KCHP Abstract Final

Evaluation of Same-Day Versus Next-Day Pegfilgrastim in Breast Cancer Patients

Background/Rationale: Pegfilgrastim is a colony stimulating factor utilized typically in the first 24-72 hours post-myelosuppressive chemotherapy to decrease the incidence of febrile neutropenia.[1] Returning for this injection is not always feasible or convenient for patients; especially during the COVID-19 pandemic and therefore a same day administration strategy may be preferred. While there is an option for patients to receive pegfilgrastim through an on-body injector, the mechanism may fail to inject in up to 6.9% of cases.[2] Studies examining same-day administration of pegfilgrastim have varied in their study design and there is minimal evidence for use in patients with breast cancer.

Objectives: The purpose of this study was to examine the difference of same-day versus next day pegfilgrastim administration on a composite of four neutropenia-related events. Secondary outcomes studied include hospitalization for febrile neutropenia, length of dose-delays for neutropenia, mortality, and the incidence of COVID-19 infection during treatment.

Methods: This was a retrospective, single-center, matched cohort chart review of breast cancer patients who completed at least one cycle of curative intent chemotherapy between January 1, 2019 and October 31, 2020. Subjects were matched by regimen and age in a 2:1 ratio for next-day to same-day pegfilgrastim administration. The primary composite outcome was defined as at least one of the following events during treatment: chemotherapy cycle delayed due to neutropenia, dose reduction due to neutropenia, early treatment discontinuation due to neutropenia, or admission to the hospital with a confirmed or suspected diagnosis of febrile neutropenia. Firth's penalized likelihood logistic regression model was utilized for statistical analysis to identify effects of same-day versus next-day pegfilgrastim administration.

Results: A total of 87 patients (next-day = 58; same-day = 29) met inclusion criteria and were selected for data analysis and matching. There were six patients with neutropenia related events in both next-day (10.3%) and same-day (20.7%) pegfilgrastim groups. (OR: 0.36, 95% CI: 0.08 – 1.41). The most common neutropenia-related event occurring in either group was admission to the hospital for suspected or confirmed diagnosis of febrile neutropenia with four patients in the next-day and five patients in the same-day groups admitted at least one time during their treatment course. No patients were diagnosed with COVID-19 or had treatment related mortality during their treatment course.

Conclusions: The results of this study suggest that same-day administration of pegfilgrastim does not result in an increase of neutropenia-related events in patients receiving chemotherapy for breast cancer.

Citations:

1. Neulasta® (pegfilgrastim) [package insert]. Thousand Oaks, CA: Amgen Inc; 2019
2. Townley C, Porter C, McMullen N. Comparing Grade 4 Neutropenia Associated with Pegfilgrastim Administered via the Onpro Device versus Manual Injection with a Prefilled Syringe. J Hematol Oncol Pharm. 2018;8(3):119-125.