

Research Progress Report

Therapeutic Area: Complications Therapies **Key Advances** **Spring 2010**

Thanks to the generous support you and other donors have provided, JDRF's Complications Therapies program has made significant advances in recent months. This therapeutic area seeks to discover and develop treatments for the complications that can strike people with diabetes, specifically diseases of the eyes, nerves, kidneys, heart, and blood vessels. The aim is to prevent complications from developing, to effectively treat them, and to halt their progression. We rely on supporters like you to move this work along as rapidly as possible. Below are highlights of recent accomplishments you helped make happen.

Important New Clues About the Genetics of Diabetic Kidney Disease

JDRF-funded scientists have identified a gene that puts people with type 1 diabetes at greater risk for diabetic nephropathy, a severe and devastating form of diabetic kidney disease that develops in up to 40% of patients with either type 1 or type 2 diabetes. Called ELM01, the gene produces important cell function proteins in key kidney cells and had previously been linked only to type 2 diabetes. The research was an analysis of genetic data collected as part of the ongoing JDRF-funded GoKinD study (Genetics of Kidneys in Diabetes). It is part of a new JDRF strategic research program called Complications Protection, which aims to find new approaches to assess risk for complications and block them from developing or progressing.

What this may mean for people with type 1 diabetes: This new genetic information, as well as additional clues found through similar research, may eventually enable physicians to identify type 1 patients with low, medium, and high risk for kidney disease. Armed with this knowledge, they could pinpoint the best candidates for certain therapies and clinical trials aimed at prevention; people who learned that they were at higher risk could also take steps to become more vigilant for early signs of kidney disease. The genes identified in these types of searches also have the potential to be a target for new treatments for diabetic kidney disease.

Blood Pressure Drugs Stop Diabetic Eye Disease from Progressing

Two drugs used to treat high blood pressure can significantly slow the progression of diabetic retinopathy, a serious and common complication of diabetes that can lead to vision loss. According to data from a multi-center clinical trial, type 1 patients with normal blood pressure, no evidence of kidney disease, and very mild eye disease who received either drug – losartan or enalapril – were at least two times less likely to develop more serious complications of diabetic retinopathy than participants not receiving them. The University of Minnesota led the study, which was built on research co-funded by JDRF in 2002.

What this may mean for people with type 1 diabetes: Complications like retinopathy only add to the burdens of living with type 1 diabetes. This study provides encouraging evidence that two blood pressure drugs may stem retinopathy in certain people with type 1 diabetes. While further studies will be needed before these drugs can be recommended for routine use, the progress here offers hope for improving the lives of people with type 1 diabetes.

To stay up-to-date on the latest JDRF-funded advances, please visit www.idrf.org.