How effective is Negative Pressure Wound Therapy in the management and closure of Diabetic foot ulcers?

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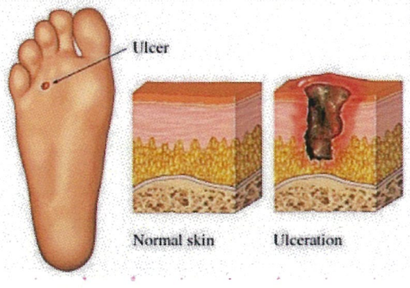
DIABETES

Within NZ there are over 200,000 people diagnosed with Diabetes and an 100,000 people living with Diabetes and yet to be diagnosed. Approx 15% of those people will experience a diabetic foot ulcer in their lifetime, leading to 85% of all non-traumatic amputations

An estimated $35million has been allocated to Diabetes with $12.4million aimed directly at improvement of diabetic care and services.

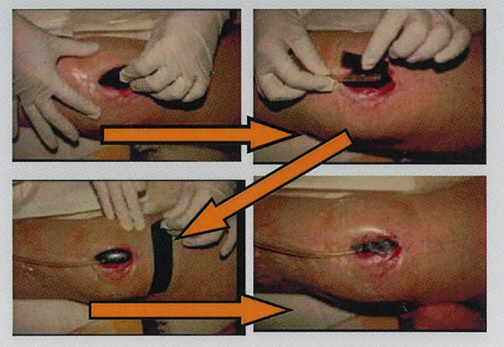
Diabetic foot ulcers are a result of neuropathic and vascular complications. The area affected losses it sense of sensation as well as an adequate blood supply, resulting in a break down of skin, limited circulation to assist with healing, the area becomes blistered and the vessels damaged, necrosis occurs and a ulcer forms.



NEGATIVE PRESSURE WOUND THERAPY

NPWT is controlled application of sub atmospheric pressure to an open wound. Using a vacuum to remove fluid from within the wound and enhance circulation.

An example below of NPWT being used on a chronic wound



• NPWT enhances circulation…is a controlled closed dressing…

-Diabetic foot ulcers have a lack of blood supply and reduced circulation…are a deep slow healing wound…

Would NPWT be effective in the closure and management of a diabetic foot ulcer??

Investigation

Evidence gathered on NPWT
Comparison between traditional treatment advanced moist wound therapy AMWT and NPWT on foot ulcer found…

• out of 342 patients involved in 112 days study, 46% of patients had complete closure of wound with NPWT and 26% of those treated with AMWT.

• NPWT appeared to be effective if not more effective on the closure of foot ulcers.

• NPWT reduced the likelihood of amputations, due to increased rate of wound closure

• NPWT worked to have shorted hospital stays and longer between dressing changes

Within Canterbury DHB it was estimated that $6,361,324 was spend on circulatory complications such as foot ulcers.

NPWT is cost effective because

• there was a longer period between dressing changes
• fewer resources were required for one dressing
• shorter hospital stays, reducing hospital cost and resources
• reduced need for nursing intervention and district visits.
• reduced the risk of surgical intervention such as amputations

More research required.

It was evident that literature was in favor of NPWT for the treatment of diabetic foot ulcers BUT they were also admit that there is a lack of completed studies and resources to be able to convincingly come to a conclusion, this was especially true within the NZ content.

Conclusion

NZ is having a diabetic epidemic which therefore is contributing to associated complications such as Diabetic foot ulcers. Throughout this investigation evidence shows the effectiveness of negative pressure wound therapy on diabetic foot ulcers and whether it is more cost effective. I have found that there was a need to try other interventions for this specific complication due to the cost on New Zealand today. NPWT was found to be very successful in the closure of ulcers and was faster then traditional treatments. This therefore contributed to this treatment being more cost effective. In conclusion NPWT on diabetic foot ulcers needs more evidence based research done to ensure health professional begin to use it as a front line treatment option in the future.

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