

The Influence of Incorrect Customs of Lifestyle in Hepatitis B Infection Transmission

Mohammad Moazeni-Bistgani¹, Reza Imani², and Shahla Shahrjerdi³

¹ Department of Surgery, Shahrekord University of Medical Sciences, Shahrekord, Iran

² Department of Infectious Diseases and Tropical Medicine, Shahrekord University of Medical Sciences, Shahrekord, Iran

³ Health Center of Shahrekord University of Medical Sciences, Shahrekord, Iran

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Abstract- Hepatitis B (HB) disease occurs with high risk behaviors in the different communities. Aim of this study was to find out some of local customs in lifestyle that might be risk factors for transmitting this disease in order to design the educational programs and control it periodically in Chaharmahal VA Bakhtiari, Iran. This was a case-control study, carried out on patients with HB and the control group in Buldaji's district since October 2008 to March 2011. An expert person interviewed both these groups with a valid and reliable questionnaire. The data were gathered and analyzed by descriptive statistics; Chi-square and logistic regression. A total of 85 patients with HB were enrolled in the study. Four of wrong customs were considered as predicting risk factors for transmission of hepatitis B infection in two groups; history of making shallow incisions on the auricle or leg for healing a disease or exchanging their blood in childhood [$P=0.000$, $OR=6.130$, $95\%CL: 2.648-14.192$], tattooing [$P=0.033$, $OR=1.391$, $95\%CL: 1.028-1.882$], be born at home by an untrained midwife [$P=0.005$, $OR=3.217$, $95\%CL: 1.425-7.263$], receiving dental services by experimental dentists [$P=0.034$, $OR=0.218$, $95\%CL: 0.053-0.893$]. For development of health education materials' in our region, we focus not only on proper prevention of general risk factors of HBV transmission but also necessarily draw upon local social and cultural contexts which may spread this disease. We encourage the people to improve these customs or don't do it to control transmission of HB.

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Introduction

Hepatitis B disease is one of the most health problems worldwide. Now, nearly 350-400 million are carriers of hepatitis B virus (HBV) in the world. Everyone that is positive for HBsAg testing is infected (1-2). Based on reviewing literatures on the prevalence of HBV infection in Iran, it's estimated that over 35% of Iranians are exposed to the HBV (3-4). In Iran, the most transmitting pathways are perinatal transmission from mothers to child and injection drug abusers (5-6). Some conditions or populations may appoint as risk factors for transmission of this disease in different parts of Iran, including male sex, being married, several sexual partners or high-risk sexual activity, contact with hepatitis B infected patients, intravenous drug abuse, major surgery, visited by experimental dentists, and some jobs (such as policemen, barbers, and drivers) (3,

6).

According to national databases of blood-borne hepatitis of Chaharmahal VA Bakhtiari province (a province in the west of Iran), during 10 years ago (8), the most of the identified patients lived in the Burojen city among seven cities of this province. The Buldaji is one of environs of Burojen city, which lived the most identified patients in there. The people in this district have religious conditions similar to the Iranian community but they had special cultural behaviors based on some of the studies (6-7). Evaluation of risk factors, including certain jobs, lifestyles and cultural matters in HBV infected people is important for designing programs of the disease control. So we conducted this study to survey on lifestyle, social behaviors and some of the local customs of Buldaji's people to determine the risk factors of HBV infection transmission in this district.

Corresponding Author: Sh. Shahrjerdi

Health Center of Shahrekord University of Medical Sciences, Shahrekord, Iran

Tel: +98 383 2223662, Fax: +98 383 2224492, E-mail address: E-mail: shahrjerdi@skums.ac.ir

Materials and Methods

This study was a population -based case-control study. Investigations were started in the Buldaji district from October 2008. This study was continued to March 2011.

Study population

According to the available information, 85 patients were referred and identified in the Buldaji healthcare center. All patients participated voluntarily in this study; we selected them as the case group under census method. It is considerable that the people are living in different parts of this province have various lifestyles, and local customs. Thus, it was suitable to compare the lifestyles, and local customs of this district's patients with its normal population.

Inclusion criteria for the control group were; interest to take part in the study; being matched with the case group in terms of sex and age (the age at the time of HBV diagnosis in the case group); no previous history of jaundice or being infected with HBV. People took part in the study voluntarily. We excluded those who did not interest to participate in this study. A total of 85 and 170 participants were included in the case and control groups, respectively.

Data collection and analysis

To collect data, we designed a questionnaire for recording participations' information. The questionnaire content was guided by an earlier qualitative study. The validity was checked by nine health experts. To assess the internal consistency of the instrument items, a Chronbach's Alpha formula using Kuder Richardson (KR20) was applied to measure the reliability of the questionnaire through a sample of 20 participations as a pilot. A high degree of reliability was found for using the questionnaire and correlation coefficient of 0.95 was reached. The questionnaire consisted of demographic characteristics, common risk factors listed in reputable sources (1-2,9), and wrong beliefs and customs in lifestyle that the people of this district were believed to carry out usually. These behaviors were introduced and explained by the dignitaries of this district. They did not know to be probable the disease transmission by those. The expert interviewed with two groups and completed the questionnaire confidentially. The expert did not write the participant's name or any identifying information on the questionnaire. The socio-demographic factors of the participants in the two groups are summarized by absolute frequencies and

percentages. The chi-square test was used to test for significance of differences between qualitative variables of the two groups. Regression data were analyzed with the binary logistic. Statistical significance was defined as $P < 0.05$ and analysis was performed using SPSS software.

Results

The case group was 85 patients and control group was 170 people. The questionnaires were completed by all participants. We divided the risk factors into three groups; demographic, common risk factors, and wrong beliefs and customs in.

Characteristics of participants

All the participations in this survey were born in Buldaji district. The case and control groups were the same age and sex, but other demographics such as marital status, education level, and occupation were different in the two groups. Most of the case group ($n=69$) lived-in the city. The age of the case group was 41.40 ± 14.06 years (95% CI=38.36- 44.43; 16-80 years). There were 58 male subjects in the case group and 116 male participants in the control group (twice times of case group). Most of the case group (80%, $n=68$) and the control group (88.82%, $n=151$) were married. Most of the case group (60%, $n=51$) and the control group (47.64%, $n=81$) had reading and writing literacy.

Common risk factors for HBV transmission

We surveyed and compared risk factors for HBV transmission (1-2, 11) in the both groups (Table 1).

Incorrect behaviors and customs in lifestyle as risk factors for HBV transmission

Behaviors and beliefs in the Lifestyle regarding HBV transmission compared between the two groups (Table2).

According to the logistic regression model results; there was a significant association between two of the common risk causes with possible transmission of HBV; Family history of HBV and contact with hepatitis B patients during lifetime with [$P=0.021$, OR=5.754, 95%CL: 1.301-25.450]. Also, Life region and four of the incorrect customs were independently associated with likely transmitting HBV; living in the city area [$P=0.006$, OR=0.328, 95%CL: 0.147-0.729], tattooing [$P=0.033$, OR=1.391, 95%CL: 1.028-1.882], making shallow incisions on the auricle or leg in childhood

[$P=0.000$, $OR=6.130$, $95\%CL: 2.648-14.192$], receiving dental services by experimental dentists [$P=0.034$, $OR=0.218$, $95\%CL: 0.053-0.893$], and being born at home by an untrained midwife [$P=0.005$, $OR=3.217$, $95\%CL: 1.425-7.263$].

It's notable, because of limited number of

participants, analysis was not performed for the risk factors such as blood and blood product transfusions, puncture ear or nose (in female or male), acupuncture, undergoing major surgery, and organ transplants (Tables 1 and 2).

Table 1. Common risk factors of transmitting hepatitis B infection in the two groups

To have a positive history of risk factors	Case group (n=85)	Control group (n=170)	P value
Contact with hepatitis B patients during lifetime*	52(61.17%)	10(5.88%)	0.021
Family history of HBV*	50(58.82 %)	10(5.88%)	0.021
Reuse needles or syringe by injection drug abusers	17(20 %)	0	<0.001
High-risk sexual activity	16(18.82 %)	0	<0.001
Mother of positive HBsAg	6(7.05 %)	0	0.001
Undergoing major surgery	3(3.52%)	3(1.76 %)	0.318
Organ transplantation	0	0	-
Receiving blood and blood products	0	0	-

Table 2. The incorrect customs and behaviors in the Lifestyle that may transmit hepatitis B infection in the two groups

To have a positive history of the social behaviors or the local customs	Case group (n=85)	Control group (n=170)	P value
Puncture ear or nose (in female or male)	37(43.52%)	48(28.23 %)	0.395
Tattooing*	17(20 %)	4(2.35 %)	0.033
Hejamat in adulthood	9(10.58%)	2(1.17 %)	0.040
Being born at home with an untrained midwife*	73(85.88%)	118(69.41%)	0.005
Receiving dental services by experimental dentists*	13(15.09 %)	3(1.76 %)	0.034
Making shallow incisions on the auricle or leg in childhood *	29(34.11 %)	10(5.88%)	0.000
Making shallow incisions on the auricle or leg in childhood with a pointed instrument such as a razor	24(28.23 %)	3(1.76 %)	0.004
A positive history of being in prison	3(3.52%)	0	0.036
Acupuncture	0	0	-

* These variables have a significant relation to HBV transmission by logistic regression model

Discussion

We could determine the risk factors that may transmit HBV infection among wrong beliefs and customs of the people in studied district.

Hejamat was identified as a risk factor in the current study. Hejamat is a traditional treatment in Iran. Usually, the public performs this in adulthood. 10.58% of cases group had Hejamat on their bodies. This treatment is performed by traditional therapists who may not use disposable sterile instruments. Although 1.17% of the control group had Hejamat was performed in clinics by general practitioners who used disposable sterile equipment. A study by Kordi *et al.*, (10) was consistent

with current findings; this practice was common among the wrestlers (11%) that 13.4% of these sportsmen had positive anti-HBcAg test. But because of using sterile devices by this group, Hejamat was not identified as a major risk factor for HBV infection transmission. As well, a study by Yazerloo *et al.*, (11), on 1553 pregnant women showed there were 59 women with a positive history of Hejamat but no one had a positive HBsAg test. Using sterile devices was the leading cause. Using sterile devices in these two studies were opposite to present findings.

Some people in this district had this practice in their childhood. Present results showed 34.11 % of the case group and 5.88% of the control group had a positive

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history in their lifetime. The dignitaries of this district said: "the people make shallow incisions on the auricle or leg's their children with a pointed instrument such as: razor in infancy or childhood as a therapeutic remedy in infancy or childhood". They said: "The tool is used usually for more than one and moreover", this procedure is performed one by one or all together by traditional therapists. There was a significant association between this custom and possible HBV transmission in our region similar to a study in china, there were differences in the traditional Chinese medicine (TCM) syndrome distribution between HBV-infected and non-HBV-infected patients (12).

Chukwuka in Nnewi showed that there is no significant difference in the prevalence of HBsAg between exposed children and unexposed ones to the various traditional practices such as scarification marks (13). It seems that for the development of health education materials in our region, we should focus not only on proper prevention of general risk factors of HBV transmission, but also necessarily draw upon local social and cultural contexts, which may spread this disease (14). Also, we can teach the education outreach programs that are tailored on socio-cultural factors by holding workshops, clinical studies (15), Internet (16), and media (radio and television). Additionally, this would benefit patients and promote knowledge of people about pathways of transmitting HBV infection, which is not announced already as a risk factor.

According to our published data, tattooing as the wrong practice may spread HBV infection. Present results were similar to a study in the Zahedan province (17) that they introduced it as a common risk factor. In a study on 226 gypsies from Shahrekord (18), tattooing was a common among the gypsies that 23.9 % of them had a positive HBcAb. Shirani *et al.*, (19), reported that barbers and hairdressers have an important role in transmission of HBV infection especial by default in using beauty instruments such as needles for tattooing from one client to another. Barbers and hairdressers of this study had an intermediate awareness about HBV diseases. It is essential that we develop continuous teaching programs and improve the barbers and hairdressers' knowledge about risk factors of transmitting HBV infection. In these educations, we should recommend them to use new needles in these measures for better controlling disease in the beauty salons as well.

In this study, birth at home with an untrained midwife was a common practice among the case group (85.88%) that was a significant incorrect risk factor for possible transmitting HBV in the two groups. Today, the hospitals

have essential equipments and many specialized in the different specialization such as training birth attendants (TBAs) (20). These are available to all the people in the province. Because of people's interest for using these facilities, particularly during delivery times, this pathway cannot be risk now.

Another wrong custom as a risk factor in this district was to get dental services by experimental dentists. This finding was similar to certain studies (7, 21) that revealed dental treatment as a risk factor for HBV infection, especially when experimental dentists in the unsanitary place performed this act. There is probably HBV transmission from patient to patient with the dentist's instrument. For decreasing transmitting HBV infection, the supervisors of health clinics should have a better evaluation of dental care and prevent using unsanitary instruments by these clinics. Also, this risk can be removed with the training dentists' postgraduate about controlling infection (22) and using standard protective equipments (23).

A positive family history of HBV infection, and contact with hepatitis B patients during lifetime, these factors were common risk factors in this study similar to the prevalence of HBV in Iran (6-7,24) and elsewhere (14,25-27). Furthermore, the most of the case group was married (80%) similar to prevalence HBV infection in Iran (6-7). transmission of infection to a partner is approximately 4% to 15% (28-29), therefore special cultural and religious conditions in this district similar to the Iranian community that the marriage ties limit to family structure, and not to receive the national vaccination programs (the most age of case group was the 36 to 45 year), this is predictable for transmission of HBV infection in the Buldaji couple. We recommend they learn about prevention of HBV transmission in the family and community and inform each other for protection, and vaccination (30). Thus, they are encouraged to do screening before the marriage because the screening of these groups can be useful for future generation.

In the results of this study, mothers with positive HBsAg (7.05%) had been identified as common risk causes of Hepatitis B infection. This pathway is one of the common routes transmitting hepatitis B infection in Iran (6). Training birth in the hospital supplies basic maternal and infant health care during delivery and community care. This measure is one of the important factors to decrease the transmitting mother-to-child infection such as HBV in birth time (31). We can prevent perinatal HBV transmission by three measures; screening and identifying HBV infected pregnant

mother during pregnancy time, injecting Hepatitis B immune globulin, and injecting the first dose of Hepatitis B vaccine to her infants within 12 hours of birth (2,32).

The current study has several strengths. Specifically, we used census sampling methods and high percent of patients as the case group, and administrated the questionnaire of survey face-to-face.

However, there are also several limitations. First, present findings may not be generalizable to other geographic areas because they do not have cultural backgrounds similar to this region. Second, due to be small size of this district, sometimes, we had difficulty for interviewing with two groups especially cultural factors in two groups.

We suggest carrying out an anthropological and intervention studies on the local customs and beliefs of different tribes and kinfolks in the various parts of Iran, to determine risk factors among of them in future. Tattooing, making shallow incisions into the auricle or leg of the children, receiving dental services by experimental dentists, and being born at home by an untrained midwife were incorrect customs were considered as major risk factors for hepatitis B infection in our region.

It is necessary that we pay special attention to implementation in such situation for hepatitis B prevention in the population: effort on increasing the knowledge in the general population as well those who have a person in family with positive HBsAg history; encourage the people to improve incorrect customs or don't do them; checking and screening infection status of patients and high risk populations especially during pregnancy, before of the marriage; superintendence on the beauty salons for using new razors and needles. Besides considering all possible pathways of transmission in issues without risk factors for infection is needed.

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