CP1.

GLYCAEMIC STATUS OF SRI LANKAN DIABETICS AND ITS RELATIONSHIP TO SERUM LIPIDS

R.SIVAKANESAN, V.L.U. ILLANGASEKERA* AND S. NANTHINI

*Department of Biochemistry and *Department of Medicine, Faculty of Medicine, University of Peradeniya*

Diabetes mellitus is a condition where derangements in glucose and lipid metabolism are commonly observed. An attempt is made in this study to correlate the concentration of serum glucose with that of serum lipids.

Blood samples were collected after 14 hrs overnight fasting from diabetic subjects (n=212) attending the diabetic clinic,Teaching hospital, Peradeniya and healthy volunteers (n=126). A questionnaire was used to collect dietary, family and other information. Glucose and lipid estimations were done on serum by enzymatic methods using Randox assay kits and fructosamine by the nitroblue tetrazolium method using Sigma kits.

Diabetics had significantly ($p<0.05$) elevated fasting serum glucose compared to the controls (149.5±3.7 mg/dl vs 90.0±1.0 mg/dl; Mean±SEM). The prevalence of hyperglycaemia (glucose concentration >111.6 mg/dl) in diabetics was 79.4 %. Similarly, the diabetic males (144.0±5.3 vs 91.4±1.4 mg/dl) and females (153.8±5.1 vs 88.3± 1.4 mg/dl) showed elevated serum glucose compared to the controls. The prevalence of hyperglycaemia in diabetic males (glucose concentration >113.7 mg/dl) was 73.6 % and in diabetic females (glucose concentration >109.0 mg/dl) was 83.9 %. The difference in serum glucose concentration between men and women of both groups was not significant.

Serum fructosamine, a marker used to assess short term glycaemic control, in diabetics was significantly ($p<0.05$) higher compared to the controls (3.15±0.06 mmol/l vs 2.24± 0.03 mmol/l). The prevalence of elevated concentration of fructosamine (fructosamine concentration >2.50 mmol/l) in diabetics was 83.8%. Similarly, the mean concentration of serum fructosamine in diabetic males (3.16±0.09 vs. 2.26±0.05 mmol/l) and females (3.14±0.09 vs 2.20±0.05) was significantly higher than the controls. The prevalence of elevated concentration of fructosamine (fructosamine concentration >2.50 mmol/l) in diabetic males was 65.3 % and in diabetic females (fructosamine concentration > 2.44 mmol/l) was 87.1 %. However, the difference between males and females of both groups was not significant.

Correlation analysis between serum glucose and lipids showed significant positive associations between serum glucose and triglycerides ($r = 0.177$, $p=0.009$) and total cholesterol ($r = 0.133$, $p=0.05$). Significant positive associations were also seen between serum glucose and duration of disease ($r = 0.179$, $p = 0.016$) and fructosamine ($r = 0.607$, $p=0.0001$).

There is a direct relationship between serum triglyceride and cholesterol concentrations and serum glucose concentration in diabetics. Furthermore, the glucose concentration tend to increase with increase in duration. Therefore it is necessary to exercise tight glycaemic control to prevent elevations in serum lipids which are proven risk factors of cardiovascular diseases.