

Kidney Disease

Research Updates

National Kidney and Urologic Diseases Information Clearinghouse

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NIDDK Explores Key Clinical Research Opportunities in Kidney Disease

With kidney disease continuing to take a rising toll on public health and medical costs, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) turned to the extramural research community for input on designing studies to help reverse the trend.

At a recent 2-day meeting of the researchers in Bethesda, MD, Robert Star, M.D., acting director of the NIDDK's Division of Kidney, Urologic, and Hematologic Diseases, stressed the sizable public health burden of all forms of renal disease.

A study from the U.S. Renal Data System for the Centers for Medicare and Medicaid Services found that treatment for people with chronic kidney disease (CKD) accounted for 19 percent of Medicare expenditures in 2002; treatment for people with end-stage renal disease (ESRD) accounted for another 7.8 percent.

In 2004, ESRD cost Medicare \$20 billion. The incidence of acute kidney injury (AKI) is increasing, according to Star, accelerating kidney function decline in some people with CKD. In addition, cardiovascular disease (CVD) accounts for half of all deaths among people with kidney failure.

With 10 large kidney studies scheduled to end between fiscal year 2007 and 2009, the NIDDK is seeking the most promising, compelling, and feasible opportunities that address what research is needed to reduce the morbidity and mortality of kidney disease.

In recommending topics for the NIDDK to study, participants were asked to consider if a concept addresses a profound public health concern in adults or children, will have a large potential economic impact, is answerable and feasible to start in 1 to 3 years, and is not likely to be addressed by others.



Meeting participants met in three groups to identify clinical research opportunities in key areas: AKI, CKD, and ESRD.

Acute Kidney Injury

The key challenges with AKI are identifying people at risk in order to carry out evaluation and undertake possible preventive measures; developing preventative and therapeutic agents; improving surveillance and care management of all patients, especially those who are high-risk;

KIDNEY DISEASE RESEARCH,
continued on page 2

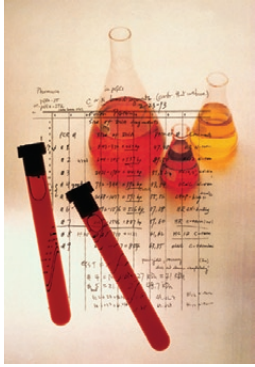


National Institute of
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Inside This Issue

Rodgers Named NIDDK Director _____	3
NIDDK Welcomes Seven New Members to Advisory Council _____	4
NKUDIC Answers More Than 8,000 Queries in 2006 _____	5
Featured in the NIDDK Reference Collection _____	6
NKDEP Forms Federal Kidney Network _____	7



The NIDDK is seeking the most promising, compelling, and feasible opportunities that address what research is needed to reduce the morbidity and mortality of kidney disease.

KIDNEY DISEASE RESEARCH, from page 1

and gaining a better understanding of the natural history of AKI and how it accelerates CKD. The concepts participants recommended included

- studying treatment for patients with established AKI, involving, for example, careful volume resuscitation; and
- studying two observational cohorts to validate biomarkers with opportunities for targeted interventional studies to test new therapies. Patients would be studied with either timed AKI—for example, following cardiovascular surgery—or untimed injury, such as sepsis.

Chronic Kidney Disease

Although CKD rates have both improved and stabilized, awareness of CKD is low and implementation of secondary prevention is poor. The key challenges participants identified were the need for better diagnostic tests and use of current testing strategies, better understanding of group and individual variation, and testing new therapies targeting both progression of the renal disease itself as well as CVD.

The concepts recommended by the CKD group included

- determining whether treating systolic blood pressure to a lower goal than currently recommended reduces CVD illness and mortality in people who don't have diabetes but have at least one CVD risk factor
- developing improved renal functional measurements to better monitor CKD as well as genetic tests to identify people who are at risk

- determining if a therapy that lowers nocturnal blood pressure reduces CKD progression and CVD mortality
- examining the efficacy of novel drugs such as anti-fibrotic or cytoprotective agents to slow progressive renal decline
- testing whether bicarbonate preserves muscle mass, limits bone disease, and slows CKD progression

End-Stage Renal Disease

The key challenge in treating ESRD is that mortality remains stubbornly high, especially in the first year of hemodialysis. Studies have failed to show that increased dialysis dose improves outcomes. While fistula use in dialysis is associated with lower morbidity, mortality, and cost, 25 to 50 percent of fistulas fail to mature, increasing the risk of sepsis from temporary catheters.

The ESRD group proposed

- determining if the mortality and cardiovascular event rate could be reduced by beta blockers and renin angiotensin system blockers
- conducting an observational study to identify determinants of fistula maturation
- assessing the need for the invasive pretransplant evaluation of CVD in transplant candidates with a randomized, controlled study

KIDNEY DISEASE RESEARCH,
continued on page 5

Kidney Disease Research Updates

Kidney Disease Research Updates, an email newsletter, is sent to subscribers by the National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC). The newsletter features news about kidney disease, special events, patient and professional meetings, and new publications available from the NKUDIC and other organizations.

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Andrew Narva, M.D., is the director of the National Kidney Disease Education Program (NKDEP) within the National Institute of Diabetes and Digestive and Kidney Diseases. Dr. Narva, a graduate of Harvard Medical School and board-certified in internal medicine and nephrology, served with the Indian Health Service before joining the NKDEP. He also was a member of the National Kidney and Urologic Diseases Advisory Board, the Renal Community Council of the U.S. Renal Data System, the Medical Review Board of End-Stage Renal Disease Network 15, and the National Kidney Foundation's Minority Outreach Committee, which he chaired.



