

HEPATITIS C: FREQUENCY AND RISK FACTORS ASSOCIATED WITH SERO-POSITIVITY AMONG ADULTS IN LARKANA CITY

Fida Hussain Shaikh, Hakim Ali Abro, Mumtaz Ali Chhutto, Parvez Ahmed Abbasi, Abdul Wahab Shaikh, Sheeraz Ali Buriro

Medical Unit-III, Chandka Medical College/Teaching Hospital, Larkana, Pakistan

Background: Viral hepatitis is a major public health problem. Infection with Hepatitis C virus (HCV) leads to chronicity and there are about 170 million people infected with HCV. Up to 70% of chronically infected individuals develop active liver disease. The Objective of the study was to find out the frequency of Anti-HCV seropositivity and risk factors of Hepatitis C Virus (HCV) transmission in people of Larkana city. **Method:** The study was conducted at Larkana from April 2006 to April 2007. Camps were established in the main general practitioners' clinics. A questionnaire about knowledge of HCV and risk factors of its transmission was administered to subjects. Descriptive statistics were done by SPSS-10. **Result:** Total 450 cases were enrolled into this study. They were divided into 3 age groups. Eighty-nine (19.8%) cases were in age group <20 years, 262 (58.2%) were in age group 20–40 years and 99 (22.0%) were in age group >40 years. There were 353 (78.4%) male and 97 (21.6%) female subjects, out of these 450 cases 30 (6.6%) were positive for Anti-HCV. A number of risk factors of HCV transmission were present in these cases. History of therapeutic injections was present in 72 cases and 35 cases used public barber services. **Conclusion:** History of therapeutic injections and use of barber services for shave were the most frequent risk factors in our study.

Keywords: Risk factors, HCV, Sero-positivity, Hepatitis, Cirrhosis, Hepatocellular Carcinoma

INTRODUCTION

Viral hepatitis is one of the major public health problems all over the world. Once infection with Hepatitis C Virus (HCV) occurs it leads to chronicity in up to 85% of cases.¹ There are about 170 million people infected chronically with HCV.² Up to 70% of chronically infected individuals develop active liver disease³. This can lead to cirrhosis, hepatocellular carcinoma (HCC) and liver failure.⁴ The Clinical course of the chronic hepatitis caused by HCV is generally insidious. About 70% of the cases have no discernible symptoms and signs where as 10–20% of the cases have non specific symptoms such as anorexia, malaise or abdominal pain and remaining small number of cases may present with jaundice.⁵

The burden of HCV related Chronic Liver Disease (CLD) on health delivery system in Pakistan has increased. Earlier studies showed 16.6% of CLD patients as anti-HCV positive.⁶ Recent studies show nearly 60–70% patients with CLD tend to be positive for anti-HCV.⁷ It has been studied that 50% patient with HCC are positive for anti-HCV.⁸ Blood transfusion is still regarded as one of the major risk factors of HCV transmission in our country. In year 2000 a survey of blood banks in the urban areas showed only 25% of them tested blood and blood product donations for anti-HCV in order to keep the cost down.⁹ There is strong relationship between therapeutic injections using non-sterile needles and the transmission of HCV. This is shown and proved by number of studies.¹⁰ In our society there is enormous dependence on parenteral therapy for

carrying out the treatment; driven by the cultural belief in the power of injections and infusions of drips.¹¹ People in our country, particularly belonging to rural areas, use barber services for beard, armpit shave and circumcision. Non-sterile practices of the barbers while doing these services predispose the people to HCV transmission. Therefore excessive use of barber services for shaving is a well recognised risk factor of HCV transmission.¹² Additional risk factors of HCV transmission are ear nose piercing, non sterile surgical and dental practices of unqualified health care workers. Eighty to eighty-five percent of the people of Larkana city belong to low and middle socio-economic class. This group of people is less educated and lack the proper knowledge of HCV infection and risk factors of its transmission, therefore they are more exposed to some of the important established risk factors of HCV transmission. Since HCV leads chronicity in up to 85% cases once infection with this virus occurs, in most of these cases the disease presents with vague clinical features, hence this leads to the development of complications like cirrhosis, HCC and even liver failure over the course of this viral illness. Purpose of this study was to find out the frequency of anti-HCV seropositivity and risk factors of HCV transmission in people of Larkana city.

METHODS AND MATERIAL

This study was conducted from April 2006 to April 2007 to find out the frequency of anti-HCV seropositivity and risk factors of HCV transmission in people of Larkana city. Camps were established in

the main general practitioners' clinics of the respective UCs. The procedure of the phlebotomy and its objective was discussed with each case entering into this study. A written consent was taken from each case entered into the study. A pre-tested questionnaire was administered to the subjects regarding their knowledge about HCV and modes of its transmission. Five millilitre of blood was collected from the subjects by a phlebotomist. Sera were separated by centrifugation and tested for anti-HCV antibodies within 1 hour by a trained laboratory technician at the camp. The HCV antibodies were tested by Dot immunochromatographic method using Nobis anti-HCV commercial kit.¹³ Basic descriptive statistics were performed using SPSS-10.

RESULTS

A total of 450 cases were enrolled into this study. They were divided into 3 age groups. The age groups were less than <20 years, 20–40 years and >40 years. Distribution of subjects in age groups is given in Table-1. Of these 450 subjects, 353 (78.4%) were male and 97 (21.6%) were female. The majority of the cases lacked knowledge about HCV, modes and its risk factors of person to person transmission. Thirty (6.6%) subjects were found positive for anti-HCV antibodies. Of these 30 anti-HCV positive cases 26 (86.7%) were male and 4 (13.3%) were female. Anti-HCV seropositivity among males was more frequent than females (Table-2).

There were a number of risk factors present in our subjects. History of injections use was present in 72 cases, out of these, 22 were seropositive for anti-HCV, history of use of barber services was present in 35 cases, out of these, 24 were seropositive for anti-HCV. History of ear and nose piercing by using non-sterile needles already in use for ear and nose piercing was present in 19 cases, out of these, 4 were seropositive for anti-HCV. Family history of HCV was present in 19 cases, and 6 were seropositive for anti-HCV. History of use of personal things of other persons like razor, nail clipper and tooth brush was present in 15 cases, and 5 were seropositive for anti-HCV. History of blood transfusion was present in 10 cases, and 7 were seropositive for Anti-HCV. History of tattoo marking was present in 2 cases, and 1 was positive for anti-HCV. History of haemodialysis was present in 1 case and was negative for anti-HCV antibodies (Table-3).

Table-1: Distribution of subjects in age groups

Age Groups	No. of Cases
<20 years	89 (19.8%)
20–40 years	262 (58.2%)
>40 years	99 (22.0%)
Total	450 (100%)

Table-2: Frequency of Anti-HCV Sero-Positivity among gender

Gender	Anti-HCV		Total
	Yes	No	
Male	26	327	353
Female	4	93	97
Total	30	420	450

Table-3: Frequency of Risk Factors

Risk factors	Anti-HCV		Total
	Yes	No	
History of injections	22	57	79
History of shave by barbers	24	11	35
History of ear nose piercing by non sterile needles	4	15	19
Family history of HCV	6	13	19
Use of personal things of others like razor, nail clipper and tooth brush	5	10	15
History of blood transfusion	7	3	10
History of tattoo marking	1	1	2
History of haemodialysis	0	1	1

DISCUSSION

Pakistan is among countries of low to middle socio economy with over one twelfth of labour force is unemployed, and over half of the population is illiterate.¹⁴ Majority of the cases under this study lacked knowledge about HCV and mode of its transmission which is comparable to the study conducted by Jafri *et al.*¹¹ Prevalence of HCV antibodies is reported to be highest in Egypt.¹⁵ Its prevalence in Pakistan is still unclear. Seroprevalence of HCV in general population ranges from 4–25.7%.¹⁶ In our study the frequency of anti-HCV seropositivity was 6.6% which is comparable to the study conducted at Hafizabad where they showed the seropositivity of 6.5% in people of Hafizabad.¹⁷

Use of contaminated syringes for injections had been identified as a leading risk factor of HCV transmission in patients belonging to northern Sindh.¹⁸ This could be explained by unlawful practices of used syringes being washed and packed for re-sale.¹⁹ Medical practitioners in the private sector re-use syringes, and only change the needle when it becomes blunt. It was estimated that about half of all injections administered in Pakistan involved re-used syringes.¹⁹ Use of multiple-dose vials is considered an important source of patient to patient transmission of HCV,¹¹ this occurs particularly at GPs and/or quacks' clinics. It had been studied earlier that the patients who received more injections were more likely to be infected with HCV.²⁰ Therapeutic injections were the most frequent risk factor of HCV transmission in our study and it was present in 72 cases. Use of barber services for face and armpit shave is a well recognised risk factor for HCV transmission. Barbers in developing countries usually are unaware of the concept of transmission of infectious agents and therefore do not sterilise their tools; 68.5% of our subjects with history of use of

barber services were positive for anti-HCV. This is comparable with results of the study conducted earlier in Islamabad-Rawalpindi.¹² Other risk factors like ear, nose piercing with non-sterile needles, history of HCV in other members of the family; use of personal things of others like razor, tooth brush and nail clipper; history of blood transfusion, history of tattoo marking and history of haemodialysis were less frequent risk factors of HCV transmission among our subjects.

CONCLUSION

History of therapeutic injections and use of barber services for face and/or armpit shave were the most frequent risk factors for spread of HCV. Majority of our subjects lacked proper knowledge about modes and risk factors of HCV transmission.

REFERENCES

1. Perlman BL. Hepatitis C infection: a clinical review. *South Med J* 2004;97(4):364–73.
2. WHO. Global Surveillance and Control of hepatitis C: Report of a WHO Consultation organized in collaboration with the Viral Hepatitis Prevention Board, Antwerp, Belgium. *J Viral Hepat* 1999;6:35–47.
3. Conry-Cantilena C, VanRaden M, Gibble J, Melpolder J, Shakil AO, Viladomiu L, *et al.* Routes of infection, viremia and liver disease in blood donors found to have hepatitis C virus infection. *N Engl J Med* 1996;334:1691–6.
4. Zein NN. The epidemiology and natural history of hepatitis C virus infection. *Cleve Clin J Med* 2003;70 (Suppl 4):S2–6.
5. Umar M, Bushra HT, Shuaib A, Anwar A, Shah NH. Spectrum of chronic liver disease due to hepatitis C virus infection. *J Coll Physicians Surg Pak* 2000;10:380–3.
6. Haider Z, Khan AA, Rehman K, Janjua MI, Iqbal J, Chishti A, *et al.* Sero-diagnosis for viral hepatitis in 93 patients admitted with acute hepatitis in three different teaching hospitals in Lahore. *J Pak Med Assoc* 1994;44:182–4.
7. Hamid S, Tabbasum S, Jafri W. Hepatitis C has replaced

Hepatitis B as the major cause of chronic liver disease in Pakistan. *Hepatology* 1999;30:212A.

8. Chohan AR, Umar M, Khaar B, Khurram M, Zahid M, Shah SF, *et al.* Demographic features of hepatocellular carcinoma. A study of 30 cases. *J Rawl Med Coll* 2001;5(2):81–3.
9. Luby S, Khanani R, Zia M, Vellani Z, Ali M, Qureshi H, *et al.* Evaluation of blood bank practices in Karachi, Pakistan and the government's response. *Health Policy Plan* 2000;15:217–22.
10. Khan AJ, Luby SP, Fikree F, Karim A, Obaid S, Dellawala S, *et al.* Unsafe injections and the transmission of hepatitis B and C in a periurban community in Pakistan. *Bull World Health Organ* 2000;78:956–63.
11. Jafri W, Jafri N, Yakoob J, Islam M, Tirmizi SFA, Jafar T, *et al.* Hepatitis B and C: prevalence and risk factors associated with seropositivity among children in Karachi, Pakistan. *BMC Infect Dis* 2006;6:101.
12. Bari A, Akhtar S, Rahbar MH, Luby SP. Risk factors for hepatitis C virus infection in male adults in Rawalpindi-Islamabad, Pakistan. *Trop Med Int Health* 2001;6:732–8.
13. Sheikh SN, Tayyab N, Jaffery G, Tasneem T, Sattar A, Ali I. Anti-HCV detection. A comparison between methodology: Elisa Vs Dipstick Assay. *J Ayub Med Coll Abbottabad* 1999;11(1):30–3.
14. Qureshi M, Bengali K. The State of Education, In: *Social Development in Pakistan, Annual Review 2002–2003. Social Policy and Development Centre Karachi, Times Press: iii-iv.*
15. Hepatitis C: global prevalence. *Wkly Epidemiol Rec* 1997;72:341–4.
16. Roy KM, Goldberg D, Taylor A, Mills P. Investigating the source of hepatitis C virus infection among individuals whose route of infection is undefined: a study of ten cases. *Scand J Infect Dis* 2003;35:326–8.
17. Luby SP, Qamruddin K, Shah AA, Omair A, Pasha O, Khan AJ, *et al.* The relationship between therapeutic injections and high prevalence of hepatitis C infection in Hafizabad, Pakistan. *Epidemiol Infect* 1997;119:349–56.
18. Shaikh MA, Shaikh WM, Solangi GA, Abro H. Frequency and transmission in mode of hepatitis C virus in northern Sindh. *J Coll Physicians Surg Pak* 2003;13:691–3.
19. Ahmad K. Pakistan: a cirrhotic state? *Lancet* 2004;364:1843–4.
20. Khan AJ. Unsafe injections and the transmission of hepatitis B and C in a Periurban community in Pakistan. *Bull World Health Organ* 2000;78:956–63.

Address for Correspondence:

Dr. Fida Hussain Shaikh, Assistant Professor, Department of Medicine, Unit-III, Chandka Medical College/Teaching Hospital, Larkana, Pakistan.

Email: fhshaikh2003@yahoo.com