tolerated and nonirritating. A small percentage of patients may experience a transient "burning" sensation on application of the ointment. Occasionally, the profuse exudate resulting from enzymatic digestion may cause irritation. In such cases, more frequent changes of dressing until exudate diminishes will alleviate discomfort.

DOSE AND ADMINISTRATION: Cleanse the wound with Allclenz® Wound Cleanser or saline. Avoid cleansing with hydrogen peroxide solution as it may inactivate the papain. Apply Panafil Ointment directly to the wound, cover with appropriate dressing, and secure into place. Note: Papain may also be inactivated by the salts of heavy metals such as lead, silver, and mercury. Contact with medications containing these metals should be avoided. When practicable, daily or twice daily changes of dressings are preferred. Longer intervals between redressings (two or three days) have proved satisfactory, and Panafil Ointment may be applied under pressure dressings.

HOW SUPPLIED: 30g tube. Store at controlled room temperature (59°-86°F, 15°-30°C).

Rx Only

REFERENCES:

Distributed by:
HEALTHPOINT®
Healthpoint, Ltd.
San Antonio, TX 78215
1-800-441-8227
www.healthpoint.com

If cost of product is higher than the reported savings, an argument still could be made that the spending of healthcare dollars for prevention and healthy maintenance is at least as important as spending for treatment and repair. Can we put a price on preventing pain and suffering? Skin tears may be seen as minor wounds to many, but to those who experience them, skin tears are not minor. They hurt!

Ruth Hall, RN, BSN, CWCN/COCN
Ozarks Medical Center
West Plains, Missouri

Reply
The average wholesale price for the no-rinse cleanser is $1.45 for 8 oz. Unfortunately, we did not measure the amount of cleanser used. I agree that, even if the costs are comparable, preventive care is certainly favored. Besides product costs, the indirect savings through decreased nursing time was recognized during this study.

Plante and Regan1 presented a poster on their work that also addressed a difference in bathing time and associated costs: 16 minutes with the no-rinse cleanser and 29 minutes with soap and water. They listed a cost-savings per nursing assistant per 30 days as $278.40.

Terry Coggins, RN, MSN, CWOCN

References