



Hepatitis B Virus Should not be Forget in Health Care Worker

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Dear Editor,

One of the most effective transmissible of blood borne viruses, which is important in health care worker (HCW) is hepatitis B virus (HBV) (1). HBV can be transmitted to a health care worker from infected patient, and similarly infected health care workers are at risk of transmitting HBV to other patients (2, 3). Also, HBV is highly contagious and can be spread by percutaneous or mucosal exposure to infected blood or other body fluids, this is a strong reason why these HCW are at greater risk than others (4). Unfortunately, there are rare case studies about transmission of HBV from HCW to the patient, However it seems that the reduction in frequency could be due to precautions, adoption of enhanced percutaneous injury precautions such as double-gloving in surgery, and routine HBV vaccination of HCWs (5).

In a study transmission of HBV e antigen (HBeAg), negative blood via needlestick was 2% and this number in HBeAg-positive blood was equivalent to 19%. Therefore, this condition underlines the transmission of HBV from HCWs to the patient and vice versa as an important route of infection (6).

Fortunately, since the discovery and introduction of the HBV vaccine, the incidence of infection with the virus has decreased in the general population. In particular, the Iran vaccination programs in newborns at birth have been able to play an effective role in this regard (7).

According to a meta-analysis on the HBV vaccination efficacy in Iranian HCW, vaccination can make 90% - 97% protection against the virus and therefore, it can effectively prevent infection transmission (8).

In addition, although the rate of seropositivity steadily declined, according to the recommendation of advisory committee on immunization practices (ACIP) regarding the HBV vaccination in HCW, they are at an increasing risk for the HBV infection (9).

Currently, the exact prevalence of HBV in HCW is unknown, however, it is obvious that following the introduction of infant vaccination at birth, catch up adolescent vaccination, and vaccination of HCWs before employment the

rate of infection significantly decreased (5).

According to the Australian national guideline for the management of healthcare worker, if HBV DNA is detectable PCR, HCWs is not permitted to use exposure prone procedure (EPPs). However, if the HCW is on antiretroviral therapy and with positive HBSAg, as long as HBV DNA is undetectable by PCR every 3 months, they are permitted to use EPPs.

To sum it up, we can conclude that HCWs infection with HBV is an important issue and great concern, due to the fact that there is a possibility of transmission from HCW to patient. Fortunately, due to vaccination of HCWs, screening program, use of universal precaution, and double gloving during EPPs transmission of HBV from HCWs to patient is rare. Therefore, All HCWs should be trained to standard precaution and be educated about how to use preventive measures when confronted with an infected patient.

Finally, in order to eliminate HBV in HCWs, a new Iranian guideline should be implemented and all HCWs be vaccinated against HBV. In addition, all HCWs who perform EPPs should be tested for HBV and other blood borne diseases.

References

1. Aminian O, Moaven Saidi M, Sadeghniiat Haghighi K, Izadi N. Coverage and long term immunogenicity of hepatitis B vaccine in healthcare workers. *Arch Clin Infect Dis*. 2016;11(4):35758. doi: [10.5812/archcid.35758](https://doi.org/10.5812/archcid.35758).
2. Mardani M. Hepatitis B and C and the role of non specialists on disease elimination. *Arch Clin Infect Dis*. 2016;11(4):42734. doi: [10.5812/archcid.42734](https://doi.org/10.5812/archcid.42734).
3. La Torre G, Scalingi S, Garruto V, Siclari M, Chiarini M, Mannocci A. Knowledge, attitude and behaviours towards recommended vaccinations among healthcare workers. *Healthcare*. 2017;5(1). doi: [10.3390/healthcare5010013](https://doi.org/10.3390/healthcare5010013). [PubMed: 28272332].
4. Azimi H, Vaezjalali M. Hepatitis B core antibody immunoglobulin M in blood donors with a history of hepatitis B virus infection. *Arch Clin Infect Dis*. 2016;11(3):38232. doi: [10.5812/archcid.38232](https://doi.org/10.5812/archcid.38232).
5. Lewis JD, Enfield KB, Sifri CD. Hepatitis B in healthcare workers, Transmission events and guidance for management. *World J Hepatol*. 2015;7(3):488-97. doi: [10.4254/wjh.v7.i3.488](https://doi.org/10.4254/wjh.v7.i3.488). [PubMed: 25848472].
6. Werner BG, Grady GF. Accidental hepatitis B surface antigen positive inoculations. Use of e antigen to estimate infectivity. *Ann Intern Med*. 1982;97(3):367-9. [PubMed: 7114632].

7. Aghasadeghi MR, Velayati AA, Mamishi S, Nabavi M, Aghakhani A, Bidari Zerehpooch F, et al. Low prevalence of hepatitis B vaccine escape mutants among individuals born after the initiation of a nationwide vaccination program in Iran. *Arch Virol*. 2016;**161**(12):3405-11. doi: [10.1007/s00705-016-3050-1](https://doi.org/10.1007/s00705-016-3050-1). [PubMed: [27613286](https://pubmed.ncbi.nlm.nih.gov/27613286/)].
8. Azami M, Hafezi Ahmadi MR, Sayehmiri K. Hepatitis B vaccination efficacy in iranian healthcare workers, A meta analysis study. *Hepat Mon*. 2017;**17**(1):1-8. doi: [10.5812/hepatmon.37781](https://doi.org/10.5812/hepatmon.37781).
9. Centers for Disease C. Recommendation of the immunization practices advisory committee, (ACIP). Inactivated hepatitis B virus vaccine. *MMWR Morb Mortal Wkly Rep*. 1982;**31**(24):317-22. 327-8. [PubMed: [6811846](https://pubmed.ncbi.nlm.nih.gov/6811846/)].