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Occult Hepatitis B Virus infection and blood transfusion

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29 Abstract

Transfusion-transmitted infections including hepatitis B virus (HBV) have been a major concern in transfusion medicine. Implementation of HBV nucleic acid testing (NAT) has revealed occult hepatitis B virus infection (OBI) in blood donors. In the mid-1980s, hepatitis B core antibody (HBe) testing was introduced to screen blood donors in HBV non-endemic countries to prevent transmission of non-A and non-B hepatitis. That test remains in use for preventing of potential transmission of HBV from hepatitis B surface antigen (HBsAg)-negative blood donors, even though anti-hepatitis C virus tests have been introduced. Studies of anti-HBe-positive donors have revealed an HBV DNA positivity rate of 0-15%. As of 2012, 30 countries have implemented HBV NAT. The prevalence of OBI in blood donors was estimated to be 8.55 per 1 million donations, according to a 2008 international survey. OBI is transmissible by blood transfusion. The clinical outcome of occult HBV transmission primarily depends on recipient immune status and the number of HBV DNA copies present in the blood products. The presence of donor anti-HBs reduces the risk of HBV infection by approximately five-fold. The risk of HBV transmission may be lower in endemic areas than in non-endemic areas, because most recipients have already been exposed to HBV. Blood safety for HBV, including OBI, has substantially improved, but the possibility for OBI transmission remains.

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Key words: Occult hepatitis B infection; Transfusion; Anti-HBe; NAT; Blood service

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