

Evaluation of Creatinine Levels in Aids Pateints Taking Haart At Rims art Centre, Ranchi, Jharkhand, India

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Abstract

Introduction: Hiv/Aids patients are increasing in number in india. Human immunodeficiency virus causes it. Recently there is a slight decrease in incidence of HIV due to easy access to ANTI RETROVIRAL THERAPY.

Objective: To monitor creatinine levels in HIV patients taking HAART

Method: Data for the study was collected from ART CENTRE RIMS RANCHI who were on HAART therapy. A total of 68 patients were included and their creatinine value was taken for 2 times at 6 month interval.

Result: Total 68 patients creatinine level was taken at 6 month interval. Their mean was calculated and analysed.

Conclusion: Creatinine level was significantly improved in 2nd reading than the 1st one. It means haart therapy can significantly improve renal functions.

Keywords: aids, creatinine, haart(stavudine+lamivudine+nevirapine), nephropathy,

I. Introduction

The Government of India estimates that about 2.4 million Indians are living with HIV (1.93 -3.04 million) with an adult prevalence of 0.31% (2009). Children (<15 yrs) account for 3.5% of all infections, while 83% are the in age group 15-49 years. Of all HIV infections, 39% (930,000) are among women. In states of Chandigarh, Orissa, Kerala, Jharkhand, Uttarakhand, Jammu & Kashmir, Arunachal Pradesh and Meghalaya show rising trends in adult HIV prevalence in the last four years. Acquired immune deficiency syndrome (AIDS), caused by the human immuno deficiency virus (HIV) is exemplified by progressive impaired body's immune system resulting in a number of opportunistic infections and biochemical complications [1]. The advent of highly active antiretroviral therapy (HAART) has enhanced long-term viral suppression, decrease of opportunistic infections and increased quality of life (QoL) of infected individuals [2]. However, the Long-term treatment with HAART is associated with toxicity and drug resistance [3]. Shortly after 1981 an entity now known as HIV-associated nephropathy (HIVAN), became evident and it remains the most common form of kidney disease among HIV-infected individuals [4],[5]. Renal damage caused by antiretroviral drugs can result in a variety of toxic drug effects presenting as acute renal failure, tubular necrosis, kidney stones, or chronic renal disease [6]. Renal dysfunction may therefore be a common finding in patients infected with HIV, and necessitates increased surveillance and adaptation of dosages of HIV drugs [6]. Knowledge on the renal function status of such individuals from time to time, will improve management strategies.

The present study therefore is done to assess the effect of HAART therapy on creatinine level by monitoring creatinine level at every 6 month interval who comes in RIMS ART centre for follow up.

Patients and methods :

This study is conducted on the pateints who attend the ART centre at rajendra institute of medical sciences ranchi between September 2015 to September 2016. A total of 68 patients are included in study. All patients who are taking HAART combination(zidovudine+lamuvidine+nevirapine) and their creatinine value were taken for 2 times at 6 month interval.

Inclusion criteria:

1. all the patients having confirmed hiv/aids.
2. patients above the age of 12 of either sex.
3. Patient taking HAART combination (zidovudine + lamivudine+nevirapine).

Exclusion criteria:

1. Patients who lost for follow up

2. patients below age 12

A master chart was prepared after recording of creatinine levels at 6 monthly intervals.

Confirmation of hiv:

All patients who attended ART centre at RIMS were screened for hiv, and hiv confirmation was done as per naco guidelines .

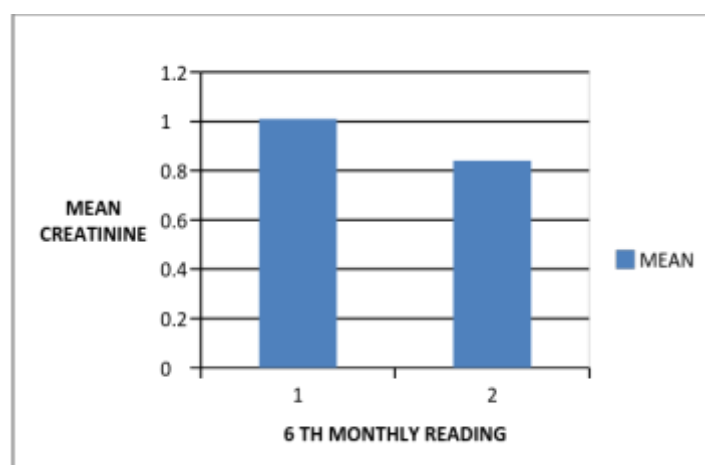
Creatinine assay:

Fasting blood was collected. Then serum of sample was evaluated at rims biochemistry department. Creatinine estimation was done by JAFFE method on fully automatic autoanalyser.

Result

Total no of 68 patients who were on HAART analysed. Two reading of mean creatinine value at 6 month interval was obtained as

reading	Mean creatinine value
1st	1.02
2nd	0.84



From the current study it was noted that there is an improvement in the creatinine level of patients taking HAART combination(Z+L+N).

II. Discussion

Renal disease is becoming an increasingly prevalent entity in human immunodeficiency virus (HIV)—infected patients; it occurs in a variety of clinical settings and is associated with histopathological changes. HIV-related renal impairment can present as acute or chronic kidney disease; it can be caused directly or indirectly by HIV and/or by drug-related effects that are directly nephrotoxic or lead to changes in renal function by inducing metabolic vasculopathy and renal damage. Acute renal failure is frequently caused by the toxic effects of antiretroviral therapy or nephrotoxic antimicrobial substances used in the treatment of HIV. The kidney plays a major role in the metabolism and excretion of antiretroviral drugs and this makes it vulnerable to various types of injuries from some of these agents, including acute kidney injury (AKI), tubulopathies, chronic kidney disease (CKD), and end-stage renal disease requiring renal replacement therapy. HAART has also been associated with CKD. The major drugs implicated in this include indinavir, atazanavir, and tenofovir [8].Clinically, HAART causes various kidney syndromes including various electrolyte and acid-base disorders, AKI, lactic acidosis, and chronic kidney disease. These injuries occur via multiple mechanisms, including direct tubular toxicity, allergic reactions, and precipitation of insoluble drug crystals within renal tubular lumens [9]. However there are Evidence of kidney function improvement in association with ART in patients with renal insufficiency also is accumulating. ART was associated with improved kidney function in subjects with stage 2 or greater CKD at baseline (eGFR change of 2.8 mL/min/1.73 m2 per year) in participants of the Longitudinal Linked Randomized Trials (ALLRT), a multi-center, prospective cohort of HIV-infected subjects who were also enrolled in randomized clinical trials or treatment strategies of ART in the AIDS Clinical Trials Group (ACTG), of whom 30% were African-American.(10) In the Development of Antiretroviral Therapy Trial (DART), a randomized trial that compared clinical and laboratory monitoring of ART versus clinical monitoring alone in 3316 HIV-infected, ART-naïve, sub-Saharan Africans, kidney function improvement was also associated with

greater baseline renal impairment.(11) Despite these strong and consistent renal benefits, a small number of subjects with normal kidney function at baseline progressed to CKD stage 3 or greater in these studies (1.9% and 1.6% of subjects in ALLRT and DART, respectively). HAART also seems to have a protective renal effect. In a 12-year follow-up study of 3976 HIV-1—seropositive patients, a 60% reduction in the risk of development of HIVAN associated with HAART was found[12]. Kidney function improvement in this study was associated with HIV-1 viral suppression, while declining kidney function was associated with higher baseline HIV RNA plasma concentrations and increases in HIV RNA over time.

III. Conclusion

The mean creatinine value at 6 month interval of HAART therapy (satudivine+lamivudine+nevirapine) shows a significant reduction in AIDS patients. It implies that there is certain amount of improved kidney function due to HAART therapy. Since the study group was small, so it can be further evaluated on large population.

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