Reflections on Masked Hypertension

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The pioneering articles by Sir George Pickering and Maurice Sokoloff have amply illustrated the potential of ambulatory blood pressure monitoring, especially in the diagnosis of hypertension. Recent work has highlighted the prognostic value of ambulatory blood pressure (BP) in predicting cardiovascular events over and above office BP.1

Several patterns have been described in the ambulatory BP curve. A lot of attention has been devoted to isolated office hypertension (elevated office BP and normal ambulatory day BP). Recently, another feature was described consisting of normal office BP but elevated ambulatory BP. This condition was called masked hypertension.2 Several aspects of this condition still need clarification. First, it is not clear yet whether the same definition can be applied for treated and untreated hypertension. Much more important, the prognostic value of masked hypertension is still under investigation. In a recent article, it was shown that masked hypertension has a negative impact on prognosis in treated elderly hypertensive patients.3

In the present issue of the American Journal of Hypertension, Pierdomenico et al4 further analyzed the question. They evaluated cardiovascular events during 5 years in 340 patients with responder hypertension (normal office and daytime ambulatory BP) and 126 with masked hypertension (clinic BP <140/90 mm Hg and daytime BP >135/85 mm Hg). After adjustment for several covariates, including clinic BP, Cox regression analysis showed that cardiovascular risk was significantly higher in masked hypertension compared to responder hypertension (relative risk [RR] 2.28, 95% CI 1.1–4.7, P < .05).

This information is important as it confirms the data of Bobrie et al3 and certainly follows logical thinking: the longer time BP is high, the higher the risk for cardiovascular events. Careful analysis of this article warrants waiting for further confirmation. The population studied in this study may be different from that seen in regular hypertension clinics. The investigators come up with a very high prevalence of masked hypertension (340 of 742 patients). For reference, in the Office vs. Ambulatory (OvA) study,1 prevalence was 143 of 1963. Also the total number of events in the two groups is rather low. Moreover, it would be interesting to see the results with and without adjustments for covariates. Still, the message is appealing as it goes in the direction of the expectations.

If confirmed, clinical repercussions of these data are far reaching. The condition is quite misleading, as a proportion of treated hypertensive patients who seem to be well controlled at the office, are in fact living with BP values above target. As a consequence, these patients are carrying a nonvisible elevated risk. If so, then would every treated hypertensive patient need an ambulatory recording, even if their office BP has returned to normal?

How do these findings influence the methods we use to measure BP and ultimately, define hypertension? We recognize that in addition to regular office BP readings, daytime and night-time ambulatory BP, as well as home BP readings can be used. However, until present, such recordings were only done when office BP is elevated. The data of Pierdomenico and others, let us reflect on the necessity of making these recordings also in patients with “normal” office BP. Do we need them also in the context of epidemiologic studies?

Unlike many other cardiovascular disorders, the diagnosis of hypertension is almost entirely dependent on BP measurements. Which method shall we choose? Obviously, there is still a lot of work to do.

References


