Support Care Cancer. 2015 Jul;23(7):2045-51. doi: 10.1007/s00520-014-2555-y. Epub 2014 Dec 19.

Comparison of filgrastim and pegfilgrastim to prevent neutropenia and maintain dose intensity of adjuvant chemotherapy in patients with breast cancer.

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Abstract

PURPOSE:

The aim of this study was to compare the effectiveness of prophylactic single fixed dose of pegfilgrastim and daily administration of filgrastim on febrile neutropenia (FN), severe neutropenia, treatment delay, and dose reduction in patients with breast cancer receiving dose-dense adjuvant chemotherapy.

METHODS:

A retrospective cohort study with 1058 breast cancer patients matched by age and chemotherapy was conducted. The primary endpoints were FN, severe (grade 3, 4) neutropenia, dose reduction (>10 % reduction of the dose planned), and treatment delay (dose given more than 2 days later).

RESULTS:

Eighteen episodes of FN (3.4%) in the filgrastim group and 23 (4.3%) in the pegfilgrastim group ($p = 0.500$) were recorded. More than half of the total episodes (27/41) occurred during the first 4 cycles of treatment. Patients who received filgrastim were almost three times more likely to experience a severe neutropenia episode and were significantly more likely to experience a dose reduction (18.5%) compared to those who received pegfilgrastim (10.8%) ($p < 0.001$). The percentage of patients, who received their planned dose on time, was significantly lower in patients receiving filgrastim (58%) compared to those receiving pegfilgrastim (72.4%, $p < 0.001$).

CONCLUSIONS:

No significant difference was detected on FN rate between daily administration of filgrastim and single administration of pegfilgrastim. However, patients receiving pegfilgrastim had a significantly lower rate of severe neutropenia, as well as dose reduction and treatment delay, thus, achieving a higher dose density.