Commentary on "Single point insulin sensitivity estimator for predicting type 2 diabetes mellitus in obese adolescents"

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Recent studies implied that an increase in calorie consumption and a decrease in physical activity among Korean teenagers have contributed to an increase in central obesity, dyslipidemia, metabolic syndrome, and type 2 diabetes over the last decade.[1-7] Obesity-related insulin resistance is a key pathophysiology of diabetes development.[8] Various insulin resistance indices, such as Homeostasis Model Assessment for Insulin Resistance, insulin sensitivity index, triglyceride to high-density lipoprotein-cholesterol ratio, and triglyceride and glucose index have been proposed to identify and stratify insulin resistance in obese populations and to aid in the early detection and prevention of type 2 diabetes mellitus.[9-12]

"Single point insulin sensitivity estimator for predicting type 2 diabetes mellitus in obese adolescents" by Ha et al.[13] investigated the usefulness of this recently proposed insulin sensitivity marker, the single point insulin sensitivity estimator (SPISE) index, for detecting blood glucose abnormalities or diabetes mellitus in Korean children with obesity. The SPISE index is a lipid- and body mass index-based index of insulin sensitivity that can predict metabolic syndrome in adolescents and adults with more accuracy than other lipid and fasting insulin-based indicators.[14] Furthermore, a recent large-scale longitudinal study from Italy confirmed the superiority of the SPISE index for predicting the development of blood glucose abnormalities among overweight/obese children compared with other insulin resistance indices.[14]

This research is meaningful since it is the first to examine the clinical utility of the SPISE index in Korean children and adolescents with type 2 diabetes. In this work, the authors suggested that a low SPISE index (<4.49) was an independent factor of type 2 diabetes mellitus in overweight/obese children, after adjusting for well-known risk factors including family history, fatty liver, and/or obesity.[13] The main limitation of this study was that it was cross-sectional with a small number of cases. Large-scale longitudinal studies are needed to confirm that the SPISE index could be useful for predicting future diabetes development in Korean children.

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