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AUTOIMMUNE DRUG MAY HELP PREVENT KIDNEY DISEASE CAUSED BY DIABETES

Abatacept protects kidney health of diabetic mice

Highlights

- A receptor called B7-1 is expressed by kidney cells during the progression of kidney disease in diabetic mice and humans.
- Targeting this receptor with an available drug called CTLA4-Ig, or abatacept, helps to maintain kidney function in mice.

Diabetes is the leading cause of kidney failure.

Washington, DC (March 27, 2014) — A drug currently used to treat autoimmune disease may also help prevent the kidney-damaging effects of diabetes, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology (JASN)*. The findings suggest that clinical trials should be designed to test the drug in diabetic patients.

Kidney disease is one of the most serious complications of diabetes. Diabetics who develop kidney disease, or diabetic nephropathy, due to high blood glucose levels may eventually require dialysis or a kidney transplant.

Paolo Fiorina, MD, PhD (Boston Children's Hospital/Harvard Medical School) and his colleagues have discovered that a receptor called B7-1 is expressed by kidney cells during the progression of diabetic nephropathy. Furthermore, targeting this receptor with an available drug called CTLA4-Ig, or abatacept, helped to maintain kidney function in mice with diabetic nephropathy. Abatacept is currently being used to treat autoimmune disease due to its ability to target B7-1 expressed on immune cells.

"The next steps will be to test anti-B7-1 drugs in individuals with diabetes and diabetic nephropathy to see if they can abrogate the progression of the disease in humans as well," said Dr. Fiorina.

Study co-authors include Andrea Vergani, MD, Roberto Bassi, MD, Monika A. Niewczas, MD, PhD, Mehmet M. Altintas, PhD, Marcus G. Pezzolesi, PhD, Francesca D'Addio, MD, PhD, Melissa Chin, Sara Tezza, Moufida Ben Nasr, PhD, Deborah Mattinzoli,

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Disclosures: Jochen Reiser has pending or issued patents on novel kidney protective therapies, and he stands to receive royalties from their future commercialization. The other authors reported no financial disclosures.

The article, entitled “Role of Podocyte B7-1 in Diabetic Nephropathy,” will appear online at <http://jasn.asnjournals.org/> on March 27, 2014.

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