Hepatitis C Virus Co-Infection In Human Immuno Deficiency Virus Positive Population In Bida, North Central Nigeria.

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Citation

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Abstract

Co-infection of HIV–positive patients with hepatitis viruses worsens the long term prognosis and this is summative for each new infection in any individual.This study was carried out to establish the seroprevalence of hepatitis C virus among HIV infected population in Bida –North Central Nigeria. A total of 250 HIV –infected patients 119 males and 131females paticipated in this study with age range of 18-65years .Rapid Chromatogenic Enzyme Immuno Assay (EIA) kit was used for the detection of HCV antibodies in the serum samples. Nineteen (7.6%) of the patients had antibodies to HCV. Co-infection of hepatitis are more in male 10(8.4%) than female 9(6.9%) subjects.Statistical analysis showed no significant difference($p>0.05$) Age group 41-50years had the highest prevalence of HCV (50.7%) followed by age group 31-40 years (16.5%) , 21-30years (9.9%) and <20years(6.7%).No significant difference was observed in association between age and prevalence of HCV antibodies($p>0.05$) .Routine screening of patients with HIV infection for HCV antibodies should be encouraged for early diagnosis.The high prevalence is a cause for concern in Bida, North central Nigeria.

INTRODUCTION

Human immuno deficency virus (HIV) and Hepatitis B and C viruses (HBV and HCV) are the three most comon chronic viral infection documented world wide (1). In patients already infected with HIV and either hepatitis B or C, the prognosis is made much worse with additional infection by other hepatotropic viruses (2). The viruses has similar route of transmission, namely through blood and blood products, sharing of needles to inject drugs and sexual activity, enabling co-infection with these viruses a common event (3). HIV positive individuals are at risk of co-infection with HBV and HCV infection (4). With the advent of highly active antiretroviral therapy (HAART) regime capable of dramatically prolonging the survival of HIV infected patients, the impact of co-morbid infections such as HBV and HCV has come into focus (5). Co-infection with HCV increases the risk for hepatotoxicity of HAART and likelihood of onset of an AIDS-defining illness, compared with infection HIV-1 alone (6). HCV co- infection in HIV positive individuals is of utmost importance due to the underlying consequences such as the hepatological problem associated with these viruses, which have been shown to decrease the life expectancy in HIV infected patients (7). HIV accounts for 38.6million infections world wide at the end of 2005(8). While HCV accounts for 17million chronic infection (9,10). Moreover among the HIV infected patients, 4-5 million are co-infected with HCV(9). Nigeria belongs to the group of countries highly endemic for viral hepatitis(11). The knowledge about the interrelationship between HIV and HCV and their effect on the immune system remains unclear in Bida North central Nigeria as no study of this nature has been done.

This study was therefore carried out to estimate the prevalence of HCV seropositivity in patients living with HIV/AIDS in Bida –Niger State, North Central Nigeria .

MATERIALS AND METHODS

A prospective Cross sectional and analytical study was carried out at the Federal Medical Centre Bida. Only confirmed HIV positive serum samples were included in this study.Two hundred and fifty (250) samples were recalled randomly from a pool of confirmed HIV positive samples stored at -24ºC until analysis. The samples were collected between January 2009-July 2010 from HIV seropositive patients who attended HAART clinic for follow –up and other health needs.

Rapid chromatogenic Ezyme Immuno Assay (EIA) kits was

used for the detection of anti HCV in the serum following the manufacturers instruction. (Acummen Diagnostics Inc.USA.) Hapatitis C positive samples were confirmed with a second serum based EIA rapid test (PMC Medical Pvt. Ltd India.). The EIA rapid test kit used had sensitivity of 99% and 99% specificity respectively and a positive predictive value of 99%.

STATISTICAL ANALYSIS

Epi info version 3.5.1 August 13th, 2008 was used for the statistical analysis at 95% confidence level.

RESULTS

Of the 250 HIV-infected patients studied, 119 were male and 131 female .The age range of the patients in this study was 18-65years. 19(7.6%) had antibodies to HCV.The prevalence of HCV antibodies was higher among the males 10(8.4%) than females 9(6.9%).Statistical analysis showed no significant difference($p<0.05$) (Table1)

Age related prevalence of HCV antibodies in HIV infected patients was assessed and results showed that subjects of age group 41-50years had the highest prevalence (50.7%).This was followed by age group 31-40years (16.5%) and 21-30years(9.9%) respectively. No significant difference was observed in association between age and prevalence of HCV antibodies($p<0.05$) (Table2)

Figure 1

Table 1. Sex related prevalence of HCV antibodies in the HIV infected patients

SEX	NO. EXAMINED	NO. INFECTED WITH HCV	PERCENTAGE INFECTED WITH HCV
MALE	119	10	8.4%
FEMALE	131	9	6.9%
TOTAL	250	19	6.7%

Figure 2

Table 2 Age related prevalence of HCV antibodies in HIV infected patients

AGE	NO. EXAMINED	NO. INFECTED WITH HCV	PERCENTAGE INFECTED WITH HCV
<20	28	1	6.7%
21-30	100	5	9.9%
31-40	73	6	16.5%
41-50	38	7	50.7%
51-60	9	0	0
>60	2	0	0
TOTAL	250	19	7.6%

DISCUSION

Chronic viral hepatitis is a leading cause of liver –related death among patients with HIV/AIDS worldwide(12). Our findings showed a prevalence of 7.6% co-infection of HCV in HIV infected patient in Bida which is somewhat in agreement with 8.2% reported by Agwale et al (16) in northern Nigeria, lower than the 11.1% reported by Forbi et al in Keffi(20) and higher than 4.8% reported by Jesses et al (15)in Ibadan and 5.7% reported by Inyama et al(26) in Jos .The factor responsible for these regional variations are unclear, although the reported co-infection rates of HCV in HIV patients have been variable World wide depending on the geographic regions, risk groups and the types of exposure involved(17,18,19.). Within India, HCV co-infection among HIV-infected patients have been reported infrequently from region to region which is in agreement with variations noticed in studies carried out in Nigeria.

HAART has transformed HIV/AIDS from a uniformly fatal illness into a managable chronic infection and has been shown to be able to restore $CD4^+$ cells in HIV infected patients (24) early diagnosis of HCV in HIV individuals have not been given enough priority it deserves in Nigeria Health Care delivery system possibly due to the low awareness of the burden and risk of HCV infection in HIV. The gains of HAART could be compromised by co-infection with hepatitis viruses as they are known to have adverse effects on the prognosis of HIV /hepatitis co-infection.(25)

In conclusion, this study was able to demonstrate that co-infection of HIV and hepatitis C virus is on the increase in this part of the world . The high prevalence of hepatitis virus co-infection with HIV is a cause for concern .Therefore, routine screening for hepatitis C viral infections in all HIV

positive patients is needful as it is now evident that early initiation of therapy before marked immunosuppression sets in could be highly beneficial for the HIV infected patients in order to decrease the long term mortality and morbidity associated with these co-infections.

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