Oxidative Stress Marker and Antioxidant Status in Patients with Type 2 Diabetes Mellitus

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Abstract

The persistence of hyperglycemia in diabetic patients leads to the generation of free radicals. Free radicals in the cells have important roles in the pathogenesis of type 2 diabetes mellitus and in the development of diabetes complications. Alterations in lipid peroxidation and antioxidant defense have been investigated as related with diabetes mellitus. Therefore, this study was aimed to study oxidative stress marker and antioxidant status in patients with type 2 diabetes mellitus and controls. For this purpose, 30 type 2 diabetes mellitus patients from diabetic clinic at Mandalay General Hospital and 30 apparently healthy controls were studied. The subjects were female, 35-50 years of age. The plasma malondialdehyde level was represented as oxidative stress marker. The plasma ascorbic acid level was determined as antioxidant vitamin. The mean plasma malondialdehyde level (9.7 4.88 mol/L) in patients was significantly higher than that of controls (4.09 2.17 mol/L) ($p< 0.001$). The mean plasma ascorbic acid level in patients (1.08 0.24 mg/dl) was found to be significantly lower than that of controls (1.21 0.27 mg/dl) ($p< 0.05$). Negative correlation was observed between these two parameters in patients ($r = -0.47$) ($p<0.01$). Therefore, this study indicated that type 2 diabetes mellitus is associated with enhanced lipid peroxidation and it may be due to impaired antioxidant system.