A pilot study of Cutimed® Sorbact® versus ACTICOAT™ versus Silverlon® for the treatment of burn wounds in a South African adult burn unit

Kleintjes WG, MBChB, MMed, FCSA, PhD
Head of Adult Burns Unit, Emergency Medicine Registrar, Houseman
Mediclinic Louis Leipoldt, Bellville, Cape Town
Schoeman D, MBChB; **Collier L,** MBChB
Correspondence to: Wayne Kleintjes, e-mail: nate@mweb.co.za
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Abstract

Background: Since significant clinical data are unavailable on the use of Cutimed® Sorbact® in burns, a decision was taken to test it against the best anti-infective dressings used in our burns unit.
Method: A random prospective study was conducted in which Cutimed® Sorbact® was compared with control products, ACTICOAT™ and Silverlon®. Selected patients had partial- or full-thickness burns.
Results: Thirteen patients were included in the pilot study. Fifty-seven dressing areas were tested. A statistical difference between the tested product and the control products was not found through either clinical observation or microbiological analysis.
Conclusion: This pilot study confirmed that the Cutimed® Sorbact® dressing was safe when treating burn wounds over a three-day period. In addition, the potential to use it on earlier or fresher burn wounds warrants the further study of Cutimed® Sorbact® as a potential skin substitute

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Introduction

The Tygerberg adult burns unit provides a level three provincial service for severe burns. Burn patients aged ≥ 12 years are admitted. Annually, approximately 300 patients are treated, of whom 110 are intensive care unit (ICU) admissions. The burn unit has bed capacity for 22 patients, six of which are intensive care beds and the rest ward beds. Adequate operating time is available to optimally manage about 50% of the patients weekly. Management of the patients is compromised in the colder period from April to September, owing to severe workload demands and a lack of resources.

As an academic hospital, associated with Stellenbosch University, the burn unit has a responsibility to expose medical students and registrars to a wide range of burn care products and wound care methods. Cost-effective therapies are required to manage the patients as there are limited financial resources.

Cutimed® Sorbact® was introduced into the Tygerberg burn unit for use on burn wounds in 2013. It is a relatively inexpensive dressing, and was used in the unit at central line sites as part of the ICU central line-associated bloodstream infection prevention protocols. Owing to lack of experience with Cutimed® Sorbact® on burn wounds, and because available specific burn wound clinical studies have not been published in peer-reviewed burn journals, it was decided to conduct a random, prospective, clinical pilot product study to compare Cutimed® Sorbact® in a clinical environment with well-established antiseptic dressings for burns, namely ACTICOAT™ and Silverlon®.

Cutimed® Sorbact® is marketed as a dressing with antibacterial activity and a lipophilic (hydrophobic) active molecule DACC (dialkylcarbomyolchloride) which binds irreversibly to the bacterial cell walls.[1-7] The bacteria do not disintegrate and toxin is not released into the wound bed.[3] Cutimed® Sorbact® leaves non-hydrophobic microorganisms in the wound to stimulate healing. There is a low likelihood of bacteria spreading during a dressing change.[3] It is also non-allergenic. There is optimal microbiological binding capacity in a moist environment, and no risk of antibiotic resistance or allergies developing.[3] The clinical indications for burn wounds are not well defined and are presented in Table I.[1-13]

Table I: A summary of the literature review on wounds to which Cutimed® Sorbact® has been applied

Year	Reference	Descriptor	Number of patients	Results
1985	Wadström et al[1]	*Staphylococcus aureus* treated in a pig		
1986	Wadström et al[1]	Faster wound healing	12	Non-healing wounds (ulcer, burn and diabetic)
1990	Meberg and Schoyen[6]	Umbilical cord infection	1 400	No increased infection
1990	Friman[2]	Chronic wounds	31	69% of the infection went, 31% was the same or worse
2009	Powell[4]	Different chronic wounds	6	100% reduced infection
2008	Kammerlander et al[7]	Different ulcers and 2% burns	116	81% success with regard to treated infection
2010	Skinner and Hampton[8]	Diabetic foot	4	All healed
2010	Derbyshire[9]	Leg ulcer follow-up	3	100% better
2011	Gentili et al[10]	Chronic wounds	15	There was less bacteria in 10 of the 15
2012	Nielsen and Andriessen[11]	Diabetic and surgical wounds	60	Adherence and pain (Cutimed® Sorbact®)
2012	Falk and Ivarsson[12]	Fibroblast in vitro	1**	50% > profliferation, 100% > healing < 72 hours
2014	Jeffrey[13]	NPWT wounds		Used as a filler and liner

NPWT: negative pressure wound therapy
*controls, **: model and control

Wadström et al reported using Cutimed® Sorbact® on infected burn wounds, but clinical details of the outcome were not provided, except that the dressing was effective.[5] Kammerlander et al reported using the dressing on burns (2% of 116 patients), but did not report on the specific burn outcome in a multicentre observational study.[7] ACTICOAT™ is a nanocrystalline-impregnated silver dressing, and is considered to be a very effective antimicrobial dressing which releases ionised silver radicals which effectively kill more than 90% of surface bacteria within 30 minutes.[14] It then releases silver slowly for sustained bacterial killing for three days, depending on the composition. Variations are on the market, such as ACTICOAT™ [7], release silver ions over a seven-day period. Classic ACTICOAT™ was chosen for this study, and is active for three days. Silverlon® is a particulate or metallic-containing silver dressing and releases silver ions when moistened.[15] Since many new products are presented to surgeons and clinicians each year, selecting a dressing is overwhelming.[4] It was decided in 2013 to conduct a random prospective clinical pilot product study in which Cutimed® Sorbact® was compared with two control products, i.e. ACTICOAT™ and Silverlon®.

Method

The study inclusion criteria were random patient selection, with the presentation of partial- or full-thickness burns. Patients were also selected if all three dressings could be used simultaneously at the same burn site with a similar depth burn.

A laser Doppler anemometry system was not available to standardise the depth assessment. Therefore, the selection of the burn area was made by the senior author, who has more than 12 years' experience as a specialist plastic and reconstructive surgeon.

The study excluded patients who were to undergo an operation within ≤ 3 days.

The selected burn wound was covered by the three dressings, applied next to one another. The Cutimed® Sorbact® was placed in the middle, separating the two silver dressings (Figure 1).

Additional areas were selected in patients where an individual dressing was applied on its own for the purposes

Figure 1: The application of the dressings

Table II: Clinical data pertaining to the Cutimed® Sorbact® study

	Cutimed® Sorbact®	ACTICOAT™	Silverlon®
Control test area			
Patient 1	Moist, red, clean and pink	Mucoid, sloughy and red, with biofilm	Mucoid, slough, biofilm, pale
Patient 2	Clean and pink,with a slough border	Large slough, orange	Slough +, pink islands
Patient 3	Granulation, clean, with small slough	Pink, red, with slough patches, clean	Pink, red, clean, exudate
Patient 4	Red, pink and clean	Red, pink and clean	White, pink, red patches, clean
Patient 5	Less slough, thin and pink	Slough, clean, with pink edges	Clean, thin slough, pink edges
Patient 6	Red, pink, smooth, with biofilm	Red and pink, with slough areas and biofilm	Red, pink, slough, biofilm
Patient 7	Pink and healed	Argyria, healed	Crusting, healed
Patient 8			
Patient 9	Pink, and with papillae and thin slough	Pseudoslough, with slough	Pink, pseudoslough, clean
Patient 10	Pink and healthy, with small slough	Bleeding, healing, with slough, deep	Bloody, wet, pink, thin slough
Patient 11	Pink and red	Pink, red and clean	Pink, pale, hypergranulation
Patient 12	Pink, with crusting, and no biofilm	Pink, with crusting and no biofilm	Pink, crusts and no biofilm or infection
Patient 13	Clean and red, with no infection or biofilm	Clean and red, with no infection or biofilm	Clean and red
Separate test area			
Patient 1	Moist, clean, pink, red and healing	Clean, pink and red	Clean, dry, with deep slough and biofilm
Patient 2			
Patient 3			
Patient 4	Healed and pink	Healing, pink	Not seen on the photograph
Patient 5			
Patient 6			
Patient 7			
Patient 8			
Patient 9	Clean, dry, with slough, but no infection	Clean and dry, with slough and no infection	Clean and dry, with slough and no infection
Patient 10	Clean, with dry slough and pink edges	Pink, with thick slough > Cutimed® Sorbact®	Red, pigment return, with a raw patch
Patient 11	Pink, with minute bleeding	Stained slough, with red edges	Pink, with grey psoudoslough
Patient 12	Pink and red, with a small crust	Pink, red and clean	Slough, clean
Patient 13			

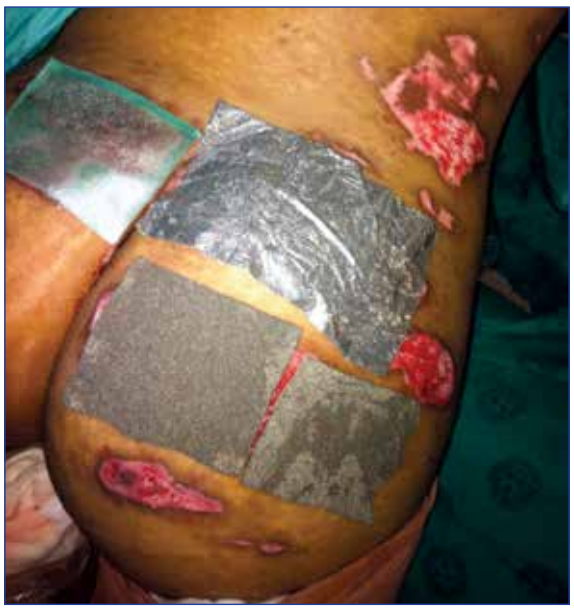

Figure 2: The three dressings were also tested independently on the wounds, separated by normal skin inbetween (separate test areas referred to in Table II), to obtain additional clinical data

of obtaining additional clinical data from single areas, i.e. moistness, infection, epithelialisation, colour, granulation and slough (Table II and Figure 2).

A photograph using a 5-megapixel camera was taken before each dressing and after removal of the dressing by the first author in all cases, except two, when the co-authors took the photographs. Three pus swabs were taken from the areas under the three dressings for microscopy, culture and sensitivity (MCS) using the Levine technique. This is a process of cleaning or rinsing with saline, and then pushing the pus swab gently into the central wound until deep exudate is absorbed, then turning it 360 degrees.

The Department of Microbiology at Tygerberg Hospital was not informed of, i.e. was blinded to, the study protocol, to allow for objective assessment of the swabs. Wound assessment was performed by the first author in conjunction with the co-authors. Wound bed appearance, slough, pus, biofilm, granulation, epithelium, smoothness and colour were assessed. The results of the microbiological blinded

assessment were determined in relation to the clinical results recorded by photography.

Consent from the Tygerberg Hospital medical superintendent was obtained prior to the study being conducted. The research was performed in line with the World Medical Association Declaration of Helsinki ethical guidelines. Patients consented to the use of their photographs for recording, research and medical education purposes.

McNemar's chi-square test was used for statistical analysis by the Department of Statistics at Stellenbosch University. Only two dressings at a time were compared using McNemar's chi-square test. Therefore, for every parameter evaluated, the test was performed for two different dressings only, e.g. the test was carried out for slough as follows: Cutimed® Sorbact® versus ACTICOAT™, Cutimed® Sorbact® versus Silverlon®, and finally ACTICOAT™ versus Silverlon®. Therefore, McNemar's chi-square test was carried out 3 x 5 times on the three dressings for the five clinical parameters that were evaluated. The clinical wound data had to be converted to numbers. The evaluated clinical parameters were given either the number "1" or "0". If the parameter assessed was present, it was given a "1", and the number "0" if not present. For example, if slough was present, it was given a "1". If no slough was found, it was given a "0". This is an obvious simplification of the results, and doesn't account for a range of results across the spectrum of clinical changes for a given assessed parameter.

Results

Thirteen patients were included in the pilot study. The original target was 20 patients for the first part. Fifty-seven dressing areas were tested. This included 39 (three wound areas x 13 patients) control test areas, and an additional 18 separate remote burn areas in the first six patients where the three different dressings were tested independently.

The average age of the patients was 33 years old, and ranged from 16-58 years. More women (eight) than men (five) were randomly included in the study. The average total body surface area (TBSA) percentage was 22. Four patients had a TBSA larger than, or equal to, 30%. The TBSA ranged from 10-30% for the other nine.

On average, dressings were applied 14 days after occurrence of the injury. On average, dressings were applied 18 days after the initial injury for the first five patients, and 13 days after the initial injury for the last seven patients. Most of the injuries sustained were as a result of flame burns (9/13) (69%). Scald burns accounted for the other cases (4/13) (Table III).

The details of each wound evaluation are recorded in Table II, while the wound variables for the three dressings are compared in Figure 3. Statistical significance was not indicated following McNemar's chi-square test (Table IV). The Silverlon® wounds appeared to be clean in five patients, although there was a thin slough area in one patient (patient 5). The clean appearance was comparable only in three instances for all three dressings on the same patient (patients 3, 4 and 13). The clinical appearance of the wound differed between the three dressings in nine of the 13 patients. However, the result was not statistically significant, with a p-value above 0.050. There was a marginal increase with respect to the clean appearance of the wound with the use of Cutimed® Sorbact®, in comparison to that achieved with the silver dressings. Slough was present in the Cutimed® Sorbact® dressing in four patients. Slough was also present in one of these wounds prior to the dressing application of a full-thickness burn area. Slough was found in five patients when ACTICOAT™ was used, and in five patients when Silverlon® was applied. Marginal slough reduction was achieved using Cutimed® Sorbact® in comparison to that

Table III: The demographic study data

Age	Sex	% TBSA	Mechanism	Injury date (2013)	Dressing date (2013)	Days after injury	MCS report
16	Female	35	Flames (house)	21 July	16 August	30	Yes
30	Male	50	Flames (shack)	23 August	28 August	5	Not reported
36	Female	30	Flames (stove)	30 July	30 August	30	Yes
58	Female	12	Hot water	20 August	30 August	10	Yes
33	Male	17	Flames	30 August	Not reported	Not reported	Yes
57	Female	10	Flames (stove)	1 August	15 August	14	Not reported
27	Female	10	Flames	4 September	7 September	3	Yes
33	Male	12	Flames (shack)	18 September	23 August	5	Yes
29	Female	15	Hot water	1 October	4 October	3	Not reported
23	Female	10	Hot water	24 September	4 October	11	Yes
17	Female	46	Flames	13 September	3 October	20	Yes
35	Male	15	Hot water	2 October	4 October	2	Yes
36	Male	18	Flames	31 August	7 October	38	Not reported

MCS: microscopy, culture and sensivity, TBSA: total body surface area

Table IV: The McNemar chi-square test was used to compare wound variables for each dressing

McNemar chi-square	Clean	Slough	Biofilm
Cutimed® Sorbact® versus ACTICOAT™	0.500 df = 1, p-value = 0.479	0.000 df = 1, p-value = 1.000	0.000 df = 1, p-value = 1.000
Cutimed® Sorbact® versus Silverlon®	0.250 df = 1, p-value = 0.617	0.000 df = 1, p-value = 1.000	The values were exactly the same between the two dressings which indicates no difference in result, i.e. the same result, so no p-value
ACTICOAT™ versus Silverlon®	0.500 df = 1, p-value = 0.479	The values were exactly the same between the two dressings which indicates no difference in result, i.e. the same result, so no p-value	The values were exactly the same between the two dressings which indicates no difference in result, i.e. the same result, so no p-value

df: degree of freedom

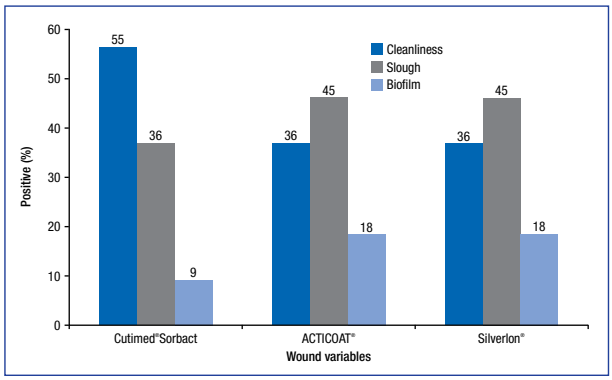

Figure 3: A comparison of the positive wound variables assessed per dressing, and expressed as a percentage

accomplished using the silver dressings. A shiny biofilm-like appearance was present in one instance with Cutimed® Sorbact®, twice with ACTICOAT™, and twice with Silverlon®. Significantly, a marginal increase in biofilm reduction was achieved using Cutimed® Sorbact®, in comparison to that accomplished with the silver dressings (Figure 3).

Good healing was demonstrated in the areas where the dressings were tested separately from one another (using all three products). Separate control areas were tested in six patients. One patient's post-dressing photographs could not be found. The Cutimed® Sorbact® wound was reported to be clean in seven of the wound datasets on the 12 patients, including the healed wound of patient 7 (Table II). Figure 4 a and b depicts the results of two of the patients after removal of the dressings. The wounds appeared to be clean in five of the 12 patients, including the healed area on patient 7, with the use of ACTICOAT™, in comparison to that of Cutimed® Sorbact®.

MCS was performed in nine of the 13 cases (69%). Pus swab results were not reported for four of the nine patients (31%). MCS results were adequately reported in nine of the 13 cases. The pus swabs were performed, but not reported, for three patients, and only one pus swab was reported for one patient. Cultured bacteria were reported in seven of the nine patients (78%). Growths were not reported in two of the nine patients (22%). Bacteria was observed on microscopy

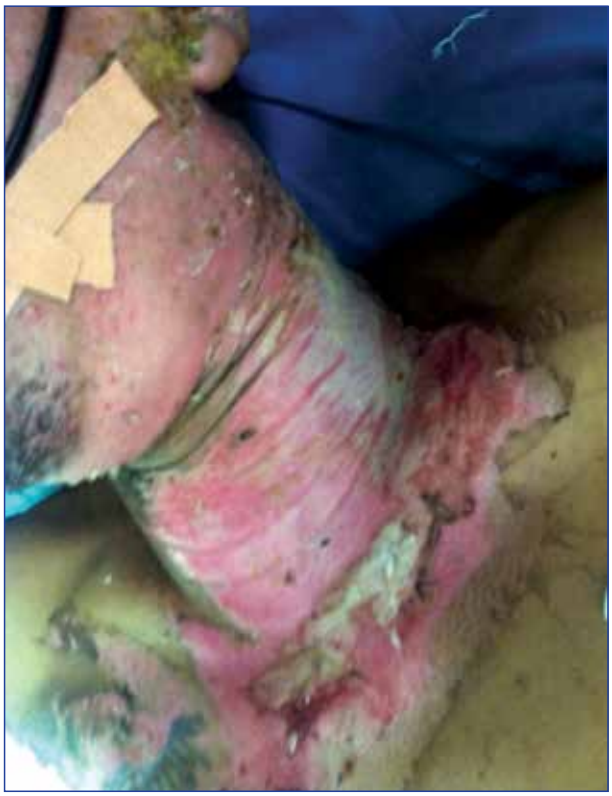

Figure 4a: Results for one of the patients after removal of the dressings

Figure 4 b: Results for another of the patients after removal of the dressings

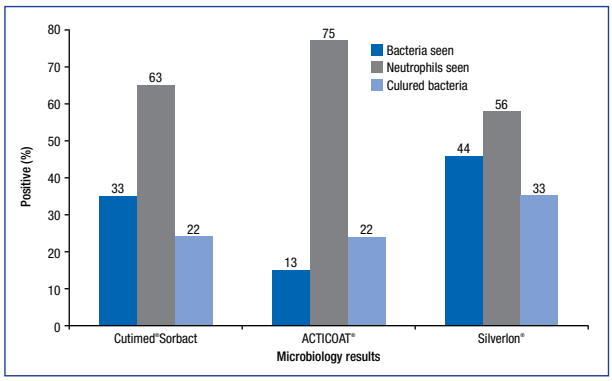

Figure 5: The microbiology paramenters reported as a positive percentage for the different dressings assessed

in three of the nine cases (33%) with Cutimed® Sorbact®, in one of eight cases (13%) with ACTICOAT™, and in four of nine cases with Silverlon®.

The function of neutrophils is to remove foreign material, bacteria, non-functional host cells and damaged matrix components which may be present at the wound site. Seventeen neutrophils were present in five of the nine cases (56%) with the use of Cutimed® Sorbact®, in six of the eight cases (75%) with ACTICOAT™, and in five of the nine cases (56%) with Silverlon®. Statistical analysis of the microbiology data, whereby two products were compared at a time using McNemar's chi-square test, revealed no statistical difference between any of the datasets, as illustrated by Figure 5 and Table V. The microbiology results are summarised in Table VI.

Swabs were taken from the wound, and bacteria cultured in six of the nine cases (66%) with Cutimed® Sorbact®. Two of these cultures were from normal skin flora, and one was reported as a mixed growth. Therefore, three of the nine (33%) were significant. Bacteria were cultured in five of the eight cases (63%) with ACTICOAT™. One of these cultures was from normal skin flora, and one was reported as a mixed growth. Proteus mirabilis was grown in both the other dressings. This result was not reported for unknown reasons. Therefore, two of the cases cases (25%) were significant positive cultures, and omission of the report on the patient with P. mirabilis (case 7 in Table VI) could have had a serious impact on the overall impression of the effectiveness of the dressing. (Three of the eight equates to a 38% incidence for ACTICOAT™, compared to an incidence of 33% with Cutimed® Sorbact®). Bacteria were cultured in seven of the nine cases (78%) with Silverlon®. Two of these cultures were from normal skin flora, and one was reported to be a mixed growth.

Table V: McNemar's chi-square values obtained for the different microbiology assessment parameters

McNemar's chi-square	Bacteria seen	Neutrophils seen	Cultured bacteria
Cutimed® Sorbact® versus ACTICOAT™	0.500 df = 1, p-value = 0.479	0.000 df = 1, p-value 1.000	The values were exactly the same between the two dressings which indicates no difference in result, i.e. the same result, so no p-value
Cutimed® Sorbact® versus Silverlon®	0.000 df = 1, p-value 1.000	0.500 df = 1, p-value 0.479	0.000 df = 1, p-value = 1.000
ACTICOAT™ versus Silverlon®	0.500 df = 1, p-value 0.479	0.000 df = 1, p-value = 1.000	0.000 df = 1, p-value 1.000

Table VI: The microbiology results of the Cutimed® Sorbact®, ACTICOAT™ and Silverlon® study

Patient number	Cutimed® Sorbact®	ACTICOAT™	Silverlon®	Wound dressing day after injury
1	Scanty N, GNB and mixed growth	Scanty N, GPC, GNB and mixed growth	Scanty N, GNB and mixed growth	26
2	Not reported			
3	Scanty N, No B seen, and MR PA	Scanty N, no B and PA	Scanty N, no B and MR PA	30
4	No N, no B, no growth	Scanty N, no B, no growth	Scanty N, GPC, IR PA and SA	19
5	No N, no B, no growth	No N, no B and no growth	No N, no B and no growth	4
6	Not reported			
7	No N, no B, and scanty *Proteus mirabilis*	Not reported	No N, GNB and *Proteus mirabilis*	2
8	No N, scanty GPC and skin flora	No N, no B and skin flora	No N, no B and skin flora	5
9	Not reported			
10	Moderate N, no B and no growth	Scanty N, no B and no growth	Scanty N, no B and no growth	10
11	Moderate N, GPC, GNB, PA, SF	Scanty N, no B and scanty PA	Scanty N, GPC and MRSA	20
12	Scanty N, no B and skin flora	Scanty N, no B and no growth	Scanty N, no B and no growth	2
13	Only one swab reported			

B: Bacteria, IR PA: Intermediate Resistant Pseudomonas Aeruginosa, N: Neutrophils, GNB: Gram Negative Bacilli, GPC: Gram Positive Cocci, MR PA: Multi-resistant Pseudomonas Aeruginosa, MRSA: Methicillin-resistant Staphylococcus aureus, SA: Staphylococcus aureus, SF:Serratia fouticola

Therefore, four of the nine cases (44%) were significant. Resistant bacteria (multi-resistant Pseudomonas aeruginosa in case 3 in Table VI) were cultured in one of the nine cases (11%) using Cutimed® Sorbact®, in three of the nine cases (33%) using Silverlon®, and in none of the eight cases (0%) using ACTICOAT™. An equivalent amount of bacteria was cultured using Cutimed® Sorbact® and ACTICOAT™.

Clinically significant bacteria were detected as follows:

- *Cutimed® Sorbact®: P. aeruginosa* in two patients, and *P. mirabilis* and *Serratia fouticola* in two other patients.
- *ACTICOAT™: P. aeruginosa* in two patients
- *Silverlon®: P. aeruginosa* in two patients, *Staphylococcus aureus*, methicillin-resistant *S. aureus* and *P. mirabilis* in three other patients (Table VI).

Discussion

The microbiology department of Tygerberg Hospital was not informed of the study protocol in order for blinded objective results to be obtained from the pus swabs. Resistance was experienced from the microbiology laboratory with regard to analysing and reporting on three specimens from three patients, which resulted in the specimens not being analysed, as reported in Table VI. Personnel in the microbiology department were later informed of the study after they made repetitive enquiries and after indicating ongoing unwillingness to conduct three tests simultaneously on the same patient. Therefore, the pilot study was terminated when the microbiology department only reported on one of the three pus swabs. The efficacy of the control areas could also be challenged in terms of the results that were obtained as the dressings were placed adjacent to one another, and thus could have influenced one another. Therefore, additional separate areas for dressing applications, chosen in the first six patients, were included, in addition to the control test areas.

Having the control and study dressings on the same-depth burn wound in the same area was considered to be the best choice for a comparative study of the dressings because this decreased the variables (for example, local oedema, inflammation and infection), which might have affected testing at the different sites.

TBSA was not a factor that was taken into consideration when making a choice about the type of dressing used because wound size is not a reliable factor with respect to differentiating between degrees of antibacterial efficacy. Initially, the dressings were tested on patients with "old" wounds, i.e. more than 18 days old, as reflected in the results. (On average, dressings were applied 18 days after the initial injury for the first five patients). Selecting patients with "older" wounds was a safety measure. This is because it was assumed that in older, more established burn wounds with potentially deep-sited infection, if any potentially bad effects on the wound were to result following the application of the Cutimed® Sorbact® dressing, such as increased infection or delayed healing, the potential complications would not be as clinically significant as they would be in a fresher burn wound (≤ 13 days), when less or no infection is suspected.

As confidence in the ability of the Cutimed® Sorbact® dressing to compete with that of ACTICOAT™ and Silverlon® grew, the dressings were applied on "younger"wounds (≤ 13 days). On average, dressings were applied seven days after the injury for the last six patients, excluding patient number 13, who was treated on day 38 after injury. The earliest that dressings were applied was on day 2 for one patient, and on day 3 for two patients. It became apparent following the successful use of Cutimed® Sorbact® that it was a good dressing for partial-thickness burns, where it acted as a temporary skin substitute, with antibacterial properties. Cutimed® Sorbact® can be classified as a skin substitute, similar to Suprathel®, which has antibacterial properties. In comparison to Suprathel®, Cutimed® Sorbact® is relatively inexpensive, and therefore highly cost-effective as a skin substitute. However, Cutimed® Sorbact® is not sticky, and is less effective than Suprathel® when this characteristic (cut and paste) is preferred, for example, when applying it to rounded or folded surfaces where a dressing which sticks is easier to apply.

The similarity group in the microbiology reports could possibly be owing to unenthusiastic reporting by the microbiology laboratory. As mentioned, resistance was experienced with respect to analysinbg and reporting on all of the specimens, a few of which were also subject to refrigeration. Thus, the reliability of the reports with respect to patients 10 and 11 (Table VI) was acknowledged to be questionable by the microbiology department.

The close correlation in the degree to which slough was present under the dressings (Cutimed® Sorbact®,[4] ACTICOAT™[5] and Silverlon®[5]) implies that the Cutimed® Sorbact® dressings did not compromise wound healing more so than the silver dressings. Cutimed® Sorbact® was not associated with statistically significantly less slough on the wounds from the observed analysis. The clinical appearance of a biofilm layer on the wound was less visible with Cutimed® Sorbact® (one case) than with ACTICOAT™ (two cases) and Silverlon® (two cases), which is not statistically significant. A meta-analysis of the Cutimed® Sorbact®/hydrophobic dressing clinical study results is presented in Table I. The sample number of patients would need to be increased for a more conclusive study. Only 13 patients were included in the study, but 57 wounds were analysed (3 wounds x 13 patients' test control areas + 3 wounds x 6 patients' individual control areas), which can be considered to be a significant number.

Statistical analysis using McNemar's chi-square test limited the information studied by simplification of the results to a number given for the presence ("1") or absence ("0") of a tested parameter. No variations in, or degrees of, the parameters, were taken into account. Therefore, the full clinical picture, as given in the broader description, cannot be appreciated fully by the statistical analysis. It was difficult to estimate the reliability of the microbiology reporting, considering acknowledgement by microbiology department personnel that some of the specimens were refrigerated.

Conclusion

This pilot study was valuable as the results confirm the impression that the clinical efficacy of Cutimed® Sorbact® in healing burn wounds is comparable to that of ACTICOAT™ and Silverlon®. Also, this study was the first prospective study to investigate Cutimed® Sorbact® use in burn wounds only. The potential of using Cutimed® Sorbact® on newer or fresher burn wounds, with respect to its ability as a skin substitute, warrants further study.

Conflict of interest

The authors state that there was no personal or financial relationship with an organisation or people which could have inappropriately influenced this work.

Declaration

The Department of Surgery at Tygerberg Hospital (Stellenbosch University) covered the financial expenses pertaining to the study, for which the authors are very grateful. Any other form of payment was not received from any organisation or trade body. This study was conducted independently in the authors' unit.

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