Using a nanocrystalline silver dressing appropriately, alongside recommended pressure ulcer management, can aid in the rapid healing of an infected sacral pressure ulcer

Introduction

In April 2010 the Daily Mail reported that the NHS spent £25 million on silver dressings that did not "beat bugs". However, according to Leaper (2011) the antimicrobial benefits of silver in general has been known for centuries and since the 1960s, silver, in the form of silver sulfadiazine has been used for both the prevention and treatment of infection in burns. Although the majority of wounds progress to healing in a timely manner and without complications, for a number of patients there will be a delay in healing and for a small minority their wounds will never fully heal. The financial burden incurred in the management of both healing and non-healing wounds is substantial with the annual cost of wound care to the NHS estimated to be between £2.3 billion and £3.1 billion. Whilst it is possible to quantify the economic cost of wound care, to express the cost of wounds purely in monetary terms would be disingenuous. The real cost and burden of wounds can only be truly reflected in the context of patient outcomes. The costs of non-healed wounds impacts are also taken into account. However whilst the economic cost of wounds can be assigned a value, the human cost a wound imposes upon a patient is often immeasurable.

Wound infection is perhaps the leading cause of delayed healing, and hence represents a major contributor to the cost, both human and economic, of wounds. Chronic wounds in particular are often heavily colonised with both bacterial and fungal organisms meaning that the possibility of progression to a state of infection is a consistent threat. The timely recognition and appropriate management of infection is therefore essential. However whilst this objective is easy to state it can prove more difficult to achieve in clinical practice, as the presence of co-morbidities such as ischaemia may mask or mimic the clinical indicators of infection. As Sanada et al explain, such difficulties in diagnosing infection in patients with pressure ulcers increases their risk of complications such as osteomyelitis and bacteremia.

The Best Practice Statement "The use of topical antiseptic/antimicrobial agents in wound management" recommends the use of topical antimicrobials in treating patients with signs of wound infection. The aim of this poster is to demonstrate that silver used appropriately alongside recommended pressure ulcer management, can aid in the rapid healing of an infected sacral pressure ulcer.

Case studies constitute practice-based clinical evidence that silver dressings alongside appropriate additional care, such as appropriate pressure relief, are effective in the management of wounds that display signs and symptoms of infection. This case study demonstrates that short term usage can be effective in reducing bacterial burden which can be a significant cause of delayed healing. In this instance the judicious use of ACTICOAT was effective in removing the barrier to wound progression constituted by the elevated bacterial burden. In consequence following the discontinuation of the silver dressing the wound continued toward healing.

Mrs D was admitted from home to a Community Hospital with loss of mobility and a pressure ulcer on her sacrum.

On admission her mobility was very limited so much so that she was unable to move or to reposition herself in bed. Her appetite was good and she was eating well but needed help with feeding. She was continent. Motor Neurone Disease was suspected.

Mrs D had her own request spent the majority of the day sitting in a chair. She had been offered an alternating mattress for her bed but declined as she found them uncomfortable. She was given a cushion for her chair.

Initial assessment: Day 0 (9.3.11)

Initial assessment of the patient’s wound revealed an area of EPUAP Grade IV ulceration to the sacrum (see Figure 1). The wound's dimensions were recorded and documented, the ulcer measuring approximately 5cm x 3.5cm. The wound bed comprised approximately 50% necrotic tissue with the remaining 50% consisting of granulation tissue which had an unhealthy dull red colouration. The peri-wound skin was characterised by a noticeable surrounding erythema and some malodour was detected.

Mrs D was complaining of some wound-associated discomfort which when quantified via a 0-10 visual analogue pain scale she scored between 4 and 5. Distinct from the peri-wound erythema there was also excoriation of the skin surrounding the wound which was thought may have arisen as a result of skin stripping by the foam dressing which had previously been used in the management of the wound.

Initial Intervention: (9.3.11)

On the basis of the initial assessment the immediate wound management priorities were established as follows:

- Reduce the wound's microbial burden in order to help resolve the wound's current status of locally infected.
- Manage exudate effectively whilst preventing any further damage to the surrounding skin.
- In order to achieve these goals the dressing regimen was changed to the following products, the rationale for these changes being as described:
  - ACTICOAT Absorbent 5cm x 5cm was employed as a primary dressing. ACTICOAT was selected in order to deliver a rapid yet sustained bactericidal effect and thereby reduce the problematic bacterial burden. The absorbent variant was chosen as it would also help to manage the wounds exudate.
  - Cavilon® was applied to the skin surrounding the wound in order to afford the already excoriated skin some protection from any further damage.
  - ALLEVYN® Gentle Border 12.5cm x 12.5cm was used as a secondary dressing. It was felt the gentle silicone adhesive would safeguard the skin surrounding the wound from further trauma.
- While the dressing’s fluid-handling properties would effectively manage wound exudate and optimise moisture balance within the wound bed.

In order to maximise the possibility of wound healing it was important to ensure that the scope of the management plan being implemented was sufficiently wide as to encompass the various elements that could influence the achievement of healing.

Therefore in addition to the local wound management measures described above the strategy of care for Mrs D also encompassed issues which if left unaddressed could contribute to non-healing.

It was recognised that without an effective pressure-reduction strategy, healing would be an impossibility. Accordingly the TVN spoke to Mrs D and explained the benefits of using an alternating mattress as well as reducing the time she spent out of bed. Mrs D agreed to sit out no more than two hours for lunch and supper and also gave her consent to the use of an alternating mattress.

Mrs D had expressed concern that if she were to stay in bed she would not be turned and would become uncomfortable. The nurses were therefore asked to reposition Mrs D every one to two hours during the day and three to four hours during the night. A repositioning chart was also employed to ensure the agreed schedule was adhered to.

The first review took place five days on from the initial assessment and commencement of the new management regimen. The wound dimensions were re-recorded to reveal that the ulcer had decreased in size. It now measured 3.5cm x 3cm as compared to the initial 5cm x 3.5cm, a not inconceivable reduction over a period of just five days (see Figure 2).

The composition of the wound bed had also changed since the initial assessment with the wound bed now consisting 60% rehydrating necrotic tissue and 40% granulation. Whilst the wound still retained a discernable malodour the surrounding erythema was resolving. ACTICOAT had been used for five days and the wound had improved considerably. However there was still some erythema and malodour and it was decided to continue with the ACTICOAT Absorbent for an additional two weeks. Following these two weeks, the wound was reviewed and in the absence of clinical indicators of infection the use of ACTICOAT was discontinued in favour of a non-antimicrobial alginate-type primary dressing.

Follow up review: Day 27 (5.4.11)

A final review of Mrs D was undertaken immediately prior to her being transferred to the Neurological Unit for further investigations, some 27 days on from initial presentation to the Tissue Viability Service. At this assessment the wound was progressing well toward closure and when the dimensions were again documented the ulcer had reduced in size considerably to 2cm x 2.5cm. The wound bed itself had a much more healthy appearance and now consisted of 100% granulation tissue. The signs suggestive of infection which had been obvious at initial presentation such as malodour and erythema surrounding the wound had resolved with the implementation of the ACTICOAT antimicrobial dressing regimen. In the absence of clinical signs of infection the use of ACTICOAT was no longer indicated and the dressing regimen had therefore been amended accordingly to a non-antimicrobial alginate-type dressing and ALLEVYN Gentle Border.

References