



Original Research Article

Awareness of Hepatitis B infection among second year medical students and their vaccination status

Mita D Wadekar¹, Sathish J V^{1,*}, Vamsi Muni Krishna¹¹Dept. of Microbiology, Chamarajanagar Institute of Medical Sciences, Chamarajanagar, Karnataka, India

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ABSTRACT

Introduction: Hepatitis B Virus (HBV) is a life-threatening infection and also one among the occupational hazard for health care personnels. Medical students represent high risk groups for HBV infection. This study aims to assess the awareness of hepatitis B infection among second year medical students and their vaccination status.

Materials and Methods: A cross-sectional study was conducted among 136 second year medical students. A questionnaire was used for data collection. The questionnaire included 12 questions about routes and modes of transmission, symptoms, sequelae, treatment and prevention of HBV. The students were also asked about their vaccination status and the reasons for not getting vaccinated.

Results: All 136 (100%) students had knowledge regarding the causative agent and organ involvement. 128(94.1%) and 125(91.9%) students were aware of modes of transmission and symptoms respectively. 117(86%) knew about carrier state. 132(97%) students considered hepatitis B to be preventable and 116(85.3%) were aware of inclusion of hepatitis B vaccine in national immunization schedule. 106(77.9%) students knew about HBsAg as screening marker and only 68(50%) students had awareness regarding antiviral therapy as treatment method. 125(92%) were aware about route of administration of vaccine. 133(97.8%) were vaccinated, 2(1.5 %) students were incompletely vaccinated and 01(0.7%) was not vaccinated.

Conclusion: Overall awareness regarding hepatitis B is relatively good with high vaccination rate of 97.8%. It is recommended to vaccinate all non vaccinated students and measures need to be taken to create complete awareness.

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1. Introduction

Viral hepatitis refers to the inflammation of the liver caused by hepatitis viruses which are heterogeneous group of viruses that belong to different families and are hepatotropic. Hepatitis viruses consists of types A, B, C, D, E, G. Many other viruses such as yellow fever virus, cytomegalovirus can cause sporadic hepatitis.¹ Hepatitis B is an acute systemic infection with major pathology in the liver, caused by Hepatitis B virus (HBV) and transmitted by multiple routes with parenteral route being most common in developing countries.² It commonly produces an acute self-limiting infection, which may be either subclinical or

symptomatic. Persistent HBV infection may cause hepatic complications like chronic hepatitis, fulminant hepatitis, cirrhosis of liver and hepatocellular carcinoma.³ HBV infection is one of the major health concerns worldwide with a global incidence of approximately 4.5 million cases per annum and a highly lethal disease causing approximately 620,000 deaths per annum globally due to chronic hepatitis, cirrhosis, and hepatocellular carcinoma.⁴

Parenteral drug abusers, multiple transfusions, hemodialysis, tattooing and multiple sexual partners have been identified as common modes of HBV transmission in the developed world. Blood, semen, saliva and vaginal secretions transmit the disease. In health-care settings, un-sterilized needles and syringes are the most common

* Corresponding author.

E-mail address: javagalsathish37@gmail.com (Sathish J V).

factors for HBV transmission. In low socio-economic settings, horizontal transmissions of HBV through contact with infected family member have also been reported.⁵ Hepatitis B infection are common due to lapse in the sterilization technique of instruments or due to the improper hospital waste management as 10% to 20% health care waste is regarded hazardous and it may create variety of health risk.⁶ In fact HBV infection is more infectious as compared to HIV infection. Transmission rate after percutaneous exposure to blood is much higher (about 50%) than that of Human immunodeficiency virus (HIV).⁷ India has intermediate endemicity of Hepatitis B, an estimate of 2-5% general population is chronically infected with hepatitis B.⁸

HBV is preventable with a safe and effective vaccine, the first vaccine against cancer due to HBV infection.⁹ HBV vaccines has been available since 1982. World Health Organization implementations of mass immunization programs has dramatically decreased the incidence of HBV infection and liver cancer.¹⁰ HBV infection has been recognized as an important occupational hazard for health care workers.¹¹ Prevention against any disease is proportional to knowledge, attitude and practice (KAP) of the population. Health care workers should familiarize themselves with “universal precautions”, which is defined by Center for Disease Control, as a set of precautions designed to prevent transmission of HIV, HBV, and other blood-borne pathogens.¹² Knowledge regarding the HBV and safety precautions is needed to minimize the health care associated infections among health personnel.¹³ Hence the present study is conducted to assess the awareness of hepatitis B infection among second year medical students and to know their vaccination status.

2. Materials and Methods

A cross-sectional study was conducted among 136 second year medical students of Chamarajanagar Institute of Medical Sciences, Chamarajanagar. First year, final year medical students and those who did not give consent to participate in the study were excluded from the study. A questionnaire was used for data collection. The questionnaire included 12 questions about routes and modes of transmission, symptoms, sequelae, treatment and prevention of HBV. The students were also asked about their vaccination status and the reasons for not getting vaccinated.

2.1. Statistical analysis

Analysis was done using MS Excel. The collected data were entered in MS excel sheet and were expressed in percentages.

2.2. Ethical considerations

Ethical clearance was obtained from the Institutional Ethical clearance committee of Chamarajanagar Institute of medical sciences, Chamarajanagar.

3. Results

All 136(100%) students had knowledge regarding the causative agent and organ involvement. 128(94.1%) and 125(91.9%) students were aware of modes of transmission and symptoms respectively. 3(2.2 %) and 5(3.7%) students considered sexual intercourse and transfusion of contaminated blood as the only mode of transmission respectively and 10(7.4%) thought jaundice as the only symptom. 117(86%) knew about carrier state. 132(97%) students considered hepatitis B to be preventable and 116(85.3%) were aware of inclusion of hepatitis B vaccine in national immunization schedule. Most students 125(92%) were aware about route of administration of vaccine as intramuscular and 11(8%) considered either oral, intradermal or subcutaneous route. 106(77.9%) students knew about HBsAg as screening marker and only 68(50%) students had awareness regarding antiviral therapy as treatment method. Other 68(50%) students considered vaccination and immunotherapy as treatment. 133(97.8%) were vaccinated, 2(1.5%) students were incompletely vaccinated and 01(0.7%) was not vaccinated with reason being never thought of vaccination.

4. Discussion

Hepatitis B virus infection occurs worldwide and is an important occupational risk for health care workers. Since the introduction of hepatitis B vaccination in our national immunization schedule, the incidence of the disease has decreased much. But to bring it down further health care workers should have knowledge about its transmission, prevention and vaccination.¹⁴ Medical students have an important role in creating awareness and improve skills to prevent infectious, occupational risk due to HBV.^{15,16}

Our study showed, students had good knowledge regarding the causative agent and organ involvement. Knowledge regarding HBV transmission is essential to take proper protection during their clinical posting as HBV is more infectious than HIV.¹⁷ 94.1% students were aware of transmission of hepatitis B and 5.9% considered sexual intercourse and transfusion of contaminated blood as the only mode of transmission. Study done by Paul P et al.¹⁸ showed awareness through sexual route at 65.5%, by contaminated needles and syringes at 71.7%, by blood transfusions at 81.8% and vertical transmission at 55.9%. In our study, 86% students knew about carrier state and in study done by Georgia Gioula et al.¹⁹ only 47% were aware of carrier state. The knowledge about prevention was good and the students also knew about availability of vaccines,

Table 1: Awareness of Hepatitis B infection

Awareness of Hepatitis B infection	No.	%
Causative agent		
1. Virus	136	100
2. Bacteria	-	-
3. Protozoa	-	-
Mode of transmission		
1. Sexual intercourse	3	2.2
2. Transfusion of contaminated blood	5	3.7
3. Vertically from mother to child	-	-
4. All of the above	128	94.1
Symptoms		
1. Loss of appetite	1	0.7
2. Vomiting	-	-
3. Jaundice	10	7.4
4. All of the above	125	91.9
Causes liver disease?		
1. Yes	136	100
2. No	-	-
Carrier state		
1. Yes	117	86
2. No	19	14
Screening for hepatitis B infection		
1. HBsAg	106	77.9
2. Anti- HBc	11	8.1
3. Anti- HBe	14	10.3
4. HBeAg	5	3.7
Included in National immunization schedule?		
1. Yes	116	85.3
2. No	20	14.7
Route of administration of vaccine		
1. Oral	1	0.7
2. Intramuscular	125	92
3. Intradermal	9	6.6
4. Subcutaneous	1	0.7
Treatment		
1. Antiviral therapy	68	50
2. Immunotherapy	19	14
3. Vaccination	49	36
Preventable?		
1. Yes	132	97
2. No	4	3
Received hepatitis B vaccine?		
1. Yes (complete)	133	97.8
2. Yes (incomplete)	2	1.5
3. No	1	0.7
Reason behind not being vaccinated		
1. Lack of motivation	-	-
2. Fear of injection	-	-
3. Vaccine unavailable	-	-
4. Never thought of vaccination	1	0.7

its inclusion in national immunization schedule and route of vaccine administration. Sujatha P et al.²⁰ study showed 88% awareness of prevention by vaccine.

Two decades ago, to overcome the prevalence and burden of hepatitis, vaccination program was initiated and since then it is available all over the country.²¹ Our study showed very high vaccination status of 97.8%, 1.5% students were incompletely vaccinated and 0.7% non-vaccinated. Study by Singh et al.²² among medical students showed vaccine status of 80%. Regardless of the duration of HBV vaccine protection, medical students should continue to be vigilant in their protection against HBV by refreshing their knowledge with the multi-dose requirements for full HBV protection because they remain a high-risk population.²³ There fore, to achieve ultimate goal, it is recommended to apply more studies and surveillance for all future medical students and health care workers to ensure their protection against HBV infection. Besides, health promotion and awareness about the importance of vaccination, is to be more developed.²⁴

5. Conclusion

Medical students are at high risk of acquiring the hepatitis B infection. Health professionals are exposed to this danger while handling the patients, during investigations procedures in ward, during surgery etc. Overall awareness regarding hepatitis B is relatively good with high vaccination rate of 97.8%. It is recommended to vaccinate all non vaccinated students and measures need to be taken to create complete awareness.

6. Source of Funding

None.

7. Conflict of Interest

None.

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Author biography

Mita D Wadekar Assistant Professor

Sathish J V Professor and Head

Vamsi Muni Krishna Tutor

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