Association Between Serum Uric Acid Levels and Cardiometabolic Risk Factors Among Japanese Junior High School Students

To the Editor:

Hongo et al examined whether serum uric acid (SUA) levels were associated with cardiometabolic risk factors among Japanese junior high school students and concluded that SUA was strongly associated. They suggested that the measurement of SUA might be a useful health-screening test for school children. However, they did not examine the usefulness of SUA measurement in addition to the measurements of body mass index (BMI), waist circumference (WC), blood pressure (BP), fasting plasma glucose (FPG), triglycerides (TG), high-density lipoprotein cholesterol (HDL-C), and total cholesterol. For this purpose, longitudinal studies regarding the incidence of metabolic syndrome (MetS), diabetes mellitus (DM), and cardiovascular disease (CVD) are eventually necessary. In cross-sectional studies, at least the independent association of SUA with MetS, DM or CVD should be examined, adjusting for BMI or WC, BP, FPG, TG, and HDL-C. The measurement of SUA is not useful as a screening test if SUA is not associated with MetS independently of BMI, WC, BP, FPG, TG, and HDL-C. The association between SUA and DM is controversial. Ford et al reported a significant association between SUA and hyperglycemia, but there was no significant association between SUA and FPG in the study by Hongo et al. There are substantial sex differences in the association between SUA and DM. Recently, my group reported a significant inverse cross-sectional association between SUA and the prevalence of DM in Japanese men, but not in women. Taniguchi et al reported that SUA was not associated with incident DM in Japanese men, whereas Chien et al reported that SUA was associated with incident DM in Chinese subjects; however, they did not examine it separately in men and in women. Dehghan et al also suggested that SUA was associated with incident DM, but again, they did not examine it separately in men and in women. Kramer et al reported that SUA may be a useful predictor of type 2 DM in older adults with impaired fasting glucose (IFG), but they also did not examine it separately in men and in women. Later, responding to comments by me and Dr Kawai, they reexamined their data and reported that SUA did not predict incident DM in men with IFG. Thus, although uric acid is one of the classical components of MetS, it behaves as an antioxidant in certain milieu and the associations of SUA with DM and CVD are controversial, especially in men.

I would deeply appreciate it if Hongo et al reexamined their data as to whether SUA is independently associated with MetS or not by adjusting by sex for BMI or WC, BP, FPG, TG, and HDL-C. Adjusting for hemoglobin A1c may be an over-adjustment.

References


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