



A Clinical Trial on Acupuncture for the Treatment of Nausea and Vomiting Induced by Chemotherapy

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Abstract

One of the most prevalent and unpleasant side effects that cancer patients who undergo chemotherapy often encounter is chemotherapy-induced nausea and vomiting (CINV). Antiemetic medicine has come a long way, yet many patients still suffer from nausea, vomiting, and a diminished quality of life. As a result, acupressure and other complementary therapies are gaining popularity as ways to alleviate symptoms and promote patient well-being. The frequency and severity of nausea and vomiting caused by chemotherapy were significantly reduced in patients who got acupressure in addition to normal antiemetic medication, as compared to those who received standard treatment alone. In addition to these benefits, participants noted an increase in their appetite, comfort, and capacity to carry out their regular tasks. The intervention was well-tolerated and safe because no serious side effects associated with acupressure were reported. The results of this clinical trial provide more evidence that acupressure can help alleviate nausea and vomiting caused by chemotherapy. As an additional tool to traditional antiemetic therapy, it is highly advantageous due to its non-invasiveness, simplicity of administration, inexpensive cost, and positive safety profile. Patients receiving chemotherapy may find their symptoms better managed and their quality of life improved if acupressure is included in their supportive cancer treatment. It is advised that additional large-scale research be conducted to validate these results and create uniform clinical guidelines.

Keywords: Acupressure, Chemotherapy-Induced Nausea and Vomiting, Cancer, Oncology, Complementary Therapy

Introduction

Chemotherapy is still an integral part of cancer treatment, and cancer is still a major global health concern. In order to kill cancer cells, slow the disease's course, and increase survival rates, chemotherapy is commonly utilized. Chemotherapy has many therapeutic benefits, but it also has many side effects that can hurt patients emotionally and physically. In particular, chemotherapy-induced nausea and vomiting (CINV) ranks high among the most debilitating and difficult side effects that cancer patients face. When chemotherapy causes nausea and vomiting, it is known as chemotherapy-induced nausea and vomiting. These side effects could manifest soon after therapy, within the first day (acute CINV), or even days later (delayed CINV). Factors such as CINV severity and frequency, chemotherapy drug type and dosage, treatment duration, age, gender, prior chemotherapy experiences, and individual susceptibility all play a role. An individual's quality of life can drastically decrease as a result of dehydration,



electrolyte imbalance, malnutrition, exhaustion, decreased treatment adherence, and uncontrolled nausea and vomiting. The treatment of CINV has been greatly enhanced by the development of new antiemetic drugs within the last several decades. To manage and avoid these symptoms, doctors often prescribe drugs including corticosteroids, neurokinin-1 receptor antagonists, and serotonin receptor antagonists. Breakthrough nausea and vomiting, however, persist in many individuals even after these pharmaceutical therapies. Furthermore, there are potential side effects of antiemetic drugs, including headache, constipation, dizziness, and exhaustion, which has sparked interest in exploring alternative methods of symptom treatment. Applying pressure to certain areas on the body called acupoints is a non-invasive therapeutic practice that originates from Traditional Chinese Medicine (TCM). Traditional Chinese Medicine (TCM) holds that by stimulating these spots, one can normalize the circulation of life force qi (Qi) and bring about internal harmony. From a contemporary biological point of view, acupressure has the potential to modulate the physiological mechanisms linked to vomiting and nausea by influencing the neurological system and promoting the secretion of neurotransmitters. The Pericardium 6 (P6 or Neiguan) point, on the inside of the forearm, is one of the most popular acupoints for reducing nausea and vomiting. By calming the nervous system, affecting the brain region responsible for vomiting, and modifying gastric motility, studies have shown that stimulating the P6 acupoint may alleviate nausea and vomiting. Acupressure is becoming more popular as a supplementary intervention in cancer treatment since it is straightforward, safe, inexpensive, and easy to self-administer. Assessing the efficacy of acupressure is highly significant, considering the ongoing challenge of chemotherapy-induced nausea and vomiting and the increasing focus on integrative cancer care. In this clinical trial, we will examine the effects of acupressure on cancer patients' ability to cope with chemotherapy-induced nausea and vomiting, as well as its possible utility as an auxiliary treatment to better manage symptoms and improve quality of life.

Cancer-Induced Nausea and Vomiting (CINV) Definition

Nausea and vomiting that happen as side effects of chemotherapy in cancer patients are called chemotherapy-induced nausea and vomiting (CINV). When a patient has this unpleasant side effect of antineoplastic therapy, it can have a major impact on their physical comfort, emotional health, nutritional status, and quality of life in general.

In addition to other symptoms including sweating, increased salivation, dizziness, and abdominal pain, nausea is the subjective and unpleasant feeling of wanting to vomit. Forceful evacuation of stomach contents through the mouth as a result of synchronized contractions of the gastrointestinal and abdominal muscles is called vomiting or emesis. Vomiting and nausea are common symptoms, although they can sometimes happen on their own.

The vomiting center and chemoreceptor trigger zone (CTZ) in the brain, along with signals from the gastrointestinal tract, are stimulated to produce CINV. Neurotransmitters like serotonin (5-hydroxytryptamine, or 5-HT) can be released when chemotherapeutic drugs harm the cells lining the gastrointestinal tract. Nausea and vomiting are caused by these neurotransmitters, which activate receptors that send messages to the brain.



Factors such as chemotherapy drug type and dosage, treatment schedule, patient characteristics, and prior chemotherapy experiences all play a role in the frequency and intensity of chemotherapy-induced nausea and vomiting (CINV). As a side effect, nausea and vomiting can be rather severe with some chemotherapy drugs due to their strong emetogenic potential.

Chemotherapy-induced nausea and vomiting can be classified into different types based on the timing and pattern of symptom onset:

- **Acute CINV:** Occurs within the first 24 hours after chemotherapy administration.
- **Delayed CINV:** Develops more than 24 hours after chemotherapy and may persist for several days.
- **Anticipatory CINV:** Occurs before chemotherapy treatment as a conditioned response based on previous negative experiences.
- **Breakthrough CINV:** Occurs despite the use of preventive antiemetic medications and requires additional treatment.
- **Refractory CINV:** Persists during subsequent chemotherapy cycles even after appropriate preventive and rescue therapies have been administered.

Uncontrolled CINV can lead to serious complications, including dehydration, electrolyte imbalance, malnutrition, fatigue, weight loss, anxiety, and reduced adherence to cancer treatment. Therefore, effective management of CINV is an essential component of supportive oncology care. Complementary therapies such as acupressure are increasingly being explored as adjunctive interventions to enhance symptom control and improve patient outcomes during chemotherapy.

Prevalence of Chemotherapy-Induced Nausea and Vomiting

Among the many side effects experienced by cancer patients undergoing chemotherapy, chemotherapy-induced nausea and vomiting (CINV) ranks high. Despite great breakthroughs in antiemetic medicines, CINV remains a serious clinical problem and continues to impact a sizable number of cancer patients worldwide. Patients' physical health, mental well-being, and quality of life are all significantly affected by this extremely distressing condition that is associated with treatment.

The occurrence of CINV varies based on various factors, including the type of chemotherapeutic drugs employed, dosage, treatment schedule, patient characteristics, and the efficiency of preventative antiemetic therapies. Research shows that a significant number of chemotherapy patients may develop nausea and vomiting if they do not take the necessary antiemetic precautions. Many patients still experience side effects, especially delayed nausea, even after taking modern antiemetic medications.

The risk of chemotherapy-induced nausea and vomiting (CINV) is higher with several chemotherapy medications because of their high emetogenicity. Severe nausea and vomiting are more common in patients undergoing chemotherapy regimens that are highly emetogenic, as opposed to therapies that are moderately or barely emetogenic. Inadequate symptom control might lead to symptoms that worsen over time and that might change across therapy cycles.



Studies have demonstrated that nausea is frequently more common and more challenging to control than vomiting. Although antiemetic treatment has made great strides in reducing vomiting episodes, many patients still deal with chronic nausea, which impacts their ability to eat, drink, and function normally. It is especially difficult to prevent and treat delayed nausea and vomiting that occurs more than 24 hours after chemotherapy administration.

The frequency of CINV is affected by various patient-related variables. Women often report higher rates of nausea and vomiting than men. Patients who are younger, have a history of anxiety, nausea during pregnancy, or motion sickness, or who have had poorly treated CINV in the past are also at a higher risk. The onset of symptoms can also be influenced by mental factors like treatment anxiety and anticipation.

The toll of CINV goes beyond mere bodily pain. A decline in quality of life, increased healthcare consumption, dehydration, electrolyte imbalances, malnutrition, exhaustion, treatment non-adherence, and weariness can result from uncontrolled symptoms. In severe cases, patients may delay or refuse further chemotherapy due to fear of experiencing recurrent nausea and vomiting.

Oncology care continues to prioritize good symptom management due to the high prevalence and considerable impact of CINV. Acupuncture and other complementary therapies are being investigated as potential additions to pharmaceutical antiemetic treatments for the purpose of better symptom control, patient comfort, and treatment outcomes in general.

Conclusion

Patients battling cancer often endure the debilitating side effects of chemotherapy, the most prevalent of which is chemotherapy-induced nausea and vomiting (CINV). Nutritional status, physical health, mental well-being, treatment adherence, and overall quality of life can all be significantly impacted by nausea and vomiting, even though antiemetic drugs have advanced. Therefore, establishing effective complimentary treatments for symptom control is vital in complete oncology care. A non-pharmacological strategy that has shown promise in the management of CINV is acupressure. Acupressure, which involves the application of pressure to certain acupoints, may alleviate nausea and vomiting by regulating the physiological systems involved, as well as by promoting relaxation and improving patient comfort. One such point is the Pericardium 6 (P6/Neiguan). As an addition to standard antiemetic treatment, it is feasible due to its non-invasive nature, simplicity of administration, low cost, and low risk of side effects. The data from numerous research reveal that acupressure can successfully reduce the frequency and intensity of chemotherapy-induced nausea and vomiting, increase appetite, boost everyday functioning, and contribute to a higher quality of life among cancer patients. Furthermore, acupressure can be delivered by healthcare professionals or performed by patients themselves following sufficient teaching, boosting its accessibility and utility in both hospital and home settings. Finally, acupressure is an excellent supplementary treatment for chemotherapy-related vomiting and nausea. Acupuncture as part of supportive cancer care has the potential to improve symptom management and overall patient outcomes. To bolster the



evidence basis, provide standardized treatment regimens, and back its normal integration into clinical practice, additional large-scale randomized controlled studies are necessary.

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