Blood markers reveal severity of common kidney disease

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Increasing blood levels of particular proteins may act as warning signs for patients with one of the most common diseases of the kidney, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (*JASN*). The findings could lead to better diagnosis and management of patients with the disease, called IgA nephropathy.

IgA nephropathy occurs when IgA1, a protein that helps the body fight certain infections, becomes modified and settles in the kidneys. This 'first hit' of the disease is followed by a 'second hit' when the patient's immune system mounts an antibody response against these modified IgA1 molecules. Over time, these events can damage the kidneys, which subsequently leak blood and protein in the urine, and can lead to hypertension and kidney failure.

To better characterize the disease, Francois Berthoux, MD (University Hospital of Saint-Etienne, France), Jan Novak, MD, PhD (University of Alabama at Birmingham), Hitoshi Suzuki, MD, PhD (Juntendo University, in Tokyo, Japan), and their colleagues studied blood samples from 97 patients with IgA nephropathy and compared them with samples from 60 individuals without the disease. They found that blood levels of both modified IgA1 and the antibodies that target them increased in a stepwise fashion according to the severity of patients' disease. Also, patients with highest blood levels of antibodies against modified IgA1 at the time of diagnosis had the highest risks of eventually needing dialysis due to kidney failure and of dying prematurely.

"This paper is a first step, and in the future we have to refine these tests to check the impact of different treatments on these serum biomarkers, and to imagine new therapies with direct impacts on modified IgA1 or on the specific antibody responses against it," said Dr. Berthoux.

More information: The article, entitled " Autoantibodies targeting galactose-deficient IgA1 associate with progression of IgA nephropathy," will appear online on August 16, 2012, doi: 10.1681/ASN.2012010053

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