PP 42

A retrospective analysis of the effect of filgrastim compared to pegfilgrastim on neutrophil recovery during the treatment of acute leukaemias

Fernandopulle KHBP[1], Khalafallah A[2]
[1]*Faculty of Medical Sciences, University of Sri Jayewardenepura,* [2]*Launceston General Hospital, Tasmania, Australia*

Objectives:The rate of neutrophil recovery is a crucial parameter for successful treatment of acute leukaemias. Traditionally, filgrastim, which is a short acting Granulocyte Colony Stimulating Factor (G-CSF) is used to reduce the period of post-chemotherapy neutropenia. It needs daily administration. The recently developed pegfilgrastim is a long acting G-CSF that has decreased renal clearance allowing for single injection dosing. The objective was to compare the effect of Filgrastim to Pegfilgrastim on post chemotherapy neutrophil recovery.

Methods: We retrospectively analysed the outcome of 103 episodes of chemotherapy in 33 patients who received induction and consolidation therapy for acute leukaemias with supporting G-CSF during the period from 2007 to 2009 at a single institution. 24 patients were treated for AML and 9 for ALL/lymphoblastic lymphoma. G-CSF was commenced according to body weight (filgrastin 5mcg/kg daily, pegfilgrastin 6mg, single dose) one day after completion of the chemotherapy. The time required for neutrophil recovery > $0.5x\ 10^{9}$/l and > $1.0x\ 10^{9}$/l were analysed for each patient for every treatment cycle. The study also incorporated other factors that may influence neutrophil recovery such as ECOG status of the patient, type of chemotherapy and the presence of febrile neutropaenia or sepsis.

Results: Patients who were treated with filgrastim (18 patients) had a neutrophil recovery >0.5/nl with a mean of 11 days compared to 12 days with pegfilgrastin, while neutrophil recovery >1.0/nl was observed on a mean of 12.5 days for both groups. There was no significant difference between the two groups with a p-value of 0.7 and 0.9 respectively. Further sub-analysis of induction and consolidation chemotherapies did not reveal a significant difference between the two cytokines, however it was noted that a prolonged neutropaenia occurred during induction- compared to consolidation chemotherapy in both treatment groups. Furthermore cost of the total course of filgrastim was three times the cost of a single dose of pegfilgrastim.

Conclusions: During the treatment of acute leukaemia, pegfilgrastim results in a comparable effect with filgrastim with decreased cost and less injections.