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SHORT REPORT

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Asian management of hypertension: Current status, home blood pressure, and specific concerns in Vietnam

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Abstract

Hypertension and atherosclerotic diseases are becoming important public health issues in Vietnam. This is due, in part, to changing dietary patterns and lifestyles accompanying economic growth in the country. The most recent prevalence data suggest that 29% of the population has hypertension, and the rate of other cardiovascular risk factors is also high. Although use of home and ambulatory blood pressure monitoring (HBPM and ABPM) is increasing, Vietnamese physicians generally rely on office blood pressure (BP) for diagnosing and managing hypertension. A lack of availability and training are limiting factors. However, out-of-office BP monitoring is important to detect white-coat and masked hypertension, and define the 24-hour BP profile. This approach is recommended in current Vietnam Society of Hypertension and Vietnamese National Heart Association guidelines. Based on 2016 data, the most commonly used antihypertensive agents in Vietnam are angiotensin-converting enzyme (ACE) inhibitors, followed by calcium channel blockers (CCBs) and diuretics, with β -blockers and angiotensin receptor blockers used less frequently. Combination therapy, usually with an ACE inhibitor plus CCB or diuretic, is quite common (used in 62% of patients). The participation of Vietnam in global hypertension initiatives and organizations has likely contributed to improved treatment and control rates over the last 10 years. Nevertheless, the prevalence of hypertension remains high and additional strategies are needed to reduce this and prevent cardiovascular disease.

1 | CARDIOVASCULAR DISEASE INCIDENCE AND HYPERTENSION MANAGEMENT IN VIETNAM

Changing dietary patterns and lifestyles accompanying economic growth may have affected the prevalence and incidence of atherosclerotic diseases and hypertension, which are becoming important public health problems in Vietnam. The prevalence of hypertension in Vietnam has increased as the country's economic status has improved, and the Ministry of Health has included hypertension in their prevention of non-communicable diseases program. In addition,

implementation of national health programs, May Measurement Month (MMM) BP screening, and updates to local guidelines are planned.

A national epidemiological survey (2001-2008) including 9832 individuals aged ≥ 25 years reported that 25.1% of the population had hypertension, almost half of whom were aware of their disease; the treatment rate in patients with hypertension was 62%, of whom 38.3% had controlled hypertension.¹ More recently, MMM 2017 data showed hypertension in 28.7% of those surveyed, and 37.7% of patients receiving antihypertensive medication had uncontrolled BP.²

The prevalence of important cardiovascular risk factors in Vietnam is high. Among 25- to 64-year-olds in 2015, the prevalence of hyperlipidemia was 32% and the prevalence of diabetes mellitus was 4.1%. In addition, the rate of overweight/obesity increased fivefold between 1993 and 2015. Vietnamese also have a high consumption of salt and sweetened non-alcoholic drinks, and high rates of smoking and alcohol consumption in males.^{3,4} In 2005, 46% of patients with acute myocardial infarction treated at the Vietnam National Heart Institute had disease that was directly associated with hypertension.¹ Furthermore, Vietnam National Neurology Institute data from 2003 showed that more than one-third of all cerebrovascular accidents treated in hospital were associated with high BP.

2 | CURRENT STATUS OF HBPM IN THE MANAGEMENT OF HYPERTENSION IN VIETNAM

Generally, Vietnamese physicians rely on office BP, but some are now using home BP monitoring (HBPM), and ambulatory BP monitoring (ABPM) is used at some major medical centers. The lack of awareness and use of ABPM in Vietnam might be due to the cost and complexity of this technique and the training required for proper implementation. Although HBPM is a bit simpler, this also requires effective training of health workers and instructions to the patient about proper techniques.

Using HBPM and/or ABPM provides data that reflect a patient's true BP over 24 hours, while office BP only reflects values at a specific point in time. HBPM and ABPM facilitate the detection of white-coat and masked hypertension. Although two basic population surveys of hypertension have been carried out in Vietnam (2004-2008 and 2008-2012), these did not include any data on white-coat and masked hypertension. Vietnamese studies using ABPM report prevalence rates of 27% for white-coat hypertension, 21% for masked hypertension and 29% for hypertension overall.^{5,6} In addition, non-dipping pattern of nocturnal BP was relatively common, reported in 29%-86% of local studies, and the rate of morning BP surge was also high (53%).⁶

3 | POSITIONING OF HBPM IN THE VIETNAM HYPERTENSION GUIDELINES

Both the Vietnam Society of Hypertension and the Vietnamese National Heart Association guidelines (latest version 2018) recommend the use of both HBPM and ABPM as important diagnostic tools to identify BP phenotypes such as masked hypertension and white-coat hypertension, and to monitor the effectiveness of treatment (including in general practice).⁷ Based on these guidelines, hypertension is diagnosed when clinic BP is ≥ 140 and/or 90 mm Hg in the clinic, mean 24-hour BP (ABPM) is ≥ 130 and/or 80 mm Hg, and average home BP (HBPM) is ≥ 135 and/or 85 mm Hg. The importance

of HBPM is also highlighted by Asian consensus documents.^{8,9} Vietnam has not adopted the more strict BP thresholds outlined in the 2017 American College of Cardiology (ACC)/American Heart Association (AHA) hypertension guidelines¹⁰; however, a lower target of 130/80 mm Hg may be considered if tolerated by the patient. For diagnosis of white-coat and masked hypertension, BP of 135/85 mm Hg based on HBPM or ABPM is used, as per the US and European guidelines.^{10,11}

4 | TRADITIONAL ANTIHYPERTENSIVE THERAPY AND POPULAR ANTIHYPERTENSIVE DRUGS IN VIETNAM

A study at Hue University of Medicine and Pharmacy in 2016 showed that angiotensin-converting enzyme (ACE) inhibitors accounted for 96.6% of antihypertensive prescriptions, calcium channel blockers (CCBs) for 71.4%, diuretics for 65.5%, β -blockers for 17.8%, and angiotensin receptor blockers for 2.8%.¹² Combination therapy was used in the majority of patients (61.9%), usually with an ACE inhibitor plus either a diuretic or a CCB.¹²

There are no precise data on the treatment of hypertension with traditional medicine in Vietnam, although few medical doctors appear to treat hypertension this way. The most common alternative therapies are herbal medicine and acupuncture, but proof of efficacy would be needed before these could be included in any updated national guidelines.

5 | SPECIFIC CONCERNS AND PERSPECTIVES FOR HYPERTENSION MANAGEMENT IN VIETNAM

The proportion of treated patients and rate of BP control have increased in Vietnam over the last 10 years. It is possible that this has been facilitated by increasing participation of Vietnam in activities of global organizations such as the WHO and ISH, regular updates of local guidelines based on international recommendations, and the use of new techniques for diagnosing and managing hypertension. Nevertheless, the prevalence of hypertension remains high and additional strategies are needed to reduce this and prevent CVD. Asia-specific data are needed before the new BP thresholds, and targets defined in the 2017 ACC/AHA guidelines¹⁰ are adopted in Vietnam.

Using HBPM and ABPM for the diagnosis and monitoring of hypertension in Vietnam has gained popularity in recent years. However, there is a need for investment in national programs to support research and appropriately priced and accessible devices to facilitate successful application of these out-of-office BP measurement techniques. Advances in technology that make HBPM and ABPM more acceptable to patients (eg, wearable technology) could help to improve the penetration of these techniques into daily practice.

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CONFLICT OF INTEREST

None of the authors have any conflicts of interest to declare.

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