ORIGINAL ARTICLE

FREQUENCY OF HEPATITIS C IN ASYMPTOMATIC PATIENTS IN DISTRICT HEADQUARTERS HOSPITAL KOTLI, AZAD KASHMIR

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Background: Hepatitis C is a common problem in developing world. It can affect a large number of asymptomatic people in whom it may cause serious complications in long run. Moreover, these asymptomatic infected people pose a serious risk for the transmission of infection to healthy population. Objective of this study was to estimate the frequency of Hepatitis C in asymptomatic adult patients attending medical OPD of District Headquarters Hospital Kotli, Azad Kashmir, and to assess the risk factors associated with its transmission. **Methods:** This was a cross-sectional study that included asymptomatic patients of both genders, aged 15–80 years, attending medical OPD of District Headquarter Hospital Kotli, Azad Kashmir from January to December, 2008. They attended the OPD for problems other than Hepatitis and most of them presented with vague complaints like generalised body aches, tiredness and dyspeptic symptoms. They were randomly tested for Hepatitis C virus (HCV) antibodies by Immunochromatographic kit method. Positive samples for Hepatitis C antibodies were confirmed by third generation ELISA. Those who were confirmed were assessed for the risk factors associated with HCV transmission. **Results:** The study included 9,564 patients. Out of them 4,230 (44.22%) were males and 5,334 (55.77%) were females. A total of 611 (6.38%) cases were positive for HCV; 257 (6.08%) were males, and 354 (6.64%) were females. Highest frequency (36%) was found between 21 and 30 years of age, and 60.54% positive patients were 21–40 years old. Blood transfusion was the most common (34.36%) risk factor followed by history of dental procedures (24.54%). In 27.16% no risk factor could be detected. **Conclusion:** Frequency of Hepatitis C is quite high in our population. Rate is higher in young adults. It is needed to adopt organised preventive strategies to overcome this problem. Blood transfusion is still the most significant risk factor followed by dental and surgical procedures. Health related procedures are still not safe in our set up and need to be addressed.

Keywords: Hepatitis C, Asymptomatic

INTRODUCTION

Hepatitis C virus is a hepatotropic virus that infects human beings. It was discovered in 1989.[1] It is prevalent all over the world. There are about 170 million people with Hepatitis C throughout the world and around 3% of world's population is infected with this virus. Every year 3 to 4 million new cases are diagnosed.[2] It is transmitted to human beings mainly through parenteral route.[3] Historically blood products and tissue and organ transplantation have been the main source of transmission.[3] In 1970s and 80s when the methods for its detection were not available, it was the most common agent associated with blood transfusion (around 10% in 1970s and 5% in 1980s) and in patients who needed transfusion of pooled products like clotting factors, risk was up to 20 to 30%.[4] At that time it was categorised as non-A non-B Hepatitis. Introduction of sensitive 2nd generation assays for the detection of HCV markers in the blood reduced this risk to 1 in 100,000 in 1992.[4]

Prevalence of Hepatitis C varies in different parts of the world. In a survey conducted between 1999 and 2000, 1.6% of general population (4.1 million people) in USA was infected with Hepatitis C.[4] Unusually high prevalence rates were found in certain countries like Egypt, where up to 20% people in certain cities were infected.[4] WHO data showed highest prevalence of Hepatitis C in Africa (5.3%) while in South East Asia 2.15% population were infected.[5,6] Rates were lower in Saudi Arabia (1.8%) and Yemen (2.1%).[7,8]

Hepatitis C is a major health problem in Pakistan, and according to an estimate about 10 million people are infected with this virus.[1] Exact prevalence is not known but is estimated to be around 3.8% according to unofficial, unpublished reports. Among high risk patients highest prevalence was found in Haemodialysis patients (24–44%).[9] In a meta-analysis of 183 studies conducted in Pakistan from 1992–2008, Umar *et al*[5] concluded that out of 1,004,391 people subjected to study, 42,982 (4.27%) were positive for anti-HCV antibodies. Furthermore, 2.71% of general and 10.39% of professional blood donors, and 56.9% of those who were suffering from liver disease, had anti-HCV in their serum.[1] Khattak *et al* showed seroprevalence of 4.1% among volunteer healthy blood donors in North-West Frontier Province of Pakistan.[10] Hepatitis C may cause asymptomatic infection in many individuals but it eventually leads to chronic hepatitis in more than 80%

of cases that may complicate to cirrhosis, end stage liver disease and hepatocellular carcinoma. It is obvious that it can cause a significant disease burden in Pakistan where infection rate of Hepatitis C is quite high. In a study on Pakistani patients, by Tong *et al*, Hepatitis C constituted 29% of chronic liver disease and 8% of hepatocellular carcinoma cases.[11] It is a rapidly increasing cause of chronic liver disease in Pakistan (16.6% of chronic liver disease patients were due to Hepatitis C before 1997 but it constituted 60 to 70% of them in recent studies).[9]

One of the problems associated with estimation of frequency of Hepatitis C is that many patients infected with this virus are asymptomatic, at least initially. They are detected incidentally when they are screened for HCV for various reasons like donating blood or applying for overseas employment. So it is difficult to calculate the frequency of Hepatitis C if we take into account only those patients who present with symptoms of hepatitis. To make the problem even more complicated, many people who are infected with the disease, do not have the history of established risk factors for its transmission.

Expecting that Hepatitis C may affect large number of asymptomatic people and its ability to cause serious complications in patients who are infected, this study was planned to see the burden of the disease and underlying risk factors responsible for its transmission in our asymptomatic population attending medical OPD of District Headquarter Hospital Kotli, Azad Kashmir. Risk factors responsible for acquiring the infection were also studied.

MATERIAL AND METHODS

This was a hospital based cross-sectional study which extended from January to December 2008. It included the patients of both genders of 15–80 years age who attended the medical OPD of DHQ Hospital Kotli during the study period. Patients selected were asymptomatic for hepatitis. Most of them presented with vague complaints like generalised body aches, tiredness and dyspeptic symptoms. Already diagnosed cases of Hepatitis C or Hepatitis B were excluded from the study. They were tested for anti-HCV antibodies using Immunochromatographic (ICT) kit method. Positive samples were confirmed by third generation ELISA. The patients tested positive for Hepatitis C were questioned about various risk factors associated with its transmission.

RESULTS

A total of 9,564 patients were studied from January to December 2008. Their ages ranged between 15 and 80 years. Out of them 4,230 (44.22%) were males and 5,334 (55.77%) were females.

From a total of 9,564 patients, 611 (6.38%) were reactive for anti-HCV. Among 4,230 male patients 257 (6.08%), and out of 5,334 female patients 354 (6.64%), were positive for Hepatitis C. In 611 HCV positive patients, 257 (42.06%) were males and 354 (57.94%) were females (Table-1).

Highest seropositivity was found in 21–30 years of age (36%). Out of 611 infected patients, 370 (60.54%) were of 21–40 years age. Frequency above the age of 50 years was quite low. Between 51 to 80 years, only 81 (13.24%) patients were infected (Table-2).

Blood transfusion was the most common risk factor found in infected patients (34.36%) followed by dental procedures (24.54%). In 166 (27.16%) patients no risk factor could be identified. Haemodialysis and tattooing contributed only a small proportion (1.63% and 0.08% respectively). None of Hepatitis C positive patients gave history of drug abuse (Table-3).

Table-1: Total and gender-wise distribution of Hepatitis C positive patients

Gender	Total patients	Hepatitis C positive	%
Male	4230	257	6.08
Female	5334	354	6.64
Total	9564	611	6.38

Table-2: Age wise distribution of Hepatitis C positive patients

Age group (years)	Hepatitis C Positive	%
≤20	80	13.09
21–30	220	36.00
31–40	150	24.54
41–50	80	13.09
51–60	40	6.54
61–70	25	4.09
71–80	16	2.61%
Total	611	100%

Table-3: Risk factors associated with Hepatitis C transmission

Risk factors	Number	%
Blood transfusion	210	34.36%
Dental Procedures	150	24.54%
Surgical procedures	50	8.01%
Needle stick injury	20	3.27%
Haemodialysis	10	1.63%
Tattooing	5	0.8%
Unknown	166	27.16%
Total	611	100%

DISCUSSION

Frequency of Hepatitis C in our study group was quite high (6.38%) which represents the magnitude of the problem in the area. It was expected to be even higher if symptomatic Hepatitis patients were also considered who were excluded in this study. Rate was more than the estimated overall global prevalence (3%) but low compared to very high prevalence countries like Egypt (20%). This higher frequency may be attributed to low educational level especially lack of health education and improper preventive health measures. When sero-prevalence rate of Hepatitis C in our survey was

compared to that found in South Asia (1–12%), it fell within that range.[6,12] It was also comparable to Central and South America where a community based study in San Juan, Puerto Rico, showed HCV prevalence rate of 6.3% between 2001 and 2002.[6,13] However, as compared to Northern Europe, where general prevalence of HCV is about 1%, it was quite high[6] compared to a hospital based study with similar settings conducted in District Buner, Pakistan from 1998–2002, showing 751 patients out of 16,400 (4.57%) to be positive for HCV antibodies, we got higher figures (6.38%).[14] But these were quite similar to those found in a community-based study in Hafizabad, Punjab (6.5% seroprevalence of HCV).[15] Studies conducted in various population subgroups in different parts of Khyber Pukhtunkhawah Province of Pakistan, gave seroprevalence of HCV in the range of 4.1% (among blood donors) to 36% (in diabetics).[2,10,16] A study done in District Mansehra, situated in the same province, showed that 3.5% of the people were actively infected with HCV whereas 7% of the population in general, had the presence of antibodies against HCV in their blood. It also showed that the prevalence of active HCV infection was high in males (4%) as compared to females (2%).[2] Difference of prevalence between males and females in this study did not correspond with the findings in our survey which showed almost equal rates (6.08% males versus 6.64% females). But our results matched with the Third National Health and Nutrition Examination Survey (NHANES III) from 1988–1994 in the United States in which neither sex nor racial-ethnic group was found to be independently correlated with HCV infection.[6] The same survey showed that majority of patients who were HCV positive, were below the age of 50, a finding which is similar to our results. Highest frequency in our study was observed in young adults of 21–30 years (36%) and 60.54% of infected patients were in 21–40 years of age. This demographic pattern is somewhat different from United States and Australia where middle aged people of 40–49 years are most commonly affected indicating that this group acquired the infection in 1960s and 70s but the rate of occurrence of new infection has decreased leading to decreased prevalence rates in younger age groups.[4,17] In this respect our results were also different from countries like Egypt where all age groups were almost equally affected which shows that they had high incidence of Hepatitis C in the past and this trend is still maintained.[17]

In our analysis blood transfusions came out to be the most important and frequent risk factor (34.36%) associated with Hepatitis C infectivity followed by dental procedures (24.54%). This is quite alarming. After the introduction of second generation ELISA for the detection of Hepatitis C virus in 1992, risk of Hepatitis C transmission by blood donation decreased dramatically from ~10% in 1970s to 1 in 100,000 in 1992.[4] Data from various countries supports this falling trend. When screening with first-generation anti-HCV test was introduced in Japan, incidence of post-transfusion non-A non-B Hepatitis dropped from 4.9% (1988–Oct 1989) to 1.9% (Nov 89–90).[18] In the United States, incidence of post-transfusion Hepatitis C decreased from 3.84% to 0.57% per patient (0.03% per unit blood) after HCV screening was started in 1990.[19] In England, the frequency of HCV infection by blood donations dropped from 1 in 520,000 (1993–98) to 1 in 30 million (1999–2001) when screening for HCV RNA was started.[20] However, incidence of transfusion related Hepatitis C is still higher in some areas of the world. In a study of 147 Chilean patients with chronic Hepatitis C, the most common risk factor was blood transfusion (54% versus just 5% with intra venous drug abuse).[21] A study done in the largest blood bank in Santa Catarina, Brazil from 1991–2001, showed a significant drop in the risk of acquiring HCV (1 in 13,721 patients) but it was almost 10 times higher than that of developed countries.[22] Our data indicates that blood transfusion is still not very safe in our setup in spite of development of very effective methods for HCV detection. It is of utmost priority to work out where the problem lies. It may be that viral screening is done infrequently due to socioeconomic restraints. The laboratories may not be doing the proper tests. Blood set needles and bags may not be sterilised. Whatever the reason may be, it should be vigorously searched out and proper measures taken to avoid such an avoidable risk factor for HCV transmission.

Dental and surgical procedures were other important risk factors for transmission of Hepatitis C in the study. Health authorities should take strict action to make sure that safe practices like wearing of sterilized gloves, proper sterilisation of instruments, careful disposal of infected material and screening of health professionals and patients may be adopted.

Intravenous drug abuse, which is now the most important mode of transmission of HCV in United States[7] as well as globally (up to 38% of newly diagnosed cases) and according to some studies in Pakistan as well[17], was not found to be a risk factor in our survey. This may be due to the fact that drug abuse is not very common in the area under study because of religious and social constraints and lack of easy excess to these agents.

CONCLUSION

Frequency of Hepatitis C is quite high in our population. In young adults there is a higher rate of acquisition of new infections. Blood transfusion is still the most significant risk factor followed by dental and surgical procedures. Health related procedures are still not safe in our setup which needs to be addressed.

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