Beta-cell sensitivity to glucose impaired after gastric bypass

December 11 2017

(HealthDay)—Individuals with prior Roux-en-Y gastric bypass (GB)

have blunted β-cell sensitivity to changes in glycemia, according to a study published online Nov. 20 in *Diabetes, Obesity and Metabolism*.

Marzieh Salehi, M.D., from the University of Cincinnati College of Medicine, and colleagues examined β-cell glucose sensitivity in the absence of meal stimulation and insulinotropic gut factors in 12 subjects without diabetes with prior GB surgery and seven matched non-surgical controls with normal glucose tolerance. During a graded glucose infusion, blood glucose and insulin secretion rates were measured. Insulin sensitivity (S_I) and glucose effectiveness (S_G) were determined.

The researchers found that GB subjects and controls had comparable S_I. During the highest dose of glucose infusion, the GB subjects had relative hyperglycemia associated with significantly reduced β-cell glucose sensitivity throughout both step-up (GB: 34 ± 6 versus control: 82 ± 9 pmol.min^{-1}.mM^{-1}.L; P $^{-1}$.mM^{-1}.L; P glucose infusion. Reduced S_G was also seen among the GB subjects (GB: 0.04 ± 0.00 versus control: 0.07 ± 0.01 min^{-1}; P = 0.004).

"In the absence of enteric stimuli β-cell sensitivity to changes in glycemia is blunted among individuals with GB, indicating a significant shift in a fundamental property of β-cell function several years after surgery," the authors write.

More information: Abstract
Full Text (subscription or payment may be required)

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Citation: Beta-cell sensitivity to glucose impaired after gastric bypass (2017, December 11) retrieved 1 May 2024 from
https://medicalxpress.com/news/2017-12-cell-sensitivity-glucose-impaired-gastric.html

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