THE KOREAN SOCIETY OF NEPHROLOGY
APCN & KSN 2024
June 13(Thu) - 16(Sun), 2024 Coex, Seoul, Korea
Promoting Sustainable Kidney Health: The Asia-Pacific and Beyond

Abstract Submission No.: A-0186

Clinical Characteristics of Non-albuminuric Kidney Disease Compared with Albuminuric Kidney Disease in Patients with Type 2 Diabetes

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Objectives : Albuminuria has long been considered a risk factor for end-stage renal disease and cardiovascular disease in patients with type 2 diabetes (T2DM), often serving as the initial clinical indicator of diabetic kidney disease (DKD). However, emerging evidence suggests that a significant number of T2DM patients exhibit a reduced glomerular filtration rate (GFR) without substantial albuminuria, termed non-albuminuric DKD (NADKD).
Methods : A one-year retrospective cohort study was conducted on T2DM patients with persistently estimated GFR <60 mL/min/1.73 m^2 in the outpatient department from January 1, 2017, to December 30, 2019. Patients were categorized into two groups based on urinary albumin-to-creatinine ratio (UACR) cutoff points (30 mg/g): NADKD and albuminuric DKD (ADKD). Albuminuria was determined using a single random urine collection for UACR measurement.
Results : The study included 170 patients, with 79 (46.5%) classified as NADKD and 91 (53.5%) as ADKD. The NADKD group exhibited lower levels of hemoglobin A1C and triglycerides, as well as higher estimated GFR, hemoglobin levels, and a higher prevalence of diabetic retinopathy at baseline. The rate of estimated GFR decline was less pronounced in the NADKD group than in the ADKD group (0.28 ± 5.12 vs. 2.05 ± 5.49 mL/min/1.73 m^2 per year; P=0.032). Logistic regression analysis revealed significant associations between NADKD and estimated GFR (OR: 1.045, 95% CI: 1.007–1.086, P=0.021), hemoglobin (OR: 1.234, 95% CI: 1.007–1.511, P=0.043), and hemoglobin A1C (OR: 0.742, 95% CI: 0.567–0.971, P=0.030). There were no significant differences in gender, age, body mass index, blood pressure, diabetic retinopathy, or cardiovascular disease between the two groups.
Conclusions : This study highlights that a considerable proportion of T2DM patients exhibit normoalbuminuric DKD. These patients typically demonstrate a slower decline in GFR, preserved renal function, favorable glycemic control, and a non-anemic status.