

**EVALUATION OF A SIMPLE DYE BINDING METHOD FOR
MEASUREMENT OF MICROPROTEINURIA IN DIABETIC
PATIENTS AND ITS CORRELATION WITH
MICROALBUMINURIA (TURBIDI-IMMUNOASSAY)
AND CLINICAL PARAMETERS**

G Rustagi, R Raju, DK Gupta, SC Dash, N Kochupillai, R Sharma,

*Departments of Medicine, Endocrinology Diabetes and Nephrology,
All India Institute of Medical Sciences, Diabetes Foundatori (India), New Delhi, India*

Diabetic microalbuminuria which predisposes to irreversible macroproteinuria and terminal renal failure is amenable to stringent metabolic control. However because of high prevalence of diabetes and lack of a simple test, the monitoring of microalbuminuria has as yet not become a standard clinical practice. To circumvent this problem, we studied the use of a simple and inexpensive method of quantitating microproteinuria using Commassie Brilliant Blue G-250. Fifty nine diabetic subjects (IDDM = 40, NIDDM = 19) who were 'Uristix' negative (test for overt proteinuria) were included in this study. Urinary albumin excretion was measured by turbidimunoassay. Seven subjects (11.9%) were found to have microproteinuria (> 190mg/24 hours), and 5 subjects (8.5%) had microalbuminuria (>50 mg/24 hours). (Urinary protein excretion rate in a group of simultaneously analysed healthy controls (n=12) was -mg/24 hours). Using the test for microalbuminuria as the 'gold standard', for the microproteinuria dye binding assay

'false negative' rate was 0% (0/5), and 'false positive' rate was 4% (2/51%). There was a positive correlation between urinary protein excretion rate and HbA1c levels ($r = 0.3$, $p < 0.05$). Those with high and uncontrolled hypertension (n=6) had an average protein excretion rate of 112.5 mg/24 hours; subjects with angiographic or overt evidence of diabetic retinopathy (n=7) had an average protein excretion, rate of 114.4 mg/24 hours (Cf. overall mean 88.2mg/24 hours). In 19 patients who underwent a detailed dietary evaluation there was a positive correlation with the average daily intake of class I proteins ($r=0.48$, $p<0.005$) and total proteins ($r=-0.26$, $p < 0.02$). Cost per test of microproteinuria by dye binding method is Rs. --- .

CONCLUSION : Commassie Blue dye binding assay is a simple, precise and inexpensive technique for detecting and monitoring incipient nephropathy of IDDM.