

## Moist exposed burn ointment: Role of alternative therapy in the management of partial-thickness burns

Sir,

Burn injury is a global problem that equally concerns under-developed, developing and developed countries. Even after so many advances in burns' care the selection of the most appropriate dressing material for burns is still elusive. The use of silver sulphadiazine for treating burns has remained the standard treatment of partial-thickness burn wounds for more than four decades. The adverse effects include painful dressing changes, local skin reaction, hypersensitivity reactions and occasionally self-limiting leucopenia.

An alternative therapy for treating the burn was developed at the China National Science and Technology Center in Beijing in 1989 in the form of a herbal remedy, moist exposed burn ointment (MEBO), and was claimed to be an ideal burn wound dressing option for burns.<sup>[1,2]</sup> Subsequently, many studies proposed MEBO as a good alternative for treating burns [Figures 1 and 2]. MEBO is claimed to shorten wound healing time, reduce bacterial colonization, reduce the need for analgesics, antibiotics and results in aesthetically superior wound healing.

MEBO is an oil-based ointment containing sesame oil, beta-sitosterol, berberine, and other small quantities of plant ingredients.<sup>[1,2]</sup> In addition, MEBO includes in its formula 18 amino acids, four major fatty acids, vitamins, and polysaccharides. The beta-sitosterol, main ingredient of MEBO has shown anti-



Figure 1: After Charcoal Burns



Figure 2: After 1 month

inflammatory effects, another ingredient berberine has demonstrated antimicrobial effects.

Many studies substantiated the claim that it promotes epithelial repair, inhibits bacterial growth, has analgesic effects, leads to reduction of water evaporation from burn wound surface, and provides the optimum physiological environment for healing and results in improved scar formation.<sup>[3-12]</sup>

A study comparing the efficacy of MEBO to silver sulphadiazine in partial-thickness facial burns found comparable rate of wound healing but the ease of dressing and healing progression assessment was more in patients treated by MEBO.<sup>[3]</sup> MEBO, because of hyperosmolar medium has also been claimed to prevent bacterial growth. It seems to change the biological behavior of bacteria, decreases the bacterial toxicity and invasive capacity, increases the bacterial sensitivity to antibiotics and enhances both the local and systemic immunity.<sup>[4]</sup> A retrospective pilot study by Numairy *et al.*, using MEBO for open wounds in wide variety of surgical conditions including burns, sunburn, pressure sore, diabetic ulcers, skin graft donor site, surgical traumatic wounds including laser and chemical peels, found MEBO to be a cost-effective, simple and safe modality producing consistently good functional and aesthetic results.<sup>[5]</sup> A study by Ang *et al.*, in 2001, evaluating the role of alternative therapy in burn wound management found MEBO to be as effective as conventional management. MEBO imparted a greater analgesic effect in the first five days of therapy, eased the management of face and neck burns, facilitated early institution of occupational therapy in hand burns and reduced hospital costs by 8%.<sup>[6]</sup> A multicenter pilot study by Atiyeh *et al.*, in 2002 on the efficacy MEBO in the management of cutaneous wounds and ulcers found rapid reduction in ulcer size along with maintaining the wound in a relatively clean and socially acceptable condition without leading to the emergence of resistant bacterial strains.<sup>[7]</sup>

A study comparing benefit–cost analysis of MEBO with other topical preparations utilized for local burn wound treatment found reduction in hospital stay, decrease in average time spent by the treating physicians, requirement of less analgesics and significant decrease in treatment cost with MEBO.<sup>[8]</sup> A randomized, controlled study comparing pain control in MEBO versus conventional methods in patients with partial-thickness burns found greater pain relief during the first week after burns with MEBO.<sup>[9]</sup> In three consecutively conducted clinical studies, Atiyeh *et al.*, found that the MEBO exhibited a beneficial prophylactic effect on primary and secondary wound healing with scar quality superior in wounds treated with MEBO.<sup>[10]</sup> In a prospective comparative study comparing healing of MEBO with conventional occlusive dressings, the biologic healing with MEBO, as determined by trans epidermal water loss (TEWL) measurements occurred at an extremely significant

earlier stage and was associated with better scar quality.<sup>[11]</sup> A randomized mono-center German study comparing the efficacy of MEBO with conventional therapy in partial-thickness burns < 20% total body surface area (TBSA) found MEBO an attractive alternative for the topical treatment of limited partial-thickness thermal burns.<sup>[12]</sup>

With the use of MEBO, four major difficulties in burn treatment are claimed to be overcome: the control of pain and infection, the decrease of scar formation and the prevention of progressive necrosis of burn tissues. However, more controlled clinical trials are still needed to explore the full action of MEBO and investigate its role at the cellular level of wound healing.

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