Original Article

The Effectiveness of Acupressure for the Control and Management of Chemotherapy-Related Acute and Delayed Nausea: A Randomized Controlled Trial

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Abstract

Context. Both positive and negative results have been reported in the literature from the use of acupressure at the P6 point, providing evidence of highly suggestive but not conclusive results.

Objectives. To clarify whether acupressure is effective in the management of chemotherapy-related nausea and vomiting.

Methods. A randomized, three-group, sham-controlled trial was designed. Patients with cancer receiving chemotherapy were randomized to receive standardized antiemetics and acupressure wristbands, sham acupressure wristbands, or antiemetics alone. Primary outcome assessment (nausea) was carried out daily for seven days per chemotherapy cycle over four cycles. Secondary outcomes included vomiting, psychological distress, and quality of life.

Results. Five hundred patients were randomized. Primary outcome analysis (nausea in Cycle 1) revealed no statistically significant differences between the three groups, although nausea levels in the proportion of patients using wristbands (both real and sham) were somewhat lower than those in the proportion of patients using antiemetics-only group. Adjusting for gender, age, and emetic risk of chemotherapy, the odds ratio of lower nausea experience was

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1.18 and 1.42 for the acupressure and sham acupressure groups, respectively. A gender interaction effect was evident ($P = 0.002$). No significant differences were detected in relation to vomiting, anxiety, and quality-of-life measures.

Conclusion. No clear recommendations can be made about the use of acupressure wristbands in the management of chemotherapy-related nausea and vomiting as results did not reach statistical significance. However, the study provided evidence of encouraging signals in relation to improved nausea experience and warrants further consideration in both practice and further clinical trials.

Trial Registration. This trial is registered with the ISRCT register, number ISRCTN87604299. J Pain Symptom Manage 2014;47:12–25.

Key Words
Acupressure, nausea, vomiting, chemotherapy

Introduction

Significant developments in antiemetic therapy over the past two decades have improved the control of chemotherapy-related vomiting. By contrast, chemotherapy-related nausea, both acute and delayed, is still a significant problem in clinical practice, with 42%–52% of patients experiencing nausea on any one day in routine practice.[1] Surprisingly, despite improvements in the management of vomiting, postchemotherapy nausea seems to have increased.[2] Furthermore, clinicians often underestimate the experience of nausea, especially with regard to delayed nausea.[3,4]

Chemotherapy-induced nausea and vomiting can have a profound effect on the cancer treatment experience[5] and is associated with negative effects on daily life and overall quality of life, including effects on food intake, weight loss, social interactions, dehydration, difficulty with sleeping, and anxiety.[5,6] In a qualitative study of patients' experiences, unmanaged nausea was constant in some patients and made them exhausted for long periods after chemotherapy, making recovery between cycles longer.[5] The impact of nausea is greater than that of vomiting,[7] and nausea has proven to be more difficult to control. The direct and indirect costs of the experience of nausea and vomiting, especially of delayed symptoms, are considerable.[8] Antiemetic trials have traditionally focused primarily on vomiting and emetic episodes, on which the effectiveness of many antiemetic drugs is judged. Little attention has been directed to the concept of chemotherapy-induced *nausea* despite the fact that it is increasingly recognized that nausea and vomiting are related but separate entities.[9,10] The need for these two symptoms to be treated as two separate entities is strongly advocated.[10]

As antiemetic medications do not fully control nausea during chemotherapy, nonpharmacologic interventions in addition to antiemetics have been tested over the years, especially in the 1980s. Acupuncture and its noninvasive form of acupressure have been tested several times after the classic early work by Dundee et al.[11,12] In a literature search between 1990 and May 2005, we identified 10 studies specific to oncology, reported elsewhere,[13] with seven of 10 studies showing positive results and another two approaching statistical significance. These studies have used a variety of acupressure methods, such as the ReliefBand® (a small battery-operated transcutaneous electrical nerve stimulation device designed to stimulate the P6 acupoint),[14–16] an acupressure wristband (a small elastic band with a round plastic button applying constant mild pressure on the P6 acupoint),[17–19] and direct pressure on acupoint P6[20] or P6 and ST36 points together.[21] We also carried out a two-arm pilot study of 36 patients with breast cancer using acupressure wristbands (plus antiemetics) vs. standard antiemetics only.[13] Although this study was limited, key findings suggested that acupressure improved the nausea *experience* as well as nausea and vomiting *occurrence* and *distress* across the first five days of chemotherapy.