



PREVALENCE OF HBV/HCV CO-INFECTION IN HIV SEROPOSITIVE PATIENTS IN A TERTIARY CARE HOSPITAL

Clinical Microbiology

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ABSTRACT

Background: Hepatitis B virus (HBV) and Hepatitis C virus (HCV) infections account for a substantial proportion of liver diseases worldwide. These viruses are responsible for liver damages ranging from minor disorders to liver cirrhosis and hepatocellular carcinoma (HCC). In India, an estimated 4-5 million HIV seropositive people harbor hepatitis infection, which is a major cause of liver-related mortality and morbidity. The HBV and HCV infections are highly prevalent among HIV infected persons, as a result of shared transmission routes. **Materials and methods:** A total of 200 HIV infected Cases were included in the study during the period of January 2019 – December 2019. Demographic data and clinical findings were recorded using a structured proforma. All the samples were screened for HBsAg detection by rapid immunochromatographic method (HEPACARD) & anti HCV antibodies detection by ELISA (HCV MICROLISA) following the kit manufacturer's instructions. **Results:** Out of 200 HIV infected patients studied, 140 were males and 60 were female patients. HBV co-infection was detected in 7/200 (3.5%) patients and HCV co-infection in 3/200 (1.5%) patients and dual co-infection (HBV/HCV) in 0/200(0%). Most of the patients belong to the age group 31-40 years. Among the risk factors, history of alcohol abuse, blood transfusion, and previous surgery was reported in most of the cases. **Conclusion:** The prevalence of HBV/HCV co-infection in HIV infected persons is much lower in our study population as compared to that reported in Western literature.

KEYWORDS

HIV, HCV, HBV, ELISA

INTRODUCTION:

Hepatitis B virus (HBV) and hepatitis C virus (HCV) are endemic in India and have an etiological role in acute hepatitis, 50 - 70% of which end up with chronic liver disease. The HBV and HCV infections are highly prevalent among HIV infected persons, as a result of shared transmission routes¹. The prevalence of HBV coinfection in HIV infected patients is about 9-12%. The prevalence of HCV coinfection in HIV infected patients is about 0.14-18%. Among the human immunodeficiency virus (HIV) infected patients, about 4-5 million are co-infected with HCV³. HBV/HCV co-infected HIV patients are associated with reduced survival and increased risk of progression to liver disease, cirrhosis and also hepatotoxicity associated with antiretroviral therapy³. Furthermore the immunosuppression due to HIV may lead to reactivation of HBV/HCV infection in people who had previously undetectable levels of viremia⁴.

AIM:

The study was conducted to elucidate HBV/HCV co-infection among the HIV seropositive patients attending ART (Anti Retroviral Therapy) center of a tertiary Hospital. The literature regarding the prevalence of co-infection with HBV/HCV in India is sparse. Hence the present study was conducted to find out the prevalence of HBV/HCV co-infection in HIV patients in Southern India.

MATERIALS AND METHODS:

This Cross-sectional Descriptive study was conducted at HIV Unit, Gandhi medical college, Secunderabad, involving 200 HIV positive patients. A detailed history and clinical examination were performed. The history mainly included age, sex, mode of transmission, education status, presence of opportunistic infections, history of smoking, alcohol intake, occupation and socioeconomic status. The physical examination included a detailed general examination and systemic examination.

Baseline investigations were performed including complete haemogram, biochemical parameters, Liver function tests and CD4/CD8 counts. Diagnosis of HBV coinfection was done by rapid immunochromatographic method and HCV co-infection was made based on third generation ELISA method.

OBSERVATION AND RESULTS:

Out of 200 HIV positive patients, most of the patients belong to the age

group 31-40 years.

Among the risk factors, history of alcohol abuse, blood transfusion, previous surgery was reported in most of the cases. Most of the HBV/HCV seropositive cases had Yellowish discoloration of eyes and skin, loss of appetite as predominant symptom followed by loss of weight, fatigue.

Serum samples of all 200 HIV patients were subjected to HBsAg and 3rd Generation HCV ELISA. Out of 200 patients, 7 patients were HBsAg positive and 3 patients were reactive for anti-HCV antibodies.

Out of 3 HCV positive cases, two were males, and one was female. All 7 HBsAg positive patients were males. HBsAg and HCV positive cases are prevalent in 30-40 Yrs of age group.

Statistical analysis of the data was done by trend (t) test using EPI INFO software. The values of the t-test are interpreted as a P value less than 0.05 as significant.

DISCUSSION:

In India, an estimated 4-5 million HIV seropositive people harbor HCV infection, which is a major cause of liver-related mortality and morbidity. HIV and HBV/HCV coinfection is emerging as an essential and frequent finding because both viruses share a similar route of transmission, and this appears to be the most crucial reason for the growing nature of the coinfection.⁵

Prevalence of Hepatitis C in HIV seropositive patients was 1.5% similar to other reports from India by Tripathi et al. (1.6%)⁶ (Lucknow). Prevalence of Hepatitis B in HIV seropositive patients, in the present study, was 3.5% similar to other reports from India by Mahajan A et al.⁷ 3.4% (Jammu and Kashmir) and from Libya by Mohammed A Daw et al. (3%)⁸ Males (70%) were more than females (30%) with a male to female ratio of 2.5:1. Similar observation was made by several authors Ponamgi et al.⁵, Vineeta Sharma et al.³ from India. From other countries, studies done by Mohammed A Daw et al.⁸ from Libya showed male to female ratio of 3.5:1 The most common mean age group affected with HCV was 35Yrs similar to study from South India by N.Chandra et al.¹, Vineeta Sharma et al.³, who reported 35 Yrs In the present study, a history of previous surgery is seen in (21%) 42 cases,

blood transfusion in 15 cases (7.5%), history of tattooing in 6 cases (3%) correlating with the study done by Anita Chakravarti et al.⁹. In the present study, the Mean ALT value of HCV positive patients was 101.2 IU/L correlating with the study from South India by N.Chandra et al.¹, who reported mean ALT- 79.9 ± 24.8 IU/L.

The HCV antibody was detected by ELISA in 1.5% of HIV seropositive cases correlating with a study Ankur Goyal et al.¹⁰, Tripathi et al.⁶, Premalatha E et al.¹¹ from India. Other studies reported higher prevalence: Chia wen li et al.¹², Vineeta Sharma et al.³, Sherman et al.¹³, Huy BV et al.¹⁴

CONCLUSION:

Among all HIV seropositive patients, co-infection was not detected with both Hepatitis B and C viruses. HBV and HCV co-infection were found to be significantly higher in HIV-positive individuals in comparison to the average population. So, routine check-ups of HIV seropositive patients for the hepatitis virus may be required to monitor better clinical outcome.³

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