# Summary

Chronic hepatitis C is one of the most common chronic viral infections worldwide and is the major cause of cirrhosis, end-stage liver disease and hepatocellular carcinoma.

Treatment with a 24 to 48-week course of interferon alfa with ribavirin can lead to a sustained eradication of the virus, which is associated with a long-term improvement in liver histology and reduction in the risk of cirrhosis and liver cancer.

The major side effects of interferon therapy include fatigue, influenza-like symptoms, neuropsychatric symptoms, and hematological abnormalities.

This study has been conducted on 300 patients suffereing from chronic hepatitis C who were previously diagnosed and treated in hepatology research unit at Tanta fever hospital (two hundred as study group I and one hundred as control group II) the patients in study group received antiviral treatment in the form of pegylated interferon (once/week) with oral ribavirin (800-1200 mg/d) for 48 weeks .

All patients were subjected to: history talking, clinical examination, BMI was calculated, routine laboratory investigations as a preparation of IFN therapy

(which included CBC, complete liver biochemical profile, serum creatinine, FBS, ANA, AFP, Anti Bilharzial antibody, Free TSH, HBsAg and Quantitative HCV RNA by PCR), Abdominal ultrasonography, liver biobsy for histopathology assessment according to METAVIR, ECG and Fundus examination.

The hematological response to treatment was crrelated with the following parameters :

- **Demographic factor** (age, gender and BMI)
- **Liver biochemical profile** (Total bilirubin, Alkaline phosphatase, albumin, AST and ALT)
- **Ultrasound finding** (US hepatomegaly and US splenomegaly)
- **Diabetic status**.
- **Viral kinetics**: HCV viral load
- **Liver Histopathology**: stage of fibroses and grade of activity according to METAVIR score.
- **Blood parameters** ( HB, Platelet, WBCs)

The results of this study showed that: Interferon therapy is associated with a reduction in peripheral white blood cell counts (both neutrophils and lymphocytes). This has been attributed to bone marrow suppression or a reversible impairment in the release of neutrophils and lymphocytes. Peg-interferon results in a greater degree of neutropenia than does non pegyleated interferon.

There was statically significant reduction in WBCs count in the first three months of treatment

Neutrophil count can fall to levels that are associated with an increase in the risk of bacterial infections and sepsis. Indeed, in the recent large randomized controlled trials of pegylated interferon combined with ribavirin neutropenia with listed as the most common reason for dose reduction (18% of patients) and was reason fpr early drug discontinuation in 1% of patients.

The management of neutropenia, like that of anemia, is variable. While some clinicians tolerate more profound neutropenia before recommending dose reduction, others are using filgrastim to raise the neutrophil counts in hepatitis C virus-infected patients receiving combination therapy.

Although dose reductions for neutropenia will remain the standard of care until additional information is developed, new information suggests that, the timing of the interferon injection relative to measuring neutrophil counts should also be considered when making decisions about dose reductions.

Prospective studies have found that the patients had a better hematological response to the combination with Granulocyte-macrophage Colony-Stimulating (GCS) Factor

therapy compared with interferon-alfa monotherapy but they failed to demonstrate any significant difference in the virological response.