

Hepatitis B surface antigen variants in voluntary blood donors in Nanjing, China

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Hepatitis B virus (HBV) is still one of the serious infectious risks for the blood transfusion safety in China. One plausible reason is the emergence of the variants in the major antigenic alpha determinant within the major hydrophilic region (MHR) of hepatitis B surface antigen (HBsAg), which have been assumed to evade the immune surveillance and pose a challenge to the disease diagnosis. It is well documented that some commercial ELISA kits could detect the wild-type but not the mutant viruses. The high prevalence of HBV in China also impaired the application of nucleic acid testing (NAT) in the improvement of blood security. Among of 20,326 blood units in the Red Cross Transfusion Center of Nanjing from October 2008 to April 2009, 296 samples (1.46%, 296/20,326) were HBsAg positive in the 2 successive rounds of the ELISA test. In these HBsAg positive units, HBV S gene could be successfully amplified from 39 donors (13.18%, 39/296) in the nested-PCR. Sequence analysis revealed that 32 strains (82.1%, 32/39) belong to genotype B, 7 strains (17.9%, 7/39) to genotype C. Besides well known G145R, widely dispersed variations in the MHR of S region, were observed in 20 samples of all the strains sequenced. These mutations in the MHR of HBsAg may be associated with disease diagnosis and the risks for the blood transfusion safety.

Biography

Dr. Yonglin Yang has completed his PhD from Nanjing Medical University in 2011. He is the director of Department of Quality Control and Management from Nanjing Red Cross Blood Center. Also Dr. Yonglin Yang is a member of Chinese Medical Association. Recently he has published the article about HBV mutation in the Virology Journal.

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