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CLINICAL STUDY OF LIPID PROFILE ABNORMALITIES IN HIV PATIENTS – AN ORIGINAL STUDY FROM A TERTIARY CARE HOSPITAL

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ABSTRACT

AIM: HIV is a global pandemic and metabolic derangements especially dyslipidemia has been reported both due to ART and the virus itself. This study is taken up to evaluate lipid profiles in HIV naïve patients and in HIV patients already on ART

METHODOLOGY: A Cross sectional study was done involving a total of 97 subjects of which 61 are naïve HIV positive and 36 HIV positive patients on ART. Subjects with other comorbidities were not included. Their serum lipid profile was estimated and comparison was made using statistical tests.

RESULTS: Out of the 61 HIV naïve subjects, 34 were male with 27 females and out of the 36 study subjects in ART group 10 were male with 26 females. Hypertriglyceridemia and low HDL is found in all naïve males and all naïve females. TC, HDL and LDL is higher in ART subjects. TG and VLDL is lower is ART group.

CONCLUSION: Dyslipidemia is a common finding in HIV naïve patients and is more deranged in those on ART. So regular monitoring of serum lipid profile is recommended in those who are on ART.

KEYWORDS : Hiv, Dyslipidemia, Art

INTRODUCTION:

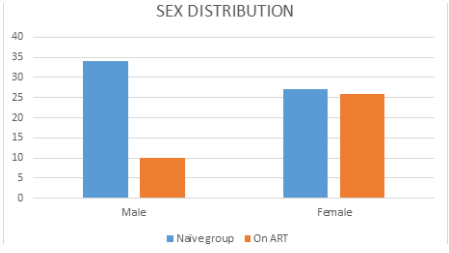
HIV, caused by Human Immunodeficiency Virus (HIV) has become a global pandemic and with the discovery of Anti-Retro Viral Therapy (ART) and increased life expectancy the prevalence of HIV has increased. Infections are the major cause of mortality and morbidity in HIV infected patients leading to high health care costs. However many metabolic derangements occur due to HIV infection itself and with the use of ART. Atherosclerosis is risk factor for cardiovascular disease, renal vascular disease, mesenteric vascular disease, peripheral vascular disease and retinal vascular disease. A consistent finding from various studies was, that patients with advanced HIV infection had increased levels of circulating triglycerides and LDL particles and low levels of HDL (1). This study is undertaken to evaluate chronic infection such as HIV infection can affect serum lipid levels and whether anti- retro viral therapy ART affects lipid levels and to compare naïve patients with patients on ART.

METHODOLOGY:

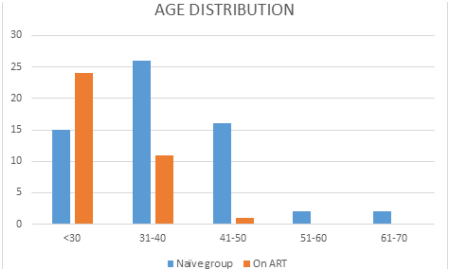
This is a cross sectional study design done in a teritiary care hospital. A total of 97 subjects attending ART center, tertiary Government General Hospital were selected, out of which 61 naïve HIV positive subjects not yet started on ART therapy and 36 HIV positive subjects who were already receiving ART therapy were selected. Subjects with prior diabetes, hypertension, renal disease, liver disease, tuberculosis in the past were not included in the study. Patients taking any lipid lowering drugs were excluded. A detailed questinnare addressing the year of diagnosis, initial presentation, year of initiation of ART, existing co morbid conditions, previous drug history was taken. Serum Lipid Profile was done for all the subjects. Hypercholesterolemia is defined as serum total cholesterol >200mg/dl. Hypertriglyceridemia is defined as serum triglycerides >150 mg/dl. Low HDL is defined as <40 mg/dl. Optimal LDL is defined as <100mg/dl. Subjects were divided into 2 classes of naive subjects and ART subjects and comparisons were made between 2 classes using appropriate statistical tests.

Results: Out of the 61 ART naïve subjects, 34 were male and 27 were female and Out of the 36 study subjects in ART treated group 10 were male and 26 were female. out of the 61 ART naïve subjects, 15 were under 30 years of age, 26 were in 31-40 years' age group, 16 were in 41-50 age group, 2 were in 51-60 age group and 2 were above 60 years of age. Out of the 36 study subjects in ART treated group, 24 subjects were below 30 years of age, 11 were in 31-40 years' age group, and 1 subject in 41-50 age group.

Sex distribution	Naive HIV	ART HIV
males	34	10
females	27	26
total	61	36



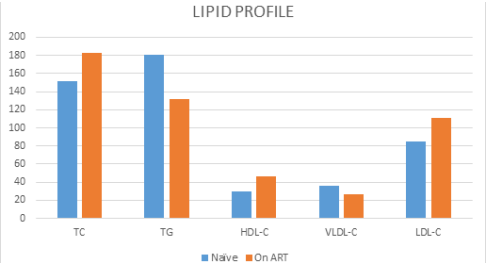
Age distribution	Naive HIV	ART HIV
<30 years	15	24
30-40 years	26	11
>40 years	20	1
total	61	36



Mean total cholesterol (TC) value among naïve subjects is 151.59. Standard deviation (SD) is 42.36. Mean TC of ART treated subjects is 183.03 with SD 38.33. This is significantly higher (p -0.0004). Mean serum triglycerides (TG) of naïve subjects is 181.11 with SD 84.98. Mean TG of ART treated subjects is 131.67 with SD 70.68. The latter is significantly lower (p value 0.0041) than among the naïve group. Mean HDL-C of naïve group is 30.18 with SD 11.10. Mean HDL-C of ART treated group is 46.03 with SD 16.11. This increase of HDL-C among ART group is significantly higher (p value 0.0001) than naïve group. Mean VLDL-C of naïve group is 36.16 with SD 17.04. Mean VLDL-C among ART group is 26.36 with SD 14.14. This reduction among ART group when compared to naïve group is significantly lower. (p value 0.0045). Mean LDL-C among naïve group is 85.24 with SD 34.80. Mean LDL-C among ART exposed group is 110.64 with SD 34.19.

This increase in LDL-C exposed to ART is significantly higher (p value 0.0007) than naïve group.

Lipid Profile	naive	On ART	P value
TC	151.59+/-42.36	183.03+/-38.33	0.0004
TG	181.11+/-84.98	131.67+/-70.68	0.0041
HDL-C	30.18+/-11.10	46.03+/-16.11	0.0001
VLDL-C	36.16+/-17.04	26.36+/-14.14	0.0045
LDL-C	85.24+/-34.80	110.64+/-34.19	0.0007



DISCUSSION:

In this study there is significant higher TC, HDL-C and LDL-C levels while there is significant lesser TG and VLDL-C levels in ART treated subjects when compared to naïve subjects. There is decrease in TC, HDL-C and LDL-C in naïve HIV subjects not started on ART. Also there is increase in TG and VLDL in this group. Rasheed Yusuf et al observed similar findings of high TC and high HDLC in ART patients than naïve patients and controls (2). The low LDL-C in naïve HIV subjects in the current study differs from study by Adewole et al2010 who observed high LDL-C in HIV infected patients than controls (3). But he observed low HDL-C and low TC in ART naïve patients which is similar to the present study. Arun Kumar et al observed high LDL-C among HIV infected naïve patients than controls which differs from the present study (4). Indumati V et al also observed similar findings, similar to the present study of high TC, LDL-C among ART subjects when compared to naïve subjects. But she observed findings of high TG and VLDL in ART subjects which is exactly opposite to that observed in present study(5).

Conclusion: Dyslipidemia in the form of hypertriglyceridemia and low HDL is found in all naïve males and all naïve females. TC, HDL and LDL is higher in ART subjects when compared to naïve subjects. TG and VLDL is lower is ART subjects when compared to naive subjects. Low TC, HDL and LDL seen in naïve males is seen as late finding. High TG and VLDL seen in naïve females is seen as early finding.

REFERENCES:

1. Grunfeld C, Pang M, Doerrler W, Shigenaga JK, Jensen P, Feingold KR, et al. Lipids, lipoproteins, triglyceride clearance, and cytokines in human immunodeficiency virus infection and the acquired
2. Yusuf R, Sambo AI, Mohammed MH, Abdulaziz H. Lipid profile of HIV/AIDS patients attending antiretroviral clinic in Zaria, North-Western Nigeria. Sub-Saharan African Journal of Medicine. 2014 Jan 1;1(1):31.
3. Adewole OO, Eze S, Betiku YE, Anteyi E, Wada I, Ajuwon Z, Erhabor G. Lipid profile in HIV/AIDS patients in Nigeria. African health sciences. 2010;10(2).
4. Kumar A, Sathian B. Assessment of lipid profile in patients with human immunodeficiency virus (HIV/AIDS) without antiretroviral therapy. Asian Pac J Trop Dis. 2011 Jan 1;1(1):24-7.
5. Indumati V, Vijay V, Rajeshwari AM, Shantala D. Comparison of serum lipid profile in HIV positive patients on ART with ART naïve patients. Journal of clinical and diagnostic research: JCDR. 2014 Oct;8(10):CC06.