

ActivHeal AquaFiber®: a new soft, conformable highly-absorbent dressing for use with chronic wounds

Exudate management is a challenge for the healthcare team as well as for the patient and despite a number of products being available, many patients still feel that exudate management is a significant problem, particularly for cavity wounds. Alginate dressings have been available for a number of years and can play a major role in the management of wound exudate. This article looks at ActivHeal AquaFiber®, a new advanced alginate dressing that has been produced to provide excellent absorbency compared with standard alginates. Its high wet strength and vertical wicking make it comparable with hydrofibre dressings.

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KEY WORDS

Wound care
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Chronic wounds
Exudate
Odour

For patients with chronic wounds, odour and exudate are often cited as the most disturbing issues (Jones, 2008). Exudate management is a challenge for the healthcare team as well as for the patient, and despite a number of products being available, many patients still feel that exudate management is a significant problem (Jones, 2008).

Alginates in the form of seaweed have been used for centuries in a variety of settings. Early reports came from sailors, who would wrap seaweed around their hands following rope injuries (Williams, 1998). They are also used in food manufacture and the brewing industry.

Alginate dressings have been available for a number of years and can be used in a variety of wound types. However, they are primarily used for their ability to manage wound exudate.

Chronic wounds are prone to higher exudate levels due to the volume of tissue loss and the potential for increased bacterial burden. Chronic wounds demand a flexible approach to ensure appropriate management and treatment regimens are applied. Wound treatments should be adapted to suit the features of the wound, and also as the wound changes over time. If treated appropriately wound exudate levels should gradually reduce.

Alginate dressings have been used in wound care for the past 20 years and in particular they facilitate absorbency, which also supports the wound healing process. Despite some newer technologies becoming available, alginates are still considered versatile enough to deal with moderate to heavily exuding wounds.

ActivHeal AquaFiber® (MedLogic Global Ltd) is a relatively new alginate dressing, which is designed to absorb exudate, facilitate easy removal and support the wound healing process.

Composition and action of alginate dressings

Alginate dressings are based on alginic acid, which is found in seaweed and

dissolved and dried to form calcium alginate fibres. Once the alginate dressing comes into contact with an exuding wound, an ion-exchange takes place between the calcium ions in the dressing and the sodium ions in the wound fluid. When a significant proportion of the calcium ions on the fibres have been replaced by sodium, the fibre swells and partially dissolves, forming a gel-like mass. This gelling provides a conformable wound dressing, which is easily removed from the wound bed.

Alginates vary in composition and are usually formed with mannuronic and guluronic acid fibres. Known as M or G alginates, the percentage concentration of each acid will determine the qualities of the individual dressing (Timmons, 1999). The composition of the dressing will also affect the 'feel' or softness of the product and its tensile strength when wet. AquaFiber has a high level of mannuronic acid which ensures that it has a high wet strength.

Alginates maintain a moist environment in the wound bed and while absorbing exudate are able to support debridement and the formation of granulation tissue. Wounds that are healing by secondary intention such as pressure ulcers, leg ulcers or diabetic foot ulcers, will often require dressings that can absorb exudate and support proliferation of new cells in the wound.

Table 1

The key features of AquaFiber

- Maintains a moist wound healing environment
- Reduces the risk of maceration to surrounding skin
- Aids autolytic debridement
- Encourages granulation tissue
- Absorbs exudate effectively
- Can be removed in one piece

AquaFiber has the ideal composition to maximise softness, with good tensile wet strength allowing one-piece removal from the wound.

Studies that have examined the effect of alginate dressings on wound healing have demonstrated the ability of alginates to promote the stimulation of cytokines, which are essential to the wound healing process (Thomas, 2000). This stimulation of cytokines is one of the key advantages of alginates.

Wound types and indications

AquaFiber dressings are available as flat dressings (Figure 1) and as ribbon or rope dressings (Figure 2). Flat dressings can be used in wounds such as leg ulcers whereas the ribbon or rope dressings are ideal for use in cavity wounds (Thomas, 2000). AquaFiber is recommended for leg ulcers, diabetic foot ulcers, burns and donor sites, pressure ulcers, cavity wounds, and surgical wounds.

A number of studies have been carried out that compare the effect of alginate products with other therapies. One early study compared healing rates in leg ulcers treated with alginate to those treated with paraffin gauze as a control and found a 73% improvement in healing in the alginate group versus a 43% improvement in the control group. This study was limited, however, in that compression therapy was not used as a standard treatment at this time (Thomas and Tucker, 1989).



Figure 1. ActivHeal AquaFiber.

Armstrong and Ruckley (1997) compared the action of an alginate and a hydrofibre dressing in 44 patients and found no significant difference in healing rates. A further study of donor sites by Steenfos and Agren (1989) found that the alginates were more absorbent and achieved faster haemostasis than paraffin gauze, however; this study focused on a relatively small group of patients (n=17).

The benefits of alginate dressings were further supported by an earlier study by Attwood (1989) who found that the healing completion time in an alginate group (n=130) was significantly shorter than in a paraffin gauze control group.

Cavity wounds

Cavity wounds often require management of exudate, protection of the surrounding skin, debridement, promotion of granulation tissue and pain reduction on removal. Alginate dressings are able to perform in all

these areas making them an ideal choice for these wounds. Cavity wounds also need to be treated with dressings that are conformable and will maintain their integrity when removed from the wound bed. Leaving wound dressing fibres behind can be problematic as they could become a focus for infection. It is also important that wounds are not packed too tightly to prevent this occurring.

AquaFiber

AquaFiber is made of natural fibres and incorporates all the benefits of alginate dressings. It can be used as a haemostat and is bioabsorbable (Barnett and Varley, 1987) while offering a high wet strength and absorbency.

AquaFiber gels on contact with wound exudate and this enables it to have a maximum contact area within the wound bed. It is also super-absorbent and is, therefore, ideal for use on moderate to heavily exuding wounds.

Table 2

Price differential between Aquacel (ConvaTec, Ickenham) and AquaFiber per unit cost (UK Drug Tariff)

Aquacel	AquaFiber
5cm x 5cm = £1.07	5cm x 5cm = 73p
10cm x 10cm = £2.54	10cm x 10cm = £1.74
15cm x 15cm = £4.78	15cm x 15cm = £3.28
2cm x 45cm (rope) = £2.54	2cm x 42cm (rope) = £1.75



Figure 2. ActivHeal AquaFiber alginate rope.

AquaFiber is designed to vertically wick exudate away from the wound, which helps to reduce the risk of maceration and damage to the peri-wound area.

AquaFiber should be used in conjunction with an appropriate secondary dressing, such as a film, in low to moderately exuding wounds, and a foam dressing in moderate to highly exuding wounds.

AquaFiber is recommended for the following chronic wound types:

- ▶▶ Pressure ulcers
- ▶▶ Leg ulcers
- ▶▶ Venous ulcers
- ▶▶ Arterial ulcers
- ▶▶ Diabetic ulcers
- ▶▶ Cavity wounds
- ▶▶ Superficial and partial-thickness burns.

It is also suitable for use on the following acute wounds:

- ▶▶ Lacerations
- ▶▶ Abrasions
- ▶▶ Graft wounds
- ▶▶ Donor sites
- ▶▶ Trauma wounds
- ▶▶ Post-operative surgical wounds.

Cost implications

Health economics is a key factor to consider when choosing the correct products for patients. However, reduced cost per dressing, although important, is only one issue — wear time,

absorbency and dressing efficacy should also be taken into account.

AquaFiber has been shown to provide similar absorbency to other hydrofibre dressings in tests commissioned by the manufacturer; however, it also offers significant savings on price per dressing. This price difference is significant if taken over a year of product use, where a saving of 30% could be achieved. An example of the price difference between a leading hydrofibre dressing and AquaFiber is demonstrated in *Table 2*.

Conclusion

Exudate management is essential in order to address patient concerns and promote wound healing. Alginate dressings have been proven to manage exudate and encourage the healing process. Alginates are also available in formats which can be applied to most wound types. ActivHeal AquaFiber is a natural fibre dressing manufactured to give gelling and absorbency properties that are similar to a leading hydrofibre dressing and is less expensive when comparing the individual cost of similar-sized dressings. **WUK**

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Key Points

- ▶▶ Alginates continue to be a useful dressing choice for moderate to heavily exuding wounds.
- ▶▶ Alginate dressings have been studied in a number of wound types including pressure ulcers, donor sites and leg ulcers, and have been found to support the healing process.
- ▶▶ AquaFiber is an alginate which offers good absorbency and high strength when wet which allows the dressing to be removed from the wound in one piece.
- ▶▶ AquaFiber is available as a flat dressing or as rope for use in cavity wounds.
- ▶▶ AquaFiber has excellent gelling and absorbency properties and is less expensive than a leading alginate when comparing the individual cost of similar-sized dressings.

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