

ANTIMICROBIAL AND WOUND HEALING ACTIVITY OF AN ENZYME ALGINOGEL IN A HARD TO HEAL DIABETIC FOOT ULCER.

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Introduction

Diabetic foot ulcers are relatively common. In the UK 5-7% of people with diabetes currently have or have had a diabetic foot ulcer. Furthermore, around 25% of people with diabetes will develop a diabetic foot ulcer during their lifetime. In England, foot complications account for 20% of the total National Health Service spend on diabetes care, which equates to around £650 million per year.¹ Without early and optimal intervention, the wound can rapidly deteriorate, leading to amputation of the affected limb. It has been suggested that up to 85% of amputations can be avoided when an effective care plan is adopted.¹

Diabetic foot ulcers are complex, chronic wounds, which have a major long-term impact on the morbidity, mortality and quality of patients' lives. Individuals who develop a diabetic foot ulcer are at greater risk of premature death, myocardial infarction and fatal stroke than those with no history of diabetic foot ulcers. Unlike other chronic wounds, the development and progression of a diabetic foot ulcer is often complicated by wide-ranging diabetic changes, such as neuropathy and vascular disease.¹

This case study involves a 64 year old male patient with type 2 diabetes for over 15 years, ischaemic heart disease, nephropathy, retinopathy, and peripheral vascular disease. He was no longer an active walker, but had a caravan on the coast that he visited regularly.

He had a diabetic foot ulcer following a neuroischaemic amputation of his left forefoot. The forefoot amputation in December 2012 was the culmination of many years of amputations of toes, resections of bones, and angioplasties. He had also had two surgical revisions of his forefoot amputation since December as well as intravenous antibiotics twice and oral antibiotics. The previous treatment regimen had involved topical negative pressure as an in-patient and as an out-patient.

On presentation, there were high levels of exudate in the ulcer with deep and sloughy wounds, which encompassed the whole of his forefoot to the bone. However, the surrounding skin was unaffected by maceration due to regular dressing changes and he was able to offload with a removable cast.

Method

The treatment plan was to reduce slough and bioburden, maintain healing progress, and manage the exudate. The wound was dressed with a primary N-A dressing (Systagenix Wound Management Ltd., UK) with gauze kept in place with Soffban (BSN Medical, UK) and yellow line Tubifast (Molnlycke, Sweden). The dressings were simple and inexpensive, but kept the wound covered.

Due to the complex nature of this patient's health and vascular status it was hoped that the slough could be reduced and his exudate managed and so Flaminal Forte (Flen Health UK) was commenced in June 2013.

Results

At the end of April, 2014, ten months after commencing Flaminal Forte, the aim of treatment was achieved as there was no infection requiring antibiotics, the slough had reduced, and the wound was healing.



16/12/2012



23/05/2013



14/06/2013



21/02/2014

Discussion

For the diabetic foot ulcer the emphasis is on radical and repeated debridement, frequent inspection and bacterial control, and careful moisture balance to prevent maceration. Tissue management in the form of radical and repeated debridement must be used with caution in the neuroischaemic foot.² Flaminal Forte is an ideal treatment for such wounds as it is indicated for moderate to heavily exuding wounds and has demonstrated its effectiveness for continuous wound debridement, antimicrobial activity, maintenance of a moist wound healing environment, and protection of wound edges and epithelial cells.³ Other benefits include its ease of use, particularly in small and hard to-reach wounds, such as diabetic foot ulcers.³

Flaminal's effectiveness has been demonstrated in an open-label case series by Durante (2012) who assessed 23 patients treated with Flaminal for up to 60 days, including 7 patients with diabetic foot ulcers. In this study, a mix of acute and chronic wounds were treated with Flaminal to control exudate and bioburden as part of the standard care protocol. Wound pain, surface area and volume, exudate levels, and wound tissues were assessed regularly. Results showed that all wounds demonstrated a significant decrease in dimensions ($p \leq 0.001$). In each group of patients wound pain also decreased over time.⁴

Conclusion

This case study demonstrated the effectiveness of Flaminal Forte in assisting healing in a neuroischaemic diabetic foot ulcer, which had previously undergone multiple amputations and recurrent infections. Flaminal's numerous modes of action avoids the need for a variety of different products at one time, by absorbing excess exudate while remaining in a gelled state, promoting debridement and controlling bioburden.

References

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