Use of acellular dermal regeneration template combined with NPWT to treat complicated extremity wounds in children

An experience with paediatric burn wounds treated with plant-derived therapeutic

Negative pressure wound therapy: improving the patient experience: Part 3 of 3

SGAP flap: a reliable method for sacral pressure ulcer reconstruction

Development of an algorithm for a wound management formulary
An experience with paediatric burn wounds treated with a plant-derived wound therapeutic

- **Objective:** To observe the efficacy of a plant-derived wound dressing (1 Primary Wound Dressing®, a mixture of hypericum and neem oil, in different types of paediatric burns.

- **Method:** A retrospective review was conducted over the complete healing course of 9 paediatric patients with a mean age of 8.12±3.35 (1–11 years), presenting mixed, partial or full-thickness burns. The treatment applied by the wound care specialist consisted of daily cleansing of the wound with a saline solution and application of 1 Primary Wound Dressing on the whole wound surface. There was no application of a secondary dressing. The time to heal, wound size, ease of handling, pain and complications were recorded. Procedural and background pain were observed in six of the patients older than 5 years (mean age 9.6±2.39, range 8–11 years). Due to the small number of patients examined during the period studied, it was not possible to perform statistical analyses.

- **Results:** The mean wound size was 50.76±48.32 cm² (4.63–132.0 cm²). A rapid induction of granulation tissue and re-epithelialisation was observed. Time to complete healing was 16.6±4.69 days (10–22 days). No complications related to wound infection were observed. The 6 patients older than five years reported a strong relief of pain, from an initial value of 7–8 out of 10 to 0 out of 10 within the first week of treatment. This remained at the 0 out of 10 level during the second and third weeks of treatment.

- **Conclusion:** This retrospective, non-controlled examination suggests that 1 Primary Wound Dressing could be an effective therapy for the treatment of burn wounds, with benefits including pain reduction and simplicity of use. Further evaluations with a larger population are required to document the effectiveness of this plant-derived wound dressing in a controlled fashion.

- **Declaration of interest:** There were no external sources of funding for this study. F. Carnevali is a researcher and co-inventor of 1 Primary Wound Dressing®.

In Bolivia, burns are the second most common cause of accidents in children. Statistically, most burns are the result of hot water scalding, especially in small children under five. This situation is very common in Bolivia and also other parts of the world, where families live in a single space that constitutes as a kitchen, bedroom, bathroom and living room, thus increasing the accessibility of many dangerous objects which can burn a child (i.e. hot water, free flames, gasoline, electricity). Burns, if not properly treated, can lead to various complications including death (lethal infections), severe functional limitations and disfiguration, especially in children in poor living conditions.

In the Paediatric Burn Department at Viedma Hospital, Bolivia, the degree of burn is clinically assessed initially by an experienced burn surgeon and it is monitored and re-examined during the following weeks to reassess the burn depth and identify the best treatment for each patient. This is consistent with many studies, especially where dedicated instruments such as Laser Doppler Imaging (LDI) are not available.

The treatment of first degree and partial thickness burns lasts from one week to 10 days, as recommended by many studies. The typical burns protocol at the hospital involves the application of hydrogel (Biopie; containing chitosan and polyaminopropyl biguanide) daily as a primary wound dressing and to leave it on the wound as long as possible without any secondary wound dressing. In the case of partial/full-thickness and third degree burns, which heal in three weeks to 30 days or more, when there are complications, escharotomy is performed under sedation in the operating theatre. The wound surface is then cleansed daily with a saline solution and a local silver sulfadiazine cream (SSD) mixed with lidocaine (Quemacur-L, INTI, Lima, Perú) is applied twice a day, or chitosan and polyaminopropyl biguanide once a day as the primary wound dressing. Two weeks after the trauma, based on a reassessment of the residual wound surface area, the burn surgeon decides whether to continue the dressing therapy for secondary intention healing or to perform a homologous skin graft. In this context, one should bear in mind the widely reported risk of developing a keloid reaction and/or hypertrophic burn scars, which is closely related to the

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We thank the Head of Viedma Hospital Dr. Romero Carozo and his staff for their approval and collaboration.