



Home blood pressure measurement: the original and the best for predicting the risk

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Diabetes mellitus (DM) is known to be a risk factor for cardiovascular disease (CVD) events. The Japanese Society of Hypertension Guidelines for the Management of Hypertension (JSH 2019) state that the office blood pressure (BP) goal is usually under 130/80 mm Hg and the home BP goal is under 125/75 mm Hg for hypertensive adults with comorbid conditions. However, it is not yet known whether the prognostic power of home BP for CVD events differs across subjects with different diabetic statuses.

The current paper in *Hypertension Research* by Suzuki et al. investigated the relationships between home BP and CVD events in patients classified according to DM status, using the data set of the Japan Morning Surge-Home Blood Pressure (J-HOP) study [1]. They evaluated 4225 participants and separated them into three groups; 2024 in the normal glucose metabolism group, 1167 in the prediabetes group, and 1034 in the DM group. CVD outcomes such as coronary artery disease, stroke, and heart failure were significantly higher in the DM group compared with the normal glucose metabolism group. Interestingly, the prediabetes group only showed an increase in the risk of CVD events in patients with elevated morning “home” systolic BP but not elevated “office” BP, indicating the importance of home BP measurement to identify and prevent CVD risk in prediabetic patients. Moreover, the incidence of composite CVD events increased according to a 10-mmHg elevation of mean morning “home” SBP in the normal glucose metabolism, prediabetes, and DM groups. However, this

association disappeared after adjustment for other risk factors in the prediabetes group. Thus, they concluded that home BP acts as an important predictive factor to detect increased CVD risk in patients with normal glucose metabolism and DM (Fig. 1).

In *Hypertension Research*, the importance of home BP measurement to predict CVD risk in diabetic patients has been reported in many papers. For example, a recent paper by Hata et al. demonstrated that chronic high home BP is associated with the progression of diabetic nephropathy [2]. Ushigome et al. also showed that an increase in home BP rather than office BP was a stronger predictor of future cardiovascular events in type 2 DM in the KAMOGAWA-HBP study [3]. The KAMOGAWA-HBP study also showed that home pulse pressure is an independent predictor of the progression of diabetic nephropathy in DM patients [4].

Moreover, a meta-analysis showed that masked uncontrolled hypertension, which is only detected using ambulatory BP or home BP measurement, is a significantly higher risk than controlled hypertension in all ethnic groups [5]. Xia et al. demonstrated that overweight and obese patients show a higher prevalence of masked uncontrolled hypertension [6]. Tomitani et al. stressed the importance of measurement of out-of-office BP to identify patients who are vulnerable to various lifestyle- and environmental-related factors, in the commentary for Xia’s paper [7]. Home BP measurement is valuable to obtain accurate and reliable BP measurements and to validate the effectiveness of hypertension treatment, as well as to identify masked and white-coat hypertension [8]. Thus, we should again recognize the importance of home BP for hypertension management.

Now, *Hypertension Research* is calling for papers for the Special Issue on “Home Blood Pressure-Centered Management of Hypertension” to manage hypertension from healthcare to medical treatment to suppress the onset and aggravation of hypertension. We would like to discuss home

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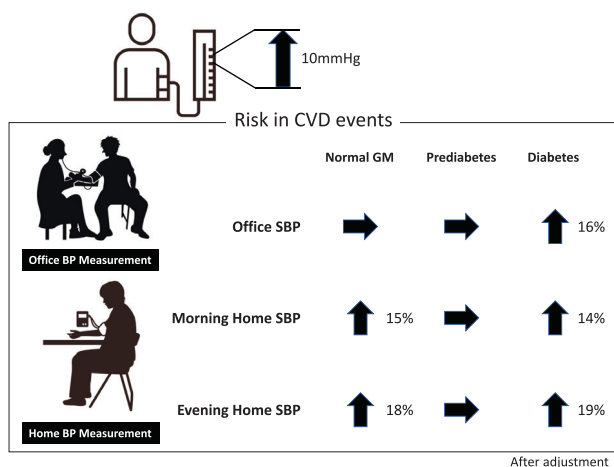


Fig. 1 Increase in cardiovascular disease events with 10-mmHg systolic blood pressure elevation in patients with normal glucose metabolism, prediabetes and diabetes mellitus. Upward arrow means significant increase with *P* value less than 0.05 after adjustment for cofounders. BP blood pressure, CVD cardiovascular disease, GM glucose metabolism, SBP systolic blood pressure

BP more deeply in this special issue. Please see 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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