

EMBARGOED FOR RELEASE until March 25, 2010 – 5:00 PM (EDT)

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KIDNEY DISEASE HIDES IN PEOPLE WITH UNDIAGNOSED DIABETES

Up to 13 Million Americans May Have Unsuspected Kidney Damage

Washington, DC (March 22, 2010) — Millions of Americans may have chronic kidney disease (CKD) and not know it, according to a study appearing in an upcoming issue of the *Clinical Journal of the American Society Nephrology* (CJASN).

"Our research indicates that much of the CKD burden in the United States is in persons with prediabetes and undiagnosed diabetes, who are not being screened for CKD," comments Laura C. Plantinga, ScM (University of California, San Francisco). The researchers believe that broader screening may be needed to detect patients with these two "relatively silent yet harmful diseases."

In a study funded by the Centers for Disease Control and Prevention, Plantinga and colleagues analyzed a nationally representative sample of about 8,200 Americans from the National Health and Nutrition Examination Survey. Standard laboratory tests were used to assess the rate of CKD, focusing on people with undiagnosed diabetes or prediabetes (sometimes called "borderline" diabetes).

Based on lab tests, 42 percent of subjects with undiagnosed diabetes had CKD—similar to the 40 percent rate in those with diagnosed diabetes. "Only a small percentage of participants were aware of the diagnosis of CKD," says Plantinga.

In addition, CKD was present in nearly 18 percent of subjects with prediabetes. Among participants without diabetes or prediabetes, the rate of CKD was about 11 percent.

"Based on these results, there may be a substantial number of individuals in the United States—up to 13 million—who have undiagnosed diabetes or prediabetes and who already have signs of kidney damage and/or reduced kidney function," says Plantinga. Such patients would be at high risk for worsening kidney disease and diabetes, and for the poor outcomes associated with both conditions—including cardiovascular disease and death.

Diabetes is the most important risk factor for kidney disease, but the new results suggest that harmful effects on the kidneys may be occurring even before diabetes is diagnosed. "Persons at risk for diabetes and their health care providers should be aware that earlier screening for both diabetes and kidney disease may be warranted," says

Plantinga. "Earlier screening would allow for appropriate, timely medical care to prevent further progression and poor outcomes."

In an accompanying editorial, Gary C. Curhan, MD, ScD (Brigham and Women's Hospital, Boston, MA) calls for CKD screening to be extended to patients with prediabetes. Curhan also suggests that it may be time to consider the concept of "pre-CKD"—identifying patients at a very early stage of CKD when the disease may still be preventable or reversible.

Although the study shows an association, it cannot determine whether the development of CKD followed the development of diabetes, or whether CKD was actually caused by diabetes. There is also likely some misclassification of both diseases, although the association remained significant when tested under a range of different assumptions.

Study co-authors include Deidra C. Crews, Josef Coresh, Edgar R. Miller III (Johns Hopkins University, Baltimore, MD), Rajiv Saran, Elizabeth Hedgeman (University of Michigan, Ann Arbor), Jerry Yee (Henry Ford Hospital, Detroit, MI), Meda Pavkov, Mark S. Eberhardt, Desmond E. Williams (Centers for Disease Control and Prevention, Atlanta, GA), and Neil R. Powe (University of California, San Francisco) on behalf of the Centers for Disease Control and Prevention Chronic Kidney Disease Surveillance Team.

Disclosures: The authors reported no financial disclosures.

The article, entitled "Prevalence of Chronic Kidney Disease in US Adults with Undiagnosed Diabetes or Prediabetes," (doi 10.2215/CJN.07891109) and the accompanying editorial, "Pre-Diabetes, Pre-Hypertension...is it time for Pre-CKD?" (doi 10.2215/CJN.01650210) will appear online at <http://cjasn.asnjournals.org/> on March 25, 2010.

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