Target Obesity in Kids With Genetic Syndromes

Reserve medications for those with genetic conditions such as familial hypercholesterolemia.

BY BETSY BATES
Los Angeles Bureau

STANFORD, CALIF. — Picture a 15-year-old Hispanic girl who is 152.5 cm tall, weighs 88.7 kg, and has a body mass index of 38 kg/m^2.

Her father has hyperlipidemia, but she has no family history of a premature coronary artery event (such as a myocardial infarction in a family member less than 55 years old) and no physical signs of hypercholesterolemia such as xanthomas under the skin.

Her fasting lipid profile is the following: total cholesterol, 267 mg/dL; triglycerides, 255 mg/dL; HDL cholesterol, 51 mg/dL; and LDL cholesterol, 164 mg/dL.

When would Dr. Clifford Chin consider initiating cholestyramine or a statin medication?

"The short answer is never," said Dr. Chin, a pediatric cardiologist and codirector of the pediatric heart transplant program at the Lucile Packard Children's Hospital at Stanford (Calif.) University.

"I feel fairly strongly we should not give an individual with obesity a pill. I think it sends a message: 'It's not up to me. It doesn't matter what I do. I'll take this pill and I'll be fine,' " he said at a recent pediatric update sponsored by Stanford University. "[Patients with] hyperlipidemia induced by obesity [in childhood] should have obesity treatment as their primary therapy."

Children who have genetic abnormalities at the root of their dyslipidemia may well require medical therapy, even at a young age.

But in today's children, dubbed "Generation XXL" by some, hyperlipidemia is far more likely to be caused by obesity.

In this scenario, the evidence favoring drug therapy is far from clear, according to Dr. Chin.

Most obese children do not have significant elevations in LDL cholesterol. "It's triglycerides [that drive up their total cholesterol], and we don't have much evidence that lowering triglycerides has an impact on premature coronary artery disease," said Dr. Chin.

Indeed, no study to date has demonstrated that lowering lipids in general during childhood has any effect on the end point of preventing coronary events in adults.

The long-term impact of cholesterol-lowering drugs has not been studied in children and "no one knows the optimal timing of when to initiate drug therapy," he stressed.

Given the dearth of evidence of benefit, Dr. Chin's policy is to focus on dietary therapy and lifestyle changes in obese adolescents and reserve medications for those with such conditions as familial hypercholesterolemia caused by genetic mutations.

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At Stanford, obese children can be referred to a specialized teen weight clinic or be seen by a pediatric nutritionist.

Dr. Chin counsels families to follow the American Heart Association Step I diet, which emphasizes a daily intake of no more than 30% of total calories from fat and less than 10% of total calories from saturated fat.

An easy way to begin is to cut starch intake by half in each meal and make up the difference in vegetables, he said.

Close monitoring and encouragement can help, but medication actually may interfere with lifestyle adaptation by making it seem unnecessary, he said.

Even children with a strong family history of premature coronary disease deserve a full lipoprotein profile rather than a simple total cholesterol screen before any decision is reached about initiating cholesterol-lowering therapy, he said.

In a typical cholesterol panel, the LDL cholesterol is not measured directly, but calculated according to a formula based on total cholesterol.

A full lipoprotein profile offered reassuring news to the parents of a 7-year-old Asian American boy who had three relatives who suffered premature coronary events (myocardial infarction, angina pectoris, and established coronary atherosclerosis by imaging, sudden cardiac death, or peripheral or cerebrovascular disease before the age of 55 years).

This child's height was 120 cm; weight, 23 kg; and BMI, normal at 16 kg/m^2.

His total fasting cholesterol was 220 mg/dL, but his triglycerides were in the normal range at 100 mg/dL, his HDL cholesterol 80 mg/dL, and LDL cholesterol 120 mg/dL.

"Although he comes from a family with premature coronary disease, he seems somewhat protected," said Dr. Chin.

He would follow the child and order a repeat lipoprotein profile at age 12, but for now, this child does not require medical therapy, he concluded. ■

Childhood and Teen Overweight Is Linked to Adult CHD

BY MARY ANN MOON
Contributing Writer

Childhood and adolescent overweight are associated with an increased risk of coronary heart disease in young and middle-aged adults, researchers in two separate studies reported.

Given the current surge in pediatric weight gain worldwide, these findings indicate that there will be substantial rises in CHD-related morbidity and mortality in coming years among even young and middle-aged adults, both groups of investigators predicted.

In the first study, Jennifer L. Baker, Ph.D., of the Institute for Health and Society, Copenhagen, and her associates analyzed data from a cohort of people born between 1930 and 1976 who had initially been examined as schoolchildren. The study sample included "virtually every schoolchild in Copenhagen" during that interval.

The investigators calculated the subjects' body mass index from these records, then used national databases to track CHD diagnoses and deaths that occurred in 280,678 of the subjects in adulthood.

There were 10,235 CHD events in men and 4,318 in women during follow-up. The risk of an event rose significantly and in a linear fashion for every 1-U increase in BMI *z* score at every age from 7 to 13 years.

The CHD risk rose with increasing child age, so that the risk in adults who had had a high BMI at age 13 was twice as high as that for adults who had had a high BMI at age 7. "We speculate that … increases in BMI *z* scores at these later ages could reflect a greater accumulation of fat, in particular intraabdominal fat, which increases the risk of CHD," the investigators said.

"In comparison with an average-size 13-year-old boy, a boy of the same age and height weighing 11.2 kg more had a 33% higher risk of having a CHD event" before age 60. Similar results were observed for girls, Dr. Baker and her associates said (N. Engl. J. Med. 2007;357:2329-37).

This pattern held true for both fatal and nonfatal CHD events, even after the data had been adjusted to account for the subjects' birth weight. Moreover, the pattern held true regardless of whether subjects were born before or during the current obesity epidemic.

"Currently, children are typically classified as being at risk only if their BMI values are above cutoff points such as the 85th or 95th percentile on growth charts. Our results do not support this approach. The linearity of the associations we identified between childhood BMI and adult CHD implies that even a surprisingly small amount of weight gain will increase the risk of CHD," they noted.

In the second study, Kirsten Bibbins-Domingo, Ph.D., of the University of California, San Francisco, and her associates used computer simulation models to estimate the potential effect of adolescent overweight on future adult CHD. The models incorporated data from the U.S. Census, the National Center for Health Statistics, Medicare, the Framingham Heart Study, and the National Health and Nutrition Examination Surveys to project the proportion of obese 35-year-old men and women in successive cohorts from 2020 to 2035.

The prevalence of adolescent overweight in 2000 was 17% in boys and 15% in girls. "By the time these adolescents turn 35 years old in 2020, the proportion of obese 35-year-olds is projected to be 30%-37% in men (as compared with 25% now) and 34%-44% in women (as compared with 32% now)," the investigators said.

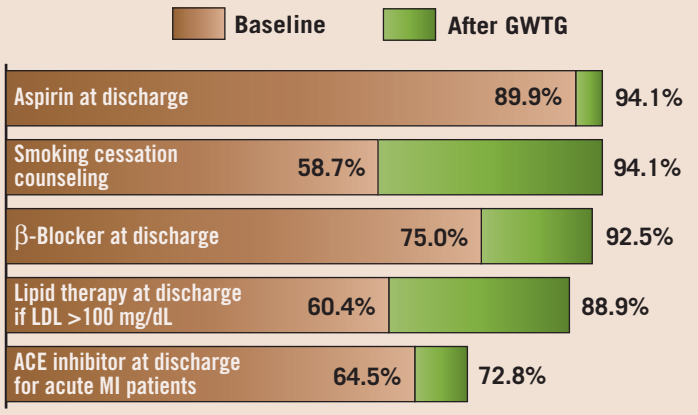
They projected a steep rise in total CHD events, "with 550 absolute excess events in 2020 (an excess of 10%) increasing to 33,000 excess events in 2035 (an excess of 14%).

"The annual excess in the incidence of CHD is projected to rise from 1,600 in 2000 to 40,000 in 2035, an excess of 15% over the incidence that would have been expected without the increase in future obesity." Similarly, the number of excess CHD deaths is projected to rise from 59 in 2020 to 3,600 in 2035, Dr. Bibbins-Domingo and her associates said (N. Engl. J. Med. 2007;357:2371-9).

Although projections into the future "are notoriously unreliable," analyses of current treatments and trends "suggest that barring a major advance in the treatment of either excessive weight gain itself or its associated alterations in blood pressure, lipid levels, and glucose metabolism, current adolescent overweight will have a substantial effect on public health far into the future," they noted. ■

DATA WATCH

Results for the Get With the Guidelines Coronary Artery Disease Program in 2006



Note: Based on data for 58,847 patients in key performance measures.
Source: American Heart Association

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