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Control of D-glucose is determinant of renal preservation in diabetes

Anil K Mandal^{1,2}, Linda M Hiebert³ and Harry Khamis⁴

¹Mandal Diabetes Research Foundation, USA

²University of Florida, USA

³University of Saskatchewan, Canada

⁴Wright State University, USA

We previously reported that D-glucose is a strong predictor of renal function change in diabetes. This study is an expansion of a previous study but with a longer duration. 85 diabetic patients were treated with a combination of glargine or detemir and regular insulin for 26.3±24.6 (SD) months. Blood pressure was controlled by beta blockers, calcium channel blockers, sympathetic inhibitors or a combination, and chlorthalidone in resistant cases. Angiotensin converting enzyme inhibitors and receptors blockers (ACE/ARB) were excluded. Objectives were to determine if this paradigm of treatment prevents progression of diabetic nephropathy. Fasting (F) and 2-hours postprandial (2hPP), glucose, serum creatinine (SCr) and estimated glomerular filtration rate (eGFR); hemoglobin A1c (HbA1c); and sitting systolic and diastolic blood pressure (SBP) were recorded for first and last visits. Mean blood pressure (MBP) and differences (d, 2hPP-F) were calculated for glucose, Scr and eGFR. Parameters between first and last visits were compared using a paired t test adjusted for age, gender and duration of treatment with P<0.05 considered significant. No significant differences were found between first and last treatments for F and 2hPP glucose; F and 2hPP Scr; F and 2hPP eGFR, and; HbA1c. D-glucose, sitting SBP and MBP were significantly lower at last compared to first visit. Combining both visits, D-glucose and HbA1c showed a direct and positive correlation with dScr. Changes in post minus pretreatment values were significantly positively correlated between HbA1c and FBG, 2hPPG or D-glucose. In conclusion, the current study reinforces the importance of control of D-glucose (2hPP-F) with insulin and exclusion of ACEI/ARB in achieving renal preservation in diabetes.

amandal@med-spec.com