

PREVALENCE OF HEPATITIS B VACCINATION STATUS AMONG DENTISTS AND DENTAL ASSISTANTS

¹NASIR MUSHTAQ, ²MUBASHIR HAYAT AWAN, ³AKBAR ALI, ⁴SAHAR KHALID, ⁵MOHID HAYAT AWAN

ABSTRACT

Hepatitis B vaccination is one of the most effective methods of protecting the population from hepatitis B virus. Past studies have emphasized the importance of hepatitis B vaccine in decreasing the number of infected patients. The purpose of this study was to evaluate vaccination status in both dental surgeons and dental assistants and to investigate cause in the group having decreased prevalence. A cross sectional study was conducted among dental surgeons and dental assistants in Peshawar Dental Hospital from 1st Jan 2015 to 30th June 2015. A total of 100 questionnaires were distributed and the results analysed. Among the dental surgeons 45(90%) had been vaccinated and 5(10%) were not. Among the 5 that were not vaccinated 3 reported vaccination phobia as the reason, one had dearth of time and one was unaware of the importance of vaccination. Among the dental assistants 8(16%) had been vaccinated, 40(80%) were not vaccinated and 2(4%) were not sure. Amongst the 40 who had not been vaccinated, 22 were not aware of the importance of vaccination, 8(although aware of importance) had no finances, 8 had dearth of time and 2 feared side effects of vaccination. In this study it is emphasized that all the medical and dental institutes should take extra measures to vaccinate and educate their staff regarding the importance of vaccination.

Key words: Hepatitis B Vaccination, dental surgeon and dental assistants, communicable disease, occupational hazards.

INTRODUCTION

Hepatitis B is a serious form of liver inflammatory disease due to infection by the Hepatitis B virus (HBV). About one million people die of Hepatitis (acute or chronic) every year and around 257 million people are infected.¹ South East Asia has the highest endemic levels in the world.² According to one study the prevalence of Hepatitis B in Pakistan is 4-10% and the number of people infected is rising.³ Hepatitis can be transmitted through infected semen, blood and other body fluids and from infected mother to the infant at the time of birth. Vaccine for hepatitis B was first developed in 1981 by Dr. Baruch Blumberg. The vaccine used nowadays is a second generation genetically engineered vaccine. It is the most effective way till date to protect the population against the infectious agent.⁴ With its help China

prevented 16-20 million of its citizens from contracting the disease and decreasing the prevalence from 9.75% to 7.18%.⁵ The vaccination status of developing states like India and Pakistan is not satisfactory. According to one study carried out in Bhopal city (central India) 61.2% of dental students were not vaccinated.⁶ WHO has categorized Pakistan at intermediate risk. The reasons considered for low prevalence of vaccination are high cost of the vaccine,⁷ no knowledge of its availability, a wrong belief of invincibility, lack of time and fear of side effects.⁸ Dental assistants and surgeons are more prone to contract Hepatitis B because of their profession.⁹

The purpose of this study was to evaluate vaccination status in both dental assistants and dental surgeons and to investigate the cause of unvaccinated status in the group having decreased frequency of vaccination. The study will further help in formulating the guidelines for the prevention of cross infection from the dentists and dental assistants to the patients and vice versa.

METHODOLOGY

This questionnaire based cross sectional study was carried out in Peshawar Dental College and Hospital. First a pilot study was carried out on the questionnaire in which an option was included with each question i.e. "invasion of privacy" and circulated among a sample of 10 dentists including Professors, Associate Professors, Assistant Professors, post graduate students, lecturers and house officers and 10 dental assistants. In that sam-

¹ Dr Nasir Mushtaq, BDS, FCPS (Orthodontics), Associate Professor, Department of Orthodontics, Rehman College of Dentistry, Peshawar

² Dr Mubashir Hayat Awan BDS, FCPS-II Resident, Department of Orthodontics Rehman College of Dentistry Correspondence: 47-B, The Mall, Peshawar Cantt.

³ Dr Akbar Ali BDS, FCPS (Orthodontics), Assistant Professor, Department of Orthodontics KMU Institute of Medical and Dental Sciences. Kohat

⁴ Dr Sahar Khalid BDS, FCPS-II Resident, Oral and Maxillofacial Surgery Rehman College of Dentistry, Peshawar Mohid Hayat Awan, 3rd year BDS (Sardar Begum Dental College)

⁵ Mohid Hayat Awan, 3rd year BDS (Sardar Begum Dental College)

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ple not a single individual ticked the option of “invasion of privacy”, making this questionnaire a valid tool to be used in the prospective study. This questionnaire was further checked by a new set of experts in the field of dentistry in which 99% individuals gave their opinion in the favour of the study. After all this work up the research was executed. After approval from the ethical committee of the college the study was carried out. The questionnaire was then distributed among the dentists and dental assistants. Every respondent was given a serial number and confidentiality of the individuals receiving the questionnaire was assured. The duration of the study was from 10th February 2015 to 10th July 2015. The questionnaire was distributed among Professors, Associate professors, Assistant professors; post graduate residents, lecturers, house officers and dental assistants of all dental departments irrespective of their age and gender. All the participants responded and there were no drop outs from the study.

With a confidence level of 90% and margin of error 8.14% the study sample was set at 100 dental professionals (50 dentists and 50 dental assistants). Total numbers of questions were seven. The first question inquired about past vaccinations while the next six were related to knowledge, attitude and practices of the respondents. The self-administered questionnaires were provided to the respondents and were informed (especially the dental assistants) that they could enquire

about the meaning of a question which they had not been able to comprehend. The questionnaires distributed were collected after 15 minutes and analysed.

RESULTS

From table 1 one can find out that the awareness among the dentists is more regarding vaccination and self-protection as 45(90%) out of 50 dental surgeons were vaccinated with Hepatitis B vaccine. This may be due to more education and knowledge about the consequences of Hepatitis B of the dentists as compared to dental assistants in which the frequency of vaccination is just 8(16%). This notion has been further elaborated by table 2 and 3 in which one can figure out that the importance of vaccination is considered more significant by the dentists rather than the dental assistants. The other factors such as phobia and unavailability of time for vaccination can also be associated with lack of education regarding Hepatitis B infection.

DISCUSSION

Since Hepatitis B is a life threatening disease considering this many countries of the world have included hepatitis B vaccination in their expanded programme on immunization (EPI) to decrease the disease prevalence. In our study the stark contrast of vaccination status among the two groups is quite

TABLE 1: STATUS OF VACCINATION AMONG DENTISTS AND DENTAL ASSISTANTS

Vaccination status among dentists				Vaccination status among dental assistants				
	Vaccinated	Frequency	Percent	Valid Percent	Vaccinated	Frequency	Percent	Valid percent
1	Yes	45	90	90	Yes	8	16	16
2	No	5	10	10	No	40	80	80
3	Not sure	0	0	0	Not sure	2	4	4
	Total	50	100	100		50	100	100

TABLE 2: REASONS FOR UNVACCINATED STATUS AMONG DENTISTS

	Reasons	Frequency
1	Unaware of importance	1(20%)
2	Phobia	3(60%)
3	No time	1(20%)
	Total	5(100%)

TABLE 3: REASONS FOR UNVACCINATED STATUS AMONG DENTAL ASSISTANTS

	Reasons	Frequencies
1	Unaware of importance	22 (55%)
2	Phobia	2(5%)
3	No time	8(20%)
4	Financial problems	8(20%)
	Total	40(100%)

evident from table 1 as 90% of dental surgeons were vaccinated as compared to 16% of dental technicians who had a vaccinated status. The results of this study are identical to the findings of a research done at Lagos University Teaching Hospital Nigeria.¹⁰ Sukriti et al in their study blood screened 2162 healthcare workers and found out that only 1198 (55.4%) of the 2162 healthcare workers screened had been vaccinated against hepatitis B; and 964 (44.6%) were not vaccination-status conscious. Of these unvaccinated healthcare workers; 600 (27.7%) had never been vaccinated and 364 (16.4%) were unaware of their vaccination status.¹¹ According to one study 73.8% of Brazilian dentists had received all three doses of the hepatitis B vaccine.¹² In Egypt, Talaat et al found that 38% of professional staff and 3.5% of housekeeping staff were vaccinated.¹³ So in most of the above mentioned researches it was found that the paramedical staff is the least vaccinated group among all the other healthcare providers. Contrary to the expectations of the researchers in this study, majority of dental assistants cited ignorance to the

importance of vaccination against Hepatitis B and not the financial constraints as the main reason for not getting vaccinated (table 3). Vaccination phobia¹⁴ is also said to be due to lack of education and information regarding Hepatitis B vaccination but surprisingly 60% of the unvaccinated dentists cited vaccination phobia as the reason for not getting vaccinated. Though the total number of unvaccinated dentists in our sample was only 5 (table 1).

Libya included the vaccination programme in its EPI in 1993.¹⁵ The vaccine for hepatitis B is available in Pakistan since 1985 and was incorporated in Expanded Programme on immunization (EPI) in the year 2000.¹⁶ According to the occupational safety and health regulation department (United States of America) all the employers should provide free vaccination services to their employees who are at risk of infectious diseases.¹⁷

The overall HBsAg sero-prevalence in healthy adults based on combined data from blood donors and non-donors was 2.4% (range 1.4–11.0%) in Pakistan.¹⁸ As already mentioned the main unvaccinated lot belongs to the paramedical staff and in dentistry dental assistants and dental technicians are the main culprits. Strong standard operating protocols for their vaccination and screening are needed to protect our community from the menace of hepatitis B. For an unvaccinated person, the risk from a single needle stick or a cut exposure to HBV-infected blood ranges from 1 to 30%, while the average risk for HIV infection after a needle stick or cut exposure to HIV-infected blood is only 0.3%.¹⁹ Protective measures against hepatitis B pathogen include overall, eye wear, gloves, face mask, head cap and most importantly vaccination. It has been shown in many studies that a person vaccinated with hepatitis B vaccine are virtually at no risk of the infection²⁰. Protective measures must be adopted by both the dental staff and technicians in order to avoid exposure to dangerous pathogens.

CONCLUSION

It is the responsibility of the dental surgeons and the dental assistants to get themselves vaccinated before getting jobs in the hospitals. Also the institution should at least get its staff screened for Hepatitis B vaccination. All the medical and dental institutes should take extra measures to educate their staff regarding the importance of all types of protective vaccinations as most of their workers especially the dental assistants of developing countries are unaware of their significance.

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CONTRIBUTIONS BY AUTHORS

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|------------------------|-------------------------------------------|
| 1 Nasir Mushtaq: | Main plot and compilation of the article. |
| 2 Mubashir Hayat Awan: | Statistics and data collection. |
| 3 Akbar Ali Khan: | Results and discussion. |
| 4 Sahar Khalid: | Results and discussion. |
| 5 Mohid Hayat Awan: | Manuscript writing. |