Study On Prevalence Of Hepatitis C Infection In Healthy And High Risk Groups

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Abstracts: **Background & objectives:** Developing country like India shows high prevalence of hepatitis C on account of lack of universal precautions while treating patients. This kind of transmission is seen more in cases of Thalesemias on regular blood transfusion, with renal diseases on haemodialysis and co-infection with hepatitis B along with patients admitted in various wards for treatment. Study was conducted with the objective to find out prevalence of HCV infection in patients with hepatitis B, Thalesemias, patients undergoing haemodialysis, patients admitted in hospital for other diseases who are hepatitis B negative, Ante-natal cases and voluntary healthy blood donors. **Methods:** Blood was collected of 1040 persons from various groups with their consent. All the sera were tested for anti HCV antibody by ELISA and Signal HCV test. **Results:** Total twelve participants were found positive for HCV infection, majority were belonged to Thalesemic group and rest of the participants belonged to voluntary healthy blood donor group, patients of hepatitis B and patients on haemodialysis. **Interpretation & conclusion:** those who are at risk of getting Hepatitis C should undergo for HCV testing on regular interval. [Gandha K et al NJIRM2013; 4(6) : 41-43]

Key Words: HCV-Hepatitis C Virus, hepatitis B, Thalesemia, Haemodialysis, ANC-Antenatal mothers.

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Introduction: Hepatitis is a major public health problem throughout the world, affecting several hundred million people. The hepatitis was recognized centuries back but the identity was well established in 19th century after the epidemic outbreak during the world war. About 500 million people worldwide currently infected with hepatitis B or C. This is over 10 times the number infected with HIV/AIDS. Hepatitis B and C kill 1.5 million people a year[1].

Hepatitis is a disorder involving the inflammation of liver that may progress to hepatic cell necrosis leading to fibrosis. This in turn may result into serious clinical, biochemical and histological changes. Also viral hepatitis is a cause of considerable illness and death in human population both from acute infection and chronic sequelae, which include chronic active hepatitis, cirrhosis and primary liver carcinoma.

On the basis of epidemiological and clinical criteria two types of viral hepatitis had been observed. One of the two types of hepatitis occurs sporadically or as epidemic affecting mainly children and young adult and transmitted by Faeco-oral route. This was called infective or infectious hepatitis. Other one is observed in person receiving serum inoculation or blood transfusion and previously known by various names such as homologues serum jaundice, serum hepatitis [because of its association with human or homologues antisera commonly used prophylaxis or therapy early in the twentieth century.] and transfusion hepatitis. It was later called hepatitis B.

Material and Methods: A cross-sectional hospital based follow up study was conducted at Guru Govind Singh Hospital, Jamnagar from January 2005 to December 2005. A total of 1040 study subjects were included in the study and their blood samples were screened using ELISA and Signal HCV test. Donors found reactive for anti HCV were informed telephonically. Those who agreed to enter the study signed an informed consent and were subjected to further detailed clinical history, physical examination and blood tests.

Group 1: A total of 200 cases of viral hepatitis which were sero positive for HBs antigen were placed in this group.

Group 2: A total of 200 cases of viral hepatitis which were sero negative for HBs antigen were placed in this group.

Group 3: A total of 200 cases of Thalesemias who received multiple blood transfusions were placed in this group.

Group 4: A total of 40 patients undergoing haemodialysis treatment were included in this group.

Group 5: A total of 200 cases that attained anti-natal clinic were placed in this group.

Group 6: A total of 200 samples of healthy blood donors were placed in this group.

Result: 3% of the Thalesemic group saw presence of anti HCV antibody followed by haemodialysis (2.5%), Voluntary Blood donor (1.5%) and a group having HBsAg positive (1%).Groups consist of HBsAg negative and ANC women did not show any proportion of positive for HCV infection. Overall positivity was found to be 1.15% that is quite high in comparison to HIV.

Table: 1 Age and sex distribution of the groups studied for anti HCV antibodies.

Sr. No.	Group	Age Group	Male	Female
1	(HBsAg +ve)	10 -45	120	80
2	(HBsAg –ve)	10 -45	124	76
3	Thalesemic	2 – 15	106	94
4	Haemodialysis	2 – 15	30	10
5	Antenatal cases	20 -40	0	200
6	Healthy Blood Donors	20 -40	150	50
	Total		**530**	**510**

Care was taken to make it 50-50 representation from the both sex or near to it as far as possible.

Graph- 1: Sex Wise Distribution Of Participants

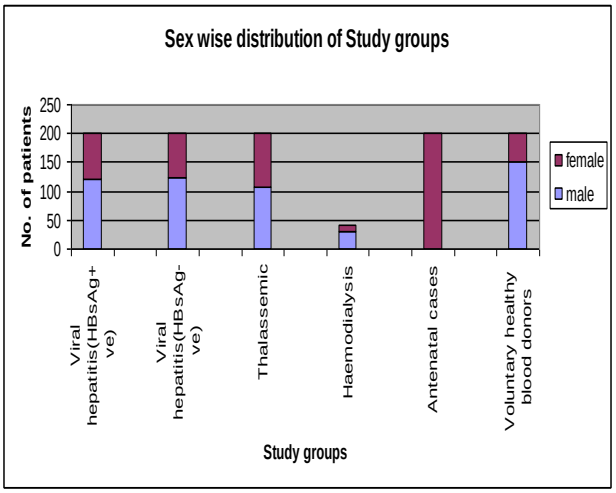

Table 2: Anti HCV sero-positivity among different study groups

	Group	N Screened	N +Ve	% Positivity
1	(Hbsag +Ve)	200	2	1%
2	(Hbsag –Ve)	200	0	0%
3	Thalesemic	200	6	3%
4	Haemodialysis	40	1	2.5%
5	Antenatal Cases	200	0	0%
6	Healthy Blood Donors	200	3	1.5%
	Total	**1040**	**12**	**1.15%**

Discussion: Hepatitis C virus is a major cause of liver disease throughout the world ranging from acute and chronic hepatitis to cirrhosis and hepato-cellular carcinoma. About 0.04 to 26% of apparently healthy population in different countries of the world is suffering from chronic HCV infection. The parenteral route of HCV transmission is responsible for almost two third of hepatitis C cases while non-parenteral routes of transmission are perinatal and sexual routes.

In present study Prevalence of Hepatitis-C is 1.15%. Highest prevalence was found in Thalesemic patients i.e. 3% followed by Haemodialysis group (2.5%), Voluntary healthy blood donors (1.5%) and patients of viral Hepatitis with Hepatitis-B positive (1%). Study carried out by Thakral et al found anti HCV sero-positivity was 0.44 percent among healthy blood donors which is lower than our study[2]. Studies from northern India found HCV sero-prevalence ranging from 0.53 to 5.1 per cent in their blood donors[3-5]. HCV sero-positivity from western India has been reported between 0.34 to 2.5 per cent [6, 7]. In study of prevalence of parenterally transmitted hepatitis Viruses in clinically diagnosed cases of hepatitis, carried out by Arora et al found prevalence of 4.28% which is much higher than our study[8]. Prevalence is higher in high risk groups, Thalesemic, haemodialysis patients, health care workers and IV drug abusers[9]. Depending upon the type of the test used for screening and confirmation, less than 0.2 to 4% of donors were found to be anti HCV positive[10]. WHO estimates that about 3% of the world's population are infected with HCV and are at risk of developing liver cirrhosis and/or liver cancer. Prevalence is 2.5% in SEAR countries[11]. Study carried out by O

Taziki and F Espahbodi reported prevalence of antibody to HCV 12% in haemodialysis patients which is much higher than prevalence reported in our study[12].

Conclusion: study suggests that time to time screening for HCV is necessary among the high risk group and it helps in prevention of transmission. Due to improved screening of blood and practice of universal precautions should be in top most priority for the prevention of transmission of HCV along with other pathogens like HBV and HIV in hospital settings.

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