

Study of Knowledge, Awareness and Practices of Hepatitis A and B Vaccination among the Medical Students of Chittagong Medical College, Bangladesh

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ABSTRACT

Background and aim: To find the degree of knowledge and awareness about hepatitis A virus (HAV) and hepatitis B virus (HBV). We also evaluated practices of vaccination among the medical students of Chittagong Medical College, Chittagong, Bangladesh.

Materials and methods: A total of 125 students of Chittagong Medical College, 25 each from first year to 5th year were selected by stratified and simple random sampling. Information about knowledge, awareness and practices of hepatitis A and B vaccination was collected by self-administered questionnaire along with direct observation of the respondents.

Results: About 6.4% and 87% of the students were aware for vaccination against hepatitis A and hepatitis B respectively. None of the students had taken vaccine against hepatitis A whereas two-thirds of the students had been vaccinated for hepatitis B.

Discussion and conclusion: Almost all students were unaware of vaccine against hepatitis A. In contrast, most of the students were aware about vaccine against hepatitis B. Despite the fact that vaccination program being priority National Public Health Program, vaccination procedures had not been implemented well in reality. Awareness of hepatitis A on preventive activities, such as increased utilization of safe water and handwashing practices should be strengthened.

Abbreviations: HAV—Hepatitis A virus; HBV—Hepatitis B virus; HCW—Health care worker; EPI—Extended program on immunization.

Keywords: Knowledge, Awareness, Practice, Hepatitis A, Hepatitis B, Vaccination, Bangladesh.

INTRODUCTION

Vaccine prevents transmission of hepatitis A virus (HAV) and hepatitis B virus (HBV).^{1,2} Risk of transmission of HBV, for which blood borne infection is a major route, is higher among the health care workers.² However, vaccination awareness has been found to be poor among the health care workers (HCW), both in developed and developing countries.³ Very few literatures have been found regarding studies on knowledge, awareness and practices of vaccination against both HAV and HBV, especially among the HCW in the Indian subcontinent.

At present, in Bangladesh, hepatitis B vaccination has been integrated into the existing expanded program of immunization (EPI) schedule. It was under trial in 25 districts and five city corporations in Bangladesh till 2004,⁴ but has been incorporated in the national immunization program throughout Bangladesh from the year 2005.⁵ Very few studies have been done in Bangladesh, in order to determine the awareness, prevention strategies and prevalence of HAV and HBV infection.⁶ Henceforth, there

is a strong need of studies for determining the level of knowledge, awareness and areas of prevention in order to reduce the prevalence.

As vaccine is the best way to prevent the incidence of hepatitis viruses, we have assessed the knowledge of the awareness of vaccination among the students, for both HAV and HBV. We also tried to develop insights about outcome of nonvaccination among medical students.

MATERIALS AND METHODS

Main aim of the study was to identify the knowledge about awareness and practices of hepatitis A and B vaccination among the medical students of Bangladesh.

Study was conducted among the medical students of Chittagong Medical College after getting permission from the Department of Community Medicine, Chittagong Medical College, Chittagong, Bangladesh. All relevant information necessary for the study was noted down and questionnaire was prepared.

Study population involved 750 students of Chittagong Medical College. Stratified sampling was done and sample of 125 students was taken with 25 each from each year. Systematic sampling was done with every 10th student from each year taken as a sample by a draw. Period of study was from December 2004 to April 2005. All the participating students were assured of confidentiality. Study was conducted by questionnaire and direct observation of the cases. Data was then checked, verified and analyzed using Microsoft Excel. General analysis was done to identify the sociodemographic factors, place of stay and place of taking meal, source of water, purification techniques. Specific analysis was done for identifying the degree of knowledge about vaccination practices and management of accidental cuts or injuries during work.

RESULTS

Demographic Profile

In the study, 51.2% (64) of the students were male and 48.8% (61) of were female. Majority of the medical students 62% were from hostel whereas 32% were commuting from their houses.

Awareness on Vaccination

More than 85% were aware about vaccination against HBV, however, only 6.4% were informed about vaccines against HAV.

Hepatitis A is a water borne disease that can be controlled by preventive measures, including safe, purified drinking water and proper hygiene. All of these have not been maintained by the medical students. Most of them take the government supplied drinking water and many of them do not purify it (Table 1). Significant numbers of them take

food from the hostel mess which is not considered hygienic (Table 1).

Vaccination Status

Nobody took vaccine against HAV, whereas 65.6% took vaccine against HBV. Although nearly two-thirds of the students had vaccinated against HBV, only 7.2% had completed the full course of the vaccine, including the booster dose, whereas 44% had taken up to the 3rd doses; 34.4% did not take any doses of the vaccine.

Among the vaccinated students, 23.2% took their first dose of vaccine before admission into the medical college. This shows increasing awareness among the high school graduates against HBV and vaccination. Among the vaccinated students, 2.4% suffered from adverse effects after vaccination. They further said they continued vaccination even after occurrence of adverse effects.

DISCUSSION

Awareness on HAV vaccination in our study is very low. Most of the students in this study had limitation about maintaining proper hygiene, proper purification of drinking water and other practices regarding prevention of HAV. None of the students were vaccinated against HAV. In our study, most of the students are aware against HBV. Nearly two-thirds of them have taken vaccine too.

Our results are consistent to the findings of similar studies done among the HCW in a tertiary health care center in India.³ This study has shown increased awareness about vaccination that has been reported from Alexandria, Egypt.⁷

Different studies have shown that high cost of vaccination and lack of easy access for it are two of the leading causes behind poor vaccination status despite of pretty fair knowledge about the disease and vaccine.^{3-5,7} In our study too, high cost of vaccine and lack of easy access to it are the leading reasons behind poor vaccination against both HAV and HBV (Table 2).

Thomson, in a study among child care workers in Victoria, found only 11% of the child care workers vaccinated against HAV, even though majority of them believed that their occupation placed them at an increased risk for HAV transmission.⁸ In a recent study in India, incidence of HBV among hospital staff has been found to be higher (10.87%) than in the general people. It has also shown that HBV infection among the surgeons is 50% more than that of general people and twice more than other physicians. Nearly 1% of HCW in India has chronic HBV infection but they are unaware of it.³ Similarly, 30% of the Chinese HCW did not have knowledge that vaccination and avoiding needle reuse are the two potent means for prevention of HBV.⁹

Table 1: Practices for prevention of hepatitis A vaccination

Traits	No	Percentage
Source of drinking water		
Government supply	89	71.2
Underground water	23	18.4
Tubewell	9	7.2
Surface water	4	3.2
Purification of drinking water		
Boiling	61	49.8
Filter	9	7.2
Chlorine tablet	6	4.8
Do not purify	47	37.6
Place of taking food		
Home	39	31.2
Hotel	4	3.2
Hostel mess	55	44.0

Table 2: Reasons for not taking vaccine

Traits	Hepatitis A vaccination		Hepatitis B vaccination	
	No	Percentage*	No	Percentage*
Ignorance	25	20.0	02	26.5
Did not know	58	46.4	14	32.5
Expensive	33	26.4	0	0.0
Lack of easy access	05	4.0	05	11.6
Fear of adverse effects	02	1.6	03	6.9
Others	02	1.6	01	2.5

* As percentage of unvaccinated respondents

In a study in Nepal, 4% HCW were found to be unaware of the fact that HBV can be transmitted respectively by needle stick injuries. Only 60% of the HCW were vaccinated for HBV although 74% had needle stick injury. In India, 28% of HCW are not vaccinated for HBV, 5.7% of them being doctors themselves.³

HAV is water borne disease transmitted feco-orally via contaminated water and food. As most of the students take food from the hostel mess, proper hygiene should be maintained in the mess.

Cooks and servers of the mess should be educated. Most of the students stay in the hostel and about one-third of them do not take boiled water for consumption; awareness should be increased about drinking boiled or purified water and purification measures should be taken.

As contaminated blood and blood products is the major source of HBV transmission, to which we are exposed in our daily life, immunization of every person, specially medical students, surgeons, physicians, hospital and laboratory staff, is mandatory to prevent the incidence of HBV.

Although majority of them were vaccinated against the HBV, none of them took vaccine against HAV. They should be encouraged to take vaccine effectively against both HAV and HBV.

The results obtained from the students not only implies to the medical students of Chittagong Medical College, but also it may represent the similar conditions among the students of other government or privately-owned medical colleges of Bangladesh and other South Asian countries.

As high cost of the vaccine (Table 2) is the major reason behind students not being vaccinated, government should take necessary steps to provide the students the vaccine at a subsidized rate.

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