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New antioxidant therapy for hard-to-heal neuroischaemic diabetic foot ulcers with deep exposure

Objective: To evaluate the clinical efficacy of a new antioxidant therapy for the treatment of complex neuroischaemic diabetic foot ulcers (DFUs).

Method: A prospective case series study has been conducted in patients with complex neuroischaemic DFUs after transmetatarsal amputation. DFUs were locally treated with an antioxidant dressing twice a week for the first two weeks, and then once a week until the end of the study or complete wound closure. Patients were followed-up for eight weeks and assessed weekly to analyse wound outcome. Primary outcomes were the wound closure ratio and percentage of granulation tissue; secondary outcomes were parameters related to wound management, namely, presence of non-viable tissue in the wound bed, levels of maceration and exudates, presence of erythema and pain.

Results: A total of 20 patients were included with a mean baseline wound area of 20.4cm ^{2}. At 8 weeks, the mean reduction in wound area was 88.1% ($p<0.0001$) and complete closure was observed in 33% of cases. In addition, there was a mean increase of 94.7% in granulation tissue in the wound bed ($p<0.0001$). Furthermore, the therapy was associated with a significant percentage reduction in wounds with non-viable tissue, good exudate management, and the maintenance of low levels of maceration, erythema and pain.

Conclusion: The new antioxidant therapy was associated with good clinical outcomes in large hard-to-heal neuroischaemic DFUs, with significant wound area reduction and granulation tissue formation. The therapy was also found to be safe and perform well from a practical perspective.

Declaration of interest: BC holds the patent that protects the technology under the antioxidant dressing and work in the research and development department of Histocell, the company that has developed the dressing.

antioxidant therapy • complex wounds • diabetic foot ulcers • hard-to-heal • oxidative stress • wound • wound care • wound dressing • wound healing

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