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A Study of Haemoglobin Level based on Tenofovir given as a First Line Anti Retroviral Therapy in Human Immune Virus Infected Patient

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ABSTRACT

Background: Tenofovir has been recently introduced in our country as first line therapy in HIV infection but limited data available on safety profile & tolerability in Indian population of patients. This study focused on change of haemoglobin level due toTenofovir given as a first line anti retroviral therapy in HIV infected patient.

Aims of the Study: To show the change of haemoglobin level due to tenofovir in tenofovir based first line anti retroviral therapy in HIV infected patient.

Materials & Methods: We studied descriptive & longitudinal study in Art center in Murshidabad medical College & hospital, west Bengal, July 2014 to June 2015.Our study included 107 HIV infected patient (aged 18 years and above) attending Art center, Murshidabad medical College & Hospital who will be started on Tenofovir based 1st line Art (according to NACO guideline) except Pregnant women, patients with serum creatinine >1.2mg/dl & unwilling for consent.

Discussion: During this period 10 of them left the study due to lack of follow up. The study population had overall weight gained & increased by haemoglobin at the end of the study.

Results: This study shows that tenofovir is well tolerable drug. Tenofovir therapy is associated with mean weight gain and increase in haemoglobin level.

Conclusion: Tenofovir therapy is associated with mean weight gain and increase in haemoglobin level.

Key Words: Weight, Mean, Creatinine

INTRODUCTION

Tenofovir recently use in our country as first line therapy in HIV infection but limited data available on safety profile in Indian. The study will focus on change of haemoglobin level due to tenofovir based first line anti retroviral therapy in human immune virus infected patient.

METHODS

We did approval from Institutional ethics committee & Informed consent from all the study subjects. We studied subjects from July 2014 to June 2015 and followed up upto12 months. We took detailed history & did physical examinations and baseline investigation before initiation of Art and subsequently at 2 weeks, 1 month, 3 months , 6 months & 12 months of starting of Art. We assessed haemoglobin level before initiation, after 12 months of Art theraphy and different laboratory tests report. We collected all data & analyzed by using SPSS.

RESULTS

This study shows that tenofovir is well tolerated drug in this population of patients with once daily regimen which has

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improved patients compliance. Tenofovir therapy improves overall general health of the patients. Tenofovir therapy is associated with mean weight gain and increased in haemoglobin level. It is not associated with adverse effect on total leucocyte count, differential leucocyte count, platelet count, serum bilirubin and serum liver enzymes (SGOT, SGPT).

DISCUSSION

HIV infection causes significant morbidity and mortality by causing an immune deficient state and patients usually succumb to death from unusual opportunistic infections and malignancies. However HIV infection is a manageable HAART. We conducted the study involving 107 eligible patients who were followed up for a period of 12 months. During followed up period of 12 months ten of them left the study. We studied the effect of tenofovir on haemoglobin level on that period.

We observed gastrointestinal intolerance which includes anorexia, nausea, vomiting and upper abdominal pain in 12.37% patients at 2 weeks of starting of ART which subsequently relieved with time. Only 4% patients had GI intolerance at 1 month which relieved after few days. We found that there is increment in mean haemoglobin level of total study population from base line value. There was no effect on the total and differential leucocyte count or on the mean platelet count.

We found no adverse effect of the drug on liver function (serum bilirubin, SGOT, SGPT did not show any change).

The study showed that there is increasing value of mean serum creatinine level of total study population from base line value but mean serum creatinine at the end of study remained within normal reference value. None of the study population developed acute renal failure or feature of proximal renal tubular dysfunction (glycosuria in presence of normal plasma glucose and proteinurea) for which discontinuation of tenofovir required. The pattern of change in serum creatinine level is same in both sex groups.

We also found that there was increasing value of mean serum urea level of the total study population from base line value although the value at the end of study remained within normal reference value.

We found there is clinical & biochemical improvement of overall health in general study of the population probably due to well control of the disease and also the control of opportunistic infection. The study population had overall weight gain at the end of the study

Conclusion: Tenofovir increases the level of haemoglobin on that period. This study result reveals improvement of haemoglobin level based on tenofovir given as a first line anti retroviral therapy in human immune virus infected patient.

Ethical Considerations: The Institutional Ethics Committee of Murshidabad medical college & hospital approved of our study.

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Interest of study: There is no conflict of interest for the study.

ABBREVIATION

TDF-Tenofovir disoproxil fumarate.

NACO-National Aids control organization.

ART-Antiretroviral therapy.

PrEP-Pre-exposure prophylaxis.

Sd- Standard deviation.

Hb-Haemoglobin.

TLC-Total leucocyte count.

DLC-Differential leucocyte count.

LFT-Liver function test.

ALT-Alanine transaminase.

HIV- Human Immunodeficiency Virus.

SIV- Simian Immunodeficiency Virus.

AIDS- Acquired Immunodeficiency Syndrome.

AZT –Zidovudine.

HAART- Highly active antiretroviral therapy.

NNRTI -Non-nucleoside reverse trancriptase inhibitor.

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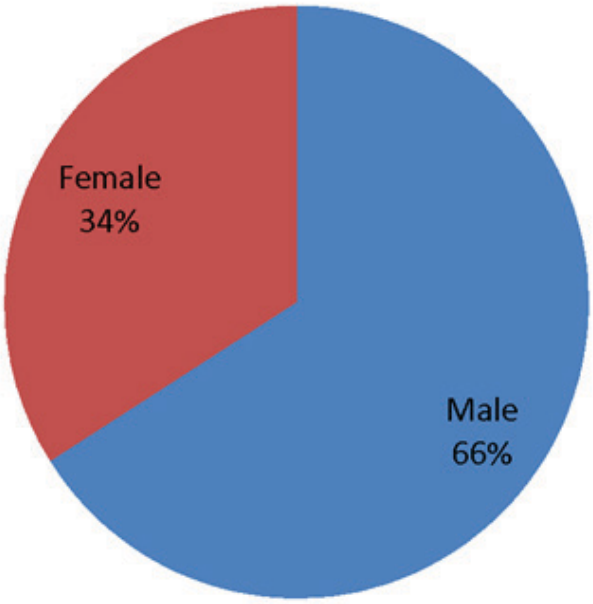

Diagram: Distribution of total population according to sex distribution.

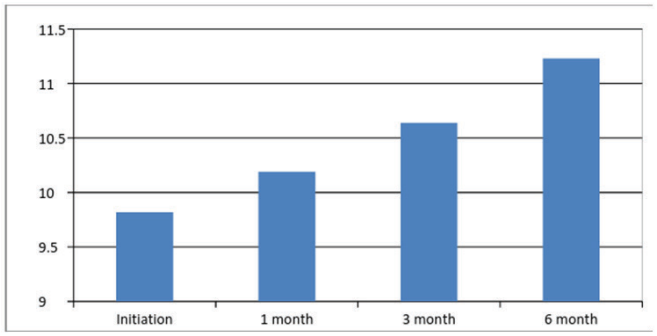

Figure 1: Changes in haemoglobin level (mean+/-Sd) of population under study observed during study period.

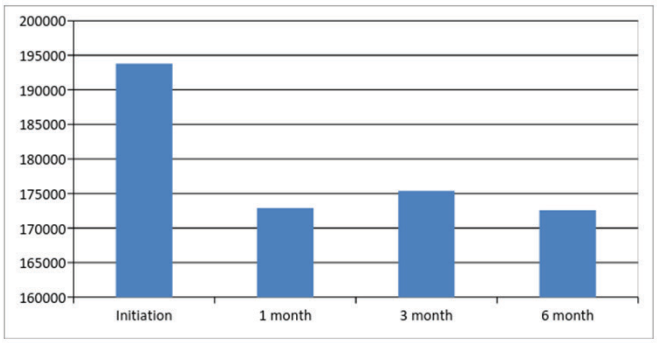

Figure 2: Change in platelet count (mean+/-Sd) of total study population observed during the study period.

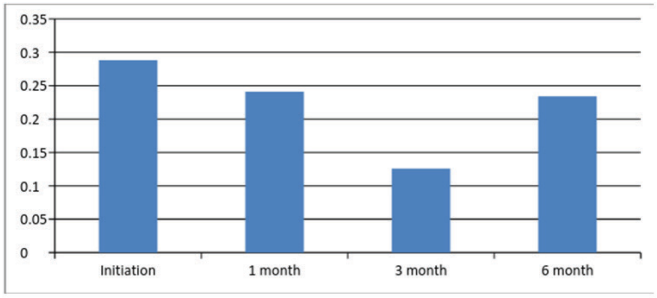

Figure 3: Change in serum direct bilirubin level (mean+/-Sd) of total study population observed during the study period.