A clinical case study of a venous leg ulcer using Suprasorb® X+PHMB

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Medial/Posterior aspect day 1

Figure 2 Anterior aspect day 1

Figure 3 Medial/Posterior aspect day 11

Figure 4 Anterior aspect day 11

Figure 5 Anterior aspect day 66

Figure 6 Medial/Posterior aspect day 66

Introduction

Suprasorb® X+PHMB (polyhexamethylene biguanide) is a safe and effective new antimicrobial. It is a HydroBalanced, biocellulose wound dressing containing 0.3% PHMB, this means the dressing has a high surface area of cellulose fibrils which are woven into a mesh that regulates the absorption and donation of moisture at the wound dressing interface (Alvarez et al 2004). PHMB is a broad spectrum antimicrobial agent that is highly effective (Mulder et al 2007) with low toxicity to human cells (Wiegand et al 2008). Given the properties of this dressing and the growing body of evidence supporting its efficacy, it was decided to commence a small scale trial within the Trust.

Method

A case study approach was taken. Mrs G is a 49 year old, morbidly obese lady with a 14 year history of venous leg ulceration to her left leg. She has suffered with recurrent cellulitis requiring regular antibiotic treatment. Severe pain, multiple sensitivities to dressings and the condition of the surrounding skin due to eczema and psoriasis have also been problematic. In January 2010 Mrs G presented as highly anxious at dressing changes, with a pain score of 3 (Trust adopted scale of 0-3, 3 being the worse pain imaginable). Swabs identified mixed organisms and coliforms; no antibiotics were being given. Following a full wound assessment, a review of her pain management and a discussion with Mrs G, it was decided to apply and evaluate Suprasorb® X+PHMB.

Due to the irregular shape and size of the ulcer it was decided to use photos alone to assess any improvement/deterioration (see figure 1 and 2). Photographs were taken at each dressing change on the Friday of each week to be consistent. In addition the wound product evaluation form developed by the West Midlands Association of Tissue Viability Nurses (WMATVN) was used to aid in the evaluation of the product. Using the previous dressing regime the frequency of dressing change had been daily. It was decided to check bandages for strike through daily, but to aim for a full change every third day to begin with. Numbers of dressings used were calculated in order to do a cost comparison.

Results

Pain score on application and removal for the first dressing change, despite the commencement of a fentanyl patch, was high, but this had improved by the second dressing change. The patient reflected at a later stage that the pain was bearable, as she knew the comfort of the dressing once in place was so good. To try and help with the pain and anxiety levels Mrs G would remove the dressings herself. At day 11 there was significant progress in the appearance of the wound (see figure 3 and 4). By the fifth dressing change the pain score had fallen and her anxiety levels had noticeably reduced. This continued to improve and, on day 42, Mrs G expressed she would be able to tolerate having a Doppler performed with a view to having compression bandaging. This resulted in Suprasorb® X+PHMB being applied with reduced compression twice weekly.

Cost

A cost comparison was made for changes of wound contact layer only over one week. Secondary dressings and bandages in use were similar to those in use prior to admission.

Previously Mrs G's ulcer had been dressed with a silver impregnated foam as the wound contact layer. Two foam dressings 20cm x 20cm were required to cover the ulcer. Two Suprasorb® X+PHMB 14cm x 20cm were required to cover the ulcer.

Silver impregnated foam 20cm x 20cm = £17.96 per piece
Suprasorb® X+PHMB 14cm x 20cm = 16.12 per piece

Therefore dressing cost per week 1
(daily dressings required with the foam dressing) = £251.44
Dressing cost with Suprasorb® X+PHMB
(three dressing changes per week) = £96.72

Discussion

At a number of the dressing changes there was concern that the surrounding skin was becoming macerated. However, it became clear over time this was not the case and it actually transpired to be new epithelial tissue.

The residue can also appear as slough on the wound bed. Some of the residue is easily removed but some remains well adhered to the wound bed. However it became clear to the TVN's conducting the evaluation that the residue does not appear to be detrimental, nor does it impede wound healing. Reduction in wound dimensions was steady and sustained (see figure 5 and 6).

Conclusion

Suprasorb® X+PHMB has a number of benefits in terms of patient satisfaction, patient outcomes, pain reduction, ease of application and removal for the practitioner and appears to be cost effective.

There may be educational issues regarding the dressing residue which would need to be addressed as the dressing might be discontinued inappropriately if maceration was thought to be occurring as proven in a study from the Netherlands (Van Leen 2006).

Mrs G has changed considerably over the course of the evaluation. She has been able to see quick progress within the wound and is now pain free with little, if any, anxiety about her wound. She often says that she just can't believe how good the ulcers look and is very pleased with how much better she feels.

References

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