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USC Study Establishes Weight Gain As Main Factor In Falling Beta Cell Function In Hispanic Women

June 9, 2008

San Francisco, Calif., June 9, 2008—A study by researchers at the University of Southern California (USC) found that weight gain was the strongest factor associated with falling beta cell function in Hispanic women, a condition that often leads to diabetes.

The results of the study were presented as an oral presentation on Monday, June 9 at the American Diabetes Association meeting 68th Scientific Sessions held in San Francisco.

“We know that type 2 diabetes in young Hispanic women occurs when pancreatic beta cells, the cells that make insulin to regulate blood sugar levels, fail progressively over time in people who are overweight, and thus resistant to their body’s insulin,” says Anny Xiang, Ph.D., associate professor in the Department of Preventive Medicine at the Keck School of Medicine of USC and the lead author of the study. “In this study, we looked for factors that might contribute to the failing beta cell function in a cohort of women who we followed with detailed metabolic measurements over five years.”

The study examined 60 women (28 with normal glucose tolerance and 32 with impaired tolerance) who had oral and intravenous glucose tolerance tests 15-30 months postpartum. Results showed that weight gain appeared to negatively impact beta cell function in two ways—it worsened insulin resistance, which places increased demands on beta cells to make more insulin, and it led to changes in some hormones from fat cells that may be damaging to beta cells, she says.

“The results highlight the importance of reducing the negative effects of excess fat if we want to prevent or delay diabetes,” Xiang notes. “The bad effects could be reduced by weight loss, or at least the prevention of weight gain, and by creating a better hormonal pattern from fat cells.”

Further follow-up data will allow researchers to examine the long-term pathogenesis in diabetes development, as well as look for genetics determinants of beta cell failure in Hispanic Americans in a separate study.

The study was funded by the National Institutes of Health-National Institute of Diabetes and Digestive and Kidney Diseases.

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Anny Xiang, Miwa Kawakubo, Enrique Trigo, Siri Kjos, Thomas A. Buchanan, “Determinants of Falling b-cell Function in Hispanic Women with Recent Gestational Diabetes: Role of Weight Gain, Adipokines and Insulin Resistance.”

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