RSNA Press Release

Groups Publish Statements on CT Contrast Use in Patients with Kidney Disease

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OAK BROOK, Ill. — The risk of administering modern intravenous iodinated contrast media in patients with reduced kidney function has been overstated, according to new consensus statements from the American College of Radiology (ACR) and the National Kidney Foundation (NKF), jointly published in the journals Radiology and Kidney Medicine.

At A Glance

- New consensus statements address the risk of intravenous iodinated contrast media in patients with impaired kidney function.
- The ACR-NKF statements say risk has been overstated due to the conflation of contrast-induced injury and contrast-associated injury.
- The statements answer key questions and provide recommendations for contrast use in patients impaired kidney function.

Matthew S. Davenport, M.D.

Intravenous iodinated contrast media are commonly used with computed tomography (CT) to evaluate disease and to determine treatment response. Although patients have benefited from their use, iodinated contrast media have been denied or delayed in patients with reduced kidney function due to the perceived risks of contrast-induced acute kidney injury. This practice can hinder a timely and accurate diagnosis in these patients.

"The historical fears of kidney injury from contrast-enhanced CT have led to unmeasured
Dr. Davenport said.

"Contrast-induced acute kidney injury implies a causal relationship. However, in many circumstances, the diagnosis of CI-AKI in clinical care and in research is made in a way that prevents causal attribution. Disentangling contrast-induced AKI (causal AKI) from contrast-associated AKI (correlated AKI) is a critical step forward in improving understanding of the true risk to patients."

The statements answer key questions and provide recommendations for use of intravenous contrast media in treating patients with varying degrees of impaired kidney function.

Although the true risk of CI-AKI remains unknown, the authors recommend intravenous normal saline for patients without contraindication, such as heart failure, who have acute kidney injury or an estimated glomerular filtration rate (eGFR) less than 30 mL/min per 1.73 m² who are not undergoing maintenance dialysis. In individual and unusual high-risk circumstances (patients with multiple comorbid risk factors), prophylaxis may be considered in patients with an eGFR of 30–44 mL/min per 1.73 m² at the discretion of the ordering clinician.

The presence of a solitary kidney should not independently influence decision making regarding the risk of CI-AKI. Lowering of contrast media dose below a known diagnostic threshold should be avoided due to the risk of lowering diagnostic accuracy. Also, when feasible, medications that are toxic to the kidneys should be withheld by the referring clinician in patients at high risk. However, renal replacement therapy should not be initiated or altered solely based on contrast media administration.

The authors emphasize that prospective controlled data are needed in adult and pediatric Groups Publish Statements on CT Contrast Use in Patients with Kidney Disease

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populations to clarify the risk of CI-AKI.

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"Use of Intravenous Iodinated Contrast Media in Patients with Kidney Disease: Consensus Statements from the American College of Radiology and the National Kidney Foundation." Collaborating with Dr. Davenport were Mark A. Perazella, M.D., Jerry Yee, M.D., Jonathan R. Dillman, M.D., M.S., Derek Fine, M.D., Robert J. McDonald, M.D., Ph.D., Roger A. Rodby, M.D., Carolyn L. Wang, M.D., and Jeffrey C. Weinreb, M.D.

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