Abdominal Height Accurately Gauges Adiposity

BY FRAN LOWRY
Orlando Bureau

NEW ORLEANS — In a patient with a body mass index of 40 kg/m^2 or more, measuring the height of the abdomen while the patient is lying down is a better indicator of visceral adiposity than is measuring waist circumference, according to a poster presentation at the annual meeting of NAASO, the Obesity Society.

In fact, said Dr. Nana Gletsu Miller, measuring waist circumference in such individuals is difficult, impractical, and does not provide a good measure of intra-abdominal fat stores, which is the fat that is more detrimental to health.

Dr. Gletsu Miller, of Emory University, Atlanta, showed measuring sagittal abdominal diameter while patients were in a supine position provided information that was more predictive of changes in insulin resistance and other cardiometabolic risk factors during weight loss than did waist circumference measured when the patient was standing up.

The 30 severely obese female patients were assessed at baseline, 1 month, and 6 months after Roux-en-Y gastric bypass or adjustable banding surgery for weight loss. Fifteen of the women also were assessed at 24 months postsurgery.

Visceral and subcutaneous adipose tissue volumes were determined using computed tomography. The height of the abdominal region was measured with a sliding-beam caliper, and waist circumference was measured at the iliac crest with a tape measure.

Other measures included hepatic insulin sensitivity, which was determined using the homeostatic model assessment of insulin resistance index that measures fasting glucose and insulin concentrations, along with the following indicators of cardiometabolic risk: systolic blood pressure, fasting LDL cholesterol, triglycerides, and high-sensitivity C-reactive protein.

All of the subjects exhibited significant decreases in general and abdominal adiposity, sagittal abdominal diameter, waist circumference, and visceral and subcutaneous fat volumes. They also improved measures of cardiometabolic risk, Dr. Gletsu Miller said.

However, as the severely obese subjects experienced weight loss over 6 months, changes in saggital abdominal diameter accounted for 15% of the changes in intra-abdominal fat volumes, whereas changes in waist circumference did not significantly explain these changes, she said.

Dr. Gletsu Miller said more studies need to be done to determine a cutoff value that will best predict insulin resistance and other risk factors in severely obese patients. ■

BMI's Association With Mortality Varies by Cause

BY ELIZABETH MECHCATIE
Senior Writer

A study using national health survey data has found varying associations between body mass index and mortality, depending on the cause.

Using data on cause-specific relative risks of mortality from the National Health and Nutrition Examination Survey (NHANES) from 1971-2002, Katherine M. Flegal, Ph.D., and colleagues looked at the association between body mass index (BMI) and excess deaths associated with three different BMI categories: underweight (BMI less than 18.5), overweight (BMI of 25 to less than 30), and obesity (BMI of 30 and over). Deaths were divided into three major categories: cardiovascular disease (CVD), cancer, and all other causes (noncancer, non-CVD causes). The normal-weight category was used as the reference group.

The underweight category was associated with significantly increased mortality from noncancer and non-CVD causes, but was not associated with increased cancer or CVD mortality.

The overweight category, however, was associated with significantly decreased mortality from noncancer and non-CVD causes. This category was not associated with cancer or CVD mortality, but was associated with significant increased mortality from diabetes and kidney disease. The net result was that the overweight category was associated with significantly decreased all-cause mortality overall, the authors reported.

The obese category was associated with significantly increased mortality from CVD, some cancers, and diabetes and kidney disease. There was no significant association between obesity and cancer mortality overall, or with noncancer, non-CVD mortality. But it was associated with increased mortality from obesity-related cancers such as colon, breast, esophageal, uterine, ovarian, kidney, and pancreatic cancer (JAMA 2007;298:2028-37).

These data "indicate that the association of BMI with mortality varies considerably by cause of death," the authors concluded. These results also help clarify their findings in an earlier study, which found "excess overall mortality associated with underweight and obesity but not with overweight."

In an interview, Dr. Flegal, senior research scientist at the National Center for Health Statistics, Hyattsville, Md., and lead author of the study, said the study's results were similar to those in other studies and are not intended for clinical use. Instead, they are intended to make estimates of the contribution of obesity and overweight to excess deaths.

The current study is an extension of a study, published in 2005, which determined that, based on national survey data from 2000, all-cause mortality was significantly increased in the underweight and obese categories and significantly decreased in the overweight category when compared with normal-weight categories.

Dr. Flegal said although some media coverage of that study suggested the findings were unusual, the association of overweight with mortality that is similar to or lower than that for normal weight, as well as the idea that being overweight may offer some survival benefits, have been found in other studies.

She emphasized that the relationship between BMI and mortality is complex. The study is not "the arbiter of whether it's OK to be overweight or not."

Asked to comment on the study's findings, Dr. Jeffrey I. Mechanick said its implications could "easily and dangerously" be distorted and should not be interpreted to mean that the results support allowing oneself to remain overweight or that dieting to achieve a "normal" BMI may not be medically indicated. Overweight people are at risk for diseases associated with a higher morbidity and mortality rate, including diabetes, obesity, and metabolic syndrome, said Dr. Mechanick, director of metabolic support and clinical professor of medicine at Mount Sinai School of Medicine, New York. ■

Long-Term Weight Loss Aids Arterial Flow, Function

NEW ORLEANS — Extremely obese individuals who lost weight and kept it off for at least 1 year significantly improved their vascular endothelial function, Dr. Noyan Gokce reported in a poster at the annual meeting of NAASO, the Obesity Society.

Arterial flow-mediated dilation rose by 3.2% in those who lost weight, but deteriorated by 1.1% in those whose weight increased or stayed the same, Dr. Gokce, a cardiologist at Boston Medical Center, said in an interview. Patients who lost weight also reduced their cholesterol and glucose levels.

Dr. Gokce and a colleague, recruited 39 consecutive subjects aged 34-58 years with a body mass index range of 36 kg/m^2 to 54 kg/m^2 who were seeking medical or surgical intervention for weight loss from the Nutrition and Weight Management Clinic at Boston Medical Center.

They measured the patients' arterial function, blood glucose, and cholesterol levels at baseline and at 12 months, and compared the results of those who lost weight with the results of those who gained weight or whose weight stayed the same. Of the total, 27 achieved successful weight loss, defined as a loss of at least 10% of body weight from baseline to 12-month follow-up, and 12 lost no weight or gained weight during the same period.

The weight-loss group showed a significant increase in flow-mediated dilation. At baseline, the mean flow-mediated dilation was impaired at 6.9% and 6.4% in weight-loss and no-weight-loss/weight-gain subjects, respectively. At 12 months, the mean flow-mediated dilation increased to 10.1% in weight-loss subjects and decreased slightly, to 5.3%, in the other group.

In addition, in those who lost weight, mean blood glucose decreased by 27 mg/dL, total cholesterol fell by 13 mg/dL, and mean triglyceride levels fell by 32 mg/dL. In those who gained or maintained their weight, mean blood glucose increased by 15 mg/dL, total cholesterol increased by 29 mg/dL, and mean triglyceride levels rose by 10 mg/dL.

—Fran Lowry