Ethnic Differences Affect Metabolic Screening

BY PATRICE WENDLING

CHICAGO — Ethnic differences in dyslipidemia should be factored into screening programs for metabolic syndrome, Dr. Anne E. Sumner said at a meeting sponsored by the International Society on Hypertension in Blacks.

Atherogenic dyslipidemia, one of the key criteria used to identify metabolic syndrome, is present more often in whites and Hispanics than in blacks, who tend to have normal triglycerides and low HDL cholesterol levels.

"This challenges the conventional thinking about the interrelationship of triglycerides and HDL," she said.

A recent unpublished study using National Health and Nutrition Examination Survey (NHANES) data from 1999-2004 showed that the frequency of increased triglycerides was significantly lower in blacks than whites and Hispanics, even after adjustment for sex and body mass index, said Dr. Sumner of the National Institute of Diabetes and Digestive and Kidney Diseases.

An earlier study she published showed that blacks are more likely than whites or Mexican Americans to be insulin resistant and to have triglyceride levels below threshold values used to define enlarged-waist elevated-triglyceride syndrome, overweight lipid syndrome, or hypertriglyceridemic waist syndrome (Atherosclerosis 2008;196:696-703).

The three syndromes—proposed as better predictors of the onset of coronary artery disease and type 2 diabetes, compared with metabolic syndrome—were defined on the basis of data from populations that were predominantly non-Hispanic white.

"From a public health point of view, the absence of elevated triglycerides in blacks does not mean the absence of risk," she said. "We need then to beware of screening programs that use triglycerides to diagnose risk.

"Isolated low HDL is a manifestation of insulin resistance and represents a cardiovascular disease risk and therefore should be treated."

She noted that three studies have shown the benefits of treating low HDL—the Helsinki Heart Study; the Veterans Affairs High-Density Lipoprotein Intervention Trial, which had excellent representation of African Americans; and the INTERHEART Africa Study, conducted in sub-Saharan Africa.

Still, the latest report from the American Heart Association shows that death rates from cardiovascular disease are highest among blacks, despite an overall decline of 26.4% from 1995 to 2005. The death rate from CVD in 2005 was 278.9 per 100,000 persons overall, but was 438.4/100,000 in black men and 319.7/100,000 in black women (Circulation 2009;119:e21-181).

Several factors may contribute to the dyslipidemia pattern seen in blacks, explained Dr. Sumner, who stressed that her views are not those of the U.S. government or the National Institutes of Health. Blacks have higher lipoprotein lipase levels and lower apolipoprotein CIII levels, which promotes elevated triglycerides. Blacks also have less visceral adipose tissue and intrahepatic fat, which results in less production of very-low-density lipoprotein, a major carrier of triglycerides.

Dr. Sumner noted that there is a push underway worldwide to use hypertriglyceridemic waist syndrome to predict cardiovascular risk. The test is cheaper to perform than the metabolic triad, requiring only the simple variables of waist circumference of 90 cm or more in men and at least 85 cm in women and a plasma triglyceride level of 177 mg/dL or more.

This approach works in whites, but not in blacks, Dr. Sumner said. She cited unpublished results from ongoing research in 120 overweight, obese, or prediabetic African Americans showing that 40 had the metabolic triad, but only 3 had a triglyceride level over 177 mg/dL. She suggested that prospective studies are needed to explore whether a reformulation of metabolic syndrome parameter thresholds might optimize risk identification in populations of African ancestry.

Dr. Sumner disclosed no conflicts of interest or study support. ■