New Way to Express Ambulatory Blood Pressure Variability

To the Editor:

In their recent article, Sega et al. provide the first demonstration that, in the population, there is a positive independent association between left ventricular mass index and the blood pressure variability component that has an erratic nature. For these conclusions we would report some considerations, based on our studies. Ambulatory blood pressure variability, measured as the standard deviation of the overall 24-hour blood pressure recording, has been shown to have a significant relationship to end-organ damage in hypertension. So far, the standard deviation of mean values, which is easily calculated by most physicians who use ambulatory blood pressure monitoring in their clinical practice, has been most widely used. Some studies have shown that the standard deviation of daytime pressure values tends to be higher in hypertensive than in normotensive people. So an important question concerns whether variability should be expressed in absolute terms (e.g., as standard deviation) or in relative terms (e.g., as coefficient of variation = standard deviation/mean blood pressure). In a recent study we showed that the coefficient of variation for diastolic blood pressure has an inverse association with mean diastolic blood pressure, whereas a new parameter named index of variation (standard deviation of 24-hour blood pressure values/square root of average blood pressure) is independent of mean blood pressure level. It would be very interesting to know if there is an association between left ventricular mass and blood pressure variability, when estimated by means of the index of variation, in the PAMELA population. The calculation of the individual residual blood pressure variability, as done by Sega et al., appears difficult for most physicians, whereas the calculation of the index of variation may be done by anyone. Our index may also facilitate communication about patients with hypertension and may provide a more precise basis for including patients in and for evaluating the outcome of clinical trials.

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