

Seroprevalence of Anti-HCV Antibodies In HIV Positive Persons At G.G. Hospital Jamnagar

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Abstracts: Objective: Hepatitis is a major public health problem throughout the world affecting several hundred million of people. Aim is to study incidence of HIV seropositivity in blood donors and suspected patients attending voluntary council and testing centre and to compare prevalence of Anti HCV antibody positivity in HIV seropositive samples. Material and Methods: A total of 1786 serum samples were tested for HIV antibodies in patients attending Voluntary Council and Testing Centre (VCTC) at Guru Govind Singh Hospital, Jamnagar. The serum sample of HIV seropositive patients were tested for HCV antibodies. Those serum samples found positive for Anti-HCV antibody were reconfirmed by Signal HCV method. Out of total 1786 samples for HIV 297 patients were positive (16.63%) for HIV and 1489 patients were negative (83.37%) for HIV. Discussion: As the hepatitis C virus has capacity to induce chronicity that leads to cirrhosis and liver cancer in long term. In the absence of vaccine and effective chemotherapy, screening of more and more serum samples is the only way to prevent post transfusion hepatitis C virus infection. [Mistry K et al NJIRM 2012; 3(2) : 129-131]

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Introduction: Hepatitis is a major public health problem throughout the world affecting several hundred million people. The hepatitis was recognized centuries back but the identity was well established in 19th century after the epidemic outbreak during the world wars. Hepatitis is a disorder involving the inflammation of liver that may progress to hepatic cell necrosis leading to fibrosis. This in turn in may result into serial clinical biochemical and histological changes. Also viral hepatitis is a cause of considerable illness and death in the human population both from acute infection and chronic sequel which include chronic active hepatitis, cirrhosis and primary liver carcinoma¹.

HCV is an enveloped single stranded RNA virus with a size approximately 55-65 nm. The capacity to produce chronicity is the striking feature of hepatitis C virus infection it may progress into cirrhosis and hepatocellular carcinoma.

The main route of transmission of HCV is dividing into percutaneous (receive blood or blood product or in case of intravenous drug users through infected needle) and non-percutaneous (e.g. sexual

contact and perinatal exposure). With the increasing incidence and spread of HIV as a pandemic it is a serious challenge to public health in modern time. The major mode of transmission of HIV is perinatal, sexual, sharing contaminated needle, blood transfusion. As the rate of transmission is very common by blood and blood product. Incidence of HIV HBV and HCV are on verge of increase.

As the mystery about hepatitis C virus is not fully unveiled the researchers are working all over the world. New discoveries are being made and more information is appearing on daily basis. The availability of commercial kit for Anti HCV antibody detection has made the work easier for the epidemiological studies of hepatitis C virus infection.

As hepatitis C virus infection is major causative agent of post transfusion hepatitis, screening of blood donor is necessary to reduce the rate. In India, it is also mandatory from June 2001 to screen blood donors for Anti hepatitis C virus antibody.

Material and Methods : The study was undertaken in Guru Govind Singh Hospital, Jamnagar from a period October 2002 to September 2003. The serum sample of HIV seropositive patients were tested for HCV antibodies. Those serum samples found positive for Anti-HCV antibody were reconfirmed by Signal HCV method.

From collected whole blood, serum was separated on the same day and then separated serum was stored at -70° C. All sera were screened for Anti-HIV 1/2 Abs using third generation ELISA (MICROLISA). Positive samples were confirmed by HIV 1 and 2 Bi-spot test (IMMUNOCOMB). Sera were also screened for HBsAg using Advanced HBsAg Test with third generation ELISA.

The serum sample of HIV seropositive patients were tested for HCV Antibodies. Anti- HCV version III ELISA (INNOVA HCV ELISA) test for detection of antibodies to HCV in human sera or plasma. Those serum samples found positive for Anti-HCV antibody were reconfirmed by SIGNAL HCV method.

Result: A total of 1786 serum samples were tested for HIV antibodies between Oct.2002 to Sept.2003 in patients attending Voluntary Council and Testing Centre (VCTC) at Guru Govind Singh Hospital, Jamnagar.

Table-1 :Prevalence Of HIV In Patient Attending VCTC

Total tested for HIV	HIV positive	HIV negative
1786	297(16.63%)	1489(83.37%)

The above table shows that out of total 1786 samples for HIV 297 patients were positive (16.63%) for HIV and 1489 patients were negative(83.37%) for HIV.

The table Below shows that in age group of 1-10 HIV positive were 14(9.92%) out of 141. In 11-20 age group 6(2.57%) out of 239 were positive. In 21-30 age group 138(17.94%) out of 769 were positive. In age group of 31-40 102(24.52%) out of 416 were positive. In 41-50 age group 31(20%) out of 155 were positive for HIV. In age group of 51 & above 5(7.69%) out of 65 were found positive for HIV.

TABLE-2: Age Wise Distribution Of Patient Tested For HIV

Age group in years	HIV positive
1-10	14(9.92%)
11-20	06(2.57%)
21-30	138(17.94%)
31-40	102(24.52%)
41-50	31(20%)
> 51	5(7.69%)
Total	297(16.63%)

Table-3 :Prevalence Of HCV In HIV Positive Patient

HIV	HCV positive(%)	HCV negative(%)	Total
HIV positive	6(2.02%)	291(97.98%)	297
HIV negative	8(0.53%)	1481(99.47%)	1489
TOTAL	14(0.78%)	1772(99.22%)	1786

The above table shows that out of 297 patient positive for HIV 6(2.02%) were found anti HCV positive and 291(97.98%) were found negative. Likewise out of 1489 patient of HIV negative , 8(0.53%) were found anti HCV positive and 1481(99.47%) were HCV negative.

Table-4

Age group in years	HIV positive	HCV Positive
1-10	14(9.92%)	1(7.14%)
11-20	06(2.57%)	1(16.67%)
21-30	138(17.94%)	2(1.44%)
31-40	102(24.52%)	2(1.96%)
41-50	31(20%)	0
≥51	5(7.69%)	0
Total	297(16.63%)	6(2.02%)

The above table shows that in age group of 1-10 1 of 14 were found positive for HCV. In age group of 11-20, 1 of 6 were found positive for HCV. In age group of 21-30, 2 of 138 were found positive for HCV. In age group of 31-40, 2 of 102 were found positive for HCV. In age group of 41-50 year and above 50 year age group, no patients were found anti HCV positive.

Discussion: After the discovery of hepatitis C virus, it has become evident that this infectious agent is

the primary cause of post transfusion and sporadic non-A non-B hepatitis. Identification and Introduction of the surrogate markers for the post transfusion hepatitis and later introduction of anti HCV screening made thing easier for the detection of antibodies in the infected patients. The importance of this infection lies in tendency to develop chronicity. This may lead to cirrhosis without prior evidence of laboratory or histological findings. The cirrhosis may further progress to carcinoma which toward the end may require liver plantation.

Following the introduction of highly active antiretroviral therapy and subsequent reduction in mortality from opportunistic infection in HIV patients.HCV related Liver failure has become a frequent cause of death in HIV positive patient. In HIV positive patients the course of HCV infection is accelerated and there is evidence that HCV is an important factor for HIV progression.⁷ Hepatitis C and human immunodeficiency virus share the same parenteral, sexual and vertical routes of transmission.(McNair et al. 1992). This common epidemiology explains the high frequency of combined infections by hepatotropic viruses in HIV infected patients⁸.

In the present study 297 out of 1786 patient tested were found positive for anti HIV antibodies showing an incidence rate of 16.63%. The studies undertaken by different workers like Tedaldi et al. (916.6%) Seme K. et al. 14.5% and 15.0% for Slovenian and Croatian respectively coincides with the present study. The present study has a prevalence rate 2% which is comparable to the Indian study of Nidhika Berry et al¹¹. which has prevalence of 1.8%. Prevalence may be higher in studies done in western countries because the route of transmission being those who are intravenous drug users.

Conclusion: In present study shows prevalence of anti HCV antibodies in HIV positive patients attending Voluntary Council and Testing Centre at G.G. Hospital, Jamnagar. As the hepatitis C virus has capacity to induce chronicity that leads to cirrhosis and liver cancer in long term. In the absence of vaccine and effective chemotherapy, screening of more and more serum samples is the

only way to prevent post transfusion hepatitis C virus infection.

The prevalence of hepatitis C virus and human immunodeficiency virus co-infection ranges from nearly 30% to 50% depending on the population.HIV co-infection studies showing more fibrosis, a higher frequency of cirrhosis and increase death from liver disease. Also study suggest that treating chronic hepatitis C in HIV co-infected patient can decrease fibrosis and decrease the rate of fatal hematomas. Because HCV is more infectious by parenteral route, the incidence of co-infection is lower in our country population possibly due to the fact that majority of HIV positive patient acquire HCV infection through heterosexual contact.

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