



Optimal blood pressure and improvement of achievement rate

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We here summarize the Special Issue—Asian Studies and Topical Collection of Digital Hypertension in the November issue of Hypertension Research. This month's issue introduces papers mainly on the strict management of blood pressure (BP), including how far BP is lowered in the real world and the contribution of hypertension specialists in achieving target BP, as well as the optimal level of BP reduction in patients with chronic kidney disease (CKD). Kobayashi et al. reported comparisons of hypertension treatment control rates in Kanagawa Prefecture, Japan between 2011, 2014, and 2021 data from the Japan Medical Association Database of Clinical Medicine [1]. The control rates of BP controlled to the target office BP of <140/90 mmHg and home BP of <135/85 mmHg were 46.7% and 83.3%, respectively, in 2021. Although the rate was less than 50% for office BP, the target BP achievement rate for home BP was quite high. On the other hand, the achievement rates of more stringent BP targets of <130/80 mmHg for office BP and <125/75 mmHg for home BP were the same for each age group, indicating that the “hypertension paradox” still exists for strict BP control. Further nationwide study of office and home BP control status is greatly needed in the future. Moreover, to achieve the strict target BP values presented in JSH 2019, continuous efforts in antihypertensive therapy are required, including overcoming “clinical inertia”.

The Japanese Society of Hypertension certifies hypertension specialists through rigorous examinations. Sakima et al. studied

the achievement rate of antihypertensive treatment for hypertension specialists and non-specialists [2]. In this study, 1469 outpatients had an average achieved office BP of $129.0 \pm 15.5/74.6 \pm 10.6$ mmHg and the achievement rate of target BP was 51.8%. In the group treated by hypertension specialists, mean office BP was $128.0 \pm 15.1/73.4 \pm 10.4$ mmHg, and the achievement rate of target BP was 56.7%, and in the group treated by non-specialists, these were $130.1 \pm 15.9/76.0 \pm 10.8$ mmHg, 46.1%, respectively. The results of this study demonstrated that hypertension management by a hypertension specialist was a significant factor in increasing the rate of achieving the target BP, suggesting that the knowledge and skills of specialists contributed to BP management.

On the other hand, it is deeply concerning that excessive BP lowering in CKD patients may lead to a decline in renal function. Kurasawa et al. investigated the lower limit of BP to prevent a decline in renal function in 1320 patients with advanced CKD who showed a decline in eGFR of 2.48 ± 2.15 mL/min/1.73 m²/year from baseline [3]. The results showed that controlling office systolic BP at 110 mmHg or higher reduced the decline in eGFR more than did controlling it at less than 100 mmHg, suggesting that a lower systolic BP limit of 110 mmHg or higher was better for preserving eGFR in patients with advanced CKD.

Similarly, for the kidneys, Nishimoto et al. examined factors that delay the onset of acute kidney injury (AKI) and promote recovery of renal function after AKI in 5168 patients who underwent surgery under general anesthesia, excluding cardiac surgery. The results showed that the use of anti-adrenergic agents, such as α -blockers and β -blockers, was a significant risk factor compared to patients on other anti-hypertensive drugs [4]. The patients treated with anti-adrenergic agents users had more cardiovascular disease, were generally taking more additional antihypertensive medications, and had higher BP, suggesting that they may have had poorer BP control, but the association was found even after adjusting for these confounding factors.

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Varghese et al. used statistical and network analysis, correlation analysis, and machine learning to create and examine a panel of biomarkers to recognize gestational hypertension, preeclampsia and ante-partum eclampsia [5]. The results showed that RANTES (Regulated on Activation, Normal T-cell Expressed and Secreted, CCL5) is a common marker for hypertensive disorders of pregnancy.

Finally, Ishida et al. examined the relationship between visceral fat area (VFA) and brachial-ankle pulse wave velocity (baPWV) in 2789 subjects whose VFA and baPWV were measured at medical examination [6]. Anthropometric indices of obesity were associated with components of the metabolic syndrome, such as hypertension, dyslipidemia, and hyperglycemia, and were inversely related to baPWV.

In summary, this month's issue contains articles on the difficulty of achieving target BP and the importance of optimally managing BP. Hypertension Research welcomes your comments on the management of BP, the use of digital devices to achieve this goal, and BP control in Asia.

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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