Efficacy of Moist Exposed Burn Ointment in the Management of Cutaneous Wounds and Ulcers: A Multicenter Pilot Study

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Local management of chronic wounds and ulcers remains one of the most costly, unsolved problems in health care today. Ever since Winter proposed his classic hypothesis that the optimum environment for epithelialization is a moist environment, there is more evidence in the recent literature that good hydration is the single most important external factor responsible for optimal wound healing. Unfortunately, most available moisture-retaining occlusive and semioclusive dressings are laborious and require methodological precision and special expertise for adequate application. In an attempt to evaluate the effect of moist, exposed burn ointment (MEBO) as a simple moist dressing alternative on healing of chronic ulcers, a multicenter prospective study was conducted. MEBO, popularized two decades ago by Xu from the Beijing Chinese Burn Center, offers the advantages of a moist environment for wound healing in addition to those of the open treatment, avoiding cumbersome, bulky, and expensive dressings.

From December 1999 to November 2000, patients with nonhealing wounds or ulcers for at least 1 month seen at each of the five centers in Greece, Italy, France, and Lebanon participating in the study were included. Local wound management after enrollment in the study was accomplished by daily application of a thick layer of MEBO ointment (1–2 mm) using gauze or a blunt instrument (tongue depressor) after gently removing the previously applied layer. Dry sterile gauze and an elastic bandage then covered the wound. Forty-six patients were entered in the study. Adequate surface area measurements by surface planimetry were available for only 32 ulcers. For statistical analysis, a healing index was calculated by dividing the difference in ulcer size between day 0 and any given day by ulcer size at day 0. Descriptive statistics and the paired Student’s t-test were used to analyze changes in ulcer surface area measurements and in healing index calculations. Changes over two specific time points were tested to quantify the significance of the change. A linear regression analysis was also performed, calculating \( r^2 \) values to evaluate the change in ulcer size and healing index that could be attributed to MEBO application.
Changes with $P$-values greater than 0.05 were considered not significant, whereas changes with $P$-values less than 0.05, 0.01, and 0.001 were considered to be significant, very significant, and extremely significant, respectively. Considering all types of ulcers together, there was an extremely significant reduction in ulcer surface area and an increase in healing index during the first 3 weeks of treatment. When separate analysis is conducted for neurotrophic ulcers and for nonneurotrophic ulcers, these changes became more pronounced with less variability, particularly for the nonneurotrophic group. The healing trend of neurotrophic ulcers showed a significant reduction in wound surface area and a significant increase in healing index between weeks 1 and 2. The same trends are observed when ulcers of vascular etiology without a neurotrophic component are considered. The 0.75 healing index curves reveal that 50% of all ulcers reached 75% healing by the second week, and approximately 80% healing by the fourth week. When considered separately, 85% of nonneurotrophic and 65% of neurotrophic ulcers reached the 0.75 healing index by the fourth week in contrast to only 65% of neurotrophic ulcers.

Although this study is limited by the rather small number of patients and by the lack of a control group for comparison, it is fair to conclude that MEBO application is a valid alternative treatment for local management of chronic ulcers. Rapid reduction in ulcer size has been observed even after a prolonged stagnant state with other therapeutic treatments. The maximal increase in the healing index of any given ulcer was observed at 4 weeks after initiation of treatment. When a healing plateau is reached, additional therapy is indicated. If, however, surgery is not an option, MEBO application can be continued for prolonged periods of time without leading to the emergence of resistant bacterial strains while maintaining the wound in a relatively clean and socially acceptable condition. Thus, these patients, who are generally elderly and debilitated, can enjoy a relatively good quality of life.

References