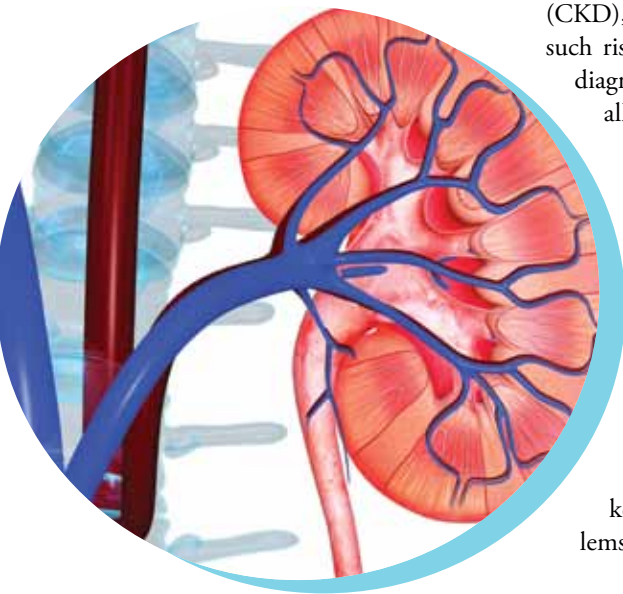


Kidney News

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Risk Factors for Chronic Kidney Disease Evident Decades Before Diagnosis



(CKD), but most studies have evaluated such risk factors at or near the time of diagnosis. Earlier identification may allow for risk factor modification and disease prevention.

Researchers have now found that certain factors are present and identifiable 30 years or more before a diagnosis of CKD. The findings, which are published in the *Journal of the American Society of Nephrology*, suggest that obesity, high blood pressure, high triglycerides, and diabetes are key signs of potential kidney problems in the future.

Lifetime risks revealed

To look at risk factors for CKD that may appear well in advance of kidney disease, Caroline S. Fox, MD, MPH, and Gearoid McMahon, MB, BCh, of the National Heart Lung and Blood Institute's Framingham Heart Study and the Center for Population Studies led a team that examined risk factors in study par-

ticipants who did and did not develop kidney disease.

"One of the benefits of the Framingham Heart Study is that we have a very long duration of follow-up," Fox said. "As a result, we are able to look far back in time prior to when individuals develop a disease to examine their risk factors."

The researchers identified 441 new cases of CKD among participants of the Framingham Heart Study, and they matched them with 882 controls who did not develop CKD. Those who ultimately developed CKD were 76 percent more likely to have had hypertension, 71 percent more likely to have been obese, and 43 percent more likely to have had higher triglycerides 30 years before CKD diagnosis.

They were also 38 percent more likely to have had hypertension, 35 percent more likely to have had higher triglyceride levels, and nearly three times more likely to have had diabetes 20 years before CKD diagnosis. There was a graded increase in CKD risk with each additional risk factor in any combination,

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Risk factors for many chronic diseases are present well before any signs of a problem. Age, hypertension, ethnicity, diabetes, smoking, low HDL cholesterol, proteinuria, and obesity all have been identified as risk factors for chronic kidney disease

Medicaid Expansion May Reduce Access Gaps in Kidney-Related Care, Study Suggests

While Medicaid is designed to provide health insurance for low-income Americans, states have flexibility within federal guidelines to design their programs. There is limited information on how differences in Medicaid coverage influence chronic disease care. Now a study shows that states with broader Medic-

aid coverage have lower incidences of kidney failure and smaller insurance-related gaps in access to kidney disease care. The *Journal of the American Society of Nephrology* findings point to the potential benefits of Medicaid expansion on the prevention and management of a chronic disease.

Chronic disease care is a major

source of rising health care expenditures, and access to care for uninsured individuals with a chronic disease has eroded over the last decade. This may change for many patients with the implementation of the Affordable Care Act, which expands Medicaid coverage to adults with incomes below 133% of the federal poverty level; however, not all states are expected to participate in this expansion.

Examining the care of patients approaching end stage renal disease (ESRD) may provide insights into the potential effect of Medicaid expan-

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Inside

Glomerular disease

Primary glomerular diseases account for about 10 percent of CKD in the U.S. and up to 50 percent in other countries. Our special section looks at recent advances in understanding the diseases plus collaborative efforts for patient care and research.

Policy Update

FDA proposes revisions to nutrition and supplement labels; ASN, others respond.

Training the Trainers

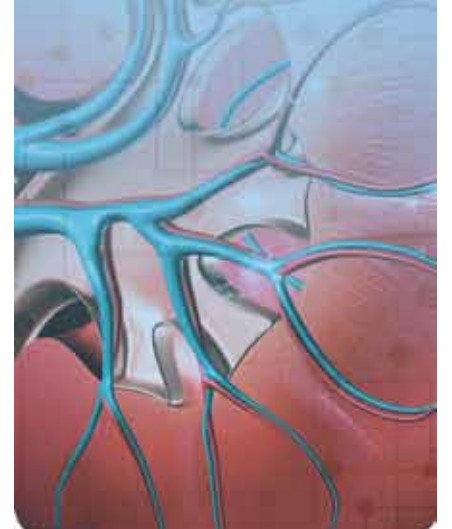
Communication workshop for nephrology educators planned for spring 2015

Practice Pointers

Drug Dosing in CKD and Dialysis

Journal View

Kidney transplant recipients are at high risk of cancer-related death. The risk may be even higher in recipients of organs from deceased donors.



Early Risk

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indicating that the more risk factors an individual had in the past, the more likely they were to develop kidney disease.

Mechanisms and implications

Fox and her colleagues explored the potential mechanisms behind the links they found. For example, regarding dyslipidemia, research indicates that the accumulation of both triglycerides and the breakdown products of lipid metabolism in the blood have atherogenic and pro-inflammatory effects on the vasculature in the kidney. Obesity is also known to have detrimental effects on the kidneys, and

studies have pointed to histopathological changes of obesity-related glomerulopathy in obese patients with no evidence of renal disease. Also, weight loss in patients with obesity-related kidney disease has been linked with reduced glomerular hyperfiltration and albuminuria.

The authors stressed that their observational study does not show whether altering these risk factors will definitely prevent future disease. Therefore, future studies should focus on whether early risk factor modification will decrease the incidence of CKD. Another important limitation is that the population studied was exclusively European-American, which indicates that the results may not be generalizable to the entire population.

Others in the field noted the value

of uncovering early indications of CKD decades before disease onset.

“This is an important study because it provides further evidence that CKD is a life course illness that often develops over several decades. The observation that risk factors such as hypertension, obesity, dyslipidemia, and diabetes may be present two to three decades before the detection of CKD implies that early intervention to abrogate these risk factors may be effective in reducing the prevalence of CKD,” said Maarten Taal, MD, FCP(SA), FRCP, a professor of medicine at the University of Nottingham and an honorary consultant nephrologist and lead clinician within the renal unit at the Royal Derby Hospital, in the UK. “This is important because of the high prevalence of CKD that affects up

to 15 percent of the adult population and because of the relative ineffectiveness of currently available therapies to ameliorate the associated risks of progressive kidney damage and cardiovascular disease.”

Taal noted that the risk factors identified are equally important for cardiovascular disease prevention, so programs focused on cardiovascular risk reduction in the general population should also reduce kidney-related risks. ●

Study co-authors include Sarah Preis, ScD, PhD, and Shih-Jen Hwang, PhD.

Disclosures: The authors reported no financial disclosures.

The article, entitled “Mid-Adulthood Risk Factor Profiles for CKD,” is online at <http://jasn.asnjournals.org/>.

Medicaid Expansion

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sion on chronic disease care. Affecting more than 350,000 nonelderly Americans, ESRD comes with a cost of \$10 billion per year. While all Americans with ESRD can qualify for Medicare coverage, those who are younger than 65 years must rely on other sources of insurance or pay out of pocket to cover pre-ESRD care. Research indicates that an estimated 10% of adults with nondialysis-dependent chronic kidney disease are uninsured.

Using national data, Manjula Tamura, MD, MPH, of the VA Palo Alto Health Care System and Stanford University, led a team that assessed the relationship between the extent of state Medicaid coverage and access to care among nonelderly adults approaching ESRD and whether that relationship differed based on patients' insurance status. “We wanted to determine whether states with broader Medicaid coverage of low-income non-elderly adults had a lower incidence of ESRD and better access to pre-ESRD care,” Tamura said.

“We also wanted to determine whether broad state Medicaid coverage benefited uninsured adults in addition to those receiving Medicaid.”

The researchers identified 408,535 adults aged 20 to 64 years who developed ESRD from 2001 through 2008. Medicaid coverage among low-income nonelderly adults living in different states ranged from 12.2% to 66.0%. Broader Medicaid coverage among low-income nonelderly adults was associated with a lower incidence of ESRD: for each additional 10% of the low-income nonelderly population covered by Medicaid, there was a 1.8% decrease in ESRD incidence.

Low-income nonelderly adults with ESRD who were on Medicaid had better access to care in states with broader Medicaid coverage: For a 50-year-old white woman, the access gap to being put on the kidney transplant waiting list between Medicaid and private insurance decreased by 7.7 percentage points in high vs. low Medicaid coverage states. Similarly, the access gap to transplantation decreased by 4.0 percentage points and the access gap to peritoneal dialysis decreased by 3.8 percentage points. Finally, broader Medic-

aid coverage was associated with some spillover benefits for uninsured adults with ESRD, but these were small and not consistently observed.

“Our study suggests that Medicaid expansion among low-income nonelderly adults could support efforts to prevent kidney failure and improve access to kidney disease care,” Tamura said.

The findings are consistent with other recent studies that found lower rates of adult mortality and delayed care in states that expanded Medicaid coverage, and improvements in mental health among newly enrolled Medicaid beneficiaries.

In an accompanying editorial, Rajnish Mehrotra, MD, and Larry Kessler, ScD, of the University of Washington, Seattle, stated that the researchers' work “highlights the intricate web of health insurance, access to care, and ESRD. Their study is timely as a social experiment is unfolding in this country that will allow us to further examine the association between Medicaid coverage and health care outcomes.” They noted that such a population-level analysis needs corroborative evidence to identify the causes for the links that were found, though. For example, improved

treatment for diabetes and hypertension, which are the most common underlying causes of ESRD, may have considerable impacts on the association of more generous state Medicaid coverage with lower incidences of ESRD.

Because a 2012 Supreme Court judgment made the Affordable Care Act's Medicaid expansion optional for states, the current period of differential Medicaid coverage will allow researchers to study a variety of questions related to access to care and health gains for the most vulnerable segments of the population.

“In the case of ESRD, we strongly recommend that detailed data also be collected concerning the intermediate markers or indicators, such as diabetes and hypertension control, to understand the nature of the impact of the provision of expanded coverage,” wrote Mehrotra and Kessler. ●

The article, entitled “State Medicaid Coverage, ESRD Incidence, and Access to Care,” is online at <http://jasn.asnjournals.org/>.

The editorial, entitled “Health Insurance, Access to Care, and ESRD: An Intricate Web,” is online at <http://jasn.asnjournals.org/>.

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