

Using an enzyme alginogel® in the treatment of a leg ulcer infected with anaerobic bacteria. Natalie Harper, Practice Nurse, Crumlin Medical Practice

Introduction

A leg ulcer can be defined as a long-lasting (chronic) wound that takes more than two weeks to heal. The factors that increase the risk of developing a leg ulcer include obesity, reduced mobility, previous deep vein thrombosis, trauma to lower leg, chronic oedema, and a family history of leg ulcers. A holistic assessment is vital for patients with leg ulceration, as inclusion of the physical and psychosocial aspects plays a crucial role in facilitating a positive outcome ⁽¹⁾.

This case study involves a 50-year-old male patient with a history of obstructive sleep apnoea, a high BMI, hypertension, and heart failure with accompanying circulatory issues. The patient's complex co-morbidity history gave rise to the use of a concoction of medications. The patient developed a leg ulcer secondary to a minor injury sustained to the lateral aspect of the right lower leg.

On presentation, the Practice Nurse completed a full holistic assessment and at this point the ulcer measured 6.5cm x 5cm with a 1cm depth. The ulcer bed consisted of 100% of devitalised tissue with a combination of necrotic and fibrinous



20th July 22



8th Aug 22



22nd Aug 22



5th Sept 22



26th Sept 22



10th Oct 22



14th Nov 22



16th Dec 22

slough. Very high levels of exudate were noted, and the ulcer was malodorous, and a positive swab result of an anaerobic bacteria, proteus and coliform were confirmed. The edges of the ulcer were macerated, as a result of the exudate levels and the surrounding tissue was erythematous and hot to touch. Antibiotic therapy was commenced, and the initial primary dressing treatment included the use of honey and silver-based dressings, although as there was no improvement during their use, they were discontinued.

Method

The Practice Nurse's aims were to aid autolytic debridement and so reduce the risk of infection, as devitalised tissue offers a breeding ground for bacteria. Additionally, exudate management was of high importance as was odour control, as this was affecting the patient's quality of life.

The decision was made to replace the initial treatment plan and an Enzyme Alginogel Flaminal® Forte was commenced as the primary dressing choice with a secondary absorbent non-adherent dressing secured with an elastic tubegauze stockinette. Furthermore, a reduced compression bandage kit was introduced. Flaminal® was selected for its ability to facilitate autolytic debridement, manage exudate levels and reduce the bioburden and therefore the risks of infection. Flaminal® is available in two formulations, Flaminal® Forte has a higher alginate concentration and is therefore indicated for higher levels of exudate whereby its counterpart Flaminal® Hydro is recommended for low to moderate levels. Dressing changes were completed in a community treatment room environment three times per week.

Result

The wound healing progressed over the course of the treatment, resulting in a change in the wound conditions. Within two and a half weeks, the use of Flaminal® had aided the autolytic debridement process and the fibrinous slough was hydrated to a stage where mechanical debridement was facilitated; the debridement process continued over the following four weeks at which point there was 100% granulation tissue. The ulcer dimension reduced; exudate levels decreased which facilitated bi-weekly dressing changes and at this point Flaminal Hydro was introduced to accommodate the change in exudate levels. There were no further episodes of infection during the period of treatment with Flaminal® and odour was eliminated and promoted dignity for the patient and a better quality of life.

Discussion

Generally, only half of all those affected by leg ulcers will heal within a twelve-month period. Therefore, accurate and timely assessment, diagnosis and management coupled with evidence-based practice is essential to ensure the best possible patient experience and outcome ⁽²⁾. The wound and surrounding skin should be assessed using a structured assessment method, such as the TIMES principle, which considers tissue type (T), infection/inflammation (I), moisture balance (M), wound edge (E) and surrounding skin (S) ⁽³⁾.

Conclusion

This case study demonstrates an effective wound management regime, with the use of Flaminal® Forte/Hydro, that facilitated full wound closure in twenty-one weeks. The treatment aims of debridement, exudate management, odour control and prevention of infection were successfully accomplished. The uninterrupted management plan and advancement of wound debridement encouraged the formulation of healthy granulation tissue and supported wound healing which meant that dressing changes were reduced to twice weekly. It also validates its suitability to be used in conjunction with compression bandaging in the management of leg ulceration. The Practice Nurse highlighted that wound closure was achieved sooner than expected and the outcome exceeded all the treatment aims.

References

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2. Guest JF, Fuller GW, Vowden P (2018) Venous leg ulcer management in clinical practice in the UK: costs and outcomes. *Int Wound J* 15(1): 29-37
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