

# MANAGEMENT OF PRESSURE ULCERS WITH FLAMINAL®

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## Pressure ulcers

Pressure ulcers are areas of localised damage to the skin and underlying tissues, usually caused by pressure, shear or friction. They are graded 1 to 4 depending on severity, with 4 being the most severe and where risk of infection is highest. Treatment is specific to the patient, grade, type and location of the pressure ulcer as well as presence of infection.

## The ideal dressing

Turner's ideal dressing criteria still hold true today (Table 1).

Table 1. Criteria for an ideal dressing (Turner, 1985)  
Ability to maintain a moist wound surface

- Provide thermal insulation
- Be highly absorptive
- Be impermeable to bacteria
- Be free of contaminants
- Be non-adherent
- Be non-toxic

However, when choosing a dressing the following considerations must be made:

- Is the dressing efficient?
- Is the dressing effective?
- Is the dressing economic?

Of the many products currently available, few effectively address both the management of exudate and control of infection. Flaminal® (distributed by Flen Pharma) is a new hydroactive alginate gel dressing that both manages exudate and restores the microbial balance in wounds. Flaminal® has a unique, naturally occurring enzyme system that specifically targets bacterial cells, leaving human cells unharmed (White, 2006). This poster aims to describe how Flaminal® provides a precise match of product to patient and wound, whilst considering the criteria identified for the ideal wound dressing.

## Flaminal® for a grade 3 pressure ulcer

Grade 3 pressure ulcer: full thickness skin loss involving damage to or necrosis of subcutaneous tissue that may extend down to, but not through underlying fascia.



An 84 year old female patient presented with an MRSA positive grade 3 pressure ulcer on left foot, measuring 2.3x1.8cm and involving the joint below. A wound management system was required that:

- addressed the increase in bacterial load
- was absorbent
- was easy and pain free to apply

Flaminal® was applied, covered by a foam dressing, wool padding and bandage. Dressing changes were made every 3 days. Amoxicillin 500mg orally three times daily was given for 8 days.



**2 weeks of ulcer management with Flaminal®**

- Peri-wound skin much improved
- Areas of necrosis present in the wound bed
- Good granulation tissue evident



**6 weeks of ulcer management with Flaminal®**

- Wound edges contracting well
- Tissue looks slightly oedematous
- Peri-wound skin appears clean and healthy with no maceration
- No slough or necrosis
- Small areas of haemorrhage

Patient's general health deteriorating



**8 weeks of ulcer management with Flaminal®**

- Wound continued to improve, measuring 1.5x1.9cm
- Wound edges contracting well
- Peri-wound skin appears in good condition with no maceration
- No slough or necrosis
- No sign of infection

Patient's general health continued to deteriorate and she passed away a short while later

## Flaminal® for a grade 4 pressure ulcer

Grade 4 pressure ulcer: extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structures with or without full thickness skin loss.



A 62 year old female, presented with a very painful grade 4 pressure ulcer to her sacral region, measuring 6x2.8cm with 4cm undermining, along with numerous skin breaks around the area. A wound management system was required that:

- addressed the increase in bacterial load
- was absorbent
- was easy and pain free to apply

Flaminal® was applied, covered by a non-adhesive foam dressing, held in place with a film dressing. Dressing changes were daily



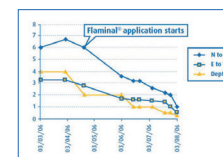
**5 weeks of ulcer management with Flaminal®**

- 99% granulation and 1% necrosis
- Contraction to 3.2x1.6cm with 1cm depth
- Medium exudation
- Wound margin clear of maceration



**11 weeks of ulcer management with Flaminal®**

- 100% granulation
- Contraction to 2x1.4cm with 0.5cm depth



## Wound contraction over time

An immediate improvement is seen following Flaminal® application compared to previous treatment.

## Conclusion

- In both patients, Flaminal® reduced bacterial load, control exudate, reduced pain experienced during dressing changes and facilitated wound contraction over time. It was therefore considered to be efficient, effective and was economical.
- Flaminal® offers an alternative way of controlling bacterial load, thus widening the choice of product type available to the clinician.

## References

Turner T.D. (1985) Which dressing and why? In: Westaby S. (ed) Wound Care. London Heinem  
White R. Flaminal® - a novel approach to wound bioburden control. Wounds UK 2006; 2(3):64-69.

# TREATMENT OF A DIABETIC FOOT ULCER WITH FLAMINAL® AND A SUPER ABSORBENT DRESSING

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## Introduction

In diabetic patients, sensory neuropathy combines a lack of protective sensation with unaccommodated foot deformities and so allows patients to put themselves at great risk of undue sudden or repetitive stress that leads to the formation of an ulcer.<sup>1</sup> Approximately 15% of patients with diabetes develop a foot ulcer at some point. Diabetic foot ulcers are at a greater risk of infection and possible amputation than non-diabetic foot ulcers partially because the normal physiological steps of the wound healing process in these patients are impeded.

## Case study

A 25 year-old female patient with poorly controlled type 2 diabetes on gliclazide (HbA1c 14%) had a history of foot problems, namely cavoid foot shape with high plantar pressures. She had sensory neuropathy and had developed a corn on the dorsum of the right fourth toe after wearing inappropriate shoes (heeled court shoes). A proprietary treatment failed to resolve the corn, the tissue broke down and an acute soft tissue infection developed. The infection was initially treated with flucloxacillin 500 mg qds, however the patient could not tolerate this and chose to stop the treatment without medical advice after 2 days. The patient became systemically unwell and 12 days after the development of the infection she was admitted to hospital as an emergency case. At this time, the soft tissue infection was extensive, cellulitis was affecting the entire right foot to the ankle and there was deep abscess formation / pus collection to right forefoot (Figure 1).

Figure 1. Diabetic foot ulcer on admission to hospital



The wound was surgically debrided with excision and drainage to the right foot (Figure 2). The surgeons selected Inadine®, gauze and a bandage as the primary wound dressing. Augmentin® was administered for 4 weeks. Novomix® 30 insulin was commenced to achieve optimal diabetes control. After 12 days the patient was referred to the diabetic foot team and the treatment regime was changed to Flaminal® Forte with super absorbent dressing as the secondary dressing. The wound measured 75 x 40 mm. Dressing changes were twice weekly initially.

Figure 2. Diabetic foot ulcer following surgical debridement



After 3 days the patient was discharged from hospital. The treatment regime of Flaminal® Forte with super absorbent dressing was continued. After 6 weeks the wound was pink and granulating, the tendon remained exposed and the wound had reduced in size to 55 x 30 mm (Figure 3). After 13 weeks the wound had a pink, granulating base, the tendon was covered and the wound measured 20 x 17 mm (Figure 4). The dressing had begun to adhere to the wound bed and so the treatment regime was changed to Flaminal® Hydro and super absorbent dressing weekly. Full healing was achieved in 16 weeks.

Figure 3. Diabetic foot ulcer at Week 6



Figure 4. Diabetic foot ulcer at Week 13



## Discussion

The rapid deterioration of this wound from a corn to a deep ulcer which reached the tendons is not atypical of diabetic foot wounds. Successful treatment of diabetic wounds requires early intervention. Debridement should be considered the first step in the management of diabetic foot ulcers. It allows the removal of necrotic tissue which may impede healing and allows an accurate assessment of the wound to be made, thus ensuring the most appropriate treatment plan is adopted. Dressing selection tends to be based on clinical experience, wound assessment and patient preference. Augmentin® was prescribed for 4 weeks only, and as the wound was discharging serous exudate a highly absorbent antimicrobial dressing was deemed necessary.

Flaminal® was selected as a primary dressing based on positive previous experience. It has antimicrobial properties and is available in two formulations; Flaminal® Forte is indicated for moderately to heavily exuding wounds whilst Flaminal® Hydro is indicated for lightly to moderately exuding wounds. Super absorbent dressing is a highly absorbent secondary dressing. In this patient, the use of Flaminal® Forte/Hydro with super absorbent dressing facilitated healing in a relatively short time and thus avoided the need for a skin graft.

Peripheral sensory neuropathy, deformity, and trauma form a critical triad most commonly seen in patients with diabetic foot ulcers, with all three of these risk factors being present in 65% of diabetic foot ulcers.<sup>2</sup> Patients with a history of foot ulcers are at increased risk of future recurrence. Therefore, meticulous attention to foot care and immediate treatment of foot injury is essential to help minimize this risk of further ulceration and the real risk of limb amputation. Multidisciplinary management which addresses various aspects of care, regular review by an appropriately trained professional, appropriate skin care and properly fitting shoes, is fundamental to the care of diabetic patients.

## Conclusion

Surgical debridement, followed by wound treatment with the antimicrobial dressing Flaminal® in combination with super absorbent dressing facilitated healing and thus prevented further tissue destruction in a young patient with poorly controlled diabetes.

## Key points

- Ulcer formation in diabetic patients frequently occurs as a result of the combination of sensory neuropathy and unaccommodated foot deformity with repetitive stress or trauma
- Successful treatment of diabetic wounds requires early intervention by a multi-disciplinary team
- Use of Flaminal® as an antimicrobial dressing combined with super absorbent dressing facilitated healing of an infected ulcer in a young patient with poorly controlled diabetes
- Meticulous foot care is essential to prevent the recurrence of such limb threatening episodes in diabetic patients
- Optimisation of metabolic control in diabetic patients is an important aspect of the multidisciplinary management of foot ulcers

## Reference List

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