

Evaluating Cutimed® Sorbact®: using a case study approach

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Abstract

This article uses a case study approach to demonstrate good clinical outcomes using a bacterial binding dressing range on a variety of difficult wounds. A case study approach can demonstrate a clinician's perspective on the practicalities of dressing choice in practice. All wounds, whether acute or chronic, offer pathogenic micro-organisms the opportunity to flourish – this can result in slow healing. Antimicrobial dressings use active ingredients but the Cutimed® Sorbact® range is a bacterial binding wound dressing that offers an alternative approach to the management of bio-burden. All dressings have a cost implication and holistic wound assessment is the key to accurate diagnosis and treatment, as well as directing the practitioner to an appropriate management strategy.

Key words: Bacterial binding ■ Bioburden ■ Cutimed Sorbact ■ Case study

Evaluating wound care products in clinical practice is a vital part of the clinical nurse specialist role in the author's wound care service. The PCT covers a population of 400,000, with a health-care budget of £600 million and wound dressings are a costly resource – silver dressings alone cost the PCT £53,388, out of a total spend of £530,000 (for the year January–December 2008). This figure does not include bandages, emollients and negative pressure wound therapy. However, the silver dressing spend in the PCT has halved from the previous year after a drive on the appropriate use and two-week reassessment of antimicrobials (Bristol PCT, 2008).

Taking note of randomized controlled trials (RCTs), evaluations and case studies is only part of the process of deciding whether products are included onto the PCT wound care formulary. The three clinical nurse specialists (CNSs) also meet every eight weeks with the Product Review Group, which comprises some of the wound care link nurses. The CNS meet with company representatives, usually in the week before the Product Review Group to find out about any new products and their cost and mode of action. Usually, new innovative wound care products are

readily accepted by the group for evaluation and this was the case with Cutimed® Sorbact®. The group evaluates products not only on their cost, but also on clinical outcomes.

As Gray et al (2002) suggest, nurses have a pivotal role in the allocation of wound care resources, therefore it is vital that their practice is based on the best up-to-date evidence available.

Bacteria and wound healing

All wounds, whether they be acute or chronic, offer pathogenic micro-organisms the opportunity to flourish. The majority of wounds are not infected (Meuleneire, 2008), however, immediate clinical intervention is required when interactions between the micro-organisms and host disrupt the wound-healing process.

Chronic wounds are characterised by a high bacterial count, the presence of more than one bacterial strain, the increased tendency to harbour drug-resistant organisms and the presence of biofilms (Vowden et al, 2008). This can delay wound healing and make these wounds difficult for nurses to manage.

Antimicrobial dressings use active ingredients, such as silver, and this comes in various forms, e.g. silver sulfadiazine and nanocrystalline silver, which are the two varieties recommended in the Bristol PCT wound formulary for controlling bacterial load. Until the evaluation of Cutimed Sorbact, the topical dressing of choice for clinically infected or colonised wounds would have been a silver dressing, used for two weeks as per the PCT guidelines.

Cutimed Sorbact dressings bind bacteria and fungi and offer an alternative approach to the management of bioburden (Hampton, 2007; Kammerlander et al, 2008). The mode of action is based on hydrophobic interaction. Cutimed Sorbact dressings are coated with a fatty acid derivative DACC (dialkyl carbamoyl chloride), providing the product with strong hydrophobic properties. Wound pathogens also have hydrophobic characteristics, therefore they become bound to the fibres of the dressing. Cutimed Sorbact has no local antiseptic or antibiotic agent impregnated into the dressing. This is a useful innovation as there is no donation of chemicals, which could lead to resistance or adverse side effects. Cutimed Sorbact dressings have the ideal properties for dealing with a variety of wounds (Table 1).

The dressing pads are coloured green on one side only and should be placed green side down. All the other Cutimed Sorbact dressings can be placed in any position on the wound. The dressings should not come into contact with

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Accepted for publication: June 2009

Table 1. The wound healing properties of Cutimed Sorbact

- Binds hydrophobic micro-organisms reducing harmful microbial load quickly
 - Binds bacterial toxins reducing damage to the wound bed
 - Leaves non-hydrophobic micro-organisms in the wound to stimulate healing
 - Bacteria irreversibly bound – low risk of bacterial spread at dressing change
 - Non-allergenic – safe to use on babies, children and nursing mothers
 - Optimal binding capacity in a moist environment – effective for long periods
 - No development of antibiotic resistance
- (Ljungh et al, 2006)

oily emollients as this can reduce the effectiveness of the hydrophobic action.

Assessment

The first step in assessing a wound is not examining the wound itself, but rather assessing the patient (Benbow, 2007). All patients used in this article’s case studies had undergone a full comprehensive assessment before the appropriate treatment for their wounds was decided upon.

The patients chosen for the evaluation of Cutimed Sorbact were either showing clinical signs of infection, e.g. wound breakdown, increased exudate, odour or increased pain, or a lack of healing progression. Reducing microbial load was, therefore, a hallmark of treatment. The main aim of the product evaluation was to determine the ability of the Cutimed Sorbact range to reduce the signs of increased bacterial load, e.g. inflammation, high exudate and odour, and to promote wound healing. The product was used until improvements were observed in the wound bed. The minimum application time was two weeks, while some patients had their wound redressed with the product for longer (eight weeks in one case).

The dressings were evaluated using a simple evaluation tool put together by the author: progression in the wound bed, a reduction in odour, pain, inflammation and in wound size using a numeral scale 0–10.



Figure 1. Case study 1: the patient had three wounds (December 2007).



Figure 2. Case study 1: odour and exudate a problem prior to changing dressing regime (May 2008).



Figure 3. Case study 1: after eight months the wounds were all but healed.

Leg ulcers – venous and mixed aetiology

Leg ulceration is notorious for its chronic character – this means that many patients suffer unnecessarily over long periods of time (Persoon et al, 2003). High exudate levels are the main problem for these patients. Wound exudate is produced in response to a complicated interaction between wound aetiology, wound healing physiology, wound environment and compounding pathological processes (World Union of Wound Healing Societies, 2007).

Excessive exudate can cause wound extension by macerating the peri-wound area, even resulting in excoriation and inflammation (Kindlen and Morrison, 1999). The successful management of excessive wound exudate is a major challenge for nurses as it can cause reduced quality of life and distress to patients if not controlled (Benbow, 2008).

Cutimed Sorbact dressings are ideal in high to medium exudate levels as hydrophobic interaction is most effective in a moist environment. The dressings have been shown to reduce levels of exudate in non-healing wounds (Hampton, 2007). There is also no risk of allergic reactions or formation of resistant bacterial strains (Ljungh et al, 2006).

Case study 1

This case study featured a man who had experienced a fibrosarcoma to his left leg 15 years ago. During that time he had under gone many plastic and orthopaedic procedures. He also developed osteoarthritis and three years ago became diabetic. Ilizarov frames were used to lengthen and reshape the bone in the leg and the last one was removed in October



Figure 4. Case study 2: the patient's three-year-old venous ulcer.



Figure 5. Case study 2: by week eight the ulceration was all but healed.

2007. At this point the patient was referred to the wound care service for assessment, support and advice. On a comprehensive assessment by the author the patient's medication comprised gliclazide, metformin and co-dydramol and he had an allergy to certain dressings. The wounds were not photographed until December 2007. There were three main wound areas: the anterior gaiter, measuring 11.5 x 5.5cm; one lateral gaiter, measuring 4.9cm x 1.6cm, and one medial gaiter 4cm x 3.2cm (Figure 1). The patient's knee and ankle joints were fixed, the skin was very dry and the main problems were high exudate, odour and oedema.

A Doppler ultrasound was taken and the results were ABPI of left 0.6 and right 1.06, and all sounds were biphasic. The initial care plan was to use an alginate dressing, good skin care and compression bandaging. However, the wounds needed to be dressed daily by the patient's wife due to exudate levels and odour. In May 2008, as the wounds were progressing slowly and the odour and exudate were still a problem (Figure 2), it was decided to use Cutimed Sorbact pads under compression with a full compression hose kit. Due to the patient's poor leg shape, it was padded and shaped with a sub-bandage. The patient and his wife found the dressing regime

much easier to manage, and could incorporate the care plan into their full-time work routines.

By September 2008, the wounds were much smaller, there was no odour, exudate was minimal and the dressing changes were reduced. By January 2009, the wounds were all but healed (Figure 3).

Case Study 2

This case featured an 80-year-old woman, who had been known to district nurses for nearly three years. The nurses visited twice-weekly to redress a venous leg ulcer on the right leg posterior gaiter and malleolus.

The patient's wounds had been treated with silver as a primary dressing under multi-layer bandaging. As reported by the district nurses, the silver dressings were on more than off, as the symptom of high exudate was resolved after a few weeks of silver but returned within a few weeks. Silver was then recommenced and the cycle kept repeating itself.

The patient's past medical history included deep vein thrombosis in her right leg, osteoarthritis in her knees, an aortic aneurism, hemicolectomy for cancer in 2005 and previous leg ulceration to her right leg. Amitriptyline was the only medication the patient was taking. The venous ulcer measured 17cm x 15cm on 13 November 2008 (Figure 4).

The primary dressing was changed to Cutimed Sorbact swabs with Sorbion® S, an absorbent secondary dressing, placed under the compression. It is not normally advised to add padding underneath compression bandaging as the dynamics of the compression can be altered, however, Sorbion S is very thin and did not seem to interfere with the compression or leave any indentations on the leg. The patient did not want the nurses to visit more than twice a week as she led a very busy social life, so the plan was to redress the wound twice weekly. There was no strike-through and the maceration to the wound edges disappeared within one week. Within two weeks there was a marked reduction in the amount of exudate and improvement in the wound bed, and after four weeks a dramatic reduction to the wound size (from 17cm x 15cm to 11.5cm x 11cm). By week eight the ulceration was all but healed and the leg was being dressed weekly, much to the delight of the patient (Figure 5).



Figure 6. Case study 3: excoriation and inflammation (5 January 2009).



Figure 7. Case study 3: reduction in wound size after three and a half weeks of treatment with Cutimed Sorbact.

Case study 3

Case study three features an 84-year-old woman, with leg ulceration of seven-month duration. On examination, there was extensive ulceration to the right medial and posterior gaiter and malleolus and exudate was causing maceration to the surrounding areas, including the foot and heel. On 5 January 2009, there was evidence of excoriation and inflammation with green exudate and some odour (Figure 6). The patient was in a lot of pain and taking an opioid painkiller as required and before dressing changes.

Dressings used to date included silver hydrofibre, Iodoflex®, hydrogel sheets, hydrocapillary and other silver dressings. The patient reported no allergies, her haemoglobin was 10.6 and she was taking iron supplements. Dressing selection is an



Figure 8. Case study 4: breast wound of unknown origin with 100% slough.



Figure 9. Case study 4: by week eight, the dressings only needed to be changed twice-weekly.

important aspect of exudate management, however, treating contributory or underlying factors and modifying the wound environment is also vital (World Union of Wound Healing Societies, 2007). Despite the pain involved, the patient agreed to have a Doppler test – her ABPI was 0.8 right leg and all pulses were biphasic except in the anterior tibial artery. Therefore, reduced compression was applied.

A Cutimed Sorbact swab 7cm x 9cm was used as the wound contact layer and opened out to cover the large area. Sorbion S was used to manage the exudate before application of multilayer compression. Figure 7 shows the wound three and a half weeks later. By the 30 January 2009, the ulcer had continued to improve, showing reduced exudate and a reduction in wound size. The pain had also improved and at week eight dressing changes had reduced from daily to twice-weekly. Full compression had been initiated and was being well-tolerated.

The patient's quality of life was improved by the reduction in exudate and the promotion of wound healing. Pain and odour were also reduced. The combination of Cutimed Sorbact and Sorbion S worked well together to deal with the high bacterial count and prolong the wear time of the bandages. Sorbion S provided an osmotic pull that ensured a rapid absorption of fluid without drying out the wound (Cutting, 2008).

Fungating lesions

Case study 4

This study features an 82-year-old female with breast and abdomen wounds of unknown origin. The consensus from the GP, hospice nurses and the author was to treat the wounds as fungating lesions. The patient was living in a nursing home and was bed-bound – she refused to be seen for assessment on an oncology unit. The patient had nursed her husband through cancer and did not want to go through all the same investigations and treatment. The patient's medical history included type 2 diabetes, stroke, right leg deep vein thrombosis and hypertension. On examination by the author the patient had abdominal wounds and the left breast wound appearance was of 100% slough and exudate with some odour (Figure 8).

An alginate dressing and foam were prescribed, but unfortunately the exudate and odour were not managed



Figure 10 Case study 5: the wound measured 3cm in length.



Figure 11. Case study 5: A seven-day application of Cutimed Sorbact took the wound to healing.

with these dressings and the surrounding skin became very red and inflamed. The odour was very strong and could be smelt outside the patient's room. Management of wounds will typically depend upon the symptoms the patient is complaining of, e.g. pain, odour, amount of exudate, and the prognosis of the patient. In this case, pain was not a problem, prognosis was good, and the patient was in general good health despite her medical history. However, anaerobic organisms were resulting in odour and the priority was to remove or reduce this – removing the dead, sloughy tissue would facilitate elimination of the odour (Pudner, 1998).

Treatment with Cutimed Sorbact ribbon and Cutimed Sorbact dressing pad was commenced, with dramatic improvements. Odour diminished by day three, exudate was reduced and the surrounding skin was much improved by week two. The results were marked and were not expected so quickly. De-sloughing was an added bonus in this case and the dressing worked well on high-to-medium exudate levels.

The wounds started to reduce in size, which may have been partly due to the commencement of daily tamoxifen. Dressings were now changed twice-weekly and on week eight the wound was much smaller than in week one of the Cutimed Sorbact care plan (Figure 9). The ribbon was discontinued with only the dressing pads needing to be continued.

Pilonidal sinus wounds

The following two case studies feature patients with pilonidal sinus wound breakdown who had wide excision and primary

closure. This procedure is a common surgical problem that occurs in the natal cleft – it can be very painful and often affects younger patients (Stephen-Haynes, 2008). Location predisposes patients to infection, due to moisture and aerobic bacteria. These surgical wounds can take months to heal (Timmons, 2007).

Case study 5

This study features a 30-year-old male who experienced total breakdown of a pilonidal sinus wound at three weeks after closure by secondary intention. Sutures were removed 14 days post-operatively and the wound appeared to be healed. However, on return for a wound check seven days after suture removal, total wound breakdown was observed and the wound measured at 3cm long (Figure 10). As the author was new to Cutimed Sorbact at this time, it was not used as a first-line dressing, but she has since used the product in this way with good results. The treatment plan consisted of daily silver dressings for seven days, reviewed at day eight, then seven days of Cutimed Sorbact. On return for review on day 15, the wound was totally healed (Figure 11).

Case study 6

This study features an 18-year-old male who was experiencing a second episode of wide excision of a pilonidal sinus. The first episode had healed by secondary intension. The second episode of excision was closed with sutures, however, these came out after six days as they were loose and the wound was gaping (Figure 12). The patient was seen at the wound



Figure 12. Case study 6: gaping wound after excision of a pilonidal sinus.



Figure 13. Case study 6: after one week, the wound had begun to reduce in size.



Figure 14. Case study 6: the wound continued to improve.

clinic 12 days after the operation. The wound was very painful and inflamed – mainly sloughy – and the patient was taking analgesia, which helped to reduce the pain slightly. The treatment plan involved Cutimed Sorbact ribbon and increased analgesia.

After one week, the wound was smaller and there was 100% granulation (Figure 13). Thereafter, the wound continued to improve (Figure 14).

Conclusion

In the above case studies, Cutimed Sorbact (Figure 15) demonstrated that it can be an effective treatment for the management of different wound types when critical colonisation and signs of infection are observed. The dressing evaluated well and the case studies presented are only a small proportion of the patients who agreed to it being used in their care.

Cutimed Sorbact is worth considering for wounds at risk of infection due to location and aetiology – and also wounds that may be non-healing due to high levels of exudate.

The use of Cutimed Sorbact in combination with silver was due to inexperience on the authors' part, however, she would now consider using this product as a first-line measure before using any other antimicrobial dressing.

Any dressing has a cost implication and wound assessment is the key to accurate diagnosis and treatment. The author used this dressing because it reduces the microbial load in a wound without the use of antibiotics. Limiting the use of systemic antibiotics minimises the evolution of resistant strains of bacteria (Eisenstein, 2008). The Bristol Community Health Formulary now has Cutimed Sorbact included on its dressing formulary, but it also guides the nurse to use it for two weeks then review if there is no change, when more appropriate action should be taken. The nurse may need to



Figure 15. The Cutimed Sorbact dressing range.

refer to the wound care CNS for advice. If there are signs of improvement and progression using Cutimed Sorbact, then the nurse is advised to continue for a further two weeks. Holistic patient and wound assessment is the key to informing the nurse and directing management strategies which should always be evidence-based. [BN](#)

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KEY POINTS

- All acute and chronic wounds provide pathogenic micro-organisms with the opportunity to flourish.
- The majority of wounds are not infected, however, immediate clinical intervention is required when interactions between the micro-organisms and host disrupt the wound healing process.
- Cutimed Sorbact is a bacterial binding wound dressing and offers an alternative approach to the management of bioburden.
- In these case studies, Cutimed Sorbact was an effective treatment for the management of different wound types when critical colonisation and signs of infection were observed.
- All dressings have a cost implication and wound assessment is the key to accurate diagnosis and treatment.
- Holistic patient and wound assessment is the key to informing the nurse and directing management strategies which should be evidence based.