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Zidovudine Induced Anaemia in Perinatally Transmitted HIV Patient: A Case Report

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ABSTRACT: The main of the study is to report the occurrence of drug related problem in order to prevent its recurrence. A 15years old male patient presented with complaints of loose stools, fever and decreased appetite since 15 days, fatigability and generalized body achesince 10days. Patient is known case of HIV that is transmitted perinatally from mother to child since 15years and taking Lamivudine 150mg, Nevirapine 200mg and Zidovudine 300mg o.d. since last 15years. He was having pallor and his haemoglobin level is 3.6g/dLi.e. the patient is severely anaemic. He was treated with 1 pint Packed red blood cells transfusion IV o.d., Tab. Ferrous fumarate + folic acid 325mg +1500mcg PO b.i.d., Tab. B ComplexPO o.d., Inj. Vit B_1, B_6, B_{12} 1ampule IV o.d., Tab. Paracetamol 500mg PO t.i.d for 5days. During this treatment Antiretroviral treatment was on hold.

Key Words:-Zidovudine(AZT), Human Immunodeficiency Virus (HIV), Anaemia.

I. INTRODCTION

HIV is a virus that causes AIDS and interferes with the body's ability to fight infection. HIV is most commonly spread by sexual contact with an infected patient. In children HIV occurs commonly through vertical transmission which means the virus is passed to the child in the womb.

According to World Health Organization (WHO) estimation that 33 million people are suffering from HIV and around 3million people have be access to Highly Active Antiretroviral Therapy (HAART).

Antiretroviral therapy (ART) has low safety profile due to following reason:

I. They need to be taken on chronic basis.
II. ART drugs are consumed by patients who areimmune deficient.
III. Immune deficient patients are more prone to develop an Adverse Drug Reaction (ADR)

Unfortunately the drug used in HAART regimens are commonly associated with ADR one of which is AZT induced anaemia. Mechanism that involved in AZT induced anaemia is mainly by inhibition of proliferation of blood cell progenitor cells in a time and dose dependent fashion. 5.4-34.5% of patient has been reported with anaemiawho were on AZT containing regimen. However there are other reasons that causes anaemia in HIV patient i.e.,haematopoietic changes due to change in cytokine production, decreased erythropoietin concentration, opportunistic infection, malnutrition and micronutrient deficiency.

Aim

The main aim of the study is to enlighten the drug related problem and address such problem in order to prevent the occurrence of adverse drug event and optimizing drug therapy.

II. CASE PRESENTATION

A 15 years old male patient presented with complaints of loose stools, fever and decreased appetite since 15 days, fatigability and generalized body ache since 10days. Patient is known case of HIV that is transmitted perinatally from mother to child since 15years and taking Tab.Lamivudine 150mg, Nevirapine 200mg and Zidovudine 300mg PO o.d. lab data shows patient's haemoglobin level is too low.

Past medication
- Tab. Lamivudine 150mg PO o.d.
- Tab. Nevirapine 200mg PO o.d.
- Tab. Zidovudine 300mg PO o.d.

Investigation
- Hb- 3.6g/dL
- RBC- 1.0 million cells/cumm
- Hematocrit- 09%

Treatment
1. 1 pint Packed red blood cell transfusion IV o.d.
2. Tab. Ferrous fumarate + folic acid 325mg+1500mcg PO b.i.d
3. Tab. B Complex PO o.d.
4. Inj. Vit B_1, B_6, B_{12} 1Ampule IV o.d.
5. Tab. Paracetamol 500mg PO t.i.d

As patient was suffering from severe anaemia , he was treated with Packed red blood cells, and iron and folic acid supplement were provided in the form of Tab. ferrous fumarate + folic acid, Vitamin B supplements were prescribed and for fever Tab. Paracetamol was prescribed. During hospitalization antiretroviral therapy that include Tab.Lamivudine 150mg, Nevirapine 200mg and Zidovudine 300mg PO was on hold.

Discharge medication
- Tab. Ferrous fumarate + folic acid 325mg+1500mcg PO 1-0-0
- Tab. Folic acid 5mg PO 1-0-0
- Tab. B Complex Vitamins PO 1-0-0
- Tab. Lamivudine + Nevirapine + Zidovudine 150+200+300mg PO 1-0-0

III. DISCUSSION

Patient appeared with symptoms of anaemia (fatigability, pallor) and patient was using zidovudinefrom long term and the patient was not taking any other medication that causes anaemia. Patient is non-vegetarian and have healthy diet hence this is not nutritional deficiency anaemia..5.4-34.5% of patient has been reported with anaemiawho were on AZT containing regimen.

IV. CONCLISION

Zidovudine was prescribed for HIV which induced severe anaemia, the condition is reversible. In majority of patient after stopping zidovudine there was recovery in Hb level within 1 month. Recovery takes as long as 6months which is due to myelotoxic effect of zidovudine that persists as long as 3 months in few patients.

Therapeutic intervention

During hospitalization Zidovudine was on hold but in Discharge medication Zidovudine was continuedon other handStavudine containing regimen increases the Hb level by suppressing viral replication and reversing some of the mechanisms that causes anaemia in HIV infected patient. Hence Zidovudine containing regimen must be replaced by Stavudine containing regimen.
Loose stools was left untreated

Learning points
- Drug induced disease conditions are preventable, so optimization of the drug regimen is very crucial in health care system.
- Withdrawing the drug causing ADR or switching to other alternative drug is best possible management of drug induced conditions.
- Hence clinical pharmacist have greater opportunities to monitor the patient and identify the drug related problem and adopt the best practice to minimize them.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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CONFLICT OF INTEREST

None

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