ANTHROPOMETRIC CORRELATES OF METABOLIC SYNDROME COMPONENTS IN A DIVERSE SAMPLE OF OVERWEIGHT/OBESE WOMEN

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INTRODUCTION

An estimated $117 billion is spent treating overweight and obesity1 in the United States, and an estimated 112,000 US adult deaths are related to obesity each year.2 Furthermore, the prevalence of obesity is highest among minorities in the United States; African American and Hispanic women have the highest rates.3

The distribution of body fat rather than total adiposity, however, may be more relevant in predicting a clustering of cardiometabolic variables. These include increased fasting glucose, blood pressure, triglycerides, and decreased high-density lipoprotein (HDL) cholesterol, collectively known as metabolic syndrome.4 Thus, body mass index (BMI), which is used as a surrogate measure of adiposity, may not be as closely related to components of the metabolic syndrome as a more central obesity pattern.6

The National Cholesterol Education Program (NCEP)7 favors use of waist circumference (WC) as a metabolic syndrome component, while the World Health Organization8 uses either BMI, WC, or waist-to-hip ratio (WHR) to identify risk factors for metabolic syndrome. Using NCEP guidelines, the prevalence rates of those with metabolic syndrome have been steadily rising,9 are greater in older populations,9 and in minority women.3 To further extend the utility of fat distribution measures in relation to metabolic syndrome components, we must examine this relationship in different racial and ethnic populations. Since overweight and obese women constitute a population who may be at greater health risk in the future,10 this is an important group to target for further study.

The purpose of this study was to examine the relationship between anthropometric variables (BMI, WC, and WHR) and cardiometabolic variables that reflect the metabolic syndrome in overweight-obese premenopausal White, African American, and Hispanic women.

SUBJECTS AND METHODS

Subjects

All participants were apparently healthy premenopausal women free from known coronary heart disease, diabetes, hypertension, or metabolic disease. Women taking oral contraceptives, hormones, or any medication that would affect serum lipids and lipoproteins, blood pressure, or carbohydrate metabolism were excluded from the study. All medical records were obtained, and information was abstracted from participants in a larger program designed to evaluate the effects of a very low calorie diet on weight loss. All women were required to have a BMI...