



A study to look at the effects of a hydrolat spray on hot flushes in women being treated for breast cancer

Jeannie Dyer^{a,*}, Sue Ashley^b, Clare Shaw^c

^a*The Royal Marsden NHS Foundation Trust, Fulham Road, London SW3 6JJ, UK*

^b*Clinical Research Finance and Information, The Royal Marsden NHS Foundation Trust, Downs Road, Sutton, Surrey SM2 5PT, UK*

^c*The Royal Marsden NHS Foundation Trust, Fulham Road, London SW3 6JJ, UK*

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Summary Women undergoing treatment for breast cancer may experience hot flushes, which greatly impact on quality of life. The use of water sprays or moist wipes to lower skin temperature is often recommended. A peppermint and neroli hydrolat spray was compared to a plain water spray to assess which was preferred, in a single-blind randomised control crossover trial. Only 18 of the 44 patients (41%) preferred the hydrolat spray to a plain water spray, which was less than the 80% required to offer this spray as a standard suggestion for hot flush management. However a small number of those choosing it found it extremely helpful. Both sprays appeared to lessen hot flush annoyance. Previous chemotherapy appeared to be a factor influencing the choice of spray.

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Introduction

Hot flushes (flashes in the North American literature) are a common side effect of treatments for breast cancer (chemotherapy and hormonal treatments). These hot flushes may be a major source of stress, causing embarrassment, panic and a sense of loss of control. A sudden wave of heat followed

by sweating, chills and palpitations diminishes quality of life and is disruptive and unpleasant.¹

Schultz et al.² found 68% of breast cancer survivors responding to a question relating to hot flushes, indicated that these flushes were a problem for them. These authors found that those who had most problems with hot flushes were significantly younger at the time of diagnosis, and that the more problems a survivor had with hot flushes the more likely she was to report that cancer did affect her overall health. No relationship was found between severity of hot flushes and type of treatment for breast cancer. Hunter et al.³

*Corresponding author. Tel.: +44 207 352 8171x1588;
fax: +44 207 808 2336.

E-mail address: jeannie.dyer@rmh.nhs.uk (J. Dyer).

found that having more problematic hot flushes and night sweats was associated with more anxiety and sleep problems, with poorer emotional and social functioning and worse body image.

Breast cancer patients are currently advised to try simple methods to palliate the unpleasant effects of these hot flushes, one of which is the use of cooling sprays or moist wipes to lower skin temperature during a hot flush. Typical advice also includes adding essential oils to the spray such as peppermint or lavender.⁴ Cooling sprays are offered as a simple palliative measure to enhance comfort, in addition to any other measures already being undertaken. This is in contrast to the use of acupuncture or drug treatment intended to manage symptoms completely.

Another way of gaining the benefits of essential oils in addition to the cooling effect of a water spray is to use hydrolats instead of essential oils. A hydrolat (term used in the UK) or hydrosol (USA, Canada, UK) is the distilled water recuperated during the distillation process for an essential oil. During the distillation process the polar/hydrophilic (water-soluble) molecules dissolve in the water/steam and a proportion remain in the hydrolat. Peppermint (*Mentha x piperita*) and neroli (*Citrus aurantium* var *amara* flos.) hydrolats contain in the region of 0.03% essential oil components.^{5,6} This is why hydrolats are fragrant and can be used therapeutically.

Formal research into the uses of hydrolats is surprisingly scant given their long history of use. Distilled plant waters have been used for healing and cleansing for centuries⁵ but no research studies into their specific effects for hot flushes have been found. There is however much anecdotal experiential evidence of their beneficial effects quoted in recent reputable text books for practitioners written by well-established aromatherapy authorities.^{5,7,8} Similar claims are also made on commercial essential oil websites.

In the USA, the Aromatic Plant Project was founded in 1990 to encourage the local growing and distillation of true essential oil plants for the production of hydrosols and in some cases essential oils. Hydrosols are recommended for use in beauty and skin care, hygiene, beverages, to freshen air and as a refreshing and healing spritz for hot flushes, or to cool the skin.⁸ The use of peppermint hydrolat for its cooling effect on hot flushes is specifically suggested by Catty,⁷ to be sprayed on face, wrists and back of neck. Similar advice is given elsewhere.⁵

Peppermint hydrolat contains menthol in a very small quantity. The sensory impact of menthol when applied to the skin depends on the concentration, a

low concentration giving a cool sensation.⁹ Neroli hydrolat is a soothing and antimicrobial product for skin care, suitable even for sensitive or delicate skin.^{5,7} Hydrolats are widely regarded as being safe and almost completely non-toxic without unwanted secondary effects.⁵

To date there is no evidence to show whether a hydrolat spray would be more effective than a plain water spray to help mitigate the unpleasant effects of hot flushes. We therefore designed a single-blind randomised controlled study which aimed to establish whether a peppermint and neroli hydrolat spray would be chosen over a plain water spray by patients experiencing hot flushes as a result of breast cancer treatment.

Methods

Participants

The eligibility criteria for this study were: any woman suffering from hot flushes as a result of treatment for breast cancer, including those already receiving acupuncture or drug treatments which were not sufficiently effective in reducing their hot flushes, recruited as an out patient attending a specialist cancer hospital on either of two sites. The exclusion criteria were: any woman suffering from adverse reactions to cosmetics, perfumes or menthol, already currently using a cooling spray for her hot flushes, or unable to attend the hospital to collect the spray bottles and diaries.

Patients were recruited by means of posters put up in the out patient clinics on both sites of the hospital. Relevant medical staff and allied health professionals were given copies of the protocol and could also refer interested patients.

Sample size

We would have proposed using this hydrolat spray as a standard therapy for hot flushes if sufficient women in this study chose it in preference to the distilled water. We considered that 80% of women choosing the hydrolat spray indicated a clear advantage to it whilst anything less than 60% would indicate that the hydrolat spray is ineffective in this setting. In order to detect this level of preference, 33 women were needed to complete the study; if 25 or more chose the hydrolat spray then it would have been considered to be effective and would have been offered as standard therapy in future patients (alpha 1-sided = 5%, power = 80%).

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