Curea Dressings made easy

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Introduction

All exuding wounds – from light to heavily exuding – require a dressing that can manage exudate while meeting other clinical needs for wound healing. A multipurpose dressing (MPD) is a useful option in exuding wounds that have additional clinical needs, such as promoting wound bed preparation (WBP) and managing the risk of infection. The Curea range offers an absorbent MPD, a multipurpose alternative to foam dressings that manages exudate and infection risk by locking away bacteria and matrix metalloproteinases (MMPs), and maintains a moist wound healing environment that creates conditions conducive to autolytic and mechanical debridement.

The skin

Exudate is a natural and essential part of the healing process (**Box 1**; Lloyd Jones, 2014). However, exudate can delay healing and cause complications when in the wrong amount, in the wrong place, or of the wrong composition (World Union of Wound Healing Societies [WUWHS], 2019). Exudate can delay healing, severely affecting a patient's quality of life and producing significant socioeconomic burden when (Moore and Strapp, 2015):

- The amount of exudate is excessive or insufficient
- The composition of exudate is abnormal
- The exudate is in the wrong place
- The exudate leaks from the dressing.

As well as the amount, composition, colour, odour and location of exudate, the consistency of the exudate may provide useful information about the wound and help guide treatment choices.

Additionally, unmanaged exudate can cause moisture-associated skin damage (MASD) and affect the surrounding skin, resulting in weakening of the skin around the wound leading to periwound maceration (Fletcher et al, 2020a). Periwound maceration delays overall wound healing and is also correlated with higher pain levels prior to and during dressing changes (Woo et al, 2017).

Box 1. Overview of exudate

Exudate may also be referred to as 'wound fluid' or 'wound drainage'. It can be formally defined as: "Exuded matter; especially the material composed of serum, fibrin, and white blood cells that escapes into a superficial lesion or area of inflammation" (Merriam-Webster Dictionary, 2022).

Periwound skin is particularly vulnerable to MASD when drainage volume exceeds the fluid-handling capacity of the applied dressing. In addition, repetitive application and removal of adhesive tapes and dressings may strip away the periwound stratum corneum, precipitating further skin damage (Woo et al, 2017). Therefore, appropriate dressing selection to manage exudate and protect the surrounding skin, is key to wound healing in all exuding wounds.

Moisture balance

Achieving an optimal moisture balance is important to wounds progressing to healing. While excessive or unmanaged exudate can affect healing and the surrounding skin, if the wound environment is too dry, this can result in the wound becoming stalled and healing being delayed (Fletcher and Probst, 2020).

Accordingly, balancing the need for exudate absorption and retention with the need for a moist wound environment to encourage healing should be considered when selecting an appropriate dressing for any exuding wound.

Beyond exudate

While exudate management is a key consideration, exuding wounds may have additional clinical needs that should not be neglected. These needs will be individual to the patient and their wound, and treatment should be tailored to the individual, their wound and general health, taking a holistic and patient-centric approach and considering any lifestyle or health-related factors.

Approaches such as wound bed preparation (WBP) can assist in identifying and addressing the barriers of wound healing, to create an optimal wound healing environment (Ousey and Schofield, 2021). A structured framework for WBP, such as TIMES (Wounds UK, 2016), encompasses the following factors:

- Tissue
- Inflammation/Infection
- Moisture balance
- Edge of wound/epithelialisation
- Surrounding skin.

WBP is a multifaceted approach that includes cleansing and debridement (see **Box 2**) to enhance the effectiveness of therapeutic measures and to prepare the wound for healing (Ousey and Schofield, 2021). In terms of dressing selection, it may be beneficial to use a dressing that can maintain or encourage an environment that promotes WBP.

Managing infection risk

Infection is a common but significant complication in wounds, which can affect healing and patient quality of life. In exuding wounds, infection can represent a vicious circle of non-healing – as increased exudate production is often associated with factors that cause inflammation (e.g. infection), and, in turn, excessive exudate production can increase the risk of infection (WUWHS, 2019). Leakage/strikethrough of exudate may also increase the risk of infection, by providing a route by which micro-organisms can enter the wound, making dressing choice an important factor in reducing the infection risk (WUWHS, 2019).

The growing issue of antimicrobial resistance (AMR) means that antimicrobials should be used judiciously wherever possible as part of an approach informed by antimicrobial stewardship (AMS; Fletcher et al, 2020b). As such, dressings that use physical means to reduce infection risk – such as locking away exudate from the wound, including the bacteria and/or matrix metalloproteinases (MMPs) contained within the exudate, protecting the wound from being exposed to their infection risk – are increasingly being considered as a good option in practice for wounds that are at risk of infection.

Multipurpose dressings

Multipurpose dressings (MPDs) fulfil several of the above clinical requirements for wound healing at once. For example, a wound may require factors including:

- Light to heavy exudate management
- Maintenance of a moist wound healing environment to promote autolytic and mechanical debridement
- Management of the infection risk.

An MPD that simultaneously fulfils these requirements in practice provides an option that enables simple and efficient treatment, benefiting the clinician and the individual with the wound. This may also provide practical benefits, such as cost savings and waste reduction, as multiple products are not required to treat the wound effectively.

Box 2. Overview of debridement

Debridement is a foundation of wound healing and involves the removal of slough, necrosis, haematomas, eschar, debris, foreign bodies and infected tissues that accumulate on the surface of chronic wounds (Malone and Swanson, 2017).

There are many ways to debride a wound; the most common are autolytic, mechanical and sharp debridement. The choice of technique will depend on results of the wound bed assessment, local policy and capability level of the clinician providing the debridement (Ousey and Schofield, 2021). Dressings are available that promote autolytic and mechanical debridement.

Curea dressings

Curea dressings provide a range of MPDs that are suitable for use on acute and chronic exuding wounds with a range of clinical needs. Key features of Curea dressings include:

- Suitable for use on all exudating wounds – from light to heavily exuding – either as a primary or secondary dressing
- Able to manage all types of exudate, both high- and low-viscosity
- Promotes soft autolytic debridement
- Retains and 'locks' exudate, protecting the surrounding skin from damage and avoiding leakage of exudate from the dressing
- Core maintains its shape, ensuring exudate is managed evenly and the dressing does not sag or leave debris in the wound
- Effective absorption, creating an optimal moisture balance
- Binding of bacteria and MMPs, thereby reducing the risk of infection
- Wear time of up to 7 days
- Suitable for use under compression therapy
- Breathable and fluid-impermeable, acting as a sterile barrier for bacteria, as well as against leakage
- Printed back side for reduced risk of incorrect application.

Dressing construction

Curea dressings utilise SuperCore® technology, a mixed fibre technology that handles all levels and viscosities of exudate in a clinically more effective manner. See **Figure 1** for an illustration of the construction of the Curea dressing and how it works in practice, and **Figure 2A & B** for more information on the SuperCore technology.

Due to their uniform mixture of natural fibres and superabsorbent sodium polyacrylate particles, the Curea dressings will absorb both high-viscosity exudate (e.g. thick exudate) and low-viscosity exudate (e.g. thin or watery fluid).

Figure 1. **Construction of Curea dressing**

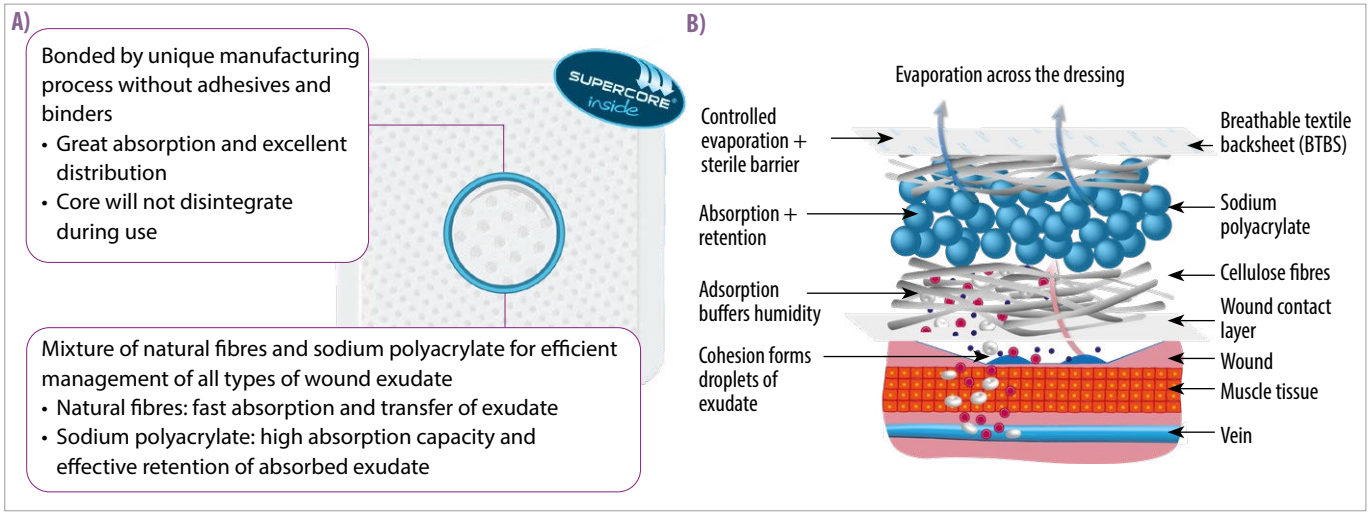

Figure 2. **SuperCore® technology**

Dressing construction

Curea dressings are available as a range of products for different wound requirements. The range includes:

- **Curea P1:** MPD based on SuperCore technology; non-woven interface layer for soft debridement, non-sagging airlaid core of natural fibres and superabsorbent sodium polyacrylate particles, breathable backsheet, laminated edges
- **Curea P2:** MPD based on SuperCore technology; non-sticking polyethylene interface layer, non-sagging airlaid core of natural fibres and sodium polyacrylates, breathable backsheet, laminated edges
- **Curea P1 duo active:** MPD based on SuperCore technology; non-woven interface layers for soft debridement (both sides), built-in carbon layer, non-sagging airlaid core of natural fibres and sodium polyacrylates, laminated edges
- **Curea P2 active:** MPD based on SuperCore technology; non-sticking polyethylene interface layer, built-in carbon layer, non-sagging airlaid core of natural fibres and sodium polyacrylates, breathable backsheet, laminated edges.

Evidence for Curea MPDs

There are many superabsorbent dressings available, but they differ fundamentally in their structure and composition, and, thereby, in their exudate absorption and retention functions, which impacts

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on their clinical efficacy (Gefen, 2021). Both laboratory and human studies have shown how Curea P1 differs from other commercial dressing products.

Recently, the fluid handling performance of the Curea P1 MPD was tested in a bioengineering laboratory setting, by means of a novel robotic wound system against other superabsorbent and foam dressings. It was found that the Curea P1 dressing exhibited the best and most robust fluid handling performance across all the test configurations including off-loaded and non-offloaded wound conditions, and for both the low- and high-viscosity fluids (**Box 3**; (Orlov and Gefen, 2022).

Box 3. Viscosity as a measure of exudate consistency

The consistency of exudate is known as the fluid viscosity in physical terms. Formally, viscosity is defined as the measure of the resistance of a fluid to gradual deformation, which implies that viscosity can be considered as the fluid's resistance to the flow. Water, for example, has lower viscosity compared to honey, and the viscosity of any fluid can be measured in a bioengineering laboratory and described in as a unit of Pascal second (Pa·s).

In addition, a multicentre randomised controlled open-label wound-dressing trial was conducted in two wound care outpatient clinics in western Switzerland from November 2018 to March 2020. A total of 77 successive patients were randomised to receive either a sterile polyacrylate wound pad with activated carbon cloth treatment (Curea P1; *n*=38) or the standard non-adhesive hydrocellular foam dressing with silver (*n*=39). The sterile polyacrylate wound pad dressings with activated carbon cloth (Curea P1) reduced the wound size, as well as the maceration area, faster than the non-adhesive hydrocellular foam dressing with silver. Odour, pain and infection were similar in both groups.

Conclusion

When selecting a dressing for a highly-exuding wound, a dressing should be chosen that can manage exudate in the expected volume, rate, viscosity and wound configuration (such as if the wound is subjected to body forces or if gravity is pulling the exudate downwards); the selected dressing must have peer-reviewed published evidence for its efficacy in exudate management under the foreseen conditions.

MPDs represent a simple and effective option for use on a range of chronic and acute wounds in clinical practice. Curea dressings offer a range of MPDs with the ability to successfully handle challenging clinical scenarios of high volumes, rates and viscosities of exudate, as well as facilitate autolytic debridement and manage the infection risk. Fulfilling these requirements within one dressing benefits patients and clinicians alike, by simplifying practice and by providing effective treatment that can promote wound healing and improve outcomes. This may also provide practical benefits such as cost saving and waste reduction, by removing the need for multiple products.

Curea dressings have the ability to handle exudate effectively and provide WBP through autolytic debridement, and may also be used as part of an AMS-informed approach to reduce infection risk without the need for antimicrobial products, as bacteria and MMPs are bound through chemico-physical means. The dressings provide effective absorption without over-drying the wound, helping to create an optimal moisture balance to promote healing.

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