

**Influence of Vitamin D Receptor Gene Polymorphisms on  
treatment of chronic HCV patients with interferon**

Thesis

Submitted for partial fulfillment for the M.D.Degree  
In Medical Biochemistry and Molecular Biology

Presented by

**Shymaa Elsayed Ayoub**

**M. B., B.Ch. – M.Sc. (Medical Biochemistry)**

Cairo University

Supervised by

**Prof. Dr. Olfat Gamil Shaker**

Professor of Medical Biochemistry and Molecular Biology

Faculty of Medicine

Cairo University

**Prof .Dr. Yassser Hussein Nassar**

Professor of Medical Biochemistry and Molecular Biology

Faculty of Medicine

Cairo University

**Prof .Dr.Maisa Said Elrazki**

Professor of Tropical Medicine

Faculty of Medicine

Cairo University

**Dr. Amr Ali Zahra**

Assistant Professor of Medical Biochemistry

Faculty of Medicine

Fayoum University

**Medical Biochemistry Department**

**Faculty of Medicine**

**Cairo University**

٢٠١٤

## Abstract

**Background and Aim:** Chronic infection with hepatitis C virus (HCV) is a huge problem both globally and at the level of the individual patient. The natural outcome and response to treatment in hepatitis C virus (HCV) infection varies between individuals. Our aim is to detect the Influence of Vitamin D Receptor Gene Polymorphisms ((BsmI) and (FokI)) and Vit.D level in the blood of chronic liver disease patients under treatment with interferon

**Subject and Methods:** Blood samples were taken from 103 patients who are suffering from chronic hepatitis C disease. They were divided into Responders (n=63) and Non-Responders (n=40) according to their initial response to treatment with normalization of aminotransferases (ALT and AST) levels and clearance of the virus denoted by negative HCV-RNA by PCR after 12 months of receiving treatment. Also 30 blood samples from controls were taken. The following were done: history taking, general examination, liver function tests, hepatitis markers, HCV quantitation by real time PCR, DNA extraction from whole blood, PCR for gene amplification, agarose gel electrophoresis and quantitation of Vit.D level by ELISA.

**Results:** there was significant differences between responders and non responders to interferon therapy of chronic hepatitis C patients before treatment as regards the mean values of Vit D ( $P = 0.001$ ). There was significant differences in the prevalence of single nucleotide polymorphism (SNP) in the promotor region of Vit. D receptor gene (BsmI) between responders and non responders to interferon therapy of chronic hepatitis C patients as regards (Bb) ( $p=0.02$ ). There was no significant differences in the prevalence of single nucleotide

polymorphism (SNP) in the promotor region of Vit. D receptor gene (Fok<sup>1</sup>) between responders and non responders to interferon therapy of chronic hepatitis C patients as regards [FF, Ff, ff) ( $p=0.004$ ), ( $p=0.001$ ) and ( $P=0.003$ ) respectively

**Conclusion:** Vitamin D Receptor Gene Polymorphisms((BsmI) and Vit.D level in the blood of chronic liver disease patients are predictors of response to combination therapy of HCV.

**Key words:** hepatitis C, Vitamin D, polymorphism.