Clinical and Economic Impact of Utilizing Dehydrated Human Amnion/Chorion Membrane Allograft for the Treatment of Chronic Ulcers

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Abstract

Introduction: Chronic non-healing ulcers are a significant challenge for patients, families and healthcare providers. Natural amniotic membranes have been used successfully for wound and reconstructive purposes since the 1900s. In 2006, the development of a method to clean, prepare and dehydrate human amniotic membrane resulted in a commercially available, easy to use allograft. Our objective is to evaluate the clinical and economic impact of utilizing dehydrated human amnion/chorion membrane (dHACM) allograft for the treatment of chronic ulcers.

Methods: We conducted a review of 65 patients in our VA clinic with either venous leg ulcers or diabetic foot ulcers. Treatment consisted of sharp debridement as needed and application of dHACM allograft every 1-2 weeks, appropriate offloading and standard topical dressings. The wounds were accessed to determine rate of closure. Cost comparisons were made between a previously used product vs. dHACM.

Results: A total of 65 patients were treated with dHACM with a 93% healing rate. The average number of grafts to closure was 4.4 per wound. The average cost to closure using dHACM was $5,600. The amputation rate was reduced to 4.1 per 1000 in 2013 despite an increase in ulcer encounters. There was an average cost saving of $4,583 per patient and an overall savings of $224,567 using dHACM in comparison to the previous product used based on a similar review that showed 7.9 average grafts to closure.

Conclusion: We were able to achieve a 93% healing rate with the use of dHACM allograft and lower our amputation rate to the lowest rate ever. The use of dHACM appears to be a clinical and cost effective treatment option for chronic ulcers.

Background

Chronic non-healing ulcers are a significant challenge for patients, families and healthcare providers. Natural amniotic membranes have been used successfully for wound and reconstructive purposes since the 1900s. In 2006, the development of a method to clean, prepare and dehydrate human amniotic membrane resulted in a commercially available, easy to use allograft. References


Methods

We conducted a review of 65 patients in our VA clinic with either venous leg ulcers or diabetic foot ulcers. Treatment consisted of sharp debridement as needed and application of dHACM allograft every 1-2 weeks, appropriate offloading and standard topical dressings. Rates of wound healing, grafts per healed wound and cost comparisons were made between historical controls from 2011 treated with human fibroblast-derived dermal substitute (HFDS) vs dHACM.

Results

Chronic non-healing ulcers are a significant challenge for patients, families and healthcare providers. Natural amniotic membranes have been used successfully for wound and reconstructive purposes since the 1900s. In 2006, the development of a method to clean, prepare and dehydrate human amniotic membrane resulted in a commercially available, easy to use allograft.

Amputation rate dropped to 4.1 per 1000 in 2013.

Cost per Healed Wound

Average cost savings of $4,583 per patient

Overall Cost

Overall savings of 43% with use of dHACM

Conclusions

Increased rates of healing, fewer grafts per healed wound and reduced costs were observed with the use of dHACM vs. HFDS.

The use of dHACM appears to be a clinical and cost effective treatment option for chronic ulcers.