

PREVALENCE OF CKD IS HIGH IN PERSONS WITH UNDIAGNOSED AND PRE-HYPERTENSION IN THE U.S.

Deidra C. Crews, Laura C. Plantinga, Edgar R. Miller, III, Rajiv Saran, Elizabeth Hedgeman, Sharon Saydah, Paul Eggers and Neil R. Powe, for the CDC CKD Surveillance Team

Johns Hopkins University, Baltimore, Maryland; University of Michigan, Ann Arbor, Michigan; and National Center for Health Statistics, Hyattsville, Maryland, United States

Hypertension (HTN) is known to be both a cause and a consequence of chronic kidney disease (CKD), but the prevalence of CKD throughout the diagnostic spectrum of HTN has not been well-established. We determined the prevalence of CKD within blood pressure categories (JNC-7) in 17,794 adults (20+ years old) surveyed by NHANES during 1999-2006. We included all participants who had measured blood pressure, self-reported HTN and CKD diagnosis (yes or no), serum creatinine for eGFR determination (MDRD equations), measurement of urine albumin excretion, and self-report of awareness of kidney disease (yes or no). Diagnosed HTN was defined as self-report of provider diagnosis ($n=5,832$); HTN was defined by measured systolic and diastolic (SBP, DBP). Undiagnosed HTN was defined as $SBP \geq 140$ mmHg or $DBP \geq 90$ mmHg, without a report of provider diagnosis ($n=3,046$); pre-HTN was defined as $SBP \geq 120$ and <140 mmHg or $DBP \geq 80$ and <90 mmHg ($n=3,719$); and no HTN was defined as $SBP <120$ mmHg and $DBP <80$ mmHg ($n=5,197$). CKD was defined as $eGFR <60$ ml/min/m² or the presence of albuminuria (urinary albumin-creatinine ratio greater than 30 mg/g). We examined CKD prevalence overall and by participant characteristics; adjustment for age, sex, and race was performed using multivariable logistic regression. Persons with undiagnosed and pre-HTN had a prevalence of CKD of 17.5% and 17.3%, respectively, in comparison to 27.5% of persons with diagnosed HTN and 13.4% in those without HTN. Approximately one third (35%) of CKD cases occurred in those with either undiagnosed or pre-HTN. In this group, only 2-4% reported being aware of having CKD. CKD prevalence is high among those with undiagnosed and pre-HTN. This population, with two potentially unrecognized conditions, should be targeted for further screening and prevention efforts.