Indian J.Sci.Res. 8(1) : 179-181, 2017

ISSN : 0976-2876 (Print)
ISSN : 2250-0138 (Online)

HEPATITIS C CO-INFECTION IN HIV INFECTED PATIENTS: A STUDY IN A TERTIARY CARE CENTRE FROM SOUTH INDIA

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ABSTRACT

Co-infection with Hepatitis C virus (HCV) in human immunodeficiency virus (HIV) infected individuals results in increased hepatic complications. This study to evaluate the presence of HCV in HIV infected individuals attending a tertiary care centre in southern India. Among the 624 HIV infected patients tested for Hepatitis C by the 2 ELISA methods, 26 (4.2%) patients were positive for Anti HCV antibodies. Among the 600 healthy controls, who were subjected to the similar protocol,8 (1.3%)were found to be reactive for Anti HCV.The findings of our study showed presence of HCV (4.2%) co-infections in HIV positive patients which was higher than that seen in HIV negative controls. Co-infection with HCV is a common problem in HIV infected patients in India. Hence, all HIV patients need to be routinely tested for markers of HBV and HCV infection.

KEYWORDS: HIV-Hepatitis C co-infection, Anti-HCV, HCV markers, HAART

Human immunodeficiency virus (HIV) is known to influence the natural history of infections with certain hepatitis viruses and interactions between HIV and hepatitis viruses may potentiate HIV replication. There is high degree of epidemiological similarity between hepatitis C virus and HIV as regard to high-risk group and route of transmission. The significant burden of HIV/Hepatitis C virus (HCV) coinfection is increasingly recognized worldwide, and in particular within the AsiaPacific region..Co-infection with HIV modifies the natural history of Hepatitis C infection .HCV infection on the other hand , increases the risk of death in AIDS & impairs CD4 T cell recovery during ART. Individuals who are co infected with both viruses are at risk from accelerated liver disease and consequently cirrhosis, liver failure, and hepatocellular carcinoma. In addition, co infected individuals may have altered immunological responses to HAART and are at increased risk of highly active antiretroviral therapy (HAART)related hepatotoxicity. (Bareja et al., 2003. change 2006.

Globally, the studies conducted on the prevalence of hepatitis viruses in patients infected with HIV have shown the rate of HIV and HCV co-infection to be around 12 to 15%. Few studies conducted in India have shown the prevalence of co-infection of HCV with HIV to vary from 2 to 8%. The present study, was an endeavour to detect the current prevalence of HCV co-infection in patients infected with HIV. (Breden and Thyagarajan 1998-1986, Jain et al., 2009, Rustgi et al., 1984, Sul Kowski 2008).

MATERIALS AND METHODS

This retrospective study was carried out at HIV lab, Institute of Microbiology, Rajiv Gandhi Government General Hospital in 2016 .This laboratory receives samples from 2700-bedded tertiary care hospital and caters to patients from Chennai and the adjacent areas in Southern India. Serum of 624 HIV infected patients were subjected to testing for Anti HCV antibodies using commercially available ERBA ELISA kit &Murex ELISA kit as per the manufacturer instructions. The validity of the test is assessed as per the given criterion and the result is calculated. Serum samples that give borderline results are retested and those repeatedly giving borderline values are considered negative. A total of 600 healthy donors were included as controls and their serum samples were simultaneously tested for anti-HCV by the same kits.

RESULTS

Among the 624 HIV infected patients tested for Hepatitis C by ERBA ELISA method,26 (4.2%) patients were positive for Anti HCV antibodies .All the samples were again subjected to Murex ELISA method as a confirmatory method. Among the 600 healthy controls, who were subjected to the similar protocol,8 (1.3%)were found

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to be reactive for Anti HCV. The difference is significant showing increased incidence of association and co-infection by these viruses.

Among the HIV-Hepatitis C co infected patients,20 (76.9%) were predominantly in the age group of 30-50 years and the co infection was found to be higher among males18/26 (69.2%) than females8/26(30.8%).. Thus, the male: female ratio of the study group was 2.3:1. All result show in table 1, 2 & 3.

DISCUSSION

HIV shares the common route of infection with HCV. It is therefore not surprising to find that some patients with HIV are co-infected with HCV. The co-infection of HCV with HIV is associated with a loss of immunological control of HCV and more rapid progression of HCV disease. In a multi-center AIDS cohort study (MACS) in 2002, it was observed that liver-related mortality rates per 1000 person-years of observation were 1.7 in HIV-seropositive patients and 14.25 in the co-infected patients (significantly higher as compared with monoinfected patients).

Furthermore, co-infection with hepatitis viruses may complicate the delivery of anti retroviral therapy (ART) by increasing the risk of drug-related hepatotoxicity and may interfere with the selection of specific agents. Expert guidelines developed in the United States and Europe recommend screening of all individuals infected with HIV for infection with HCV and HBV to help in appropriate management of such patients. (Das et al., 2011, Tankhiwall 2003 and Padma priyadarshi et al., 2006).

CONCLUSIONS

Shared epidemiological risk have resulted in the HIV infected population having a higher risk and incidence of HCV than those uninfected with HIV. Response rates to HCV therapy are generally 1015% lower than in HCV monoinfection, and therapy may be complicated by issues of drug interactions and significant toxicity. However, greater understanding of baseline factors can contribute to better prediction of treatment outcome, and monitoring of on-treatment virological responses increasingly allows individualization of therapy. Where possible, treatment of HCV is often advisable before HAART is required to avoid the issues of drug interactions on HCV therapy and the risk of HAART-related hepatotoxicity. Early diagnosis of both HIV and HCV infection is essential to most effectively manage HIV-HCV-coinfected individuals.

Table 1 : Sex distribution of samples (n=624)

Sex	No. of Patients	Percentage (%)
Male	326	52.2
Female	298	47.8
Total	624	100

Table 2 : HCV coinfection in HIV patients

HIV Positive Patients	HCV & HIV Coinfected patients	Male	Female
624	26 (4.3%)	18	8

Table 3 : Age Distribution of Hepatitis C &HIV Coinfected patients

Total no of sample	HCV & HIV Coinfected patients	11-20		21-30		31-40		41-50		51-60		61-70		71-80	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F
624	26	-	-	1	1	8	3	7	2	2	2	-	-	-	-

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