ASN LEADING THE FIGHT AGAINST KIDNEY DISEASE

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Press Release

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CERTAIN BLOOD MARKERS MAY INDICATE EARLY SIGNS OF KIDNEY DISEASE

Testing for the markers may allow for earlier treatment to protect the kidneys

Highlights

- Six metabolites in the blood had strong correlations with kidney function.
- Two of the metabolites—pseudouridine and C-mannosyltryptophan—were equally good measures of kidney function while having some advantages over current measures of kidney function.

An estimated 26 million people in the United States have chronic kidney disease.

Washington, DC (October 8, 2015) — Newly discovered blood markers may lead to improved and earlier diagnoses of kidney disease, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN). The findings could help clinicians monitor patients' kidney health.

Chronic kidney disease (CKD) is a major public health challenge, affecting approximately 10% of adults and contributing to kidney failure, heart disease, and premature death. While it is important to identify individuals with CKD early on in order to prevent complications, measures of kidney function are usually based on the blood concentrations of the metabolite creatinine, which only start to become elevated after 50% of the kidneys' function has already been lost. In addition, creatinine concentrations are influenced by other factors such as muscle mass.

To look for better markers of kidney function, Anna Köttgen, MD, MPH, Peggy Sekula, PhD (University of Freiburg, Germany), Gabi Kastenmüller PhD (Helmholtz Center Munich, Germany), and their colleagues measured the concentrations of almost 500 metabolites in the blood of several thousand individuals from the general population. (Metabolites are generated through ongoing metabolic processes and many are cleared from the body by the kidneys. When the function of the kidneys is impaired, the concentrations of these metabolites in the blood may increase.)

Six of the metabolites showed particularly strong correlations with kidney function. In addition, 2 of the metabolites—pseudouridine and C-mannosyltryptophan—were equally

good measures of kidney function and disease progression in patients with CKD compared with creatinine.

“These markers therefore represent promising candidates to further improve the estimation of kidney function by combining them with information on creatinine concentrations. This will facilitate an improved diagnosis of CKD, enabling treatment and prevention of complications,” said Dr. Köttgen.

Study co-authors include Oemer-Necmi Goek, MD, MPH; Lydia Quaye, PhD; Clara Barrios, PhD; Andrew Levey, MD; Werner Römisch–Margl, PhD; Cristina Menni, PhD; Idil Yet, PhD; Christian Gieger, PhD; Lesley Inker, MD, MS; Jerzy Adamski, PhD; Wolfram Gronwald, PhD; Thomas Illig, PhD; Katja Dettmer, PhD; Jan Krumsiek, PhD; Peter Oefner, PhD; Ana Valdes, PhD; Christa Meisinger, MD; Josef Coresh, MD, PhD; Tim Spector, PhD; Robert Mohney, PhD; and Karsten Suhre, PhD.

Disclosures: ASL, LAI, and JC have applied for a patent for precise estimation of GFR using a panel of metabolomic filtration markers.

The article, entitled “A Metabolome-wide Association Study of Kidney Function and Disease in the General Population,” will appear online at http://jasn.asnjournals.org/ on October 8, 2015.

Founded in 1966, and with nearly 16,000 members, the American Society of Nephrology (ASN) leads the fight against kidney disease by educating health professionals, sharing new knowledge, advancing research, and advocating the highest quality care for patients.

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