

# Level of Fatigue in Women Receiving Dose-Dense Versus Standard Chemotherapy for Breast Cancer: A Pilot Study

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**Purpose/Objectives:** To determine whether women receiving dose-dense chemotherapy for breast cancer experience different levels of fatigue than women receiving standard chemotherapy regimens for the disease.

**Design:** Quasi-experimental pilot study.

**Setting:** Private physicians' offices in California.

**Sample:** 15 women with stage I, II, or III breast cancer receiving dose-dense or standard chemotherapy. The average female participant was 48 years old ( $\bar{X} = 48.3$ ), was married (80%), and had a college degree (73%).

**Methods:** The revised Piper Fatigue Scale was completed by patients at three different times: pretreatment, three days after their cycle 1 chemotherapy dose, and three days after their cycle 2 chemotherapy dose. Patients returned completed surveys by mail.

**Main Research Variables:** Fatigue levels associated with chemotherapy.

**Findings:** Pretreatment total fatigue scores were not significantly different in the dose-dense and standard chemotherapy groups. Total fatigue scores were significantly higher in the dose-dense group at the cycle 1 and 2 time points. Fatigue scores were significantly higher in women who had undergone a mastectomy, were working, were HER2 positive, and had a tumor size larger than 2 cm.

**Conclusions:** Dose-dense chemotherapy resulted in significantly greater fatigue.

**Implications for Nursing:** Nurses should educate women receiving dose-dense chemotherapy as part of informed consent and assist them in preparing and planning for fatigue. Information about which patients are more likely to experience significant fatigue allows nurses to judge the frequency with which they need to assess and manage fatigue to improve patient outcomes.

Breast cancer is the most common cancer in women, with an estimated 212,920 new cases and 40,970 deaths predicted for 2006 (American Cancer Society, 2006). Adjuvant chemotherapy following surgical intervention is a commonly prescribed treatment modality, even for women diagnosed with stage I or II disease. For women undergoing treatment for breast cancer, fatigue has been reported to be the most common and problematic side effect of treatment (Longman, Braden, & Mishel, 1997). Jacobsen et al. (1999) found that slightly more than 90% of women receiving adjuvant chemotherapy reported fatigue. Since 2003, clinical trials have shown a benefit in disease-free survival as well as overall survival for patients with breast

## Key Points . . .

- Dose-dense chemotherapy has an intertreatment interval shorter than standard chemotherapy.
- Women receiving dose-dense chemotherapy may experience higher levels of fatigue than are expected with standard chemotherapy.
- Poor prognostic factor selection bias, demographic differences, and use of pegfilgrastim in women receiving dose-dense chemotherapy may be causes of higher fatigue scores.

cancer when dose-dense chemotherapy is used in the adjuvant setting (Citron et al., 2003). No study has determined how dose-dense chemotherapy affects fatigue levels.

## Literature Review

### Fatigue

Many definitions for fatigue exist, but most note that fatigue is a complex concept that is multidimensional and multicausal (de Jong, Courtens, Abu-Saad, & Schouten, 2002). Fatigue also has been defined as a subjective feeling of tiredness influenced by circadian rhythm (Piper, Lindsey, & Dodd, 1987). Definitions suggest that the nature of cancer-related fatigue is somehow different than fatigue experienced in everyday life. Although everyone experiences fatigue on a daily basis as a protective mechanism, fatigue that becomes constant, unusual, or excessive loses its protective function and can lead to an aversion to activity (Piper et al., 1987). Cancer-related fatigue is more

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