Pulsar II AWI: AN INNOVATIVE APPROACH TO HEALING CHRONIC WOUNDS OF UP TO SIX YEARS DURATION

Heather Hodgson (Lead Nurse Tissue Viability Acute & Partnerships), Ruth Potter (Tissue Viability Nurse)
NHS Greater Glasgow & Clyde

INTRODUCTION

A chronic wound is described as a wound that has not healed within 6 weeks (Benbow, 2010). 200,000 patients in the UK have a chronic wound. It is reported that up to 55% of patients have this wound for a year or more. These include pressure ulcers, diabetic foot ulcers and leg ulcers. Treating chronic wounds is costly both in terms of NHS resources and quality of life. Financial costs of chronic wounds have been widely reported and discussed. Direct costs to the NHS for caring for a patient with a chronic wound has been estimated at £2-3 billion per year. The DH (2010) estimated that management and treatment of a single grade 4 pressure ulcer could cost £668K. Up to 41% of the cost is attributed to nursingtime.

Wound Care Solutions Limited (WCS) offers an innovative and safe pulse irrigation system to provide selective hydro-mechanical debridement to chronic non-healing wounds.PULSAR II AWI uses low pressure irrigation (8 – 15 psi) with volumes of 1500ml to 3000ml of saline. The procedure is generally ell tolerated with minimal pain or discomfort using a no touch, no suction technique. This results in:

1. Hydro-mechanical removal of necrotic tissue removal using direct localised hydrotherapy
2. Hydro-mechanical removal of biofilm without using antibiotics
3. Reduction in bacterial bioburden by up to 86.9% with each treatment without harming normal wound bed tissue
4. Bio stimulation of normal tissue to enhance healing rates

Due to these actions, it is perceived that treatment costs can be lowered for chronic wound management in terms of:

- Reduced time to healing
- Reduced hospital admission and stay
- Reduced antibiotic use
- Reduced requirement for more costly debridement

PULSAR II AWI treatment for chronic wounds facilitates quicker healing rates which will provide health economic benefits for the organisation and quality of life benefits for the patient.
PULSAR II AWI can be done at patient's bedside or own home because it is an enclosed therapy to control aerosol. There is no initial cost outlay as all equipment is disposable.

METHOD

Patient with a wound of six weeks or more duration were recruited to evaluate PULSAR II AWI .PULSAR II AWI was carried out both in the hospital and community setting. In all cases wounds were treated for four weeks (=20 sessions) with PULSAR II AWI .
A series of 7 case studies will be presented demonstrating the pre and post PULSAR II AWI intervention results.

RESULTS

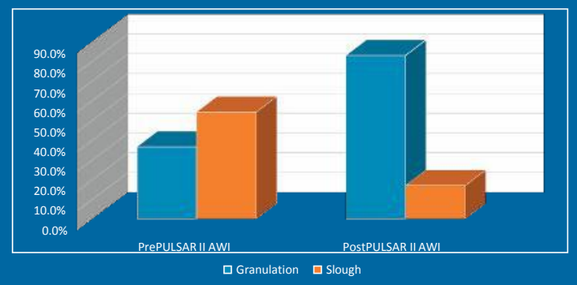
In all cases there was an improvement in terms of reduction in wound size and/or reduction in necrotic/sloughy tissue and increase in granulation tissue.

Case 7: Pressure Ulcer Week 0

Case 7: Pressure Ulcer Week 4

Patient Number	Sex	Age	Wound Type	Wound Duration (Months)	Size Pre-PULSAE II AWI	Size Post-PULSAR II AWI	% Reduction in Wound Size
1	M	43	Pressure Ulcer	72	348cm^3	90cm^3	75%
2	F	62	Pressure Ulcer	8	3 cm^3	2.5cm^3	17%
3	F	62	Pressure Ulcer	8	5.25cm^3	3.75cm^3	29%
4	M	67	Pressure Ulcer	2	36cm^3	24cm^3	33%
5	F	83	Pressure Ulcer	24	30.6cm^3	8cm^3	78%
6	M	46	Necrotising Fasciitis	48	27cm^3	11.25cm^3	58%

Change in Average % Tissue Type in Wound Bed



DISCUSSION

Chronic wounds remain a huge challenge to deal with for patients, carers, clinical staff and budget holders. New innovation needs to be tried to determine whether they have a positive impact on wound healing or not. Therapy which eliminates hospital re-admission, weekly treatment room/ hospital visits, use of antibiotics and waste disposal costs must be considered.

Pulsar II AWI is one such innovation that is worth consideration, and which is suitable for a variety of wounds including:

- Pressure Ulcers
- Diabetic Foot Ulcers
- Venous Ulcers
- Tunnelling wounds
- Traumatic wounds
- Infected wounds (including MRSA)

CONCLUSION

Pulsar II AWI proved beneficial in all cases, even on wounds with over six years duration. Because of the ease of use and patient acceptance,PULSAR II AWI should be considered as an option to treat chronic wounds both in the acute and community setting.

REFERENCES

Benbow M. Wound swabs and chronic wounds Practice Nurse 2010;9(39):27-30

The PULSAR II AWI system used in this case study were supplied without charge by Wound Care Solutions Limited, UK.