SUMMARY AND CONCLUSION

E-Selectin is a member of the selectin family which comprises E,P and L selectins. The selectin family is a family of the cell adhesion molecules whish are cell surface proteins involoved in cell binding. usually to leukocytes, to each other, to endothelial cells or to extracellular matrix.

E-selectin is expressed on activated endothelial cells in response to inflammation or tissue injury, where it functions cooperatively with other selectins in mediating the rolling phase of leukocytes on endothelium prior to its migration to site of injury. It is also involved in other physiological functions including : homming of leukocytes to the skin, angiogenesis and support binding of hematopoietic progenitor cells to endothelial cells.

E-selectin has the same basic structure as other selectins : amino terminus with lectin like domain, short consensus repeart and epidermal growth factor like domains with short cytoplasmic tail. It is present in low undetectable quantities on resting endothelial cells. Increased expression occurs as a result of tissue injury, where it mediates the selectin binding phase of leukocytes.

Diabetes mellitus is a primary disorder of carbohydrate metabolism. It is mainly of two types : Type 1 or insulin dependent diabetes mellitus and type 2 or non insulin dependent diabetes mellitus.

Diabetes mellitus has many chronic complications which are mainly vascular in origin; the most important of which are nephropathy, retinopathy, neuropathy and atherosclerotic changes.

World wide, diabetic nephropathy has become the most common single complication that leads to end stage renal disease.

Diabetic nephropathy is a clinical syndrome characterized by persistent overt albuminuria (more than 300 mg/24 hours), a decline in GFR and raised arterial blood pressure. Its course precedes through several distinct, but interconnected, phases of normoalbuminuria (less than 30 mg/24h), microlbuminuria (30-300 mg/24h) and overt persistent proteinuria (more than 300 mg/24h) which is progressing to end stage renal failure.

Microalbuminuria is the earliest clinical evidence of nephropathy in diabetic patients, it is associated with several risk factors including : poor glycemic control, systemic hypertension, long duration of diabetes, abnormalities in lipid spectrum and endothelial dysfunction.

E-selectin level may be significantly increased in sera from patients with different inflammatory or malignant diseases and high levels may be also associated with endothelial dysfunction which precedes development of angiopathic atherosclerotic changes in diabetic patients.

This study aimed at determination of serum E-selectin level in patients with type 2 diabetes mellitus, in a trial to correlate its level with their glycemic control and renal angiopathic complications.

The study has been conducted on 45 with type 2 diabetes mellitus and ten control subjects of comparable age, sex and socioeconomic state. The patients groups was divided according to their levels of urinary proteins into normoalbuminuric, microalbuminuric and frank proteinuric patients groups.

To all subjects full clinical examination and laboratory investigation were done including : estimation of serum levels of fasting and post prandial glucose. total cholesterol, trigycerides, LDL-cholesterol, HDL-cholesterol. Detection of serum C-reactive protein and estimation of urinary proteins, glycosylated hemoglobin and serum E-selectin was also performed.

In the present work significantly higher levels of E-selectin in type 2 diabetic patients than that in controls was detected. This higher level of E-selectin in diabetic groups may be attributed to many factors studied in the present work such as :

1- poor glycemic control, since the whole diabetic patients showed significantly higher levels of glycosylated hemoglobin than that in controls, together with the presence of a positive correlation between the levels of E-selectin and glycoslated hemoglobin .

2- Presence of diabetic nephropathy, since the diabetic patients showed significantly higher levels of urinary proteints than that in controls, together with the presence of a positive correlation between E-selectin and urinary proteints. In addition, patients with frank proteneiuria had higher level of E-selectin than patients with or without microalbuminuria. But no difference in E-selectin levels were found between patients with or without microalbuminuria.

The presence of a significant positive correlation between E-selectin and urinary proteins in patients groups with glcosylated hemoglobin more than 8.5% (uncontrolled group) adds to the strong association between increased sE-selectin levels in relation to poor glycemic control and diabetic nephropathy.

The patients with frank proteinuria had the poorest glycemic control since threir glycosylated hemoglobin level was higher than that in the other two groups. This might explain the higher levels of E-selectin in these patients.

3- The presence of hypertriglyceridemia which is manifested in diabetic group by the significantly higher levels of triglycerides than their level in controls.

From the present work we concluded:

*E-selectin is increased in type 2 diabetics than in controls.

* Highest levels of E-selectin were found in patients with frank proteinuria.

* No difference in E-selectin levels was found between patients with and without microalbuminuria.

* Higher levels of E-selectin were found in patients with poor glycemic control as evidenced by increased glycoslated hemoglobin level.

Therefore, increased sE-selectin levels in patients with type 2 diabetes mellitus could be used as a predictor of endothelial dysfunction and occurrence of angiopathies. It could be also used as a monitor of the glycemic control in these patients.