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A feasibility study of auricular therapy and self-administered acupressure for insomnia following cancer treatment

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ABSTRACT

Introduction: Many cancer patients experience sleeping difficulties which can persist several years after the completion of cancer treatment. Previous research suggests that acupuncture, and variants of acupuncture (acupressure, auricular therapy) may be effective treatment options for sleep disturbance. However, current evidence is limited for cancer patients.
Methods: Feasibility study with 3 arms. Seven cancer patients with insomnia randomised to receive either auricular therapy (attaching semen vaccariae seeds to ear acupoints) ($n = 4$), self-acupressure ($n = 1$) or no treatment ($n = 2$). Participants assigned to receive auricular therapy or self-acupressure stimulated the acupoints each night an hour before retiring to bed. The duration of participant involvement was 5 weeks. Subjective sleep quality was measured at baseline and post-treatment using the Pittsburgh sleep quality index (PSQI). The impact of treatment on concerns of importance to the participants themselves was measured using the measure yourself concerns and wellbeing (MYCaW). Each participant also completed a treatment log book.
Results: All participants completed their treatment. All auricular therapy and self-acupressure participants recorded clinically significant improvements in global PSQI scores. In the auricular therapy arm mean global PSQI reduced from 12.5 at baseline to 8 following completion of treatment. In the self-acupressure arm PSQI reduced from 15 to 11. While in the no treatment arm the mean PSQI score was 14.5 at both baseline and follow up.
Conclusions: Despite the limited sample size, both auricular therapy and self-acupressure may represent potentially effective treatments for cancer patients with insomnia. The positive findings suggest further research is warranted into both treatment modalities.

1. Introduction

Between 25% and 59% of cancer patients experience sleeping difficulties [1–4]. Patients ranked sleep problems as the 5th highest out of 14 distressing symptoms before their cancer treatment, and 4th highest after cancer treatment [5]. In between 23% and 44% of cancer patients, sleep problems persist several years after the initiation of adjuvant therapy for cancer, suggesting that insomnia develops a chronic course in substantial numbers of cancer patients [6]. Many of these cancer patients receive hypnotic medications to relieve their symptoms of insomnia. However, the usage of hypnotic medications is associated with a number of risks and limitations, such as daytime drowsiness and associated increased risk of falls and fractures [6]. Prolonged usage is also associated with risks of dependence or tolerance (reduced efficacy due to prolonged usage, and the need to increase the dosage to maintain therapeutic effects) [6]. Given the limitations of hypnotic medications non-pharmacologic approaches to treating insomnia should be considered.

The findings from published systematic reviews suggest that acupuncture, and variants of acupuncture (acupressure; auricular acupuncture; auricular therapy), may be effective treatment

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options for sleep disturbance [7–13]. However, evidence of the effectiveness of acupuncture and related interventions within cancer are more limited [14]. A non-randomised single arm feasibility study evaluated a short course of acupuncture treatment for sleep disturbance and hot flushes in 10 postmenopausal breast cancer survivors. The findings suggested a short term benefit from acupuncture on a range of sleep outcomes (total sleep time, sleep latency, and night-time awakenings) [15]. A randomised controlled trial comparing acupuncture with fluoxetine in 80 cancer patients presenting with depression and insomnia concluded that acupuncture significantly improved sleep quality [16].

However many previous studies of acupuncture and related interventions have contained numerous methodological weaknesses [7–16], and there is no conclusive evidence to suggest which modality of acupuncture may be more effective for sleep disturbance. This feasibility study aimed to address this gap in the evidence base and provide preliminary data on the effectiveness of two variants of acupuncture (auricular therapy (attaching semen vaccariae seeds to ear acupoints) and self-administered acupressure) in the relief of insomnia in a sample of patients with cancer in a methodologically rigorous feasibility study.

2. Methods

The study was a randomised controlled feasibility study with 3 arms. Treatment arms consisted of (1) auricular therapy (attaching semen vaccariae seeds to ear acupoints), (2) self-administered acupressure, and (3) no additional treatment. Patients were informed about the study by treating healthcare professionals at the study site. Members of the research team provided interested patients with a patient information sheet and detailed verbal information regarding the study. Participants were required to be hospital outpatients with breast, prostate or colorectal cancer; meet the criteria for chronic insomnia syndrome (require more than thirty minutes to fall asleep and/or have more than thirty minutes of nocturnal awakenings, occurring three nights a week or more, for six months or more and affecting daytime functioning); have a score of five or more on the Pittsburgh Sleep quality index; be older than 16 years; and receiving acupressure or auricular therapy for the first time. Exclusion criteria included those with self-reported sleeping difficulties prior to receiving their diagnosis of cancer; those currently receiving, or having received within the last month, chemotherapy or radiotherapy; and those scheduled to receive anticancer treatments within the next three months, with the exception of adjuvant hormone therapy. Patient recruitment occurred between February 2010 and June 2012.

The duration of participants' involvement was 5 weeks. Participants were randomly allocated to the trial groups through simple envelope method. Trial allocations were randomly placed in sealed numbered opaque envelopes by a member of university staff not involved in the research study or the care of the participating patients. Upon participants consenting to take part in the study the next numbered envelope was opened to reveal the trial allocation.

As part of the feasibility study aspects of the study design, such as recruitment, acceptability of the intervention, and appropriateness of the outcome measures were evaluated. The study was conducted at the Christie NHS Foundation Trust, Manchester. Ethical approval for the feasibility study was obtained from Stafford and Trafford Research Ethics Committee [REC reference number: 09/H1004/7].

2.1. Interventions

Participants were randomly allocated to receive either auricular therapy, self-administered acupressure, or no treatment. The modalities of acupressure and auricular therapy were chosen for this study due to considerations of ease of administration, and because they are less invasive than needle insertion. The acupuncturists instructing patients and administering treatments were all nurses who had received training from either the British Medical Acupuncture Society or the British Academy of Western Medical Acupuncture. All acupuncturists had at least 3 years of clinical experience in treating patients with cancer.

2.1.1. Auricular therapy

Participants assigned to auricular therapy attended Christie NHS Foundation Trust on a weekly basis for five weeks. Appointment times lasted approximately ten minutes and took place at a time convenient for participants (total therapist contact time 50 min). Acupoints selected for the feasibility study were based on those utilised in previous research; acupuncture textbooks; and consultations with practicing acupuncturists. The auricular acupoints stimulated included shenmen bilaterally, and any two from insomnia 1, insomnia 2, heart, liver, kidney and subcortex bilaterally based on the patient's presenting condition. Semen vaccariae seeds were fixed tightly to each acupoint with a piece of adhesive plaster by the treating acupuncturist. The seeds were left in place and replaced each week by the acupuncturist. Based on previous research and consultations with practicing acupuncturists, participants were asked to press the seeds for one minute each night an hour before retiring to bed.

2.1.2. Self-administered acupressure

Participants allocated to the self-administered acupressure group received a 50 min appointment with an acupuncturist, at a time convenient for the participant. The acupuncturist provided participants with instructions on how to locate and apply pressure to specific acupoints. Acupoints selected for the feasibility study were based on points used within previous research; consulting acupuncture/acupressure textbooks; and consultations with practicing acupuncturists. Consideration was additionally given to the likely ease of location and stimulation by patients. All patients were instructed to apply pressure to HT7 bilaterally, and two from PC6, GB20, Ex8 (anmian 1), KI6, BL62 bilaterally based on the patients presenting condition. Based on previous research and consultations with practicing acupuncturists, participants were asked to stimulate each acupoint for approximately one minute, each evening an hour before retiring to bed.

2.1.3. No additional treatment

Participants allocated to the no treatment group received no additional treatments for the duration of the study. Participants allocated to no additional treatment were offered the choice of receiving either auricular therapy or self-acupressure at the end of their participation in the study.

2.2. Outcome measures

Subjective sleep quality was measured using the Pittsburgh sleep quality index (PSQI) [17], which contains seven indices to represent patients' quality of sleep over the previous month: overall sleep quality; sleep latency (the amount of time it takes to fall asleep); sleep duration; sleep efficiency; sleep disturbances; day dysfunction due to sleepiness; and use of sleeping medication. Global PSQI scores range from 0 to 21, with a score of $\geq$5 indicating sleeping difficulty. In addition the impact of treatment on concerns of importance to the participants' themselves were measured using the measure yourself concerns and wellbeing (MYCaW) [18]. The MYCaW is an individualised questionnaire that has been developed for evaluating complementary therapies in cancer care. MYCaW contains two patient-generated problems. Patients rate two concerns or problems which they would most like help with