Introduction

The term epidermolysis bullosa (EB) represents a number of genetically determined skin disorders, each having a wide range of severity. The condition is caused by an extreme fragility of the skin and mucous membranes and a susceptibility of these tissues to blister or break down in response to minimal everyday friction and trauma. The affected protein and a specific gene mutation determine each type of EB. The rarest is EB dystrophic which is associated with non-enzymatic keratinisation, a process involved in the formation of keratinised squamous epithelia.[1-3]

In its mildest form, EB causes painful blistering to the hands and feet, and healing problems. More severe forms of EB can lead to death in early infancy or progressive disability resulting from contractual scarring of the skin and mucous membranes.[4, 5]

Method

A Total of 10 Children with all types of severe EB were selected for the study. Criteria included those with chronic wounds which were critically colonised or where presence of a biofilm was suspected.

In severe forms of EB, chronic wounds develop and healing is compromised by nutritional deficiencies, continual trauma, colonisation and infection and the underlying gene defect. Those with junctional and dystrophic forms of EB have proved to be especially prone to wounds which are particularly difficult to manage and frequently do not respond to conventional therapies.[6-8]

These ulcers are unresponsive to conventional care. The dressing choice was guided by the determined nature of the wound, which in all cases was non-exudative, with a sloughy base exhibiting signs of colonisation.

The positive charge by creating a positive charge. The absorbent properties of KytoCel® enable it to bind and lock away commonly encountered wound pathogens such as Escherichia coli, Staphylococcus aureus, Candida Albicans and methicillin-resistant organisms. The positive charge and negative charge of the Dressing and skin respectively have the advantage in children with EB where skin breakdown, bleeding and resulting infection remains a challenge.

Results

Due to the rarity of severe EB only a total of 10 children were selected for the study varying from EB Simplex to severe dystrophic disease. Improved wound healing was demonstrated in all cases and bleeding reduced. The dressing was easy to apply and comfortable during wear time. Where complete gelling had not occurred, irrigation with saline facilitated atraumatic removal.

Discussion

Improvements in recalcitrant wounds where all other therapies have failed are very encouraging and further studies of the use of chitosan dressings in this group of patients will be helpful. We plan to try the products on neonates suffering wounds from prenatal disease. Improved wound healing was demonstrated in all cases and bleeding reduced. The dressing was easy to apply and comfortable during wear time, reduce bioburden.

Conclusion

Early results have indicated in this small pilot study that KytoCel® dressings are helpful in treating recalcitrant wounds in patients with severe forms of EB. We recommend that further studies should be undertaken extending to adult EB patients to see if the same benefits can improve patients’ outcomes.

References:

Great Ormond Street Hospital for Children

Use Of KytoCel® Dressings In The Management Of Chronic Wounds In Children With Severe Epidermolysis Bullosa

Case study 1

An 11-year-old boy with severe generalized recessive dystrophic EB. Co-morbidities include anaemia and malabsorption syndrome. Nutrition is poor and increasing a tendency from chronic wounds. He dictated his dressing choice, which is not optimal for exudate management or control of the bio burden. After much encouragement he agreed to try KytoCel under his usual dressing on one wound that had failed to heal in 2 months. The dressings were changed every other day. After the first dressing change there was marked reduction in exudate and the wound appeared clean. By day 10 the wound had healed. He has now agreed to try KytoCel on some of his other wounds.

Case study 2

An 8-year-old girl with EB simplex localised had severe blistering on her feet, which became worse in hot weather, the ulcerated area on her foot became heavily colonized and inamared (Fig 1). KytoCel ribbon was gently packed into the ulcer with KerraLite Cool as a secondary dressing. The dressings were changed daily as she likes to soak her feet in cool water after school. The ulcer appeared cleaner at the first dressing changing and healed within 2 weeks.

Case study 3

A 3-year-old girl with laryngo ocular cutaneous syndrome, a rare form of junctional EB. Blistering and development of granulomas within her trachea mean she has dependent upon a tracheostomy for her survival. It is essential that the tube does not become dislodged and the securing tapes must therefore be very tight. The phalange of the tracheostomy tube rubbed against her fragile skin causing an area of ulceration, which was painful. She developed a resistant strain of pseudomonas in her sputum, which colonized the wound promoting bleeding and friable tissue (Image 1) the wound had failed to heal for 25 days. KytoCel was applied to the wound with KerraLite Cool (Crawford Healthcare) as a secondary dressing. The dressing was changed daily. Within 2 weeks bleeding and exudate reduced and the wound had reduced in size. By 19 days the wound had healed and wound swabs confirmed eradication of pseudomonas; despite the fact her sputum remains colonized.