Abstract

Background

Pegfilgrastim's role in reducing febrile neutropenia (FN) risk in patients with colorectal cancer (CRC) receiving chemotherapy plus bevacizumab was not previously evaluated in a prospective study. This phase 3, double-blind trial evaluated efficacy of pegfilgrastim vs placebo in reducing grade 3/4 FN incidence in patients with advanced CRC receiving bevacizumab in combination with first-line chemotherapy (FOLFOX or FOLFIRI).

Patients and Methods

Patients ≥18 years of age with locally advanced/metastatic CRC were randomized 1:1 to placebo or 6-mg pegfilgrastim∼24 hours after receiving chemotherapy plus bevacizumab every 14 days. The study treatment period included 4 cycles, but patients could continue treatment for up to 60 months. The primary endpoint was grade 3/4 FN incidence in the first 4 cycles. Secondary endpoints included objective response rate (ORR), overall survival (OS), and progression-free survival (PFS) analyzed at the end of the long-term follow-up period.

Results

A total of 845 patients were randomized between November 2009 and January 2012 (422, pegfilgrastim; 423, placebo). Pegfilgrastim significantly reduced grade 3/4 FN incidence in the first 4 treatment cycles (pegfilgrastim, 2.4% [95% CI: 1.1–4.3] vs placebo, 5.7% [95% CI: 3.7–8.3]; odds ratio [OR] 0.41; *P*=0.014). No significant differences were observed between the two arms in ORR (OR 1.15, *P*=0.330), and OS and PFS (hazard ratio 0.94, *P*=0.440 and 0.93, *P*=0.300, respectively).

Conclusion

Pegfilgrastim reduced FN incidence in patients with advanced CRC receiving chemotherapy and bevacizumab. Administration of pegfilgrastim was tolerable and did not negatively impact tumor response or survival in this patient population.

Keywords

- Pegfilgrastim;
- colorectal cancer;
- febrile neutropenia;
- overall survival

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Trial registration: This trial was registered at ClinicalTrials.gov: NCT00911170 on May 21, 2009.

Conflict Of Interest

ZandraKlippel, Maureen Reiner, and Phuong Khanh Morrow are employees and stockholders of Amgen Inc. Sadie Whittaker is a stockholder of Amgen Inc. Sadie Whittaker and Mi Rim Choi were employees and stockholders of Amgen Inc. at the time of the study. Tamas Pinter participated in an advisory board and/or was a consultant to Pfizer, Novartis, and Roche. AlvydasCesas received research funding from Amgen Inc. Adina Croitoru received research funding and was a consultant to Amgen Inc. All remaining authors have declared no conflicts of interest.

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