Strategy Unveiled to Battle Pediatric Obesity

BY HEIDI SPLETE
Senior Writer

A new guideline issued by the Endocrine Society offers evidence-based recommendations that clinicians can use to combat the growing problem of childhood obesity in the United States.

The guideline is currently available online at http://jcem.endojournals.org (search for keyword "pediatric obesity") and will appear in print in the December issue of the Journal of Clinical Endocrinology and Metabolism.

This is the first time the Endocrine Society has issued a clinical practice guideline for pediatric obesity, Dr. A. Jay Cohen, medical director of the Endocrine Clinic, P.C., in Memphis, Tenn., said in an interview.

The guideline will make it easier for clinicians to treat pediatric patients who are at risk for obesity, explained Dr. Cohen. "It will give direction to pediatricians, family practice physicians, and endocrinologists as to what to evaluate, how, and when. It will also give direction to insurance companies as to standards of care." The guideline recommends that clinicians define overweight as a body mass index greater than the 85th percentile and obesity as a BMI greater than the 95th percentile.

The most important elements of the guideline that clinicians can use immediately are the recommendations for changes in daily exercise patterns and dramatic adjustments in food behaviors, Dr. Cohen said.

While pharmacotherapy is included in the guideline, it should be considered only after lifestyle changes have failed or if severe comorbidities persist.

The guideline recommends breastfeeding of infants for at least 6 months as part of a strategy to prevent obesity. And as a first-line treatment for obesity in children and adolescents, the guideline emphasizes intensive lifestyle changes in diet, exercise, and behavior. To help with lifestyle modification, the guideline encourages clinicians to advocate for 60 minutes of moderate to vigorous exercise each day for all school-aged children in all grades.

While pharmacotherapy is included in the guideline, it should be considered for children only after lifestyle modification has failed, or if severe comorbidities such as nonalcoholic fatty liver disease persist despite lifestyle modification. And medication should be given only by clinicians who have experience in using antiobesity drugs and who understand the possible side effects and adverse reactions.

In addition, the guideline recommends evaluating children with a BMI above the 85th percentile for comorbidities and complications associated with obesity. This process would help identify children who might benefit from specialized treatment such as bariatric surgery.

Bariatric surgery may be an option for some children, but the guideline states that it should be considered only for adolescents with a BMI greater than 50, or in those with a BMI greater than 40 who have severe comorbidities or who have failed to manage weight with intensive lifestyle modification, pharmacotherapy, or both.

Implementation of this guideline into clinical practice poses many challenges, including the amount of time needed on a consistent basis to educate, support, and give follow-up care to young patients at risk for obesity, Dr. Cohen said, adding that reimbursement for care remains an issue. "Insurance companies must start covering for nutritionists and counseling."

Additional research is needed to continue to support the guidelines or revise them if necessary, noted Dr. Cohen.

"Data will be needed to show the evolution of these patients into adulthood and the risks of diabetes, cardiac problems, and accelerated complications. The roles of medication and bariatric surgery are important issues to address in the near future," he said. ■

Youth With Type 2 Diabetes Have Three Times More Cardiovascular Risk Factors

BY MIRIAM E. TUCKER
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ROME — Youth with type 2 diabetes had an average of nearly three cardiovascular risk factors each, compared with just one among healthy controls in an analysis of 295 participants in a large, multicenter, U.S. case-control study.

The data come from 106 patients with type 2 diabetes and 189 healthy controls (matched for age, sex, and race/ethnicity) recruited by primary care providers at two sites (Colorado and South Carolina) of the six sites participating in the federally-funded SEARCH for Diabetes in Youth, a study designed to investigate the prevalence and characteristics of diabetes among individuals aged younger than 20 years (www.searchfordiabetes.org).

The current analysis, one of the first to look specifically at cardiovascular (CV) risk in youth with type 2 diabetes, also revealed that not all of the risk factors could be accounted for by increased obesity and/or hyperglycemia. "We believe that our data support the statement that early prevention and treatment strategies aimed at reducing the prevalence of cardiovascular risk factors in youth with type 2 diabetes mellitus are urgently needed," Dr. Dana Dabelea said at the annual meeting of the European Association for the Study of Diabetes.

Participants were aged 10-22 years, with a mean of 16 years for the diabetic group and 14 years for the controls. (This was a statistically significant difference, despite attempts to age-match.) Duration of diabetes in the type 2 group was 1.5 years. Females comprised 69% of the diabetic group and 60% of controls, not significantly different, said Dr. Dabelea, director of the epidemiology PhD program at the University of Colorado, Denver, and a principal investigator at the SEARCH Colorado site.

The type 2 group was significantly more likely than were the controls to be African American (55% vs. 29%) and less likely to be non-Hispanic white (28% vs. 54%). The proportion of Hispanics was 17% in both groups. Body mass index was significantly greater among the youth with diabetes (35 vs. 24 kg/m^2), as was waist circumference (108 vs. 80 cm in the females and 110 vs. 77 cm in the males). Mean hemoglobin A_{1c} among the diabetics was 7% (versus 5% among the controls).

Consumption of saturated fat as a percent of total daily calories was slightly higher in the type 2 group, while the amount of daily physical activity was lower, but these did not reach statistical significance.

Highly statistically significant differences were seen between the two groups in the proportions—adjusted for age and race/ethnicity—who had hypertension, defined as systolic or diastolic blood pressure of 95th percentile or greater for age, sex, height, or medication (27% in the type 2 group vs. 5% of controls), low HDL cholesterol, defined as 35 mg/dL or below (25% of the type 2 group vs. 5% of controls) and high triglycerides, of 150 mg/dL or higher (27% vs. 6%).

Also highly significantly different were the proportions who were obese, defined as 95th percentile or greater BMI for age and sex (86% vs. 26%) and those who had a large waist circumference, defined as 90th percentile or greater for age and sex (82% vs. 22%).

Elevated albumin/creatinine ratio of 30 mcg/mg or greater was present in 17% of the type 2 group vs. 7% of controls, of borderline significance. The proportions of patients with high LDL cholesterol (130 mg/dL or greater) and who were current smokers were not significantly different, she said.

Nearly half (45%) of the controls had none of these CV risk factors, compared with just 3% of those with type 2 diabetes. In contrast, 60% of the type 2 patients had three or more risk factors, compared with just 13% of the nondiabetic controls. Those with type 2 diabetes had a mean of 2.9 CV risk factors each, compared with 1 for the controls.

The type 2 group also had a less favorable profile of nontraditional CV risk factors, including significantly lower levels of adiponectin and LDL particle density, and higher levels of apolipoprotein B, fibrinogen, and interleukin-6.

In a series of multiple linear regression models, adjustment for differences in obesity accounted for the differences between the type 2 group and the controls in HDL cholesterol, systolic blood pressure, and adiponectin, while adjustment for hemoglobin A_{1c} between the groups accounted for the differences in apolipoprotein B and LDL particle size. Adjustment for both obesity and HbA_{1c} accounted for the difference in triglycerides. ■

β-Cell Function

Teens *from page 1*

The demographics of both progressors and non-progressors were similar with regard to sex; age (median, 12 years); and body mass index. The difference in family history of diabetes between progressors and non-progressors was not significant, Dr. Caprio said.

"This is the first time that we are showing that the reason for developing glucose intolerance is because of impaired β-cells," Dr. Caprio said.

Besides having impaired glucose tolerance and β-cell dysfunction, teens who were headed for type 2 diabetes deposited more fat in their liver and muscles.

"There are differences in the prediabetes forms already in children. I want to emphasize that there is an evolution that gradually takes place. They go from normal glucose tolerance to impaired glucose tolerance, and there are two defects, both insulin resistance and early defects in pancreatic β-cell function," Dr. Caprio said.

The study did not continue to follow the teens to see who would eventually get diabetes.

But, Dr. Caprio warned, "if these children do not improve their weight or physical activity—or in extreme cases, be put on medication—they are at very high risk for developing type 2 diabetes."

Dr. Caprio said she was pleased to see that most of the obese teens did not develop glucose intolerance. "Twenty-three percent of the original cohort moved from normal glucose tolerance to impaired glucose tolerance, but the rest remained normal. So it's quite nice … they had excellent tests, the same plasma glucose every time we repeated those tests. These teens kept their normal glucose tolerance as opposed to those who were developing prediabetes."

Why do some go on to develop impaired glucose tolerance, while most do not?

Dr. Caprio said she would like to find the answer to that question. "We need to understand why they already have the predisposition to prediabetes, and how we can reverse or prevent it."

In the meantime, prevention of type 2 diabetes in at-risk youth should target insulin resistance and β-cell dysfunction "as early as possible," she said.

Dr. Caprio said she had no conflicts of interest to disclose. ■