

original article

Seropostivity status of hepatitis 'C' viral infection in healthy blood donors from a tertiary care setting

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Abstract:

Aim: To determine the seroprevalence of Hepatitis C in healthy blood donors.

Material and methods: 2750 healthy donors attending SKIMS Medical College Hospital in Kashmir from August 2015 to July 2016 were screened. The donors were aged between 18 to 55 years, 89% being males and 11% female.

Results: Four persons all male and above 40 years of age tested positive for HCV. No HCV-HIV or HCV-HBsAg co infection were detected.

Conclusion: Hepatitis C is an upcoming threat to global population and is spreading unknowingly to others from carriers of infection. An aggressive screening for HCV in apparently healthy donors is needed.

Introduction

Hepatitis C infection is an emerging public health problem globally. 3% of the world's population is estimated to be chronically infected. Upto 80% of them are from low & middle income countries.¹ The burden in India is estimated at 8.6 million viraemic HCV carriers.² Since HCV infection is a known cause of hepatocellular carcinoma, 20-30% of these will develop cirrhosis or hepatocellular carcinoma.³ Of the various Hepatitis C genotypes the ones most prevalent include genotype 3, followed by genotype 1 & genotype 4, 6 & 2.⁴ Seropositivity of HCV ranges from 0.13% to 6%.^{5,6}

The main modalities of spread of hepatitis C infection are blood transfusion, injection drug use, unsafe therapeutic injections & health care related procedures. In developed countries the predominant hepatitis C infection is IV drug use, whereas in India, blood transfusion & unsafe therapeutic injections are the predominant modalities of transmission of hepatitis C.⁷ Its not only a morbidity burden but an important economic burden for the country, considering the high cost of treatment with PEG-IFN based therapy costing lakhs of Indian rupees.⁸ Recently low cost generic versions of treatments have been made available but there is no provision of these treatments through public sector & the burden of cost though marginally less falls on the pocket of exchequer in India.

Only a limited number of studies have been conducted so far for determination of seropositivity prevalence of hepatitis C viral infection. The current study has been taken up to see for the seropositivity prevalence in Kashmir where till now such studies have not been conducted.

Materials & Methods:

The present study was conducted in SKIMS Medical College & hospital for a period of 1 year from August 2015 to July 2016. During this period, healthy blood donors were analyzed for seroprevalence of HCV. They were selected for donation by trained personnel of the Department of Blood Transfusion after complete examination & satisfactory donor questionnaire. The sample included replacement donors (friends or relatives of patients) & voluntary donors (people donating without any favour in return or donating in blood donation camps). Of these 2580 donors were replacement donors & 170 were voluntary donors. Enough

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care was taken to exclude all professional donors. Basic socio-demographic information was sought & formal written consent provided in English or translated version in Kashmiri language was obtained before collecting the blood. 2ml of blood sample was collected at the time of collection of blood from donor tubes of blood bag.

NANBASE C-96 3.0 ELISA Kit was utilized for HCV-testing.

Results:

Of 2750 screened, 2173(78.54%) were aged ≤ 40 years & 577(21.5%) were >40 years of age. Males were more 2450 (89%) than females (11%). Majority (36.65%) had a blood group B followed by group O in 29.6%. 19.6% had AA & 7.4% AB blood groups. 2448 (89%) were literate, 39% were govt. employees, 35% were self employed & rest (26%) were either labourers, homemakers & students. Majority (58%) were above poverty line.

Of the 2750 people screened, 4 came positive for HCV. All were males <40 years of age, 50% of them were married. All were above poverty line. 50% were self-employed, 50% were govt. employees. No HCV-HIV or HCV/HBsAg co-infections were detected. HCV prevalence of the current study was 0.14%.

DISCUSSION:

The present study was aimed at estimating seroprevalence of HCV. Seroprevalence of HCV was 0.17% in our study. The prevalence rate is comparable to study conducted by V. Gowri et al⁶ reporting a prevalence of 0.22% (from voluntary blood donors, antenatal clinic & ICTC centers) with 0.13% prevalence in voluntary blood donors. Another study from Madurai has shown a prevalence of 0.75%.⁹ A study on pregnant women has shown prevalence of 0.3%.¹⁰ The age groups for infection are usually less than 40 years by CDC & Wasley et al.^{11,12} Similar results were obtained from our study. None of the infected had any known evidence of transmission in them. This was again seen in the study conducted by Parveen M where substantial number of infected had no known evidence of transmission.

Conclusion:

Hepatitis C is an upcoming communicable disease threat to the global population. With its modes of transmission being so closely related to HBV & HIV infection the disease is spreading unknowingly to others from carrier of infection. Thus there is a pressing need for more aggressive screening for HCV infection in apparently healthy individuals not only in tertiary care centers but also

in secondary levels of health care where in addition to care in terms of safe blood supply, centralized blood collection system, asepsis during dental/surgical procedures, better personnel & equipments. Raising awareness amongst general population about the modes of transmission & prevention will have a larger impact. Action now will prevent the emergence of HCV epidemic in future. Further, more studies especially in community settings are needed for getting the real picture of HCV prevalence in general population.

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