

EDITORIAL

The HOPE Asia Network for “zero” cardiovascular events in Asia

Hypertension is one of the more significant contributors to the global burden of disease and premature death and disability. Blood pressure (BP) control has been well established as an effective approach to reduce the risk of cardiovascular events and age-related organ damage, and healthcare organizations worldwide stress the need for urgent and strict lowering of BP.^{1–3}

We recently established the HOPE Asia (Hypertension Cardiovascular Outcome Prevention and Evidence in Asia) Network (Table S1). Our mission is to improve the management of hypertension and organ protection towards achieving “zero” cardiovascular events in Asia. Our activity is based on three streams: (1) the examination and analysis of the existing evidence related to hypertension, (2) the development of consensus on clinically relevant themes on hypertension, and (3) the conduct of Asia-wide clinical studies of hypertension (Table 1). We will focus on clinically important aspects of hypertension and its management in Asia and the prevention of cardiovascular-renal disease, with an emphasis on the evidence related to pathogenesis and treatment.

There are important ethnic differences in cardiovascular-renal demographics around the world, and hypertension has been found to be one of the most powerful risk factors contributing to these demographic differences. As groups of Asian hypertension researchers, eg, the Asia BP@Home investigators and the COME Asia-MHDG (Characteristics On the Management of Hypertension in the Asia-Morning Hypertension Discussion Group), we have been studying the characteristics of hypertension and cardiovascular-renal disease in Asian populations.^{4–8} These groups have collaborated to form the HOPE Asia Network.

With reference to hypertension and related outcomes, it is well established that Asians display characteristics that differ markedly to those of whites and blacks (Table 2).⁹ For example, the phenotypes of cardiovascular disease, stroke, and heart failure, which are closely associated with BP, are more common in Asia. The slope of the association between higher BP levels and cardiovascular events is also steeper in Asians compared with Western populations. Thus, the impact of controlling hypertension throughout the 24-hour period can be greater in Asians.^{9,10}

A 24-hour BP profile is determined partly by an individual's genetic factors, but it is also strongly affected by a variety of cultural factors (eg, food, lifestyle and traditions) and environmental factors (eg, temperature, atmospheric pressure, humidity, and seasonal changes).¹¹ Among the many Asian countries, there are significant country, regional, and ethnic differences in the control of BP. To achieve effective protection against cardiovascular-renal events in Asia, the Asian

characteristics of hypertension-related cardiovascular-renal disease need to be identified at national, regional, and ethnic levels.

As the first step for the HOPE Asia Network, we have focused on home BP values, because we consider the home BP-guided approach to be an effective practical strategy for clinical practice in Asia. There is increasing evidence for home BP as a better predictor of cardiovascular events than office BP.^{11–13}

As a result of the Asian lifestyle, individuals are unlikely to measure their evening home BP before dinner, and recording their evening home BP just before going to bed is thus recommended in the Japanese Society of Hypertension guidelines.¹³ However, the measurement of evening home BP just before going to bed is strongly affected by the individual's dinner (including alcohol consumption) and evening behavior (eg, bathing in the evening is common in Asia).¹⁴ We have thus stressed the importance of recommending morning home BP measurement in clinical practice, because morning home BP has shown better reproducibility than evening home BP or office BP.

Two prospective studies conducted in Asia, one of which is an investigation of a general population-based cohort (the Ohasama study¹⁵) and the other an investigation of a general practitioner-based cohort of patients with cardiovascular risk (J-HOP [Japan Morning Surge-Home Blood Pressure] study¹⁶), demonstrated that morning home BP is a better predictor of adverse outcomes than office BP. On-treatment morning home BP is also a stronger predictor of cardiovascular events compared with office BP. In the HOMED-BP (Hypertension Objective Treatment Based on Measurement by Electrical Devices of Blood Pressure) study¹⁷ and the HONEST (Home Blood Pressure Measurement With Olmesartan Naive Patients to Establish Standard Target Blood Pressure) study,¹⁸ which is also the largest nationwide Japanese observational trial, morning home BP was

TABLE 1 The HOPE Asia (Hypertension Cardiovascular Outcome Prevention and Evidence in Asia) Network

Mission
To improve the management of hypertension and organ protection toward the goal of achieving “zero” cardiovascular events in Asia
Contribution streams (and current initiatives)
1. To examine and analyze the evidence on hypertension and its treatment (review article on current status)
2. To achieve consensus on clinically relevant themes in hypertension (consensus article and practical guide for home blood pressure monitoring)
3. To conduct clinical studies of hypertension (original study article)

confirmed as a strong predictor of coronary artery disease events, similar to stroke events.¹⁹ In the HONEST trial, morning home systolic BP around 125 mm Hg showed minimal risk for cardiovascular events.¹¹ Asian patients with hypertension have an exaggerated morning BP surge, which presents a risk for stroke,²⁰ and they have higher morning BP levels than Western populations.^{21,22} Thus, the morning BP-guided approach can be an effective strategy to achieve “zero” cardiovascular events in Asia.

As the initial project conducted by the HOPE Asia Network, we reviewed the current status and evidence regarding home BP published in the medical literature in 12 Asian countries and regions.²³ As our second project, we convened several meetings with the purpose of achieving a consensus on home BP-guided clinical management of hypertension in Asia. As our third project, we commenced the Asia BP@Home study, which will examine the prevalence of uncontrolled masked morning hypertension and the characteristics of home BP variability in medicated patients with hypertension living in 12 Asian countries and regions.²⁴ As noted above, among the countries that comprise Asia, there are expected to be significant country, regional, and ethnic differences in BP characteristics. The Asia BP@Home study is the first study of home BP in Asia that uses the same protocol and

the same BP device across the participating countries. Through this HOPE Asia Network activity we hope to contribute to advances in the management of hypertension and the prevention of cardiovascular-renal disease, toward reaching our audacious goal of “zero” cardiovascular events in Asia.

The HOPE Asia Network is proud to now be a member organization of the World Hypertension League (WHL) (Figure) and looks forward to contributing actively to WHL’s mission of confronting the global epidemic of hypertension and the high burden of premature death and disability that results from this condition.

CONFLICTS OF INTEREST

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TABLE 2 Characteristics of hypertension and cardiovascular disease in Asia

1. Stroke, especially hemorrhagic stroke, is more common than myocardial infarction
2. Steeper association between blood pressure and cardiovascular disease
3. Higher salt intake with higher salt sensitivity
4. Obesity and metabolic syndrome are epidemics
5. Morning hypertension and nocturnal hypertension are more common



FIGURE Kazuomi Kario (Center), HOPE Asia (Hypertension Cardiovascular Outcome Prevention and Evidence in Asia) Network, Jichi Medical University; Michael A. Weber (right), vice president of the World Hypertension League (WHL), State University of New York (SUNY) Downstate College of Medicine; and Daniel T. Lackland (left), Medical University of South Carolina and president of the WHL

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SUPPORTING INFORMATION

Additional Supporting Information may be found online in the supporting information tab for this article.