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Associated risk factors affecting renal deterioration in type 2 diabetic patients

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Abstract

Predominantly diabetic nephropathy starts with abnormal glomerular permeability, the primary step towards the glomerulosclerosis, when plasma molecules cross the glomerular basement membrane (GBM) and subsequently appear in the urine. The progression rate of glomerulosclerosis is proportionate to abundance and severity of lesions created at incipient stage, which is reflected as proteinuria even though eGFR remains in the normal range. Excessive glycation induces protenuria and high urinary excretion of IgG with progression of glomerular injury as indicated in our study of 683 type 2 diabetic patients with varying degree of protenuria. Type 2 diabetic patients were selected for this study with eGFR75 l/min/1.73 m2 and grouped into four quartiles based on urinary IgG creatinine ratio (UIgGCR). The markers of key factors affecting progression of proteinuria were estimated through biochemical tests. The impact of these markers on proteinuria was accessed by applying multinomial logistic regression. The adjusted odds ratio for the urinary glycosaminoglycans creatinine ratio (UGAGCR) was 1.186 (95 % CI: 1.061–1.327) P\0.003 in highest quartiles of UIgGCR, followed by odds ratio for markers of collagen catabolism 1.051 (95 % CI: 1.025–1.079) P\0.001, and urinary sialic acid creatinine ratio (USACR) 1.044 (95 % CI: 1.013–1.077) P\0.006 respectively. The marker of glycation, i.e., glycated hemoglobin showed the highest odds ratio 5.449 (95 % CI: 1.132–26.236) P\0.035. In addition, odds for the systolic blood pressure was observed 1.387 (95 % CI: 1.124–1.712) P\0.002. The higher odds inform and could help to discriminate the diabetic patients with fast progressive diabetic nephropathy. The study describes critical relationship between the urinary excretion of IgG and factors leading to proteinuria in type 2 diabetic patients.

Biography

Prof Kiran Kalia has completed her Ph.D at the age of 24 years from Industrial Toxicology Research Centre, India, in 1986. She was the visiting faculty at School of Health Sciences, Purdue University, USA in 2006-07. She is the Principle investigator for 14 major research projects funded by Government of India and published more than 65 papers in peer-reviewed journals, many book chapters and serving as editorial board member of reputed journals. She has delivered plenary lectures / Lead lectures at various international conferences at Malaysia, Singapore, Czech Republic, France, China and USA.