

Three Most Expensive Components Of A Mixed Depth Paediatric Scald Treatment Episode Do You Think? How Would You Suggest The Clinical Outcome Of Treatment Was Best Measured?

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Abstract: *In the paediatric population trauma is the leading cause of mortality and burns accounts for the second most common traumatic injury (Lakhoo et al 1995, Van Niekerk et al 2007). There have been major developments in the management of burns injuries in the last two decades which have enabled life-saving care in the paediatric severe burns population.*

However, major burns can have a significant impact in the long term on quality of life and health outcomes. These can be caused by a single factor or a combination of factors associated with complications of severe burns, such as muscle weakness, contractures, itching, neuropathic pain, itching, mixed depth paediatric scald as well as psychosocial factors such as body image and psychological trauma associated with the injury (Esselman et al 2006).

Therefore, when assessing efficacy of specific treatment methods and long term outcomes of the paediatric burns population, this paper would be looking for three most expensive components of a mixed depth paediatric scald treatment episodes and would try to suggest the clinical outcome of treatment was best measured. Although, there are a number of factors can be measured.

Method:

Collecting data from PubMed

Literature Review

More than 60% of burns in children are attributed to scalds. There are a number of factors that differentiate paediatric burns and their management from the same type of burns in adults. However, there is no clear standard care pathway available for paediatric scald treatment in the UK (Monstrey et al, 2008).

The key elements of management of burns in paediatric patients consists of debridement, optics antimicrobials and frequent dressing changes of the affected areas. Of these, burns dressings are a particularly expensive consumable within burn care, due to the variety of products used, their

different requirements for application (e.g. change daily requires nurses to apply a dressing daily) and the product costs.

Silverstein et al. reported that primary dressing costs accounted for approximately 70% of Mepilex Ag wound management costs, where as accounted for 11% of costs in management with Silvadene. Interestingly, labour used in wound management however accounted for 21% of costs in patients treated with Mepilex (total cost of treatment per patient was \$309), and 63% in the Silvadene patient group (total cost of treatment per patient was \$514).

Furthermore, the most comprehensive cost-analysis I found in the literature search I conducted was a prospective study in Spain carried out over 5 years that found that labour costs were actually the most expensive aspect of wound management, accounting for 56% of cost, and in combination with social costs, amounted to 85% of the total cost of wound management. (Sanchez et al 2007). There is very limited data available solely looking at paediatric cost-analysis in burns care.

Griffiths et al investigated the financial costs of uncomplicated, minor paediatric scald injuries management in Bristol and found that all cases required general anaesthetic for wound cleaning and BioBrane and dressing application. They also required admission and round reviews at 48hours prior to discharge. The average total cost per patient was £1850.

Therefore, a summary labour, hospital admission and wound care in terms of dressings and topical agents would be the most expensive components of wound management.

Clinical outcomes could be measured by designing a prospective study over a period of time, assessing a cohort of children in terms of methods of management and treatment outcome. Treatment outcome could be measured by assessment of the progress of the burn by a burn specialist, the

intervention can then either be monitored daily or on alternative days. For example, For example, Jozsa et al (2017) assessed a group of 73 children treated with Zn-hyaluronon gel combined with Aquacel Ag foam with superficial and mixed-type second degree burns. They applied the Ag foam dressing with Zn hyaluronon gel primarily after debridement and then reviewed the progress. To improve their study outcomes should be compared with an alternative method of treatment (Jozsa et al, 2017).

Findings

I have found through literature searches that there is very limited research into the quality of life associated with particular treatment options and therefore I think this would be an interesting aspect to research. However, to date, there is no specific quality of life measure designed and validated for the paediatric burns patients (Brown et al) and therefore it may be more imminent for this to be developed. Health-related quality of life scale or possibly more appropriately, the Burn-Specific Health Scale could potentially be applied to patient at start of a particular intervention and then at follow up intervals of 1-2 years to assess how different treatment methods improve (or do not improve) health-related quality of life. A modified version of the Burn-Specific Health Scale appropriate for the paediatric population could be designed for the study.

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