

Executive Summary: Kidney Early Evaluation Program (KEEP) 2008 Annual Data Report

George L. Bakris, MD,¹ Peter A. McCullough, MD, MPH,² and Allan J. Collins, MD^{3,4}

The National Kidney Foundation Kidney Early Evaluation Program (KEEP) is in its ninth year of operation. Comprising data collected from more than 100,000 people who have already been screened for kidney disease in the United States, the KEEP database is the largest database of its type to provide information about chronic kidney disease (CKD) in the United States. Annual Data Reports, published yearly in the *American Journal of Kidney Diseases*, serve as a compendium of information for interested readers. To ease the burden of information and focus the information, 3 key articles are presented this year to summarize the major high points for busy nephrologists. Trend figures and reference tables in the KEEP 2008 Annual Data Report complement these articles. The reference tables present basic and informative participant- and affiliate-level data included for easy reference.

For the present issue, the KEEP Executive Committee developed thematic articles that describe and present KEEP data in the context of known associated cardiovascular risk factors, including diabetes and hypertension. This report includes the most recent data (August 2000 to December 31, 2007) supplied by the KEEP Data Coordinating Center. The articles were written from the perspective of the respective authors. All articles were peer reviewed by the KEEP Executive Committee and reviewers for the *American Journal of Kidney Diseases*.

The articles represent a distillation of data. They focus on key topics agreed upon by the KEEP Steering Committee as the most important issues to highlight from the database. KEEP data are complementary to the nationally representa-

tive National Health and Nutrition Examination Survey (NHANES) 1999-2006 data in looking specifically for awareness of kidney disease in the community and for the presence of cardiovascular risk factors associated with various stages of kidney disease, and the data sets are compared on several dimensions.

In the first article, Bhuriya et al examine 4,472 patients with stages 3 and 4 CKD from the KEEP database and evaluate the association between plasma parathyroid hormone level and prevalent cardiovascular disease. Parathyroid hormone levels greater than 70 pg/mL (the highest tertile) were independently associated with prevalent cardiovascular disease; however, no association was found between parathyroid hormone level and serum phosphorus or calcium level. These data further confirm the association between measures of CKD mineral and bone disorders with cardiovascular disease. Speculation about the biological explanation for this association includes accelerated cardiovascular calcification and increased vascular stiffness. Either of these

From the ¹Department of Medicine, Hypertensive Diseases Unit, University of Chicago, Pritzker School of Medicine, Chicago, IL; ²Division of Nutrition and Preventive Medicine, William Beaumont Hospital, Royal Oak, MI; ³Chronic Disease Research Group, Minneapolis Medical Research Foundation; and ⁴Department of Medicine, University of Minnesota, Minneapolis, MN.

Address correspondence to Allan J. Collins, MD, Chronic Disease Research Group, Minneapolis Medical Research Foundation, 914 South 8th St, Ste S-406, Minneapolis, MN 55404. E-mail: acollins@cdrg.org

© 2009 by the National Kidney Foundation, Inc.

0272-6386/09/5304-0101\$36.00/0

doi:10.1053/j.ajkd.2009.01.003

processes, if dominant, could lead to outcomes different from standard treatments for cardiovascular disease and raise interest in new renal-specific diagnostic and therapeutic targets for cardiovascular disease in patients with CKD.

In the second article, Whaley-Connell et al focus on the presence of metabolic abnormalities in KEEP and NHANES; specifically, diabetes and level of glycemia, assessed in the context of participant awareness of CKD. The investigators note that KEEP and NHANES data are congruent regarding greater diabetes prevalence with CKD. However, lack of CKD awareness in KEEP participants with diabetes highlights the need for a new approach in diabetes education with a focus on screening, awareness, and management of CKD risk. As a targeted screening program, KEEP may represent a higher risk and more motivated population; thus, general population awareness likely would be even worse.

In the third article, Kalaitzidis et al compare hypertension prevalence in the KEEP and NHANES populations, with a specific emphasis

on the demographic distribution of similarities and differences between databases. Importantly, this report emphasizes amplification of the frequency and intensity of hypertension as an associated risk factor in patients at risk of and with CKD in the KEEP population. Findings with respect to obesity portend future trends in the NHANES population with respect to increases in hypertension and CKD as a consequence of increasing body mass index.

We hope that this collection of articles describing KEEP data will be informative and useful for researchers, clinicians, and public health officials alike. Our aim is to position these analyses as descriptive and hypothesis-generating pieces to provide a springboard for future population-based and translational research. The overarching goal is to improve health outcomes for patients with CKD by better informing patients and clinicians, as well as the general public, about the risks associated with kidney disease and by influencing public health policy concerning this important disease state.