




Original Article

HCV- HIV Coinfection – Thirteen Years Experience at Tertiary Care Center of Northern India

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ABSTRACT

Introduction: HCV-HIV co-infection, affecting 2.5–5 million people worldwide, occurs when an individual is infected with both Hepatitis C and HIV, with up to 90–95% prevalence among people who inject drugs. HIV accelerates HCV-related liver damage, increasing fibrosis and mortality. Direct-Acting Antiviral (DAA) therapy boasts >95% cure rates for HCV, even in HIV-positive patients. Roughly 10–30% of people with HIV are also co-infected with HCV. Both viruses share transmission routes (blood-to-blood contact, primarily shared needles). Antiretroviral Therapy (ART) is essential to manage HIV and retards liver disease progression. Potential drug-drug interactions between ART and DAA's, requires regular monitoring. All individuals with HIV should be screened for Hepatitis C due to the high risk of coinfection.

Aim of Study: The aim of present study was to determine the HCV and HIV Co-infection at Tertiary care centre of Northern India.

Material and Methods: The present study was conducted to determine HCV-HIV co-infection in patients reporting at Medical Gastroenterology department of Post Graduate Institute of Medical Sciences in North India. A total of 12,000 serum samples of Hepatitis B and 6500 of HIV confirmed patients were tested for co-infection.

Observations: A total of 12,000 confirmed patients of HCV and 6500 of HIV were screened for co-infections. Out of this total pool of 18,500 patients, 160 patients (0.86 %) were found to be having co-infection. Out of these 160 co-infected patients, 150 (93.75 %) were males and 10 (6.25 %) were females. On analysing geographical distribution of patients, majority belonged to rural area. In male group, 109 (772.66 %) patients resided in rural area whereas in females, 7 (70 %) belonged to rural area. Age distribution characteristically showed predominance in younger age group of 20-50 yrs in both the groups. In males, 64 (92.75 %) of patients were in 20-50 yrs of age group and in females, all 10 (100 %) belonged to 20-50 yrs of age. On analysis of risk factors, there were strong differences noted in both the groups. In males, out of 150 patients, 123 patients (82 %) were alcoholic, 141 patients (94 %) were smokers, 50 patients (33.33 %) had past history of surgery, 87 patients (58 %) were intravenous drug abusers, 39 (26 %) had got tattooing, 9 (6 %) had previous history of blood transfusion, none gave history of multiple sexual partners or undergoing dental procedures, 87 patients (58 %) had F0-F1 fibrosis, 39 (26%) had F2-F3 fibrosis, 24 (16%) had F4 or cirrhosis and none patient developed HCC. Only one male was having CKD and was on dialysis. Out of 150 males, 123 (82%) had high HCV viral load. In comparison in females, none was alcoholic, smoker or intravenous drug abuser, 4 patients (40 %) had past history of surgery, none had got tattooing, dental procedures, blood transfusion, had multiple sexual partners, 7 patients (70 %) had F0-F1 fibrosis, 3 (30%) had F2-F3 fibrosis, none had F4 or cirrhosis or HCC and 8 patients (80%) had high HCV viral load.

Conclusion: Surveillance for co-infections in every patient of HBV, HCV and HIV is mandatory. Timely diagnosis and institution of antiviral therapy can lead to

decreased incidence of end stage liver disease, development of HCC and need of liver transplant as definitive cure. It also helps in identification and modification of associated risk factors.

Keywords: HIV, Hepatitis C, Intravenous drug abuse, Tattooing, Surgery, Blood transfusion, Smoking, Alcohol.

INTRODUCTION

HCV and human immunodeficiency virus (HIV) coinfection is common in patients who acquire HIV by parenteral routes and an estimated 2.3million persons are infected with both viruses. The spectrum of chronic HCV infection is changing in the era of DAA therapy, which are substantially more effective in curing HCV than previously available interferon regimens. HCV-HIV coinfection can accelerate the progression of hepatic fibrosis and contribute to a more aggressive course of liver disease among persons with untreated HCV. [1-3] Cirrhosis has been observed to occur 12 to 16 years earlier in persons with HCV and HIV coinfection compared with those who have HCV mono-infection.[4] For persons living with HIV who has HCV coinfection, liver-related morbidity and mortality is a prominent non-AIDS-related complication—up to 80 to 90% of liver-related deaths in persons living with HIV have been attributed to HCV infection. [5,6] Further, individuals with HIV and HCV coinfection have decreased access to liver transplantation compared with persons who have HCV mono-infection.[7], hence treatment of HCV in persons with HIV coinfection remains a high priority. Antiretroviral therapy is recommended for all persons with HIV. Antiretroviral treatment for HIV may slow the progression of HCV-related liver disease and reduce the risk of liver-related morbidity. Treatment of HIV with antiretroviral therapy should be initiated for all persons with HIV and HCV coinfection, regardless of the CD4 cell count and fibrosis stage, potential drug interactions should be kept in mind. Individuals with HIV and HCV coinfection should be screened for prior or active HBV infection and those with chronic HBV infection, in addition to HIV and HCV coinfection should receive antiretroviral therapy that is active against HBV prior to starting HCV treatment, ideally with a regimen that includes either tenofovir in combination with emtricitabine or lamivudine. Treatment of HCV with DAAs should not be withheld solely based on a perceived lack of adherence or due to untreated HIV infection. Because of the increased risk of hepatotoxicity after initiating antiretroviral therapy in persons with HCV coinfection, evaluation of alanine aminotransferase (ALT) and aspartate aminotransferase (AST) levels should take place 4 to 8 weeks after starting antiretroviral therapy and be repeated 6 to 12 months later.

MATERIAL & METHODS

The present study was conducted to determine HCV-HIV co-infection in patients reporting at Medical Gastroenterology department of Post Graduate Institute of Medical Sciences in North India. A total of 12,000 serum samples of Hepatitis C and 6500 of HIV confirmed patients were tested for co-infection. The present study was conducted over thirteen years from 01.04.2013 to 31.03.2026, for determining HCV-HIV co-infection in patients reporting at Medical Gastroenterology department of Post Graduate Institute of Medical Sciences in North India. A total of 12000 serum samples of Hepatitis C and 6500 of HIV confirmed patients were tested for co-infection. Patients were enrolled in the study after proper consent and then tested for co-infection with other viruses. About 5 ml of whole blood was collected aseptically by venipuncture. The collected blood was allowed to clot; serum was separated by centrifugation at room temperature and then were tested for HCV, HBV and HIV by Enzyme linked immunosorbent assay. In all the enrolled patients, detailed history, physical and clinical examination was done. Every patient underwent complete biochemical examination which included complete hemogram, liver & renal function tests, viral screen, viral load, ultra sonogram abdomen, Fibroscan and upper Gastrointestinal endoscopy and Triple phase computed tomography scan wherever indicated.

OBSERVATIONS

A total of 12,000 confirmed patients of HCV and 6500 of HIV were screened for co-infections. Out of this total pool of 18,500 patients, 160 patients (0.86 %) were found to be having co-infection. Out of these 160 co-infected patients, 150 (93.75 %) were males and 10 (6.25 %) were females. On analysing geographical distribution of patients, majority belonged to rural area. In male group, 109 (72.66 %) patients resided in rural area whereas in females, 7 (70 %) belonged to rural area. Age distribution characteristically showed predominance in younger age group of 20-50 yrs in both the groups. In males, 64 (92.75 %) of patients were in 20-50 yrs of age group and in females, all 10 (100 %) belonged to 20-50 yrs of age. On analysis of risk factors, there were strong differences noted in both the groups. In males, out of 150 patients, 123 patients (82 %) were alcoholic, 141 (94 %) were smokers, 50 patients (33.33 %) had past history of surgery, 87 patients (58 %) were intravenous drug abusers, 39 (26 %) had got tattooing, 9 (6 %) had previous history of blood transfusion, none gave history of multiple sexual partners or undergoing dental procedures, 87 patients (58 %) had F0-F1 fibrosis, 39 (26%) had F2-F3 fibrosis, 24 (16%) had F4 or cirrhosis and none patient developed HCC. Only one male was having CKD and was on dialysis. Out of 150 males, 123 (82%) had high HCV viral load. In comparison in females, none was alcoholic, smoker or intravenous drug abuser, 4 patients (40 %) had past history of surgery, none had got tattooing, dental procedures, blood transfusion, had multiple sexual partners, 7 patients (70 %) had F0-F1 fibrosis, 3 (30%) had F2-F3 fibrosis, none had F4 or cirrhosis or HCC and 8 patients (80%) had high HCV viral load.

Table-1- Showing percentage of Co-infection in HCV-HIV study group

Total Patients (HCV & HIV)	Co-infected (HCV & HIV)	Monoinfected
18,500	160 (0.86%)	18,340 (99.14%)

Table 2- Showing Age group and Sex distribution in HCV-HIV Co-infected Patients

Total Co-infected Patients (160)	Male (150 patients, 93.75%)	Female (10 patients, 6.25 %)
0-10 yrs	0 (0%)	0 (0%)
11-20 yrs	4 (2.66%)	0 (0%)
21-30 yrs	75 (50%)	0 (0 %)
31-40 yrs	42 (28 %)	5 (50 %)
41-50 yrs	22 (14.66 %)	3 (30 %)
51-60 yrs	4 (2.66%)	2 (20 %)
61-70 yrs	3 (2 %)	0 (0%)
71-80 yrs	0 (0%)	0 (0%)

Table 3- Showing Distribution of various parameters in HCV-HIV Co-infected study group

Total Patients (160)	Male (150)	Female (10)
Rural Background	109 (72.66 %)	7 (70%)
Urban Background	41 (27.34%)	3 (30%)
Alcohol	123 (82 %)	0 (0%)
Smoking	141 (94 %)	0 (0%)
H/o Surgery	50 (33.33 %)	4 (40 %)
H/o Blood Transfusion	9 (6 %)	1 (10 %)
Tattooing	39 (26 %)	0 (0 %)
IV Drug abuser	87 (58 %)	0 (0%)
Multiple Sex Partners	0 (0 %)	0 (0%)
Dental Procedures	0 (0 %)	0 (0 %)
Hepatocellular carcinoma	0 (0%)	0 (0%)
Acute Hepatitis B	0 (0 %)	0 (0 %)
F0-F1 Fibrosis	87 (58 %)	7 (70 %)
F2-F3 Fibrosis	39 (26 %)	3 (30 %)
F4 - Cirrhosis	24 (16 %)	0 (0 %)

DISCUSSION

In our pool, co-infection was seen only in 0.86 % which is in alignment in study conducted by Okonko et al. [8] The reason for the same can be attributed to strict screening for co-infections in every mono-infected patient. As protocol, we always mandatory vaccinated for HBV in HCV or HIV patients. Moreover, total free treatment including testing has led to exemplary high compliance rate, thus preventing complications of co-infections in future. Regular counselling of patients and family members throughout the course of illness helps in reducing risk factors responsible for future development of co-infections. It is multi-pronged strategy which is giving fruitful results. In mono-infections of HCV and HIV, male predominance is there but in our study group of co-infections, male predominance was more than as seen in mono-infections. The same observation was observed in geographical distribution of patients in which rural background is seen in both mono-infection and co-infection but this relationship was much stronger in latter group. In our study cohort, there was characteristic age distribution of patients in both the sexes i.e. maximum patients were seen in age group of 20-50 yrs. The reason behind this can be explained on basis of different risk factors for counteracting co-infections in both the groups. In males, the most important risk factors were alcohol, smoking, intravenous drug abuse, tattooing, blood transfusions, past history of surgery but in female group surgery was most important risk factors. Thus, as males have high risk behaviour which usually occurs in younger age group and in females, various kind of surgeries like tubectomies, hysterectomies etc. are done in the same age group of 20-50 yrs, hence maximum females belonged to this group. The same high-risk behaviour in males causes increased number of HBV-HIV co-infection in males. As expected, being a male is risk factor for progression into cirrhotic stage and same was seen in our study group where cirrhosis was seen in significant percentage of males but none female was found to be cirrhotic. Fibroscan and ultrasonogram were relied upon for classifying fibrosis and cirrhosis. None patient in our study pool developed HCC, despite being high HCV viral load in majority which can be attributed to strict screening for co-infections leading to timely detection and starting of treatment. Moreover, regular counselling led to leaving habit of smoking and alcohol in majority of patients, along with maintenance of optimum body weight may have played part in nil prevalence of HCC in our study group.

CONCLUSION

Surveillance for co-infections in every patient of HBV, HCV and HIV is mandatory. Timely diagnosis and management can lead to decreased incidence of end stage liver disease, development of HCC and need of liver transplant as definitive cure. It also helps in identification and modification of associated risk factors. The risk factors are different in male and female and should be kept in mind for planning preventive strategies against these transmissible deadly diseases.

LIMITATION OF STUDY

Our study group, majority patients were uneducated or partially literate and belonged to poor socio-economic status, hence there are high chances that percentage of multiple sex partners may be under reported.

CONFLICTS OF INTEREST

The editors declare that there was no conflict of interest.

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