

Original Article**“RETROSPECTIVE STUDY OF DETECTION OF BLOOD BORNE VIRAL MARKERS
AT A TERTIARY CARE CENTRE IN KANPUR”****R.Sujatha, Nidhi pal**

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ABSTRACT: Viral infections such as HIV, HBV and HCV are the serious public health problem and significant cause of high morbidity and mortality throughout the world. This study was conducted to screen blood borne viral markers in a tertiary care center. **Material and methods:** This was the retrospective study conducted in the Department of Microbiology, Rama Medical College Hospital & Research Center from June 2016 to November 2016. The OPD/ IPD patients, who were advised to undergo screening for HIV, and HCV antibodies and HbsAg were included in the study. Two ml blood was collected aseptically and rapid card test were performed to rule out HBsAg and anti-HCV antibody. HIV antibody testing was done as per NACO guidelines. **Result:** A total of 6250 sera were tested over a period of six months. The rate of positivity of viral markers was 0.10%, 2.38 % and 0.69 % of HIV, HBsAg and HCV respectively. Among these positive cases 8 cases had a coinfection with both HBsAg and HCV and only one case of HBsAg and HIV co- infection was seen. Males were more infected than female. In case of HIV and HbsAg age group patients, 31-40 year were more infected and 41-50 year age group patients were more infected for HCV. **Conclusion:** This study reveals the increased rate of viral infections and a urgent need to implement necessary immunization and awareness programs in high prevalence areas to reduce the infection rates.

Key words: Viral Markers, HIV, HBsAg, HCV

INTRODUCTION

There are numerous blood born pathogens responsible for high morbidity in general population. Some viral infections such as HIV, HBsAg and HCV are the serious

public health problem and significant cause of high morbidity and mortality throughout the world.^[1,2] This study was conducted to screen blood born viral marker in a tertiary care center.

MATERIAL AND METHODS

This retrospective study was conducted in the Department of Microbiology, Rama Medical College Hospital & Research Center from June 2016 to November 2016. The OPD/ IPD patients of this hospital, who were advised to undergo HIV, and anti-HCV antibody, HbsAg, testing as a part of preoperative screening, antenatal screening and clinically suspected cases of these infections were included in the study. Two ml blood was collected aseptically from medial cubital vein. HBsAg and anti-HCV antibody were detected by rapid card test bases on immunochromatography principle.

Rapid card tests used were SD HCV (one step anti-HCV) manufactured by Alere medical Pvt. Ltd for detection of Anti HCV antibodies , Hepaview HbsAg kits manufactured by Qualpro Diagnostics, Pvt Ltd for detection of HbsAg and anti-HCV antibodies.

In case of any doubt or faint band samples, results were confirmed by Enzyme Linked Immuno-sorbent assay (ERBALISA HBsAg and ERBALISA HCV). HIV antibody testing was done as per NACO guidelines.^[3] Ethical clearance was taken from institutional ethical clearance committee.

RESULTS

A total of 6250 serum samples were tested over a period of six months i.e. from June 2016 to November 2016. The rate of positivity of viral markers was 0.10%, 2.38 % and 0.69 % of HIV, HBsAg and HCV respectively. **[Table 1]** . Among these positive cases 8 cases had a coinfection with both HBsAg and HCV and only one case of HBsAg and HIV infection . **[Table 2]** Age and gender wise distribution of patients with HIV, HBV and HCV seropositivity are shown in **table 3** and **table 4** respectively.

Table 1: Seropositivity of anti-HIV antibodies, HbsAg and anti-HCV antibodies

	HIV Antibody	HBsAg	Anti-HCV
Sample tested	4575	4695	4590
Positive	5	112	32
%	0.10	2.38	0.69

Table 2: Seropositivity of Co-infections

	HBsAg + Anti- HCV	HBsAg +HIV Antibody
Positive	8	1

Table 3 : Age wise distribution among positive cases of anti-HIV antibodies, HbsAg and anti-HCV antibodies

Age	HIV Antibody	HBsAg	Anti- HCV
<10	0	0	0
11-20	0	12 (10.71%)	3 (9.37%)
21-30	1 (20%)	19 (16.96%)	2 (6.25%)
31-40	2 (40%)	29 (25.89%)	4 (12.50%)
41-50	1 (20%)	21 (18.75%)	10 (31.25%)
51-60	0	15 (13.39%)	6 (18.75%)
>60	1 (20%)	16 (14.28%)	7 (21.87%)
Total	5	112	32

Table 4 : Gender wise distribution among positive cases of anti-HIV antibodies, HbsAg and anti-HCV antibodies

	Anti-HIV		HBsAg		Anti-HCV	
	Count	%	Count	%	Count	%
Males	4	80%	72	64.28%	15	46.87%
Female	1	20%	40	35.71%	17	53.12%

DISCUSSION

In the present study only viral markers were observed for positivity and it was found that rate of HBsAg infection was more (2.38%) as compared to other infections HCV (0.69%) and HIV (0.1%). Sood et al [4] have reported a less prevalence of HBsAg 1.63% and 0.87% respectively as compare to this study. The main reason was a very minute amount of infected blood or serum is responsible for HBsAg infection transmission. The direct percutaneous exposure to blood and blood products account for major route of transmission of this infection. The rate of infection of anti-HIV antibodies in the present study was found to be 0.1 % , while other studies reported high prevalence 0.35%,1.26%, 2.26% by Shivekar *et al.*, Sood *et al.* and Balaji *et al.* [4,5,6]. While other studies conducted by Sayed et al [7] There are studies conducted in India, showed a wide range of HCV prevalence rate 1-2%[8], 2.97[9] 12.8% [3]. The infection rate of HCV was found to be 0.69% which was similar to study conducted at Haryana by Vohra *et. al.* i.e. (0.68%).[1] In India, the seroprevalence of HCV was 1.57% in a study from Cuttack, 2.46% in Rajasthan and 4.8% in Pondicherry.[10,11,12]

Among all the positive cases 8 cases were found to be co-infected with HBsAg and HCV infections and only one case of coinfection of HBsAg and HIV infection .

In both the cases HBsAg and HIV, Infection rate was higher in male as compare to female i.e. 4:1 and 1.8:1 respectively. Other studies also reported the same^[3] while Vohra P et.al. reported female were more infected than male.^[1] Seventeen cases of females suffered from Anti-HCV in this study which does not correlate to other studies .^[1]

Mazzur et al had suggested that the higher frequency of HBV carriers in males could result from behavioral differences between males and females; the life activities of males more often bring them into contact with hepatitis virus and, as a consequence, they are more likely to become infected and become carriers.^[13]

Analysis of age distribution of anti-HIV antibodies and HBsAg revealed a relative high rate of infection found in 31-40 age group 40% and 25.89% respectively and 41-50 age group patients were infected for HCV. Vohra P et.al. reported 21-30 years age group showed high prevalence for HIV, 11-30 years age group for HBsAg and more than 50 for HCV.^[1]

CONCLUSION

The study indicates increased magnitude of viral transmission among general population of Kanpur. It is important to carry out studies to reveal the epidemiology of viral infections and implement necessary immunization and awareness programs in high prevalence areas to reduce the infection rates.

This study reveals the increased rate of viral infections and a urgent need to implement necessary immunization and awareness programs in high prevalence areas to reduce the infection rates.

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