Community Experience With Filgrastim in Diverse Nonmyeloid Malignancies: An Open-Label Phase IV Study

Authors James M. Epstein, Sheila M. Donnelly, Joan M. O'Byrne, Brian W. McGuire, and Jimmie H. Harvey

Origin of Study USA

Type of Study MULTICENTER, OPEN-LABEL, PHASE IV CLINICAL TRIAL

Objectives Assess the efficacy of filgrastim, a recombinant growth factor, in managing chemotherapy-induced neutropenia when used as labeled in the community oncology setting.

Study Design Filgrastim was started 24 hours after each chemotherapy cycle and was continued until the post-nadir absolute neutrophil count was $\geq 10 \times 10^9$/L.

Blood counts were taken at least twice a week.

Endpoints included incidence and duration of neutropenia and percentage of cycles given on time at the planned dose.

Patients In all, 780 patients, representing 33 different types of nonmyeloid tumors, were studied in 99 community oncology practices.

Median age was 58 years (range, < 1 to 91 years); 64% of patients were female.

Observations A total of 3,197 chemotherapy cycles were delivered.

Mean number of filgrastim doses per cycle was 11.2 ± 3.5 (SD) and varied little across cycles. Some variation was seen among tumor types, reflecting the differing intensities of chemotherapy:

Duration of Filgrastim Therapy by Tumor Type

TUMOR TYPE	CYCLES	DAYS OF FILGRASTIM USE	
		MEAN ± SD	MEDIAN
Breast cancer	1,012	11.0 ± 2.8	10.5
Non-small cell lung cancer	327	10.6 ± 3.0	10.0
Small cell lung cancer	398	10.7 ± 3.1	10.0
Ovarian cancer	309	11.5 ± 3.1	11.0
Non-Hodgkin's lymphoma	466	11.2 ± 3.5	10.0
Other tumors	572	12.0 ± 4.7	11.0
All tumor types	3,084	11.2 ± 3.5	11.0

Younger patients (< 18 years of age) were significantly more likely than older patients to require a longer duration of filgrastim dosing (mean, 14.4 ± 4.4 [SD] days).

Grade 4 neutropenia was observed in 17% of patient cycles, although the mean duration was short (0.4 ± 1.1 days).

A high proportion of chemotherapy cycles were at full dose (90%) and on time (91%).

Conclusions When used as labeled, filgrastim facilitated planned delivery of chemotherapy with a low incidence of neutropenic complications.

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Discussion

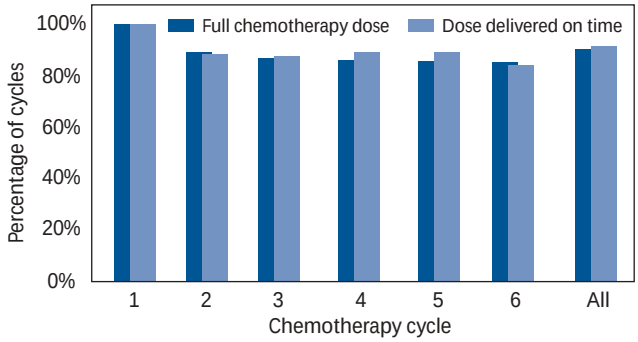
In this large open-label trial, which included 99 community oncology practices, investigators found that filgrastim (Neupogen), when administered as labeled, helps allow planned delivery of chemotherapy cycles with a low incidence of neutropenic complications.

The study included 780 pediatric and adult patients (median age, 58 years; range, < 1 to 91 years) with nonmyeloid malignancies who received a total of 3,197 chemotherapy cycles. Over 30 different pediatric and adult solid or lymphoid malignancies were represented in the study. The most common malignancies were breast (29%), non-small cell lung cancer (14%), small cell lung cancer (13.5%), and non-Hodgkin's lymphoma (13%).

The type of chemotherapy regimen was at the discretion of the investigators. Filgrastim therapy was initiated 24 hours after each chemotherapy cycle and given to a post-nadir absolute neutrophil count of $\geq 10 \times 10^9$/L. Blood counts were taken twice weekly or more often.

Overall, 91% of cycles were given on time and 90% were given at full dose, with no unexpected adverse events observed. Filgrastim was administered for a mean of 11.2 days. Longer duration of dosing was associated with pediatric chemotherapy regimens (mean of 14.4 days) and patients who had received prior chemotherapy.

Proportion of Cycles Delivered on Time and at Full Dose



The incidence of grade 4 neutropenia was 17% and was highest (24%) in the first cycle. Incidence ranged from a low of 29% of non-small cell lung cancer patients to 43% for patients with non-Hodgkin's lymphoma and 45% for those with small cell lung cancer. Duration of grade 4 neutropenia was short: the longest mean duration of grade 4 neutropenia was 0.5 days, which also occurred in the first cycle. In 99% of chemotherapy cycles, the duration of grade 4 neutropenia was no longer than 5 days.

The authors of this report believe the results of this large community oncology study illustrate the ability to quicken recovery of neutrophils with adjunctive filgrastim treatment. The benefit of filgrastim was observed in a variety of tumor types and across a broad range of chemotherapeutic regimens. The results may help to guide rational application of growth factor support in community oncology practices.

Key Points

- Filgrastim, when administered as labeled in community oncology practices, helps allow planned delivery of chemotherapy cycles, with a low incidence of neutropenic complications.
- Overall, 91% of cycles were given on time and 90% were given at full dose, with no unexpected adverse events.
- Incidence of grade 4 neutropenia was 17% overall, and its duration was short (mean of 0.5 days).

References

Epstein JM, Donnelly SM, O'Byrne JM, McGuire BW, Harvey JH. Community experience with filgrastim in diverse nonmyeloid malignancies: an open-label phase 4 study. Poster presented at the 2003 Annual Meeting of the American College of Clinical Pharmacy; November 2–5, 2003; Atlanta, Ga. Abstract 168.