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NEPHROPROTECTIVE TREATMENT WITH DAPAGLIFLOZIN IN PATIENTS WITH DIABETIC KIDNEY DISEASE

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Objectives : Albuminuria in patients with diabetes presents a higher risk for adverse renal and cardiovascular (CV) outcomes. Sodium glucose co-transporter 2 (SGLT2) inhibitors demonstrate improved albuminuria and reduces the risk of end-stage renal disease in patients with chronic kidney disease. The study aim was the impact of the SGLT2 inhibitor dapagliflozin on urine albumin-to-creatinine ratio (UACR) and GFR decline.
Methods : In the single center trial, total 132 participants with CKD and type 2 diabetes (T2D) were randomly assigned to dapagliflozin (n = 78) 10 mg once daily or placebo (n = 54). Kidney inclusion criteria were eGFR 30--60ml/min/1.73 m2 and any UACR. The primary end point was a composite of sustained decline in eGFR >50%, end-stage renal disease, or kidney or cardiovascular death. Percentage treatment difference was estimated by geometric mean ratio for the overall cohort and by eGFR and UACR subgroups. Progression/regression of UACR were assessed. Hazard ratios, 95% confidence intervals (CI), and p-values were estimated by Cox proportional hazards model.
Results : Median baseline eGFR was 42.3ml/min/1.73 m2, with 5% at <30ml/min/1.73 m2. At baseline, median UACR was 103 mg/g, and 1/4 of patients had normoalbuminuric, 2/4 had micro, and 1/4 had macroalbuminuria. Median follow up was 18 months. The UACR difference for dapagliflozin vs placebo was -25.1% (95% CI -27.5, -23.2; p< 0.001). Reductions were similar across eGFRs. In UACR 30-299mg/g and >300mg/g, reductions were significant in dapagliflozin (p< 0.001). Progression risk was lower and regression risk higher in dapagliflozin vs placebo (p<0.001).
Conclusions : Dapagliflozin significantly slowed long-term eGFR decline in patients with CKD with T2D compared with placebo, and significantly reduced UACR and had favorable effects on UACR progression and regression.