



Research Article

HEPATITIS C VIRUS INFECTION IN DIALYSIS PATIENTS: A RETROSPECTIVE STUDY FROM A TERTIARY CARE HOSPITAL OF NORTH INDIA

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ABSTRACT

Introduction: HCV infection is a major public health problem with global prevalence of 3%. An estimated 5-20% of infected patients develop cirrhosis annually and 1-4% of these develop hepatocellular carcinoma. HCV infection is a significant problem in hemodialysis patients which poses difficulty in the management of the patients in the renal dialysis units.

Material and Methods: This retrospective hospital record based study was carried out in a tertiary care hospital in Faridkot (Punjab), India for a period of 2 years (January 2013 to December 2014). Clinical, demographic and geographical data was collected from the patients. They were tested for anti HCV antibodies by 4th Generation HCV TRIDOT ELISA (J. Mitra & Co. Pvt. Ltd.).

Results: Out of the total 262 patients, 88(33.5%) were found to be positive for HCV infection. Out of these 88 HCV positive patients, 59 were males and 29 were females. The highest prevalence was found in the age group of 41-60 years (43.18%) and lowest prevalence was observed in the age group of <20 years (2.27%) and >80 years (1.17%). There was a predominant rural distribution (70.4%) as compared to urban (29.5%). Among the districts of Punjab, the highest frequency distribution of HCV positivity was found in Faridkot (32.9%) followed by Ferozepur (23.8%), thereafter Moga (19.3%) and lowest was observed in Zira district (1.13%).

Conclusion: High prevalence of HCV infection in patients on hemodialysis emphasises the fact that chronic renal failure patients are highly exposed to HCV infection. These patients are also continuously increasing the source/ reservoir of HCV infection in our population.

Keywords: Hepatitis C, Dialysis, North India.

INTRODUCTION

HCV infection is a major public health problem with an estimated global prevalence of HCV is 3%. There are about 180 million carriers and approximately 4 million people annually are newly infected. (1) HCV is a single stranded positive sense RNA virus, 9.6kb in length and belongs to family flaviviridae and genus Hepacivirus. (2) HCV is a blood-borne virus, well known risk factors for HCV transmission includes injection drug use, blood/blood product transfusion,

organ transplantation, chronic hemodialysis, occupational exposure among health care workers, therapeutic injections, major/minor surgeries, dental treatment, shaving at barber shops, unprotected sexual contact and vertical transmission. (3-4)

Renal failure patients on hemodialysis (HD) are at high risk for blood borne infections because of prolonged vascular access and the potential for exposure to infected patients and contaminated equipment. (5) Infection due to hepatitis

viruses is one such infection, which is an important cause of morbidity and mortality in hemodialysis patients and poses problem in the management of the patients in the renal dialysis units.(6)

In India, a wide range of prevalence rates for HCV(4.3%-45.2%) in the hemodialysis population have been reported.(7-9)There is paucity of published data of HCV infection in Punjab. As large number of patients of acute and chronic renal failure visit our tertiary care hospital for hemodialysis, this retrospective study was conducted to determine the positivity of anti HCV antibodies in patients undergoing hemodialysis for the first time in Guru Gobind Singh Medical College and Hospital, Faridkot(North West Punjab) and to study its geographical and regional distribution.

MATERIAL AND METHODS

This retrospective hospital record- based study was carried out in a tertiary care hospital in Faridkot (Punjab), India. Clinical, demographic and geographical data of the renal disease patients admitted to our hospital for hemodialysis for the first time was collected for a period of 2 years (January 2013 to December 2014).Patients of all age groups were tested for anti HCV antibodies by 4th Generation HCV TRIDOT ELISA (J. Mitra & Co. Pvt. Ltd.). Patients residing outside Punjab and HCV positive patients on maintenance dialysis were excluded from the study.

Statistical analysis: All collected data was entered and analysed with statistical package for social sciences (SPSS version 16.0).

RESULTS

In the present study, a total number of 262 patients were enrolled for hemodialysis in the two consecutive years (January 2013to December 2014). Out of the total 262 patients, 88(33.5%) were found to be having HCV infection. Out of the 88 HCV positive patients ,59(67%) were males and 29(32.9%) were females[Table1].The highest prevalence was found in the 41-60 years of age group(43.18%) followed by 21-40 years (30.7%) and thereafter in 61-80 years(22.7%) and lowest prevalence was observed in the age group of <20years(2.27%) and >80years(1.17%)[Table2].There was a predominant rural distribution(62/88= 70.4%) as compared to urban(26/88=29.5%)[Table3]Among the districts of Punjab,

the highest frequency distribution of HCV positivity was found in Faridkot (32.9%) followed by Ferozepur(23.8%), thereafter Moga(19.3%) and lowest was observed in Zira district(1.13%).

DISCUSSION

In this retrospective study, we studied the demographic and geographical data of kidney disease patients having hepatitis C infection, who were admitted to our hospital for hemodialysis in the past 2 years. This gave an overview of Hepatitis C infection in renal disease patients and its distribution in various regions of Punjab.HCV infection has a negative impact on the survival of hemodialysis patients, attributed mostly to HCV related liver disease and its complications.In the present study, Hepatitis C infection was found to be more in males(67%) as compared to females(33%). This may be due to the fact that in India, males seek health care services earlier than females.In a study by Surendra et al, preponderance of HCV infection was observed in males on hemodialysis.(10)In our study, the prevalence of HCV infection in patients on hemodialysis was highest in age group of 41-60 years(43.2%) followed by 21-40 years(33.7%) which is similar to study by Jasuja et al.(7)Predominant rural distribution(70.5%) of patients infected with HCV infection is most likely due to lack of proper health care facilities in rural areas, reuse of unsterilized instruments and syringes by quacks, drug abuse and lack of awareness about the prevention and the treatment of this infection among rural people. In a recent questionnaire based study, it was concluded that inspite of having awareness about parenteral route of transmission of HCV infection, a substantial proportion of family physicians in Punjab state persist to reuse needles and syringes. Knowledge about the virology, clinical symptoms, diagnostic tests and management approach is lacking among considerable section of family physicians in Punjab.(11)

To conclude, our study shows that Hepatitis C is an emerging disease in rural Punjab whose long lasting implications will be felt in years to come. It is the first study depicting the frequency distribution of Hepatitis C infection in hemodialysis patients in different districts of Punjab. High prevalence of HCV among hemodialysis patients demonstrated that the environment of dialysis treatment itself function as a vehicle in dissemination of HCV among hemodialysis patients as well

Table 1: Sex distribution of subjects

Sex	No.	%age
Male	59	67
Female	29	33
Total	88	100

Table 2: Age distribution of subjects

Age in years	No.	%age
Upto 20 years	2	2.3
21-40	27	30.7
41-60	38	43.2
61-80	20	22.7
>80 years	1	1.1
Total	88	100

Table 3: Locality distribution of subjects

Locality	No.	%age
Rural	62	70.5
Urban	26	29.5
Total	88	100

Table 4: Distribution of subjects according to districts

District	No.	%age
Bathinda	4	4.5
Faridkot	29	33
Ferozepur	21	23.9
Fazilka	10	11.4
Moga	17	19.3
Muktsar	6	6.8
Zira	1	1.1
Total	88	100

as they are exposed to the same risk factors as general population.

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