Endogenous IFNγ in chronic HCV genotype 4 patients treated with PEG-IFNα and ribavirin

Abstract

Introduction: Hepatitis C virus (HCV) infections remain an increasingly prevalent and emergent health problem worldwide, causing a wide spectrum of liver diseases. Combination therapy with pegylated interferon (PEG-IFN) of peginterferon alfa-2a and oral ribavirinis currently recognized as the standard treatment of chronic HCV infection. Several complex immunological mechanisms are involved during the course of HCV treatment using interferons. The role of endogenous interferon gamma (IFNγ) in Egyptian patients infected with chronic HCV and treated with PEG-IFN/ribavirin is uncertain. The goal of this study was to evaluate the association of IFNγ and chronic HCV infection among patients treated with combination therapy of PEG-IFN/ribavirin. Methodology: Samples from 20 patients infected with HCV genotype-4 (HCV-4) and 20 non-infected individuals as healthy controls were used in this retrospective study. IFNγ levels in peripheral blood monocytes were analyzed, along with liver enzyme alanine aminotransferase (ALT) levels, and single nucleotide polymorphism (SNP) of the myxovirus resistance-A (MxA) gene. Results: The results showed that an increase of IFNγ and a decrease of ALT levels in chronic HCV-infected patients after 12 weeks of treatment with combination therapy. Conclusion: Enhanced IFNγ secretion and decreased liver enzyme ALT production are indicative of HCV clearance and improvement of liver function. In addition, the SNP of the MxA gene is an important host genetic factor that independently influenced the response to IFNα in patients with chronic HCV infection, especially in those with a low viral load.

Keyword: Hepatitis C; Interferon α; Interferon γ; MxA; SNP.