

# Analyzing Current Practice Patterns: Lessons From Amgen's Project ChemoInsight®

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**Purpose/Objectives:** To retrospectively review data on chemotherapy dose/dose intensity in patients with breast cancer.

**Data Sources:** Computerized database, published articles, and book chapter.

**Data Synthesis:** Chart reviews were conducted of 20,106 patients with breast cancer from 1,135 oncology practices throughout the United States. More dose delays, dose reductions, and suboptimal dose intensity occur in patients who are 65 years of age or older. Overall, dose intensity was not achieved in 18.4% of patients, dose reductions occurred in 25.7% of patients, and dose delays occurred in 43.1% of patients. Neutropenia was often the cause of dose delays/reductions.

**Conclusions:** A substantial number of patients with breast cancer experience chemotherapy dose delays or reductions.

**Implications for Nursing Practice:** Guidelines may help consistently manage primary and secondary prophylaxis of neutropenia. Nurses' can influence patients' attitudes about prescribed therapies.

The relationship among chemotherapy dose, dose intensity, and patient outcomes has been well established in the clinical literature. Bonadonna, Valagussa, Moliterni, Zambetti, and Brambilla (1995) showed that in women with node-positive breast cancer who received adjuvant cyclophosphamide, methotrexate, and 5FU (cyclophosphamide, methotrexate, and fluorouracil [CMF]), the 52% who received a cumulative amount of more than 85% of the planned dose had relapse-free survival 20 years after treatment, compared with only 30% of those who received less than 65% of the planned dose. Many oncology practices subsequently have designed protocols and established treatment goals to ensure that patients achieve at least 85% of planned dose intensity. A patient chart review (Amgen's Project ChemoInsight®) was undertaken to provide clinicians with data to evaluate their success in attaining this goal.

## Process

Data were collected by retrospectively reviewing the charts of patients with breast cancer or non-Hodgkin's lymphoma (NHL) who had completed their planned cycles of chemotherapy. In each participating practice, a nurse retrieved about 20 medical charts and prepared a simple one-page summary of each patient's key clinical data, including chemotherapy doses and dates of administration. Each summary page was numbered serially—individual patients were not identified.

## Key Points . . .

- ▶ On the basis of current data, a divergence exists between clinical intent and clinical outcomes—a substantial number of patients do not receive optimal chemotherapy dose intensity.
- ▶ Nurses and other healthcare team members need to provide ongoing education on the importance of dose intensity.
- ▶ An evidence-based model can be used to identify areas for quality improvement.
- ▶ The healthcare team should develop guidelines for minimizing and managing neutropenia and other factors that may contribute to reduced dose intensity.

This report summarizes chart reviews of 20,106 patients with breast cancer from 1,135 oncology practices throughout the United States. Data were collected between August 1997 and December 1999 (Amgen Inc., 1999). (Chart reviews of patients with NHL were initiated in March 1999 and will be reported at a later date. Chart reviews for patients with breast cancer and NHL are ongoing, with new data added to the databases each month.)

Amgen's Project ChemoInsight breast cancer database contains demographic and chemotherapy data of patients who received select myelosuppressive chemotherapy regimens (see Table 1). The database is designed to track the delivery of chemotherapy dose intensity by examining specific clinical indicators, including (a) dose intensity, (b) dose delays (defined as doses that were administered five days after the originally scheduled date), (c) dose reductions, (d) use of filgrastim, (e) starting absolute neutrophil count (ANC) and final ANC, (f) lowest ANC for each cycle, and (g) hospitalizations or other treatments for febrile neutropenia. Table 2 shows an outline of demographics of 20,106 patients with breast cancer who were in the national database as of December 1999.

Relative dose intensity was determined using the three-step equation outlined in Figure 1. The total cumulative dose delivered to each patient is calculated by adding the delivered doses for all agents during each cycle. The start date of each cycle of the regimen is used to determine both the duration of therapy and the occurrence of dose delays. Chemotherapy

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