



Determinants and clinical implication of hypertension from childhood to old age in Asian subjects

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We here summarize the Special Issue—Asian Study and the Topical Collection—Digital Hypertension in the August issue of Hypertension Research.

The Special Issue—Asian Study has two papers from Japan and China related to obesity and blood pressure. Fukumine et al. reported on the association between obesity and hypertension on the small closed remote island of Yonaguni in Okinawa, where obesity is becoming more apparent in their cross-sectional study [1]. Even after adjusting for confounding factors such as age, alcohol consumption, smoking, and salt restriction behavior, the odds ratio for hypertension in obese individuals with body mass index (BMI) > 25 was as high as 3.73 for men and 4.13 for women, again indicating that obesity is closely associated with hypertension. Cui et al. reported the results of a 6-year follow-up study of the risk of hypertension in obese and overweight children in Yantai, China, beginning at age 7 years [2]. The group that remained obese or overweight during the course of the study had the highest blood pressure, the group that became obese or overweight during the course of the study showed a strong trend toward increased blood pressure, and the group that returned to normal weight during the course of the study had a small increase in blood pressure. Thus, early weight intervention was shown to be important.

On the other hand, the relation between blood pressure and the development of dementia and chronic kidney disease (CKD) has been reported. Nakamura et al. have reported numerous results on the association between

cognitive function and hypertension and dyslipidemia in community residents aged 70 years and older in the Septuagenarians, Octogenarians, Nonagenarians, Investigation with Centenarians (SONIC) study [3]. The Montreal Cognitive Assessment Japanese version (MoCA-J) showed no significant difference between cognitive function and each lifestyle-related disease such as hypertension and dyslipidemia and. However, high high-density lipoprotein (HDL) and high diastolic blood pressure were associated with better cognitive function in individuals with hypertension and dyslipidemia, and high systolic blood pressure (SBP) in those with hypertension interestingly predicted better cognitive function. Suenaga et al. examined predictors of blood pressure in new-onset CKD patients from a database of ~1.5 million individuals. They found that SBP ≥ 120 mmHg and DBP ≥ 80 mmHg were associated with significantly higher risk of CKD, but when divided into DBP and SBP, DBP was more strongly associated with CKD risk than was SBP [4]. DBP ≥ 80 mmHg was associated with higher CKD risk regardless of SBP level, and SBP ≥ 150 mmHg was associated with higher risk even if DBP was <80 mmHg, indicating blood pressure levels that should be noted for CKD.

In contrast, Woo et al. examined the effects of the environment on the brain in Korean residents, examining the amount of manganese exposure in the air and organic changes in the brain using brain magnetic resonance imaging (MRI) [5]. They found that the higher the manganese exposure, the greater the brain white matter thinning and white matter hyperintensities. This suggests that manganese exposure may be associated with atrophy of the cerebral cortex.

Next, two papers were reported in the Topical Collection—Digital Hypertension. Suzuki et al. used Google Trends to investigate changes in attitudes toward salt reduction in Japan [6]. Internet research activity related to “salt reduction” increased year by year, indicating a growing interest in salt reduction in Japan, compared with little change in the United Kingdom. Kario et al. reported that digital

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therapeutics using a smartphone-based lifestyle-related disease improvement application (HERB Mobile) lowered blood pressure [7]. In this issue, this app-related home blood pressure-lowering effect was most pronounced in a group of untreated hypertensive patients with baseline characteristics of high BMI and high salt intake [8].

Now, Hypertension Research is calling for papers for the Special Issue—“Digital Hypertension” and the Topical Collection—“Home Blood Pressure-Centered Management of Hypertension” on the management of hypertension from healthcare to medical treatment using digital devices etc. to reduce cardiovascular disease. We would like to discuss digital devices and home BP more deeply in these special issues. Please refer to the following website: <https://www.nature.com/hr/call-for-paper>.

Compliance with ethical standards

Conflict of interest The authors declare no competing interests.

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