# ROLE OF INSULIN RESISTANCE AS AN INDEPENDENT PREDICTOR IN THE TREATMENT OF CHRONIC HCV

***Thesis***

**Submitted for Partial Fulfillment of M.D Degree**

**In Internal Medicine**

***By***

Tarek Ibrahim Ahmed

M.B.B.ch, MSc

***Supervised By***

PROF.DR. MAHER ABO BAKR ELAMIR

Prof. of internal medicine, Faculty of medicine, Fayoum University

PROF.DR. EMAD ELMOATASEM BELLAH AMIN

Prof. of internal medicine, Faculty of medicine, Cairo University

PROF.DR. NAGWA KAMAL EL.DIN ROSHDY

Prof. of medical Biochemistry, Faculty of medicine, Cairo University

DR.HALA SAYED EL-TOUKHY

Lecturer of internal medicine, Faculty of medicine, Fayoum University

***Cairo in 2012***

***Background:***

Hepatitis C virus (HCV) infects an estimated 170 million persons worldwide and thus represents a viral pandemic, one that is five times as widespread as infection with the human immunodeficiency virus type 1 (HIV-1). Chronic hepatitis C develops in up to 85% of patients with acute hepatitis C **( Lauer et al.,2001).**

Six distinct but related HCV genotypes and multiple subtypes have been identified on the basis of molecular relatedness. In the United States and Western Europe genotypes 1a and 1b are most common, followed by genotypes 2 and 3. The other genotypes are virtually never found in these countries but are common in other areas, such as Egypt in the case of genotype 4, South Africa in the case of genotype 5, and Southeast Asia in the case of genotype 6 (**McHutchison et al.,1998).**

Knowledge of the genotype is important because it has a predictive value in terms of the response to antiviral therapy **(Poynard et al., 1998)**.

There is increasing evidence that patients infected with different HCV genotypes may have different clinical profiles, severity of liver disease and response to alpha interferon therapy **(Mita et al.,1994).**

Glucose abnormality has been shown to be associated with chronic HCV infection **(A.L. Mason et al., 1999).**

Hepatitis C may induce insulin resistance (which in turn increases the risk of hepatic fibrosis), and the risk of type 2 diabetes mellitus is increased in persons with chronic hepatitis C **(H. Knobler et al., 2000).**

Type II DM in patients with chronic HCV infection is associated with worsening insulin sensitivity and an impaired first phase insulin response **(N. Taura et al., 2006).**

So, it is considered valuable to evaluate the impacts of insulin resistance in the clinical feature and the response to anti-HCV therapy **(K. Byth et al., 2003)**.

***Aim of the work:***

- Focused on whether hepatitis C virus (HCV) genotype 4 is associated with different response to antiviral therapy.
- To evaluate impact of insulin resistance and beta-cell function on the response to peg interferon-alpha (PEG-IFN)/ribavirin combination therapy in Egyptian patients with chronic hepatitis C (CHC).

***Patient & method:***

**The following subjects were enrolled in the study:**

1- Twenty age and sex matched healthy subjects will serve as control.
2- One hundred patients with chronic hepatitis C and without overt diabetes is treated with combination therapy with (PEG-IFN)/ribavirin.

**The following investigations were:**

- serum transaminases, total proteins, albumin, total and direct bilirubin and prothrombin time.
- serum urea, creatinine.
- Complete blood picture.
- Fasting and 2h post prandial blood sugar.
- Abdominal U/S.
- Liver biopsy.
- Histopathological examination of liver biopsy.
- HBsAg.
- ANA.

- TSH.
- HCV genotype were determined.
- Pretreatment, at 12 weeks, at 24 weeks , at 48 weeks of treatment and 6 months after stoppage of treatment ,HCV RNA level were measured.
- Insulin resistance and beta-cell function were evaluated by homeostasis model assessment of insulin resistance (HOMA-IR) and homeostasis model assessment of beta-cell function (HOMA-beta) before starting treatment.

## Abstract :

**- Spontaneous bacterial peritonitis** is one of the most serious complications of ascites in cirrhotic patients. The condition should be suspected in any cirrhotic patient with ascites with evidence of clinical deterioration, regression in hepatic or renal function, worsening malaise, encephalopathy or unexplained persistent leucocytosis. **(Rimola et al., 1993).**

Diagnostic aspiration should be performed and neutrophil count>250 cells/$mm^3$ is indicative of underlying SBP. **(Runyon et al., 2004).**

- **Leukocyte esterase** (LE) is a urine test for the presence of white blood cells and other abnormalities associated with infection by detecting esterase which is an enzyme released by white blood cells and this test was tried for

diagnosis of SBP using the ascitic fluid as the substrate. **(Castello et al., 2003).**

- Our study aims to assess the reliability and validity of leukocyte esterase reagent strips in diagnosis of SBP in cirrhotic patient with ascites and compare this method with other conventional methods used in diagnosis.

**key words :** ascites, cirrhosis, portal hypertension, spontaneous bacterial peritonitis, leukocyte esterase.