Biobrane™ versus Acticoat™ in the treatment of mid-dermal paediatric burns: a prospective randomised controlled pilot study

Dr Ela J Hyland[a], Dr Rachel D'Cruz[a], A Dr Seema Menon[a], A/Prof John G Harvey[a,b], Dr Erik La Hei[a,b], Dr Torey Lawrence[a], Ms Kelly Waddell[a], Dr Mitchell Nash[a], Prof Andrew JA Holland[a,b]

a. The Children's Hospital at Westmead Burns Research Institute, The Children's Hospital at Westmead, Cnr Hawkesbury Rd and Hainsworth St, Westmead, NSW, Australia, 2145

b. Discipline of Paediatrics and Child Health, Sydney Medical School, The University of Sydney, New South Wales, Australia

Introduction

The management of mid-dermal or indeterminate depth burns is difficult. Anecdotal evidence suggests that Biobrane™, a temporary skin substitute consisting of porcine collagen elements may be a beneficial treatment for burns of this depth, and lead to a reduction in the requirement for skin grafting, and expedite epithelisation in this group. Current standard care of these burns in our unit is the use of Acticoat™. No studies have yet been published comparing Biobrane™ to Acticoat™ for the treatment of mid-dermal burns.

Methods

A prospective, randomised controlled pilot study was conducted, comparing the use of Biobrane™ to Acticoat™ for mid-dermal burns, affecting ≥1% Total Body Surface Area (TBSA) in children. Children underwent Laser Doppler Imaging on day 1 or 2 post-injury. Upon confirmation of a mid-dermal burn, they were randomised into either Biobrane™ with an Acticoat™ overlay (as a means of reducing infection risk) or Acticoat™ alone. These were undertaken either at the clinic or ward level under sedation or in the operating theatre under a general anaesthetic.

Results

10 patients were recruited in each treatment group in this pilot study. Patient characteristics were similar; median age 2.0 years (Biobrane™) and 1.5 years (Acticoat™). The median TBSA burnt was 8% (Biobrane™) and 8.5% (Acticoat™). Children in the Biobrane™ group had more infections and required more antibiotics than the Acticoat™ group (6 children versus 1) (p=0.057). The number of positive wound swabs was also more in the Biobrane™ group (7 children versus 4) (p=0.37). Time to healing was more than a week less in the Biobrane™ group (19 days versus 26.5 days) although the significance of this is lacking due to too few numbers in the pilot study (p=0.18). The number of dressing changes were similar in both groups (5 versus 5.5) (p=0.56). The number of children requiring skin grafting was greater in the Acticoat™ group (7 versus 4 children, p=0.37), although the % TBSA grafted was exactly the same (1.75% TBSA).

Conclusions

This pilot study has shown trends, which suggest that Biobrane™, despite increased numbers of infections associated with the dressing, decreases the time to healing, and therefore the need for skin grafting in mid-dermal paediatric burns when compared to Acticoat™ alone.

Key Words

Biobrane™, Acticoat™, mid-dermal burns

Nominated Stream for Oral Presentations

[x] Medical
[ ] Nursing
[ ] Allied Health
[ ] Scientific

Nominated Stream for Poster Presentations

[ ] Care
[ ] Prevention
[x] Research

General instructions for preparing your abstract:

- Save this file to your desktop
- Please only capitalise the first word and pronouns in your abstract title
- Make sure you include all the authors and their organisation details in the abstract
- Highlight the presenting author by make his/her name bold
- Your abstract will appear on the web site and in the program book exactly as submitted