OMICS Group Conferences
Accelerating Scientific Discovery

International Conference and Exhibition on
Nephrology & Therapeutics

August 20-22, 2012 Hilton Chicago/Northbrook, USA

Glycemic control with intensive insulin treatment is fundamental to renal preservation in diabetes

Anil K. Mandal[1] and Linda M Hiebert[2]
[1]Mandal Diabetes Research Foundation, USA
[2]Department of Veterinary Biomedical Sciences, University of Saskatchewan, Canada

Objective: Diabetic nephropathy is the most common cause of chronic kidney disease (CKD), which progresses to end stage renal disease (ESRD) requiring dialysis. We ask if CKD progression is preventable by glycemic control with intensive insulin treatment.

Methods: Data was obtained from 46 office treated patients (28F, 18 M) with established diabetes. Mean age was 62.2 (range 39 – 86 years. They were followed for a mean period of 14.2 (1.5 – 115) months. Diabetes was diagnosed by 2-h postprandial glucose (2hPPG) of > 11.1 mmol/L and treated with Glargine or detemir insulin after breakfast and dinner and regular insulin based on finger-stick glucose reading 2-h post meal and bedtime. Hypertension was treated with therapy with complete exclusion of renin-angiotensin inhibitor drugs. Glucose, urea nitrogen, serum creatinine (Scr), estimated glomerular filtration rate (eGFR), and glycosylated hemoglobin (HbA1c), and blood pressure (BP) were recorded. Values were compared between first and last visits using a paired two-tailed t-test. P< 0.05 was significant. Patients were divided by 2hPPG of < or > 11.1 mmol/L.

Results: In the all patients group, fasting glucose was significantly lower at the last versus the first visit (8.4 ± 0.6 vs. 10.3 ± 0.7 mmol/L, p=0.0173), and was associated with a significantly reduced Scr (100.3 + 5.2 vs. 110.9 + 7.8 μmol/L, p=0.0134). Little change in eGFR was found between visits. Mean eGFR was no worse than CKD stage 1 in all groups at the last visit. Less than 50% of 46 patients achieved glucose control of <11.1 mmol/L, with a highly significant reduction of HbA1c (9.14±0.52 vs. 7.60±0.45%, p=0.0148). Average BPs were normal in both visits in all groups, but diastolic BP was significantly lower in the all patients group at the last visit (77.7 ± 1.5 vs. 81.6 ± 1.9 mmHg, p=0.0297).

Conclusion: Thus the paradigm of therapy in this study may not be affirmative in uniformly achieving tight glycemic control (< 11.1 mmol/L) but is proven to be effective in renal preservation over time in diabetes.

Biography

Dr. Mandal is a native of India and a naturalized citizen of the United States. He is board certified in Internal Medicine and Nephrology (kidney disease and hypertension). He is an author of 13 books and more than 250 published articles and abstracts on research in diabetes and kidney disease. He is a two-times Fulbright Scholar and a visiting professor in 23 countries that invited him to lecture on diabetes, high blood pressure, and kidney diseases.

amandal@med-spec.com