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Vitamin D Receptor FokI Gene Polymorphism Predicted Poor Response to Treatment in Chronic HCV Genotype 4

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Abstract

The aim of this study was to investigate the association between a genetic polymorphism of the vitamin D receptor (VDR) and antiviral responses in Egyptian patients with chronic hepatitis C virus genotype 4 (HCV-4).

Methods: Our study enrolled 100 HCV-4 patients who received pegylated interferon alpha-2a (pegIFNα-*2a) and* ribavirin for 48 weeks. Patients were divided into 2 groups according to their response to therapy: 50 were responders, and 50 were non-responders. All HCV-4 patients were further subjected to the following laboratory tests: HCV-RNA using quantitative PCR, vitamin D level using ELISA and VDR genotype using PCR-RFLP assays, and abdominal ultrasonography.

Results: There was a statistically significant difference in the frequency of the VDR polymorphism (FokI rs10735810) between responders (FF:60%, Ff:16%, ff:24%) and non-responders (FF:10%, Ff:26%, ff:64%) (P<0.001). There was a statistically significant association between VDR polymorphism with higher ALT levels (ff: 63.2±30.8 U/L, Ff: 48.5±19.5 U/L, FF: 54.4±10.8 U/L, P=0.04) and higher alkaline phosphatase levels (ff: 102.6±53.2 U/L, Ff: 100.3±66.4 U/L, FF:68.3±29.4 U/L, P=0.007). VDR polymorphism showed no association with baseline vitamin D levels (P=0.21).

Conclusion: VDR polymorphism plays a role in the treatment response of HCV and the modification of disease progression in Egyptians infected with chronic HCV-4.

Key Words: HCV genotype 4 ● response to treatment ● vitamin D ● FokI polymorphism (rs10735810)