Definition of Metabolic Syndrome

To the Editor:

Ninomiya et al reported that metabolic syndrome is a significant risk factor for cardiovascular disease in the Japanese middle-aged population (the Hisayama Study). They discussed that metabolic syndrome was not predictive for cardiovascular disease among diabetic women in the Japanese Diabetes Complications Study (JDCS), though it was consistently predictive of cardiovascular disease not only in both men and women but also in subjects with diabetes in the Hisayama Study, and speculated that this discrepancy resulted from the difference in the cutoff point of the waist circumference (WC) between the 2 studies. JDCS adopted the WC cutpoint proposed by the Japanese Society for the Study of Obesity (85 cm for men and 90 cm for women), which was criticized by us and Hayashi et al because of their inconsistent methodology, but Ninomiya et al adopted the WC definition for Asian populations (90 cm for men and 80 cm for women). Indeed, metabolic syndrome defined by either the National Cholesterol Education Program or the International Diabetes Federation revealed to be a significant risk factor for cardiovascular disease among Japanese diabetic women in JDCS by the reanalysis responding to my request. Cutpoints of WC are controversial not only in Asians but also in Europeans, and recently the Obesity Society, the American Society for Nutrition, and the American Diabetes Association jointly stated that though WC provides a unique indicator of body fat distribution, which can identify patients who are at increased risk of obesity-related cardiometabolic disease, the clinical usefulness of measuring WC is limited and further studies are needed to establish WC cutpoints, which will be complex because they are likely influenced by sex, race-ethnicity, age, BMI, and other factors. Therefore, I proposed a new definition of metabolic syndrome in which WC in the revised National Cholesterol Education Program criteria is replaced by C-reactive protein (0.65 mg/L as the cutpoint for Japanese) not for the diagnosis at present but for future studies of this syndrome. Anthropometric markers of obesity such as BMI, WC, waist-to-hip ratio, and waist-to-height ratio are not direct causes for the clustering of the cardiometabolic risk factors but upstream factors indirectly leading to the clustering through metabolic susceptibility as illustrated by Grundy and should be used as simple, but not complex, tools for the screening of more proximal risk factors for cardiometabolic disease.

Disclosures

None.

Eiji Oda, MD
Department of Internal Medicine
Niigata Prefectural Yoshida Hospital
Niigata, Japan

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