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Urine Dipstick Helps Predict Acute Kidney Injury

A commonly used, inexpensive diagnostic tool, the dipstick proteinuria (DP) urine test, may provide an easier, more effective way to predict Acute Kidney Injury (AKI) in patients with sepsis or severe blood poisoning infections.

Led by Dr. Javier Neyra at the Henry Ford Hospital in Detroit, Michigan, researchers have found a new prognostic application for the readily available urine test. Intensivists and emergency room physicians have been using it as part of routine testing on admission.

This study, which examined 328 septic patients with no recent history of protein in the urine, found that the detection of this protein via a dipstick on patient admission accurately predicted AKI in 55 percent of septic patients. AKI occurs, in almost 30 percent of patients with severe sepsis and the presence of albuminuria, or elevated protein in the urine, occurs in nearly 87 percent of septic patients. Using the DP test resulted in fewer false positives, and accurate detection of more severe AKI.

“Production of creatinine from the muscle is reduced in septic patients, so relying on changes in serum creatinine to diagnose AKI in such settings could delay its diagnosis. As such, it is highly important to identify biomarkers that are sensitive, specific, and which enable early diagnosis before substantial kidney damage has been done. Additionally, septic patients receive aggressive IV fluid administration which can further dilute serum creatinine, making it harder to detect AKI in this population,” expressed Dr. Neyra.

This research was presented at the National Kidney Foundation’s Spring Clinical Meetings, held from 10-13 May, 2012.

“Ultimately, using this tool to indicate who is most susceptible to AKI may allow providers to intervene early and prevent it from developing. Given the increased risk of developing chronic kidney disease later in life after an episode of AKI, this is especially significant,” said Dr. Lynda Szczech, National Kidney Foundation

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