

# EWMA 2011 Wound Care Conference

## Poster Presentation

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### **ABSTRACT TITLE –USE OF CALCIUM ALGINATE V/S HYDROFIBRE DRESSING IN CITY AND HACKNEY COMMUNITY HEALTH SERVICE.**

#### **Abstract**

In the last decade the use of Hydrifibre dressings have increased drastically and is posing a concerned to the cost of Prescribing and Medicine Management across all hospital and Community Health services NHS Trust. Hydrofibre dressing usage and its selection by health care professional is questioning the ability and rationale for the selection of such antimicrobial dressing. The usual questions asked by the Procurement, Prescribing and Medicine Management team is whether the product is being used to its expected entity or just in case in the management of bioburden.

The Tissue Viability Team in City and Hackney has evaluated the effectiveness of Calcium Alginate dressing in comparison to Hydrofibre Dressing. The Calcium Alginate has been trialed in the Trust to look at its versatility in term of cost, quality and effectiveness as well as patient experience. The case study below demonstrates the effectiveness of Calcium Alginate in optimizing wound healing.

The authors identify that further study is required to understand the total healing cost effectiveness of calcium alginate in comparison to hydrofibre. In this scenario, it appears to be cost effective.

#### **Introduction**

Most wounds normally heal within 4-14 days with little intervention. It is not necessarily an indicator of a problem in the healing process if a wound does not heal within a certain timeframe as long as progression is being made. However in the community, the staff finds themselves with stagnant wound or hard to heal wounds. The health care professional in community care often uses Hydrofibre or its Silver product in patient to maintain the wound from infection or reduction of bioburden but unable to achieve healing, while the primary aim is healing the wound and ensure independence for the patients.

Often patients with such non healing wounds find themselves liking silver dressing as it maintain a constant stagnant wound but comfortable. There is the fear if the silver dressing is changed to a different one, infection or hospital admission may occur. This is also acknowledged by Health Care professional.

The authors have undertaken a literature review of the effectiveness of Hydrofibre and its silver version, effectiveness of calcium alginate and management of moderate to heavily exudating wound.

A case study was undertaken on a 70 years old female suffering from chronic wound for the past eight months. She has been on a regime of hydrofibre to manage exudates for the past four months until she was referred to the Tissue Viability Service.

#### **Method**

The 70 years old woman was seen by the Tissue Viability Service. Dressing selection and a holistic assessment was carried out.

The patient dressing plan was change to calcium alginate. The authors still consider other factor such as bed, medical history and psychosocial aspect of the patient. In this case the authors were looking at the effective of dressings choice and leaving all other factors constant.

Calcium Alginate is a highly absorbent, biodegradable alginate dressings are derived from seaweed. They have been successfully applied to cleanse a wide variety of secreting lesions. The high absorption is achieved via strong hydrophilic gel formation. This limits wound secretions and minimizes bacterial contamination. Alginate fibres trapped in a wound are readily biodegraded.

Alginate dressings maintain a physiologically moist microenvironment that promotes healing and the formation of granulation tissue. Alginates can be rinsed away with saline irrigation, so removal of the dressing does not interfere with healing granulation tissue. This makes dressing changes virtually painless. Alginate dressings are very useful for moderate to heavily exuding wounds

## Results

The use of the Calcium Alginate for 3 weeks has kick start the healing phase. The calcium alginate promotes a moist wound healing environment. The dressing is easy to apply, will gently adhere to surrounding dry skin but will not adhere to a wound bed. Apply a secondary dressing of choice, this can be an absorbent dressing or semi-permeable film dressing depending on the nature of the wound, in this case an island dressing was used.

The wound which has been stagnant for the past four months eventually healed in 12 weeks. Dressing change was initially daily, then to three times weekly in week 3 to 5. By week 6 dressing change was twice weekly and exudates level was reducing. The shift from high to moderate exudates was significant in week 2 and by week 3 to 5, the exudates was moderate and healing was happening. The depth of the wound was reduced.



Picture at week 6

## Discussion

It is important to be able recognize the stage a wound is at in the healing phase and to know if a wound is not following the normal progression in healing. Identifying debris in the wound and knowing how best to deal with it are important aspects of wound management. Preserving viable tissue and structures within the wound bed will assist the healing process.

The healing of the wound requires the development of a vascularised granular tissue bed, filling of large tissue defects by dermal regeneration, and the restoration of a continuous epidermal keratinocyte layer. In the study, the calcium alginate increased the proliferation of fibroblasts but decreased the proliferation of keratinocytes. In contrast, the calcium alginate decreased fibroblast motility but had no effect on keratinocyte motility. There was no significant effect of calcium alginate on the formation of capillary. The effects of calcium alginate on cell proliferation and migration may have been mediated by released calcium ions as suggested in various other well documented studies.

Wound dressings play an important part in creating the right environment in which wounds heal efficiently with an optimum outcome. The selection of a dressing may only be a part of the requirement for effective wound healing. A full holistic assessment is advised for patients whose wounds do not heal in a normal pattern or time frame.

## Conclusion

A holistic assessment of the patients needs is essential to ensure the healing potential is optimized. Dressing selection and knowing the performance of a dressing is crucial to optimize healing. Calcium Alginate base dressing is an effective natural product when use appropriate after a holistic assessment of the patient.

Calcium alginate dressing ,with respect to wound fluid retaining ability, adherence, dressing residues, epithelialisation and inflammatory cell infiltration, shows to be better in this study when compared to Hydrofiber.

NOTE: Sorbsan - Calcium alginate from Aspen Medical Europe

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