Prophylaxis of chemotherapy-induced neutropenia with Lipegfilgrastim in patients with breast cancer: Results from an interim analysis of the non-interventional study NADIR

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INTRODUCTION

Anthracycline and/or taxane-based chemotherapies are among the most effective treatments in patients with breast cancer. In particular, dose-dense regimens are increasingly applied in the neoadjuvant setting with the intention to improve outcome for patients with breast cancer. Clinical trials with neoadjuvant dose-dense chemotherapy regimens are associated with a significant incidence of febrile neutropenia thus necessitating a primary prophylaxis using granulocyte colony-stimulating factors (G-CSF).

Lipegfilgrastim is a glycoployy-G-CSF approach to reduce the duration of neutropenia and the incidence of febrile neutropenia. In the pivotal study by Bordovskiy et al., the incidence of severe neutropenia (CTCAE grade 4) in breast cancer patients receiving Lipegfilgrastim prophylaxis was 50.0%, while in patients of the per protocol population developed febrile neutropenia.

In 2014, NADIR, a large-scaled non-interventional study was initiated to obtain additional information on the value of Lipegfilgrastim in order to prevent both febrile neutropenia and chemotherapy dose reductions. Here we report outcomes from an interim analysis focusing on the subset of patients with breast cancer.

METHODS

Objectives

• Evaluation of effectiveness (incidence of severe neutropenia (NTCTCAE grade 4) and febrile neutropenia) and safety of Lipegfilgrastim use in 2,020 patients with different tumor entities subjected to chemotherapy in routine clinical practice.

Study design

NADIR is a non-interventional, prospective, multicenter study carried out in 270 oncology centers and hospitals across Germany.

Patient population

• Cancer patients treated with chemotherapy receiving Lipegfilgrastim, without other G-CSF support prior to Lipegfilgrastim in the current chemotherapy regimen.

• This was an interim analysis of the NADIR study and here the results for the subgroup of patients with breast cancer are presented.

• At time of data cut-off for the interim analysis patient enrollment was ongoing.

Treatment

• Dose dense regimens were defined as regimens with treatment intervals of 2 weeks containing at least one of the following substances: Epirubicin, cyclophosphamide, taxane.

Observational period

• The first administration of Lipegfilgrastim, patients were observed for a maximum of 6 subsequent cycles of chemotherapy.

Assessments

• Incidence of severe neutropenia (NTCTCAE grade 4) was determined by assessing the neutrophil count.

RESULTS

The analysis population for the interim analysis included all patients who received at least one dose of Lipegfilgrastim and finished the observation period.

All parameters were analyzed descriptively, for continuous parameters mean, standard deviation, median, quartiles, minimum and maximum were calculated. Categorical parameters were presented using frequency tables together with a 95% confidence interval if appropriate.

• Incidence of febrile neutropenia was determined according to investigator's assessment.

• Severity of adverse events was graded according to CTCAE V4.03.

Statistical analysis

• The analyses population for the interim analyses was all patients who received at least one dose of Lipegfilgrastim and finished the observation period. For continuous variables mean, standard deviation, median, quartiles, minimum and maximum were calculated. Categorical parameters were presented as frequency tables with 95% confidence interval if appropriate.

Patient characteristics

• At the time of data cut-off for this interim analysis (March 2014), 2,422 patients had been enrolled at 198 institutions and 2,585 evaluable patients were observed in breast cancer units diagnosed with breast cancer, of which 274 were treated with dose-dense regimens (Figure 1). For Adjuvant breast cancer we listed 1,161 patients.

• 68.1% of breast cancer patients and those receiving dose-dense regimens, respectively, were treated in a (neo-)adjuvant setting. 6.1% of breast cancer patients received an anthracycline and/or taxane-based regimen (Table 2).

• Table 3 shows the chemotherapy setting and details on chemotherapy regimens.

• Table 4: Incidence of severe neutropenia and febrile neutropenia.

• Table 5: Adverse events due to Lipegfilgrastim.

CONCLUSION

Use of Lipegfilgrastim in patients receiving anthracycline (neo-)adjuvant chemotherapy for breast cancer in routine clinical practice showed a low incidence of neutropenia and febrile neutropenia, revealing comparable efficacy with chemotherapy regimens already tested for in clinical trials. Lipegfilgrastim was well tolerated: The type of reported Lipegfilgrastim-related adverse events were similar to literature.

• Lipegfilgrastim was well tolerated in patients treated with high-risk dose-dense regimens.


Table 1: Patient characteristics.

Table 2: Chemotherapy setting and details on chemotherapy regimens.

Table 3: Table 4: Incidence of severe neutropenia and febrile neutropenia.

Table 5: Adverse events due to Lipegfilgrastim.