

New strategy may help prevent kidney failure in patients with diabetes

September 8 2016

A new strategy may help halt the progression of kidney disease in patients with diabetes. The approach, which is highlighted in an upcoming issue of the *Journal of the American Society of Nephrology* (*JASN*), addresses a common and serious complication of diabetes.

Diabetes is the leading cause of [chronic kidney disease](#) and kidney failure, and approximately one-third of diabetic patients develop kidney disease, or diabetic nephropathy. Current diabetes therapies are often insufficient for preventing the progression of diabetic nephropathy to [kidney failure](#), but a team led by Jesus Egido, MD, PhD and Carmen Gomez-Guerrero, PhD (Fundacion Jimenez Diaz University Hospital-Health Research Institute at the Autonomous University of Madrid, in Spain) has discovered a promising new strategy.

The approach targets a cellular pathway called JAK/STAT that is chronically activated in diabetes and mediates the damaging effects of high blood sugar on kidney cells. The researchers developed a compound that mimics a protein called Suppressor Of Cytokine Signaling 1 (SOCS1) that helps regulate JAK/STAT, and they found that it can enter cells, inhibit the deleterious effects of [high blood sugar](#) on [kidney cells](#), and slow the progression of [kidney disease](#) in diabetic mice. In addition, it was able to protect the kidneys in both early and advanced phases of diabetes, it improved kidney function, and it reduced expression of genes associated with kidney inflammation and scarring. These effects occurred independently of blood glucose levels.

"Our goal is to develop the compound as a novel approach to combat chronic complications of diabetes," said Dr. Gomez-Guerrero. "We plan to initiate preclinical development to support early-phase clinical trials."

More information: "Suppressor of cytokine signaling-1 (SOCS1) peptidomimetic limits progression of diabetic nephropathy," [DOI: 10.1681/ASN.2016020237](https://doi.org/10.1681/ASN.2016020237)

Provided by American Society of Nephrology

Citation: New strategy may help prevent kidney failure in patients with diabetes (2016, September 8) retrieved 3 April 2023 from <https://medicalxpress.com/news/2016-09-strategy-kidney-failure-patients-diabetes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.