

## **Interleukin-10 Gene Promoter Polymorphisms and Hepatitis B Virus Infection Outcome**

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### ***ABSTRACT***

**Background and objective:** Environmental factors and host genetic are important factors in different outcomes of HBV infection. One of these genetic factors is polymorphisms of regulatory genes of cytokines. Single nucleotide polymorphisms (SNP) in the promoter region of the interleukin (IL)-10 gene has been reported to have a role in determining of hepatitis B virus (HBV) infection outcome. The present study was undertaken to evaluate the association between HBV infection and SNP in the promoter region of the IL-10 gene.

**Materials and methods:** A total of 127 cases including 30 subjects who had spontaneously recovered from HBV infection, 34 healthy carriers, 32 patients with chronic hepatitis B and 31 healthy controls were enrolled in this study. The three biallelic (-819,-592,-1082) polymorphisms in the IL-10 gene promoter were analyzed by PCR and direct sequencing.

**Results:** No significant difference was found in frequencies of genotypes and haplotypes of IL-10 gene promoter region at position -1082, -819 and -592 among controls, individuals spontaneously recovering from HBV infection, carriers and patients with chronic hepatitis B infection. However, frequencies of A/A genotype at position -592 and T/T genotype at position -819 were higher in the HBV clearance group while frequency of G/G genotype at position-1082 was higher in persistence group. GCC/GCC and GCC/ACC haplotypes were significantly more frequent in anti-HBe positive patients.

**Conclusion:** It seems that genetic polymorphisms of IL-10 promoter region are not associated with HBV infection outcome. However, patients with high and intermediate producer haplotypes of IL-10 had more ability to produce anti-HBe than those with low producer haplotypes.

**Key words:** Hepatitis B infection; Interleukin (IL)-10 gene; Genotype; Haplotype