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PILOT STUDY TO EVALUATE THE USE OF CONTINUOUS TOPICAL OXYGEN THERAPY IN THE TREATMENT OF CHRONIC WOUNDS

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Aim: Oxygen has also been demonstrated to promote wound healing by enhancing energy production, collagen synthesis, neovascularization, and anti-microbial activity. The primary objective of this study is to evaluate the ability of continuous topical oxygen therapy to promote healing in chronic wounds.

Methods: In this pilot study, 9 patients with chronic ulcers in the lower extremities were treated with continuous topical oxygen therapy. Dressings were applied two to three times a week, for a period of up to four weeks. The wound size was measured weekly. Characteristics of the wounds indicating wound infection using the NERDS and STONEES checklist were recorded. The higher the NERDS and STONEES score the more characteristics are present suggesting wound infection. Semi-quantitative swabs were obtained at week 0 and 4.

Results: The mean surface area reduced from 12.03 cm² at baseline to 9.60 cm² at week 4. The difference in surface areas was significant ($t=3.04$, $df=8$, $p=0.016$). The NERDS and STONEES score was reduced from 5.3 to 2.7 ($t=3.8$, $df=8$, $p=0.027$) in the first 3 weeks of therapy indicating improvement in wound characteristics are that associated with infection.

Conclusion: Continuous topical oxygen therapy is an effective treatment modality for chronic wounds. This therapy promotes wound healing and reduces signs associated with bacterial burden.