

RISK FACTORS FOR ACCELERATED LOSS OF GFR IN ADVANCED CHRONIC KIDNEY DISEASE (CKD)

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Participants in the African American Study of Kidney Disease (AASK) trial had an increased rate of GFR decline as CKD progressed. This study examines the effect of risk factors for CKD progression identified in the AASK trial on changes in GFR decline as CKD progresses.

Data was collected from 1094 patients with hypertensive kidney disease in the AASK trial. The study population was divided into two GFR groups, $GFR < 40$ (LGFR) and $GFR \geq 40$ (HGFR)). The association between GFR group and a renal composite outcome representing progression of CKD, ESRD or death, was examined at different levels of previously identified progression risk factors in stratified and multivariable analyses.

The OR (95% CI) for the outcome was 3.82 (2.9, 5.0) in LGFR compared to HGFR. Of a total of 19 risk factors, four were associated with differences in the outcome among LGFR and HGFR subjects (male gender, high urine protein, serum creatinine > 1.8 , and BUN > 20). For males, LGFR (compared to HGFR) the OR was 5.28 (3.7, 7.5) and for females the OR was 2.54 (1.6, 3.9). For higher urine protein, LGFR the OR was 4.05 (2.6, 6.3) compared with an OR of 1.81 (1.2, 2.7) in patients without elevated urine protein. The interaction between GFR group and gender ($p=0.03$), proteinuria ($p=0.01$), and BUN ($p=0.00$) remained significant in multivariate analysis controlling for other risk factors.

Gender, high BUN, and proteinuria modify the association between level of GFR and a composite renal outcome in the AASK trial. This is a novel finding that certain CKD risk factors have a different effect on CKD progression as GFR declines.