

Growth hormone defect may protect against diabetes, cancer in unique ecuador population

June 23 2014

People who lack growth hormone (GH) receptors also appear to have marked insulin sensitivity that prevents them from developing diabetes and lowers their risk for cancer, despite their increased percentage of body fat, new research finds. The results were presented Sunday, June 22, at ICE/ENDO 2014, the joint meeting of the International Society of Endocrinology and the Endocrine Society in Chicago.

"We have shown that people who, due to a <u>genetic defect</u>, are unable to respond to growth hormone have an increased sensitivity to insulin that safeguards them from developing Type 2 diabetes, which is associated with overweight, even if they have increased body fat content. They also have reduced risk for developing cancer," said lead study author Jaime Guevara Aguirre, MD, professor of diebetology and endocrinology at Universidad San Francisco de Quito in Quito, Ecuador.

"In the presence of the largest pandemic of obesity, diabetes and associated comorbidities, including cancer, knowledge of the mechanisms influencing <u>insulin sensitivity</u> and resistance appears relevant," said Dr. Guevara Aguirre.

Growth hormone is produced in the <u>pituitary gland</u> and helps stimulate growth. Insulin is a hormone secreted by the pancreas that controls the level of the <u>sugar glucose</u> in the blood and permits cells to use glucose for energy. In the most common form of diabetes, type 2, the pancreas



produces insulin, but cells throughout the body do not respond normally to it.

Previous research by Dr. Guevara Aguirre and colleagues reported the absence of diabetes and protection from cancer in a unique group of people from southern Ecuador who have growth hormone receptor deficiency (GHRD).

They showed that, even if these people were overweight or obese, they did not have diabetes, while 5% of their relatives had diabetes. They also showed that the overnight fasting concentrations of insulin in their blood were much lower than in their relatives, indicating that their bodies had increased sensitivity to insulin.

This report continues that work and explores the effects of lifelong absence of GH and the relationships between body composition, hormonal status and disease risk in a larger population.

The researchers studied 27 adults with GHRD and 35 comparably overweight control study participants and found that the adults with GHRD had a consistently greater mean percentage of <u>body fat</u> —~50%—and a lower ratio of lean to fat. Their fasting insulin, 2-hour blood glucose, Very-low-density lipoprotein (VLDL), and triglyceride levels were all significantly lower, indicating their sensitivity to insulin, and their cholesterol (C), high-density lipoprotein (HDL) and lowdensity lipoprotein (LDL) were also elevated.

The authors called for further research to explore the detailed metabolism of this unique group of people and their normal relatives to find exactly where in the complex metabolic cycle the lack of <u>growth</u> hormone is having an effect, which may lead to focused treatment for Type 2 <u>diabetes</u>.



Provided by The Endocrine Society

Citation: Growth hormone defect may protect against diabetes, cancer in unique ecuador population (2014, June 23) retrieved 3 May 2024 from <u>https://medicalxpress.com/news/2014-06-growth-hormone-defect-diabetes-cancer.html</u>

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.