

TECHNOLOGY UPDATE:

Using antimicrobial foam dressings in paediatric wounds

References

1. Afsar FS. Skin care for preterm and term neonates. *Clin Exp Dermatol* 2009; 34(8): 855–58.
2. Fluhr JW, Darlenski R, Taieb A, et al. Functional skin adaptation in infancy - almost complete but not fully competent. *Exp Dermatol* 2010; 19(6): 483–92.
3. Fernandes JD, de Oliveira ZNP. Children and newborn skin care and prevention. *An Bras Dermatol* 2011; 86(1): 102–10
4. Ciprandi G. Palliative wound care in pediatric patients. 21st Conference of the European Wound Management Association, EWMA 25–27 May 2011.

Kendall™ AMD antimicrobial foam dressings are highly absorbent foam dressings that contain polyhexamethylene biguanide (PHMB — also known as polihexanide) an effective antimicrobial agent that has very low cytotoxicity. These dressings are particularly suited to the management of acute or chronic wounds with moderate to high levels of exudate where there is an increased risk or evidence of wound infection. The following article describes the use of this dressing in paediatrics in a hospital in Italy.

Antimicrobial foam dressings in paediatrics

The skin of paediatric patients is more prone to breakdown and the development of pressure ulcers than adult skin^[1]. There are a number of important differences between the skin of children and adults that may contribute to this problem. For example, the skin of children has a:

- ▶ thinner stratum corneum — the skin is less well protected against mechanical damage
- ▶ lower lipid content — the skin is more prone to becoming dry
- ▶ higher pH — the low acidic pH of adult and adolescent skin has a protective effect against microorganisms^[2,3].

The differences between the skin of adults and children are more pronounced in the very young. In addition, in pre-term babies and neonates the lack of cohesion between the epidermis and dermis makes the skin vulnerable to mechanical damage^[2].

Kendall™ AMD antimicrobial foam dressings can be used in the treatment of complex wounds in paediatric patients. The high level of exudation and high rate of polymicrobialism that may be responsible for the wound deterioration seen in these patients can be managed by the combination of the open cell foam dressing and PHMB.

Evidence in paediatrics

In a series of 25 consecutive bed-ridden patients (mean age 4.6 years), 90% of wounds that were treated with Kendall™ AMD antimicrobial foam dressing were healed within two weeks and a mean of 6.5 dressing changes^[4]. The wounds occurred at a range of sites, including occiput, ear, heel, back and sacrum. The dressing was well tolerated and no adverse effects, allergic reactions or periwound skin complications were observed.^[4]

Practicalities in paediatrics

In children, the Kendall™ AMD antimicrobial foam dressing should be applied so that a 1.5cm border extends beyond the wound onto normal skin. This helps to prevent the dressing from being dislodged and to ensure a moist wound environment beneath the dressing. The dressing should be changed initially every two days and then every four days. The dressing can be cut into any shape and be easily molded to cover wounds on body prominences.

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Kendall™ AMD antimicrobial foam dressing paediatric case report

AG is a 26-month-old girl presented to the Bambino Gesù' Children's Hospital in Rome with a large Stage/Category III infected occipital pressure ulcer which had developed during treatment for bacterial meningitis. The wound was covered with a dark brown eschar that was firmly adherent to the tissues below (Figure 1). Microbiological analysis revealed high levels of *Pseudomonas aeruginosa* and *Acinetobacter baumannii*.

Treatment

A Kendall™ AMD antimicrobial foam dressing was applied to the wound (Figure 2). The centre of the dressing was removed to allow for application of a gel for enzymatic debridement. After three days, the eschar was reduced in size and debridement was completed surgically. Treatment was continued with an intact Kendall™ AMD antimicrobial foam dressing. After two weeks of treatment the wound had reduced in size, the redness had disappeared and the wound was no longer infected (Figure 3). Two months later hair growth was visible and only a small area remained to heal.



Fig 1: Occipital pressure ulcer on presentation

Fig 2: Kendall™ AMD antimicrobial foam dressing in situ

Fig 3: After two weeks of treatment