Original Research Paper Medical Science

Hepatitis B Immunization Among Resident Doctors Working at Government Medical Collge, Aurnagabad, Maharashtra

Dr.Pushpa Omprakash Lokare	M.D.PSM, Assistant Professor,Department of PSM, GMC, Akola
Dr. Vinod Deorao Karanjekar	M.D.PSM, HFWTC, Amravati
Dr. Jagannath V Dixit	Professor and Head , Dept of Community medicine, GMC, Latur.

ABSTRACT

Background- *Health Care Workers (HCWs) are at increased risk of occupational acquisition of Hepatitis B Virus infection. Viruses may be deposited in needles and syringes, and may be transmitted to HCWs by accidental injury.6Present study was conducted to assess coverage of hepatitis B vaccination among resident doctors and reasons for non vaccination among them.*

Method- *It was a descriptive conducted among 102 resident doctors of Govt. Medical College Aurangabad from Dec 2006 to Feb 2006.*

Result- *Among 102 residents , 87% of residents had received all three doses of hepatitis vaccine. Out of total non immunized, 76.9% of residents told that vaccine was not available and similar proportion of the resident never felt need of vaccination.*

Conclusion-*The higher vaccination status among male resident was found in our study. Most of the reasons related with no vaccination were non availability of vaccine and forgot to take vaccine.*

KEYWORDS : Hepatitis B infection, Hepatitis B Immunization , Resident doctors

INTRODUCTION

Over two billion cases are infected with Hepatitis B virus (HBV) of whom 350 millions are chronic carriers according to global statistics and about 600 000 people die every year as a result of hepatitis B virus infection.[1,2] At least 15-25% of chronically HBV infected people will die due to liver disease caused by HBV and this constitutes nearly one million people each year. It is the most common cause of chronic liver disease, including cirrhosis of the liver and hepatocellular carcinoma worldwide[3]

The virus is transmitted by percutaneous and permucosal exposure to infected blood and other body fluids mainly semen and vaginal fluid.[4]Hepatitis B infection is considered to be an occupational risk for health care workers. In India, carrier rate of HBsAg in hospital has been found to be 10.87% than voluntary blood donors (6%) and (5%) in general population. The factors associated with this high prevalence are exposure to blood and blood products of infected patients.[5] The viruses may be transmitted to health care workers by accidental injury.[6]

Hepatitis B infection is preventable with safe and effective vaccines that have been available since 1982. Although the vaccine will not cure chronic hepatitis, it is 95% effective in preventing chronic infections and is the first vaccine against a major human cancer.[7] Despite of wide availability of vaccine, the most doctors and health care workers are not vaccinated against hepatitis B infection. As vaccination is best measure to prevent hepatitis we have assessed hepatitis B immunization status among resident doctors along with reasons for not being vaccinated .The outcome of the study would be considered to suggest ways and means for improvement of immunization status in the health care settings.

MATERIAL AND METHODS:

The present cross-sectional study was conducted in Government Medical College, Aurangabad in Maharashtra state of India. Total 102 resident doctors were interviewed from Dec 2006 to Feb 2006. The resident doctors were selected by simple random sampling from a list. The resident doctors were explained the aim of the study and each resident was given the pretested questionnaire to fill themselves after their informed consent .The information gathered was on age, gender, history of vaccination with its schedule and reasons for not getting vaccinated. Complete Immunization was defined as those residents who had received all three doses of hepatitis B vaccine on day 0,1 and 6 months and incomplete immunization who had received one or two doses of vaccines. Those who did not received any dose of vaccine were considered as nonimmunized. Statistical analysis was done with the help of Epi Info version 7 statistical software. The Chi square test of significance was applied at 0.05 level of significance.

RESULTS:

Figure 1. showed that among 102 residents about 89 residents had ever received hepatitis vaccine of which 87% of them were completely immunized and only 11 % was incompletely immunized . Thus coverage of vaccination was satisfactory among them.

Table no.1 revealed that proportion of full immunization was higher in males (76.4%) than in females (23.6%). Both were females who had not received even a single dose of hepatitis B Vaccine. The difference was found significant statistically ($p<0.05$).

As revealed in table no.2 the resident doctors working in the clinical department had full immunization status (69.7%) as compared to 25.8% in para clinical and 4.5% % working in the preclinical department. It was observed that incomplete immunization was high (54.6%) among resident doctors of preclinical department .The proportion of those not received any vaccination was also found among preclinical department. The difference of immunization status was statistically significant ($p<0.05$).

Most common reason for not receiving any vaccine or incomplete immunization was that they had forgotten about schedule of vaccination. The residents forgot to take the vaccine and if started with one dose of vaccine they forgot to take next one. Out of total, 76.9% of them told that vaccine was not available when they wanted to receive it and similar proportion of the resident never felt need of vaccination. However, 61.5% of the resident knew importance of hepatitis B vaccination but due to heavy work postponed the vaccination and 53.9% residents told that single dose of HBV vaccine not available so they found difficult for them to take the vaccine. Another reason for non immunization was highest cost which was told by 46.2% of the

residents. Remaining 30.8% residents had fear of prick and not having knowledge of appropriate schedule of vaccination especially for booster dose.

DISCUSSION

In our study , 87.3 % medical students were vaccinated against Hepatitis B. Though,these health care providers have a higher chance of acquiring hepatitis B infections in their professional life 11.8% had not received it or received it incompletely. .The proportion of residents with immunization against Hepatitis B virus in our study is higher than the study done in Lahore[8] (42.2%), South London[9] Egypt (16%)[10] .The higher vaccination status among male resident was found in our study which was similar to study by Muhammad Asif at Mirpurkhas.[11,12]

The immunization against hepatitis B infection was higher in our study which indicates awareness among resident doctors The vaccines is available since many years despite of that 11.8 % of the residents were not vaccinated. The most frequent reasons were non availability of vaccine, forgotten due to heavy work. Most of the resident never felt need of vaccination .This reason was similar to the study reported by Muhammad Asif [11] and others [12,13] The most commonly cited reasons for non-vaccination found in study at Multan were forgetting dosage schedule, lack of awareness, laziness and negligence respectively. [14] Thus, resident doctors are careless on their part on acquiring the vaccine. The proportion of incomplete immunization or no immunization was higher among resident doctors from preclinical subject in our study .They thought that they were not at risk to hepatitis B infection. There should vaccination of resident doctors with hepatitis B vaccine immediately after joining the hospital duties.

Conclusion-

In our study majority of resident doctors were immunized with hepatitits B vaccine and 11.3% were incompletely immunized. Thus ,there was awareness about need of hepatitis B vaccination in them .The immunization coverage was low among female residents as compared to male resident doctors which indicates the need of motivation among female residents for immunization with hepatitis B vaccine. Most of the reasons related with no vaccination were non availability of vaccine and forgot to take vaccine and high cost .The availability and use of free or low-cost vaccine, as well as offering the vaccine in institutional settings for residents and other high risk group in the hospital will help to tackle these problems. Similarly, work-place policies should be there to mandate or encourage hepatitis B vaccination at the time of joining the institute.

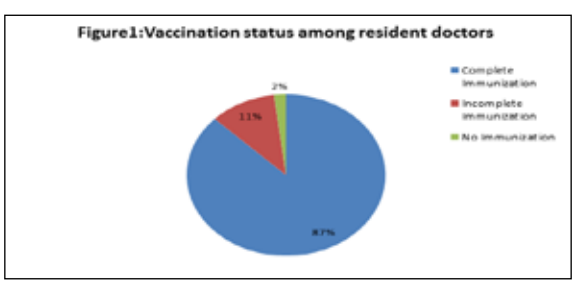

Table No.1: Hepatitis B immunization status of resident doctors according to sex

HBV vaccination	Male	Female	Total
Fully immunized	68(76.4)	21(23.6)	89
Partially immunized	6(54.5)	5(45.5)	11
Not immunized	Nil	2(100)	2
Total	74	28	102

(Figures in parenthesis indicates percentage) $\chi 2=7.74$ d(f);2 p=0.02

Table No.2 : Hepatitis B immunization status among residents according to specialty

Immunization status	Specialty			
	Clinical	Para clinical	Preclinical	Total
Fully immunized	62 (69.7)	23 (25.84)	4 (4.5)	89
Partially immunized	4 (36.4)	1 (9.0)	6 (54.6)	11
Not immunized	Nil	Nil	2 (100)	2
Total	67	24	12	102

(Figures in parenthesis indicates percentage) $\chi 2 =38.99$ d(f);4 p=0.0001

Table No.3: Reasons of partial immunization /no immunization against HBV vaccine

Reasons	Number	Percentage
Forgot due to heavy work	11	84.62
Non availability	10	76.92
Never felt need	10	76.92
Postponed	8	61.54
Single dose not available	7	53.85
High cost	6	46.15
Other	4	30.8

References-

1. Goldstein ST et al. A mathematical model to estimate global hepatitis B disease burden and vaccination impact. International Journal of Epidemiology, 2005, 34:1329–1339.
2. Safioleas M, Lygidakis NJ, Manti C. Hepatitis B today Hepatogasterenterology 2007; 54: 545-8.
3. Lavanchy D. Public health measures in the control of viral hepatitis: A world health organization perspective for the next millennium. J Gastroenterol Hepatol 2002;17:452-459.
4. Beasley RP et al. Prevention of perinatally transmitted hepatitis B virus infections with hepatitis B immune globulin and hepatitis B vaccine. Lancet 1983; 2:1099– 1102.
5. Simard EP, Miller JT, George PA, Wasley A, Alter MJ, Bell BP, et al. Hepatitis B vaccination coverage levels among healthcare workers in the United States, 2002-2003. Infect Control Hosp Epidemiol 2007; 28: 783-90.
6. Kane M. The epidemiology and control of hepatitis B as an occupational hazard in the health professions. In: Kane M,Holleran C, Andre F, eds. Proceedings of the European Conference on Hepatitis B as an occupational hazard.
7. World Health Organization. Measuring Health. World Health Report. Life in 21st century: A vision for all. Geneva. 1998: 55.
8. 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
9. Briggs JM, Thomas. Obstacles to hepatitis B vaccination uptake by health care staff. J Public Health 1994; 108: 137-48.
10. 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.
11. Asif M, Raza W, Ali Z. Hepatitis B vaccination coverage in medical students at a medical college of Mirpurkhas.J Pak Med Assoc 2011;61:680-82.
12. Vinod KD, M Srini V, Sankar AB, et al. Hepatitis B vaccination among Medical students . J Community Medicine India 2008; 33: 67-8.
13. Lin WC and Ball C. Factors affecting the decision of nursing students in Taiwan to be Vaccinated against hepatitis B infection. J Adv Nurs 1999; 25: 709-18.
14. Nauman AJ, Muhammad AS, Rehan Y, Ali R, Ijaz H. Hepatitis b vaccination status of health care workers at a tertiary care hospital in Multan . NMJ 2009; 1(1): 23-27