SOHO ANNUAL MEETING 2024

EFFICACY PROFILE DAILY INJECTION FILGRASTIM IN CHEMOTHERAPY-INDUCED FEBRILE NEUTROPENIA IN PATIENTS WITH ACUTE LEUKEMIA: UKRANIAN RETROSPECTIVE STUDY IN A REAL-LIFE COHORT

Lymanets T.[1,2], *Skrypnyk I.*[1], *Maslova G.*[1], *Gusachenko I.*[2]

[1] Poltava State Medical University, Poltava, Ukraine

[2] Public enterprise "Poltava Regional Clinical Hospital n.a.M.V. Sklifosovsky Poltava regional council", Poltava, Ukraine

INTRODUCTION

The use of highly hematotoxic anthracycline antibiotics remains the standard of induction chemotherapy for acute leukemia, despite advances in recent decades. Febrile neutropenia development is the most challenging issue on the way to achieving remission.

AIM

The primary endpoint was to evaluate the efficacy of Filgrastim (short-acting granulocyte colony-stimulating factors (G-CSFs), sc 480 mcg) for the prevention chemotherapy-induced febrile neutropenia in adult patients with acute leukemia.

The second point was to measure the incidence of febrile neutropenia (i.e. absolute neutrophil count (ANC) < 0.5 IU and temperature ≥ 38.5^{0}C) after every cycle of chemotherapy.

MATERIALS AND METHODS

59 primary patients with acute leukemia (median age: 53.8, range: 9.23 years; male 35 (59.3%), female 24 (40.7%); ECOG I-II) were included in the study during 2021-2023 and received the standard induction chemotherapy according to ESMO Clinical Practice Guidelines in our department.

The patients were enrolled into two groups: 31 (52.5%) and 28 (47.5%) pts in control and study to Filgrastim groups, respectively. 21 (35.6%) acute myeloid leukemia (AML) pts and 10 (17%) acute lymphoblastic leukemia (ALL) pts were involved in IA and IIA control groups; 17 (28.8%) AML-pts and 11(18.6%) ALL-pts were contained in IB and IIB study groups, respectively.

RESULTS

We verified Grade 4 neutropenia in 17 (80.95%) AML patients of group IA and 14 (82.35%) patients of group IB which received regimen 7+3 with/without etoposide (Fig.1). Duration time of Gr 4 neutropenia in group IB versus group IA was 1.5 times less, $t(38)= 3.65$, $p<0.001$ (Fig.2).

Febrile neutropenia developed significantly rarer in IB group with G-CSFs, $X^2(1, N=38) = 4.87$, $p<0.03$.

Among the patients with ALL was registered Grade 4 neutropenia in 6 (60%) patients of group IIA and 6 (54.5%) patients of group IIB (Fig.1). Duration time of severe neutropenia was 2.7 times less in IIB group with G-CSFs than in group IIA, $t(21)= 6.62$, $p<0.00001$ (Fig.2).

But there was no difference in the number of febrile neutropenia episodes developed in IIB vs IIA groups, $p>0.05$.

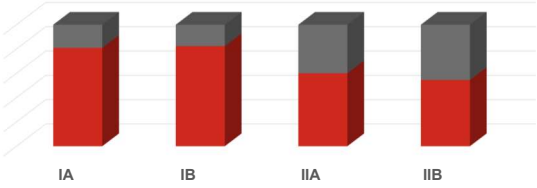


Fig.1 Grade 4 neutropenia development after induction chemotherapy

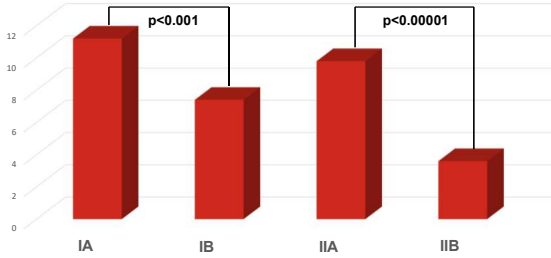


Fig.2 Grade 4 neutropenia duration (days)

CONCLUSIONS

Filgrastim effectively prevents the development of febrile neutropenia in patients with AML against the background of severe cytostatic neutropenia. Thus, the use of Filgrastim made it possible to reduce the duration of severe neutropenia in patients with acute leukemia during induction chemotherapy.

CONTACT INFORMATION

Tetiana Lymanets

Email: t.lymanets@pdmu.edu.ua

Tel: +380662179414