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Original Research Article

Knowledge about Hepatitis B and Vaccination Status among Healthcare Workers in a Tertiary Care Teaching Hospital, Mysuru

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ABSTRACT

Background: Hepatitis B is a major infectious disease of mankind. It is the most common cause of chronic hepatitis, liver cirrhosis and hepato-cellular carcinoma worldwide. Health professionals are at the most risk. Vaccination against Hepatitis B can prevent this deadly disease.
Objectives: This study was conducted to assess the knowledge and status of Hepatitis B vaccination among technicians, nurses and group D workers.
Materials and Methods: A cross-sectional study was conducted among 150 members and the data was analyzed by cross tabulation and Chi square tests.
Results: The Knowledge regarding hepatitis b among group D workers was found to be low with a mean score of 2.66. The attitude and practices to prevent transmission of Hepatitis B infection was low among group D workers when compared to nurses and technicians in the hospital.
Conclusions: The, Knowledge, Practices and vaccination status among group D workers was poor when compared to technicians and nurses. A considerable amount of improvement in practice is required among health care workers to prevent hepatitis B infection.

Keywords: Hepatitis B, Healthcare workers, Awareness, Vaccination.

INTRODUCTION

Hepatitis B is a potentially life-threatening liver infection caused by Hepatitis B virus. It can cause chronic infection and puts people at high risk of death from cirrhosis and liver cancer. [1] Hepatitis B is a very important public health problem affecting almost 10% of the world population. [2] An estimated 240 million people are chronically infected with Hepatitis B (defined as Hepatitis B surface antigen positive for at least 6 months). [1] The number of HBsAg carriers in India has been estimated to be over 40 million. Estimates indicate that annually over 100,000 Indians die due to illness related with HBV infection. [3] Majority of infections are sub-clinical, so that 80% of all infections are undiagnosed. It has been demonstrated that patient medical histories are unreliable in identifying exposure to Hepatitis B Viral infection (HBV). So regardless of the medical history, all patients should therefore be regarded as potential carrier. [1]

Transmission of HBV occurs through percutaneous or permucosal exposure to infective body fluids. In addition to sexual contact and drug injection, nosocomial transmission is also a possibility. [4] Blood and blood products are the most common vehicle of transmission in health care settings. [5] With the increasing number of invasive diagnostic and therapeutic procedures, there is an increasing risk of Hepatitis B viral infection

to the auxiliary health care workers (AHCWs). [6]

Treatment

There is no specific treatment for acute hepatitis B. Therefore, care is aimed at maintaining comfort and adequate nutritional balance, including replacement of fluids lost from vomiting and diarrhea. Chronic hepatitis B infection can be treated with drugs, including oral antiviral agents. Treatment can slow the progression of cirrhosis, reduce incidence of liver cancer and improve long term survival. WHO recommends the use of oral treatments - Tenofovir or Entecavir, because these are the most potent drugs to suppress hepatitis B virus. [1]

A safe and effective vaccine against HBV:

The following vaccination schedule is recommended by WHO to prevent Hepatitis B infection:

1. A 3-dose schedule of hepatitis B vaccine, with the first dose (monovalent) being given at birth and the second and third (monovalent or combined vaccine) given at the same time as the first and third doses of diphtheria, pertussis (whooping cough), and tetanus – (DTP) vaccine; or
2. Four doses, where a monovalent birth dose is followed by 3 monovalent or combined vaccine doses, usually given with other routine infant vaccines. [1]

A small percentage of patients actually know about the transmission of Hepatitis B; this lack of knowledge about HB transmission can be attributed to a rise in the frequency of Hepatitis B.

Patients in the current study also showed poor practice towards Hepatitis B. Only a small number of patients appeared for Hepatitis B screening before they were diagnosed with infection. The majority of the patients were not concerned about the safety measures which exposed them to the danger of spreading Hepatitis B infection within their social circle. [7]

Doctors were the most vaccinated 73% and the least vaccinated were the paramedics like nurses, dental assistants and laboratory technicians14%. [8]

Aim of the Study: The main aim of the study is to assess health care professionals Knowledge, Attitude and evaluate their Practice regarding infection control standard precautions to prevent hepatitis B infection.

Objectives of the Study:

1. To assess the knowledge about Hepatitis B Infection among technicians, nurses and group D workers
2. To evaluate the attitude of health care professionals about Hepatitis B infections
3. To study the infection control practices in a tertiary care teaching hospital to prevent Hepatitis B infection.
4. To know the vaccination status among health care professionals to prevent Hepatitis B infection.

MATERIALS AND METHODS

A cross-sectional survey was carried out at tertiary care teaching hospital, Mysuru city among 150 auxiliary healthcare workers which comprised of laboratory technicians, nurses and the housekeeping staff. After obtaining ethical clearance and written consent, they were counseled and explained about the objective of the study and were requested to answer a structured questionnaire consisting of 20 multiple choice closed ended questions. The data was compiled and subjected to statistical analysis.

Statistical analysis: Data were entered into MS excel sheet and then into SPSS software version 22 and analyzed by descriptive statistics. Cross tabulation and Chi square tests were conducted for analysis.

RESULTS

All the 150 participants responded to the study. Among the 150 participants in the study, 45 participants were nurses, 55 participants were technicians and 50 participants were Group D workers. The following was the results observed:

Knowledge

The study revealed that the nurses had good Knowledge about Hepatitis B when compared to the technicians and group D workers. The mean knowledge score among nurses was 12.44, among technicians it was 11.49 and among group D workers it was 2.66 which is of significant importance for the management.

Attitude

The Attitude regarding transmission and safe practices to prevent Hepatitis B among nurses was found to be good but the attitude among group D workers was found to be significantly low when compared to other groups.

Practice

The Practice among group D workers is poor compared to technicians and nurses. A considerable amount of improvement in practice is required among health care workers to prevent hepatitis B infection.

The questions on the awareness and occupational risk perception of HBV infection and the percentage of correct responses are enlisted in [Table 1] and [Table 2], respectively.

Table 1: Percentage of healthcare workers who gave correct responses to the questions regarding awareness and vaccination status on Hepatitis B

Question	Technicians	Nurses	Group D workers	Chi square score	P-Value
Do you know how hepatitis B is transmitted?	45 (39.8)	55 (48.7)	13 (11.5)	98.23	.001
Is hepatitis B transmitted from mother to child at birth?	45(45.0%)	55(55.0%)	0	174.525	.001
Is it transmitted by touching a person with hepatitis B?	9(69.2%)	4(30.8%)	0	179.318	0.001
Is it transmitted by sharing utensils, foods ?	13(81.3%)	3(18.8%)	0	26.232	0.001
Is it transmitted by eating food prepared by a person with hepatitis B?	10(55.6%)	1(5.6%)	7(38.9%)	35.078	0.001
Is it transmitted by sharing toothbrushes or razor blades?	45(38.5%)	55(47.0%)	17(14.5%)	84.615	0.001
Is it transmitted by sharing injecting needles, e.g. needles used in acupuncture, tattooing, body piercing or drug use?	45(38.5%)	55(47%)	17(14.5%)	81.735	0.001
Is hepatitis B transmitted by having unprotected sex with a person?	36(43.4%)	47(56.6%)	0	150.783	0.001
Can Hepatitis B cause liver damage, liver cancer?	41(42.7%)	55(57.3%)	0	181.703	0.001
Can People with hepatitis B be infected for life?	29(34.5%)	55(65.5%)	0	184.921	0.001
Do most people infected with hepatitis B have symptoms?	22(48.9%)	9(16.4%)	0	168.361	0.001
Are there effective treatments for hepatitis B?	14(31.1%)	28(50.9%)	0	155.974	0.001
Can Hepatitis B be cured?	10(22.2%)	16(29.1%)	0	150.910	0.001
Do people with hepatitis B need regular check-up?	33(3808%)	52(61.2%)	0	184.395	0.001
Does washing hands before eating prevent getting hepatitis B?	27(25.7%)	55(52.4%)	23(21.9%)	66.315	0.001
Is there a vaccination to prevent hepatitis B?	39(41.5%)	55(58.5%)	0	184.365	0.001
Are you vaccinated for Hepatitis?	35(41.7%)	49(58.3%)	0	109.322	0.001
Do you treat hepatitis B positive cases equally as other cases?	8	0	0	187.382	0.001
Do you use additional infection control practices when treating Hepatitis B positive cases?	32(40.5%)	47(59.5%)	0	154.604	0.001
Is the possibility of acquiring Hepatitis B infection high?	34(38.2%)	55(61.8%)	0	192.377	.001
Should all the patients who receive healthcare be tested for Hepatitis B?	28(33.7%)	55(66.3%)	0	162.011	0.001

Descriptive Statistics						
	N	**Range**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Knowledge-Score	150	12	2	14	8.89	4.589
Attitude-Score	150	4	0	4	2.29	1.785
Practice-Score	150	4	0	4	1.90	1.365
Valid N (list wise)	150					

Table 2: Table representing the mean knowledge, attitude and practice scores among various healthcare workers about Hepatitis B

Category		**Mean**	**Std. Deviation**	**P**
Knowledge-Score	Technician	11.49	1.392	0.001
	Nurses	12.44	.977	
	Group D	2.66	1.154	
Attitude-Score	Technician	2.91	1.104	0.001
	Nurses	3.85	.356	
	Group D	.00	.000	
Practice-Score	Technician	2.73	.809	0.001
	Nurses	2.75	.726	
	Group D	.22	.418	

DISCUSSION

The mean Knowledge scores of healthcare workers were good but their attitude towards the mode of transmission and prevention of hepatitis is significantly poor. The practice among nurses and technicians was good but group D workers needed more awareness on the precautions required to prevent the disease. The knowledge about transmission of hepatitis B infection among group D workers was low and is of significant importance for the management. The group D workers had poor knowledge about being infected for lifetime by hepatitis B when compared to other groups in the study. The Knowledge about availability of effective treatment to cure hepatitis B is good among nurses and low among group D workers.

The Attitude among technicians (62%) and group D workers (100%) on periodic check up for Hepatitis B carrier is low. The use of infection control practices among technicians (71%) and nurses (85%) is good but among group D workers it is of significant value. The attitude for frequent tests to identify the carrier state was good among nurses and is of significant value among technicians and group D workers.

In our study, 56% of healthcare workers had received Hepatitis B vaccination, among them group D workers required more awareness regarding the availability of vaccination to prevent the disease.

Only 28% believed that this infection is self limiting, 65% believed that all healthcare workers are at risk and 89% believed that vaccination provides protection. Majority (82%) responded that scalpel and blade injuries are as serious as needle stick injuries in transmitting infection. About 97% agreed that education can reduce the incidence of needle stick injuries. It is encouraging to note that the overall knowledge regarding HBV transmission was adequate but on the contrary only around half of the participants were found vaccinated. Many healthcare workers had attended sessions on HBV awareness in the past but due to non-availability of funds they could not complete immunization course. [9]

Coverage of HB vaccination had a statistically significant difference among different specialties (P=.025); it was highest among dentists and lowest in par clinicians. [10]

The findings of previous study conducted by, Yonatan et al concludes that there is poor knowledge among the medical and health science students entering into the profession practice about the hazards of Hepatitis B, its mode of transmission and prevention. Moreover, majority (95.3%) the students were not fully vaccinated against Hepatitis B and 48.4% of the students were no aware about the availability of post exposure prophylaxis for HB, which made them more vulnerable to the disease in their professional life. [11]

RECOMMENDATIONS BASED ON THE STUDY:

As per CDC (Center for disease control, Atlanta) definition healthcare workers fall in the high risk group for contracting hepatitis B infection at any time of their professional career. The findings of this study indicate that healthcare workers lacked an understanding of infection control and management.

Healthcare workers need more awareness about the knowledge of transmission of Hepatitis B. They should be encouraged to use precautionary measures to prevent Hepatitis B Infection. All the healthcare workers should be educated to take the immunization as prescribed by the WHO as a preventive measure. The management should make it mandatory for all healthcare professionals to get immunized before they are employed. Periodic screening should be conducted by management to create awareness and prevent Hepatitis b infection among healthcare workers. There is a need for well planned and clear policies for Hepatitis B virus screening, vaccination, and serological response checkups for all healthcare workers. Continuous education, awareness

and safe practices can help to prevent Hepatitis B infection.

CONCLUSION

Hepatitis B is the most common blood borne viral infection which places healthcare professional at higher occupational risk. High prevalence of HBV in India substantially increases the risk of exposure to the virus. The present study revealed that 82% technicians, 89% nurses and 19% group D workers had shown their level of knowledge regarding hepatitis-B, and 77% of technicians, 89% nurses are fully immunized for the same, however 23% technicians, 11% nurses and 100% group D workers were not immunized which is matter of concern. Appropriate knowledge should be provided to the medical and other health care professional students regarding HBV in the curriculum. As the risk of contracting and transmitting Hepatitis b is higher in a healthcare setup, stringent screening measure and periodic awareness programme and training of healthcare workers along with mandatory vaccination may help check the spread of disease to a large extent.

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