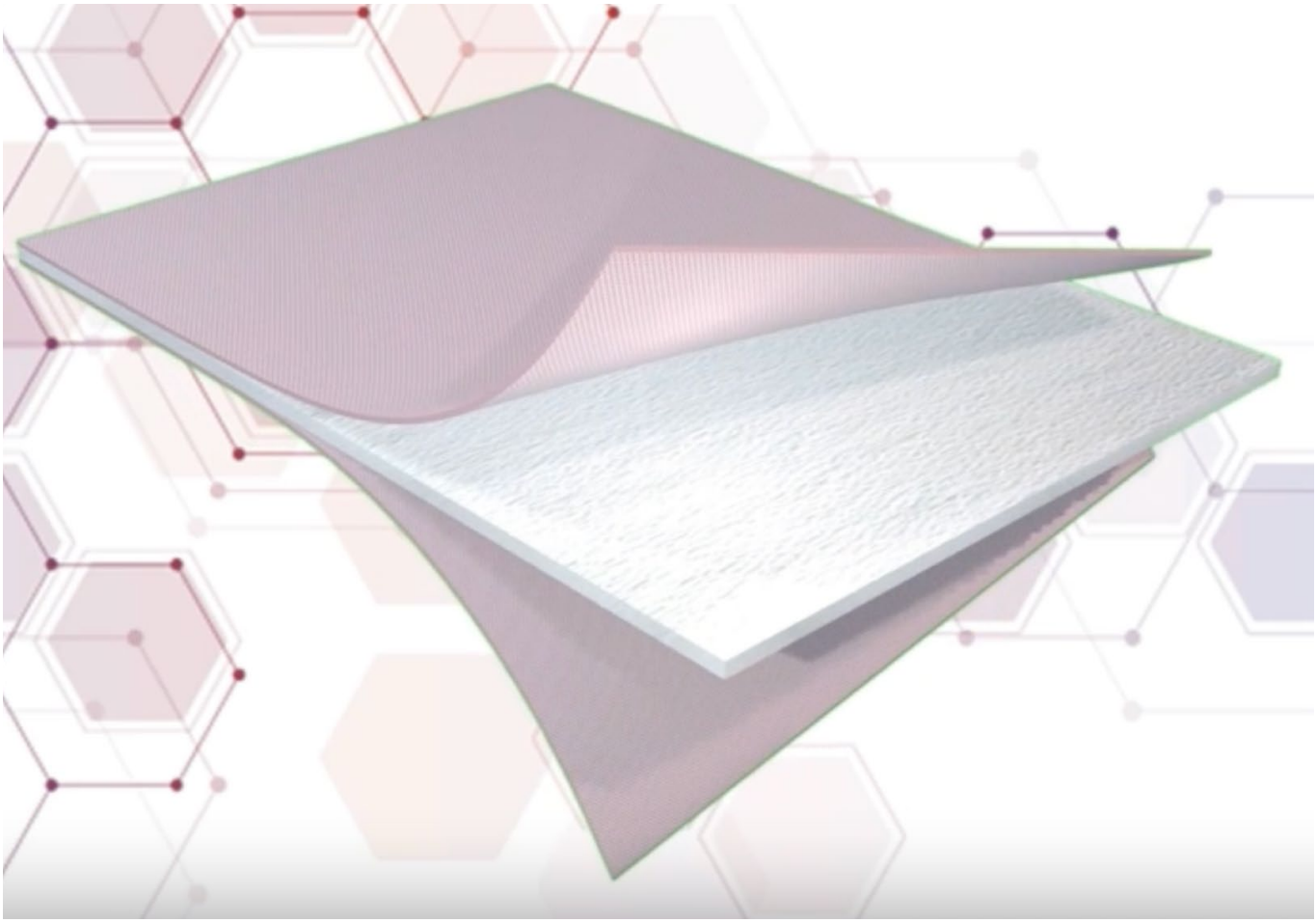
XLTA® CURE WOUND CARE RANGE
SUPER ABSORBENT • HYDROCAPILLARY • NON-ADHERENT WOUND DRESSING

CLINICAL WHITE PAPER



# EVALUATION OF EFFICACY FOR A HYDROCAPILLARY DRESSING (XLTA) on the Treatment of Burn Wounds

An observational cohort study from a South African tertiary burn center

ABSTRACT REPACKAGED FOR DECISION-MAKERS

# Executive Summary

## Background

Hydrocapillary dressings have gained clinical traction due to their ability to absorb exudate, promote autolytic debridement, prevent infection, increase patient comfort, and create optimal conditions for epithelialization, factors that are critical for positive healing outcomes. The purpose of this study was to investigate the efficacy of a hydrocapillary hydroconductive dressing (XLTA) on high exudating burn wounds at a tertiary burn center in South Africa.

## Methods

This study reports the results of an observational cohort trial involving 62 patients treated with the XLTA bandage for a variety of burn wounds. Ten total wound assessment parameters were analyzed pre and post-treatment including biofilm, exudate, moistness, epithelialization, slough, infection, colour, size and site, odour, and swab need.

## Results

This trial took place from September 2021 to July 2024, with an average TBSA of 29.7%. Initial results show that the XLTA dressing was able to make improvements to all 10 assessment parameters, with no instances of biofilm, excessive exudate, slough, infection, odour, or other negative healing outcomes after treatment.

## Conclusion

This trial provides compelling preliminary evidence for the efficacy of the XLTA dressing within a variety of burn wounds. However, the trial lacks a typical hydrocolloid or paraffin dressing control group that would be considered a more standard dressing type. Future research should focus on comparisons of XLTA to alternative dressing options, additionally gathering more empirical quantitative data when possible.

### Study at a Glance

- **Study period:** September 2021 to July 2024
- **Patients:** 62
- **Average TBSA:** 29.7%
- **Assessment parameters:** 10
- **Treatment setting:** South African tertiary burn center
- **Observed change:** Improvement across all 10 parameters

**0 reported**
BIOFILM AFTER TREATMENT

**0 reported**
SLOUGH AFTER TREATMENT

**0 reported**
INFECTION AFTER TREATMENT

CLINICAL CONTEXT

# Introduction

Burn injuries remain a significant global public health burden. In the United States alone, medical costs in addition to productivity losses due to burn injuries is estimated to be $7.6 billion USD annually [1]. In 2021 the global prevalence of burn injuries was 248.33 million cases worldwide, with severe burns accounting for over 5% of that number [2]. Additional analyses predict a 233.4% increase in severe burns and a 142.5% increase in mild burns by 2025 [2]. Burn wound healing is complex in nature, including a multistage healing process [3]. Dressing type for these wounds can play a crucial role in the healing process. Some common types of dressings include paraffin/Vaseline® dressings (to avoid adherence and provide moisture), hydrogels (to promote cooling and provide moisture), hydrocolloid (absorbs exudate, forms a gel layer, and supports autolytic debridement), and silver containing dressings (aid in infection) [4,5,6].

In partial- and full-thickness burn wounds, the dressing choice is driven by the need to maintain a moist healing environment, limit dressing adherence for atraumatic application and removal, manage excessive exudate, and mitigate infection. Paraffin non-adherent gauze is often the bandage of choice as a simple contact layer that reduces adherence and protects the fragile epithelium layer. However, this dressing typically requires a secondary absorbent layer and possible increased frequency of changing if the wound is highly exudative. RCTs (randomized controlled trials) evidence synthesis has shown that outcomes with paraffin dressings are often comparable to other basic dressings, although this result is limited by study quality and often contains biases [7].

This shows that wound characteristics play a strong role in the selection of routine care.

> ***No single product is optimal for all burns and dressing change pain, frequency, and feasibility are major determinants for real-world effectiveness [10].***

Hydrocolloid dressings provide a moist environment that can possibly support autolytic debridement by forming a gel with the wound fluid. This dressing type is less suitable in highly exudating wounds or when infection is suspected. Across five RCTs, hydrocolloids show similar healing outcomes to paraffin dressings. The certainty of evidence remains low [7].

Hydrogels are commonly emphasized for first aid and early burn management because their water content promotes evaporative cooling which can be useful when prolonged running water is not feasible (mass casualty, minimal resources). Hydrogels can help reduce pain and protect the wound from external contamination, but the actual clinical benefit often varies by treatment setting. Hydrogels may still require secondary dressing depending on site and exudate levels. Systematic review of superficial/partial-thickness burns suggests that hydrogels can heal faster than some usual care options, but the trials disagree on the magnitude and offer low certainty [4].

When infection risk is the main concern, clinicians often default to silver-containing dressings. These are used for their topical antimicrobial activity, and when compared to SSD cream reviews report comparable healing outcomes but with benefits such as fewer resources used and less frequent dressing changes [8,9]. Current ISBI (International Society for Burn Injuries) guidelines suggest matching dressing to burn depth, exudate levels, and infection risk. They note that no single product is optimal for all burns and that dressing change pain, frequency, and feasibility are major determinants for real-world effectiveness [10].

DEVICE DESIGN

# Product Overview and Mechanism of Action

The XLTA dressing is composed of three distinct layers: the two outer non-adherent layers, which protect the wound and ensure patient comfort, and a central hydrocapillary layer that absorbs exudate. The middle layer is a super absorbent hydrocapillary layer which is said to provide the wound with necessary conditions for a rapid recovery in both acute and chronic scenarios.

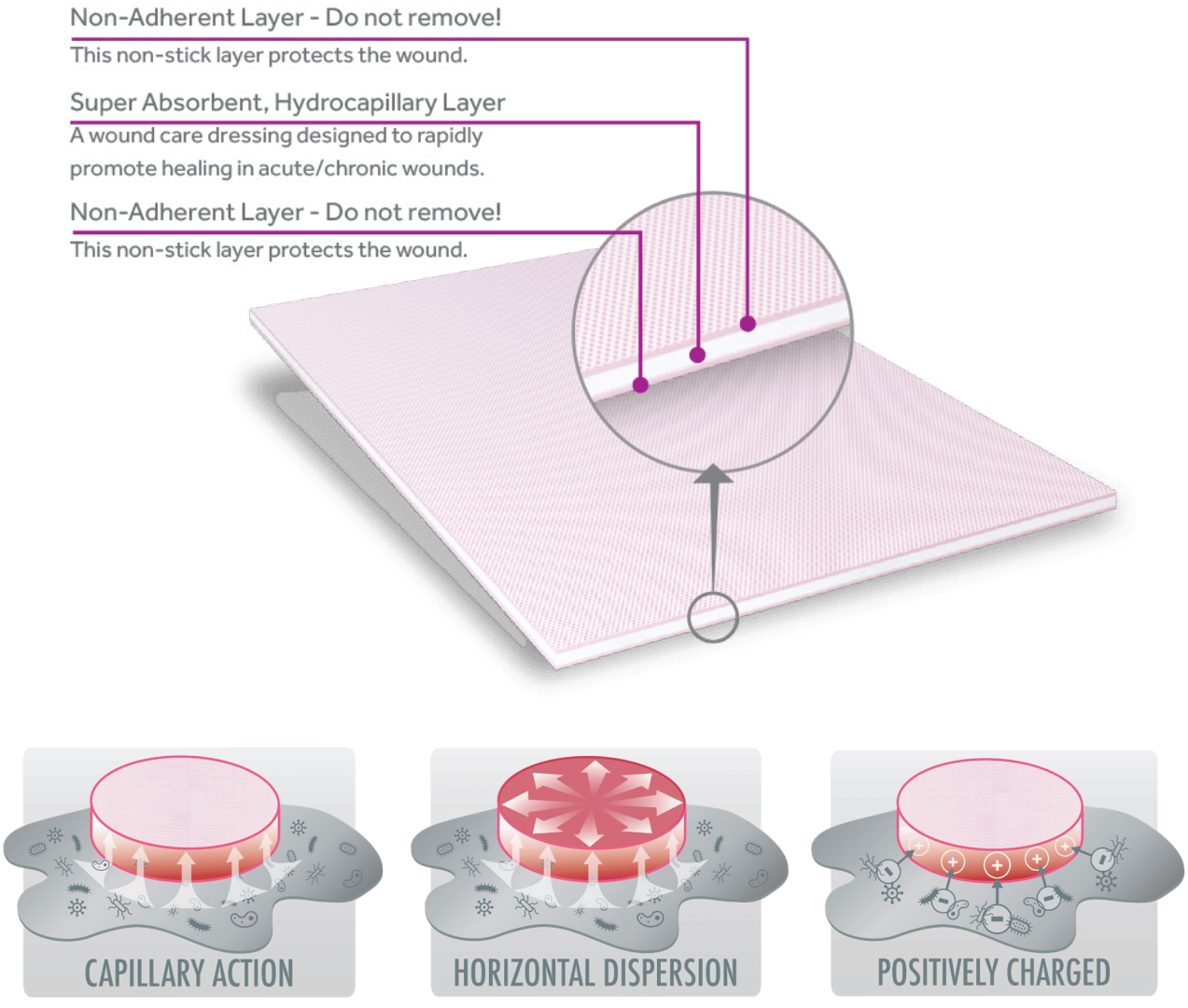
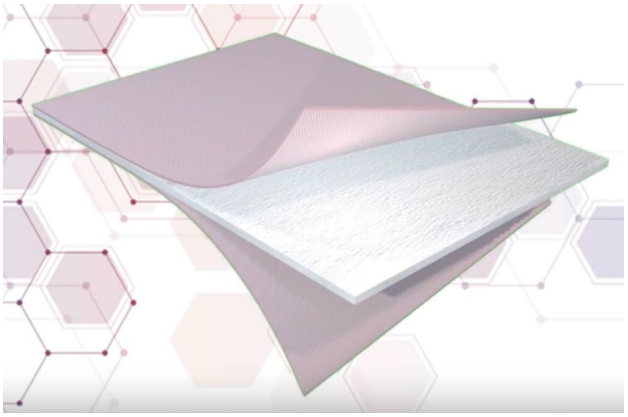



***Figure 1 and Figure 2.*** *Schematic representation of the XLTA dressing, its tri-layer construction, and the proposed mechanisms of action.*

The proposed mechanisms of action for the XLTA bandage induce capillary action, horizontal dispersion, and a negative charge pulling action for wound moisture management. The capillary action stems from the innermost layer which draws up excessive exudate, creating a wound bed with proper moisture levels, which is critical for epithelialization [11]. This capillary flow of fluid into the bandage is accompanied by horizontal dispersion, which evenly distributes the fluid matrix through the bandage and its layers. This prevents fluid pooling and traps bacteria along with necrotic tissue away from the wound. The positive charge of the fiber throughout the bandage attracts negatively charged bacteria, cytokines, and matrix metalloproteinases (MMPs), which likely aid in debridement and overall reduce bioburden [12].

The XLTA dressing is available in the following sizes: 2×2”, 3×3”, 4×4”, 6×8”, 8×8”, 4×39”, and 8×39”. All sizes are available in three variants: XLTA Max: 340 GSM; XLTA Super: 640 GSM; and XLTA Ace: 750 GSM. The XLTA product variants are differentiated by basis weight (GSM), which reflects dressing density and correlates with fluid-handling capacity across varying wound exudate levels.

XLTA introduces a hydrocapillary, hydroconductive dressing for exudating wounds. Related studies on the evaluation of hydroconductive dressings assessed the absorption of fluid and sequestering of bacteria over a 24-hour period. To do so, sequestering was monitored using standard plate counting methods and visualized with scanning electron microscopy.



Here, the hydroconductive dressing was shown to absorb eight times its weight in fluid and had a 90% decrease in bacteria over the 24 hours [13]. When looking at real world patient applications, previous research on high-exudating wounds shows that hydrocapillary dressings (alone) have better absorption capabilities and tend to be more comfortable when compared to hydropolymer dressings [14–16]. In a separate example, a more recent 2013 case series, eight human cases demonstrated that hydroconductive dressings appeared to facilitate necrotic tissue removal and preserve healthy granulation. No adverse effects were noted [17].

With previous research pointing towards positive healing outcomes with limited adverse effects, it is appropriate to expand the scale of research and see how hydrocapillary bandages can aid in treating a wide range of real-world injuries. This paper will explore the treatment of 62 individuals with partial- or full-thickness burn wounds utilizing the hydrocapillary dressing, XLTA. The goal of this study was to initiate an evaluation of the clinical efficacy of a hydrocapillary dressing and to assess its potential suitability for inclusion as a standard-of-care treatment option.

XLTA was first developed and commercialized in South Africa. The product is fully approved by SAHPRA (South Africa Health Products Regulatory Authority). The product has been supplied under government contract as well as to several large hospitals across the country. Therefore, South Africa was an appropriate location for this study as it represents both an appropriate, approved regulatory environment and well-established clinical setting for the trial.

STUDY DESIGN

# Materials and Methods

**Sep 2021 – Jul 2024**
STUDY PERIOD

**Tertiary burn center**
TREATMENT SETTING

**27 days**
AVERAGE WOUND AGE AT APPLICATION

An observational study conducted from September 2021 to July 2024 included a total of 62 individuals with a variety of burn wounds. Patients were treated at a tertiary burn center in South Africa utilizing the XLTA hydrocapillary bandage. This study was conducted at this particular site due to the number and severity of patient burns that historically have presented. Patients of either sex presenting to a tertiary burn center in South Africa with an exudating wound were eligible for inclusion. Patients with partial-thickness or full-thickness burn wounds characterized by moderate to high exudate levels and deemed appropriate for treatment with the XLTA hydrocapillary bandage were enrolled. Eligibility was not restricted by total body surface area (TBSA), anatomical wound location, or burn etiology. Patients were excluded if the wound required an antimicrobial dressing instead, or if they were pregnant, had systemic infection, or presented with comorbidities at the time of enrollment that could confound treatment assessment or participation. Patient demographic data were collected upon initial evaluation, including gender, age, mode of injury, injury age, total body surface area of the injury (TBSA), time to treatment, and injury location. The time of XLTA application was physician elected (Table 1).

In addition to patient demographic data, this study included 10 wound assessment parameters that were analyzed: biofilm, exudate, moistness, epithelialization, slough, infection, colour, size and site, odour, and swab need (BE, ME, SIC, SOS). An initial pre-treatment wound assessment was completed, followed by a post-treatment assessment. All wound assessment parameter data were collected qualitatively based on clinical visual interpretation from the same single physician. Assessment was based on routine visual evaluation of the wound characteristics over time by the physician. Wound analysis images were taken from 30 cm using an iPhone 6 in conjunction with a standardized wound ruler. Patient-reported pain intensity was evaluated using a visual analog scale (VAS) incorporating pictorial icons to represent increasing levels of discomfort. All patient data were collected by the attending physician.

## Definitions of wound assessment parameters

| Parameter | Definition |
|---|---|
| Biofilm | Presence of adherent, structured microbial colonies embedded in an extracellular matrix on the wound site. Assessed as clinically apparent biofilm. |
| Exudate | Wound fluid produced during inflammation and healing, assessed by amount and character. |
| Moisture balance | Assessment of wound hydration, reflecting whether the wound was too dry, balanced, or overly moist. |
| Epithelialization | Extent of new epithelial tissue formation and migration across the wound surface. |
| Slough | Presence of non-viable soft tissue within the wound bed. |
| Infection | Evidence of microbial invasion causing impairment to wound healing. |
| Color | Visual appearance of the wound bed and surrounding tissue. |
| Size and site | Wound dimension and anatomical location. |
| Odour | Presence and quality of wound-related smell. |
| Swab need | Whether microbial sampling is clinically indicated. |

Wound assessment and standard of care occurred in the timeframe prior to XLTA application, patient dependent, including cleansing and other clinically indicated wound-bed interventions; however, the specific extent of debridement or prior surgical revision was not prospectively standardized or recorded for all cases. At the time of XLTA application, wound assessment and cleansing in accordance with institutional burn care practice occurred. Then the XLTA hydrocapillary dressing was applied directly to the wound bed by the same treating physician for all patients to maintain consistency in application technique. Care was taken to ensure that the dressing was placed in direct contact with the entire wound surface. A secondary absorbent dressing (Melolin) was then positioned over the XLTA dressing, and the wound was subsequently secured with a conforming retention bandage (Kling or Crepe), selected according to wound location and clinical need. Dressings were managed as part of routine burn care follow-up, with changes performed according to clinical assessment of wound status, exudate level, and dressing integrity. Patients received analgesic therapy throughout the recovery period based on clinician discretion and individual patient needs. When dressing removal was anticipated to cause substantial discomfort or distress, ketamine sedation was administered at the discretion of the treating clinical team prior to dressing removal to facilitate pain control and patient tolerance.

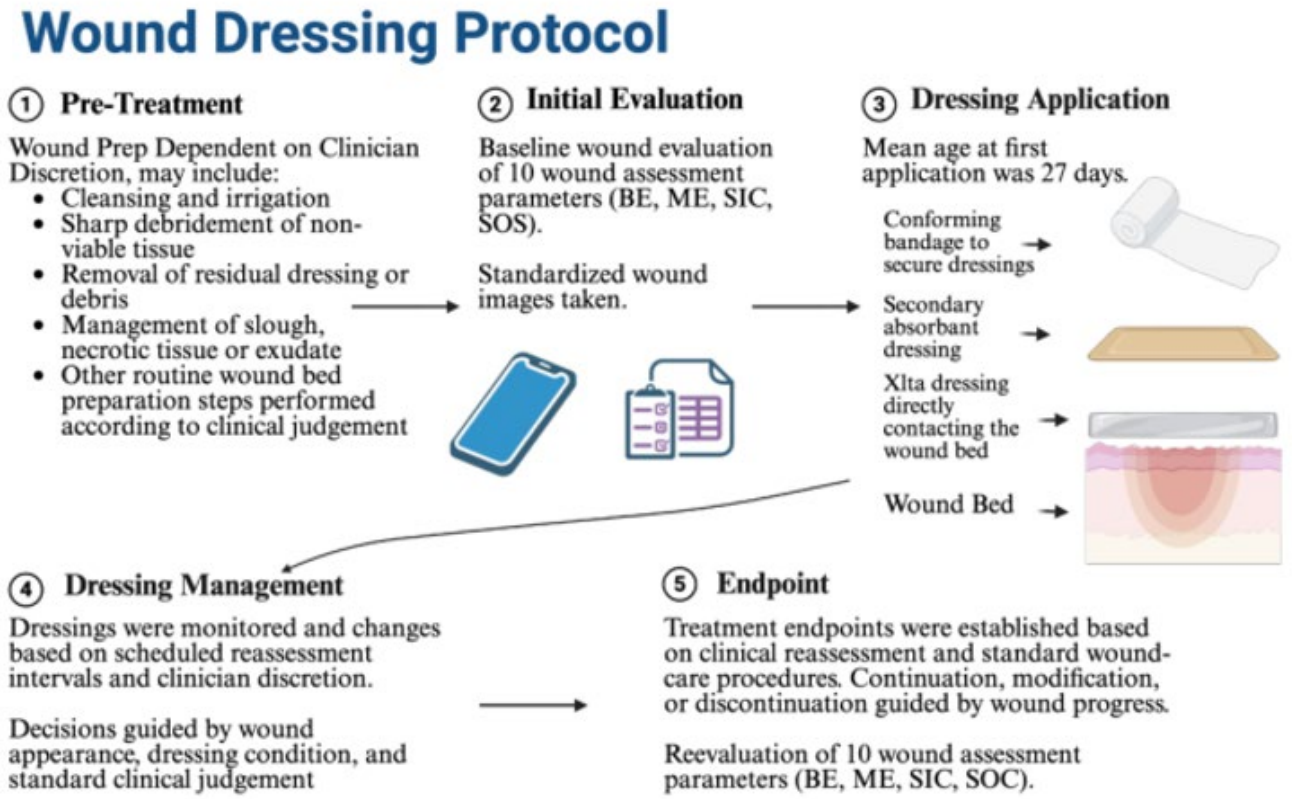



***Figure 3.*** *Flow Chart of Dressing Protocol Broken into 5 phases (Pre-treatment, Initial evaluation, Dressing Application, Dressing Management, and Endpoint). Schematic view of bandage layers. Wound assessment parameters: Biofilm, Exudate, Moisture Balance, Epithelialization, Slough, Infection, Color, Size/Site, Odour, Swab needed. Created in BioRender. (2026) https://BioRender.com/h505dbe*

OBSERVATIONAL FINDINGS

# Results

A total of 62 patients were treated with the XLTA dressing. The patient demographics are summarized as follows: 38 were male and 24 were female. Four mechanisms of injury were treated: flame (88.7%), hot water (4.8%), electrical (4.8%), and oil (1.6%). The average patient age was 35 years, with a minimum treatment age of 16 years and a maximum of 70 years. The average TBSA for the wounds was 29.7%. The average wound age at the time of treatment was 27 days, with a maximum of 143 days; 13 wounds (21%) were treated within 7 days, while 49 wounds (79%) were treated after 7 days. The areas of treatment included the forehead, scalp, neck, shoulders, arms, abdomen, back, flanks, thighs, legs, gluteal region, chest, breasts, and feet.

**Table 1.** Demographic information summary for the patients involved

| Variable | Value |
|---|---|
| Number of patients | 62 |
| Sex (Male) | 38 (61.3%) |
| Sex (Female) | 24 (38.7%) |
| Mechanism: Flame | 55 (88.7%) |
| Mechanism: Hot Water | 3 (4.8%) |
| Mechanism: Electrical | 3 (4.8%) |
| Mechanism: Oil | 1 (1.6%) |
| Age (years) – Mean | 35 |
| Age (years) – Min | 16 |
| Age (years) – Max | 70 |
| TBSA (%) – Mean | 29.7 |
| Wound age at application (days) – Mean | 27 |
| Wound age at application (days) – Max | 143 |
| Applied ≤7 days n (%) | 13 (21.0%) |
| Applied >7 days n (%) | 49 (79.0%) |

Prior to wound treatment, wound assessment parameters (BE, ME, SIC, SOS) revealed the incidence of clinically apparent biofilm in 18 out of 62 cases (29%). Exudate was present in all 62 cases. Excessive moisture was also present in all 62 cases. Prior wound epithelialization occurred in 17 out of 62 cases (27%). Sloughy wounds were present in 25 out of 62 cases (40%). Wound infection was present in 12 out of 62 cases (19%). Wound coloration ranged from pink to yellow, with the most common presentation being a red-yellow combination. Wound size varied from 45 $cm^2$ to 4800 $cm^2$. A total of 2 out of 62 cases (3%) presented with odor. Finally, no wounds were swabbed for culture before treatment. No pain was reported during application or removal of the treatment dressing.

After treatment and dressing removal, wound assessment parameters were measured again. Zero incidences of clinically apparent biofilm were reported. Exudate appeared to be well absorbed by the dressing, with proper moisture for wound healing present, and all wounds clinically appeared improved compared to before XLTA application. Moisture balance was clinically improved in all 62 cases. Epithelialization appeared to occur more in all cases. Sloughy wounds dropped to 0%. Wound infections also dropped to 0%. Color improved in all cases, with wounds appearing pink with good epithelialization. Wound size was similar or smaller in all cases. The incidence of wound odor was 0%. Again, no wounds were swabbed for culture. There was no pain reported related to the dressing during removal or while wearing the dressing.

## Table 2.

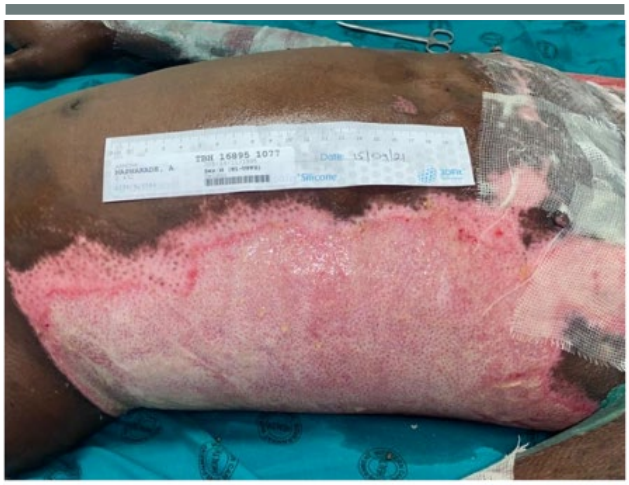
Summary of pre- and post-treatment results for the 10 wound assessment parameters

| Wound assessment | Before | After |
|---|---|---|
| Biofilm | Yes (29%) | No |
| Exudate | High (100%) | 100% Less |
| Moisture balance | Excessive (100%) | 100% Better |
| Epithelialization | Little (27%) | Increased (percentage not identified) |
| Slough | Yes (40%) | No |
| Infection | Yes (19%) | No |
| Colour | Predominantly red-yellow | Mostly red or pink |
| Size, site | Small to larger sizes | All appear similar or smaller |
| Odour | Yes (3%) | No |
| Swab need | None | None |

BEFORE-AND-AFTER EXAMPLES

# Clinical Photographic Evidence

**Before**



**After**

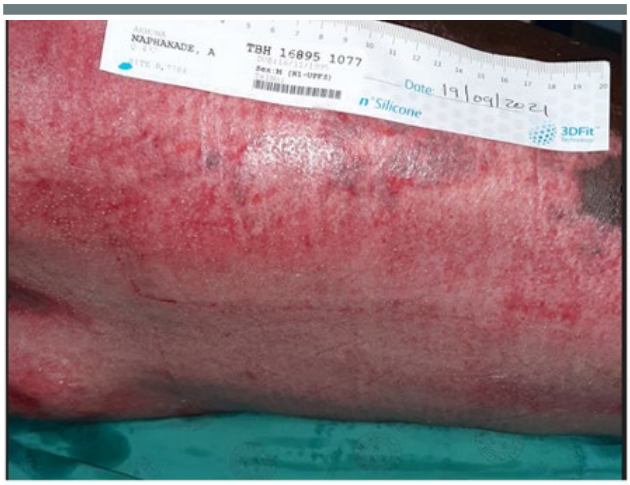


***Figure 4.*** *Left flank and back before (left image) and four days later (right image).*

**Before:** Burn wound depth: Deep dermal; delayed healing; yellow slough and shiny appearance of possible slough; yellow and pink wound; very moist wound.

**After:** No slough or sliminess visible; less moist; redder and pinker with signs of darker pigment or epithelialization.

**Before**

**After**

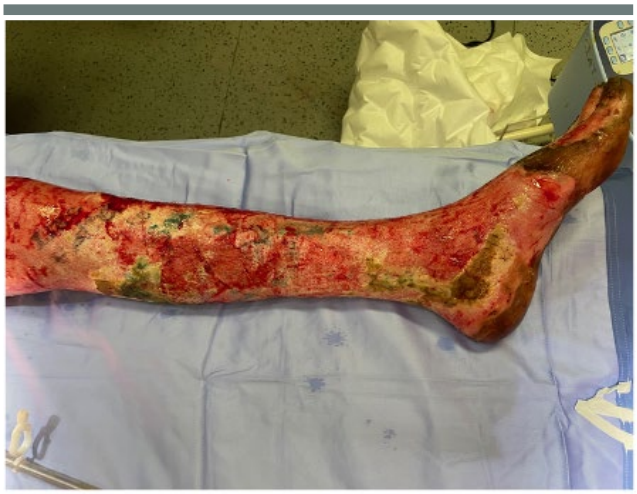


***Figure 5.*** *Lower leg before application (left) and 5 days later (right).*

**Before:** Chronic deep burn wound, full-thickness with pockets green with Pseudomonas aeruginosa infection; slimy and shiny of possible biofilm and increased exudate

**After:** The wound appears drier, no sliminess, more red areas of good vascularity; less Pseudomonas aeruginosa.

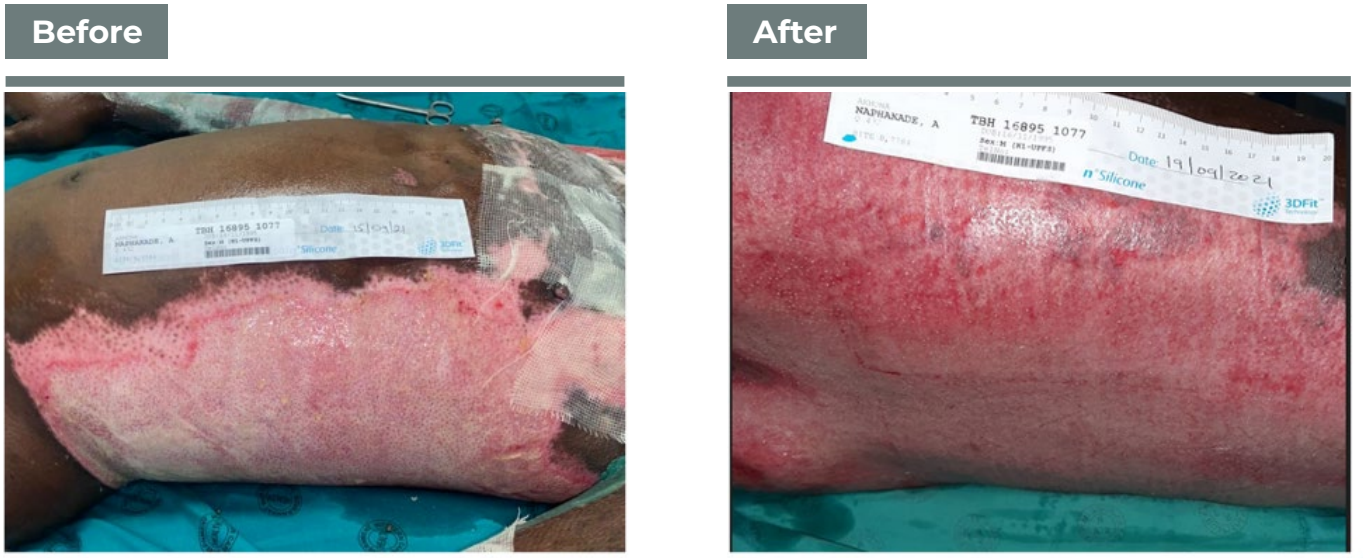



***Figure 6.*** *Abdomen and flank burns before (left) and 2 days after application (right).*

**Before:** Slough; sliminess; yellow and little pink areas.

**After:** No slough; no sliminess; more red and pink areas.

**Overall, the dressing appeared to have a well-rounded and aided in the healing outcome in the 62 patient cases presented**

Additional statistical analysis was conducted using R Studio. A McNemar's chi-square test was completed for the biofilm, slough, infection, and odor assessments pre- and post-treatment. This test analyzed categorical variables for two paired groups, making it well suited for a before-and-after analysis of binary variables such as these with a yes/no value [18,19]. For this analysis, each patient's (62) results for each variable (biofilm, slough, infection, and odor) were converted to binary for before and after treatment. No or not present was assigned a 0 and yes or present was assigned a 1. Before and after results were paired for each patient. McNemar's test looks only at discordant pairs, meaning those with a change (yes to a no, or no to a yes).

Essentially the test asks, among the patients who changed, did significantly more change in one direction than the other? The null hypothesis assumes that the probability of changing from a yes to a no equals that of changing from a no to a yes (i.e., no treatment effect). A significant p-value means there is asymmetric change meaning the intervention had an effect. The McNemar's chi-squared values were 16.065, 23.04, 10.083, and 0.05, respectively. The corresponding p-values were $6.15\times10^{-5}$, $1.59\times10^{-6}$, $1.496\times10^{-3}$, and 0.4795, respectively.

## Table 3.

Summary of McNemar's chi-squared results for biofilm, slough, infection, and odor

| Group | McNemar's chi-squared | P-value |
|---|---|---|
| Biofilm | 16.056 | 6.15E-05 |
| Slough | 23.04 | 1.59E-06 |
| Infection | 10.083 | 0.001496 |
| Odor | 0.5 | 0.4795 |

INTERPRETATION

# Discussion

**Based on the evidence provided, the XLTA hydrocapillary dressing was clinically successful in the treatment of a variety of burn wounds. All wound assessment parameters improved following application with the hydrocapillary dressing. All instances of biofilm, slough, infection, and odor dropped to zero. Exudate, moisture balance, epithelialization, color, and size improved in all cases. The XLTA dressing had a positive impact on progressing the wound healing cascade in all patients. All cases demonstrated positive healing outcomes, and no negative effects were reported.**

The XLTA bandage performed exceptionally in exudate absorption. There were no incidences of excessive exudate in any cases post-treatment, and the moisture balance of all cases improved. In previous hydrocapillary hydroconductive dressings, the mechanism of removal of slough was proposed to be due to dehydration of the wound and matrix, causing slough to get stuck in the bandage fibers. The effect of the polyethylene layer is unknown, but mechanical debridement with these layers may be improved in the XLTA bandage. Future research aims must include this assessment to support this hypothesis.

The statistical computations show suggestive evidence that there was improvement from the baseline analysis to the post-treatment results. The p-values for biofilm, slough, and infection are well below the 0.05 threshold, demonstrating a statistically significant difference in pre- and post-analysis. The p-value for odor was 0.4795, meaning there was no significant difference in the pre- and post-treatment results, likely due to only 2 cases of odor to begin with. With only a 3% rate of yes before treatment, it would be hard to demonstrate a change even with all of those cases being negative after post-treatment. Overall, the results of McNemar's chi-squared give trending data that the XLTA bandage reduces biofilm, slough, and infection after treatment with the dressing.

The original goal of the study was to enroll 70 patients; however, a total of 62 patients were ultimately enrolled. Additional work demands and extra human hours are ultimately what limited the number of patients in the study. Similarly, this is why the study window was rather large. However, 62 patients are sufficient for the purpose of observations in evaluating the efficacy of the XLTA bandage on burn wounds. The demographics treated with the bandage well represent a standard population in burn care. The most common mechanism of injury in this study was flame, which is also the most common in adult populations [20]. Therefore, the high percentage of flame burns in this study is representative. Additionally, the higher percentage of men in this study is consistent with adult men being more likely to sustain a burn injury than women [21]. No observed correlations between age, gender, or mechanism of injury were recorded with respect to healing outcomes. The XLTA dressing performed well in all scenarios, and no bias was observed in treating outcomes.

Initial evaluation of the data presents a strong case for the XLTA dressing. However, the observational cohort study does include some research limitations. Based on study design, the research setup includes qualitative data collection that was largely interpreted by the collecting clinicians. Although data collection, per patient, was performed by a single clinician and may include some degree of subjective interpretation, this approach also supported consistency in wound assessment throughout the study. The use of a single observer limits the ability to conduct inter-observer agreement. Accordingly, the results should be interpreted within the context of this methodological consideration. Future studies can be supported by quantitative analysis of wound surface area, weighing of dressings to assess exudate volume, speciation of biofilm, and/or detailed analysis of epithelialization percentages. Additionally, future prospective data should include a control group to compare healing across the same parameters.

Pain analysis is difficult to draw any conclusions from as well. Patients were on many analgesics of varying doses. Additionally, patients received ketamine sedation before dressing removal. Each individual reacts biologically different to pain medications and has differing pain tolerances. Because of this, drawing conclusions on the pain related to the XLTA dressing is fairly limited. In some cases, even with the pain medication present, patients might still experience some breakthrough pain upon dressing removal. There were no reported cases of such pain, and no increases in analgesia were needed. Concurrently, no patients reported any additional pain due to the XLTA dressing during the recovery process.

While no direct comparisons can be made of the XLTA dressing to a more traditional dressing in terms of patient comfort and pain level, it stands to reason that the XLTA dressing does an adequate job in ensuring patient comfort based on the VAS presented. The XLTA dressing includes a non-adherent polyethylene layer on both sides, creating a non-stick application. This means there is no need for additional wound contact layers and provides an atraumatic, seemingly pain-free removal process. The non-adhesive layers of the XLTA bandage, in theory, give it an advantage over traditional dressings in terms of patient comfort. This polyethylene layer likely contributed to the absence of pain associated with the dressing.

The average wound age for this study was 27 days, with ~80% receiving the dressing more than one week after initial injury. This demonstrates a possible bias towards more chronic wounds. These older wounds were more likely to be colonized with bacterial infections and have slough present. This was one of the main concerns and areas of focus for such cases. For acute or newly formed wounds, high exudate and moisture control were more of a concern. It is important to keep in mind the higher prevalence of more chronic wounds when interpreting the results. The representation of chronic wounds is much higher than acute wounds.

A total of 12 cases had signs of infection at the start of the trial. After treatment, there were no instances of infection reported, demonstrating XLTA's ability to reduce infection. Evaluation of infection was based on visual assessment and no cultures were taken for analysis. Additionally, given the chronicity of most wounds, those patients with infections present were likely already on culture-specific antibiotics, thus giving inconclusive evidence as the analysis of infection was not tightly controlled. However, a few proposed mechanisms of reducing infection have some scientific rigor in their favor, as previously mentioned.

Various methods of biofilm assessment exist, and advanced techniques can be utilized with technology such as the MolecuLight [22]. However, in the interest of cost savings, reduced human hours, and using pre-existing resources in the clinical setting, a simplified bedside method for diagnosing biofilm was used. The presence of a viscous, shiny-appearing layer on the wound was considered clinically apparent biofilm. Additional signs of wound infection, poor epithelialization, delayed healing, and other parameters from the BE, ME, SIC, SOS analysis were used to aid in the suspicion of biofilm. Previous research suggests that exudate may act as a nutrient source to biofilm, so XLTA's ability to sequester exudate may reduce biofilm's negative effects on wound healing [23,24].

Future studies on the XLTA wound dressing should aim to prospectively investigate the aforementioned unplanned study limitations. Implementing a control group with a silver-containing agent or hydrocolloid dressing that might typically be used for these wounds would allow direct analysis of XLTA's advantages and disadvantages compared to more standard treatment dressings. Implementing standardized wound analysis utilizing common wound assessment scores would allow for additional quantitative analysis. Wound size and even color analysis using software could provide further quantitative data. Adding in wound microbial culture analysis would give additional insight into bacterial count and adsorption into the bandage. Measuring the weight of the dressing before and after treatment could give quantitative insight into the volume of exudate and slough absorbed by the bandage.

CLOSING SECTION

# Conclusions

This observational cohort study of 62 patients at a South African tertiary burn center provides preliminary evidence supporting the efficacy of the XLTA dressing across a range of burn wounds. BE, ME, SIC, and SOS wound assessment parameters were evaluated before and after treatment. Healing outcomes were all positive, and no negative clinical effects were reported relating to the dressing. Statistical analysis demonstrated the bandage had a positive effect in reducing biofilm, slough, and infection in those patients who presented with them before treatment. Patient comfort was reported to be exceptional, with no pain relating to the dressing itself, including dressing removal. Conceptually, this hydrocapillary bandage can perform effectively in exudate absorption, mechanical debridement, wicking away bacteria and MMPs, and creating the proper environment for rapid wound healing progression.

In practice, initial testing of the XLTA bandage suggests potential efficacy in treating high exudating wounds such as those presented in this study. Given the study design, subjective bias may be present in the results and should be taken into consideration when interpreting the data. Additional research should focus on obtaining quantitative analysis and include a side-by-side comparison with the standard of care in order to further evaluate the efficacy of the XLTA dressing.

*Informed Consent Statement: Informed consent for participation was obtained by the clinicians for all subjects involved in the study.*

REFERENCE MATERIAL

# Appendix A. Abbreviations

| Abbreviation | Definition |
|---|---|
| TBSA | Total Body Surface Area |
| USD | United States Dollar |
| MMPs | Matrix Metalloproteinases |
| BE, ME, SIC, SOS | Biofilm, Exudate, Moisture, Epithelialization, Slough, Infection, Color, Size and Site, Odour, Swab Needed |
| VAS | Visual Analog Scale |
| ISBI | International Society for Burn Injuries |
| RCT | Randomized Controlled Trial |
| SAHPRA | South Africa Health Products Regulatory Authority |

CITED SOURCES

# Appendix B. References

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