

## Study of Admission Rate of Hepatitis B Surface Antigen Positive Patients in 50 Dentistry Centers in Tehran (Spring 2003)

Seyed-Moayed Alavian <sup>1</sup>, Seyed-Hamed Moosavi <sup>2\*</sup>, Seyed-Hadi Mousavi <sup>3, 4</sup>, Behzad Azizi <sup>2</sup>, Hossein Akbari <sup>5</sup>

<sup>1</sup> Baqiyatallah Research Center for Gastroenterology and Liver Disease, Baqiyatallah University of Medical Sciences, Tehran, Iran

<sup>2</sup> Department of Internal Medicine, Baqiyatallah University of Medical Sciences, Tehran, Iran

<sup>3</sup> Medical Toxicology Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

<sup>4</sup> Department of Pharmacology & Pharmacological Research Center of Medicinal Plants, Mashhad University of Medical Sciences, Mashhad, Iran

<sup>5</sup> School of Dentistry, Shaheed Beheshti University of Medical Sciences, Tehran, Iran

**Background and Aims:** Hepatitis B is one of the common diseases in the world and in Iran, caused by hepatitis B virus (HBV). This virus is transmitted by various ways including dentistry procedures and this may discourage dentists to admit hepatitis B surface antigen (HBsAg) positive patients leading to hide the disease by the patients and increased transmission risk.

**Methods:** During a cross-sectional descriptive study, 50 dentistry centers were chosen among dentistry centers of Tehran in various regions by cluster sampling. Two HBsAg positive medical students went to these centers and announced about their diseases and requested for dentistry. Samples (dentists and secretaries) did not have any information about the research. They studied and examined reaction of dentists and their secretaries as well as admission rate.

**Results:** Among 50 centers, 16 did not admit patients (5 cases by secretary and 11 cases by dentist) and 16 centers admitted them as the last patient (last appointment) and totally 32 cases met unfriendly. Among different regions of Tehran, the highest rate of non-admission was observed in the south (60%) and the lowest rate in the north ( $P < 0.01$ ). Charity centers and private centers had the most and the least non-admission rate, respectively, and the difference was significant ( $P < 0.01$ ). There were 16 non-admission cases among general dentists but there was not any rejection in specialists.

**Conclusions:** The higher rate of non-admission and unfriendly behavior in southern district of Tehran and military and charity centers may be related to the lack of awareness and proper communication between patient and dentist. It highlights the necessity of more educational workshop to promote dentists knowledge about HBV, encourage them to use disposable tools for the patients, more accurate supervision on centers by the ministry of health and finally to assume all patients as HBsAg positive.

**Keywords:** HBsAg, Admission, Dentists

Hepatitis B virus (HBV) infection is one of the most important global health problems in the world. World health organization estimate that approximately 2 billion of people in the world have serological evidence of prior HBV infection and over 350 million people are chronic carriers in whom over 250000 die each year from hepatitis B associated liver diseases <sup>(1-3)</sup>. In Iran, more than 2 million people are affected by HBV in whom near to 10% is chronic hepatitis <sup>(4)</sup>. Meanwhile near to 40% of Iranian population have been contacted by this virus (based on anti-HBe antibody level), among them only 3% remained carriers <sup>(5)</sup>.

### \* Correspondence:

Seyed-Hamed Moosavi, M.D., Department of Internal Medicine, Baqiyatallah Hospital, Mollasadra Avenue, Vanak Square, Tehran 88067114, Iran.

Tel/Fax: +98 511 8798993

E-mail: shamedmoosavi@yahoo.com

Received: 11 Dec 2007 Revised: 24 Feb 2008

Accepted: 5 Apr 2008

Because an author of this manuscript is an editor of Hep Mon, the peer-review and decision-making processes were handled entirely by an Associate Editor who served as Acting Editor-in-Chief.

Hep Mon 2008; 8 (1): 67-69

HBV virus is transmitted by prenatal routes, blood transfusion, sexual contacts, and medical intervention such as dental procedures. On the other hand, due to high prevalence of oral and dental diseases, dental and oral hygiene, has been added to Almaeta's agreement in Iran (6, 7). Increasing of society health levels, more attention to the health of tooth and mouth, recommendations to have at least one visit by dentists in each 6 months, have increased referring to dentistry centers. As mentioned above, one of the HBV transmission methods is dentistry and medical equipments (8). Despite of vaccination against HBV, many physicians are not inclined to do medical procedures in HIV and hepatitis B patients (9).

High risk of transmission in dentists may discourage them to admit HBsAg positive patients. Negative reactions (e.g., admission in the last of working hours) may cause patients to hide their disease from the dentists. There has not been any published data regarding to the behavior of dentists to an HBsAg positive patient. Therefore, in this study we tried to describe dentists' reactions in facing HBsAg positive patients asking dental procedure.

This pilot cross-sectional descriptive study performed in 50 dentistry centers at north, south, center, east and west of Tehran including military and non-military (governmental, private and charity) centers. The samples are selected by cluster sampling method. Two HBsAg positive medical students went to the selected centers and declared that they are HBsAg positive and need to have a dental procedure. Samples (dentists and secretaries) did not have any information about the research. After leaving the centers they filled the appropriate questionnaire to record the acquired data. All dental examinations done by dentists were compared to Imam Khomeini dental clinic center as a standard. Data were analyzed by SPSS 11.0. The descriptive data were compared by chi-square test. Quantitative data were expressed as mean ± SD and compared by independent t-test. A probability level of  $P < 0.05$  was considered statistically significant.

From 50 dentists participated in this study, 41 (82%) were male and 9 were female, in which 6 ones were specialists and the others were general dentists. Centers were military (5 cases) and non-military ones (45 cases), including private (n=33), governmental (n=8), and charity (n=4). The students were admitted in 34 centers (68%), in which 16 centers asked them to come at the end of working hours. Sixteen centers didn't admit the students in which, 5 rejections were carried out by secretaries and 11 ones by dentists. Fourteen male

dentists and 2 female were working at centers where refused to admit our patients.

There was no specialist who rejected the patients but 2 ones were requested to come at the end of working hours. Sixteen general dentists refused to admit the patients.

The students were referred to academic and non-academic centers in 7 and 9 cases, respectively (Table 1). Centers which accepted patients are required to answer this question why patients should say they are HBsAg positive. The answers to this question are follows: 5 centers noted the declaration did not change the procedures; 7 stated that declaration would force them to sterilize equipments more carefully; and 12 ones stated this was important for better sterilization to reduce the risk of transmission. Among 16 centers which refused to admit patients, 9 centers stated that they had no suitable sterilization; 5 were concerned with disease transmission and in 2 cases both reasons were presented. Regular admission was defined as an admission similar to other patients. Last appointment and refused admission was considered as an inappropriate admission.

Refused admission was significantly different between charity and private centers. As shown in Table 2, refused admission was significantly higher in the south compared to the north.

Hepatitis B is one of the most common infectious diseases globally. Iran has an intermediate prevalence of hepatitis B chronic infection, according to CDC (10). Although, the prevalence of HBV has decreased dramatically in Iranian population during the last decade, now our country is classified as low endemic area for hepatitis B infection; so considering all possible routes of transmission is necessary (11). One

**Table 1.** Frequency of admission and non admission based on dentistry centers.

	Military	Private	Governmental	Charity	Total
Regular admission	0	16	2	0	18
Last-person admission	3	9	3	1	16
Refused	2	8	3	3	16
Total	5	33	8	4	50

**Table 2.** Frequency of admission and non admission in different regions of Tehran.

	North	West	Center	East	South	Total
Regular admission	5	5	2	4	2	18
Last-person admission	6	2	5	1	2	16
Refused	0	2	3	5	6	16
Total	11	9	10	10	10	50

of the potential ways for HBV transmission is dentistry procedure and all people who need medical and dentistry procedures must be assumed HIV and HBsAg positive. It is mandatory for all dentistry centers to have autoclaves for sterilizing of tool sets, but unfortunately, some centers ignore this performance due to high prices of autoclave. So in the present study the reaction of dentists in facing HBsAg patients asking dental procedure was evaluated.

Significant difference of non-admission rate between south and north ( $P < 0.01$ ) could be due to lack of enough education for dentists and secretaries of these centers. In South, there might be inadequate sterilization including autoclave because of possible financial problems. Significant difference between charity and private centers could be related to this reason that the charity centers would like to decrease the costs to attract more patients. In governmental centers there was unfriendly contact in more than 75% of cases which could be related to more patients in these centers and inexpensive traffics rather than private centers, thus they ignore sterilization of their tools. Unfriendly contact in military centers and high risk of infection to HBV and HCV in war handicaps and casualties <sup>(12)</sup> indicates the dentists should be educated more in this regard. Among centers admitted patients only 5 ones assumed all HBsAg positive patients, and other centers noted the special procedures were performed only for patients declared his/her HBsAg positivity. This approach actually could increase transmission rate of HBV. Unfriendly encounter existed in 33 cases which this could lead the patients to hide their disease in next session. Actually the admission rate in this study is still far from health standards.

In regard to HBV, the behavior and reaction of dentists and secretaries to HBsAg positive patients have not previously studied. Attitudes and behavior with HIV-infected patients among Danish dentists have been previously studied. Two-hundred twenty-eight Danish dentists responded to a questionnaire on dental treatment. Sixty-four percent of the dentists favored the idea of referral of HIV-infected patients to special dental clinics for routine dental treatment, and 93% disagreed with the idea that the infected people are free to choose their centers <sup>(12)</sup>.

In another study, 262 final year dental students in México City believed that they had a moral (83%) and professional (78%) duty to treat HIV positive patients and only 20% had been vaccinated against hepatitis <sup>(13)</sup>.

The present study is the first to show the reaction of dentists in facing to HBsAg positive patients. Dentists should be reminded to use disposal tools for medical treatments. They also must assume all patients as HBsAg positive. It highlights the necessity of more educational workshop to promote dentists knowledge about HBV. More accurate supervision should be also done by the ministry of health on these centers.

## References

1. Braunwald ED, Fauci AS. Harrison's Principles of Internal Medicine. McGraw Hill, New York. 2001; 1721-36.
2. Margolis HS, Alter MJ, Hadler SC. Hepatitis B: evolving epidemiology and implications for control. *Semin Liver Dis* 1991; **11**: 84-92.
3. Jablkowski M, Kuydowicz J, Strzelczyk J, Bialkowska J. Prevalence of markers of hepatotropic viruses A, B, C and the efficacy of vaccination against hepatitis A and hepatitis B among medical students. *Med Sci Monit* 2002; **8**: CR762-6.
4. Malekzadeh R, Khatibian M, Rezvan H. Viral hepatitis in the world and Iran. *Journal of Medical Council of Islamic Republic of Iran* 1997; **15**: 183-200.
5. Daryani NE. *Autoimmune and Viral Hepatitis*. Tehran, 1999; 13-42.
6. Alavian SM. Networking for Overcoming on Viral Hepatitis in Middle East and Central Asia: "Asian Hepatitis Network". *Hep Mon* 2007; **7**: 181-2.
7. Shojaii-Tehrani H. *Preventive and Social Medicine*. Tehran, 1996; 139.
8. Sheila S. *Diseases of the Liver and Biliary System*. Blackwell Scientific Publication, 1989; 312-22.
9. Porter SR. Infection control in dentistry. *Curr Opin Dent* 1991; **1**: 429-35.
10. Alavian SM. Ministry of Health in Iran Is Serious about Controlling Hepatitis B. *Hep Mon* 2007; **7**: 3-5.
11. Alavian SM, Fallahian F, Lankarani KB. The changing epidemiology of viral hepatitis B in Iran. *J Gastrointestin Liver Dis* 2007; **16**: 403-6.
12. Scheutz F. Dental care of HIV-infected patients: attitudes and behavior among Danish dentists. *Community Dent Oral Epidemiol* 1989; **17**: 117-9.
13. Maupome-Carvantes G, Borges-Yanez SA. Attitudes and habits for the control of HIV and hepatitis B in dental students (in Spanish). *Salud Publica Mex* 1993; **35**: 642-50.