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## RESEARCH ARTICLE

### ZIDOVUDINE INDUCED SKIN AND NAIL HYPERPIGMENTATION- A CASE REPORT

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#### Abstract

Zidovudine is a thymidine analogue with efficient therapeutic activity against a broad spectrum of retroviruses.<sup>1</sup> It is used in human immunodeficiency virus (HIV) infected patients only in combination with at least two other antiviral drugs. It is one of the two optional antiviral NRTIs used by National AIDS Control Organisation (NACO) for its first line triple drug antiretroviral regimen (ARV). Zidovudine can prolong life in HIV-infected individuals and diminish HIV associated dementia.<sup>2</sup>

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#### Introduction:-

Zidovudine a thymidine analogue is introduced for the treatment of HIV. It is one of the first line triple antiretroviral drug regimen.<sup>3</sup> It is used as an oral or injectable drug in HIV infection. It belongs to the class of reverse transcriptase inhibitors. Reverse transcriptase is an enzyme that is used by HIV viruses to make new DNA. Zidovudine is converted into an active form zidovudine triphosphate within the infected cell that selectively inhibits viral reverse transcriptase enzyme.<sup>3</sup> It blocks the synthesis of new proviral DNA and HIV viruses. To prevent HIV transmission from mother to foetus, the dose is 200 mg thrice daily. Treatment should be initiated between the 14th and 34th weeks of pregnancy and continued till the time of labour. During delivery, 2mg/kg should be administered intravenously over 1hr followed by 1mg/kg/hr until the umbilical cord is clamped.<sup>4</sup> It is the standard drug of choice to prevent mother to offspring HIV transmission.<sup>1</sup> Patients initiating zidovudine treatment often complaints of fatigue, malaise, myalgia, nausea, anorexia, headache and insomnia which resolve within the first few weeks of treatment. Dose related side effects are frequent with zidovudine such as anaemia and neutropenia most often in individuals with advanced HIV disease and low CD4 counts.<sup>3</sup> The prevalence of zidovudine induced anaemia varies across the globe (5.42-9.62%).<sup>5,6</sup>

#### Case Report:-

A 39 year old male patient known case of HIV (CD4-116 cells/mm<sup>3</sup>) was admitted in RIMS hospital (Medicine ward), Imphal for increase in weakness, decrease in food intake, itching sensation on the skin followed by discolouration. Patient gave the history that the discolouration on the skin developed after about 3 weeks of treatment with antiretroviral therapy comprising of Zidovudine(AZT) + Lamivudine (3TC) + Efavirenz (EFV). Patient had been on ART since two months before hospitalisation. Physical examination revealed pallor, clubbing and bluish black discolouration of nails and skin. There was diffuse hyperpigmentation (bluish black) over the face, oral mucosa, dorsum of the hands and feet. Multiple hyperpigmented macules were present over the groin and on both upper and lower limbs. Hepatitis C virus infection (genotype 3, viral load 12,41,445) was diagnosed four months before the admission. AZT was replaced with Stavudine and with supportive treatment after four days, the well being improved (Hb- 3 gm/dl to 5.9 gm/dl; CD4-220 cells/mm<sup>3</sup>) and the itching sensation of the skin also disappeared. Patient was discharged and advised for the further regular follow up.

**Discussion:-**

Nail pigmentation with zidovudine was first reported in black patients.<sup>7</sup> Cutaneous hyperpigmentation is associated with many drugs including antiretroviral drug zidovudine.<sup>8</sup> Propensity of nail hyperpigmentation is more among dark individuals. Treatment is preferred with “highly active antiretroviral therapy” (HAART) regimen which consists 3 or more antiretroviral drugs in combination. In the present case, AZT is one of the 3 ART drugs. Based on reported ADRs associated with the ART drugs, AZT may be the causative drug for the hyperpigmentation. Zidovudine is not indicated alone for HIV infected individuals as the risk of drug resistance to retrovirus may emerge. Zidovudine in combination with other drugs as indicated in HAART regimen delays the progression of the disease, decreases the viral load and increases the CD4 count.<sup>3</sup>

**Conclusion:-**

Zidovudine is one of the popular ART drugs. Hyperpigmentation is an important adverse reaction with prolonged therapy. Prior assurance with the possible untoward reactions may improve outcome of the therapy as well as adherence to the antiviral drug regimen.

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