

Activated charcoal dressing in malodorous leg ulcers

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Leg ulcers are commonly associated with malodour. Reduction of malodour in foul smelling ulcers is an adjuvant therapy in the management of ulcers. We report two patients with leg ulcer who got benefited with activated charcoal dressing for malodour.

Key words : Activated charcoal , Dressing, Malodorous leg ulcers

Introduction

Ulcers produce noxious odours which can cause significant distress or embarrassment to the patient and their relatives. Odours may cause an individual to withdraw from social contacts, even with family and close friends (Van Toller 1993). Dressings with activated charcoal adsorbs volatile substances and reduce malodour.

Case Reports

Case 1

A 55 year old male Hansen's patient presented with non healing ulcer over the right leg for 5 months duration. Examination revealed a 8x5 cm ulcer over the lateral aspect of right leg. Maggots in the ulcer were removed using turpentine. The ulcer was foul smelling. Antibiotics was started according to culture and sensitivity pattern. Activated charcoal dressing was done and malodour was markedly reduced within 24 hours.

Case 2

A 63 year old male patient presented with

verrucous lesion over the right heel of 1 year duration. Examination revealed a 6x5 cm verrucous plaque with superficial erosions over the right heel. Ulcer was foul smelling. Biopsy showed features of squamous cell carcinoma. Activated charcoal dressing was done during pre-operative days and lead to marked reduction in



Figure 1 : Activated charcoal coated gauze pieces were placed over the vaseline dressing.



Figure 2: Activated charcoal dressing covered with gauze roll.

malodour. In both cases, ulcers were initially cleaned with normal saline. Ulcers were covered with vaseline impregnated gauze pieces. Activated charcoal coated gauze pieces were placed over the vaseline dressing (Figure 1) and completely covered with gauze roll (Figure 2). Dressings were done daily.

Discussion

Leg ulcer of any cause produce undesirable odour. The presence of a pervasive malodour can lead to embarrassment, disgust, depression and social isolation and may have a detrimental effect on sexual expression causing relationship problems. The smell from these wounds are caused by volatile agents that include short chain organic acids (n-butyric, n-valeric, n-caproic, n-haptanoic and n-caprylic) produced by anaerobic bacteria (Moss et al 1980), together with a mixture of amines and diamines such as cadaverine and putrescine that are produced by the metabolic processes of other proteolytic bacteria. The effective way of treating odour is by giving appropriate antibiotics and surgical debridement but in most cases adequate local concentration of antibiotics were not achieved in the presence of necrotic tissue. A poor blood supply to the wound

may further reduce the effectiveness of systemic treatment (Thomas et al 1998). Topical honey, yogurt, larva were tried to treat the odour (Keast-Butler 1980, Thomas et al 1996). In 1976, a more scientific approach to the control of odour was reported by Butcher et al (1976) by using charcoal coated with cloth. Activated charcoal is carbon that has been treated with oxygen. The treatment results in a highly porous charcoal. These tiny holes give the charcoal a surface area of 300-2,000 m²/g allowing liquids or gases to pass through the charcoal and interact with the exposed carbon. The carbon adsorbs a wide range of impurities and contaminants, including chlorine, odors and pigments. A single dressing which, by virtue of the large surface area of the carbon, is capable of taking up very large numbers of molecules should therefore prove capable of removing odour over prolonged periods. Laboratory studies proved that activated charcoal can absorb the bacteria although they still remained viable. So, antimicrobial substances impregnated charcoal will be highly effective in the management of ulcers.

We advocate this cost effective method of dressing against commercial available dressing for malodorous ulcers.

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