Anti-HCV Positivity in Anicteric Individuals with Raised Serum Transaminases

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To document the prevalence of anti-HCV antibodies, 104 anicteric cases referred by clinicians with vague signs and symptoms and 2 to 3 fold rise of serum transaminases were analysed for anti-HCV antibodies. The clinical presentation in these cases indicated that it is a disease of mild severity with fatigue (86.54%), anorexia (41.35%), and nausea (13.46%). Serum alanine transaminase (ALT) and aspartate transaminase (AST) rise upto twice the upper normal limit (UNL) was present in 82 (78.85%) and in 79 (75.96%) cases respectively. 20 (19.23%) and 25 (24.04%) individuals had an elevation of ALT and AST upto thrice the UNL. Serum bilirubin and alkaline phosphatase were normal in most cases. Anti-HCV antibodies were analysed using the ELISA technique (by ABBOTT). Anti-HCV positivity was observed in 45 (43.27%) of the total cases.
Key words: HCV, ALT, AST.

HCV is the most common cause of community-acquired hepatitis and cirrhosis worldwide. It has a striking serologic association with cryptogenic cirrhosis and hepatocellular carcinoma and is a leading cause of end- stage liver disease requiring liver transplantation[1].

Active virus infection (viraemia) is invariably associated with liver damage. Circulating antibodies of HCV reflects persistent infection rather than immunity[2] However HCV RNA detected by PCR was seen in only 69.56% of symptom free anti-HCV positive individuals[3] .Many authors have documented the association of transaminases and HCV infection. Anti-HCV positive subjects showed an elevation of ALT[4,5]. At the same time HCV infection may be present in the absence of elevated ALT[6].

The transfusion transmitted virus study (TTVS) has recently reported a significant association between donor ALT and recepient non-A, non-B Hepatitis (NANB). Data from TTVS and from prospective studies at National Institute of Health at Islamabad predicted an efficacy of 29-30% reduction of NANB hepatitis by excluding donors with elevated ALT at the loss of 1.3-1.6% of donor population [07, 08]. Hence use of surrogate markers such as antibodies to hepatitis B core antigen (anti-HBc) and elevated transaminase levels was recommended to screen NANB hepatitis which further reduced the incidence of post-transfusion hepatitis[09, 10].

The study was therefore planned to find out the prevalence of HCV in patients with vague symptoms and two- three folds rise of transaminases.

Materials and methods

The study was conducted on anicteric individuals between January and December 2000. All the persons presented with vague symptoms and were referred by physicians for liver function tests. 104 cases with 2-3-fold rise of transaminases were selected for the determination of anti-HCV antibodies. In each case previous history of jaundice, blood transfusion, alcohol and drug abuse, surgical procedures or past history of hospitalization was ruled out.

Five ml of blood was collected from the ante-cubital vein under aseptic conditions in sterile disposable syringe. The sera of all cases were separated immediately. Kits of Merck Diagnostics on Microlab-100 spectrophotometer were used to assay serum bilirubin, ALT, AST and alkaline phosphatase levels. About 400-500 ul of sera from cases with 2-3 times the UNL of ALT and AST was transferred to a specimen vial, which was labeled and stored at –20 C until analysed for anti-HCV antibodies. Using ELISA technique based kits from ABBOTT analysis was carried out for the determination of anti-HCV levels.

Results

The present study comprised of 104 subjects ranging in age from 0->60 years, with 60 males and 44 females. All these individuals were from various corners of Lahore.

Out of these individuals 90 (86.54%) complained of fatigue; 43(41.35%) had anorexia; 14 (13.96%) had nausea and epigastric discomfort and 5 (04.8%) had unexplained symptoms related to their health (Table 1). In all, out of 104 specimens, serum bilirubin was <1.0mg/dl in 72(69.23%) and <2.0mg/dl in 32 (30.77%). Serum ALT levels were upto twice UNL in 82 (78.85%) and upto thrice the UNL in 20(19.23%) and 2(01.92%) were having levels > thrice the UNL. The upper normal limit of ALT was 41 IU/L. As regards the serum AST levels, 79(75.96%) persons had levels upto thrice UNL and the remaining 25 (24.04%) had an elevation > twice UNL but less than thrice UNL. The upper normal limit of AST was 37 IU/L. Alkaline phosphatase levels were in the normal range

i.e. <306 IU/L in 77(74.04%) whereas 27(25.96%) individuals had a rise less than twice UNL(Table 2).

Anti-HCV antibodies analysed by ELISA technique showed a little higher positivity in females as compared to males. 20 females out of 44(45.45%) were anti-HCV positive and 24(54.55%) were anti-HCV negative; however 25 males out of 60(41.67%) were anti-HCV positive and 35(58.33%) were anti-HCV negative. In total out of 104 cases having a rise of serum transaminases upto thrice the UNL, 45(43.27%) showed anti-HCV positivity and 59(56.73%) were negative for anti-HCV antibodies (Table 3).

Discussion

Hepatitis C virus is a positive stranded RNA virus related to Flaviviridae family[11,12]. It is a common cause of NANB hepatitis leading to end stage liver disease. Almost 50% of HCV infections lead to chronic liver disease including chronic active hepatitis with or without concurrent cirrhosis[13]. Malik et al, 1993[14] in his study on 100 cases of chronic liver disease found that 43% cases of chronic hepatitis , 18% of cirrhosis and 61% of primary liver carcinoma were infected with HCV.

Qualitative PCR detected HCV RNA is an expensive but the only marker of viral activity currently available on very few centres in big cities. Alberti et al, 1992[3] detected HCV RNA by PCR in 16 cases out of 23 symptom free anti-HCV positive individuals; 7 of them had abnormal ALT levels (43.75%). They were found to be cases of chronic active hepatitis (42.86%) and chronic persistent hepatitis(57.14%) on liver biopsy. Shakeel et al, 1995[15] detected HCV RNA in 65% cases who were anti- HCV positive with normal transaminase levels, and in 95% of cases who were anti-HCV positive with elevated transaminase levels. Anwar et al, 1999[4] reported a rise of transaminases in 100% anti-HCV positive patients. Esteban et al,1990[16] also reported a high incidence of hepatitis in the recepients of blood with raised ALT (33 v 07%).

The present study was conducted to document the prevalence of anti-HCV positivity in persons with vague symptoms and raised transaminases. In the present study 86.54% individuals complained of fatigue; 41.35% of anorexia while 13.46% presented with nausea and epigastric discomfort. This was comparable to the study done by Malik et al, 1990[14]. The anti- HCV positivity rate observed in our study was 45%. Shafi et al, 1992[17] reported 81.8% anti HCV positivity in patients on chronic haemodialysis with raised liver functions. The high anti-HCV positivity (81.9%) was due to repeated blood transfusions in these patients.

There is a potential value of screening for anti-HCV and high levels of surrogate markers i.e transaminases and anti- HB-c to reduce the transfusion associated hepatitis[18]. Barrera et al, 1991[19] recommended the use of anti- HCV positivity and elevated transaminases to screen NANB post transfusion hepatitis. The surrogate marker reduced the overall post transfusion hepatitis by 70% ($p<0.05$) by withholding the blood containing raised transaminases[20].

Conclusion

HCV positivity and viraemia has become a very common health problem. HCV RNA by PCR is a very costly diagnostic tool. Keeping in mind the high rate of anti-HCV positivity, its dreadful complications and high cost of management the surrogate marker approach should not be dismissed at present, since it may be supplemented by anti-HCV screening and quantitation while we wait for a definitive confirmatory test like HCV RNA and liver biopsy to become available.

Table 1. Presenting complaints of patients (n=104)

	n=	%age
Fatigue	90	86.54
Anorexia	43	41.35
Nausea and Epigastric discomfort	14	13.46
Unexplained Symptoms	05	04.81

All patients with vague symptoms and elevated transaminases should have the aetiology of viral hepatitis determined for management of the individual, his family and environment.

Table 2. Serum bilirubin, alt, and ast levels (n= 104)

		n=	%age
Bilirubin	<1.0 mg/dl	72	69.23
	1.0–2.0 mg/dl	32	30.77
ALT (UNL = 41IU/L)	Upto twice UNL	82	78.85
	"thrice	20	19.23
	>" "	02	01.92
AST (UNL = 37IU/L)	Upto twice UNL	79	75.96
	Upto thrice UNL	25	24.04
	>thrice UNL	-	-
ALP (UNL= 306 IU/L)	< 306 IU/L	77	74.04
	Upto twice UNL	27	25.96
	> twice UNL	-	-

Table 3 Anti-HCV positivity (n = 104)

No of cases	Anti- HCV positive	Anti- HCV negative
Females (44)	20 (45.45%)	24 (54.55%)
Males (60)	25 (41.67%)	35 (58.33%)
Total (104)	45 (43.27%)	59 (56.73%)

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