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METABOLIC SYNDROME LINKED TO INCREASED RISK OF CHRONIC KIDNEY DISEASE

Washington, DC (June 1, 2005) — Patients with the combination of risk factors known as metabolic syndrome are at elevated long-term risk of developing chronic kidney disease (CKD), reports a study in the July *Journal of the American Society of Nephrology*.

Dr. Manjula Kurella and colleagues of University of California San Francisco analyzed the relationship between metabolic syndrome and CKD in over 10,000 middle-aged Americans participating in a long-term study of cardiovascular disease risk factors. All subjects initially had normal kidney function. None had diabetes at the beginning of the study, but 21% had at least one characteristic of metabolic syndrome, including:

- Large waist measurement—over 35 inches for women and 40 inches for men.
- High triglyceride level—150 mg/dL or higher.
- Low high-density lipoprotein cholesterol ("good cholesterol")—under 50 mg/dL for women and 40 mg/dL for men.
- High blood pressure—130/85 mm Hg or higher, or taking blood pressure medications.
- High blood glucose (blood sugar) level—110 mg/dL or higher.

During follow-up, seven percent of subjects developed CKD, reflecting a gradual, irreversible loss of kidney function. With adjustment for other factors, CKD risk was 43% higher in subjects with at least 3 of the 5 characteristics of metabolic syndrome, compared to those with no characteristics.

The more characteristics of metabolic syndrome, the higher the risk of CKD. For subjects with all five characteristics, the risk of CKD was more than double that of a person with no characteristics.

Further adjustments were performed to account for the presence of high blood pressure and the development of diabetes, both important CKD risk factors. The link remained significant although somewhat weaker—CKD risk was increased 24% for subjects with metabolic syndrome.

About 1 in 5 U.S. adults have metabolic syndrome, sometimes called insulin resistance syndrome, or "syndrome X." Previous studies have identified metabolic syndrome as a risk factor for diabetes and cardiovascular disease. However, its effect on CKD has been unclear.

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Early identification of CKD is a major health care priority, especially because effective treatments can slow or prevent progressive kidney disease. Like metabolic syndrome, CKD is recognized as a major risk factor for development of cardiovascular diseases such as heart attack and stroke. Early treatment of CKD has been shown to reduce the risk of later development of cardiovascular disease.

The new results suggest that metabolic syndrome is an important risk factor for CKD in middle-aged people without diabetes. This risk is significant even after adjustment for other factors, and increases along with the number of metabolic syndrome characteristics present. "[T]he metabolic syndrome directly contributes to the development of CKD," Dr. Kurella and coauthors conclude. More research will be needed to determine whether weight loss, exercise, and other measures to address the characteristics of metabolic syndrome can help to reduce the long-term risk of CKD.

The study entitled, "Metabolic Syndrome and the Risk for Chronic Kidney Disease among Nondiabetic Adults" is available in the July issue of the *Journal of the American Society of Nephrology* (JASN) and online at www.asn-online.org or www.jasn.org.

The ASN is a not-for-profit organization of 9,000 physicians and scientists dedicated to the study of nephrology and committed to providing a forum for the promulgation of information regarding the latest research and clinical findings on kidney diseases.

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