Dipstick Test Shows Promise for Diagnosing Obstetric AKI

A salivary urea nitrogen (SUN) dipstick test is specific—but not sensitive—for diagnosis of obstetric-related acute kidney injury (AKI) in high-risk Malawian women, reports a study in the open-access journal *Kidney International Reports*.

The study included 301 pregnant or postpartum women at high risk of AKI. The women were admitted to the obstetric unit of a district hospital in Blantyre, Malawi, over a 12-week period. The patients' mean age was 26 years, and 11% were HIV positive. On admission, patients underwent the SUN dipstick test as well as serum creatinine measurement, with additional testing as indicated.

Acute kidney injury was diagnosed in 23 women. Of these, nearly half had stage 1 AKI, mainly due to preeclampsia or eclampsia. Mean admission serum creatinine was 108.8 mg/dL in women with stage 1 AKI, 1.33 mg/dL in stage 2, and 1.36 mg/dL in stage 3. A SUN dipstick value of greater than 14 mg/dL was 97.33% specific for the diagnosis of AKI, with sensitivity of just 12.82%.

Area under the receiver operating characteristic curve with the SUN dipstick test was 0.551. Perinatal mortality was 25.0% for women with an SUN dipstick value greater than 14 mg/dL, compared to 11.8% for those with normal admission SUN.

Laboratory-independent tools for diagnosis of obstetric-related AKI in low-income countries are needed. The SUN dipstick test has shown good performance in diagnosis of kidney injury in adult patients with acute and chronic kidney disease.

This study finds that the SUN dipstick is a specific but insensitive test for obstetric-related AKI among high-risk women in Malawi. A modified dipstick test with better sensitivity at lower ranges of SUN is under development and will be tested in pregnant and nonpregnant patients [Evans RDR, et al. A salivary urea nitrogen dipstick to detect obstetric-related acute kidney disease in Malawi. *Kidney Int Rep* 2018; 3:178– 184]. ■