



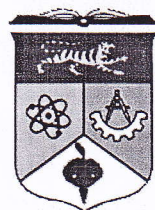
*Official Journal of the
Malaysian Medical Association*

The Medical Journal of Malaysia

2nd Malaysia Tissue Engineering & Regenerative Medicine
Scientific Meeting
(2nd MTERMS)

22nd - 23rd July 2008

Universiti Kebangsaan Malaysia Medical Centre
Kuala Lumpur



UNIVERSITI
KEBANGSAAN
MALAYSIA
National University of Malaysia

Volume: 63

Supplement A

July 2008

Cultured Epidermal Autografts in Combination with Meek Micrografting Technique in the Treatment of Major Burn Injuries

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SUMMARY

The treatment of major burn injuries are a formidable challenge to the burn surgeon. Early aggressive surgery for deep to full thickness burn injuries is vital in the prevention of infection. The ultimate goal in major burn injuries is to prevent the onset of multi-resistant organisms and achieve early wound cover. The field of tissue engineering can help to expedite the healing of these burn wounds. The development of keratinocyte culture delivery system can be used clinically to fasten the healing process and save many lives.

INTRODUCTION

Keratinocyte culture technique had been applied clinically since it was first described by Rheinwald and Green in 1975. Keratinocytes are from the epidermal layer which makes up more than 80% of the cells¹. Keratinocytes isolated from small skin biopsies are able to undergo rapid expansion in vitro and may be regarded as a form of biological dressing in patients with deep dermal burns².

The cultured epidermal autograft (CEA) has become an established and standardized method, practiced in several burn centers over the world as a replacement of the skin graft^{3,4}. These CEA's may reduce the need for skin grafts and can reduce the complications of burn injuries. This study was conducted to audit our use of CEA's on major burn patients.

MATERIALS AND METHODS

A retrospective study was conducted from 2003 to 2008 in Hospital Universiti Sains Malaysia on all burn patients using CEA's. During the first week a small skin sample was taken and sent to our tissue engineering laboratory, burns unit. During the first two weeks the CEA's were used to cover the burn wounds in combination with skin autografts (MEEK Micrografting).

RESULTS

A total of 9 patients were included in this study. The mean age was 10.4 years (range 1 – 41 years). The mean TBSA% was 35.1% (range 17 – 55%). Two cases had INTEGRA Artificial Dermal Regeneration Template used. Three cases had Tisseel fibrin glue spray in combination with CEA's. In all the cases, one attempt of CEA was used for each patient. One case succumbed to sepsis during the third week of burn injury. Eight patients survived well and were discharged home. The MEEK Micrografting technique of skin autograft was used in all the cases.

DISCUSSION

In conclusion, CEA's are a valuable option in the treatment of major burn injuries. CEA's help to expedite the healing process and minimize the length of stay of these burn patients.

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Fig. 1: 14 months old child with 22% Deep Dermal to Full Thickness Scald injury



Fig. 2: One week post CEA and MEEK Micrografting



Fig. 3: Six weeks post CEA and MEEK Micrografting