

Gastric Banding Improves Weight, QOL in Teens

The study provides more level 1 evidence that bariatric surgery trumps nonsurgical treatment.

BY MARY ANN MOON

Gastric banding allowed extremely obese adolescents to achieve a more substantial and durable weight loss than did an intensive lifestyle modification program, based on results of a prospective clinical trial with 50 adolescents.

The bariatric procedure improved overall health better than the lifestyle intervention did, resolving all cases of metabolic syndrome and insulin resistance. It also improved the adolescents' quality of life to a greater degree, according to the findings of a randomized controlled trial.

Dr. Paul E. O'Brien of the Centre for Obesity Research and Education at Monash University, Melbourne, and his associates compared the two approaches in adolescents aged 14-18 years with a body mass index of greater than 35. All study subjects had related medical complications, including hypertension, metabolic syndrome, asthma, and back pain, as well as physical limitations such as the inability to play sports and problems performing activities of daily living. They also reported psychosocial problems including isolation, low self-esteem, and victimization by bullies.

The subjects were randomly assigned to undergo laparoscopic adjustable gastric banding with follow-up education and guidance or to participate in an intensive nonsurgical intervention program.

The program focused on reduced energy intake (800-2,000 kcal per day, de-

pending on age and weight); increased physical activity (more than 10,000 steps/day as measured by pedometer), which included structured exercise for at least 30 minutes per day; and behavior modification. The subjects were advised to limit time spent on sedentary pursuits such as computer or television to 2 hours per day, and to participate in bike rides, hiking trips, kickboxing events, and bowling parties with other patients. They received 6 weeks of instruction from a personal trainer and met with a physician, a dietitian, or an exercise consultant every 6 weeks.

Twenty-four of the 25 subjects in the surgery group (96%) completed the full 2 years of follow-up, compared with 18 of the 25 in the lifestyle group (72%).

Twenty-one subjects in the surgery group (84%) but only three subjects in the lifestyle group (12%) achieved the primary outcome measure of a loss of at least 50% of excess weight.

At 2 years, surgery group subjects had lost a mean of 35 kg, which represents a mean loss of 28% of total body weight. In comparison, subjects in the lifestyle group lost a mean of 3 kg, which represents a mean loss of 3% of total body weight, according to Dr. O'Brien and his colleagues (JAMA 2010;303:519-26).

At the inception of the study, 9 subjects in the surgery group and 10 in the lifestyle group had metabolic syndrome. By the end of the study, this had resolved in all surgery subjects and in six of the lifestyle subjects.

Similarly, insulin resistance was abnormally high in more than half of the subjects at baseline. The problem resolved in all subjects in the surgery group but persisted in three subjects in the lifestyle group.

Those who underwent gastric banding also showed significant improvements in quality of life in the domains of physical functioning, general health, self-esteem, and family activities, whereas those who participated in the nonsurgical intervention did not.

There were no operative or postoper-

events," the investigators stated.

However, compared with adults, adolescents may have more difficulty understanding and complying with instructions to eat only small meals and to eat very slowly in order to avoid the need for revisional procedures. Therefore, additional education and supervision of eating may be helpful for this age group, they added.

In an editorial comment accompanying the article, Dr. Edward H. Livingston of the University of Texas Southwestern Medical Center, Dallas, said that the study provides another randomized controlled trial comparing bariatric surgery with nonsurgical treatments, culminating in more level 1 evidence. This is crucial because the quality of the current evidence in support of bariatric surgery is "poor," he said (JAMA 2010;303:559-60).

Dr. Livingston added that the 28% rate of revisional procedures in this study is particularly important "because O'Brien et al. are among the most experienced group in the world with these operations, suggesting that these complication rates will probably be higher in actual community practice."

This study was supported in part by Allergan Inc., which provided the gastric bands. Dr. O'Brien reported no potential conflicts of interest, but one of his associates is a consultant for Allergan, Bariatric Advantage, Scientific Intake Ltd., SP Health Co., Optifast, Abbott Australasia, Eli Lilly Australia, Merck Sharp & Dohme Australia, Nestle Australia, and Roche Products Australia. Dr. Livingston reported no potential conflicts of interest. ■

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active complications, and the rates of adverse events were similar between the two groups.

Two girls in each group became pregnant during follow-up, an unexpectedly high rate that "suggests sexual counseling may be appropriate in association with weight-loss programs" in adolescents, the researchers said.

Since "the need for revisional procedures for enlargement of the stomach above the band or injury to the tubing is intrinsic to the gastric banding procedure," it was not surprising that seven patients in the surgery group (28%) required such revisions, they noted. "The need for a revisional procedure did not compromise the weight loss outcome or lead to additional adverse

Childhood Obesity, HT Linked to Early Adult Mortality

BY MARY ANN MOON

Obesity, hypertension, and glucose intolerance in childhood are strongly associated with premature death from endogenous causes, according to an analysis of data from a longitudinal study.

Failure to reverse the current population trends in childhood obesity thus could have far-reaching consequences for longevity, said Paul W. Franks, Ph.D., of the National Institute of Diabetes and Digestive and Kidney Diseases, Phoenix, and his associates.

The investigators noted that "little is known about the way in which cardiovascular risk factors that are present during childhood affect the life span," and examined the issue using data from a longitudinal study of diabetes among Native Americans who were born between 1945 and 1984. The 4,857 study subjects were children and adolescents (aged 5-20 years) when first enrolled between 1966 and 2003.

The study subjects had at least 4/8

Pima or Tohono O'odham Indian heritage and lived in the Gila River Indian Community.

This is a population with high rates of obesity and diabetes, and 1,394 (29%) of the children in this study were obese.

However, "this prevalence is similar to that observed in contemporary Hispanic and African American children.

"Thus ... our findings may reflect the future burden of premature death among contemporary children from other ethnic groups and may be more generalizable than the findings in previous studies," Dr. Franks and his colleagues noted (N. Engl. J. Med. 2010;362:485-93).

The study subjects were followed until death, their 55th birthday, or the end of 2003, whichever came first. Deaths due to endogenous causes were defined as those with a proximate cause of disease or self-inflicted injury such as acute

alcohol intoxication or drug use.

A total of 559 (11.5%) study subjects died before they reached 55 years of age, and 166 of these deaths were due to endogenous causes. Most deaths (59) were attributed to alcoholic liver dis-

VITALS

Major Finding: Childhood obesity raised the risk of premature death in adulthood by 50%, hypertension did so by 57%, and a high glucose level did so by 73%.

Data Source: A study of 4,857 Native American children through adulthood or death.

Disclosures: The study was supported by the National Institute of Diabetes and Digestive and Kidney Diseases' intramural research program. Dr. Franks reported no conflicts of interest.

ease, 22 to cardiovascular disease, 21 to infection, 12 to cancer, 10 to diabetes or diabetic nephropathy, 9 to acute alcohol poisoning or drug overdose, and 33 to miscellaneous causes.

Obesity was strongly related to risk of premature death. Adult mortality was more than twice as high among children

in the highest quartile of body mass index than among those in the lowest quartile.

Similarly, hypertension and glucose intolerance in childhood were strongly related to premature death. Hypertension raised the risk by 57%, and children in the highest quartile of glucose level had a 73% higher risk of premature death than did those in the lowest quartile.

In contrast, childhood hypercholesterolemia was not associated with premature death. That may be due in part to the fact that the proportion of deaths from cardiovascular disease was quite low in this young cohort (13%).

In addition, cholesterol levels are lower in most Native Americans than in other ethnic groups, which may have affected this outcome, the investigators said.

Dr. Franks was supported in part by grants from the Swedish Diabetes Association, the Swedish Heart Lung Foundation, the Swedish Research Council, Umeå University, and Västerbotten regional health authority. ■