CHRONIC KIDNEY DISEASE AND CARDIOVASCULAR DISEASE IN VOLUNTEER AND RANDOMLY SELECTED POPULATIONS: KEEP AND NHANES

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Chronic kidney disease (CKD) is recognized as an independent cardiovascular disease (CVD) risk state. The relationship between CKD and CVD in volunteer and randomly selected populations has not been explored.

Kidney Early Evaluation Program (KEEP) community volunteers completed surveys and underwent blood pressure and laboratory testing. Estimated glomerular filtration rate (eGFR) was computed and urine albumin-creatinine ratio (ACR) measured. CVD was defined as self-reported myocardial infarction or stroke. Data were compared with National Health and Nutrition Examination Survey (NHANES) 1999-2004 data for prevalence of CVD risk factors, cardiovascular outcomes, and all-cause death.

Of 69,244 KEEP participants, mean age was 53.4 ± 15.7 years, 68.3% were female and 33.0% African American; 27.6% had diabetes. Of 17,061 NHANES participants, mean age was 45.1 ± 0.27 years, 50.2% were female and 11.2% African American; 6.7% had diabetes. In KEEP 26.8% and NHANES 15.3% had CKD. ACR was the dominant positive screening test for younger and eGFR for older age groups for both populations. Prevalence of myocardial infarction or stroke for those with and without CKD was 16.5% and 7.8 % for KEEP and 15.1% and 3.7% for NHANES. Rate of death increased fourfold over the short term for KEEP CKD participants.

CKD is an independent predictor of myocardial infarction, stroke, and death among participants in a voluntary screening program and a randomly selected survey population. Heightened concerns regarding risks among volunteers yielded higher CVD prevalence in KEEP, which was associated with increased short-term mortality.