# Summary and Conclusion

Vascular complications comprise one of the most frequent complications in diabetes and may be a leading cause of increased mortality in these patients ***(Magill, et al., 1996)***. Endothelin and nitric oxide may serve as markers of endothelial dysfunction ***(Faraci, et al., 1998)***. So, it was planned in this work to clarify the role of endothelin and nitric oxide as markers of endothelium malfunction, which is a gate of vascular complications in diabetes mellitus.

In order to achieve this goal, this study was carried out on 75 subjects. 60 of them were diabetic patients, classified into 2 groups. Group I consisted of 35 non-insulin dependent diabetics with mean age of 50.24 $\pm$ 17.29 years including 18 males and 17 females. Group II consisted of 25 insulin dependent diabetics with mean age of 37.73 $\pm$ 13.15 years including 14 males and 11 females. The rest 15 subjects were well cross-matched apparent healthy volunteers with mean age of 45.13 $\pm$ 10.52 years including 9 males and 6 females as a control group or group III.

All subjects under study were subjected to a thorough history and clinical examination with special stress on the following: duration of diabetes, mode of therapy, state of diabetic control and presence of complications as micro and macro-vascular complications. Also, all subjects under study were subjected to laboratory investigations including fasting and 2-hours post-prandial plasma glucose, glycated hemoglobin, urine analysis for microalbumin, serum creatinine level, lipid pattern including total cholesterol, triglycerides, HDL-cholesterol

and LDL-cholesterol, plasma level of endothelin and plasma level of nitric oxide.

According to the results obtained from this study it is found that:

There was a significant increase of plasma levels of endothelin and decrease of plasma levels of nitric oxide in diabetic patients when compared to the control group.

The changes in endothelin and nitric oxide levels in diabetic patients were more obvious in the poor controlled diabetic patients.

There was no significant difference in plasma level of endothelin and nitric oxide between insulin-dependent diabetic patients and non-insulin-dependent diabetic patients.

The clinical complications (as retinopathy, hypertension, nephropathy and peripheral neuritis) became more sever with the increase in endothelin level and with the decrease in nitric oxide level.

There was a significant positive correlation and regression between endothelin and glycated hemoglobin, microalbumin, cholesterol, triglycerides, LDL-cholesterol, retinopathy, hypertension, peripheral complications and nephropathy.

There was a significant negative correlation and regression between nitric oxide and glycated hemoglobin, microalbumin, cholesterol, triglycerides, LDL-cholesterol, retinopathy, hypertension, peripheral complications and nephropathy.

From the results obtained in this study, it is concluded that plasma endothelin and nitric oxide levels could be added as chemical markers of

diabetic control. Also, they may be used as markers of endothelial malfunction, which is the corner stone in diabetic complications.