

# Retrospective Analysis of Viral Diseases Infected Patients: An Hospital Based Observational Study

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## ABSTRACT

**Background:** Hepatitis B virus (HBV) and hepatitis C virus (HCV) are among the principal causes of severe liver disease, including hepatocellular carcinoma (HCC) and cirrhosis-related end-stage liver disease. The present study was conducted to assess the cases of viral infection among study population.

**Materials & Methods:** The present retrospective study was conducted on 82 patients. In all patients, blood samples were obtained. The samples were subjected to card test (J Mitra) for HBsAg, anti HCV antibodies and antibodies to HIV- 1. All the positive card tests were confirmed by ELISA.

**Results:** Out of 82 patients, males were 52 and females were 30. The difference was non- significant (P- 0.5). Common viral infections were HIV in 1 male, HBsAg in 34 males and 16 females and HCV in 17 males and 14 females. The difference was significant (P< 0.05). Common risk factors were tattoo (3), unsafe injections (3), blood product (22), unsafe sex (18), organ transplant (4) and piercing (5). The difference was significant (P< 0.05).

**Conclusion:** Viral infection may spread through unsafe sex, unsafe injections, piercing and tattooing. Hepatitis B infection is quite common than HCV and HIV. Male predominance is observed as compared to females.

**Key words:** Antibody, Viral, Hepatitis

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## INTRODUCTION

Hepatitis B virus (HBV) and hepatitis C virus (HCV) are among the principal causes of severe liver disease, including hepatocellular carcinoma (HCC) and cirrhosis-related end-stage liver disease. Hepatitis B virus (HBV) infection is leading health problem globally. There are approximately 2 billion people infected by HBV and about 400 million carriers worldwide.<sup>[1]</sup> Majority of these reside in Asia and West Pacific. Although HBV is present all over the world, its prevalence is significantly different across different countries. An estimated 57% of cases of liver cirrhosis and 78% of cases of primary liver cancer result from HBV or HCV infection.

According to the National AIDS Control Organization (NACO), the overall viral prevalence among general adult

population of India remains at 0.36% as of 2006 which translates to approximately 2.5–3.0 million cases.<sup>2</sup> Although the reasons for significantly low levels of viral incidence in India as compared to African countries, where subtype C is also the predominating strain, are not completely understood, socio-economic conditions, cultural factors, host genetics and family traditions may have played or are playing an important role. Of note, among the high risk groups, including injecting drug users (IDU), men who have sex with men (MSM) and female sex workers (FSW), the infection rates are higher than 5% (NACO, India), suggesting that host resistance may have a limited significance. Although India harbours the second largest number of HIV infections in the

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world, the number of scientific studies and research publications appearing from India rather remains small and inadequate.<sup>[3]</sup> The present study was conducted to assess the cases of viral infection among study population.

## METHODS

We planned the present study in the department of general medicine of Government Hospital, Barmer, Rajasthan, India. The present retrospective study was conducted on 82 patients of both genders. All visited the hospital and were confirmed cases of viral infection. All were informed regarding the study and written consent was obtained. Ethical clearance was obtained before the start of study. General information such as name, age, gender etc. was recorded in case history performa.

In all patients, blood samples were obtained. The samples were subjected to card test (J Mitra) for HBsAg, anti HCV antibodies and antibodies to HIV- 1. All the positive card tests were confirmed by ELISA. Results were tabulated and subjected to statistical analysis using chi- square test. P value less than 0.05 was considered significant.

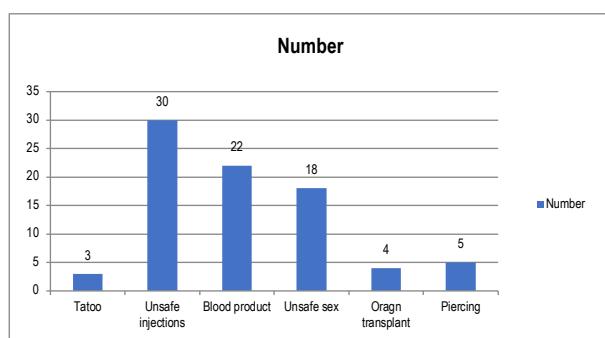
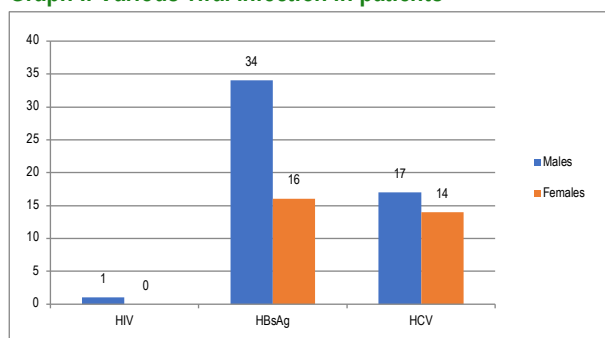
## RESULTS

Table I shows that out of 82 patients, males were 52 and females were 30. The difference was non- significant (P= 0.5). Graph I shows that common viral infections were HIV in 1 male, HBsAg in 34 males and 16 females and HCV in 17 males and 14 females. The difference was significant (P< 0.05). Graph II shows that common risk factors were tattoo (3), unsafe injections (3), blood product (22), unsafe sex (18), organ transplant (4) and piercing (5). The difference was significant (P< 0.05).

**Table I: Distribution of patients**

	Total- 82	
Males	Females	P value
52	30	0.5

**Graph I: Various viral infection in patients**



**Graph II: Risk factor for viral transmission**

## DISCUSSION

HBV infection is predominantly acquired at an early age in developing countries, which includes vertical transmission from mother to child, perinatal transmission, and horizontal transmission from child to child. However, HBV can also be transmitted sexually and sexual transmission both heterosexual and homosexual, accounts for a majority of the transmission occurring in adult life.<sup>[4]</sup>

Numerous studies have reported high prevalence of HBV markers in subjects practicing risky sexual behaviour, like STD patients and commercial sex workers. A high prevalence of HBV infection has also been reported among individuals practicing risky behaviours and HIV infected individuals in India. However, a majority of such reports were based on the presence of HBV surface antigen only.<sup>[5]</sup> Though spouses of HBV carriers were shown to have higher risk of HBV acquisition, limited data are available with regard to the extent of sexual transmission of HBV. Data on incidence of HBV infection in STD patients and other population are not available from India. HBV as well as HIV can be transmitted sexually. Dual infection of HIV and HBV can lead to reactivation of HBV infection and also increase in replication of HIV. Currently, STD control programmes in India do not generally include administration of hepatitis B vaccine to STD patients.<sup>[6]</sup>

In present study, out of 82 patients, males were 52 and females were 30. We found that common viral infections were HIV in 1 male, HBsAg in 34 males and 16 females and HCV in 17 males and 14 females. This is in agreement with Jha et al.<sup>[7]</sup>

In a study by Singh et al<sup>8</sup>, out of 2400 subjects, rate for participation was 76.38%. None of the subjects was positive for anti-hepatitis C virus antibody. Point prevalence for HBsAg positivity was 0.92. Being healthcare worker and having tattoo were significantly associated with HBsAg positive results. Nose and ear piercing was reported by almost. History of blood or blood product transfusion, I/V drug abuse, multiple sexual partners, unsafe injections, haemodialysis and any h/o surgery was not associated with HBsAg positivity.

We found that common risk factors were tattoo (3), unsafe injections (3), blood product (22), unsafe sex (18), organ transplant (4) and piercing (5). Tondon et al<sup>9</sup> found that off the 497 participants 3.6%, 26.5%, and 43.2% were positive for HBsAg, anti-HBs, and anti-HBc respectively. Tattooing was found to be independently associated with presence of core antibody. Additionally, history of being in commercial sex work and history of a genital ulcer were independently associated with a positive anti-HBc antibody test. 72 out of 497 (14.5%) participants were HIV positive at baseline. HIV-1 antibody positive patients were more likely to have a positive anti-HBc test. 30 out of 282 participants, negative for anti-HBc antibody at enrolment, seroconverted subsequently, resulting in an incidence of 10.86 per 100 person years. Colombo D et al performed a post hoc analysis of the Observational Study of infectious events in psoriasis complicated by active psoriatic arthritis (SYNERGY) study in patients with psoriatic arthritis (PsA) treated with immunosuppressive regimens including cyclosporine, in order to evaluate potential between-sex differences in severity of disease and prevalence of viral infections. SYNERGY was an observational study conducted in 24 Italian dermatology clinics, which included 238 consecutively enrolled patients with PsA, under treatment with

immunosuppressant regimens including cyclosporin A. In this post hoc analysis, patients' demographical data and clinical characteristics of psoriasis, severity and activity of PsA, prevalence of seropositivity for at least one viral infection, and treatments administered for PsA and infections were compared between sexes. A total of 225 patients were evaluated in this post hoc analysis, and 121 (54%) were males. Demographic characteristics and concomitant diseases were comparable between sexes. Statistically significant sex differences were observed at baseline in Psoriasis Area and Severity Index score (higher in males), mean number of painful joints, Bath Ankylosing Spondylitis Disease Activity Index, and the global activity of disease assessed by patients (all higher in females). The percentage of patients with at least one seropositivity detected at baseline, indicative of concomitant or former viral infection, was significantly higher among women than among men. No between-sex differences were detected in other measures, at other time points, and in treatments. Patients developed no hepatitis B virus or hepatitis C virus reactivation during cyclosporine treatment. Our post hoc sex analysis suggests that women with PsA have a greater articular involvement and a higher activity of disease compared to males.<sup>[10]</sup>

## CONCLUSION

Viral infection may spread through unsafe sex, unsafe injections, piercing and tattooing. Hepatitis B infection is quite

common than HCV and HIV. Male predominance is observed as compared to females.

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