



Insidious Hepatitis B Virus and Risk of Community Transmission: Case Report

Sinsi Hepatit B Virüsü ve Toplumda Bulaşma Riski: Olgu Sunumu

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ABSTRACT

Hepatitis B virus (HBV), which causes serious health problems worldwide, causes millions of people to get sick and hundreds of thousands to die every year, despite the precautions and vaccination campaigns. Health professionals providing services are at serious risk, particularly in terms of undiagnosed HBV carriers. The hepatitis B surface antigen value of five children who were born at home in a family living in rural areas, whose mother's were hepatitis B patient's, and who were not vaccinated against hepatitis B, were found to be positive. These individuals, who are excluded in any treatment and education program are an important risk factors for both health workers and society.

Keywords: Hepatitis B virus, risk factor, health professionals

ÖZ

Dünya genelinde ciddi sağlık sorunlarına yol açan hepatit B virüsü (HBV), alınan önlemlere ve aşılama kampanyalarına rağmen her yıl milyonlarca insanın hastalanmasına ve yüz binlercesinin hayatını kaybetmesine neden oluyor. Hizmet sunan sağlık çalışanları, özellikle tanı konulmamış HBV taşıyıcıları açısından ciddi risk altındadır. Kırsal kesimde yaşayan bir ailede evde doğan, anneleri hepatit B hastası olan ve hepatit B aşısı yapılmamış beş çocuğun hepatit B yüzey antijeni değeri pozitif bulunmuştur. Herhangi bir tedavi ve eğitim programında alınmayan bu bireyler hem sağlık çalışanları hem de toplum için önemli bir risk faktörüdür.

Anahtar Kelimeler: Hepatit B virüsü, risk faktörü, sağlık çalışanları

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Introduction

Hepatitis B virus (HBV) is a small, double-stranded, and deadly DNA virus from the hepadnaviridae family that can cause liver disease in both the acute and chronic stages. It can usually be transmitted from mother to baby during childbirth. It can also be transmitted through blood and sexual intercourse. The use of uncontrolled blood or blood products, medical interventions with non-sterilized tools, injections, use of sharp/piercing materials, sharing of items such as razors, toothbrushes, tattooing, and applying body jewelry with non-sterilized tools are also the most common ways of transmission. Hepatitis B can remain in the body for many years without any symptoms after infection (1,2).

According to the World Health Organization data, in 2015, HBV its prevalence was found to be 3.5%. In other words, an average of 257 million people live with HBV infection, and an average of 1-2 million new patients are added to this number annually (1,3). As of 2015, only 8% (1.7 million) of the diagnosed patients could be included in the treatment. Additionally, considering that 25.3% of these are women of childbearing age, 65 million women of childbearing age have the risk of transmitting the disease to their babies (4,5). In 2015 alone, 885,000 people died from HBV-related liver disease (3).

In a study conducted in Turkey in 2009 on individuals over the age of 18, hepatitis B surface antigen (HBsAg) positivity was 4% and anti-hepatitis B core antigen (anti-HBc) positivity was 30.6%.

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It has been reported that one out of every three people over the age of 18 in Turkey has encountered HBV. It is estimated that there are more than 2 million HBsAg positivity in adult individuals. It was found that only 12% of these people were aware of the situation (2). This is important in terms of demonstrating the extremely low level of awareness in our country (6). According to the data of the Ministry of Health of the Republic of Turkey, approximately half (40-50%) of liver transplantations performed between 2012 and 2016 constitute acute-chronic liver failure and liver cancer due to HBV infection (7).

Those working in risky occupational groups, especially health professionals, should be more careful and have a high level of awareness about HBV. Studies have reported that the prevalence of hepatitis B among healthcare professionals in Turkey is between 0.5 % and 1%. In the world, studies have stated that this rate rises up to 10% (8,9).

Many hepatitis B carriers lead their lives uncontrolled, and there may be periods when they may pose a risk both for themselves and for their environment. When these patients are identified, they should be promptly directed to the relevant departments and followed up (10).

Case Report

Mother who is 62 years old, has a positive HBsAg value, has not received any treatment, is illiterate and gave birth to all her children in a home environment with normal birth, has chronic hepatitis B disease and strengthens the assumption that the mother transmitted the HBV to the children at birth. Additionally, because the family lives in a rural part of a province in the Southeastern Anatolia Region of Turkey, the fact that four children aged 44, 41, 37, and 34, respectively, were not vaccinated at all or were not directed in any way, caused these five children to have chronic hepatitis B. Therefore, these people, who are not followed-up and treated, constitute a serious risk factor for health service providers and other individuals in the society. In the serological tests of the mother and her five children, the HBsAg value was positive (+) and the anti-HBs value was (-). All five children have 6, 4, 2, 5 children, respectively; However, since all children are born in a hospital environment, the HBsAg value is not positive in any of them, as they are vaccinated. These patients, who are still living their daily lives, were not involved in any control and treatment process. The risk that these individuals may pose, who do not even have the slightest knowledge about the transmission and spread of the HBV, poses a serious problem for public health. Informed consent was obtained.

Discussion

In the literature review, public awareness of the HBV in Turkey is at a very low level (1,2,4). Saatçi et al. (11) in their study with high school students in Turkey, it is emphasized that awareness of hepatitis B is not at the desired level, and therefore, it is necessary to implement education programs on this subject urgently. In our case, the mother and her five children learned by chance that they had hepatitis B by the results of the general examination. According to Tozun et al. (2) In their population-based viral hepatitis prevalence

study conducted in Turkey in 5,471 people over the age of 18, HBsAg positivity was 4%, anti-HBc total positivity was 30.6%, and anti-HB positivity was 31.9%. Additionally, it was determined that HBsAg positivity was significantly higher in Southeastern Anatolia, Eastern Anatolia, and Central Anatolia regions and lower in western regions (2). As a matter of fact, the fact that our case lived in the rural part of the Southeastern Anatolia Region of Turkey increased the risk of HBsAg positivity in line with the literature studies. Mahamat et al. (12), in which a meta-analysis of 227 studies (224,936 health professionals in 71 countries) published between 1970 and 2019 were examined; found HBsAg positivity as 2.3% and acute HBV infection as 5.3% in healthcare professionals. This situation shows us that health professionals are at a serious risk.

Conclusion

Undiagnosed patients who receive services in the public sphere are mixed into society and benefit from all common areas, including healthcare services. Considering the ways of transmission of the HBV, they can increase the rate of spread of the virus in all public spaces, especially healthcare providers. The presence of these undiagnosed patients causes the virus to be transmitted, but the fact that their exact numbers cannot be determined is a worrying situation. To raise awareness about the HBV in Turkey and to be more vigilant against it, it is necessary to conduct screenings throughout the country, to identify and follow-up infected people, to conduct regular vaccination campaigns, especially in rural areas, and to organize national training. Health professionals should also take the necessary precautions in service delivery and ensure that infected patients are guided quickly and effectively.

Ethics

Informed Consent: It was obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: O.P., A.Y., A.K., Concept: O.P., A.Y., A.K., Design: O.P., A.Y., Data Collection, or Processing: O.P., A.Y., Analysis, or Interpretation: O.P., A.Y., A.K., Literature Search: O.P., A.K., Writing: O.P., A.Y., A.K.

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References

1. TR Ministry of Health. Turkey Viral Hepatitis Prevention and Control Program 2018-2023. (accessed on: 30 October 2022). Available from: <https://batmanism.saglik.gov.tr/TR,142887/turkiye-viral-hepatit-onleme-ve-kontrol-programi-2018-2023.html>
2. Tozun N, Ozdogan O, Cakaloglu Y, Idilman R, Karasu Z, Akarca U, Kaymakoglu S, Ergonul O. Seroprevalence of hepatitis B and C virus infections and risk factors in Turkey: a fieldwork TURHEP study. *Clin Microbiol Infect.* 2015;21:1020-1026.
3. World Health Organization. Global hepatitis report, 2017. (accessed on: 28 October 2022). Available from: <https://www.who.int/publications/item/global-hepatitis-report-2017>

4. Romero Díaz-Maroto V, Sánchez Cuervo M, Rodríguez Sagrado MÁ, Bermejo Vicedo T. Adherence to entecavir for chronic hepatitis B and correlation with effectiveness. *Farm Hosp*. 2015;39:378-381.
5. Guidelines for the prevention, care and treatment of persons with chronic hepatitis B infection. Geneva: World Health Organization; March 2015. (accessed on: 28 October 2022). Available from: http://apps.who.int/iris/bitstream/10665/154590/1/9789241549059_eng.pdf?ua=1&ua=1
6. Toy M, Önder FO, Wörmann T, Bozdayi AM, Schalm SW, Borsboom GJ, van Rosmalen J, Richardus JH, Yurdaydin C. Age- and region-specific hepatitis B prevalence in Turkey estimated using generalized linear mixed models: a systematic review. *BMC Infect Dis*. 2011;11:337.
7. Number of Transfers-TTDis Decision Support System. Department of Organ, Tissue Transplantation and Dialysis Services. (accessed on: 28 October 2022). Available from: <https://organkds.saglik.gov.tr/KamuyaAcikRapor.aspx?q=ORGANNAKLI>
8. Bosnian KB, Karaođlan I, Namiduru M, Şahin A. Seroprevalence of Hepatitis B, Hepatitis C and HIV in healthcare workers of Gaziantep University Şahinbey Research and Practice Hospital. *Viral Hepat J*. 2013;19:11-14.
9. Singhal V, Bora D, Singh S. Hepatitis B in health care workers: Indian scenario. *J Lab Physicians*. 2009;1:41-48.
10. Nankya-Mutyoba J, Aizire J, Makumbi F, Atuyambe L, Ocama P, Kirk GD. Correlates of hepatitis B awareness and disease-specific knowledge among pregnant women in Northern and Central Uganda: a cross-sectional study. *Hepatol Med Policy*. 2018;3:14.
11. Saatçi E, Gerekliođlu Ç, Bozdemir N, Akpınar E. Hepatitis B awareness among high school students in Adana. *Türk Aile Hek Derg*. 2006;10:25-30 (Turkish).
12. Mahamat G, Kenmoe S, Akazong EW, Ebogo-Belobo JT, Mbaga DS, Bowo-Ngandji A, Foe-Essomba JR, Amougou-Atsama M, Monamele CG, Mbongue Mikangue CA, Kame-Ngasse GI, Magoudjou-Pekam JN, Zemnou-Tepap C, Meta-Djomsi D, Maidadi-Foudi M, Touangnou-Chamda SA, Daha-Tchoffo AG, Selly-Ngaloumo AA, Nayang-Mundo RA, Yéngué JF, Taya-Fokou JB, Fokou LKM, Kenfack-Momo R, Tchami Ngongang D, Atembeh Noura E, Tazokong HR, Demeni Emoh CP, Kengne-Ndé C, Bigna JJ, Boyomo O, Njouom R. Global prevalence of hepatitis B virus serological markers among healthcare workers: A systematic review and meta-analysis. *World J Hepatol*. 2021;13:1190-1202.