

Original article:

Study of risk factors of co-infection of Hepatitis B and Hepatitis C virus in HIV infected patients

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ABSTRACT:

INTRODUCTION: The three very common chronic viral infections seen in the world are Human immunodeficiency virus (HIV), Hepatitis C virus (HCV), and Hepatitis B virus (HBV). These viruses have the same routes of transmission and therefore there is high chance of their co-existence in the same host.

MATERIALS AND METHODS: : The information for the study was collected from HIV positive patients admitted to BLDEU'S Shri B.M Patil Medical college Hospital and Research center, Vijayapur from November 2015 to June 2017. Information was collected through prepared proforma from each patient. All patients were interviewed as per the prepared proforma and then complete clinical examination was done.

Results : The survival among HIV infected individuals is increasing and they are surviving up to a longer age, due to the advent of HAART, but they are suffering more due to liver diseases caused by hepatitis B and Hepatitis C virus. Co-infection is common because of common mode of transmission and similar risky behavior.

CONCLUSIONS: . Co-positivity with HBV in HIV positive patients was found to be 14.7%.. Study also shows that highest co-positivity is seen in patients whose CD 4 count was <200.

INTRODUCTION

The three very common chronic viral infections seen in the world are Human immunodeficiency virus (HIV), Hepatitis C virus (HCV), and Hepatitis B virus (HBV). These viruses have the same routes of transmission and therefore there is high chance of their co-existence in the same host. ¹As there is immunosuppression due to HIV infection, it leads to harmful effects on the natural history, pathophysiology, diagnosis, therapeutic responses to hepatitis B and hepatitis C viruses. HBV vaccination has less efficiency in persons with HIV infection. Co-infection of HIV with HBV and HCV is likely to become a major health care concern in the future. ² The presence of HBV/HCV in HIV may advance quickly to liver cirrhosis and lead to an increased threat of antiretroviral therapy induced hepatotoxicity. The studies on co-infection of HCV and HBV in HIV infection are scarce in our country.

There is more chance of liver disease, cirrhosis, and mortalities in a person having co-infection of HIV with HCV/HBV when compared to a person who is having infection of only one of these viruses. Hence, identifying HCV and HBV in HIV infected individuals is important in order to take care of these infections and allocate resources in health plans so that all HIV positive individuals should be tested for both HCV and HBV.³

Therefore this study was undertaken to study risk factors of co-infection of Hepatitis B and Hepatitis C virus in HIV infected patients.

MATERIALS AND METHODS:

The information for the study was collected from HIV positive patients admitted to BLDEU’S Shri B.M Patil Medical college Hospital and Research center, Vijayapur from November 2015 to June 2017. Information was collected through prepared proforma from each patient. All patients were interviewed as per the prepared proforma and then complete clinical examination was done.

Inclusion Criteria:

- HIV infection diagnosed as per NACO guidelines.
 - **Diagnosed by 3 spot tests:**
 1. **Coombs AIDS test**
 2. **Triline test**
 3. **Qualpro test**

Exclusion Criteria:

- HIV negative patents.
- Patients not willing to take part in the study.

It was a cross-sectional study with of HBV in HIV positive cases 2.25%[3] and at 95% confidence interval and +/-2 margin of error the sample size worked was 211 using

$$n = (Z_a^2 * p * q) / d^2$$

RESULTS:

TABLE-1: ASSOCIATION OF AGE AND SEX

AGE (Yrs)	Male		Female		p value
	N	%	N	%	
≤20	2	1.5	4	5.4	0.005*
21-30	13	9.5	16	21.6	
31-40	53	38.7	35	47.3	
41-50	40	29.2	14	18.9	
51-60	22	16.1	4	5.4	
>60	7	5.1	1	1.4	
Total	137	100.0	74	100.0	

Note: *means significant at 5% level of significance (p<0.05)

TABLE-2: DISTRIBUTION OF CASES ACCORDING TO CLINICAL FEATURE

CLINICAL FEATURE	N	%
FEVER	92	43.6
COUGH	32	15.2
LOSS OF WEIGHT	78	37
JAUNDICE	20	9.5

Out of 211 patients, 92 (43.6%) patients had fever, 32 (15.2%) patients had cough, 78 (37%) patients had loss of weight and 20 (9.5%) patients had jaundice.

TABLE-3: DISTRIBUTION OF CASES ACCORDING TO RISKY BEHAVIOUR

RISKY BEHAVIOUR	N	%
BLOOD TRANSFUSION	14	6.6
MULTIPLE SEXUAL PARTNERS	98	46.4
IDU	4	1.9

TABLE-4: DISTRIBUTION OF CASES ACCORDING TO HbsAg & Anti HCV POSITIVITY

Positivity	N	%
HbsAg +ve	31	14.7
Anti HCV +ve	8	3.8

TABLE-5: DISTRIBUTION OF AGE ACCORDING TO HbsAg POSITIVITY

AGE (Yrs)	HbsAg +ve		HbsAg -ve		p value
	N	%	N	%	
≤20	1	3.2	5	2.8	0.209
21-30	2	6.5	27	15.0	
31-40	11	35.5	77	42.8	
41-50	8	25.8	46	25.6	
51-60	8	25.8	18	10.0	
>60	1	3.2	7	3.9	
Total	31	100.0	180	100.0	
Mean & SD	43.4	10.4	40.0	10.5	0.097

TABLE-6: DISTRIBUTION OF AGE ACCORDING TO Anti HCV POSITIVITY

AGE (Yrs)	Anti HCV +ve		Anti HCV -ve		p value
	N	%	N	%	
≤20	0	0.0	6	3.0	0.847
21-30	2	25.0	27	13.3	
31-40	4	50.0	84	41.4	
41-50	1	12.5	53	26.1	
51-60	1	12.5	25	12.3	
>60	0	0.0	8	3.9	
Total	8	100.0	203	100.0	
Mean & SD	39.0	10.0	40.5	10.6	0.685

DISCUSSION:

The survival among HIV infected individuals is increasing and they are surviving up to a longer age, due to the advent of HAART, but they are suffering more due to liver diseases caused by hepatitis B and Hepatitis C virus. Co-infection is common because of common mode of transmission and similar risky behavior.

Many studies have been done in the western countries regarding the co-positivity of HIV with HbsAg and HCV but there are very few studies done in India.^{4,5,6} Considering the above this study was done at BLDEU's Shri B M Patil medical college hospital and research centre, Vijayapur. This study comprises, confirmed HIV positive individuals who were subjected to HbsAg and Anti HCV antibody testing. Various studies denotes the HbsAg and anti HCV antibody co-positivity from 5-30 % for HbsAg and 0-20% for Anti HCV.

Study conducted by Saroj Hooja et al⁷ found that CD4 counts were significantly lower in the HIV/HBV co-infected group as compared to HIV alone. Naval Chandra et al⁸ also showed that CD4 counts were significantly lower in HIV patients co-infected with HBV or HCV. The same is seen in our present study. Study conducted by Naval Chandra et al⁸ found that there was marked elevation of liver enzymes in HIV patients co-infected with HBV or HCV as compared to HIV alone. Similar results were found in our present study.

CONCLUSIONS:

Co-positivity with HBV in HIV positive patients was found to be 14.7%.. Study also shows that highest co-positivity is seen in patients whose CD 4 count was <200.

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