Dermacyn as the Local Treatment for Infected Diabetic Foot Wounds – a case series

B.T.Monaghan, Podiatry Services Manager and Clinical Lead in Diabetes Belfast City Hospital, Belfast Health and Social Care Trust.
J.H.Cundell, Lecturer Practioner , University of Ulster/ Belfast City Hospital , Belfast Health and Social Care Trust.

Background

Massive deep infection is the most common factor leading to amputation, and the optimal way to manage diabetic foot infections is not established. Dermacyn™, a stable free radical solution initially introduced as an antibacterial agent for surfaces and instruments medical device was then found to be helpful in the management of infected diabetic ulcers. Dermacyn™ can be used to manage the bacterial burden of wounds by mechanically debriding, flushing and cleansing the wound surface. As a topical agent it avoids the occurrence of side effects, and the development of resistance associated with antibiotic use. Dermacyn™ has been found to lead to the elimination of a wide range of bacteria and fungi from the surface of wounds after 15 minutes of topical application. More importantly it can eradicate MRSA and pseudomonas species from wounds, both of which can lead to significant impairment of wound healing.

Method

A review was carried out of 10 cases of patients with diabetic foot infections where Dermacyn™, was used in the clinical and ward settings to address the issue of wound infection. All patients had undergone standard podiatric care including regular sharp debridement and appropriate offloading. Peripheral arterial disease had been addressed by the vascular surgeons prior to inclusion. Patients with osteomyelitis were excluded from the series unless the patient had already undergone surgical excision of the infected bone. The wounds were all assessed using PEDIS. Bacterial burden was assessed using routine clinical swabbing, wound size was assessed using surface area and depth was measured using a sterile probe.

Results

Perfusion – 3 patients had "normal" perfusion, 6 had non critical PAD (2 had had stenting , 1 had had bypass graft) 1 patient had CLI resulting in BKA.

Extent – Pre Dermacyn ™ 4 -5 cm ^{2} – 2 patients
>5cm ^{2} - 7 patients
Post Dermacyn ™ < 2cm ^{2}
>5cm ^{2} - 1 patient.
1 Patient had BKA

Depth - Full Thickness - 2
Deep - 9
Bone and /or joint – these were excluded

Infection -

Case	Organisms pre Dermacyn™	Organisms post Dermacyn™
4	Not swabbed but clinical signs present	Clinical signs absent
5	Coliform ++ Strep Group B+ Pseudomonas+ Proteus +	No growth
6	Diptheroids++ Strep Group B + Staph Coag Neg	No growth
7	MRSA (few) Pseudomonas+ +	No growth
8	Not swabbed but clinical signs present	Patient had BKA
9	MRSA+++	MRSA (few)
10	MRSA++ Staph Coag Neg	MRSA +

Sensation - Intact – 2 patients
Loss of protective sensation- 8 patients

Conclusion

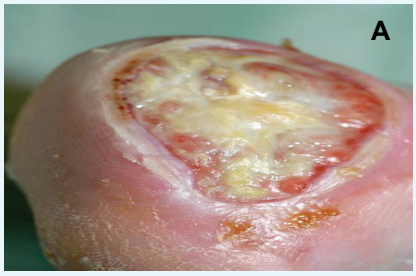
This case series demonstrates that the use of Dermacyn™, led to a reduction in ulcer size, bacterial burden and the clinical signs of soft tissue infection. Dermacyn™ appears to be a useful adjunct in the management DF Infection.

Case 1

A
03 11 2006
Prior to using Dermacyn – swab result – Serratia liquefaciens+++

B
Dermacyn had been used for 3 weeks
swab result – no growth

Case 2



A
Prior to using Dermacyn – swab result – MRSA +++
Ent.cloacae +

B
Dermacyn had been used for 8 weeks
swab result – MRSA +

Case 3

A
19 10 2005
Prior to using Dermacyn – swab result – Serratia Marcescens +++

B
03 01 2006
Dermacyn had been used for 8 weeks.
Wound closed 2 weeks after this photograph was taken

Competing interests: None