# SUMMARY AND CONCLUSION

Our study included 75 patients with chronic liver diseases divided into 3 groups : the first group included 25 patients with B hepatic fibrosis, portal hypertension, esophageal varices either bleed or not, with normal renal function or with HRS. The second group included 25 patients with postviral cirrhosis with or without portal hypertension, bleeding or non – bleeding esophageal varices, with normal renal function or with HRS. They may have hepatitis B virus or hepatitis C virus or both.

The third group included 25 patients with mixed B hepatic fibrosis and post viral cirrhosis, with bleeding esophageal varices or non – bleeders, with normal renal function or with HRS.

There were also 10 healthy individuals acting as a control group.

We excluded patients with diabetes mellitus, hypertension, heart failure, bronchial asthma or other diseases that may influence the plasma endothelin concentration.

For all patients groups and also the control group we evaluated the liver status by many laboratory tests and investigational procedures : complete blood picture, liver function tests (S. bilirubin, S. albumin, PT, PC, ALT, AST, total protein), viral hepatitis markers for HBV and HCV, renal function tests (S. creatinine and blood urea), random blood sugar. Also abdominal sonars were done to all patients and control groups. Upper endoscopy was done for all patients groups. Proctosigmoidoscopy was done for all patients with B hepatic fibrosis and mixed cirrhosis and B agglutination antibodies were also done. Liver biopsy was done for 7 cases in whom the diagnosis was not established.

Patients with HRS underwent many additional laboratory investigations to establish their diagnosis such as urine and plasma sodium concentration and urine volume and urine analysis to exclude any other cause of renal failure.

Finally plasma endothelin radioimmunoassay was done for all patients and control groups.

Endothelin is the most potent endogenous vasoconstrictor yet identified. It is a 21 – aminoacid peptide secreted by the vascular endothelial cells as well as many tissues such as kidneys, lungs, brain, adrenals, reproductive system, heart and others.

Its actions are through modulation of vasomotor tone, cell proliferation, and hormone production.

Many investigations showed that endothelin has a role in the physiology and also in disease processes in many vital organs and that the plasma and urine concentrations are changed significantly in many disease entities and this may be used as a disease markers or it can be used in the follow-up for these diseases.

Our study focussed on the role of endothelin in the pathogenesis of the portal hypertension and the hepato-renal syndrome and showed that plasma endothelin is significantly increased in all patients groups whatever the etiologies of these patients – compared to healthy controls. So the cause of portal hypertension; hepatic fibrosis, post viral cirrhosis, or mixed cirrhosis may have no direct influence on the plasma endothelin concentrations.

The plasma endothelin concentration is significantly increased in patients with bleeding esophageal varices than those with non –bleeding esophageal varices.

Also, there is a significant positive correlation between plasma endothelin concentrations and portal vein diameters. So, endothelin may be accused in the causation of portal hypertension and its perpetuations. Plasma endothelin concentration is highest in patients with the hepatorenal syndrome compared with cirrhotic patients with normal renal function and control subjects. So, the kidney vasculature is the most sensitive tissue to the vasoconstrictor effect of endothelin.

Plasma endothelin levels in HRS are about 10 times than the normal control subjects whereas cirrhotic patients with normal renal function are only about 3-4 folds than the control subjects.

Also plasma endothelin levels are significantly correlated with blood urea and serum creatinine and so this enforces its role in the pathogenesis of the hepatorenal syndrome.

Many investigators studied endothelin in chronic liver diseases and hepatorenal syndrome and showed increased, within normal or decreased levels of endothelin in these situations and this can be attributed to the differences in selections of patients, etiologies of cirrhosis, or the techniques used for the estimation of plasma endothelin levels.

Plasma endothelin concentrations have significant correlations with PT, PC, S. bilirubin and S. albumin concentrations so, it may have a role in the bleeding diathesis in these patients.

In conclusion, although the plasma endothelin concentration is increased in patients with portal hypertension and hepatorenal syndrome, urinary endothelin concentrations must be determined and also compared with the corresponding plasma endothelin levels to show if that increase in plasma endothelin level is due to the increased production by the kidney vasculature or impaired excretion of these peptides.

Also continued work must be done on the endothelin receptor – antagonists and this may be beneficial in the control of portal hypertension and hepatorenal syndrome.

Lastly, as plasma endothelin measurements have been found to correlate well with the severity of portal hypertension and hepatorenal syndrome, this may have prognostic or diagnostic values and may be used as a marker for the progression of these diseases.