Osteopontin Gene Polymorphisms as Predictors for the Efficacy of Interferon Therapy in Chronic Hepatitis C Egyptian Patients with Genotype 4

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Hepatitis C virus (HCV) is presently considered one of the major health problems worldwide. This study aimed to determine the relationship between osteopontin gene polymorphisms and its protein level and the efficacy of interferon-based therapies in HCV patients. The study included one hundred chronic hepatitis C patients infected with genotype 4, received PEG-IFNα2b plus ribavirin for 24 weeks, as well as, 60 healthy subjects serving as control. All individuals were subjected to clinical and laboratory parameters, including hepatitis markers and HCV quantitation by real time PCR. Single nucleotide polymorphisms (SNPs) in the promoter region of osteopontin (OPN) gene (at nucleotide -155, -443, -1748) were analyzed by direct sequencing of DNA fragments amplified by PCR, in addition to, estimation of serum level of OPN by ELISA. The SNPs in the promotor region of the osteopontin gene (OPN) at nucleotide -443 (C/C vs C/T, T/T) were found to represent predictors for treatment response by univariate logistic regression analysis. However, OPN serum level was independent predictors for treatment response by both univariate and multivariate logistic regression analysis. In conclusion, the responsiveness of HCV infected patients to interferon treatment differed depending on the alleles of the SNPs in the promoter region of OPN at nt -443 and serum OPN protein levels, therefore, they could be used as a useful markers to predict the efficacy of treatment.

Key words: Hepatitis C virus, Osteopontin, Interferon therapy, Polymorphism.