Low prevalence of occult hepatitis B infection among blood donors in Beirut, Lebanon: reconsider the deferral strategy of anti-HBs-positive blood donors

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Background: Hepatitis B virus (HBV) infection remains one of the major infectious threats to human health. Since the implementation of highly sensitive HBV nucleic acid testing, occult HBV infection (OBI) has been detected. The prevalence of OBI varies significantly between geographic areas, genotypes and population depending on the sensitivity of the detection assays used. This project aimed at determining the prevalence of OBI in blood donors from a major blood donor center in Beirut, Lebanon through testing for four HBV markers (HBsAg, anti-HBs, anti-HBc and HBV DNA).

Material/methods: A total of 7437 blood donors were first tested for anti-HBc marker between August 2013 and March 2015; 341 samples positive for anti-HBc were tested for other serological markers and HBV genome
**Results:** This study revealed a 4.6% prevalence of anti-HBc positive blood donors (341/7437). Among anti-HBc positive blood donors, 21 were HBsAg positive (6.2%) and 75% were positive for anti-HBs. The occurrence of occult Hepatitis B virus in healthy seropositive blood donors during a 20 months period was very low; only one Syrian blood donor (n=1/341, 0.3%) was HBsAg negative, HBV DNA-positive with anti-HBs level > 1000 mIU/mL.

**Conclusions:** Our study indicates that HBV DNA is present in a small percentage of HBsAg negative, anti-HBc reactive units. Lebanon has developed its own blood screening strategy, which is to screen for anti-HBc in addition to HBsAg. This is based on HBV prevalence and cost-effectiveness of testing methods. The disadvantage of not implementing is missing rare blood units from a donor in the window period.