Waist Circumference Predicts Cardiovascular Risk

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NEW ORLEANS — Waist circumference is increasingly supplanting body mass index as the preferred indicator of obesity-related cardiovascular risk, both in research studies and clinical practice, Robert H. Eckel, M.D., said at the annual scientific sessions of the American Heart Association.

"Many people believe we have been overfocusing on body mass index. …I think the database worldwide is suggesting waist circumference is a better measure of risk than weight itself or BMI," said Dr. Eckel, AHA president-elect and professor of medicine at the University of Colorado, Denver. "Waist circumference is a vital sign in my clinic, like blood pressure and pulse."

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Several studies presented at the meeting underscored the point that for assessing cardiovascular risk, where a person's excess body fat is located is more important than how overweight or obese the person is.

For example, Xavier Jouven, M.D., presented an update on the landmark Paris Prospective Study I, which enrolled more than 7,000 healthy middle-aged French policemen and followed them for more than 20 years. There were 118 sudden deaths and 182 nonsudden cardiac deaths.

After adjustment for all the standard cardiovascular risk factors, sagittal abdominal diameter—a measure of abdominal fat—was significantly associated with increased risk of sudden death. BMI was not.

Normal-weight men have long been viewed as being at low risk for sudden death. Yet in the Paris study, normal-weight policemen who had a BMI of less than 25 kg/m^2 but were in the third tertile for sagittal abdominal diameter had a threefold greater risk of sudden death than did normal-weight men in the first tertile, said Dr. Jouven of the cardiovascular, metabolic, and sudden death epidemiology unit of INSERM, the French national medical research organization, in Villejuif, France.

More than half of the roughly 300,000 sudden deaths occurring each year in the United States constitute the first manifestation of heart disease in previously asymptomatic individuals. This underscores the importance of trying to pinpoint the risk factors for sudden death as accurately as possible to enhance efforts at prevention, he stressed.

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DR. AMMAR

Abdominal obesity is an established independent risk factor for coronary heart disease, but prior to the Paris study little was known about the relationship between abdominal obesity and sudden death.

The usual measure of obesity is BMI, but this has the disadvantage of combining fat-free mass and fat mass, while providing no information about fat localization, he noted.

In a separate presentation, Khawaja Afza Ammar, M.D., reported on 2,042 randomly selected Minnesotans aged 45 and older who underwent echocardiographic evaluation of left ventricular function along with measures of central, peripheral, and overall obesity. He found that any of the central obesity measures—waist circumference, waist-hip ratio, and neck circumference—were more strongly correlated with diastolic dysfunction than peripheral obesity as measured by skinfold thickness or overall obesity as reflected in BMI.

In fact, after adjustment for the standard coronary risk factors, BMI and skinfold thickness had little or no relationship with left ventricular dysfunction. Waist-hip ratio and the other measures of central obesity did, said Dr. Ammar, director of the treadmill laboratory at Olmsted Medical Center, Rochester, Minn.

"We think that we have identified central obesity as a more important mediator of congestive heart failure and left ventricular dysfunction," Dr. Ammar commented.

"Instead of measuring weight, height, and BMI, if a doctor is more concerned about a patient developing congestive heart failure it might be more prudent to measure waist circumference or even neck circumference, which is a very easy-to-measure marker of obesity. You do not need to disrobe the patient to measure neck circumference—you can measure it in the corridor. And in our study, neck circumference was almost as strongly correlated with left ventricular dysfunction as were waist circumference and waist-hip ratio," he said. ■

Metabolic Syndrome Linked With Atherosclerosis in Young Adults

NEW ORLEANS — Young and middle-aged adults who meet criteria for metabolic syndrome are at a 2.5-fold greater risk of having subclinical atherosclerosis, Kwame O. Akosah, M.D., said at the annual scientific sessions of the American Heart Association.

This is true regardless of whether they have a low Framingham risk score or a normal-range C-reactive protein (CRP) level. The risk of subclinical atherosclerosis tied to metabolic syndrome is also independent of—and even greater than—that associated with diabetes mellitus, a coronary heart disease equivalent, added Dr. Akosah of the Gundersen Lutheran Health System, La Crosse, Wisc.

"It appeared in our study that metabolic syndrome was the driving force for developing early atherosclerosis, not high-sensitivity CRP or diabetes mellitus," he said.

Dr. Akosah reported on 253 consecutive men and women, mostly in their 40s and 50s, who were evaluated for possible coronary artery disease in a group cardiology practice. All underwent carotid ultrasound assessed by blinded cardiologists for the presence of subclinical carotid atherosclerosis, a well-established marker for atherosclerosis in other vascular beds.

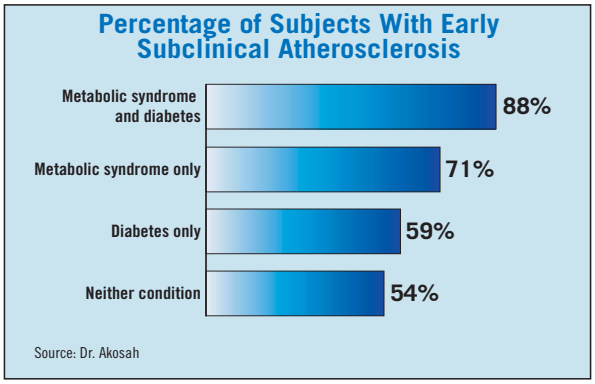
Subclinical carotid atherosclerosis (focal plaque and/or a mean intimal-medical thickness of 1.0 mm or more) was identified in 59% of subjects. Yet 89% of study participants had a low-risk Framingham risk score. And 37% didn't even have multiple major cardiovascular risk factors, Dr. Akosah said.

Among 75 subjects who met criteria for metabolic syndrome, 18 had concomitant diabetes. Another 17 subjects had diabetes without metabolic syndrome. The prevalence of subclinical carotid atherosclerosis was significantly greater in participants with metabolic syndrome than in those with diabetes only, or neither condition. (See box.)

In a multivariate logistic regression analysis, metabolic syndrome independently conferred a 2.5-fold increased risk of having subclinical atherosclerosis. Of note, CRP was not useful in risk stratification.

A disturbing finding was that 56% of subjects in the study didn't have a fasting blood glucose level taken along with their lipid measurements, making it impossible to properly assess them for the presence of metabolic syndrome.

"I would suggest that my colleagues in cardiology do a much better job in checking people for the full spectrum of metabolic syndrome," Dr. Akosah suggested. ■



Aortic Inelasticity Signals Uncomplicated Obesity

NEW ORLEANS — Obese individuals with no other complicating diseases have an abnormally stiff aorta, predisposing them to heart failure and other cardiovascular diseases, Monique Robinson, M.B., said at the annual scientific sessions of the American Heart Association.

"Being just overweight or obese is not OK," said Dr. Robinson, a cardiovascular research fellow at the University of Oxford, England.

Mean aortic distensibility was reduced by 59% in obese subjects, compared with normal-weight subjects.

DR. ROBINSON

"In primary care practice, our focus has been on the comorbidities associated with obesity. We treat you if you're diabetic. We treat you if you've got hypertension. We also need to treat our obese people who are just obese, because our results suggest that there may be an increased cardiovascular risk for these patients," she said.

Using MRI, she studied the the aorta's mechanical elastic functioning in 27 obese subjects with a mean body mass index of 34 kg/m^2 without diabetes, hypercholesterolemia, or hypertension, and in 12 normal-weight controls.

Mean aortic distensibility was reduced by 59% in obese subjects, compared with normal-weight subjects. Mean aortic compliance was 40% less. An aortic stiffness index was also markedly increased in the obese subjects.

"What this means is the aorta in obese subjects was less able to expand and contract to deal with high-velocity blood flow from the left main pumping chamber, as compared with the normal controls," she explained.

Multiple linear regression analysis showed that fat mass, body mass index, leptin, and HDL cholesterol were all robust predictors of aortic elastic function in obese individuals, Dr. Robinson said. ■