

The Use Of Polymeric Membrane Silver Dressings* In Burns - a Case Series

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INTRODUCTION

Burn pain is described as excruciating and by some authors as "a living hell" and certainly most authors would agree that burn pain is the one of the most severe forms of all pain². Burn pain is unique in nature and initially patients may feel little or no pain for the first several hours due to the initial shock reaction. However, once pain is felt, there is a never ending round of procedures and dressings which all contribute to the pain experience.

Traditionally in burn care, dressings, largely due to size have centered on petrolatum impregnated gauze type dressings. Unfortunately these lead to pain, trauma on removal and the shedding of fibres into the wound. This in turn leads to increased pain at dressing changes, which leads to anxiety about forthcoming dressings and consequently an increased pain experience.

Therefore, clinicians are often seeking the 'ideal dressing' that promotes healing, but also reduces pain and nursing time, whilst preventing infection, a problem in burns.

Aim

This was a proof of concept evaluation of the potential use of polymeric membrane silver dressings* in a range of burns to see whether further evaluation was required.

METHOD

3 patients with burns wounds were treated with polymeric membrane silver dressings. These dressings contain components which draw and concentrate healing substances from the body into the wound bed to promote rapid healing while facilitating autolytic debridement by loosening the bonds

between the slough and the wound-bed. The surfactant, glycerol and starch copolymer work synergistically promoting wound cleansing and healing. The nanocrystalline silver particles are embedded into the foam matrix and are not released onto the wound surface³.

RESULTS

All patients found the dressing comfortable to wear, easy to apply and remove and preferable to other products they had tried. Staff found the dressing easy to use and effective in promoting wound healing in these very painful wounds.

The only negative comments were that staff would have liked a more "tacky dressing as occasionally it was a little difficult to apply.

Mr R

Mr R was a 40 year old man who fell asleep with a chip pan on. He awoke to the house being on fire and sustained burns to his face and both arms, totalling 9% TBSA. He was initially treated in Edinburgh and then transferred to our service 5 days post injury. The areas were still very raw and painful, and he had been treated previously with petrolatum gauze and silver sulphadiazine creme. As it was so painful and his movement was very poor, it was decided to treat his left arm and first web space of his right hand with polymeric membrane silver dressings.



Left arm, 5 days post injury. It is very painful and Mr R had to be re-admitted to our Centre for pain and dressing management.



Left arm healed after 15 days of treatment. Mr R was very happy with the dressing and the pain relief it gave and was able to regain full function.



Mr R's right 1st webspace at 5 days post injury. The thumb is very painful.



Wound after 7 days of treatment with polymeric membrane silver dressings. No pain any more.



Wound after 14 days of treatment, the area is almost healed. The dressing was a little difficult to apply to this area.

Mr H

Mr H was a 22 year old man who scalded himself on a pan of boiling water which tipped onto the dorsum of his right foot. This totalled 1% TBSA, and was dermal in nature. He was initially admitted to the Burn Centre and then discharged to our outpatient department 3 days post injury and was dressed with polymeric membrane silver dressings.



Initial picture of burn at first presentation, this is quite deep in places



Wound at day 6, looking slightly deeper and a little inflamed which is common in foot burns



Wound at day 10, inflammation has settled and there is good evidence of healing



Wound at day 17, healing well and dressing changed to oval adhesive version. The wound was completely closed 3 days later.

Miss M

Miss M was a 29 year old lady who was involved in a house fire that happened when she had left a candle burning, which had set a cushion on fire. When she awoke, she stepped on the cushion and sustained burns to her right foot. These were deep and very painful and totalled 0.2% TBSA. She was referred at 7 days post injury and was initially treated with a range of dressings including silver sulphadiazine creme, silver primary contact dressing, soft silicone silver dressings and an absorbent alginate silver dressing, however, all these were very painful and it was decided to use polymeric membrane silver dressings. One version of the dressing is a cavity version (without a film layer), which fitted very well around the lady's toes.



Initial photo of wounds at presentation to service 7 days post burn injury



At day 28 when polymeric membrane silver dressings were commenced. The interdigital area was very painful.



Day 31, (3 days after initial application). Miss M found the dressings very comfortable and pain relieving. There was good evidence of healing.



Almost closed at day 36, so dressing discontinued

DISCUSSION

Polymeric membrane silver dressings offer a good clinical advantage when used in burns and burn-related wounds. Patients had an overall reduction in pain when using these dressings and given that these are some of the most painful injuries, this could have a positive effect on wound healing and overall return to normal function.

This could be a significant finding in terms of managing these wounds as previously pain was an accepted consequence of a burn injury and often patients learned to expect pain at dressing changes. This is supported by Watkins et al⁴ who suggest anxiety is anticipatory, in that the stressor is no longer

the burn, but the severe and repetitive pain experienced for which inadequate analgesia has been provided. They argue that once the patient has learned to associate burn treatment with pain, even increased analgesia will be inadequate. This dressing potentially gives practitioners the opportunity to prevent patients from "learning about pain" and therefore hopefully anticipatory pain will be prevented.

References

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CONCLUSION

These case studies have identified that polymeric membrane silver dressings have the potential to be a useful adjunct in the management of this wound type. Further formal evaluations have been carried out on both acute burn wounds as well as chronic non-healing burn related wounds. The positive outcome from these evaluations has resulted in these polymeric membrane silver dressings being a part of the Burn Centres formulary.

*PolyMem® Silver Wound dressing and PolyMem® WIC Cavity Dressing

Manufactured by Ferris Mfg Corp, Burr Ridge, IL 60527 USA. This case study was unsponsored. Ferris Mfg. Corp. contributed to this poster design and presentation.