We thank Dr Kawada for the interest in our article and the appreciative comments. Recently, we reported that, regarding diabetes mellitus and hypertension, the area under the receiver-operating characteristic curve (AUCs) for waist-to-height ratio (WHtR) was significantly higher than either the body mass index (BMI) or waist circumference (WC) in both sexes. Additionally, the AUCs for WHtR were the highest for women with high total cholesterol and high low-density lipoprotein cholesterol. As Dr Kawada indicated, we also found a significant correlation between WC and WHtR in our study population (Pearson’s correlation coefficient, r=0.930 in men and r=0.947 in women). Further analysis revealed that Pearson’s correlation coefficients between height and WC or WHtR were 0.115 and –0.256 in men and –0.107 and –0.418 in women, respectively (P<0.05). The latter was different from that observed in the study by Dr Kawada. A correlation of height to WHtR was higher in our study population compared to that in the Japanese population, especially in women.

Several studies reported that WC was the simplest anthropometric index for predicting the risk of diabetes mellitus. However, the WC measurement has been criticized for not taking into account differences in height, and the WHtR value has been reported to be a better predictor of cardiovascular risk factors. Lorenzo et al showed that in the White and Mexican-origin population, WC might be the preferred marker for identifying men with diabetes mellitus. However, AUC for WHtR was higher than WC for indentifying women with diabetes mellitus. Huang et al showed that WHtR might be a better indicator of cardiovascular risk factors than WC, waist-to-hip ratio, and BMI, especially for women.

Obesity indices have been promoted for use in clinical and public health studies, assessing potential benefit from specific intervention. In recent studies, WC and WHtR were repeatedly shown to be simple yet powerful predictors of common adult chronic conditions. The WHtR can be simply calculated by WC and height, and we suggested that it might provide additional information for predicting cardiovascular risk. However, users of this index should recognize that the effect size and the cutoff points of different anthropometric indices such as WC and WHtR might differ depending on sex, race and ethnicity. Taken together, waist-derived anthropometric indices such as WC and WHtR nevertheless provide useful information on cardiovascular risk factors.

References

Sung-Hee Park, PhD
Hyun-Young Park, MD, PhD
Division of Cardiovascular and Rare Diseases, Center for Biomedical Sciences, National Institute of Health, Seoul, South Korea
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