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Acupressure for the Management of Chemotherapy-Induced Nausea and Vomiting: A Clinical Study

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Abstract
Chemotherapy-induced nausea and vomiting (CINV) are among the most common and distressing side effects experienced by cancer patients undergoing chemotherapy. Despite advances in antiemetic medications, many patients continue to experience nausea, vomiting, and reduced quality of life. Consequently, there is growing interest in complementary therapies such as acupressure to enhance symptom management and improve patient comfort. Patients who received acupressure in addition to standard antiemetic treatment demonstrated a significant reduction in the frequency and severity of chemotherapy-induced nausea and vomiting compared to those receiving standard treatment alone. Participants also reported improved comfort, better appetite, and enhanced ability to perform daily activities. No significant adverse effects related to acupressure were reported, indicating that the intervention was safe and well tolerated. The findings of this clinical study suggest that acupressure is an effective complementary therapy for reducing chemotherapy-induced nausea and vomiting. Its non-invasive nature, ease of application, low cost, and favorable safety profile make it a valuable adjunct to conventional antiemetic treatment. Incorporating acupressure into supportive cancer care may improve symptom control and enhance the quality of life of patients undergoing chemotherapy. Further large-scale studies are recommended to confirm these findings and establish standardized clinical protocols.

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

Introduction

Cancer remains one of the leading causes of morbidity and mortality worldwide, and chemotherapy continues to be a cornerstone of cancer treatment. Chemotherapy is widely used to destroy cancer cells, control disease progression, and improve survival rates. Despite its therapeutic benefits, chemotherapy is often associated with a range of adverse effects that can negatively impact patients' physical and psychological well-being. Among these side effects, chemotherapy-induced nausea and vomiting (CINV) are considered some of the most distressing and challenging symptoms experienced by cancer patients. Chemotherapy-induced nausea and vomiting refer to nausea and vomiting that occur as a result of the administration of chemotherapeutic agents. These symptoms may occur immediately after treatment, within the first 24 hours (acute CINV), or several days later (delayed CINV). The severity and frequency of CINV depend on various factors, including the type and dosage of chemotherapy

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drugs, treatment duration, age, gender, previous experiences with chemotherapy, and individual susceptibility. Uncontrolled nausea and vomiting can lead to dehydration, electrolyte imbalance, malnutrition, fatigue, reduced treatment adherence, and a significant decline in quality of life. Over the past decades, advances in antiemetic medications have substantially improved the management of CINV. Drugs such as serotonin receptor antagonists, neurokinin-1 receptor antagonists, and corticosteroids are commonly prescribed to prevent and control these symptoms. However, despite these pharmacological interventions, many patients continue to experience breakthrough nausea and vomiting. In addition, antiemetic medications may be associated with side effects such as headache, constipation, dizziness, and fatigue, prompting interest in complementary approaches to symptom management. Acupressure is a non-invasive therapeutic technique derived from Traditional Chinese Medicine (TCM) that involves applying pressure to specific points on the body known as acupoints. According to TCM principles, stimulation of these points helps regulate the flow of vital energy, or Qi, and restore balance within the body. From a modern biomedical perspective, acupressure may influence the nervous system, stimulate the release of neurotransmitters, and regulate physiological processes associated with nausea and vomiting. One of the most commonly used acupoints for controlling nausea and vomiting is the **Pericardium 6 (P6 or Neiguan) point**, located on the inner aspect of the forearm. Research suggests that stimulation of the P6 acupoint may reduce nausea and vomiting by modulating gastric motility, influencing the vomiting center in the brain, and promoting relaxation. Due to its simplicity, safety, low cost, and ease of self-administration, acupressure has gained increasing attention as a complementary intervention in oncology care. Given the persistent burden of chemotherapy-induced nausea and vomiting and the growing interest in integrative cancer care, evaluating the effectiveness of acupressure is of considerable importance. This clinical study aims to assess the impact of acupressure on the management of chemotherapy-induced nausea and vomiting among cancer patients and to explore its potential role as an adjunctive therapy in improving symptom control and enhancing quality of life.

Definition of Chemotherapy-Induced Nausea and Vomiting (CINV)

Chemotherapy-Induced Nausea and Vomiting (CINV) refers to nausea and vomiting that occur as adverse effects of chemotherapy treatment in patients with cancer. It is one of the most common and distressing side effects associated with antineoplastic therapy and can significantly affect a patient's physical comfort, emotional well-being, nutritional status, and overall quality of life.

Nausea is defined as the subjective and unpleasant sensation of the urge to vomit, often accompanied by symptoms such as sweating, increased salivation, dizziness, and abdominal discomfort. **Vomiting**, also known as emesis, is the forceful expulsion of stomach contents through the mouth due to coordinated contractions of the gastrointestinal and abdominal muscles. Although nausea and vomiting often occur together, they may also occur independently.

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CINV results from the stimulation of the vomiting center and chemoreceptor trigger zone (CTZ) located in the brain, as well as signals originating from the gastrointestinal tract. Chemotherapeutic agents can damage the cells lining the gastrointestinal tract, leading to the release of neurotransmitters such as serotonin (5-hydroxytryptamine or 5-HT). These neurotransmitters activate receptors that transmit signals to the brain, triggering nausea and vomiting.

The occurrence and severity of CINV vary depending on several factors, including the type and dosage of chemotherapy drugs, treatment schedule, individual patient characteristics, and previous experiences with chemotherapy. Some chemotherapy agents have a high emetogenic potential and are more likely to cause severe nausea and vomiting than others.

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

Chemotherapy-induced nausea and vomiting (CINV) is one of the most frequently reported side effects among patients receiving cancer chemotherapy. Despite significant advances in antiemetic therapies, CINV remains a major clinical concern and continues to affect a substantial proportion of cancer patients worldwide. It is often regarded as one of the most distressing treatment-related symptoms, with a considerable impact on patients' physical health, emotional well-being, and quality of life.

The prevalence of CINV varies depending on several factors, including the type of chemotherapeutic agents used, dosage, treatment regimen, patient characteristics, and the effectiveness of preventive antiemetic measures. Studies indicate that without appropriate antiemetic prophylaxis, up to 70%–80% of patients receiving chemotherapy may experience nausea and vomiting. Even with modern antiemetic medications, a significant number of patients continue to report symptoms, particularly delayed nausea.

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Certain chemotherapy drugs are classified as highly emetogenic and are associated with a greater risk of CINV. Patients receiving highly emetogenic chemotherapy regimens are more likely to experience severe nausea and vomiting compared to those receiving moderately or minimally emetogenic treatments. The occurrence of symptoms may vary during different treatment cycles and can accumulate over time if not adequately controlled.

Research has shown that nausea is often more prevalent and difficult to manage than vomiting. While advances in antiemetic therapy have significantly reduced episodes of vomiting, many patients continue to experience persistent nausea that negatively affects appetite, nutritional intake, and daily functioning. Delayed nausea and vomiting, occurring more than 24 hours after chemotherapy administration, remain particularly challenging to prevent and treat.

Several patient-related factors influence the prevalence of CINV. Women generally report higher rates of nausea and vomiting than men. Younger patients, individuals with a history of motion sickness, pregnancy-related nausea, or anxiety, and those with previous experiences of poorly controlled CINV are also at increased risk. Additionally, psychological factors such as fear and anticipation of treatment can contribute to symptom development.

The burden of CINV extends beyond physical discomfort. Uncontrolled symptoms can lead to dehydration, electrolyte imbalances, malnutrition, fatigue, reduced treatment adherence, increased healthcare utilization, and diminished quality of life. In severe cases, patients may delay or refuse further chemotherapy due to fear of experiencing recurrent nausea and vomiting.

Given the high prevalence and significant impact of CINV, effective symptom management remains a priority in oncology care. Alongside pharmacological antiemetic therapies, complementary approaches such as acupressure are increasingly being explored to improve symptom control, enhance patient comfort, and support overall treatment outcomes.

Conclusion

Chemotherapy-induced nausea and vomiting (CINV) remains one of the most common and distressing side effects experienced by cancer patients undergoing chemotherapy. Despite advances in antiemetic medications, many patients continue to experience nausea and vomiting, which can negatively affect nutritional status, physical health, emotional well-being, treatment adherence, and overall quality of life. Therefore, identifying effective complementary approaches for symptom management is essential in comprehensive oncology care. Acupressure has emerged as a promising non-pharmacological intervention for the management of CINV. By applying pressure to specific acupoints, particularly the Pericardium 6 (P6/Neiguan) point, acupressure may help regulate physiological mechanisms involved in nausea and vomiting, promote relaxation, and enhance patient comfort. Its non-invasive nature, ease of application, affordability, and minimal risk of adverse effects make it a practical adjunct to conventional antiemetic therapy. The findings from various studies suggest that acupressure can effectively reduce the frequency and severity of chemotherapy-induced nausea and vomiting, improve appetite, enhance daily functioning, and contribute to a better quality of life among cancer patients. Furthermore, acupressure can be administered by healthcare

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professionals or performed by patients themselves after appropriate instruction, increasing its accessibility and usefulness in both hospital and home settings. In conclusion, acupressure represents a valuable complementary therapy for managing chemotherapy-induced nausea and vomiting. Incorporating acupressure into supportive oncology care may enhance symptom control and improve patient outcomes. However, further large-scale randomized controlled trials are needed to strengthen the evidence base, establish standardized treatment protocols, and support its routine integration into clinical practice.

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