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Title of Thesis: A Study of Interleukin-10 (IL-10) Promoter Gene Polymorphisms and Response to Therapy in Chronic Hepatitis C Infection in Egyptian Children

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Abstract :

Background: According to the world Health Organization (WHO) report (2002), at least 170 million people are chronically infected with hepatitis C virus (HCV).Egypt with the highest prevalence of HCV infection (15%), its rural villages have a high prevalence of HCV infection in children younger than 10 years of age. Interleukin 10 (IL-10) an anti-inflammatory cytokine, down regulates the protective inflammatory response, adversely affecting the response to antiviral treatment. The IL-10 promoter is highly polymorphic, two single nucleotide polymorphisms (SNPs) G1082A and C592A that form three haplotypes (AA, AC, and GC) have been shown to be associated with differential IL-10 expression in humans. **Aim of work:** determine the prevalence of the 2 SNPs G1082A and C592A in the IL-10 promoter region and their effect on response to antiviral therapy in a cohort of children and young adults with HCV infection.

Patients and methods: forty HCV patients underwent baseline quantitation of HCV-RNA by polymerase chain reaction (PCR) and baseline biochemical testing and were followed up for seventy-two weeks, both clinically and via laboratory assessment HCV-RNA viral load and liver function tests. The genotype status of IL-10 was assessed by real time PCR-Taqman probe based assay. **Results and conclusion:** there was no significant association between polymorphisms in the IL-10 gene (G1082A and C592A) or cytokine haplotype as regards response to therapy or severity of HCV infection in children. As for the SNP C592A; there was a statistically significant association between the score of fibrosis and different genotypes ($P < 0.004$), concluding that the (A) allele is risky. HCV RNA-count and gamma glutamyl transferase pretreatment levels were found to be predictors of response to interferon therapy in HCV infected children in this study.

Keywords:

Interleukin-10 (IL-10); Hepatitis C; Polymorphism; Real time PCR).