Case Series: Transdermal Continuous Oxygen Wound Therapy
for the treatment of complicated foot ulcers

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Background: Oxygen is an important key factor in wound healing and essential in the early step of the wound repair process. It is required for collagen synthesis and angiogenesis.

Purpose: to examine the use of a TCOT (Transdermal Continuous Oxygen Therapy) in patients with chronic wounds and multiple co-morbidities.

Methods: Eight chronic wound patients with multiple co-morbidities that failed prior advanced treatment were selected for TCOT. All patients selected had at least one wound photograph taken prior to Day 1 TCOT. All subjects received the same type of device and wound care that included an alginate dressing under an occlusive dressing. Each patient received instructions on daily dressing changes. Follow-up clinical visits were up to 12 weeks. Wound characteristics and photographs were taken at each visit.

Results: Each patient in this case series showed an increase in granulation tissue after 2 weeks of TCOT (Transdermal Continuous Oxygen Therapy). All patients also showed 50% wound area or wound volume reduction within 3 weeks of TCOT. 5 of the 8 patients showed complete wound closure within 3 months of TCOT. Three patients who did not respond to TCOT treatment were given alternative treatments. No adverse events were reported.

Conclusion: These case studies support the use of TCOT for the complex patient with chronic wounds. A prospective study of complex patients with an aim to characterize treatment responders would be beneficial for this patient population. This future study might include measuring effects at the cellular level so as to obtain predictive characteristics regarding responders to this therapy.

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