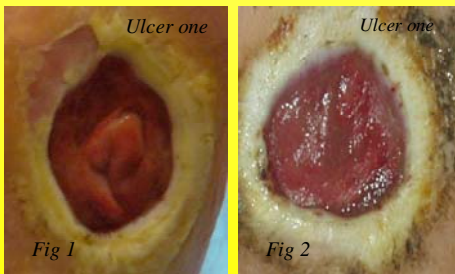


Introduction

Wound healing is a highly complex process and the stages are controlled by interactions between extra cellular components, signal molecules and cells. In acute wound healing, the provisional wound matrix, containing fibrin and fibronectin, provides a framework for cells to attach to in order to stimulate cells to proliferate, differentiate and synthesise new extra cellular matrix (Schulz et al 2003). However in the chronic wound environment the extra cellular matrix can malfunction and cells cannot attach resulting in impairment of cell proliferation, differentiation and migration (Vowden et al 2007).

Restoring extracellular matrix proteins may help to restore cellular balance and promote wound healing. Xelma® is a treatment thought to increase the healing rate of chronic wounds and has been proven to accelerate healing in venous leg ulcers that failed to heal with standard therapy (Vowden et al 2007). Xelma® contains the extracellular protein amelogenin in a viscous water solution of propylene glycol alginate. Amelogenin extracellular matrix proteins have been shown to increase levels of extracellular growth factors (Mirastscijski et al 2004). The action of Xelma® is to restore the extracellular matrix by providing critical cell adhesion proteins.



Methodology

Two chronic wounds were selected in a compromised patient with diabetes who had developed an injury to the planter of the left foot. Ulcers had been present for 18 months prior to the application of Xelma® and had not responded favourably to several other treatment regimes. Xelma® was applied at weekly intervals for a six week period to both ulcers. A foam dressing was applied to manage exudate and promote healing environment.

Results

- There was a rapid improvement in granulation tissue in ulcer one (fig 1,2) compared to other treatments.
- Patient developed sensation in the neuropathic foot.
- Significant healing was noted with healthy re-epithelialisation in ulcer two (fig 3,4).
- Maceration was reduced during dressing changes.
- Skin appeared healthy during the 6 week evaluation.
- Both ulcers continued to improve after treatment of xelma® was discontinued.



Factors considered:

- Rate of healing
- Reduction in ulcer size
- Cost effective

Discussion

The healing effects were dramatic with ulcer one developing healthy granulation tissue and achieving 30% reduction in size. Complete healing was achieved in ulcer two over a 12 week period (fig 4).

There were no adverse effects and the level of exudates had decreased during the use of Xelma® compared to other dressing regimes. There were no clinical signs of systemic infection during the 10 week period however the ulcer was assessed for critical colonisation and application of an antimicrobial dressing was applied when necessary.

Conclusion

Wound healing was enhanced in this instance using Xelma® an extracellular matrix protein. Restoration of cellular balance was achieved With one of the ulcers fully healed.

Reference

- Mirastscijski et al (2004) effects of topical enamel matrix derivative on skin wound healing. Wound Repair Regen; 12(1); 100-108.
- Sculz et al (2003) Wound bed preparation. Wound repair Regen; 11 (suppl 1); S1-S28.
- Vowden P; Romanelli M; Price P (2007) Effect of amelogenin extracellular matrix protein on venous leg ulcers. Journal of Wound Care 16 (5) 189-195.