Combination Antiretroviral Therapy during Autologous Stem Cell Transplant for HIV+ve Patients with Haematological Malignancies

Ibrahim K.1,2,3 and Milliken S.2
1-Pharmacy Department, St. Vincent’s Hospital, Darlinghurst, Sydney
2-Kinghorn Cancer Centre, St. Vincent’s Hospital, Darlinghurst, Sydney
3-St Vincent’s Medical School, UNSW, Sydney

Background

-HIV-infected individuals are at an increased risk of developing haematological malignancies like high-grade B-cell non-Hodgkin lymphoma (NHL) and Hodgkin lymphoma (HL) 1,2.

-Concomitant administration of combination antiretroviral therapy (cART) and chemotherapy has been shown to reduce the incidence of opportunistic infections and improves overall survival and complete response in patients receiving chemotherapy for HIV-associated lymphoma 3,4.

-In the post cART era, HIV+ve patients on cART are better able to tolerate chemotherapy and results of treatment are similar now to non-HIV infected patients. Consequently the use of haematopoietic stem cell transplant (HSCT) has been investigated in the post cART era.

-One of the main challenges that face clinicians is the high likelihood of cART and chemotherapy drug-drug interactions, and the potential for overlapping toxicities.

-Antiretroviral agents that inhibit the metabolism of chemotherapy drugs may result in increasing the risk of adverse effects, which in turn could lead to life-threatening toxicities. On the other hand, antiretroviral agents that induce the metabolism of chemotherapy drugs may reduce their efficacy, and hence compromise treatment outcomes.

-Therefore, the choice of an appropriate cART regimen is essential when treating HIV-infected patients who are undergoing HSCT.

Objectives

-To highlight our institution’s experience with continuation of combination antiretroviral therapy (cART) during high dose chemotherapy in HIV+ve patients undergoing Autologous Stem Cell transplant (ASCT) for haematological malignancies.

Clinical Features

-Our case series included 11 patients who underwent ASCT for a haematological malignancy between 1st of January 2007 and 31st of December 2018.

-Multiple myeloma (MM), n=4
-Non- Hodgkin’s Lymphoma = 6
-Hodgkin lymphoma (HL), n=1

-Of the 11 patients, 6 (54.5%) were on non-Protease inhibitor (PI) and 5 (45.5%) were on PI based cART during their stem cell transplant.

-Median age at presentation for transplant = 44 years (range 27-64). Median CD4 count = 220 cells/μL (range 39-528).

-HIV viral load (VL) was undetectable in 9 patients (81.8%) at the start of the conditioning chemotherapy.

Clinical Features (Continued )

-No treatment related mortality (TRM) were observed, all 11 patients continued cART during conditioning chemotherapy, which was well tolerated.

-11 patients (100%) had neutropenic infections. One patient developed bacterial endocarditis, which resolved with intravenous antibiotics. Two patients developed CMV viraemia but no other opportunistic infections (OIs) were observed.

-6 Patients relapsed, 2 were salvaged by allogeneic HSCT, 4 patients were given salvage treatment.

-There were 5 non-treatment related deaths, n=1 developed secondary malignancy, n=3 relapsed MM and one patient died due to zidovudine induced lactic acidosis 10 months post ASCT.

-CD4+ counts recovered after 6-12 months post HSCT in all patients.

-Overall survival from ranged from 1-11 yrs.

Pharmacist Interventions and Outcomes

-HIV+ve patients presenting for ASCT were reviewed by a multidisciplinary team of Haematology, Immunology and Clinical Pharmacy teams to minimise potential drug interactions between cART and chemotherapy regimens.

-No significant toxicities relating to cART continuation were observed during ASCT. cART interruptions of 4-7 days were observed in 2 of 11 patients due to severe mucositis.

Conclusions

-In our case series we found no evidence that concomitant cART during conditioning chemotherapy adversely affected transplant outcomes or increased treatment related toxicities. Based on our experience we recommend continuing cART during conditioning chemotherapy. However, cART may need to be altered prior to ASCT to avoid any major cART and chemotherapy drug interactions.

References


Correspondence:
Dr Karim Ibrahim, B.Pharm, DOinPharm, FSHP, AACPA
Senior Haematology and Bone Marrow Transplant Pharmacist
St Vincent’s Hospital, Sydney, Australia
Email: Karim.Ibrahim@svha.com.au