JANUARY - MARCH 2014

MEDICAL CHANNEL

Original Article

HEPATITIS B VACCINATION STATUS AMONG THE MEDICAL STUDENTS OF SIR SYED COLLEGE OF MEDICAL SCIENCES FOR GIRLS KARACHI

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ABSTRACT

Objective: To determine the vaccination status against hepatitis B virus among the medical students of Sir Syed college of Medical Sciences for Girls, Karachi and to highlight the purpose behind vaccination.
Study Design: Descriptive and observational/cross-sectional
Place and Duration of study: This study was conducted in Sir Syed College of Medical Sciences for Girls, Karachi from October 2011 to March 2012.
Participants and Methods: A total of 250 medical students, 50 from each year were distributed questionnaires after verbal consent.
The data collected was analyzed by using SPSS version 17.0.
Results: Out of 250 students, 75.7% were vaccinated against Hepatitis B. The positive vaccination history was contributed mainly by the clinical years. Screening before vaccination was done by 46.2%, while post vaccination antibody status was determined by only a 9.2% of students. Most common reasons for getting vaccinated were risk of exposure and motivation. Whereas, lack of time and forgetting the dosage were reasons given for not getting vaccinated.
Conclusion: Health education and awareness programs on consistent basis are required to enhance the awareness about the vaccination against hepatitis B virus in medical schools.

Key words: Hepatitis B virus, Vaccination, Medical students, Chronic liver disease

INTRODUCTION:

Hepatitis B is the most common liver infection in the world and is caused by the hepatitis B virus. The hepatitis B virus enters the body and travels to the liver via the bloodstream. In the liver, the virus attaches to healthy liver cells and multiplies. This replication of the virus then triggers a response from the body's immune system. People are often unaware they have been infected with the Hepatitis B at this stage. More than 2 billion people have evidence of past or current infection with 350 million chronic carriers worldwide.[1] After infection with HBV, 10% of the patients develop chronic hepatitis and about 15-25% develop cirrhosis. Half of these individuals later develop hepatic decompensation or hepatocellular carcinoma.[2]

Pakistan is in the intermediate HBV prevalence area. The carrier rate is 3-4% for HBV infection with estimated 4.5 million carriers. However, much higher prevalence rates have been reported by some studies ranging from 16% in Lahore to 23.8% in Gujranwala.[3l] Global studies indicate that, depending on location, 10-40% of healthcare workers may show serologic evidence of past or present HBV infection.[4] The risk of acquiring HBV by healthcare personnel is four times greater than general adult population.[5,6] At least 85-

90% of HBV associated deaths can be prevented by the vaccine.[7] Viruses may be deposited in needles and syringes, and may be transmitted to health care workers by accidental injury. Thus the HCWs constantly place themselves in potential danger by attending to infected patients.[8]

Hepatitis B is a well documented occupational hazard for HCWs, including both laboratory and nursing personnel. Since the development of effective hepatitis B vaccine, the Immunization Practices Advisory Committee (ACIP) has recommended that HCWs receive the vaccine. Prexposure immunization of HCWs against HBV and documentation of their response to vaccination have been recommended.[9] Studies regarding vaccination status of HCWs in Pakistan have reported vaccination rates ranging from 49-86%. Keeping these facts and figures in mind this study was planned and conducted at Sir Syed Medical College for Girls, Karachi to determine the vaccination status among the medical students of all the academic years from first year to final year and to highlight the reasons behind their vaccination status.

MATERIAL AND METHOD:

This study was conducted at Sir Syed College of Medical Sciences for Girls, Karachi from October 2011 to March 2012. It was a descriptive, cross-sectional/observational study where convenient sampling was adopted for the selection of 50 students randomly from a class of 100 each, making a total of 250 students from 1st year to final year. Selection of 50 students from each class helped in eliminating any bias of selection that may have come by students who chose to volunteer.

Before the distribution of questionnaires, Ethical permission was taken from the academic council and students were explained regarding the purpose of the study and verbal consent was taken from each student to participate in the study. In some cases, the questionnaires were filled directly asking the questions from the participants.

The questionnaire covered the age, year of the study, screening before vaccination, history of vaccination, completion of all three doses (which was defined as all three doses) and the reasons behind vaccination and not getting vaccinated.

Students were then divided into two groups on the basis of preclinical (1st and 2nd year) and clinical (3rd year, 4th year and final year) to see any variation between these two groups The data from the structured questionnaire was then collected and analyzed using SPSS version 17.0.

FIG 1:
HISTORY OF VACCINATION AMONG ALL STUDENTS

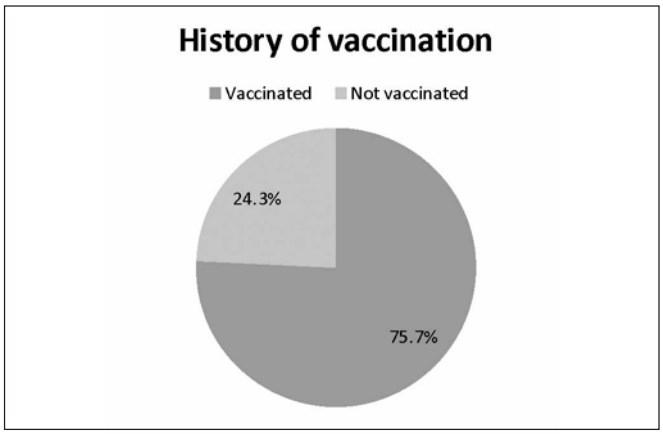


FIG 2:
POST VACCINATION ANTIBODY TITER

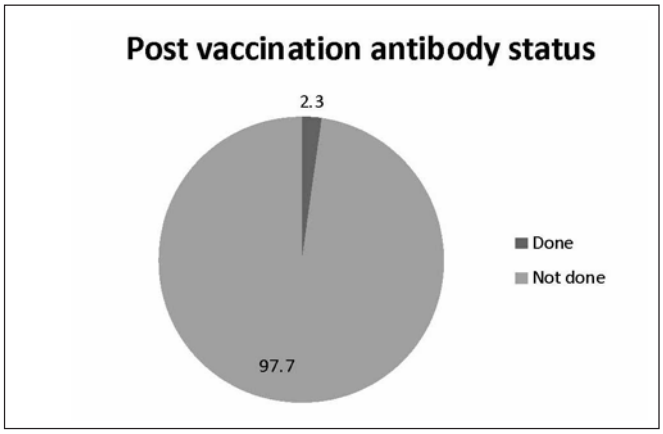


TABLE 1:
REASONS FOR NOT GETTING VACCINATED IN CLINICAL AND PRECLINICAL GROUP

Reasons	Pre-clinical	Clinical
Lack of awareness	49	1
Lack of motivation	12	1
Never felt the need	8	3
Never thought	1	4
Fear of injection	1	1
Cost of injection	1	1
Forgetting the dosage	2	35
Lack of time	1	51
Thought no risk of exposure	23	1
Afraid of side effects	1	1
Lack of belief in vaccination	1	1

RESULTS:

The mean age of students was 22 and all were females. Out of 250 students,75.7 % had been vaccinated (fig:1) and which were further seen on the basis of preclinical (43.2 % n=100) and clinical side (66.7% n=150) were vaccinated, but out of those only 15% and 27.2% respectively were screened before getting vaccinated. In preclinical 63.9%, while 78.7% in clinical group completed their 3 doses of Hepatitis B vaccination. The positive vaccination history was contributed mainly from the clinical years. The post vaccination antibody status was only done by total 9.2 %(2.3%+7.9%) of students (fig: 2)

The most common reasons for not getting vaccinated (Table 1)were lack of awareness in 49%, thought no risk of exposure in 23 % and lack of motivation in 12% of preclinical group while lack of time (51%) and forgetting the dose (35%) were observed in clinical group.

Whereas, the reasons for getting vaccinated were the risk of exposure 54% and motivation 38% in clinical group while in preclinical group 21% and 27 % respectively.

DISCUSSION:

Vaccination status against hepatitis B virus among doctors has been a subject of study in various settings. Despite the availability of the vaccination schedule being widely known and acceptable particularly by doctors, many continue to get infected with the completely preventable disease. In our study, we have targeted the population that are to become doctors with the idea to evaluate how significant a problem they believe Hepatitis B is while they are medical students and hence take measures for its prevention. This would also act as an indicator for less possible incidence rates when they become doctors in the future. . Limitation of the study; was that it did not include all students from each class; for the purpose of convenience thereby limiting our sample size.

Previous studies that were conducted among medical students for assessment concluded a positive vaccination status as 57%(Mirpurkhas)[10], 42.2% (Lahore)[11], 16% (Egypt)[12], 29.5% (Yemen)[13], 33%(South London)[14], 40%(Sweden)[15], 56%(North Sydney)[16]. Our study sample concluded a positive vaccination status in the pre clinical years as 43.2% and in the clinical years as 66.7%. Our study indicated a greater percentage of students were vaccinated in the clinical years, screened before vaccination(27.2%) and had completed all three doses(78.7%) as compared to the preclinical years. As this later implied that clinical years of MBBS had more motivation and awareness because they believed they had a greater risk of exposure. Among the preclinical students, lack of awareness was found to be the commonest reason for not getting vaccinated, while lack of time and forgetting the dose were recorded for the clinical group.

Health education regarding the vaccination against this preventable infection is necessary in this community as this would contribute greatly to increase awareness as that seems to be the common reason for non immunization. While the clinical years that do have better awareness and state that they have less time for getting vaccinated should be given the opportunity for getting vaccinated by holding immunization camps in the medical schools itself. This would help save their time and act as a constant reminder for medical students about the significance of the disease for them in particular.

CONCLUSION AND RECOMMENDATIONS:

Health education and awareness programs on regular basis should be done to increase the awareness about the vaccination against hepatitis B virus in medical schools. Although it is a universal practice and a pre requisite for admission in all medical colleges but still it is not strictly applied.

All medical colleges in Pakistan should keep a check on the vaccination status by getting antibody titers during admission process and make a proper policy.

REFERENCES:

1. Hepatitis B: World Health Organization Fact Sheet 204. 2000 : World Health Organization. http://www.who.int/mediacentre/factsheets/fs204/en/
2. Pyrsopoulos N, Rajendar K. Hepatitis B. eMed J 2005; 3: 2005 Available from URL: http://www.emedicine.com/ gastroenterology/ hepatitis B.
3. Abbas Z, Jafri W, Shah SHA,et al. Members of the consensus panel. PSG consensus statement on management of hepatitis B virus infection - 2003. J Pak Med Assoc 2004; 54: 150-8.
4. Guidelines for protecting the safety and health of HCWs. Joint advisory notice. Department of Labor, Department of Health and Human Services Protection Against Occupational Exposure to hepatitis B virus and HIV. Oct 19, 1997.
5. Bonomi P, Bonaccorsi G. vaccination against hepatitis B in health care workers. Vaccine 2001; 19 917-9: 2389-94.
6. Byrne EB. Viral hepatitis: an occupational hazard of medical personnel. Experience of the Yale New Haven Hospital, 1952 to 1965. JAMA. 1966; 195 (5): 362-4.
7. Document from department of vaccines and biological, world health organization 1211 G e n e v a 2 0 0 1 a v a i l a b l e a t www.who.int/ vaccinesdocuments/.
8. Usmani RA, Rana MS, Wazir MS, Sarwer H, Fazli H, Pervaiz MA, Tahir I, Sajjad R. Assessment of hepatitis B vaccination status in doctors of services hospital, Lahore. J Ayub Med Coll Abbottabad. 2010 ;22(2):36-9.
9. N. H. Sheikh., Hasnain S, Majrooh A, Tariq M, Maqbool E, Status of hepatitis b vaccination among the health care workers of a tertiary hospital, Lahore. Biomedica. 2007 23(2)24-8.
10. Asif M, Raja W, Gorar ZA. Hepatitis B vaccination coverage in medical students at a medical college of Mirpurkhas. J Pak Med Assoc. 2011 Jul;61(7):680-2. Erratum in: J Pak Med Assoc. 2013 Nov;63(11):1369.
11. Nasir K, Khan KA, Kadri WM, Salim S, Tufail K, Sheikh HZ, et al. Hepatitis B vaccination among health care workers and students of a medical college. J Pak Med Assoc 2000; 50: 239-43.
12. Talaat M, Kandeel A, El-Shoubary W, Bodenschatz C, Khairy I, Oun S, et al. Occupational exposure to needlestick injuries and hepatitis B vaccination coverage among health care workers in Egypt. Am J Infect Control 2003; 31: 469-74.
13. Raja's YA, Saeed GG, Al-Hattami AA, Al-Asadi MH, Mohammad AA, Ahmed AA, et al. Coverage and p[erception of Medical Sciences Students toward Hepatitis B virus vaccination in Sana 'a Cuty, Yemen. Saudi Medical J 2002; 23: 1222-6.
14. Briggs JM, Thomas. Obstacles to hepatitis B vaccination uptake by health care staff. J Public Health 1994; 108: 137-48.
15. Dannetun E, Tegnell A, Torner A, Giesecke J. Coverage of hepatitis B vaccination in Swedish healthcare workers. J Hosp Infect 2006; 63: 201-4.
16. Stanford MP, Black TR, March LM, Holt DA, Campbell DH, et al. Hepatitis B vaccination rates among staff at a district general hospital. Public health unit, Northern Sydney Area heath services. Med J Aust 1995; 62: 304-6.