

Hepatitis B vaccination coverage in medical students at a medical college of Mirpurkhas

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Abstract

Objectives: To estimate the coverage of Hepatitis B vaccine in medical students enrolled in a private Medical College.

Methods: This cross sectional study was done at Muhammad Medical College Mirpurkhas. It has a total of 375 medical students from first year to final year. All students were interviewed using a pre-structured urdu translated questionnaire to find out the vaccination status of these students and the reasons for not getting vaccinated.

Results: A total of 395 medical students were approached to participate in the study but only 375 (95%) students (M=214, F=159) gave response. Out of the total 375 students, 214 (57%) were vaccinated against Hepatitis B. Amongst this group 188 (87.8%) had completed their vaccination schedule of 03 doses and 26 (13%) were partially vaccinated. Vaccination uptake was higher (55.6%) in males as compared to females (44.3%). Reasons of not vaccination were lack of motivation (29.2%), no need felt (24.8%), (3) never thought of vaccination (21.7%), fear of injection (10.5%) and lack of belief in vaccination (8.07%). Only 130 (60.7%) students were screened before taking the vaccine. The self reported seropositivity of Hepatitis B Surface Antigen in medical students was 3.7%.

Conclusions: Despite the availability and accessibility of a cost effective Hepatitis B vaccine since mid 80's, the vaccination coverage among medical students is low. Health education needs to be improved in all medical students especially in the private sector.

Keywords: Hepatitis B vaccination, Medical students, Hepatitis B Vaccine, Cost effective (JPMA 61:680; 2011).

Introduction

Hepatitis B virus (HBV) infection is seen in all ages and all around the world with high morbidity and mortality.¹⁻³ According to global statistics over two billion cases are infected with Hepatitis B of whom 350 millions are chronic carriers.⁴ Every year more than one million of the affected individuals die because of complication such as cirrhosis and liver cancer which happens despite the availability of an effective vaccine with minimal/transient side effects.⁵ Pakistan Medical Research Council in its seroprevalence survey has shown national HBsAg prevalence as 2.5%. The gender wise distribution in Sindh province is 3.4% in males and 1.7% in females.⁶

The Health care worker and medical students are at risk of infection with Hepatitis B through occupational exposure to blood and infectious body fluids.⁵⁻⁷ Therefore it is important for Health Care Workers to be actively protected against HBV through vaccination. The introduction of hepatitis B vaccine has increased the annual budget for immunization services by approximately 56%.⁸ It is predicted that more than 4000 future deaths shall be averted annually by this intervention. In the base case scenario, the incremental costs per undiscounted deaths averted amount to US\$436, and the costs per undiscounted DALY averted amount to US\$36. Since the major impact of hepatitis B vaccination will not start to be evident for at least another 40 years (deaths from hepatitis B mainly occur between

40-60 years of age), the cost per DALY averted rises to US\$47, when using a discount rate of 3% on health effects. This sentence does not pertain to our study in adults, so may be deleted It is found that the monovalent hepatitis B vaccine is considerably more cost-effective than the hepatitis B vaccine in combination with DTP.⁹

A safe and effective vaccine against HBV is available since 20 years and is effective in preventing infection when given before or shortly after exposure.¹⁰ The currently available Hepatitis B vaccine is extremely safe.¹¹ A study from Lahore reported that 49% health care workers and 42% medical students were vaccinated against hepatitis B.¹² Internationally the vaccination coverage among medical students was 11% in South Florida¹³ and 29% in Yemen.¹⁴

This study was planned in a private sector medical college in rural Sindh to assess the status of vaccination in this group and determine the reasons of non- vaccination with the aim of improving the health status of the community.

Subjects and Methods

This cross sectional study was conducted from April to May 2009 at Muhammad Medical College Mirpurkhas. All enrolled medical students (N= 395) from first year to final were invited to participate in the study. Year wise breakup of students was 1st year n=87, 2nd year n=68, 3rd year n=71, 4th year n=76 and 5th year n=93. A pre-structured, tested and coded, questionnaire was translated in Urdu was applied to all participants. After taking the consent, the students were explained the aims of the study and each student was given the questionnaire to fill themselves. The information gathered was age, gender, year of study, screening before vaccination, history of vaccination, completion of all 3 doses and reasons for not getting vaccinated. Complete vaccination was defined as all three doses of vaccine and incompletely vaccination was less than 3 doses of vaccine.

The questions also include the history of Hepatitis B infection and C infection among the medical students. Collected data were analyzed by SPSS 16. P value of less than 0.05 was considered significant.

Ethical Considerations:

Ethical approval was taken from the academic council of the college and an informed consent was obtained from each student. Anonymity of the respondents was ensured.

Results

Out of 395 medical students, 375 (M=214, F=159) completed the questionnaire giving a response rate of 95%. Age of the participants ranged from 20-30 years. There were 214 (57%) males and 159 (42.4%) females. Out of 375 participants, 214 (57%) were vaccinated against HBV (Figure-1).

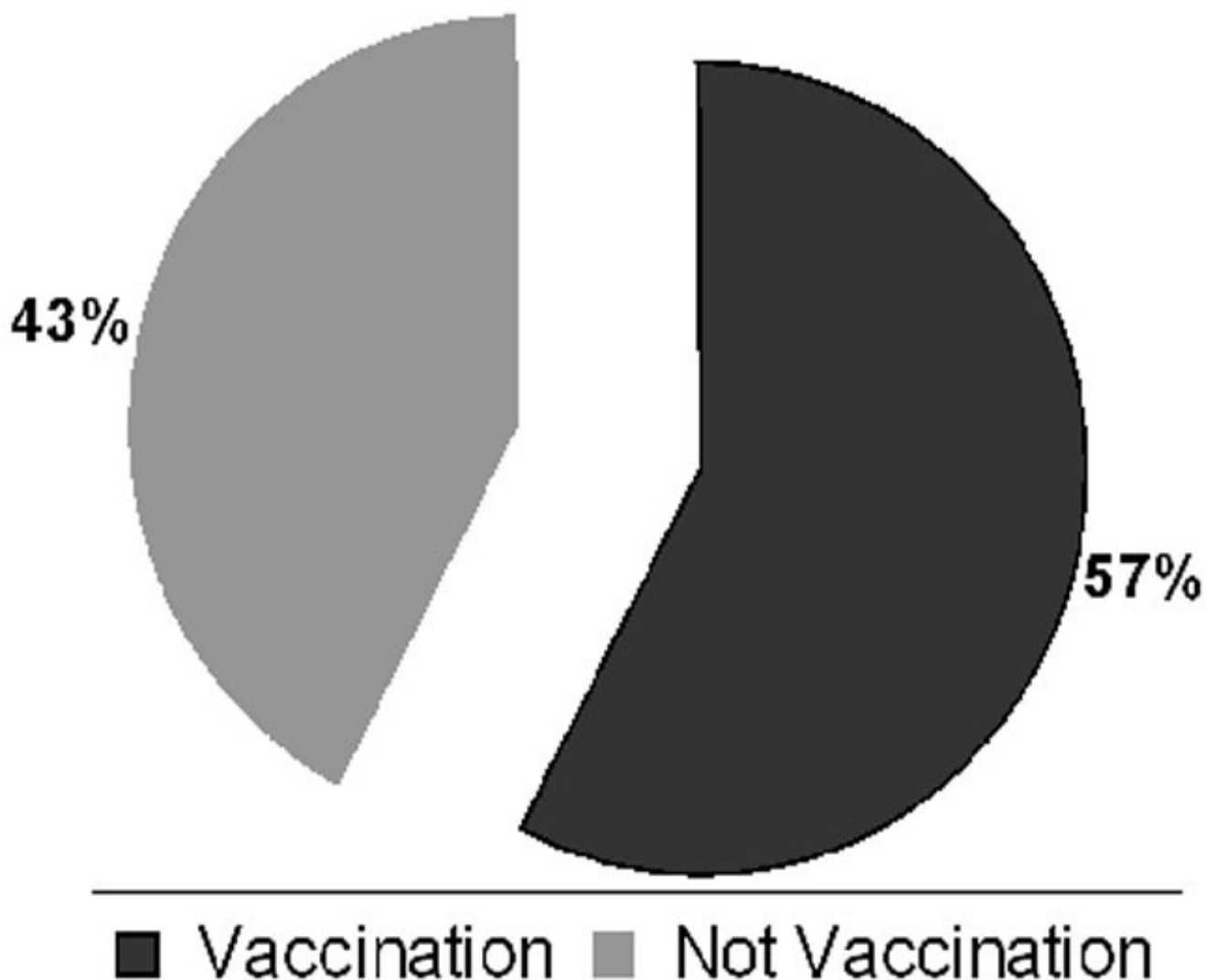


Figure 1: Status of vaccination.

In the vaccinated group, 188 (87.8%) completed all 3 doses of their vaccination schedule and remaining 26 (13%) students were incompletely vaccinated. Rate of vaccine uptake was higher in males (119 (55.6%) than in females (95 (44.3%) The proportion of complete increased from 16.3% in the first year to 17.3% in second year and remained the same in the third year and decreased in fourth year (14%) and again went up in the final year (22%) (Table-1).

Table-1: Prevalence of Complete and Incomplete HBV vaccination among Medical students.

Prof: Year	Number of students	History of Vaccination	Completed Vaccination		Not Completed Vaccination	
			Frequency	Percentage	Frequency	Percentage
First Year	77	37	35	18.8	2	7.6
2nd Year	68	43	37	19.8	6	23
3rd Year	71	40	37	19.8	3	11.5
4th Year	66	33	30	16.12	3	11.5
Final Year	93	61	47	25.26	12	46.15
Total	375	214	186	86.91	26	12.14

About 14 (3.7%) students reported as being known HBsAg positive, out of whom 08 were females. Reasons for not getting vaccinated were lack of motivation in 47 (29.19%) students, no need was felt by 40 (24.8%) students, 35 (21.7%) never thought of vaccination, 17 (10.5%) had fear of injection and

13 (8.07%) said they had no belief on vaccination (Table-2).

Table-2: Reason of No vaccination among Medical students.

Reasons	1st Year	2nd Year	3rd Year	4thYear	5th Year	Total	%age
Lack of Motivation	9	7	7	14	10	47	29.19
Never felt need	9	6	14	4	7	40	24.8
Never thought	11	5	3	9	7	35	21.7
Fear from Injection	2	3	3	6	3	17	10.5
Not belief on vaccination	5	1	6	0	1	13	8.07
Lack of awareness	3	2	0	0	4	9	5.5

Prior screening was done in 130 (60.7%) students before the vaccination. The prevalence of Hepatitis B surface antigen was 3.7%.

Discussion

Only 57% medical students were vaccinated against Hepatitis B, though these health care producers have a hugher chance of acquiring this and other infections in their professional life. The need for HBV vaccination in this group should be a priority. The 57% vaccination in our subjects is similar to a study done in North Sydney¹⁵ 56% but higher than the study done in Lahore¹² (42.2%), South London¹⁶ (33%), Sweden¹⁷ (40%), Egypt¹⁸ (16%), and Yemen¹⁴ (29.5%). The fact indicates that discrete qualitative variables affect the uptake of vaccine more than its availability.

The increase in the uptake of vaccine with the advancing age and professional years in MBBS indicate increasing awareness about the disease. Similar result were found in the nursing students of tertiary care hospital of Peshawar.¹⁹ Higher vaccination coverage in boys was seen in the present study and same was reported from India.²⁰

The prevalence of Hepatitis B surface antigen was 3.7%, which is slightly lower than reported by Mohammad et al⁹ but is higher than the national prevalence figures.

Despite the availability of HBV vaccine for more than two decades over 90% coverage has not been achieved in this group. The most frequent reason for not getting vaccinated in the present study was lack of motivation (29.2%) followed by no need felt (24.8%), or never thought of vaccination (21.7%). These are serious issues and need to be improved by educating them. Reasons for not getting vaccinated as reported by Hafiz et al were high cost (26.5%), fear of injection (24.5%) and not convinced about the efficacy of vaccine (18.4%) and afraid of side effects (12.2%). These are also baseless reasons and need to be improved by education. High cost was cited as the main reason for not getting vaccinated in some other local studies.^{11,20} This is also not a true reason as most of the students from private medical colleges can well afford Rs 1000 for complete vaccination.

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