Is Metabolic Syndrome a Risk Factor for Cardiovascular Disease in Late Elderly?

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In the developed countries of the world, life expectancy has prolonged continuously and the proportion of elderly people increased steeply during the last decades. Decreased physical activity and decreased energy expenditure with aging predispose to fat accumulation. Therefore, obesity and the related comorbidities are considered as major healthcare problems in the elderly.

Metabolic syndrome (MetS) is defined as a cluster of cardio-metabolic risk factors, such as abdominal obesity, impaired glucose tolerance, dyslipidemia, and hypertension, which are related to insulin resistance. The degree of insulin resistance increases with aging. Therefore, older people are at a greater risk to develop the MetS. Several population-based studies have reported that MetS was associated with the risk of cardiovascular disease (CVD) in people aged 65 years or older. However, less evidence is available on the diverse effects of MetS on CVD between early (65–74 years) and late elderly (≥75 years) people.

Blood pressure-lowering therapy has been acknowledged to be effective for preventing CVD. The treatment benefits have found to be broadly consistent among antihypertensive agents in middle-aged and elderly people. With regard to late elderly people, the results of the Hypertension in the Very Elderly Trial (HYVET) showed that blood pressure-lowering therapy in people 80 years of age was beneficial for preventing CVD. Likewise, in the post-hoc analysis of the Action in Diabetes and Vascular disease: preterAx and diamicron-MR Controlled Evaluation (ADVANCE) study, antihypertensive treatment also reduced the risk of CVD in people aged ≥75 years with type 2 diabetes. However, the favor effects of blood pressure lowering on CVD and optimal target levels of blood pressure control in the elderly are still inconclusive.

In this issue, Kawano et al. present a post-hoc analysis of the Japanese Trial to Assess Optimal Systolic blood pressure in elderly hypertensive patients (JATOS), which is an open-labeled randomized clinical trial to compare the effect of strict blood-pressure-treatment of <140 mmHg with that of mild blood-pressure-treatment of 140–159 mmHg on the development of CVD in elderly hypertensive patients. The investigators show that MetS is associated with the greater risk of CVD in the mild blood-pressure-treatment group for the early elderly people, whereas the harmful effect of MetS on the risk of CVD disappears in the strict blood-pressure-treatment group, raising the possibility that strict blood-pressure-control is effective for reducing cardiovascular risk in early elderly people with MetS. On the contrary, MetS is not a significant risk factor for CVD in both strict and mild blood-pressure-treatment groups.

This study may not provide a conclusive evidence of the effect of MetS on CVD in the early and late elderly, because the generalizability of the findings in the selected population, as with many clinical trials, is limited. These findings, however, let us reaffirm the necessity of large-scale longitudinal studies to determine whether MetS contributes to the development of CVD in the elderly, especially in the late elderly. In addition, further clinical trials to determine optimal control levels of blood pressure for preventing CVD in the elderly seem justified.

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