

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/burns

Topical petrolatum gel alone versus topical silver sulfadiazine with standard gauze dressings for the treatment of superficial partial thickness burns in adults: A randomized controlled trial[☆]

Glenn Angelo S. Genuino^a, Kathrina Victoria Baluyut-Angeles^{a,1},
 Andre Paolo T. Espiritu^{a,2}, Marie Carmela M. Lapitan^b, Brian S. Buckley^{b,c,*}

^a Division of Plastic Surgery, Department of Surgery, Philippine General Hospital, University of the Philippines, Manila, Philippines

^b Department of Surgery, Philippine General Hospital, University of the Philippines, Manila, Philippines

^c Division of Primary Care, National University of Ireland, Galway, Ireland

ARTICLE INFO

Article history:

Accepted 28 July 2014

Keywords:

Partial thickness burns

Dressings

Silver sulfadiazine

Petrolatum

ABSTRACT

Background: Non-extensive superficial partial thickness burns constitute a major proportion of burns. Conventional treatment involves regular changing of absorptive dressings including the application of a topical antimicrobial, commonly silver sulfadiazine. A systematic review has found insufficient evidence to support or refute such antimicrobial prophylaxis. Another review compared silver sulfadiazine dressings with other occlusive and non-antimicrobial dressings and found insufficient evidence to guide practice. Other research has suggested that dressings with petrolatum gel are as effective as silver sulfadiazine.

Methods: Single-center, randomized, controlled parallel group trial comparing conventional silver sulfadiazine dressings with treatment with petrolatum gel alone. Consenting adults 18–45 years old with superficial partial thickness burns $\leq 10\%$ total body surface area seen within 24 h of the injury were randomized to daily dressing either with petrolatum gel without top dressings or conventional silver sulfadiazine treatment with gauze dressings. Primary outcomes were blinded assessment of time to complete re-epithelialization, wound infection or allergic contact dermatitis. Secondary outcomes included assessment of ease, time and pain of dressing changes.

Results: 26 patients were randomized to petrolatum and 24 to silver sulfadiazine dressings. Follow up data available for 19 in each group. Mean time to re-epithelialization was 6.2 days (SD 2.8) in the petrolatum group and 7.8 days (SD 2.1) in the silver sulfadiazine group

[☆] Trial registration: ClinicalTrials.gov NCT02109718.

* Corresponding author at: Department of Surgery, Philippine General Hospital, University of the Philippines, Manila, Philippines. Tel.: +63 2 5255453; fax: +63 2 5255453.

E-mail addresses: gsgenuino@gmail.com (G.A.S. Genuino), rina_baluyut@yahoo.com (K.V. Baluyut-Angeles), dreespiritu@gmail.com (A.P.T. Espiritu), melalapitan@gmail.com (M.C.M. Lapitan), briansbuckley@gmail.com, bsbuckley@iol.ie (B.S. Buckley).

¹ Current address: Section of Plastic and Reconstructive Surgery, Department of Surgery, Southern Philippines Medical Center, Davao, Philippines.

² Current address: Section of Plastic Surgery, Department of Surgery, St. Luke's Medical Center, Quezon City and Global City, Manila, Philippines.

<http://dx.doi.org/10.1016/j.burns.2014.07.024>

0305-4179/© 2014 Elsevier Ltd and ISBI. All rights reserved.

($p = 0.050$). No wound infection or dermatitis was observed in either group. Scores for adherence to wound, ease of dressing removal and time required to change dressings were significantly better in the petrolatum treatment arm ($p < 0.01$).

Conclusions: Petrolatum gel without top dressings may be at least as effective as silver sulfadiazine gauze dressings with regard to time to re-epithelialization, and incidence of infection and allergic contact dermatitis. Petrolatum gel appears to be an effective, affordable and widely available alternative in the treatment of minor superficial partial thickness burns in adults.

© 2014 Elsevier Ltd and ISBI. All rights reserved.

1. Background

More than 95% of burns can be managed on an outpatient basis [1]. Non-extensive superficial partial thickness (second degree) burns constitute a major proportion of these injuries. Superficial partial thickness burns involve damage to the epidermis and the upper layers of the papillary dermis. Rapid wound closure treatment of these wounds aims to promote re-epithelialization, prevent desiccation and infection, and relieve pain.

A conventional approach involves regular changing of absorptive dressings including the application of a topical antimicrobial. Prophylactic antimicrobials, commonly 1.0% silver sulfadiazine, are intended to decrease the risk of wound infection. However, several studies and a systematic review have found that neither silver sulfadiazine nor any other topical antimicrobial agent significantly improves outcomes in superficial and partial thickness burns [2–5]. Silver sulfadiazine is contraindicated in pregnant and lactating women and newborns and has been found to be associated in some studies with delayed wound healing and adverse events including transient leukopenia and cutaneous sensitivity reactions [6–10].

In many regions of the world, limited availability and cost of health care products mean that it would be desirable to identify an effective alternative approach to dressing minor superficial partial thickness burns that is not necessarily antimicrobial, that maintains a moist wound environment, and that is readily available. Compared with gauze dressing combined with antimicrobial agents, previous studies have suggested that gauze impregnated with readily available petrolatum gel was associated with similar healing outcomes and infection rates, reduced costs and decreased likelihood of allergic reactions. It has also been found that the application of petrolatum with no top dressings is sufficient for simple sutured wounds or abrasions, less expensive, and allows patients to monitor their wounds continuously [2,11,12].

This study aimed to establish whether treatment of superficial partial thickness burns of minor extent with petrolatum without gauze dressings is as effective as conventional treatment involving silver sulfadiazine and gauze dressings in terms of time to healing, pain during dressing changes, ease of dressing changes and time taken to change dressings.

2. Methods

2.1. Study design, participant recruitment and randomization

The study was a single-center, randomized, parallel group controlled trial conducted in the Burn Center of the Philippine General Hospital, a tertiary, government-funded hospital in Manila, Philippines. Participants were randomized in equal proportions to have their burn wounds dressed either with petrolatum gel without top dressings (treatment) or conventional silver sulfadiazine treatment with gauze top dressings (control).

Adults aged between 18 and 45 years old with superficial partial thickness burns judged not to require grafting and less than or equal to 10% total body surface area (TBSA), who were treated on out-patient basis and seen within 24 h of the injury were eligible for study participation. Exclusion criteria included: patients with burns involving the primary areas (face, hand, groin, joints, feet); previous treatment of the burn wound; previous burn injury to the same area; electrical burns; patients with inhalation injury; known sensitivity or allergy to one of the dressings or their constituents; allergy to NSAIDs; treatment with systemic steroid medication; diabetes; patients with AIDS or AIDS related complex.

All potentially eligible patients were informed of the study and invited to participate. After written informed consent was obtained, participants were randomly assigned to either treatment or control by the senior resident. Randomization was based upon a computer-generated table of random numbers provided sequentially upon each recruitment to the senior resident, who was blinded to the allocation number sequence.

2.2. Interventions

All wounds were initially cleansed with dilute povidone-iodine soap solution using a soft cloth or gauze and then rinsed with warm water. Subsequently, participants randomized to the treatment arm had their wounds dressed with a thin layer (1 mm) of petrolatum gel applied over the burn wound and instructed to reapply the gel as needed in the event of gel coming off. The gel used was commercially available 100% white petrolatum USP (Vaseline), which formed a transparent coating on the wound. Participants randomized to the control arm had an initial layer of fine mesh gauze applied to their

Download English Version:

<https://daneshyari.com/en/article/3104529>

Download Persian Version:

<https://daneshyari.com/article/3104529>

[Daneshyari.com](https://daneshyari.com)