

Circulating blood factor linked with a leading cause of kidney failure

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Patients with a disease that is a leading cause of kidney failure tend to have high levels of a particular factor circulating in their blood, according to a study appearing in an upcoming issue of the Journal of the American Society of Nephrology (JASN). The findings suggest that the factor could be used to monitor the disease's progression as well as patients' response to different therapies. It might also be a therapeutic target of future treatments for this difficult-to-treat disease.

[Focal segmental glomerulosclerosis](#) (FSGS), which is characterized by scarring of the kidneys, is a devastating disease in both children and adults. Most therapies are not effective, and patients often eventually need to undergo a [kidney transplant](#). Research indicates that high blood levels of a factor called soluble urokinase receptor (suPAR)—which is overproduced in FSGS—plays a key role in the development of the disease. At high concentrations, suPAR binds to and damages kidney podocyte cells, leading to poor kidney filtration and protein excretion in the urine, eventually causing kidney failure.

Jochen Reiser, MD, PhD (Rush University Medical Center) and his colleagues evaluated suPAR levels in the blood of 70 adult FSGS patients from North America, 94 pediatric FSGS patients from Europe, and 150 individuals without the disease. They also analyzed suPAR levels after patients were treated with various drugs.

Among the major findings:

- 84% and 55% of FSGS patients in the two different cohorts had elevated suPAR levels in their blood, compared with only 6% of individuals without FSGS.
- After treatment with [mycophenolate mofetil](#), an immunosuppressant, patients had significantly reduced suPAR levels in the blood. They also had reduced protein excretion in the urine and a greater likelihood of experiencing remission.
- Treatment with [cyclosporine](#) A, another immunosuppressant, did not produce these effects.

The findings suggest that suPAR blood tests might be used to monitor patients' disease and their response to treatment. Also, "anti-suPAR therapies may help reduce the burden of FSGS," said Dr. Reiser. "Since FSGS can recur after kidney transplantation, suPAR removal may also have relevance in the treatment of post-transplant FSGS," he added.

More information: The article, entitled "Circulating suPAR in Two Cohorts of Primary FSGS," will appear online on November 8, 2012, [doi: 10.1681/2012030302](https://doi.org/10.1681/2012030302)

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