

# Assessment of Knowledge Regarding Hepatitis C Virus among Medical Students in a Tertiary Care Hospital of North India

Aradhya Abrol<sup>1</sup>, Surbhi Abrol<sup>2</sup>, Abhinav Goyal<sup>3</sup>, Savita Mahajan<sup>4\*</sup>, Ram Kishan Abrol<sup>5</sup>, Gaurav R. Kumar<sup>6</sup>

<sup>1</sup>MBBS Final year student, Dr. RPGMC Tanda (Kangra) Himachal Pradesh, <sup>2</sup> DDS Student Boston University USA,

<sup>3</sup>Gastroenterologist Einstein Medical centre Philadelphia, <sup>4\*</sup>Assistant Professor Microbiology, <sup>5</sup> Professor Surgery, <sup>6</sup> Junior Resident Surgery Dr. RPGMC Tanda (Kangra) Himachal Pradesh

**Abstract:-** Hepatitis C virus infection is a globally prevalent pathogen and is a major cause of health care burden in India. HCV is affecting about 170 million people annually throughout the world. The estimated prevalence of HCV in India is about 0.5-1.5% and is a leading cause of chronic liver disease and hepatocellular carcinoma rapidly transmitting as silent killer. This study was planned with an aim to determine awareness about Hepatitis C infection among medical students. A cross-sectional questionnaire-based survey containing 30 questions to assess the knowledge about Hepatitis C infection was conducted. Total 125 students participated, overall score of knowledge-based questions and about transmission of HCV infection were satisfactory. Majority of students were aware of HCV transmission and prevention but have not shown good results about laboratory diagnosis. Overall grasp of Hepatitis C by the studied group was good. However, there were serious gap in their knowledge of lab diagnosis which need to be filled. Knowledge about transmission was very good.

**Keywords:-** Awareness, HCV.

## I. INTRODUCTION

Hepatitis C is a liver disease caused by Hepatitis C virus. It is a worldwide health problem, which can cause both acute and chronic hepatitis infection, cirrhosis, portal hypertension, hepatic decompensation and hepatocellular carcinoma which are the examples of complications of severe hepatitis [1]. HCV infection is mainly by blood transfusion and other modes of contact with infected blood or blood products. Injectable drug abusers, transplant recipient and immunocompromised persons are at high risk. Sexual transmission is probably less important. Vertical transmission from mother to baby may take place [2]. Transmission of hepatitis among healthcare workers has also been reported after needle stick or sharps exposure to HCV- positive blood. The risk of infection reported is about 1.8%.

Hepatitis C virus (HCV) infection is now being recognized as a global health problem. About 170 million people are chronically infected and 3-4 million are newly affected every year [3]. Around 23 million persons in the middle east region are infected with Hepatitis C infection, which represents 1-2% of overall prevalence. Egypt is said

to have the highest prevalence internationally with an estimated 14.7% of the total population being seropositive for HCV [4], Pakistan 4.8% and China 3.2%.

The number of studies in India is limited. However, the estimated prevalence of HCV infection in India is about 0.5-1.5% [5]. Despite the low prevalence of HCV, India with its large population accounts for a significant proportion of the global HCV burden [6]. Approximately 12-18 million people are thought to be infected with HCV in India [7].

In the study conducted by Al-Ajla, the prevalence of Hepatitis C marker among the students admitted in the health colleges and institutes in Saudi Arabia was lower than in general population [8]. The study from Guilan University in Iran reported that knowledge of HCV among medical students globally is relatively low [9]. However, the study from Bitola in Macedonia [10] showed medical students' knowledge of HCV as satisfactory.

Till date, no vaccine is available for Hepatitis C. Good knowledge and proper attitude of medical students about HCV infection are very important in preventing the spread of the disease among themselves and patients of their close contact with hepatitis C patients in the course of their study, and as further health care workers [10].

Since final year medical students, interns and post graduate students are the junior members of the medical team. They are the first to encounter patients in real clinical practice. They may be involved in certain procedure. Hence without proper knowledge and clinical exposure may expose them to hepatitis C infection.

Keeping this in mind, present study was designed to determine the awareness about hepatitis C infection among medical students of DR. RPGMC Tanda.

## II. MATERIAL AND METHODS

This cross-sectional study was conducted to assess awareness of hepatitis C infection in a 750 bedded tertiary care teaching hospital of Himachal Pradesh. The study population included MBBS final year students, interns and post-graduate students of medical college of DR. RPGMC Tanda, Himachal Pradesh, in North India.

A total of 150 candidates were approached. A pre-fabricated validity tested questionnaire was randomly distributed among medical students. All questions in questionnaire were close-ended.

The questionnaire was distributed by the faculty member of various departments. The respondents were asked to return the questionnaire after half an hour.

➤ *Hepatitis C infection awareness among medical students.*

S.no	Question	Response	Percentage
1	Any history of testing for hepatitis C-	a) Yes, and was positive b) Yes, was negative c) I do not know d) No	0% 28% 64% 8%
2	Any history of needle stick injury–	a) Yes b) No c) I don't know	8% 84% 8%
3	Family member with hepatitis C infection history	a) Yes b) No c) I don't know	0% 100% 0%

Table 1:- Hepatitis C related characteristics of study participants (n=125)

S.no	Question	Response	Correct Response	Percentage
4	Hepatitis C virus is a	a) ss DNA virus b) ds DNA virus c) Single stranded RNA Virus d) Ds DNA Virus	114	92.2
5	Incubation period of hepatitis C	a) 30-80 days b) 15-60 days c) 15-45 days d) 15-160 days	95	76
6	Hepatitis C virus is	a) Enveloped virus b) Non enveloped virus	107	85.6
7	Hepatitis C virus is a	a) Toga virus b) Flavi Virus c) Filo Virus d) Retro Virus	108	86.4
8	Which of the following hepatitis virus has the maximum potential for chronicity	a) HAV b) HBV c) HCV d) HDV	93	74.4
9	In India which HCV genotypes are more prevalent –	a) 1 and 3 b) 2 and 4 c) 1 and 2 d) 1 and 4	86	68.8
10	Hepatitis C infection risk after needle stick injury are	a) 2 – 3% b) 10% c) 4 – 5% d) 1.8%	48	38.4
11	Hepatitis C can survive inside the syringe for	a) 3 Days b) 4 Days c) Many Days d) Many weeks	62	49.6
12	Hepatitis C can survive outside the body in open air for	a) 4 Days b) 2 days c) 1-week	45	36

		d) Month		
13	Hepatitis C is associated with	a) Spiky fever b) Scleroderma c) Cryoglobulinemia d) Polyarthrititis	98	78.4
14	In acute HCV infection on set of infection nodosa exposer	a) 2 Months b) 1 Year c) 6-month d) 1 month	62	49.6
15	Chronic Liver diseases is caused by	a) Hepatitis A b) Hepatitis B c) Hepatitis C d) Hepatitis D	90	72

Table 2:- Hepatitis C Knowledge based questions

S.no	Question	Response	Correct Response	Percentage
16	True findings about hepatitis C virus is	a) Spreads along faeco-oral routes b) It cannot be cultured c) Transmission through infected blood donor	125	100
17	Hepatitis C virus can transmit by	a) Shaking hands with infected person b) Contaminated dentistry tools c) Sharing infected razor tattooing / piercing nose/ear with infected articles. d) All above except A	111	88.8
18	Parental transmission of HCV Infection through –	a) Contaminated blood and blood product b) Contaminated needle and sharp c) Sharing infection with drug users d) All of the above	122	97.6
19	Vertical transmission of HCV infection	a) Baby birth from HCV infected mother b) Breast feeding from HCV infected mother	116	92.8
20	Can a person catch hepatitis C from sexual transmission if yes how much is the percentage –	a) 1% b) 3% c) 1.2 % d) 0.3%	67	53.6
21	Hepatitis C virus can be transmitted through-	a) Coughing and sneezing b) Vector c) Faeco-oral transmission d) Transplant from infected donor	119	95.2

22	Hepatitis C screening should be done for –	a) Blood donor b) Pregnant women c) Pre surgery patients d) All the above	125	100
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Table 3:- Questions regarding transmission of Hepatitis C virus

S.no	Question	Response	Correct Response	Percentage
23	The standard HCV Antibodies detection test for screening HCV _____.	<u>ELISA</u>	62	52.8
24	Gold standard detection test for confirmation of active HCV infection _____.	<u>RT-PCR</u> .	60	48
25	Patient with serological confirmation chronic hepatitis C having circulating _____.	<u>LKM1 auto antibody</u> .	30	24

Table 4:- Question regarding laboratory diagnosis

S.no	Question	Response	Correct Response	Percentage
26	Can Hepatitis C is prevented by proper disposal of sharp wastes –	a) Yes b) No	125	100%
27	Hepatitis C patient can be treated with –	a) Antiviral drugs b) Antibiotics c) Interferon's	82	65.6
28	Is vaccine available for hepatitis C	a) Yes b) I don't know c) No	102	81.6
29	Which of the following disinfectant can kill Hepatitis C	a) Phenol b) Bleach c) Detergent d) HCHO	49	39.2
30	According to CDC which HCV infected persons should be treated for HCV-	A) Only those with advanced fibrosis e.g. (stages 3-4). B) Only those with minimal to moderate fibrosis e.g. (stages 0-2). C) Everyone who is HCV antibody positive regardless of the degree of fibrosis. D) Everyone who has a detectable HCV viral load except those have short life expectancy.	63	50.4

Table 5:- Question about prevention and treatment of hepatitis C

### III. RESULTS

A total of 150 questionnaire were distributed out of which 125 were received back. The 125 respondents comprised of 95 MBBS final year students (76%) 30 interns and PG student (25%)

Table 1 – shows hepatitis C – related characteristic of students participating in this study. Total 64% of the students were screened for hepatitis C and were negative. 8% did not know if they were screened. Whereas needle stick injury was positive in 8% students and none had reported family history of hepatitis C.

The responses of students regarding knowledge of hepatitis C virus is shown in Table-2. Generally, responses of students regarding knowledge-based questions were satisfactory. But only 38.4% respondents (n=48) were aware that risk of hepatitis C infection after needle stick injury is 1.8% and 49.6%. Students (n=62) knew that hepatitis C can survive inside the syringe for many days. Whereas only 36% respondents (n=45) were aware that hepatitis C can survive outside the body in open air for 4 days. But overall score of knowledge-based questions was good.

The responses of students regarding the efficacy of HCV transmission is shown Table -3. Knowledge of transmission of hepatitis C virus was very good. 100% participant were aware that HCV is transmitted through infected blood donors. 88.8% respondents were aware that it can transmit through contaminated needles, dentistry tools, sharing infected razors, tattooing, piercing nose/ear with infected articles. About 97% were aware of vertical transmission of HCV infection from infected mother to baby. Whereas 53.6% respondents were aware that 0.3% person can catch hepatitis C from sexual transmission. 100% students were aware about hepatitis screening should be done for blood donors, pregnant woman and pre-surgical patients.

Table-4 showed knowledge of students regarding laboratory diagnosis was poor. Only 24% respondents were aware that HCV patients with serological confirmations, chronic hepatitis C having circulating LKM1 autoantibodies. Although 52.8% and 48% respondents answered correctly that ELISA and RT-PCR are the screening and gold standard test for HCV respectively.

Table-5 showed responses of students regarding prevention and treatment of Hepatitis C. 100% were aware that Hepatitis C can be prevented by proper disposal of sharp waste but only 39.2% had answered correctly that disinfectant bleach can kill hepatitis C virus. 81.6% respondents knew there is no vaccine for HCV. Whereas 50.4% aware that according to CDC, everyone who has a detectable HCV viral load should be treated except those who have short life expectancy.

#### IV. DISCUSSION

The current study was conducted among medical students who are expected to have adequate background knowledge and a cautious attitude toward such contagious disease as hepatitis C. Mostly knowledge-based questions and regarding the mode of transmission had shown very encouraging results. Regarding the mode of HCV transmission, our study has shown that the level of awareness among all the participants was very good. These findings are similar to findings reported by the study in the University of LOME students [11] and also in medical college. Bitola [10] and University of Dammam have also shown high level of awareness of HCV transmission [12]. The students in this study have not shown good results on the laboratory diagnosis of hepatitis C infection. Similar

findings have been reported by medical student in Guilan University, Iran. [9]

Whereas our study had reported good knowledge of prevention and treatment of HCV which is better than Guilan University medical students [9] and students of Dammam University [12]. In the present study, overall score of knowledge-based questions, transmission prevention and treatment were significantly high.

#### V. CONCLUSION

Although the level of knowledge of hepatitis C virus was good, but unfortunately there was a poor knowledge about laboratory diagnosis. Since various aspects have been covered in pre-clinical subjects, hence, were expected to be better. Since respondents are supposed to have first exposure to patients which means, these students should be mindful of protecting themselves and others. In addition, since hepatitis C infection has no post-exposure prophylaxis. Prevention of infection is the only option and is of paramount importance.

#### RECOMMENDATION

There should be pre-clinical practical course to raise awareness and improve the attitude of 4<sup>th</sup> year medical students to blood borne infections in general and Hepatitis C in particular before there is any clinical exposure.

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