Molecular and serological detection of occult hepatitis B virus among healthy hepatitis B surface antigen-negative blood donors in Malaysia

ABSTRACT

Background: Occult hepatitis B infections are becoming a major global threat, but the available data on its prevalence in various parts of the world are often divergent.**Objective:** This study aimed to detect occult hepatitis B virus in hepatitis B surface antigen-negative serum using anti-HBc as a marker of previous infection. **Patient and methods:** A total of 1000 randomly selected hepatitis B surface antigen-negative sera from blood donors were tested for hepatitis B core antibody and hepatitis B surface antibody using an ELISA and nested polymerase chain reaction was done using primers specific to the surface gene (S-gene). **Results:** Of the 1000 samples 55 (5.5%) were found to be reactive, of which 87.3% (48/55) were positive for hepatitis B surface antibody, indicating immunity as a result of previous infection however, that does not exclude active infection with escaped mutant HBV. Nested PCR results showed the presence of hepatitis B viral DNA in all the 55 samples that were positive for core protein, which is in agreement with the hepatitis B surface antibody result. **Conclusion:** This study reveals the 5.5% prevalence of occult hepatitis B among Malaysian blood donors as well as the reliability of using hepatitis B core antibody in screening for occult hepatitis B infection in low endemic, low socioeconomic settings.

Keyword: Hepatitis B; Core antibody; Occult hepatitis B infection; Polymerase chain reaction; Surface antigen