

The Role of Programmed Cell Death 1(PD-1) and Cytotoxic T-Lymphocyte-Associated Protein 4 (CTLA-4) Single Nucleotide Polymorphisms in Susceptibility to Chronic Infection in Hepatitis C Virus Infected Patients With and Without Type 2 Diabetes Mellitus

Thesis

Submitted in Partial Fulfillment of the MD degree in
Medical Microbiology and Immunology

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2020

Abstract

Background: Cytotoxic T-lymphocyte-associated protein 4 and Programmed cell death 1 downregulate immune responses. This study aimed to assess the impact of rs10204525, a single nucleotide polymorphism (SNP) of Programmed cell death 1, and rs 231775 variation on chronic Hepatitis C Virus (HCV) infected patients with or without diabetes mellitus (DM).

Methods: One hundred and fifty eight patients (80 patients with chronic infection HCV and DM, 78 patients with HCV without DM) as well as 81 healthy controls were enrolled in this study. Genomic DNA was extracted from blood samples collected from subjects. Genotyping of selected SNPs of rs10204525 and rs 231775 was carried out using RT-PCR.

Results: Regarding rs10204525, our results showed that there was increased risk of being chronic HCV with DM or being chronic HCV alone when the patient was CT or TT as compared with control [(P = 0.002 , OR-7.49) and (P<0.0001, OR-6.337)]. As regards rs231775, there was increased risk of being chronic HCV with DM or being chronic HCV alone when the patient was AG or GG as compared to control [(P=0.001, OR-8.992) and (P=0.002, OR-3.561)].

Conclusions: Risk of chronic HCV with or without DM increased when the patients had CT or TT genotypes of rs10204525. Also, there was increased risk of being chronic HCV with DM or being chronic HCV alone when the patient was AG or GG of rs231775.

Key words: Cytotoxic T-lymphocyte-associated protein 4, Programmed cell death 1, single nucleotide polymorphism, DM, chronic HCV