Academic Sciences International Journal of Pharmacy and Pharmaceutical Sciences

ISSN- 0975-1491 Vol 3, Suppl 4, 2011

Research Article

RISING SEROPREVALENCE OF HCV A SILENT KILLER –EMERGING PROBLEM

DR. DEEPAK ARORA, DR.NEERJA JINDAL, DR. RAMAN DANG, DR. RAJIV KUMAR

*Department of Microbiology, Guru Gobind Singh Medical College & Hospital, Faridkot (Punjab) India, Department of Microbiology, Guru Gobind Singh Medical College & Hospital, Faridkot (Punjab) India, Department of Neurosurgery, Guru Gobind Singh Medical College & Hospital, Faridkot (Punjab) India, Department of Microbiology, Adesh medical college, Bathinda (Punjab) India.
Email: drdeepakarora78@gmail.com

Received: 29 March 2011, Revised and Accepted: 5 May 2011

ABSTRACT

Prevalence of active hepatitis C virus (HCV) infection in apparently healthy inhabitants of district Faridkot, was surveyed during December, 2009 to December , 2010. Subjects of different age and gender groups were analyzed through random blood sampling. Sum of 2119individuals out of which 321 were positive, 237 male and 84 females with age groups from 20 years to 50 and above were included in the study. All the individuals were screened for antibodies against HCV. The results showed that 15% of the people of District faridkot are actively infected with HCV . It was also concluded that the prevalence of active HCV infection was high 73% in males as compared to females (26%). The prevalence of HCV proportionality increases with the increase in age of the people. Its incidence was highest in the people of the age group of 30-50 years.

INTRODUCTION

Hepatitis C virus (HCV) was found to be a major cause of non-A non-B (NANB) hepatitis in the world.(1) It is responsible for parenterally transmitted, acute and chronic hepatitis. The persistent infection (>50%) due to HCV usually results in chronic active hepatitis that may lead to liver cirrhosis and hepato-cellular carcinoma.(2) . Approximately 3% of the world's population is chronically infected with HCV (3) and constitute a medical threat, underscoring the urgent need for anti-HCV vaccines and antiviral agents.(4) T over 200 million people around the world are infected with hepatitis C - an overall incidence of around 3.3% of the world's population. Statistically, as many people are infected with HCV as are with HIV, the virus that causes AIDS. Without large scale efforts to contain the spread of HCV and treat infected populations, the death rate from hepatitis C will surpass that of AIDS by the turn of the century and will only get worse.

HCV is diagnosed serologically by detecting antibodies specific to the HCV (Anti-HCV) and by ruling out other viruses such as HAV or HBV. Anti-HCV testing does not differentiate between an acute, chronic or resolved infection. A supplement test can also be used to confirm or refute a positive anti-HCV result. Nevertheless, current anti- HCV assays have been very effective for screening general population before blood donation or planned surgery. Anti-HCV is not a protective antibody and in patients with acute or chronic hepatitis, the presence of anti-HCV in serum gene-rally signifies that HCV is the cause.

Hepatitis C is also common in faridkot but accurate epidemiological information is quite limited. In the suburbs of the cities and in far flung areas, quacks (non-qualified medical and dental practitioners, lady health visitors, mid wives and dais) and barbers frequently use un-sterilized instruments which are a major potential source of spreading HCV infection in the urban and sub-urban population .

AIMS AND OBJECTIVES

Present study was undertaken:

1. To evaluate the frequency of HCV infection in the randomly selected population presenting to Teaching Hospital, Faridkot

2. To assess the prevalence rate of HCV infection in the different age groups and any sex differentiation in the prevalence of HCV infection in this population.

MATERIAL AND METHODS

Blood sampling

The study included individuals from hospital. Informed consent was taken from individuals under observation. Immuno-chromatographic tests (ICT) Sera screening was done for anti-HCV antibodies with the help of Immuno-chromatographic tests by using strips from j.mitra . Anti-HCV screening test or anti-HCV-ELISA test for the detection of anti-HCV antibodies (anti-HCV) have been evolved since 1990 and third or even fourth version of such assays is now available that detects anti-HCV in almost 95% cases of HCV infection and is the only screening test in most clinical laboratories of the world, which is still not so specific and sensitive especially, for early diagnosis of HCV infection and also in immune-suppressed patients.

RESULTS

A total of 2119 apparently healthy individuals were randomly sampled for the study as shown in table1

Table 1:

Month	Total	Positive	%age
Dec09	36	8	22.22
Jan10	8	0	0
Feb	225	66	29.33
Mar	225	40	17.77
Apr	195	22	11.28
May	226	16	7
June	147	17	11.56
July	182	26	14.28
Aug	170	20	11.76
Sep	182	30	16.48
Oct	233	30	12.87
Nov	217	31	14.28
Dec	116	16	13.79

Total no. of patients =2119
%age of positivity = 15%

These individuals belonged to various districts of Punjab.. Out of the total 321 were positive samples examined, 237 were males while 84 samples were from the female population (Table 2).

DISCUSSION

Despite progress in the diagnosis and treatment of viral hepatitis, their incidence is still high in some parts of the world. In the context of globalization, which currently facilitates the large-scale spread of disease more than ever, all regions are exposed to the risk of viral infections (5,6) The absence of an anti-HCV vaccine amplifies the risk of HCV transmission and explains why the incidence of HCV infection is still increasing all over the world. This is the reason why periodical reevaluation of epidemiologic data is necessary in all countries (7, 8). Our results showed high prevalence rate of HCV is 15% of the people of District faridkot are actively infected with HCV similar finding were reported in 2000, by Frank et al. that Egypt has

the highest number of reported HCV infections with a mean prevalence of 22% [9] Bhattacharya et al reported a prevalence rate of 4.8% of HCV antibodies in a study carried out in hospital based population in South India.[10] Another study from India reported a HCV prevalence rate of 4.28% in clinically diagnosed cases of heaptitis. In USA, hepatitis C infection is one of the major blood-borne diseases and a leading cause of chronic hepatitis and about 12000 individuals die each year from HCV associated chronic liver disease. [9,16,17]

Table 2:

Male	%Age	Female	%Age
2	25	6	75
-		-	
47	71.22	19	28.78
36	90	4	10
17	77.27	5	22.72
13	81.25	3	18.75
14	82.35	3	17.64
17	65.38	9	34.61
18	90	2	10
21	70	9	30
17	56.66	13	43.33
23	74.19	7	22.58
12	75	4	25

Total no. of male=237
%AGE positivity=73%
Total no. Of female=84
%age post=26%
Male/female ratio=3

Table 3:

Age wise

Age	No.	%age
20-30	113	35
30-40	144	45
40-50	48	15
50 above	16	5

Sera were isolated from all the blood samples and subsequently tested for anti-HCV antibodies by Immuno Chromatographic test (ICT). The samples were tested using HCV Tridot supplied by J.mitra

All the individuals were categorized into four age groups(table 3)

The World Health Organization estimates that the worldwide prevalence of HCV infection is approximately 3%,(11) with significant geographical and ethnical variations, possibly due to the presence and frequency of risk factors associated to the transmission of HCV inside a community [12] Our study, which was carried out in adult population (20 years or older), shows an increasing prevalence of infection with age. This distribution is similar to what is described in countries like Japan or Italy, where the estimated peak incidence of infection was 30 to 50 years ago.

The prevalence of HCV in different age groups of both sexes was studied and it was found that the prevalence of HCV was maximum (73%) in mature males as compared to young males (26%) [15] . Our study is in agreement with the fact that male population is more affected by HCV. The female population is less affected High prevalence in male and lower prevalence in female again could be attributed to their exposure status to various HCV risk factors which was quite evident from the life style.

The reasons of high incidence of HCV in the general population of this highly populated area consisting of less educated people might be (i) lack of awareness about risk factors involved in its transmission/spread (ii) malpractice among medical community such as reuse of syringes, and not using properly sterilized medical instruments especially by Dentists and (iii) reuse of contaminated razors by the Barbers and so forth. Yet another important reason for higher rate of HCV carriers might be that presently, facility for HCV screening in most blood transfusion centers of the country are not up to the standard, thus a major source of transmission of HCV infection Limited studies are available to have a clear picture of prevalence of hepatitis C at the national level in our country. In any seroprevalence estimation, the appropriate study cohort would probably be a sample from the general population as the disease is not limited to a small geographical, social or socio-economic group. Most studies revolve mainly around blood banks and blood donors are usually young adults, predominantly males, hence seroprevalence in females and other age groups, like children and aged cannot be estimated.

Most of these apparently healthy individuals are unaware of their disease whereas some of them are suffering from chronic liver disease. These individuals are a constant source of infection to their families and community. No specific post exposure therapy is available for chronic viral hepatitis C disease. Also, currently no prophylactic vaccine is available for HCV infection or any short term prevention such as for HBsAg or immunoglobulin. In the absence of the above, all possible preventive measures should be adopted.

CONCLUSION

Hepatitis C is an emerging infection in India whose long term implications will be felt in the decades to come. It is a pathogen that is already responsible for a significant proportion of liver disease in various regions of India. The advent of the HIV epidemic may further add to the existing load of HCV infection in the country. Stringent blood banking laws need to be introduced and sterilization and reuse of needles discouraged. All this is not possible without increased public awareness of the magnitude and implications of this chronic infection and its mode of spread. Health authorities have to include hepatitis C on their radar as a disease which can result in significant morbidity and mortality in the years to come. Though this study is a basic study but will surely help the epidimiologist to go for further detail on epidemiology on HCV.

REFERENCES

1. Choo QL, Kuo G, Weiner AJ, Overby LR, Bradley DW, Houghton M. Isolation of a cDNA clone derived from blood born non-A, non-B viral hepatitis genome. *Science* 1989; 244:359-364.
2. Saito I, Miyamura T, Ohbayashi A, Harada H, Katayama T, Kikuchi S. Hepatitis C virus infection is associated with the development of hepatocellular carcinoma. *Proc Natl Acad Sci USA* 1990; 87: 6547-6549.
3. Anonymous. Hepatitis C; global prevalence. W*eekly Epidemiol Record* 1997; 72: 341-344.
4. Koshy R, Inchauspe G. Evalutation of hepatitits C virus protein epitopes for vaccine development. *Tibtech* 1996; 14: 364-369.
5. Gheorghe L, Iacob S, Csiki IE. Prevalence of hepatitis C in Romania different from European rates? J Hepatol 2008; 49: 661-662.
6. Paquet C, Babes VT, Drucker J, Senemaud B, Dobrescu A. Viral hepatitis in Bucharest. Bull World Health Organ 1993; 71: 781–786.
7. Lok AS, McMahon BJ. Chronic hepatitis B. Hepatology 2007; 45:507-539.
8. EASL. International Consensus Conference of Hepatitis B. 13-14 September 2002 Geneva, Switzerland, Consensus of statement (long version) J Hepatol 2003; 39 Supl. 1: S3-25.
9. 5. Davis GL, Albright JE, Cook SF, Rosenberg DM: Pro-jecting future complications of chronic hepatitis C in the United States. Liver Transpl 2003 Apr; 9 (4): 331-8.
10. Sampietro M, Caputo L, Annoni G, Corbetta N, Tico-zzi A, Fiorelli G, et al; High prevalence of clinically silent HCV infection in older people. J Am Geriatr Soc1998; 46: 1057-58.
11. Hepatitis C - Global prevalence (update). *Wkly Epidemiol Rec* 1999; 74: 425-427.
12. Memon MI, Memon MA. Hepatitis C: an epidemiological review. *J Viral Hepat* 2002; 9: 84-100.
13. Soza A, Arrese M, Gonzalez R, Alvarez M, Perez RM, Cortes P, Patillo A, et al. Clinical and epidemiological features of 147 Chilean patients with chronic hepatitis C. *Ann Hepatol* 2004; 3: 146-151.
14. Muhammad N, Jan A: Frequency of hepatitis C in Bunir, NWFP. J Coll Physicians Surg Pak 2005, 15:11-14.

15. Ali SA, Rafe M, Donahue J, Qureshi H, Vermund SH: Hepatitis B and hepatitis C in Pakistan: prevalence and risk factors. Int J Infect Dis 2009, 13:9-19.
16. Armstrong GL, Alert MJ, McQuillan GM, Margolis HS, The past incidence of hepatitis C virus infection: implications for the future burden of chronic liver disease in the United States. Hepatology 2000; 31: 777-82.
17. Brown RS, Gaglio PJ. Scope of worldwide hepatitis C problem. Liver Transplantation 2003; 9 (Suppl 3): S 10-13.