

# The Importance of Occult Hepatitis B Infection Screening in Pre-Transplant Evaluation

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**Received:** November 6, 2013; **Accepted:** November 6, 2013

**Keywords:** Hepatitis B, Immunosuppression

Occult hepatitis B virus infection (OHB) is defined based on the existence of hepatitis B virus (HBV) DNA in liver tissue or serum of the patients, in spite of negative antibody test result for hepatitis B surface antigen (1). Most of these patients have positive hepatitis B core antibody (Hbc Ab) test result as the evidence of past HBV infection. Ramezani et al. recommended the evaluation of Hbc Ab in hemodialysis patients for detection of OHB (2).

There might be low titer of Hbc Ab in minority of OHB patients due to immunosuppression. In the other word, all serological Ab panels for HBV might be negative in OHB setting. Searching for HBV DNA in serum is promising for determination of OHB in the immune deficiency state. However, this method could not be recommended in the routine screening due to its high expense. Therefore, defining the best diagnostic strategy for detection of OHB seems to be challenging in particular subgroups of patients. Although the precise clinical manifestations and pathogenesis of OHB are not clear, it is considered as a probable source of HBV infection via blood transfusion, hemodialysis, and organ transplantation. Reactivation of OHB in the post-transplantation phase could be fatal. It is wise to improve the yield of diagnostic tool for OHB screening in the pre-transplant phase to lower the liver-related morbidity and mortality in the transplant candidates.

The important issues on OHB are the aggravation of chronic liver damage and concomitant fibrosis (3). Some studies showed that this condition causes progression of cirrhosis and development of hepatocellular carcinoma in chronic liver disease (4) OHB lowers the virologic response in hepatitis C infection (5) Song et al. declared that HBV transmission could occur via transfusion, he-

modialysis, and organ transplantation (1). Considering the possibility of HBV reactivation, they suggested the screening of OBI in the post-transplantation phase. Furthermore, they mentioned the need for antiviral therapy in HBsAg-negative transplanted patients who are anti-Hbc positive, to prevent the reactivation of HBV infection. HBV recurrence has occurred even two years after discontinuation of the immunosuppression (6). Fontenele et al. issued the role of OHB screening in hemodialysis patients to prevent the transmission of HBV and the consequent liver cell damage (7).

Based on the current evidence, it seems reasonable to screen for OHB in the pre-transplantation phase and follow the patient carefully for early detection of OHB relapse. Hbc Ab test is a practical screening method for OHB and is a surrogate marker of previous HBV infection in the immune competent patients. HBV DNA assay is an accepted alternative for OHB screening in the immunosuppressed individuals whose Hbc Ab is in a low detectable titer.

## Acknowledgements

I thank Dr. Arsia Jamali for reviewing the manuscript.

## Financial Disclosure

No benefits in any form have been received or will be received from any commercial party related directly or indirectly to the subject of this study.

## Funding/Support

This study was supported by the research funds of Tehran University of Medical Sciences.

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### Implication for health policy/practice/research/medical education:

This paper argues the importance of occult hepatitis B infection screening in pre-transplant evaluation. It is applicable for those in the field of organ transplantation.

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