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Willingness of Saudi dental professionals to treat Hepatitis B virus-infected patients

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Abstract

Background: Hepatitis B virus (HBV) is considered the most important cross-infection hazard in developing countries. Patients infected with hepatitis virus could encounter difficulties in obtaining dental care. The aim of this study was to investigate the willingness of Saudi dental professionals to treat hepatitis B virus infected patients.

Materials and Methods: This cross-sectional survey was carried out by distributing 300 questionnaires to Saudi dentists working in 40 government and private dental centers in Riyadh, Saudi Arabia. The questionnaire included questions related to age, sex, vaccination against HBV, screening for HBV antibody levels, willingness to treat hepatitis B infected patients, and the reasons behind any refusal. A *t*-test was used to compare the results and a *P* < 0.05 was considered significant.

Results: Of the 300 distributed questionnaires, 274 were collected giving a response rate of 91%. The respondents were 212 males (77.4%) and 62 (22.6%) females. Only 10.2% of the Saudi dentists were willing to treat HB infected patients. The other dentists (89.8%) were unwilling to provide dental care for HB infected patients. Although 94.5% of the surveyed dentists were vaccinated against HBV, the main reason behind the refusal to treat HB infected patients (92.3%) was the risk of cross infection.

Conclusion: High percentages of Saudi dentists are unwilling to treat HBV-infected patients due to their apprehension about risk of cross infection. Many of the Saudi dentists do not screen for HBV antibody levels. All vaccinated dentists should carefully monitor their antibody levels to evaluate the need for booster doses. There is a need for educational programs to change the attitude of dentists toward treating HBV-infected patients. The strict adoption of cross infection preventive protocols by dentists will reduce the risk of transmitting infectious diseases in dental clinics as identification of blood-borne infections is not always possible.

Key words: Cross infection, dentist, hepatitis virus, vaccination

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Introduction

Chronic viral infections such as hepatitis B virus (HBV) and Human immuno deficiency virus (HIV) that can be transmitted in dental clinics by handling patients are considered important issues for dental professionals.^[1] The high number of infected patients with these viruses worldwide increases the percentage of having such patients as regular visitors to the dental clinics.^[2] Hepatitis B was an endemic disease in Saudi Arabia and its spread was reduced by a planned vaccination program that was started

in 1989.^[3] Mandatory vaccination against HBV for health workers and hemodialysis patients in Saudi Arabia was also introduced as part of the prevention program. Such measures helped in the control of the disease and most young Saudi individuals are now vaccinated against HBV.^[4] A study on premarital screening for HBV in Saudi Arabia showed a prevalence of 1.31% with Hepatitis B surface antigen (HBsAg) reported as 3.8%.^[5] The prevalence of

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HBsAg in blood donation units in Saudi Arabia ranges from 2.7 to 9.8%.^[6] There is little knowledge about the attitude of Saudi dentists regarding managing patients infected with HBV. Screening dental patients for hepatitis at the College of Dentistry, King Saud University, Saudi Arabia has shown that 3.2% were hepatitis B positive.^[7] These Hepatitis positive patients do not disclose their status as this may present them with discrimination in getting dental treatment.^[8] Hepatitis B virus can be transmitted through different routes including the parenteral route by percutaneous and mucous membrane exposures to infected blood, sexual contact, and by perinatal exposure. Needles and syringes which are commonly used in dental practices may be contaminated by the virus and may transmit it in case of accidental injuries.^[8] It has been shown that many dentists get a needle stick injury or puncture of skin at least once every week.^[9] It has also been reported that there is a high prevalence of HBV transmission among dentists, mainly among those who work in the surgical specialties such as maxillofacial surgery and periodontics where direct contact with blood is encountered.^[10,11]

The aim of this study was to investigate the willingness of Saudi dental professionals to treat hepatitis B virus infected patients.

Materials and Methods

A cross sectional study was carried out among Saudi dentists working in both private and governmental centers in the capital city of Riyadh. A total of 300 one-page, self-administered, anonymous, and confidential questionnaire with an explanatory letter were distributed to Saudi dentists working in more than 40 dental centers. The questionnaires were given to the main reception of the dental centers and distributed randomly to the Saudi dentists working on the day of distribution. The questionnaire included questions related to age, sex, vaccination against HBV, screening for HBV antibody levels, willingness to treat hepatitis B infected patients, and the reasons behind any refusal to treat these patients. The study protocol was approved by the College of Dentistry Research Center Ethical Committee, King Saud University (Registration number: FR0160).

Data were collected and analyzed descriptively using Statistical Package for Social Sciences version 17 software (SPSS Inc, Chicago, IL, USA). A *t*-test was used to compare results and $P < 0.05$ was considered significant.

Results

Of the 300 distributed questionnaires, 274 (91%) were completed by respondents and it comprised of 211 males (77.4%) and 62 (22.6%) females [Table 1]. Only 10.2% of the Saudi dentists were willing to treat HB-infected

patients. The other dentists (89.8%) were unwilling to provide dental care for HB-infected patients [Table 2]. Although 94.5% of the surveyed dentists were vaccinated against HBV [Table 3], the main reason behind their refusal to treat HB infected patients (92.3%) was the risk of cross infection [Table 4]. There was no significant difference between male and female dentists in the refusal to treat HB infected patients ($P = 0.87$). Of all vaccinated dentists, only 48.6% checked their antibody levels against HBV to evaluate the need for booster doses [Table 5]. There was no significant difference in vaccination rate between male and female dentists in this study ($P = 0.70$).

Table 1: Age distribution of dentists

Group in years	Frequency	Percent
26-36	139	50.7
37-46	90	32.8
> 46	45	16.4
Total	274	100.0

Table 2: Number of Saudi dentists willing or unwilling to treat HBV infected patients

	Willingness to Treat HBV patients		Total
	Accept treating	Refuse treating	
Male	22	190	212
Female	6	56	62
Total	28	246	274

HBV=Hepatitis B virus

Table 3: Number of Saudi dentists who are vaccinated against HBV

	Frequency	Percent
Vaccinated against HBV	259	94.5
Not vaccinated against HBV	15	5.5
Total	274	100.0

HBV=Hepatitis B virus

Table 4: Percentage of reasons stated by Saudi dentists for not accepting treating HBV infected patients

	Frequency	Percent
Risk of infection	244	89.1
No protection facilities	13	4.7
Other reasons	17	6.2
Total	274	100.0

HBV=Hepatitis B virus

Table 5: Number of vaccinated Saudi dentists who had their HBV antibodies level screened

	Screening		Total
	Yes	No	
Male	91	110	201
Female	35	23	58
Total	126	133	259

HBV=Hepatitis B virus

Discussion

Hepatitis B virus is considered the most important cross infection hazard in the developing countries.^[12] The high percentage of the disease in these countries leads to the presence of a high number of patients who could be regular dental attendees. There are more than two billion people infected with HBV worldwide with more than 350 million chronic carriers.^[13,14] It was found that 18.3% of Nigerian patients undergoing dental extraction were positive for HBV. Hepatitis virus can be transmitted easily in dental clinics in case of poor cross infection control protocol. The use of sharp instruments in the field of dentistry increases the risk of injuries by such instruments which could be contaminated by the virus.^[15] The present study showed that high percentages of Saudi dentists were vaccinated against HBV but only 48.6% checked their antibody levels against HBV. In a recent study that evaluated the percentage of Saudi dentists on vaccination against HBV, it has been shown that 80.5% of the 402 surveyed were vaccinated against HBV, but 57.5% of them had not been screened for HBV antibodies after their vaccination.^[16] The standard primary course of HBV vaccination consists of three doses, with doses administered mainly at 0, 1, and 6 months. Other short schedules also exist such as 0, 1- and 2-month schedule and an accelerated 0, 7- and 21-day schedule with a fourth dose recommended at 12 months in both schedules.^[17] Booster dose refers to the dose given after primary vaccination series which aims to provide rapid protective immunity. Determining the surface antibody level for hepatitis B (anti-HBs) after primary vaccination means not only the need for offering booster, but also that, if a dentist is accidentally exposed on a single occasion to material infected with hepatitis B virus, prophylaxis measures may be tailored to his or her needs. It has been shown that the anti-HBs concentration decreased rapidly within the first year after primary vaccination and more slowly thereafter.^[18] The current scientific evidence does not recommend booster vaccination against HBV for all adults who are immunologically potent for long-term protection, but it is recommended that antibody titers for HBV in immunocompromised persons should be monitored with additional doses of vaccine administered when the level decreases to less than 10 mIU/mL.^[18]

In some countries the vaccination rate of dental students against hepatitis B virus was found to be very low.^[19] In a survey, in 2007, of Nigerian dental students' vaccination against HBV, it was found that only 37.9% were vaccinated.^[20] The present study showed that even though a high percentage of dentists in Saudi Arabia were vaccinated against HBV, 89.8% were unwilling to treat HBV infected patients because of a fear of cross infection. It has been shown in another study that the willingness to provide dental care for HBV infected patients ranged from 25 to 95%.^[13] Screening of 124 dental students for

HBV antibodies after their vaccination, which had been taken 3-4 years before the screening, showed that 24.2% had positive but weak immune response against HBV and 21.8% were sero negative for HBV antibodies.^[21] Patients who are refused treatment many times because of their HBV infection hide their infection status during history taking.^[8,12] Such behavior by patients may put the dentist at more risk of dealing with infected patients as healthy. Although it is unethical to refuse treating patients infected with HBV in Saudi Arabia, dentists who are unwilling to treat such patients cannot be forced to manage such patients. All cross infection protocols should be applied to all patients whether they are known to be infected or not.^[22] The high percentage of Saudi dentists unwilling to treat HBV infected patients in the present study could increase the behavior of patients hiding their infection status in the history unless the attitude of the dentists changes. The American and Canadian Dental Associations have stated that it is unethical for dentists to refuse treating patients based on their blood-borne virus infection.^[22,23] Despite being subject to this ethical obligation, it was very clear in the present study that there were a high number of dentists continuing to be unwilling to treat HBV infected patients. The Same findings were reported in another study in Jordan.^[13] Dentists should be vaccinated against HBV as unvaccinated dentists are five times more likely to get the infection than vaccinated dentists.^[24] Dentists should also be educated about the risk of infection even if they are unwilling to treat HBV infected patients, simply because they may be unknowingly treating carriers of the virus. Clearly, all practicing dentists should change their approach toward HBV infected patients in order to undertake safer practice.

Conclusion

High percentages of Saudi dentists are unwilling to treat HBV-infected patients due to their apprehension about the risk of cross infection. In spite of the high percentage of vaccinated Saudi dentists against HBV, many of them do not screen for HBV antibody levels. All vaccinated dentists should carefully monitor their antibody levels to evaluate the need for booster doses. There is a need for an educational program to change the attitude of the dentists toward treating HBV as well as any other blood-borne virus-infected patients. It is also recommended that all dentists use the universal precaution system in treating patients, whether they are infected with HBV or not.

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