

# THE USE OF GLYCERINE-BASED DRESSINGS IN PATIENTS WITH JOINT REGION BURNS

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**Introduction:** Burn injury constitutes a major national health problem and requires financial support for prolonged hospitalization and replacement of lost manpower. As a result of these problems, new treatment modalities have been developed in the last decade. Unfortunately, the patients with major burn injuries require a burn treatment unit but are nearly always treated in nonspecialized hospitals in developing countries. Definitive closure of burn wounds as soon as possible after injury is the goal of objective care. Patients with circumferential second degree burns of joint regions need special dressings because the skin is tightly adhered to the underlying fascia. The extremities should be exercised actively in order to maintain patency of venules. Also, it has been documented that a progressive physical therapy program must begin during the first days of burn injury so as not to lose joint function. Conventional dressings do not maintain effective joint mobilization. To determine if a more flexible, bacteriostatic dressing could prevent complications and allow for faster healing, glycerine-based hydrogel dressings were applied to a number of patients with joint burn injuries and compared to previous conventional dressing results.

**Method:** In this study, glycerine-based hydrogel dressings were applied on five patients (age range 27-55 years, four men and one woman) with major burn injuries. Application of the dressings were made immediately after hospitalization. Glycerine-based hydrogel dressings (Elasto-Gel™) were changed one time per 24-hours in the first two days and then every third day until the wound healed.

**Results:** Second and third degree burn injury calculated in the five patients. The burn injury is related to boiling water (two patients with 35% and 40% of total body surface burns on lower extremities), chemical (in two patients with 30% and 25% of body surface on lower and upper extremities) and electrical current injury (one patient with 10 % on upper extremity.) Standard protocol is to treat with acute replacement therapy and antibiotic and would be performed in all patients. However, the dressings by being bacteriostatic and fungistatic, reduced the need for the latter. The patients improved without complications. A split thickness graft was performed in a patient with third degree injury, the Elastogel™ dressing minimized hypertrophic scarring with no complications for this patient. We found perfect joint movement after treatment.

**Conclusion:** Hydrogel sheet dressings with water permeability, bacteriostatic and fungistatic properties are a proven and useful tool in the treatment of skin burns of the joints region. The major advantages are shortened hospital stays, lower cost per treatment, faster cictrization with diminished hypertrophic scarring and improved joint function. These dressings never stick to the healing skin and offer proper positioning during bed rest.

1. Burd A.: Evaluating the use of hydrogel sheet dressings in comprehensive burn wound care. *Ostomy Wound Manage.* 2007 Mar;53(3):52-62.
2. Palfreyman SJ, Nelson EA, Lochiel R, Michaels JA.: Dressings for healing venous leg ulcers. *Cochrane Database Syst Rev.* 2006 Jul 19;3:CD001103. Review.
3. Osti E.: Cutaneous burns treated with hydrogel (Burnshield) and a semipermeable adhesive film. *Arch Surg.* 2006 Jan;141(1):39-42.
4. Lay-Flurrie K.: The properties of hydrogel dressings and their impact on wound healing. *Prof Nurse.* 2004 Jan;19(5):269-73. Review.



**Photos 1: 30% Chemical Burn (Accumulator Factory) Male, Age 45, Lower Extremity**



**Photos 2: 25% Chemical Burn (Benzene) Female, Age 30, Upper & Lower Extremities**



**Photos 3: 35% Hot Water Burn Male, Age 33, Lower Extremity**



**Photos 4: 40% Hot Water Burn Male, Lower Extremity**



**Photo 5: 10% Electrical Burn Male, Age 23, Upper Extremity**



**Products Used**  
Elasto-Gel™ Wound Care Dressing