

# Some Turning to Gastric Bypass in Adolescents

BY CHRISTINE KILGORE

Contributing Writer

WASHINGTON — Early evidence suggests that the health benefits of bariatric surgery offset the risks for severely obese adolescents, according to the results of small studies reported at the annual scientific sessions of the American Diabetes Association.

Significant metabolic improvements and near-complete resolution of type 2 diabetes and obstructive sleep apnea were among the 1-year outcomes of Roux-en-Y gastric bypass surgery performed in 36 morbidly obese adolescents, aged 13-21 years, at three pediatric surgical centers participating in the Pediatric Bariatric Study Group.

Severely obese adolescents are developing serious adultlike comorbidities at an unexpectedly high frequency. Limited success with behavioral and lifestyle interventions has left physicians considering more aggressive interventions. "Children who are obese become obese adults," said Dr. Carroll M. Harmon, of the Children's Hospital of Alabama, Birmingham.

Teens were eligible for the surgery at Children's Hospital and the other institutions in the Pediatric Bariatric Study Group (the University of Florida in Gainesville and the Cincinnati Children's Hospital Medical Center) if they had a body mass index (BMI) of at least 40 kg/m<sup>2</sup> with serious comorbidities such as type 2 diabetes and obstructive sleep apnea, or a BMI of 50 or more with less severe comorbidities. They also had to have been deemed "physiologically mature" and "psychologically sound," and had to have tried an intensive, multidisciplinary 6-month medical weight loss program.

The teens in the multicenter cohort had a mean BMI preoperatively of approximately 57. Postoperatively, the mean BMI fell to 36, a 37% reduction.

None of the patients included in the weight loss analysis (9 of the 36 teens in

the cohort were excluded because they did not comply with follow-up requirements) attained normal weight in the year of follow-up; BMI values, in fact, still ranged from overweight to severe obesity.

Still, the postoperative weight loss was significant and consistent with outcomes in adults who undergo bariatric surgery, said Dr. Harmon, professor of surgery in the University of Alabama division of pediatric surgery.

Metabolic measures improved as a result of significant changes in triglycerides (-65 mg/dL), total cholesterol (-30 mg/dL), fasting blood glucose (-12 g/dL), and fasting insulin (-21.3 μU/mL). Changes in HDL and LDL cholesterol values were not statistically significant.

Mean hemoglobin A<sub>1c</sub> decreased from 7.3% to 5.6% in the 10 patients diagnosed with type 2 diabetes. At 1 year after surgery, 1 of 10 patients remained on diabetic medications; 9 of 10 were on diabetic medications preoperatively, Dr. Harmon reported, adding that the adolescents also scored significantly higher postoperatively on various quality-of-life measures than they did preoperatively.

In a separate poster presentation, Dr. Marc P. Michalsky and Dr. Dara Schuster of Ohio State University, Columbus, reported on what they said are similarly good outcomes in five morbidly obese adolescents (BMI of at least 57) who underwent Roux-en-Y gastric bypass surgery at Columbus Children's Hospital.

Serum hemoglobin A<sub>1c</sub> reached normal values within 20 weeks of surgery in each of the four adolescents with type 2 diabetes. Blood pressures reached normal values within 20 weeks in each of four hypertensive patients, and obstructive sleep apnea resolved after surgery in two of three affected patients. Insulin resistance (as determined by calculating the homeostasis model assessment of insulin resistance) also was reduced by a mean of 66% at 12 weeks post surgery.

"These are superobese kids," and they

have the same morbidities as obese adults who qualify for gastric bypass surgery, Dr. Schuster said in an interview. "The question we need to answer is: Do we do them a favor by operating early?"

Long-term follow-up will be necessary to determine the durability of the patients' improvements and the safety of the surgery, the physicians said. It remains to be seen whether the patients will experience nutritional malabsorption, they noted.

None of the 5 adolescents treated in Columbus experienced complications during the 20-week follow-up period, but there were complications among the 36 who were followed for a year.

Nine of the 36 patients had minor complications with no long-term sequelae (nausea, wound infection, and food obstruction), and 4 had at least one moderate complication (persistent iron-deficiency anemia or the need for reoperation).

Two patients had severe complications, said Dr. Harmon. One developed severe thiamine deficiency with significant sequelae,

and the other, who initially presented with a BMI of 80 and a weight of 630 pounds, died 9 months after surgery due to infectious colitis contracted while undergoing inpatient rehabilitation for osteoarthritis.

The complication profile thus far is similar to that seen in superobese adults who undergo the surgery. "But so far, in adolescents, just as in adults, these risks seem to be offset by the benefits," he said.

The adjustable gastric banding procedure, which does not involve an intestinal bypass, is getting more attention as a possible "best" operation for adolescents—even though long-term results in adults have not been compared with those of gastric bypass surgery—because it eliminates concerns about nutritional and mineral malabsorption, Dr. Harmon said.

Insurance coverage varies nationwide and is difficult to secure in some locales. "In Ohio, Medicaid has been favorable toward covering these kids so far," Dr. Michalsky said. "We have a high rate of obesity, so the state may be attuned [to the problem]." ■

## Comorbid Conditions Often Missed

Dr. Schuster said the "most striking thing" about seeing adolescents referred to her hospital's bariatric surgery clinic is how "many of them didn't have their comorbid conditions diagnosed" before their surgical evaluations.

Hypertension, sleep apnea, diabetes, and other obesity-related comorbid conditions "are underdiagnosed and undermanaged" in obese adolescents, Dr. Schuster and her colleagues said in a poster presented at the annual scientific sessions of the American Diabetes Association.

Of 46 patients who were seen at the Columbus Children's Hospital Adolescent Bariatric Surgery Clinic in 2004 and 2005, 42% received a "new diag-

nosis" of obstructive sleep apnea and 33% learned they were hypothyroid.

During their initial presurgical evaluation, 25% were first told they had type 2 diabetes, 13% learned they had gastroesophageal reflux disease, and 10% received a new diagnosis of hypertension. Not surprisingly, since insulin resistance is hard to diagnose in most clinical settings, 54% learned for the first time that they were insulin resistant.

The prevalence of comorbidities was similar to, or higher than, the rates recorded among morbidly obese adults presenting at other clinics at Ohio State University in Columbus, reported Dr. Schuster and her associates.

## Weight Loss After Banding Varies Among Ethnic Groups

BY JEFF EVANS

Senior Writer

SAN FRANCISCO — African American patients, especially women, appear to lose a smaller percentage of excess weight after laparoscopic adjustable gastric banding than their white counterparts, despite similar resolution of comorbidities, Dr. Manish S. Parikh reported at the annual meeting of the American Society for Bariatric Surgery.

"It's unclear what impact race has on outcomes after bariatric surgery. There have been conflicting reports of decreased mean excess weight loss among African Americans after bariatric surgery, most of which involved gastric bypasses," said Dr. Parikh, of the department of surgery at New York University, New York.

In a previously published review of 630 white and 61 African American patients, Dr. Parikh and his colleagues found a significant difference in mean excess weight

loss between whites and African Americans at 3 years of follow-up (54% and 38%, respectively) after laparoscopic adjustable gastric banding (LAGB). But that study did not examine any differences in age, body mass index, or prevalence of comorbidities (Surg. Endosc. 2005;19:1631-5).

To investigate more thoroughly any racial differences in LAGB outcomes, Dr. Parikh and his colleagues used prospectively collected data on 959 patients who underwent the procedure during 2001-2004. They retrospectively matched 65 white patients with 58 African American patients based on age (mean 37 years), sex (104 females), and preoperative BMI (47 kg/m<sup>2</sup>).

Compared with African American patients, white patients on average lost a significantly higher percentage of excess weight at 1 year (39% vs. 49%), 2 years (44% vs. 55%), and 3 years of follow-up (41% vs. 52%). But the obesity-related comorbidities

of type 2 diabetes, hypertension, obstructive sleep apnea, and hyperlipidemia resolved in a similar percentage of patients in both groups at each time point.

At baseline, 64% of African Americans and 55% of whites had obesity-related comorbidities. A decrease in the dose or number of medications was seen in 77% of African Americans and 61% of whites while obesity-related comorbidities completely resolved (medications were discontinued) in 32% of African Americans and in 29% of whites.

The follow-up rates at 3 years were 60% for African Americans and 74% for whites.

"This is a very small study with preliminary data. Larger studies are needed to delineate ethnic differences in outcomes after bariatric surgery," Dr. Parikh said.

Physicians should look at such data "with a little bit of caution, especially the types of studies that may foster far-reaching implications," said Dr. Titus D. Dun-

can, a scheduled discussant. "Insurance companies and other entities get these papers as well; and they can—and have—historically denied access to patients" based on studies that have not reached final conclusions.

It's important to consider "difficult-to-study" variables, such as social support issues, social negotiation skills, personal life experiences, conditioned preferences and avoidances, role models, and body image, which influence the overall outcomes in African American patients, said Dr. Duncan, director of minimally invasive and bariatric surgery at the Atlanta Medical Center.

Taking those variables into consideration in postoperative care plans, Dr. Duncan said that his group has found no significant racial differences in weight loss parameters or resolution of comorbidities in 3,500 bariatric procedures performed at their institution (including more than 800 African American patients). ■