The Relationship of Chemotherapy-Induced Nausea to the Frequency of Pericardium 6 Digital Acupressure

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Purpose/Objectives: To explain the relationship between the intensity of chemotherapy-induced nausea (CIN) and the frequency of pericardium 6 (P6) digital acupressure.

Design: Secondary data analysis of a multicenter, longitudinal, randomized, clinical trial.

Setting: Nine community clinical oncology programs and six independent sites in the United States.

Sample: 53 patients with breast cancer who received moderate to highly emetogenic chemotherapy and applied P6 digital acupressure in addition to antiemetics to control CIN.

Methods: A daily log measuring nausea intensity and the frequency of acupressure for 11 days after the administration of chemotherapy. Hierarchical generalized linear modeling procedure (multilevel negative binomial regression) was used for analyzing the data.

Main Research Variables: Nausea intensity and acupressure frequency.

Findings: Participants used acupressure an average of two times per day (SD = 1.84, range 0–10). Women who used acupressure more frequently after the peak of nausea (on day 4) were predicted to have a 0.97-point higher nausea intensity in the acute phase than women who used acupressure less frequently, controlling for the effects of other variables in the model (incidence rate ratio = 1.52, $p < 0.01$).

Conclusions: Patients with breast cancer whose nausea intensity started higher from the acute phase continued to experience higher symptom intensity during the 11 days after chemotherapy administration and required more frequent acupressure even after the peak of nausea.

Implications for Nursing: Careful assessment and management of acute CIN with continuous monitoring and care of CIN in the delayed phase are important nursing issues in caring for patients receiving chemotherapy.

The American Cancer Society (2010) estimated that 1,529,560 new cases of cancer will be diagnosed in 2010 and 80% will be treated with chemotherapy (Massaro & Lenz, 2005). This translates to more than 1 million patients undergoing chemotherapy. Chemotherapy-induced nausea (CIN) has been rated as the most distressing side effect of chemotherapy (de Boer-Dennert et al., 1997; Griffin et al., 1996; Rhodes & McDaniel, 2001). In a study by Molassiotis et al. (2008) of 102 patients with diverse cancer diagnoses, about 71% had acute nausea, which was defined as nausea within 24 hours after chemotherapy administration (Navari, 2003), and about 60% experienced delayed nausea, defined as nausea that begins and persists for more than 16–24 hours after chemotherapy (Lindley et al., 2005), when highly emetogenic chemotherapy and routine antiemetics were administered. With moderately emetogenic chemotherapy and routine antiemetics, about 47% had acute nausea and about 61% experienced delayed nausea (Molassiotis et al., 2008). Even when patients were treated for moderately emetogenic chemotherapy with a 5-hydroxytryptamine 3 receptor antagonist (5-HT_3 RA) (e.g., palonosetron), a neurokinin-1 receptor antagonist (NK-_1 RA) (e.g., aprepitant), and dexamethasone, 29% still reported acute nausea and 47% experienced delayed nausea (Grote et al., 2006). Incomplete control of CIN strongly suggests the presence of mechanisms that are not well understood or controlled with current antiemetic therapy. Common adverse effects of 5-HT_3 RAs include headaches, dizziness, constipation, and diarrhea (Kovac, 2003). Adverse effects of NK-_1 RAs include asthenia and fatigue (Dando & Perry, 2004). In addition, 5-HT_3 RAs and NK-_1 RAs are expensive. Finding more cost-effective nausea control modalities with fewer adverse effects for additional CIN control is desirable.

The effect of pericardium 6 (P6) acupressure in CIN control has been supported through six randomized (Dibble, Chapman, Mack, & Shih, 2000; Dibble et al., 2007; Molassiotis, Helin, Dabbour, & Hummerston,