



1725 I Street NW • Suite 510 • Washington, DC 20006
Tel 202-659-0599 • Fax 202-659-0709 • www.asn-online.org

Contact: Shari Leventhal: 202-416-0658, sleventhal@asn-online.org

RADIOGRAPHIC SCANS WITH INTRAVENOUS DYE RARELY CAUSE CLINICALLY SIGNIFICANT KIDNEY INJURY

This Common Procedure is Safe for Most Patients

Washington, DC (Tuesday, May 27, 2008) — Radiographic procedures such as computed tomography (CT) scans that use intravenous dye rarely cause clinically significant acute kidney injury in patients with mild baseline kidney disease, according to a study appearing in the September 2008 issue of the *Clinical Journal of the American Society Nephrology* (CJASN). The findings reveal that these procedures are safe for the large and growing number of individuals who undergo them as well as give physicians reassuring information on patient risk.

For some CT scans and other procedures used to visualize parts of the internal body, a contrast material such as dye is injected into a blood vessel so that various structures and organs can be seen more easily. Previous studies have shown that the administration of contrast dye into blood vessels can cause acute kidney injury, or the rapid loss of kidney function due to damage to the kidneys. However, this research has traditionally been conducted in patients undergoing angiographic procedures that are done to detect abnormalities in the blood vessels. Less is known about the risk of acute kidney injury in outpatients who receive intravenous dye for CT scans. This information would be valuable to physicians, because patients who are considered at risk of kidney injury from these procedures should receive certain preventive interventions.

To fill this knowledge gap, Dr. Steven Weisbord and his colleagues of the Department of Veterans Affairs (VA) Pittsburgh Healthcare System and the University of Pittsburgh School of Medicine attempted to determine the incidence of acute kidney injury due to intravenous dye in individuals undergoing CT scans. They conducted a prospective, observational study of 421 patients within the VA Pittsburgh Healthcare System who did not have end-stage renal disease and who were scheduled to undergo CT scans with intravenous dye. They assessed kidney injury by measuring the amount of creatinine found in the blood. Creatinine is a muscle break-down product that is filtered by the kidneys; high levels in the blood indicate kidney dysfunction.

In following patients' creatinine levels after the procedures, the researchers reported that only 0.5% of patients had a 50% or more increase in creatinine blood levels, and none had a 100% increase. Contrast-

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induced acute kidney injury was not uncommon in the subset of patients who were hospitalized or who had advanced kidney impairment prior to the CT scan. But kidney injury was very uncommon in outpatients with mild baseline kidney disease. Even when patients did develop contrast-induced acute kidney injury, none required dialysis and none were hospitalized or died because of the kidney disease.

“These observations have important implications for providers ordering and performing computed tomography and for future clinical trials of contrast-induced acute kidney injury in patients undergoing this radiographic procedure,” the authors write. They note that their findings will help physicians determine which patients are at risk for acute kidney injury and will help ensure that intravenous dye is used in the safest possible manner.

The study, entitled “Incidence and Outcomes of Contrast-Induced AKI Following Computed Tomography,” is available online at <http://cjasn.asnjournals.org/> and will appear in print in the September issue of the CJASN.

The American Society of Nephrology (ASN) is a not-for-profit organization of 11,000 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 publishes the Journal of the American Society of Nephrology (JASN), CJASN, and the Nephrology Self-Assessment Program (NephSAP). In January 2009, ASN will launch a newsmagazine.

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