

Optimising the Clinical Potential of Cultured Epithelial Autograft with CellSpray®

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Cultured Epithelial Autograft (CEA) is a well established tool in the treatment of burn wounds. The use of CEA however, is tempered by several important drawbacks in terms of availability, cost and logistics. The time taken to produce confluent sheets of autologous cultured epithelial cells has led to the development of techniques utilising pre-confluent keratinocytes as the treatment.

There are several advantages from both a clinical and laboratory perspective in using cultured epithelium as a pre-confluent suspension. Rapid expansion of keratinocytes 'in vitro' is usually required when using these cells clinically. There is increasing evidence that using pre-confluent keratinocytes offers the advantage of earlier grafting with more rapidly dividing keratinocytes that attach to the wound bed more readily. We have developed a technique, which utilises pre-confluent keratinocytes transferred to the wound using a spray applicator.

Good clinical results have been achieved using CellSpray® in the treatment of burn patients. The treatment of burn patients with cultured epithelium presents a particular challenge for both the laboratory and the clinician. The patients often present with underlying pathology in addition to their burn injury and the extent of each of these factors has implications for their treatment protocol.

Various aspects of the CellSpray® technique will be reviewed and the clinical use of this treatment will be presented.