Brief communication (Original)

A herbal cream consisting of *Aloe vera*, *Lavandula stoechas*, and *Pelargonium roseum* as an alternative for silver sulfadiazine in burn management

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**Background:** Silver sulfadiazine (SSD) is the most used topical agent for the treatment of burn wounds. However, it has some side effects such as delayed and incomplete epithelialization, generation of black scars, and limited penetration to the depth of a wound.

**Objective:** The present study investigated the efficacy of herbal combination cream containing *Aloe vera* gel and essential oils of *Lavandula stoechas* and *Pelargonium roseum* in the alleviation of symptoms in patients with superficial second-degree burns and comparison of its effects with those of SSD 1% cream.

**Methods:** One hundred eleven patients with second-degree burns (occurring in the preceding 48 hours and affecting <50% body area) were randomized to receive either herbal cream (n = 56) or SSD 1% cream (n = 55) applied once daily for 14 days. Prevalence of skin dryness and pain severity (assessed using a visual analogue scale) and evidence of infection was determined for patients at baseline as well days 2, 7, and 14.

**Results:** Both groups experienced a significant reduction in the pain severity at day 14 compared to baseline (*p* < 0.001). As for the magnitude of change in pain score, there was a significantly greater reduction from baseline to the seven (*p* = 0.014) and 14 (*p* = 0.05) day in the herbal cream compared to control group. The frequency of skin dryness was not significantly different between the groups at any of the assessed time points (*p* > 0.05). There was a single case of infection in the herbal cream group, which cleared with continuation of treatment.

**Conclusion:** Our findings suggested that the herbal cream used here is superior to SSD 1% cream in the alleviation of pain and may serve as a natural alternative for treatment of second-degree burns.

**Keywords:** *Aloe vera*, burn wound, *Lavandula stoechas*, *Pelargonium roseum*, silver sulfadiazine

Thermal burns are among the major causes of serious injury in the United States. About 1.1 million people are affected with burns annually, of which most are treated as outpatient. However, 45000 of these patients need hospital admission and another 4,500 die [1].

Because of burn injury to the skin, the first physiologic barrier against foreign microorganisms is impaired. Therefore, wound site infections are an important concern in the management of burn patients. Antibiotic therapy is among the main approaches for the prevention and treatment of burn wounds and statistics indicate that there was an approximately 60% reduction in burn-related mortality following the introduction of topical antibiotics [1].

Based on the depth of injury, burns are classified into four degrees. First-degree burns affect only the epidermis. Second-degree burns extend into dermis but subcutaneous fat is not involved. In third-degree burns, necrosis extends through the entire dermis and affects the subcutaneous fat layer. In Forth-degree burns, injury extends through the entire skin into subcutaneous tissues and may involve underlying fascia, muscle, and bone. Second-degree burns are further classified into superficial and deep burns. The first-degree superficial form involves papillary dermis.