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SIMPLE TEST DETECTS INCREASED RISKS IN PATIENTS WITH ACUTE KIDNEY INJURY

Test could help physicians provide better care for at-risk patients

Highlights

- A simple test performed with the FDA-approved medication furosemide, along with a measurement of urine output, can predict which patients with acute kidney injury will later require dialysis.
- The test could help clinicians safeguard patients' kidney health.

Acute kidney injury is one of the most common and serious complications of hospitalized patients.

Washington, DC (February 5, 2015) — A simple test can help predict which patients with acute kidney injury will likely develop serious kidney problems and die in the hospital, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN). Using this test could help clinicians safeguard patients' health.

Acute kidney injury (AKI) is an abrupt decline in kidney function that often arises after major surgeries or severe infections. When a patient develops AKI, some may recover promptly while others get worse and require dialysis. Unfortunately, there are limited tools to help predict which patients with early AKI will go on to develop the more severe forms of AKI that require dialysis. Having such information would improve care and perhaps help safeguard patients' health.

In a study of 77 patients with early AKI, a team led by Lakhmir Chawla, MD (George Washington University and Veteran Affairs Medical Center, Washington DC) and Jay Koyner, MD (University of Chicago) found that a simple test performed with a one-time dose of the FDA-approved medication furosemide, along with a measurement of urine output, could effectively make this early diagnostic determination. Furosemide is a diuretic that is predominantly cleared by the kidneys, and it can be used to assess certain aspects of the kidneys' function. The test is termed the Furosemide Stress Test (FST).

"These findings may pave the way forward to robust clinical diagnostic tools for clinicians who care for patients with AKI," said Dr. Chawla. "In this standardized protocol, we were

able to determine which patients may or may not require dialysis for acute kidney injury 1 to 3 days ahead of time.”

Dr. Chawla noted that using the FST to assess the severity of AKI is similar to the model used in patients with cardiac angina, or chest pain, wherein a marker such as troponin is used in conjunction with an exercise stress test. Similarly, when FST was used in conjunction with AKI markers, it improved predictions of outcomes in patients with early AKI.

In an accompanying editorial, T. Clark Powell, MPH and David Warnock, MD (University of Alabama at Birmingham) noted that the study’s findings need to be confirmed and broadened to include larger numbers of individuals. “It will be important to see if the predictive power of the FST remains informative for patients who are not in the critical care setting and critically ill patients,” they added.

Study co-authors include Danielle Davison, MD, Ermira Brasha-Mitchell, MD, Divya Chalikonda, BA, John Arthur, MD, PhD, Andrew Shaw, MD, James Tumlin, MD, Sharon Trevino, RN, Michael Bennett, PhD, Paul Kimmel, MD, and Michael Seneff, MD.

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The article, entitled “Furosemide Stress Test and Biomarkers for the Prediction of AKI Severity,” will appear online at <http://jasn.asnjournals.org/> on February 5, 2015.

The editorial, entitled “The Furosemide Stress Test and Predicting AKI Outcomes,” will appear online at <http://jasn.asnjournals.org/> on February 5, 2015.

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Founded in 1966, and with more than 15,000 members, the American Society of Nephrology (ASN) leads the fight against kidney disease by educating health professionals, sharing new

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