

Original Research Article

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Study of Prevalence of Hepatitis C Virus (HCV) Infection in a Patients attending Tertiary Care Hospital Valsad, Gujarat, India

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ABSTRACT

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Hepatitis C infection is a liver disease caused by the hepatitis C virus (HCV). It is one of the important risk factor causing acute to chronic illness in form of altered liver functions or development of chronic hepatitis, cirrhosis, hepatocellular carcinoma and liver failure. In India reported prevalence rates vary widely in range of 0.09%-2.02%. This retrospective study was carried out in patients attending GMERS hospital, Valsad, South Gujarat during January 2016 to December 2016. Serum samples were collected and screened for antibody against HCV by ELISA method. Result: Of the 7089 patients tested in this period 20 (0.28%) were found to be positive for HCV antibody, which includes 10(0.14%) males and 10(0.14%) females, the most common affected age group was ≥ 50 years. Conclusion: The present study highlights current scenario of HCV infection in our tertiary care hospital, it may help to detect target group for early detection and treatment in order to prevent complication.

Introduction

Hepatitis C infection is a liver disease caused by the hepatitis C virus (HCV) (Who hepatitis C, 2016). It is one of the important risk factor causing acute to chronic illness in form of alter liver function or development of chronic hepatitis, cirrhosis, hepatocellular carcinoma and liver failure (Zidan *et al.*, 2012; Farag *et al.*, 2015). 75%-85% of patients develop chronic disease after acute infection which depends upon factor influencing interaction between host and HCV Chen *et al.*, 2006). Prevalence of HCV infection is variable according to geographical distribution, routes of transmission and other factors. Higher prevalence is found in developing countries

where limited resources and facilities are available, Central and east Asia as well as Africa are the most affected region in the world (Preeti *et al.*, 2015; Farag *et al.*, 2015; Who hepatitis C, 2016). According to the World Health Organization (WHO) the prevalence of HCV infection is up to 3% of the world's population. In India reported prevalence rates vary widely in range of 0.09%–2.02% (Mukhopadhyaya, 2008). In India about 20 million people are known to have Hepatitis C virus (HCV) infection and a quarter of them expected to develop chronic liver disease in the next 10-15 years (Khaja *et al.*, 2006). The impact of this infection has

just started to emerge in India. In the absence of efficient anti-HCV screening in our country, the HCV infection from various sources like will unscreened donors, injection drug use, unsafe injection etc. continue to add to the disease pool (Gowri *et al.*, 2012; Parveen *et al.*, 2015). HCV infection is usually asymptomatic so only few patients are diagnosed during acute phase, those patients who develops chronic HCV infection often undiagnosed because the infection remains asymptomatic, after infection symptoms develop secondary to serious liver damage. There is no vaccine available for hepatitis C therefore prevention of infection is only depends upon reducing risk of exposure. The aim of this study was to determine the prevalence of Hepatitis C virus infection in patients attending the tertiary care Hospital at Valsad, South Gujarat, India.

Materials and Methods

A retrospective study was carried out from January 2016 to December 2016 on patients attending OPD & IPD at tertiary care hospital. Blood samples of all patients for HCV testing were collected that referred to the Microbiology laboratory. The serum was separated for the qualitative detection of HCV antibody by ELISA. The test procedure and interpretation of result was done according to standard protocol and manufacturer's instructions. The test result of patients were noted and analyzed.

Results and Discussion

The overall prevalence of HCV infection was 0.28 % (Table 1) and rate of prevalence in both sexes were same.

Prevalence of HCV infection was different in all age group in range 0 to 0.112%. The study showed maximum prevalence of HCV infection in aged ≥ 50 years (0.112%) (Table

2). Out of total positive maximum number of patients were identified in preoperative screening. Indication wise distribution of patients is shown in table 3.

Acute HCV infection is usually asymptomatic so infection remains undiagnosed, usually it diagnosed accidentally or when it becomes chronic. It is estimated that only 30–50% of individuals infected with HCV are aware of their disease (Rajesh, 2012).

Hepatitis C infection is found worldwide, prevalence rates are also different e.g. 5.5% in Africa, 4.6% in the Eastern Mediterranean region, 4% in the Western Pacific region, 2% in South East Asia, 1.7% in the United States of America (USA), 1% in Europe and 28% in Egypt were noted in past (Sy *et al.*, 2006).

Risk factors for HCV transmission differ between developed and developing countries. Transmission of HCV was strongly associated with intravenous and percutaneous drug users (IDUs). Studies from the developed countries also reveals that most of the new HCV infection associated with injection drug use (Wasley *et al.*, 2000).

In the developing countries, unsafe therapeutic injections and transfusions are likely to be the major modes of transmission, especially in countries where age-specific seroprevalence rates suggest ongoing increased risk of HCV infection (Shepard *et al.*, 2005).

The seroprevalence of HCV among general population of India has been reported between 0.22-1.8 per cent (Gowri *et al.*, 2012; Jaiswal *et al.*, 1996).

In our study overall prevalence of HCV infection is 0.28% which is similar to study done by Gowri *et al.*, (0.22%), lower seropositivity was reported from Madurai20,

while study done by Preeti Mindolii *et al.*, (2.6%) and Mishra *et al.*, (1.57%) 21 Showed higher prevalence as compare to our study. Differences in prevalence rates may be due differences in health resources and educational levels awareness of the disease in

different regions. The prevalence of HCV in both genders is controversial. While some studies showed higher HCV incidence among men, other population based surveys showed similar rates in both sexes. In this study prevalence were same for both sexes.

Table.1 Prevalence of Hepatitis C infection among patients in a tertiary care hospital

Total no. of sample received	Total no. of positive sample	Percentage of total no. of positive sample
7089	20	0.28%

Table.2 Age-wise prevalence of HCV in hospital based general population

Age group (in years)	Total no. of positive patients	Percentage(%) of total no. of positive patients
0-9	00	0 %
10-19	02	0.028 %
20-29	05	0.070 %
30-39	01	0.014 %
40-49	04	0.056 %
≥ 50	08	0.112 %
Total	20	0.28 %

Table.3 Categorization of Hepatitis c patients according to probable cause

Indication	No. of HCV positive patients	Percentage(%) of HCV positive patients
Symptomatic(Patients admitted in medical ward)	05	25 %
Patients attending OPD	07	35 %
Pre-operative screening	08	40 %
Total	20	100 %

In patients attending OPD 7 was positive for HCV and 02 of them were positive for HIV.

The present study revealed significant trend of HCV seropositivity with relation to age, highest prevalence was noted in older age group. Study done by Preeti Mindolli *et al.*, also showed similar result, in present study highest prevalence was noted in older age group, may be the reason that late diagnosis in older age group due unavailability of facilities at that time. After older age group significant numbers of HCV positive patients were found in younger age group (20-29 yr). Intravenous drug abuse is very common in this age group so it can be the first reason of HCV transmission and early diagnosis due to improvement in health care facilities as well as patients awareness of diseases can be the other reason.

The rate of HIV-HCV confection in the present study was 10%, other studies from India have reported a prevalence of 3.02% in Andhra Pradesh (Ponamgi *et al.*, 2009), 2.2% in Tamil Nadu (Saravanan *et al.*, 2007) and 1.6% in Lucknow (Tripathi *et al.*, 2007) Co infection is due to similarity in mode of transmission.

In conclusion HCV would be responsible for emerging infection in India. In order to prevent transmission of infection, educational program and screening to target group as well as illiterate people in collaboration with health care provider are require.

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