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## **SMALL DROPS IN KIDNEY FUNCTION AFTER DYE INJECTION LINKED TO INCREASED MORTALITY**

**Washington, DC (August 21, 2006)** — Even relatively small reductions in kidney function after radiocontrast dye injection for x-ray procedures can lead to an increased risk of death, reports a study in the October *Journal of the American Society of Nephrology*.

"Our study helps to identify early changes in kidney function that should alert clinicians to a potential problem with kidney function," comments Dr. Steven D. Weisbord of the VA Pittsburgh Healthcare System and the University of Pittsburgh School of Medicine, lead author of the study. "This will help clinicians implement measures to prevent further loss of kidney function and potentially avoid serious adverse events."

Dr. Weisbord and colleagues analyzed data on nearly 11,500 patients who underwent a test called coronary angiography to evaluate possible heart disease. In this procedure, radiocontrast dye is injected into the blood vessels so that the coronary arteries will appear on x-ray pictures. Changes in the serum creatinine level—an indicator of kidney function—were evaluated before and after dye injection. (An increase in serum creatinine level indicates a drop in kidney function.)

Patients who had even a small decrease in kidney function after dye injection were at significantly increased risk of death over the next 30 days. Patients with a 25 to 50 percent increase in serum creatinine level in the days after dye injection had a 39 percent increase in mortality risk, after adjustment for other factors.

In general, patients with larger increases in serum creatinine—and thus with greater decreases in kidney function—were at higher risk of death. Patients with larger increases in creatinine also spent more time in the hospital.

Many prior studies of this complication, called radiocontrast nephropathy, have used absolute changes in serum creatinine of 0.5 mg/dL or 1.0 mg/dL to define the development of clinically significant kidney failure. Although less than five percent of patients in this study developed a change

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in serum creatinine of more than 0.25 milligram per deciliter (mg/dL) within three days after dye injection, an absolute increase in the serum creatinine of as little as 0.25 to 0.5 mg/dL was associated with an 83 percent increase in the risk of death. For patients whose serum creatinine increased by more than 1.0 mg/dL, the risk of death increased by more than 200 percent.

X-ray procedures using radiocontrast dye are increasingly used to diagnose and treat heart disease and other medical conditions. The use of radiocontrast dye carries a risk of acute or sudden kidney failure. Radiocontrast nephropathy is one of the most common causes of acute kidney injury. Previous studies have used varying definitions, making it difficult to tell how often RCN occurs and to compare the effectiveness of preventive treatments.

"Although it is difficult to establish a definition of radiocontrast nephropathy in a single study, our results identify the levels of change in kidney function that predict adverse events, including death," says Dr. Weisbord. "The findings will help clinicians identify patients who will need to be followed more carefully after a radiographic procedure and will allow clinicians to implement measures to prevent more substantial declines in kidney function." The results will also aid in designing future studies of approaches to preventing radiocontrast nephropathy.

The study, entitled "Associations of Increases in Serum Creatinine with Mortality and Length of Hospital Stay Following Coronary Angiography" will be available online at [www.jasn.org](http://www.jasn.org) on August 23 and in print in the October issue of the *Journal of the American Society of Nephrology*.

The ASN is a not-for-profit organization of 9,500 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.

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