SUMMARY AND CONCLUSION

Non-alcoholic fatty liver disease (NAFLD) is a clinicopathological syndrome characterized by hepatic steatosis with or without active inflammation in patients with a negligible alcohol intake, NAFLD can progress to fibrosis and even cirrhosis and eventually can cause hepatocellular carcinoma. NAFLD is recognized as one of the leading causes of chronic liver disorders with a worldwide distribution.

Insulin resistance; a state in which a given concentration of insulin produces a less than expected biological effect and also it has been defined as the requirement of 200 or more units of insulin per day to attain glycemic control and prevent ketosis, and according to the homeostasis model assessment (HOMA), patient is considered to have insulin resistance if HOMA index is more than 2.14, is thought to be the pathognomonic condition responsible for NAFLD.

Adiponectin is a hormone that is secreted by the adipocytes and it was reported that it has several anti-atherogenic, anti-diabetic and anti-inflammatory properties. Experimental and clinical studies have stated that adiponectin concentrations had a positive correlation with insulin sensitivity.

This study aimed to investigate the relation between NAFLD and both of insulin resistance and adiponectin hormone and discover their role in the pathogenesis of the disease.

The study included fourty patients (twenty four females and sixteen males) with NAFLD as well as ten age and sex matched healthy volunteers serving as controls. Patients were selected from those attending the outpatient clinics of the internal medicine department of Benha University Hospitals.

All patients were subjected to a thorough history taking and a complete clinical examination, with special stress on the following:

- The medical history.
- The family history.
- Estimation of the body mass index (BMI).
- Measurement of the systolic and diastolic blood pressure.
- Measurement of waist circumference.
- Abdominal ultrasound.

THE FOLLOEING INVESTIGATIONS WERE DONE TO ALL SUBJECTS:

1- Fasting blood glucose.
2- Liver function tests [alanine aminotransferase (ALT) and aspartate aminotransferase (AST)].
3- Total serum lipogram pattern [total serum cholesterol (TC), serum low density lipoprotein cholesterol (LDL), serum high density lipoprotein cholesterol (HDL) and serum triglycerides (TG)].
4- Fasting serum insulin.
5- Fasting plasma adiponectin hormone.
6- Estimation of insulin resistance according to (HOMA test).
7- Kidney function tests (blood urea, serum creatinine and serum uric acid levels).

THIS STUDY SHOWED THE FOLLOWING RESULTS:

■ Patients with NAFLD had a significantly lower levels of adiponectin compared to the control group.

■ Patients with NAFLD had higher levels of fasting serum insulin and insulin resistance (HOMA test) compared to the control group.

■ Patients with NAFLD had increase in the values of waist circumference, serum ALT, serum AST, serum TC, serum LDL, serum triglycerides and serum uric acid levels in comparison with the control group.

■ Patients with NAFLD had lower levels of serum HDL than the control group.

■ This study demonstrated that plasma adiponectin levels were higher in females than in males.

■ Plasma Adiponectin level was negatively correlated with: age, BMI, waist circumference, systolic and diastolic blood pressure, fasting serum blood glucose, fasting serum insulin level, insulin resistance (HOMA test), serum TC, serum LDL, serum triglycerides and serum uric acid levels.

■ Positive correlation was found between adiponectin level and blood urea, serum creatinine and serum HDL.

■ There was a non significant correlation between adiponectin level and both of ALT and AST.

CONCLUSIONS:

In conclusion, this study reported lower adiponectin levels in NAFLD patients that were inversely correlated with insulin resistance, which was markedly documented in the patients of NAFLD. These data

support that insulin resistance is a primary pathognomonic factor in NAFLD and also support a role for adiponectin hormone in the protection against liver injury, in the context of the hypothesis that an imbalance between the pro-inflammatory and the anti-inflammatory cytokines may have a pathogenic role in the development of the liver damage in NAFLD. Moreover the relation between the adipose tissue and the liver may act as a major player in the link between the metabolic syndrome and the NAFLD. Finally adiponectin may be applicable in human diseases as a novel agent for diagnosis and treating insulin resistance and NAFLD.