TARGETING MASKED HYPERTENSION : WHEN DAY-TIME IS NOT ENOUGH.

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We read with great interest the paper by Yano et al. (1) that showed significant differences in the prevalence of masked hypertension (MH) and masked uncontrolled hypertension (MUH) when out-of-office blood pressure (BP) included awake, asleep, and 24-hour BP versus awake BP alone. These findings clearly underline that ambulatory BP normality inferred from the average daytime measures leaves a large number of individuals at increased cardiovascular risk due to the failure to timely detect MH or MUH. A further novel piece of information provided by Yano et al.'s report, based on pooled data from 5 studies conducted in the United States, is that the percent of reclassification of MH (and MUH) assessing asleep and 24-hour varied in relation to the ethnicity, with the most evident increase in non-Hispanic Black (1.7fold) compared to non-Hispanic White (1.4 fold).

A few years ago, our group investigated the prevalence of isolated nocturnal hypertension in the opposite condition to MH, that is white coat hypertension (WCH). We showed that when this phenotype was defined based on the 24-hour BP normality, it did not detect a selective BP elevation during the night (2). In fact, among 3223 consecutive patients with normal 24-hour BP (i.e.<130/80 mmHg) according to European Society of Cardiology/European Society of Hypertension (ESC/ESH) guidelines (3) an isolated elevation of night-time BP was present in 27% individuals with WCH and 32 % with uncontrolled WCH.

While considering the different characteristics of the designs, populations examined, phenotypes of interest (i.e.MH and WCH), both studies (1,2) converge in pointing out that the assessment of the out-of-office BP limited to the daytime period is unable to identify a large fraction of individuals at increased cardiovascular risk. Thus, limiting ABPM to day-time or failing to separately analyze night-time data can lead to erroneous clinical conclusions due to the lack of identification of nocturnal BP elevation.

The value of home BP monitoring (HBPM) as a reliable and cost-effective alternative to ABPM in the assessment of BP outside the medical environment has been consistently proven by numerous studies documenting that home BP may be clinically more relevant than office BP in predicting organ damage and cardiovascular events. The study by Yano et al. (1) reinforces the notion that at present, pending the advancement of HBPM technologies (4), the diagnosis of MH should be preferentially based on the ABPM, by using diagnostic criteria reflecting the entire 24-hour BP profile (day- and night-time periods) as recommended by the 2018 ESC/ESH guidelines (3). The clinical implication of these observations is that healthcare professionals should be aware that the use of HBPM, according to conventional methods, could lead to a high risk of not unmasking MH. In our opinion, this key point did not receive sufficient attention by the authors in their discussion.

Finally, in addition to the link between race/ethnicity and the risk of MH, elegantly highlighted by Yano et al. (1), the roles of different inter-racial burden of conventional risk factors are also important. Factors including high normal office BP, obesity, type 2 diabetes, sleep obstructive apnea, and unexplained organ damage, together with race/ethnicity should be carefully considered in the decision making aimed at unmasking MH.

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