THE ROLE OF RECELL IN BURNS AND PLASTIC SURGERY SERVICES - AN EVIDENCED BASED APPROACH (P045)

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Introduction: Wound coverage is a challenging aspect of burn care. Cultured epidermal autografts (CEA) was first used in major burns in the early 1980s. Although a viable option for assisting wound coverage, complexities with the process itself led to sourcing of other options. The introduction of non-cultured autologous skin cells in 1992 has resulted in growing interest to revisit its clinical potential in burn wound care. ReCell® is a system which further simplifies delivery of these cells intra-operatively. The autologous suspension contains an array of cells required for wound healing such as keratinocytes, fibroblasts, melanocytes, Langerhan cells and undifferentiated basal cells. It has gained favourable use in a variety of services. This study aims to examine the role of ReCell® in burns and plastic surgery services through a literature review for an evidenced based approach of recommendations.

Methodology: A literature search was conducted using the search term “ReCell®” and “non-cultured autologous cells” on databases Medline, Embase, Cinahl, Cochrane and Nice Evidence over the last 30 years. We included all literature available in the English language, including non-English publications which were translated by a native speaker. Papers not available in the English language and commercial case studies by ReCell® were excluded. We included non-burn publications as we feel that these findings could be extrapolated to burn scar reconstruction.

Results: Our search revealed 42 papers. One paper was excluded as there was no English translation available. Of the 41 remaining papers, 21 were burns practice, 14 were plastic surgery/wound care, and 6 were pigmentation focused. Regarding acute burns, studies have shown the use of ReCell® alone in burn surgery significantly reduced length of stay in hospital, in comparison other techniques for partial thickness wounds. ReCell® was most commonly used with Biobrane® with improved post-operative pain and reduced healing times in paediatric scalds of superficial partial thickness. There was little evidence to suggest type of dressings disrupted ReCell® re-epithelialisation rates, with only one study stating no difference in outcome between Mepitel® and Surfasoft®. Several studies claim its use on the face gave highly satisfactory aesthetic outcomes. Recell® application has also been advocated in pigmentation disorders including scar management with variable success rates. Its impact on duration of surgery has been shown to be inconclusive. Several studies have shown it is a useful alternative in management of deep partial thickness burns and also in full thickness chronic wounds. Cost effectiveness varied between countries depending on health care schemes. Most showed it can incur high cost in the acute setting but more long term studies are required to understand the resultant implications on health care budgets. Currently, its use in the United Kingdom is varied and influenced by surgeon’s preference. Within our search, we note limited number of Level 1 evidence, with small numbers of subjects and therefore, questionable power of study strength.

Conclusion: ReCell® does have promising potential in burn and plastic services. However, streamlining of its clinical indications through a recommended set of national guidelines is required to maximise its potential and cost effectiveness to the healthcare system. A multi-centred randomized controlled trial addressing those aspects is required.