Progression of dysglycemia in youth similar to adults

July 12 2014

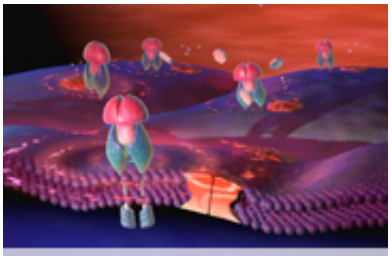

Image courtesy of Blausen Medical

(HealthDay)—For obese adolescents, glucose sensitivity deteriorates progressively across the spectrum of glucose tolerance, according to a study published online June 19 in *Diabetes*.

Sara F. Michaliszyn, Ph.D., from the University of Pittsburgh Medical Center, and colleagues describe oral glucose tolerance test (OGTT)-modeled β-cell function and incretin effect in 255 obese adolescents (173 with normal glucose tolerance, 48 with impaired glucose tolerance, and 34 with type 2 diabetes). An established mathematical model yielding β-cell glucose sensitivity, rate sensitivity, and insulin sensitivity was used to derive β-cell function parameters. The ratio of the OGTT β-cell glucose sensitivity to the two-hour hyperglycemic clamp β-cell glucose sensitivity was calculated as the incretin effect.

The researchers found that β-cell glucose sensitivity was 30 and 65 percent lower in youth with impaired glucose tolerance and type 2 diabetes, respectively, compared with normal glucose tolerance. In type 2 diabetes, rate sensitivity was 40 percent lower. Incretin effect was 32 and 38 percent lower for youth with impaired glucose tolerance and type 2 diabetes, respectively, compared with normal glucose tolerance, when faced with similar changes in glucagon-like peptide-1 (GLP-1) and glucose-dependent insulinotropic polypeptide (GIP) in response to oral glucose.

"We conclude that glucose sensitivity deteriorates progressively in obese youth across the spectrum of glucose tolerance in association with impairment in incretin effect without reduction in GLP-1 or GIP, similar to that seen in adult dysglycemia," the authors write.

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