

Effect of type 2 diabetic mellitus duration on blood glucose, serum creatinine and urinary microalbumin: a cross section study on patients attending Diabetic Centre, Teaching Hospital, Jaffna

Ruwanpathirana, R. P. E.¹, Kandeepan, K.² and Arasaratnam, V.²

¹*Unit of Allied Health Sciences, Faculty of Medicine, University of Jaffna.*

²*Department of Biochemistry, Faculty of Medicine, University of Jaffna.*

Background: Diabetes mellitus affects the quality and longevity of life. The complications of diabetes are influenced not only by chronic hyperglycemia but also by the duration of disease. The objective of this study was to evaluate the effect of Type 2 Diabetic mellitus duration on the alteration of fasting plasma glucose (FPG), Serum Creatinine and Urinary Microalbumin levels.

Methods: A total of 98 diabetic patients diagnosed as type 2 diabetics attending the Diabetic Centre, Teaching Hospital Jaffna were included. Patients with known evidence of chronic kidney disease were excluded. FPG (Glucose Oxidase method), serum and urine creatinine (Jaffe Alkaline Picric Acid method) and random urine albumin (Immunoturbidimetry method) were estimated. Simple linear regression was performed.

Results: The mean duration of diabetes was 9.28 (± 7.20) years. The mean duration of diabetes mellitus was not significantly different between males (9.76 years) and females (8.97 years) ($p \leq 0.596$). The mean FPG, serum creatinine, urine albumin, urine creatinine, urine albumin to creatinine ratio and duration of diabetes were 136.17 (± 53.92) mg/dL, 1.25 (± 0.64) mg/dL, 18.9 (± 16.2) mg/L, 1.21 (± 0.80) g/L, 17.11 (± 14.16) mg/g creatinine and 9.28 (± 7.20) years respectively. The highest number of patients [39 (39.8%)] were in the initial stage (0-5 years) of type 2 diabetic. With the increase in the duration of diabetes mellitus, fasting plasma glucose level ($r \leq 0.25$), serum creatinine ($r \leq 0.1$), random urine albumin ($r \leq 0.35$) and urine albumin to creatinine ratio ($r \leq 0.43$) increased. Further with the increase in the duration of Type 2 diabetes mellitus the patients had macroalbuminuria rather than normoalbuminuria and microalbuminuria.

Keywords: Creatinine, Duration, diabetes mellitus type 2, Microalbuminuria, Fasting Plasma Glucose.