

The Effectiveness of Cryotherapy in Relieving Chemotherapy-Induced Peripheral Neuropathy

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Background

Breast cancer has the highest incidence rate among female cancers in Taiwan. Breast cancer chemotherapy is administered to 60.19% female cancer patients. Taxane is one of the useful chemotherapeutic agents for breast cancer; it can reduce disease relapse and mortality rates. However, chemotherapy-induced peripheral neuropathy (CIPN) is a side effect of taxane use; CIPN causes paraesthesia, burning pain, numbness, weakness, etc., and can impact a patient's physical function and daily life for months. Medical and non-medical treatments are available to reduce peripheral neuropathy; cryotherapy is the most convenient method for this purpose it can be provided by a nurse without the doctor's supervision.

The Japanese scholars, Akiko and his group used frozen gloves and socks for 40 breast cancer patients receiving weekly paclitaxel 80 mg/m² for one hour, and use cryotherapy 15 minutes before paclitaxel infusion on the dominant hand and foot, and lasted until 15 minutes after the paclitaxel infusion, so the entire period cryotherapy was totally 90 minutes, and they replaced the frozen gloves and socks at the first 45 minutes. Their results showed that CIPN incidence was significantly lower in the cryotherapy group than in the control group. In Taiwan, however, there is still little research on the effectiveness of cryotherapy in relieving chemotherapy-induced peripheral neuropathy in hands.

Purpose

The purpose of this study will to determine if cryotherapy is effective for CIPN.

Methods

This study will conduct a quasi-experimental study design; we will use frozen gloves for cryotherapy in female breast cancer patients who receive weekly one-hour doses of taxane for 3 months. The patients wear a frozen glove on one hand 15 minutes before receiving chemotherapeutic drugs but do not wear a frozen glove on the other hand. We will evaluate patients' peripheral neuropathy before treatment and after the first and second months of treatment.

Results

We expect the results to be found that frozen gloves can reduce the incidence of CIPN and thus, can have a small impact on daily life and physical function of the patients.

Conclusion

Cryotherapy will be able to reduce CIPN such as paraesthesia, burning pain, numbness, and weakness.