Ambulatory Blood Pressure vs. Office Blood Pressure in Type 2 Diabetes

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Ambulatory blood pressure monitoring (ABPM) has become a widely accepted method for assessing the cardiovascular risk of hypertensive patients. Several studies demonstrated that ABPM predicted cardiovascular events better than did office blood pressure, however, most of the patients were nondiabetic. In this issue of the American Journal of Hypertension, Eguchi et al. reported the results of a large prospective study that evaluated the significance of ABPM in hypertensive patients with type 2 diabetes in comparison to office blood pressure. This article is of considerable interest because prevalence of hypertension is high among patients with type 2 diabetes, and patients with both conditions are particularly at risk to suffer from cardiovascular disease. The authors demonstrated that (i) calculation models based on ABPM predicted cardiovascular events better than did office blood pressure and (ii) absolute values of awake and sleep systolic blood pressure, but not a nondipping status, predicted the cardiovascular risk. However, patients with a night-to-day ratio of systolic blood pressure >1—labelled as riser—had the highest cardiovascular event rate (Table 2). Although the Cox regression analysis (Table 3) did not reveal the rising pattern as independent predictor of cardiovascular events, this finding is noteworthy and in accordance with a recent large cohort study which evaluated the prognostic accuracy of ABPM. This cohort study reported the worst prognosis in patients with a higher night time than daytime blood pressure. There are few hypothetical explanations for this observation, including autonomic dysfunction or increased salt sensitivity; however, one should consider the age dependency of the night-to-day blood pressure ratio. Risers in the study by Eguchi et al. were older than dipper or nondipper. This fact might partly explain the lacking significance of the rising pattern in the prediction of cardiovascular events after adjustment for age (Table 3). Unfortunately, the authors did not provide data about further ABPM parameters of potential interest such as the morning surge or the blood pressure variability. Another interesting finding of this study was the quite similar cardiovascular event rate of 2.1 and 1.8 per 100 person-years for patients with and without diabetes, respectively. The authors did not provide A1c data of diabetic patients, therefore one cannot evaluate glycaemia control. However, as shown in Table 4, patients with diabetes had a more pronounced increase of cardiovascular events with increasing blood pressure compared with patients without diabetes. This underlines the significant importance of hypertension as cardiovascular risk factor in type 2 diabetes. In conclusion, the findings of Eguchi et al. clearly suggest the use of ABPM in type 2 diabetes to assess the cardiovascular risk. Absolute awake and sleep blood pressure values rather than the dipping status should be the basis for a valid evaluation.

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