MedicalXpress

Urinary markers may indicate kidney injury in preterm infants

July 28 2016

A new study indicates that several proteins are excreted differently in preterm infants with kidney injury compared with those with healthy kidneys. The findings, which appear in an upcoming issue of the *Clinical Journal of the American Society of Nephrology* (*CJASN*), could lead to better diagnostics related to kidney health in newborns.

Acute kidney injury (AKI), or a rapid decline in kidney function, is common in premature infants, and newborns with AKI have a higher likelihood of dying or of needing an extended stay in the hospital. Research also indicates that premature infants are twice as likely to develop chronic kidney disease and kidney failure compared with term infants, and experts wonder whether AKI may contribute to this risk. Unfortunately, however, detecting AKI in newborns is challenging.

Because developing better diagnostic tests for AKI could lead to better prevention and treatment, David Askenazi MD, MSPH (University of Alabama at Birmingham) and his colleagues assessed the potential of 14 urine proteins for indicating the presence of kidney damage. Using single drops of urine from 113 preterm infants, they found that several of these proteins are good candidates for further investigation. Maximum levels in the first 4 postnatal days of life were 1.7 to 3.7 times higher in those with AKI than those without AKI for the following markers: cystatin c, neutrophil gelatinase associated lipocalin, osteopontin, clusterin, and alpha glutathione S-transferase.

"Having better diagnostic tests to diagnose kidney injury can have an

important impact on how we care for infants, how we prognosticate outcomes, and how we design studies to prevent and/or mitigate AKI in these very vulnerable babies," said Dr. Askenazi.

More information: "Acute Kidney Injury Urine Biomarkers in Very Low Birth Weight Infants," DOI: 10.2215/CJN.13381215

Provided by American Society of Nephrology