022 A

IS THERE A CORRELATION OF SERUM ZINC LEVEL WITH FASTING BLOOD SUGAR VALUE IN DIABETICS AND NORMAL SUBJECTS

Zinc is an essential element for plant and animal life. In human body, zinc is an essential and integral part of the insulin molecule during its storage in the β-islet cell. In the β-cells, insulin (and also proinsulin) combines with zinc to form complexes. But once released as a hormone, it need not have zinc bound to it. According to some studies the concentration of zinc in serum is (700-1250) μg/ dm3 in normal subjects. Zinc deficiency is associated with many conditions including hyperglycemia. Diabetes mellitus is a common health problem in Sri Lanka. In this study relationship between serum zinc level and fasting serum glucose level in Sri Lankan urban diabetic subjects was investigated. Serum zinc level in non-diabetic subject was studied for comparative purposes.

Forty seven healthy volunteers in the age group 20-65 years and forty seven patients in the same age group were selected at random. Serum glucose was estimated by enzymatic method. Serum zinc level was analyzed by flame atomic absorption spectrometry. Special care was taken to avoid contamination. Results were

rechecked using standard addition method with the flame atomic absorption spectrometer.

In the diabetics mean serum glucose concentration (n=47) 156.7±9.5 mg/ dL was significantly higher than that of normals (n=47) 91.91±1.4 mg/ dL. The mean serum zinc level of diabetics 836±38 µg/ dm3 was not different from normal subjects with a mean of 761±30 µg/ dm3. There was no significant relationship between the level of zinc and glucose concentration in diabetics and in normal subjects in all the categories of serum sugar analyzed. Serum zinc level in diabetics and healthy subjects were almost similar. This study was conducted using a group of diabetics from urban area who are exposed to lot of environmental contaminants. It had been reported that tyre wear in the highway emit a lot of Zn to the atmosphere and that could be a contributing factor to the evaluated serum zinc levels obtained. Serum zinc may be not a factor contributing to diabetics in urban Sri Lanka. It is suggestive to estimate the pancreatic zinc level and check for similar correlations.