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## **EMBARGOED FOR RELEASE UNTIL 6:00 PM ON SATURDAY, NOVEMBER 12**

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November 8: ASN Management Office, Pennsylvania Convention Center, Room 304, (215) 418-2061  
Wednesday, Nov. 9–Sunday, Nov. 13: ASN Press Room, Pennsylvania Convention Center, Room 303B,  
(215) 418-2058 (Press Room), 202-236-8142 (after hours)

## **NEW DISCOVERIES MAY HELP TO PRESERVE KIDNEY QUALITY AFTER BRAIN DEATH**

**Philadelphia, PA (November 3, 2005)** — Dutch researchers are evaluating potential new approaches to assessing and protecting the quality of kidneys for transplantation from brain-dead donors, as described in two papers presented at the American Society of Nephrology's 38<sup>th</sup> Annual Meeting and Scientific Exposition in Philadelphia.

Dr. Henri G. D. Leuvenink and colleagues of University Medical Center in Groningen, The Netherlands, evaluated a recently identified marker—called Kidney Injury Molecule-1 (KIM-1)—as an indicator of kidney damage after experimentally induced brain death in rats.

In the hours after brain death, levels of KIM-1 activity in the kidneys increased dramatically. By 4 hours, KIM-1 gene expression was nearly 50 times higher than before brain death. Patterns of progression in KIM-1 activity suggested that kidney damage began in the tubules at the innermost portions of the kidneys, proceeding outward over time.

Elevated KIM-1 levels were detectable in urine samples as early as 1 hour after brain death. A pilot study suggested that KIM-1 levels rise rapidly after brain death in humans as well.

In a separate study, Dr. Leuvenink's research group explored the use of a modified form of the hormone erythropoietin—called carbamylated erythropoietin (CEpo)—to help protect the kidneys after the donor dies. The researchers compared various indicators of kidney inflammation after brain death in rats receiving CEpo, regular erythropoietin, or an inactive placebo.

Four hours after brain death, kidneys from CEpo-treated rats had lower levels of inflammatory markers than kidneys from rats treated with regular erythropoietin. In contrast, kidneys from rats treated with erythropoietin and placebo had similar levels of inflammation. The kidneys of rats treated with CEpo also had reduced numbers of inflammatory cells.

Treatment with CEpo also seemed to prevent deterioration of kidney function after brain death. It did not affect KIM-1 or other markers of early kidney damage.

**MORE**

Brain-dead patients are extensively used as kidney donors. Unfortunately, graft survival is worse than with kidneys from living donors. Accumulating evidence suggests that the quality of the donor organ declines not only because of cold storage but also because of processes occurring during the period of brain death, when instabilities in blood pressure and hormone balance lead to inflammation of the kidney.

“The studies suggest promising new approaches to assessing and protecting kidney quality in the critical hours between brain death and transplantation,” said Dr. Leuvenink. KIM-1 may provide a valuable marker of kidney quality before transplantation, showing evidence of kidney damage within one hour after brain death. Pretreatment with CEpo could protect against inflammation after brain death, improving the quality of the kidney and potentially leading to better transplantation outcomes. More research will be needed to determine whether KIM-1 measurement and CEpo treatment are of value in human kidney transplantation, however.

The study abstracts, “Kidney Injury Molecule-1 (KIM-1) as an Early Marker for Donor Brain-Death-Associated Renal Injury,” (SA-FC108) and “Carbamylated Erythropoietin (CEPO) Reduces Renal Inflammation during Brain Death,” (SA-FC112) will be presented during a Free Communications session on the topic of “New Agents and Markers to Improve Allograft Survival” on Saturday, November 12 at 4:20 pm and 6:00 pm, respectively, in Room 113A of the Pennsylvania Convention Center.

The ASN is a not-for-profit organization of 9,000 physicians and scientists dedicated to the study of nephrology and committed to providing a forum for the promulgation of information regarding the latest research and clinical findings on kidney diseases. ASN’s Renal Week 2005, the largest nephrology meeting of its kind, will provide a forum for more than 12,000 nephrologists to discuss the latest findings in renal research and engage in educational sessions relating advances in the care of patients with kidney and related disorders from November 8-13 at the Pennsylvania Convention Center in Philadelphia, PA.

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