



## Current practice in the management of wound odour: An international survey



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### ARTICLE INFO

#### Article history:

Received 10 April 2013

Received in revised form 16 October 2013

Accepted 16 October 2013

#### Keywords:

Odor

Guidelines

Management

Palliative wound

Wound symptoms

Nursing

### ABSTRACT

**Aim:** To determine from a multi-disciplinary and international perspective current practice in the management of wound odour.

**Background:** Malodour is cited by patients and carers as one of the most distressing and socially isolating aspects of their wounds. The absence of a standardised approach to assessment and management underscores the need to collect baseline data to support guideline development.

**Design:** On-line survey.

**Methods:** A study specific questionnaire in English, Spanish, Italian and German was emailed to wound care organisations worldwide, palliative and oncology nursing organisations, and known contacts with a special interest in wound management, for distribution to members between December 2011 and February 2012.

**Results:** 1444 people from 36 countries responded. 12% assess odour with descriptive words being the most frequent form of assessment. Charcoal and silver based dressings were the most frequently used odour management agents, yet, only 48.4% and 23% respectively reported these as being very effective. Antimicrobial agents were cited as most effective but were not the most frequently used. 8% use aromatherapy oils direct to the wound, and 74% combine a range of dressings to try and manage odour. Odour, pain and exudate management were the greatest wound management challenges facing patients and clinicians. 46.7% of respondents encounter patients with MFW on a monthly basis and 89% agreed there is a need to develop guidelines in this area.

**Conclusion:** A 'trial and error' approach to odour management exists with low overall satisfaction with current practice. There is a need for research and education on means to assess odour and odour management options.

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### What is already known about the topic?

- Acute and chronic wounds affect up to 2% of the population and account for up to 4% of total health care expenditure.
- Of all wound symptoms, odour is cited by patients and carers as the most distressing, causing social isolation, depression and revulsion.
- Best practice in wound assessment advocates for assessment of odour, yet, there is no consensus on methods of assessment or management strategies and the lack of an evidence base to guide practice necessitates the need for collection of baseline data.

### What this paper adds

- This study demonstrates an important theory–practice gap as only 12% of clinicians assess odour, yet it is advocated for in wound assessment tools.
- Topical antimicrobials are cited as being the most effective odour management agents but are not the most widely used for odour management.
- Trial and error prevails in the management of odour at the wound bed and in the patients' environment.

## 1. Introduction

Consistent research findings demonstrate the negative impact wounds, and their associated symptoms, have on the quality of life of the individual in physical, psychological, spiritual and social domains. Of all wound related symptoms, odour is cited by patients and professionals as the most distressing, contributing to a contracted life of the individual, social isolation, depression, feelings of guilt and repulsion (Chase et al., 2000; Grocott, 2007; Probst et al., 2009). Chronic wounds as well as palliative wounds may be associated with a profound odour problem and some patients report feelings of being totally isolated by the effects of their wound attributing the odour as the main causative factor (Probst et al., 2013a,b). These feelings of isolation also result in patients and carers struggling in their attempts to manage the physical elements of the wound while simultaneously coping with the psychological impact of its appearance and in the case of malignant fungating wounds (MFWs) the reminder of underlying disease (Probst et al., 2013a,b).

Living in a body with a chronic or palliative wound that leaks and smells is a big challenge for patients and leads to significant emotional, physical and social distress (Grocott et al., 2005; Probst et al., 2009). Most of the patients are using 'trial and error' methods to cope with their unpredictable and unbounded body that cannot contain fluids and odours and leads to feelings of shame and frustration (Probst et al., 2013a,b). The problem of odour may also have a detrimental effect on sexual expression, leading to relationship problems (Haughton and Young, 1995).

Malodour arises from a combination of factors including bacteria, necrotic tissue, high levels of exudate and poorly vascularised tissue (Gethin, 2010). It is caused by a cocktail of volatile agents that includes short chain organic

acids, (n-butyric, n-valeric, n-caproic, n-haptanoic and n-caprylic) produced by anaerobic bacteria (Moss et al., 1974), together with a mixture of amines and diamines such as cadaverine and putrescine that are produced by the metabolic processes of other proteolytic bacteria (Thomas et al., 1998). This odour has been linked to the smell of rotting meat (Price, 1996). More recently Dimethyl Trisulfide has been identified in malignant wounds as a source of odour (Shirasu et al., 2009). This compound has also been found in volatiles emitted from certain vegetables, fermented milk and aged food or drinks and is also produced by aerobes such as *Pseudomonas aeruginosa* (Shirasu et al., 2009).

Smell is difficult to research as any given odour may be made up of hundreds of different chemicals. Humans can distinguish 10,000 or so odours, but research suggests that our olfactory receptors are stimulated by different combinations of a more limited number of olfactory qualities (Tortora and Derrickson, 2011). While it is believed that individuals can become accustomed to certain odours, this is not the case with putrescine and cadaverine which cause a gagging reflex among individuals (Van Toller, 1994).

Assessment of wound odour remains an important goal as there is currently no internationally agreed method of assessment and the inter-rater reliability of some methods is very poor ( $r = 0.2$ ) (Gethin and Cowman, 2007). Variation in the use of visual analogue scale (VAS) for assessment is reported with scales ranging from a two point, to four point, five point, 10 point and 100 point scale; yet there is a dearth of research, which has evaluated the reliability of any of the scales.

## 2. Background

Wounds and their management are a significant problem affecting approximately 2% of the general population, accounting for up to 4% of total health care expenditure and approximately 68% of community nurses time (McDermott-Scales et al., 2009; Posnett et al., 2009; Sen et al., 2009). Chronic wounds such as venous, arterial and diabetic foot ulcers have a protracted course of healing and are associated with a recurrence rate of up to 70% (Milic et al., 2009; Sen et al., 2009). While availability of precise figures for MFWs is limited, it is estimated that of those people with metastatic carcinoma approximately 5–10% experience skin involvement occurring during the last 6–12 months of life (Lo et al., 2008). A MFW occurs by an infiltration of the skin by a tumour or metastasis (Grocott, 2007). Population projections would suggest that the prevalence of all wounds will increase significantly in the next 20 years due to a range of factors including increased life expectancy, lifestyle changes, increased prevalence of chronic illness and increased survivorship from major traumas and surgeries (Posnett et al., 2009; Sen et al., 2009).

The problem of wound odour extends across wound aetiologies and geographical boundaries and is currently an under researched and poorly managed phenomena while simultaneously being the most distressing aspect of a wound. Yet, odour management was not identified as a

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