

Relationship between serum uric acid and blood pressure by adjusting dietary factors

To the Editor,

I read with interest the article by Krupp and colleagues.¹ The authors conducted a cross-sectional study to investigate the association between serum uric acid (hyperuricemia) and blood pressure (hypertension) by adjusting confounders including dietary factors. By multiple regression analysis, serum uric acid was a significant predictor for blood pressure except diastolic blood pressure in participants 50 years or older. By logistic regression analysis, hyperuricemia was a significant predictor for hypertension. I have some concerns about their study.

First, Towiwat and Li² summarized the impact of diet on uric acid and gout. In addition, hypertension is also related to exercise and sleep.^{3,4} I suppose that dietary factors are also related to hypertension, and hyperuricemia is affected by the lack of regular exercise. In addition, Krupp and colleagues presented adjusted square values of multiple regression coefficients, and they did not reach 0.3 in every statistical model of multiple regression analysis. Taken together, comprehensive adjustment for the relationship between hyperuricemia and hypertension is needed.

Second, Krupp and colleagues conducted a subanalysis by considering medication for hypertension, because antihypertensive drugs sometimes affect uric acid levels. Kuwabara and colleagues⁵ handled patients without medication of hypertension and hyperuricemia, and concluded that elevated serum uric acid levels were important for hypertension in combination with obesity, dyslipidemia, diabetes mellitus, smoking, and reduced kidney function.⁵ As dietary factors were not considered for the adjustment, the study by Krupp and colleagues had an advantage of elucidating a diet-independent relationship.

Finally, mechanisms on hyperuricemic hypertension have been widely speculated,⁶ and a causal association between hyperuricemia and hypertension should be investigated by a prospective and interventional study.^{7,8}

CONFLICTS OF INTEREST

None declared.

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