

Toll Like Receptor 3 Polymorphisms in Hepatitis B Virus Infection

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Hepatitis B virus (HBV) is the one of the major causes of chronic liver disease. Individuals exposed to HBV show wide spectrum outcomes including immunized persons, asymptomatic carrier, chronic active hepatitis, cirrhosis and HCC. The outcome of HBV infection and the severity of associated liver diseases are determined by the nature and strength of host immune responses against the virus. There is accumulating evidence that the innate branch of the host immune system plays an important role in the control of HBV infection. Various components including toll-like receptor (TLR) contribute to this nonspecific innate immune response .TLR3 play an important role in innate immune response against viral pathogens. Single nucleotide polymorphisms (SNPs) in the TLR3 could be considered as factors for the susceptibility to viral pathogens including HBV. This study aimed to investigate the distribution of six SNPs of the TLR3 gene in patients infected with HBV and to determine the relation between these SNPs and the clearance of hepatitis B virus. These SNPs were tested by direct sequencing. Three groups were investigated: chronic HBV carrier (25 patients), chronic active HBV carrier (16 patients) and 13 persons who were previously exposed to HBV and became immunized. These 3 groups were examined for six SNPs (rs5743311, rs5743312, rs5743313, rs5743314, rs5743315, and rs78726532). The analysis showed high frequencies of GCTCCA haplotype and CCA haplotype in the immunized group when compared to chronic hepatitis B groups ($P<0.05$). These findings indicate that genetic variations in the TLR3 gene could affect the outcome of HBV infection.