**“Protein Carbonyl & Microalbuminuria in Type 2 Diabetes Mellitus”**

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**Abstract:**

**INTRODUCTION**: Diabetes is a devastating disease throughout the world. It is associated with several mechanisms, one of which is oxidative stress. Oxidative stress plays an important role in the pathogenesis and the complications of diabetes. A hyperglycemia results in overproduction of oxygen free radicals, which contributes to the progression of diabetes. The development of complications during diabetes is associated with oxidative stress. Measuring protein carbonyl associated with nephropathy as oxidative protein damage is the primary aim of our study.

**METHODS**: We measured protein carbonyl, urine microalbumin & glycated hemoglobin in type 2 Diabetes mellitus & studied for correlation among these parameters towards development of nephropathy. Fifty diabetic and fifty age matched healthy subjects were included in the study. Both the groups were evaluated for protein carbonyl, urine microalbumin & glycated hemoglobin.

**OBSERVATIONS**: Plasma protein carbonyls were significantly (p< 0.001) elevated in diabetes (0.091 ± 0.13 mmol/L) when compared with healthy subjects (0.037 ± 0.012 mmol/L). Glycated hemoglobin has shown proportional increase with blood glucose. Urine microalbumin is found to be increased in patients with diabetes & positively correlated with protein carbonyl.

**RESULTS**: Increased formation of protein carbonyl, a marker of oxidative stress produced under hyperglycemia of diabetes mellitus may be one of the probable cause for evolution of nephropathy in diabetes mellitus.

**KEYWORDS:** Diabetes mellitus – Glycated hemoglobin – oxidative stress- protein damage

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