



The Knowledge Level and Behavior of Patients with HBV Regarding HBV Infection and Prevention

HBV'li Hastaların HBV Enfeksiyonu ve Önlenmesine İlişkin Bilgi Düzeyi ve Davranışı

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ABSTRACT

Objectives: To determine the knowledge of hepatitis B infected patients and their behaviors regarding hepatitis B virus (HBV) infection and vaccination.

Materials and Methods: This study was conducted in Ankara Atatürk Training and Research Hospital, Department of Infectious Diseases. A total of 402 patients followed for one year or more were included in the study.

Results: Seventy-seven percent of the patients knew that HBV affects the liver, 64.2% of the patients were aware that HBV was an infectious disease and the possibility of inactive carriage was known by 91% of the patients. Although almost all patients were aware of the transmission routes, they were found to assume that transmission rates could be high even in circumstances where the risk of transmission was actually very low. Vaccination and its effects were recognized by all of the patients, as well as the possibility for progression to cirrhosis. Seventy-six percent of the patients were aware of treatments for HBV infection.

Conclusion: In this study, the knowledge and awareness level of the patients was considered to be good overall, despite the fact that there were some gaps in patient knowledge. We believe that these positive findings were associated with the educational activities in our clinic.

Keywords: Hepatitis B, knowledge, prevention

ÖZ

Amaç: Hepatit B ile enfekte hastaların bilgilerini ve hepatit B virüs (HBV) enfeksiyonu ve aşılama ile ilgili davranışlarını belirlemektir.

Gereç ve Yöntemler: Bu çalışma Ankara Atatürk Eğitim ve Araştırma Hastanesi, Enfeksiyon Hastalıkları Kliniği'nde yapılmıştır. Çalışmaya bir yıl veya daha uzun süre takip edilen toplam 402 hasta dahil edildi.

Bulgular: Hastaların %77'si HBV'nin karaciğeri etkilediğini biliyordu, hastaların %64,2'si HBV'nin bulaşıcı bir hastalık olduğunu farkındaydı ve inaktif taşıyıcı olma olasılığını %91'i biliyordu. Neredeyse tüm hastalar bulaşma yollarının farkında olsalar da, bulaşma riskinin gerçekten çok düşük olduğu durumlarda bile bulaşma oranlarının yüksek olabileceğini varsaydıkları bulundu. Aşılama ve etkileri, siroza ilerleme olasılığı tüm hastalar tarafından fark edildi. Hastaların yüzde yetmiş altısı HBV enfeksiyonu tedavisinden haberdardı.

Sonuç: Bu çalışmada, hasta bilgilerinde bazı boşluklar olmasına rağmen, hastaların bilgi ve farkındalık düzeylerinin genel olarak iyi olduğu kabul edildi. Bu olumlu bulguların kliniğimizdeki eğitim faaliyetleri ile ilişkili olduğuna inanıyoruz.

Anahtar Kelimeler: Hepatit B, bilgi, önleme

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Introduction

Despite being a vaccine-preventable disease, Hepatitis B is a common public health problem throughout the world. The global prevalence of hepatitis B surface antigen (HBsAg), a surface antigen of the hepatitis B virus (HBV) which shows the presence of infection, ranges from 3% to 6%; however, prevalence varies greatly according to geographical region and vaccination success (1).

In Turkey, one out of three people over the age of 18 has been infected with HBV at some point in their life, and it is thought that there are more than 2 million adults with HBsAg positivity. Only about 12% of these people were found to be aware of their condition (2,3). According to this result, HBV awareness in our country can be considered to be quite low.

Prevention is the most important precaution for HBV infection. Many people who do not have symptoms and signs do not consider themselves to be at any risk for Hepatitis B. Therefore, patient education that may increase the likelihood of avoidance and vaccination behaviors, will play a crucial role in the prevention of disease spread. The second step is to increase and maintain the level of community immunity (herd immunity). The third step is to strengthen the surveillance of the disease. This will ensure timely, accurate and consistent reporting of diagnosed cases. The fourth step is to prevent the transmission of the disease. The fifth step is to increase accessibility to appropriate treatment options, thus reducing disease-related mortality (4,5,6). In order to achieve these goals, not only healthcare workers but also patients should be sufficiently educated about Hepatitis B infection.

In this study, we aimed to determine the knowledge and behaviors of patients infected with hepatitis B.

Materials and Methods

Study Group

The study included 402 patients with hepatitis B infection who were followed for a duration of at least one year between June 2014 and July 2014 at Ankara Atatürk Training and Research Hospital, Clinic of Infectious Diseases and Clinical Microbiology. The importance and requirements of the study were explained verbally to all patients followed at our center and written informed consent was obtained before sampling from all individuals that accepted to participate.

Ethical Issues

This study was approved by the Institutional Ethics Review Committee of Ankara Atatürk Training and Research Hospital in accordance with the World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects.

Study Instrument

A self-explanatory questionnaire comprising of 24 questions was designed to assess and compare patients' knowledge and attitudes regarding hepatitis B infection. The questionnaires were completed under observation without any intervention. The content of the questionnaire was created by scanning national and international publications with regard to the questions we usually

receive from patients followed at our department. The questions were open-ended, but in some questions, options (multiple-choice) were given to learn the views of the participants. The questionnaire was comprised of questions that assessed the following:

- Demographic: age, gender, education, socioeconomic status,
- Current disease status,
- Knowledge of Hepatitis B: Sources, self-assessment, knowledge items,
- Attitudes and behaviors towards disease,
- Disease concerns and difficulties.

Statistical Analysis

Statistical analyses were performed using SPSS version 15.0 (Chicago, IL, USA). In the study, numerical data were shown with mean and standard deviation, and categorical data were given with frequency (n) and percentages. Chi-square tests were used for categorical data comparisons while the Kruskal-Wallis test was used for multiple group analyses of ordinal data. The Cronbach's alpha value, which shows the consistency of the questionnaire, was found to be 0.588. In all statistical analyses, obtaining a $p < 0.05$ value was considered to demonstrate statistical significance.

Results

We included 402 patients (258 males and 144 females) into our study, mean age was 37.9 ± 11.3 years.

Most of the patients learned that they had HBV infection during blood donation ($n=300$, 74.6%).

All (402 patients, 100%) knew that hepatitis B infection could progress to cirrhosis, 372 patients (92.5%) knew that it could progress to liver cancer, 288 patients (71.6%) were aware of the possibility of death due to HBV infection (Table 1, 2). The rate of correctly answering this question was statistically higher in patients who were diagnosed 0-5 years ago (41.1%) than those who were diagnosed more than 5 years ago ($p=0.036$). A large majority of patients (366, 91%) also had knowledge that individuals could carry the infection as silent carriers.

In the study group, 120 (29.9%) attended physician visits every 3 months. Patients who attended visits every 3 months were more likely to know that HBV infection affects the liver, that their relatives were at risk for infection, and that the disease had drug treatments, compared to patients who attended physician visits at longer intervals ($p=0.045$, $p=0.040$, $p=0.042$, respectively).

The most recognized transmittance patterns by patients were: dental treatment ($n=402$, 100%), kissing ($n=402$, %100) and blood route ($n=396$, 98.5%) (Table 3).

The frequency of knowing about preventive measures were as follows: separation of toothbrushes and nail clippers ($n=402$, 100%), vaccination ($n=402$, 100%), single-partner sexual life ($n=402$, 100%). In addition, patients were found to believe that washing food (100%) and using bottled water (100%) were important for the prevention of disease transmission (Table 4).

Patients were mostly educated about hepatitis B infection by their physicians ($n=390$, 97%), while the internet was also an important source of information which was reported by 264 (65.7%) of the patients.

The family members of 336 patients (83.6%) were screened for HBV after the disease was diagnosed in their relative. All of

Table 1. Distribution of patients' knowledge about HBV infection		
	n	%
What is hepatitis B infection?		
It is a microbial disease affecting blood	150	37.3
An important disease in which the liver is affected by a germ	312	77.6
Icterus is seen	120	29.9
It is an infectious disease	258	64.2
Can people infected with hepatitis B become "silent carriers"?		
Yes	366	91.0
No	36	9.0
Are the relatives of patients at risk for hepatitis B infection?		
Yes	348	86.6
No	48	11.9
Is there any medication for chronic hepatitis B infection?		
Yes	306	76.1
No	96	23.9
Can hepatitis B infection be treated with diet?		
Yes	294	73.1
No	108	26.9
HBV: Hepatitis B virus		

Table 2. Patients' knowledge of prognosis of HBV infection		
Sequelae of infection	n	%
Cirrhosis of the liver	402	100.0
Liver cancer	372	92.5
Death	288	71.6
Liver transplantation	378	94.0
HBV: Hepatitis B virus		

Table 3. Distribution of patients' knowledge about HBV transmission		
	n	%
Mode of transmission		
Contact with patient blood	396	98.5
During sexual activity	366	91.0
During surgery	384	95.5
During dental treatment	402	100.0
During childbirth	396	98.5
Acupuncture, tattoo, during piercing	396	98.5
With the common use of instruments in contact with blood in the barbershop	396	98.5
Kissing with infected person	396	98.5
Contact with body fluids	396	98.5
Sharing the same environment with the patient	396	98.5
Shaking hands with infected person	402	100.0
Respiratory tract	396	98.5
Shared toilet, bathroom, with clothes, kitchen utensils	396	98.5
With stress	396	98.5
With the common use of insulin needle	402	100.0
HBV: Hepatitis B virus		

the patients (n=402,100%) stated that they believed their relatives should be vaccinated to prevent hepatitis B infection. The most common negative behavior reported by patients was avoidance or refusal of medical intervention by medical personnel in the emergency medicine setting (n=210, 52.2%), which was followed by people avoiding handshaking or kissing (n=210, 52.2%) (Table 5).

Gender, age, education and income were found to have no effect on the knowledge level of our study group (p>0.05 for each).

Discussion

HBV infection is accepted as the leading cause of hepatocellular cancer (HCC) worldwide. In case-control studies, the risk of HCC in individuals with chronic HBV infection is reported to increase between 5 and 15 times, although it varies with regard to the effects of other risk factors. Hepatic cirrhosis is present in 70-90% of individuals who develop HCC on the basis of HBV infection, but HCC may develop without cirrhosis in HBV infection (7,8). In a study conducted in Chinese and Southeast Asians, 68% of the participants stated that they were aware of HBV, but more than 60% did not know the relationship between HBV and cirrhosis and cancer. It has been shown that the level of knowledge about HBV infection increases with advanced age, education level and

the use of media in health education (9). In studies conducted with different occupational groups in our country, the rates of those who were aware that hepatitis B could progress to cirrhosis and HCC were respectively, 13.1% and 8.3% among barbers and 88.7% and 75.3% among midwives. In a previous study in our clinic, these rates were found to be 85.7% and 65.7%, respectively (10).

In the literature, individuals were reported to believe that the disease could be transmitted by breast milk, saliva, sweat, tears, kissing, sneezing and handshaking (11,12,13). The presence of these erroneous notions is the source of unnecessary worries in the society and also the problems experienced by these patients in social life. Similarly, in our study, although all patients knew the correct routes of transmission, the proportion of patients with similar false information was quite high. In a previous study at our clinic, we had found that 75.2% of patients were aware that the separation of personal items such as toothbrushes and nail clippers were necessary measures to prevent HBV infection. In the current study, all patients were found to know that hepatitis B could be prevented by vaccination. In the previous study at our clinic, this percentage was 63.8% (10), indicating that the education carried out by our clinic had been effective.

Studies have shown that those who are in close contact with patients diagnosed with hepatitis B and those who live in the same household are persons at high risk of developing the disease

Table 4. Distribution of patients' knowledge about HBV infection prevention		
	n	%
Prevention of transmission		
Separation of personal items with blood contact, such as toothbrushes and nail clippers	402	100.0
Vaccination	402	100.0
Single partner sexual activity	402	100.0
Using a condom	402	100.0
Avoid contact with blood and body secretions of infected persons	402	100.0
Washing foods with water	402	100.0
Bottled water	402	100.0
HBV: Hepatitis B virus		

Table 5. Negative attitudes and behaviors exposure by the patients		
Have you encountered negative attitudes and behaviors related to your illness?		
Yes	210	52.2
No	192	47.8
Have you encountered negative attitudes and behaviors in your family?		
Yes	48	11.9
No	354	88.1
What are the negative attitudes and behaviors you have encountered?		
My colleagues didn't want to share the same environment with me	60	14.9
Most people avoided shaking hands or kissing me.	210	52.2
My family is trying to keep my grandchildren and/or children away from me	54	13.4
My dentist declined me treatment	90	22.4
Emergency medical staff did not want to/hesitated to provide treatment	210	52.2
A large notice indicating that I was positive for HBV was placed on my bed when I was treated as an in-patient	66	16.4
HBV: Hepatitis B virus		

and that these people should be screened regularly (5,14,15). In a study conducted on the relatives of patients with hepatitis B in our country, it was found that 23.1% of the patients' relatives had not undergone screening. In the same study, it was found that 32.7% of the participants who had to be vaccinated after having a screening test and 25% of the participants whose spouses had hepatitis B were not vaccinated to prevent hepatitis B infection (16). In our study, 16.4% of the patients reported that their family members had not undergone screening tests. However, all of the patients stated that their relatives should be vaccinated in order to prevent the disease from spreading. In the previous study at our clinic, 95.8% of patients had stated that their family members should undergo screening tests (10).

Studies conducted with different segments of the national and international community have shown that a great many participants have incomplete or incorrect information about hepatitis B infection prevention and transmission routes. Nevertheless, these studies have been shown that education and awareness studies contribute to infection prevention and vaccination (17,18,19). Similarly, when we compare the results of our previous study with the current study, we believe that our patients' HBV knowledge and awareness have increased as a result of effective training.

For the assessment of patient knowledge levels in our country should include the conduct of large-scale multi-center studies to determine the level of knowledge of patients with HBV and the general population. Considering the extreme numbers of Syrian immigrants in our country, it is essential that such studies should be conducted as soon as possible. The results of greater studies can improve the chance to perform sufficient and targeted education in the diverse populations that are present in our country.

Study Limitations

The limitations of our study are that the patient was obtained from a single center, the questions were answered on the basis of the self-reporting, and the validity and reliability analysis of the questions asked were not performed.

Conclusion

Hepatitis B is a preventable and curable disease. Increasing the level of knowledge about the disease and vaccination studies can both reduce the incidence of the disease and prevent negative attitudes and behaviors faced by the patients.

Ethics

Ethics Committee Approval: This study was approved by the Institutional Ethics Review Committee of Ankara Atatürk Training and Research Hospital in accordance with the World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects.

Informed Consent: Informed consent was obtained from them before they took the questionnaire.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: A.K.K., İ.H., M.A.T., Concept: A.K.K., R.G., M.A.T., Design: A.K.K., R.G., M.A.T., Data Collection or

Processing: A.K.K., G.R.Y., R.G., Analysis or Interpretation: A.K.K., İ.H., M.A.T., Literature Search: A.K.K., İ.H., M.A.T., Writing: A.K.K., R.G., FE., İ.H., G.R.Y., M.A.T., Final approval: A.K.K., R.G., FE., İ.H., G.R.Y., M.A.T.

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